BEFORE THE ENVIRONMENT COURT
AT WELLINGTON

ENV-2021-WLG-000020
ENV-2021-WLG-000021
ENV-2021-WLG-000022
ENV-2021-WLG-000023

IN THE MATTER OF	**An appeal pursuant to cl 14 of Plan Change 2** **Resource Management Act 1991**
BETWEEN	**TE RUNANGA O RAUKAWA NGĀTI TURANGA** **ANDREW EDWARD DAY** **WELLINGTON FISH AND GAME COUNCIL** **Initiators**
AND	**MANAWATŪ-WHANGANUI REGIONAL COUNCIL** **Respondent**
	FEDERATED FARMERS OF NEW ZEALAND **HORTICULTURE NEW ZEALAND** **ROYAL FOREST AND BIRD SOCIETY OF NEW ZEALAND INC** **VIVIENNE TAUEKI** **Section 274 Interested Parties**

Hearing Commenced:	20 November 2023 held in Courtroom 5.01
Court:	Judge L Semple Commissioner K Edmonds Commissioner J Hodges
Appearances:	S Ongley for the Initiators Ngāti Turanga and Wellington Fish and Game Council M Wright for Initiator Day S Johnston for the Respondent N Edwards for Federated Farmers of New Zealand P F Majurey and N Buxeda for Horticulture New Zealand P Anderson for Royal Forest and Bird Society of New Zealand Inc.

NOTES OF EVIDENCE TAKEN BEFORE THE ENVIRONMENT COURT

TABLE OF CONTENTS

COURT RESUMES ON TUESDAY 21 NOVEMBER 2023 AT 10.02 AM 105

ELIZABETH EMMA DALY (AFFIRMED) 105
CROSS-EXAMINATION: MS ONGLEY 107
EXHIBIT 14 PRODUCED – MINUTES OF HORIZONS REGIONAL COUNCIL MEETING DATED 26 FEBRUARY 2019 109
CROSS-EXAMINATION: MS WRITE 124
RE-EXAMINATION: MS JOHNSTON 126
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 126
QUESTIONS FROM THE COURT: JUDGE SEMPLE 129
QUESTIONS ARISING – NIL 131

ELLERY TAPPIN (SWORN) 132
CROSS-EXAMINATION: – NIL 134
QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL 134
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 134
QUESTIONS FROM THE COURT: JUDGE SEMPLE 134
QUESTIONS ARISING – NIL 136

MAREE ELLEN PATTERSON (AFFIRMED) 137
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 138
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 140

JAMES ANTHONY HANLEY (AFFIRMED) 142
CROSS-EXAMINATION: MS ONGLEY 143
RE-EXAMINATION: MS JOHNSTON – NIL 144
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 145
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 147
QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL 147
QUESTIONS ARISING – NIL 147

HEATHER MILDRED COLLINS (SWORN) 148
CROSS-EXAMINATION: MS WRIGHT 150
QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL 155
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 155
QUESTIONS FROM THE COURT: JUDGE SEMPLE 155
QUESTIONS ARISING – NIL 161

DAVID JOHN HORNE (SWORN) 162
CROSS-EXAMINATION: MS ONGLEY 170
CROSS-EXAMINATION: MR ANDERSON 188
CROSS-EXAMINATION: MS WRIGHT 203

COURT RESUMES ON WEDNESDAY 22 NOVEMBER 2023 AT 09.33 AM 217
RE-EXAMINATION: MS JOHNSTON 217
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 217
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 227
QUESTIONS ARISING: MS JOHNSTON 235
FURTHER QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 255
QUESTIONS FROM THE COURT: JUDGE SEMPLE 259
QUESTIONS FROM THE COURT: JUDGE SEMPLE 262

RE-EXAMINATION: MS JOHNSTON – NIL 266
EXHIBIT E PRODUCED – RISK ASSESSMENT TOOL 267

PAUL FREDERICK LE MIERE (AFFIRMED) 267
CROSS-EXAMINATION: MS ONGLEY 268
CROSS-EXAMINATION: MS WRIGHT 279
CROSS-EXAMINATION: MR ANDERSON 285
RE-EXAMINATION: MS JOHNSTON 289
QUESTIONS FROM THE COURT: JUDGE SEMPLE 290
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 297
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 303
QUESTIONS ARISING – NIL 304

AARON RICHARD PASSEY (AFFIRMED) 306
CROSS-EXAMINATION: MR ANDERSON 306
RE-EXAMINATION: MS EDWARDS – NIL 308
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 308
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 312
FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES 312
QUESTIONS FROM THE COURT: JUDGE SEMPLE 313
QUESTIONS ARISING: MS EDWARDS 318
QUESTIONS ARISING ALL OTHER COUNSEL – NIL 319

ANNE MARIE JANE JOLLY (AFFIRMED) 323
CROSS-EXAMINATION: MS BUXEDA 325
CROSS-EXAMINATION: MS ONGLEY 333
CROSS-EXAMINATION: MR ANDERSON 341

COURT RESUMES ON THURSDAY 23 NOVEMBER 2023 AT 10.02 AM 348
CROSS-EXAMINATION: MS WRIGHT 348
RE-EXAMINATION: MS JOHNSTON 357
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 358
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 368
QUESTIONS FROM THE COURT: JUDGE SEMPLE 368
QUESTIONS ARISING: MS JOHNSTON 369
QUESTIONS ARISING ALL OTHER COUNSEL – NIL 370

ANTONIUS HUGH SNELDER (AFFIRMED) 371
EXHIBIT F PRODUCED – MAP OF EFFECTIVENESS OF CONTAMINANT-REDUCING ACTIONS 376
CROSS-EXAMINATION: MS BUXEDA – NIL 376
CROSS-EXAMINATION: MS EDWARDS – NIL 376
CROSS-EXAMINATION: MS ONGLEY 376
CROSS-EXAMINATION: MR WILLIAMS 382
CROSS-EXAMINATION: MS WRIGHT 385
RE-EXAMINATION: MS JOHNSTON 394
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 395
QUESTIONS FROM THE COURT: JUDGE SEMPLE 401
QUESTIONS ARISING – NIL 402

KERRY ARTHUR MAYES (AFFIRMED) 404
CROSS-EXAMINATION: MS ONGLEY 404
RE-EXAMINATION: MR SINCLAIR 408
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 408
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 409

QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL 409

CHRISTINE ANNE FOSTER (AFFIRMED) 410
CROSS-EXAMINATION: MR MAJUREY 414
CROSS-EXAMINATION: MS ONGLEY 431
CROSS-EXAMINATION: MS WRIGHT 446
CROSS-EXAMINATION: MR WILLIAMS 453
RE-EXAMINATION: MS JOHNSTON 455

COURT RESUMES ON FRIDAY 24 NOVEMBER 2023 AT 10.05 AM 459
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 459
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 482
THE COURT: COMMISSIONER EDMONDS 485
QUESTIONS FROM THE COURT: JUDGE SEMPLE 493
QUESTIONS ARISING: MS JOHNSTON 497
FURTHER QUESTIONS FROM THE COURT: JUDGE SEMPLE 498
MS WRIGHT 499
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 504
COURT: COMMISSIONER HODGES 507

MURRAY HUGH HOLDAWAY (SWORN) 509
CROSS-EXAMINATION: MS WRIGHT 509
CROSS-EXAMINATION: MS ONGLEY 511
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 512
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 513
QUESTIONS FROM THE COURT: JUDGE SEMPLE 514
QUESTIONS ARISING: MS EDWARDS 515

MICHELLE KATHLEEN SANDS (SWORN) 519
CROSS-EXAMINATION: MS ONGLEY 520
CROSS-EXAMINATION: MS WRIGHT 524
CROSS-EXAMINATION: MS JOHNSTON 524
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 527
QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL 533
QUESTIONS FROM THE COURT: JUDGE SEMPLE 533
QUESTIONS ARISING: MS BUXEDA 539

STUART JOHN FORD (AFFIRMED) 541
CROSS-EXAMINATION: MS ONGLEY 544
RE-EXAMINATION: MS BUXEDA – NIL 546
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 546
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 547
QUESTIONS FROM THE COURT: JUDGE SEMPLE 547
QUESTIONS ARISING – NIL 548

COURT RESUMES ON WEDNESDAY 7 FEBRUARY 2024 AT 10.37 AM 549

COURTROOM CHANGE: LEVIN DISTRICT COURT 2 549

GREGORY JOHN CARLYON (AFFIRMED) 549
CROSS-EXAMINATION: MS JOHNSTON 554
CROSS-EXAMINATION: MS BUXEDA 592
CROSS-EXAMINATION: MS EDWARDS 602
CROSS-EXAMINATION: MR ANDERSON – NIL 607
CROSS-EXAMINATION: MS WRIGHT 607

RE-EXAMINATION: MS ONGLEY 610
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 611
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 623
QUESTIONS FROM THE COURT: JUDGE SEMPLE 624
FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES 641
QUESTIONS ARISING – NIL 642

JOHN JOSEPH CLARK (SWORN) 644
EXHIBIT I PRODUCED – NITROGEN RISK ASSESSMENT DEVELOPED FOR WOODHAVEN GARDENS – ANDREW BARBER 2023 653
CROSS-EXAMINATION: UNKNOWN FEMALE COUNSEL – NIL 655
CROSS-EXAMINATION: MS WRIGHT 655
RE-EXAMINATION: MS BUXEDA – NIL 658
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 658
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 658
QUESTIONS FROM THE COURT: JUDGE SEMPLE 668
QUESTIONS ARISING – NIL 669

COURT RESUMES ON THURSDAY 8 FEBRUARY 2024 AT 10.04 AM 670

ANDREW JOHN BARBER (AFFIRMED) 670
CROSS-EXAMINATION: MS ONGLEY 674
CROSS-EXAMINATION: MS WRIGHT 679
CROSS-EXAMINATION: MR WILLIAMS 683
RE-EXAMINATION: MS BUXEDA – NIL 685
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 685
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 685
QUESTIONS FROM THE COURT: JUDGE SEMPLE 689
FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES 690
QUESTIONS ARISING – NIL 692

GILLIAN MARGARET HOLMES (AFFIRMED) 693
CROSS-EXAMINATION: MR SINCLAIR 693
CROSS-EXAMINATION: MS WRIGHT 693
CROSS-EXAMINATION: MS ONGLEY 694
RE-EXAMINATION: MS SCHARTING – NIL 697
QUESTIONS FROM THE COURT – NIL 697

CHARLOTTE JOSEPHINE MARY DRURY (SWORN) 698
EXHIBIT J PRODUCED – CROP ROTATION DIAGRAM 698
CROSS-EXAMINATION: MR SINCLAIR 702
CROSS-EXAMINATION: MS ONGLEY 705
CROSS-EXAMINATION: MS WRIGHT 709
CROSS-EXAMINATION: MR WILLIAMS 710
RE-EXAMINATION: MS BUXEDA – NIL 713
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 713
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 720
QUESTIONS FROM THE COURT: JUDGE SEMPLE 722
QUESTIONS ARISING – NIL 728

DAVID HORNE (SWORN) 730

PAUL LE MIERE (AFFIRMED) 730

JEAN-PAUL TAVERNET (AFFIRMED) 730

ALISON DEWES (AFFIRMED) 730

ELIZABETH PARLATO (AFFIRMED) 730

ANNE-MAREE JOLLY (AFFIRMED) 730

STUART FORD (AFFIRMED) (VIA LINK) 730
CROSS-EXAMINATION: MS JOHNSTON TO PROFESSOR HORNE 786
CROSS-EXAMINATION: MS WRIGHT TO DR LE MIERE 787
CROSS-EXAMINATION: MS ONGLEY TO DR LE MIERE AND PROFESSOR HUNT 788
CROSS-EXAMINATION: MS ONGLEY TO DR TAVERNET 791
CROSS-EXAMINATION: MR ANDERSON TO DR LE MIERE 793

COURT RESUMES ON FRIDAY 9 FEBRUARY 2024 AT 10.05 AM 795

HAYDEN TUROA (AFFIRMED) 795
CROSS-EXAMINATION: MS JOHNSTON 806
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 807
QUESTIONS FROM THE COURT: JUDGE SEMPLE 809
QUESTIONS ARISING – NIL 813

DAVID JOHN HORNE (SWORN) 814
CROSS-EXAMINATION: MS ONGLEY 815
EXHIBIT K1 PRODUCED – PAGE OF TABLES 819
EXHIBIT K2 PRODUCED – NATIONAL REPORT ALL FARMS (866 FARMS) 819
EXHIBIT K3 PRODUCED – OVERSEER NATIONAL REPORTING (500 FARMS) 819
EXHIBIT K4 PRODUCED – ALL FARMS 820
CROSS-EXAMINATION: MS WRIGHT 823
CROSS-EXAMINATION: REMAINING COUNSEL – NIL 826
RE-EXAMINATION: MS JOHNSTON 826
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 837
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 837
QUESTIONS FROM THE COURT: JUDGE SEMPLE 840
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 841
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 842

PETER WILLIAM JOHN CLOUGH (SWORN) 867
CROSS-EXAMINATION: MS ONGLEY 867
CROSS-EXAMINATION: MS WRIGHT 868
CROSS-EXAMINATION: REMAINING COUNSEL – NIL 869
RE-EXAMINATION: MS JOHNSTON – NIL 869
QUESTIONS FROM THE COURT – NIL 869

COURT RESUMES ON WEDNESDAY 5 JUNE 2024 AT 10.05 AM IN WELLINGTON COURTROOM 5.01 871

ANTONIUS HUGH SNELDER (RE-AFFIRMED) (RE-CALLED) 871
CROSS-EXAMINATION: MS ONGLEY 871
CROSS-EXAMINATION: MS WRIGHT 875
CROSS-EXAMINATION: MR WILLIAMS 876
RE-EXAMINATION: MS JOHNSTON 881
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 882
QUESTIONS FROM THE COURT JUDGE SEMPLE – NIL 885
EXHIBIT L PRODUCED BY CONSENT – UPDATED GUIDANCE DOCUMENT 886

DAVE JOHN HORNE (RE-CALLED AND RE-SWORN) 886
EXHIBIT M PRODUCED – TABLE WITH ROUNDED VALUES (DECIMAL POINTS CORRECTED) 887
CROSS-EXAMINATION: MS ONGLEY 887
CROSS-EXAMINATION: MS WRIGHT 896
CROSS-EXAMINATION: MR WILLIAMS 899
RE-EXAMINATION: MS JOHNSTON 903
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 905
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 915
QUESTIONS FROM THE COURT: JUDGE SEMPLE 921
RE-EXAMINATION: MS JOHNSTON 932

ANN-MAREE JANE JOLLY (RE-CALLED) (RE-AFFIRMED) 935
CROSS-EXAMINATION: OTHER COUNSEL – NIL 935
QUESTIONS FROM THE COURT COMMISSIONER HODGES: 935
QUESTIONS FROM THE COURT COMMISSIONER EDMONDS: 937
QUESTIONS FROM THE COURT JUDGE SEMPLE: 939
RE-EXAMINATION: MS JOHNSTON – NIL 943

STUART JOHN FORD (RE-AFFIRMED) (RE-CALLED) 944
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 945
QUESTIONS FROM THE COURT: JUDGE SEMPLE 945

CHARLOTTE JOSEPHINE MARY DRURY (RE-SWORN) (RE-CALLED) 947
QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL 947
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 947
QUESTIONS FROM THE COURT: JUDGE SEMPLE 947
QUESTIONS FROM THE COURT COMISSIONER HODGES: 950
QUESTIONS FROM THE COURT COMMISSIONER EDMONDS: 951
QUESTIONS FROM THE COURT: JUDGE SEMPLE 951
RE-EXAMINATION: MS BUXEDA 952

CHRISTINE FOSTER (RE-CALLED) (RE-AFFIRMED) 953
CROSS-EXAMINATION: MS ONGLEY 954
CROSS-EXAMINATION: MS WRIGHT 967
CROSS-EXAMINATION: MR ANDERSON 981

COURT RESUMES ON THURSDAY 6 JUNE 2024 AT 10.08 AM 989
EXHIBIT N1 PRODUCED – IFLU CONSENT GRANTED ON 22 MARCH 2017 989
EXHIBIT N2 PRODUCED – IFLU CONSENT SIMILARLY GRANTED ON 22 MARCH 2017 989
EXHIBIT N3 PRODUCED – IFLU CONSENT GRANTED 15 JUNE 2017 989
RE-EXAMINATION: MS JOHNSTON 989
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS 993
QUESTIONS FROM THE COURT: COMISSIONER HODGES 1004
QUESTIONS FROM THE COURT: JUDGE SEMPLE 1006
RE-EXAMINATION: MS JOHNSTON 1026

ALEC DONALD MACKAY (AFFIRMED) 1064
CROSS-EXAMINATION: MS WRIGHT 1069
CROSS-EXAMINATION: MS JOHNSTON 1073
CROSS-EXAMINATION: MS EDWARDS – NIL 1090
RE-EXAMINATION: MS ONGLEY 1091
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 1092
QUESTIONS ARISING: ALL COUNSEL – NIL 1095

COURT RESUMES ON FRIDAY 7 JUNE 2024 AT 10.04 AM 1096

ALISON MARY DEWES (SWORN) 1096
CROSS-EXAMINATION: MS WRIGHT 1100
CROSS-EXAMINATION: MR ANDERSON 1104
CROSS-EXAMINATION: MS EDWARDS 1107
CROSS-EXAMINATION: MS JOHNSTON 1110
EXHIBITS K1–K4 PRODUCED – NATIONAL REGIONAL REPORTING 1120
CROSS-EXAMINATION: MS BUXEDA 1122
RE-EXAMINATION: MS ONGLEY – NIL 1122
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 1123
QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL 1126
QUESTIONS FROM THE COURT: JUDGE SEMPLE 1126
QUESTIONS ARISING – NIL 1129

ELIZABETH HELEN PARLATO (AFFIRMED) 1130
CROSS-EXAMINATION: MS WRIGHT 1130
CROSS-EXAMINATION: MS BUXEDA 1138
CROSS-EXAMINATION: MS EDWARDS 1142
CROSS-EXAMINATION: MS JOHNSTON 1144
RE-EXAMINATION: MS ONGLEY 1158
QUESTIONS FROM THE COURT: COMMISSIONER HODGES 1159
QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL 1160
QUESTIONS ARISING – NIL 1160

MS JOHNSTON OPENS

"MAY IT PLEASE THE COURT:

A. INTRODUCTION

[1] These proceedings are appeals against the decision of the Manawatū-Whanganui Regional Council (**Council**) to approve Proposed Plan Change 2 (**PC2**) to the One Plan.[1]

[2] PC2 is a narrow plan change, which seeks to rectify a discrete issue with the One Plan, as it relates to existing intensive farming land uses (**IFLU**) within targeted water management sub-zones (**WMSZs**). The issue arises because of a policy 'roadblock' in the One Plan, which has meant that the IFLU provisions have not been working as intended, with a substantial number of existing IFLU unconsented within targeted WMSZs.[2] The effect of this has been uncertainty, stress, and a feeling of being 'in limbo' for the farming community,[3] and delays in water quality improvements in degraded targeted catchments within the Manawatū-Whanganui Region (**Region**).

[3] PC2 therefore proposes to:

(a) Update the cumulative nitrogen leaching maximums (**CNLM**) in Table 14.2 to reflect the best available Overseer modelling information; and

(b) Provide a workable (or viable) pathway for existing IFLU in targeted WMSZs to apply for resource consent where they cannot meet Table 14.2.

---

1 The One Plan is the consolidated regional policy statement, regional plan, and regional coastal plan for the Manawatū-Whanganui Region.

2 **[[202.1011]]** Statement of Evidence of Christine Foster (7 October 2023) at [59]–[83].

3 **[[201.0345]]** Statement of Evidence of Heather Collins (6 October 2023) at [11].

[4] As will be outlined in these submissions, the exact shape of the 'viable consent pathway' for existing IFLU has been the subject of scrutiny and change over time – however, the intent of PC2 has remained consistent.

[5] Overseer has been a central part of the consenting pathways in the decisions version of PC2 (**DV-PC2**) – both in terms of Table 14.2,[4] and the alternative 'specified reduction pathways' for commercial vegetable growing (**CVG**) and pastoral farming.[5] The Government response to the whole model peer review of Overseer following the filing of appeals in 2021[6] was therefore of significance, given the concerns raised regarding its use as a regulatory tool

[6] Nonetheless, the issue PC2 seeks to address remains. For this reason, the Council took steps to work with the parties to these appeals to consider the issues/implications of the Overseer review.

[7] Eleven expert conferences took place between farms systems experts and planners (or a combination of the two groups) between 28 June 2022 and 16 May 2023. This collaborative effort from the parties' planning and farm systems experts led to the development of a new risk assessment tool and a modified set of plan provisions for PC2.

[8] The Council prepared and filed its proposed provisions (appeals version) on 22 September 2023 (**AV-PC2**), which contain the risk assessment tool developed at conferencing, as the 'alternative pathway' to Table 14.2 instead of the specified reduction pathways within DV-PC2.[7] Following the exchange of evidence, Mrs Foster has prepared an amended version of the provisions, which she will produce when giving evidence.

---

4 The cumulative nitrogen leaching maximums in Table 14.2 are Overseer derived.

5 Requiring modelled nitrogen reductions of 35% for CVG and 20% for pastoral.

6 **[[101.0001]]**–**[[101.0033]]**.

7 **[[301.0001]]** Council Proposed Provisions – Proposed Plan Change 2 (Appeals Version).

[9] PC2 is not the complete answer to water quality challenges in the Region. It was never proposed to be. It addresses a regulatory issue that has caused considerable uncertainty and frustration for all involved, by dealing with an impractical consenting regime. In doing so, PC2 ensures all existing IFLU are in a regulatory framework, doing their part to improve water quality.

[10] These drivers for PC2 remain today. As Mrs Foster summarises:[8]

> I accept that the window of benefit has shrunk since PC2 was publicly notified. However, resolution of PC2 as soon as possible, with implementation of N leaching reductions as soon as practicable, remains preferable in my opinion to deferring decision making until the NPS-FM freshwater plan is settled. The Council's proposed PC2 provisions have the support of pastoral and CVG sector representatives. The regulation of existing IFLU activities has been hampered by uncertainty to date. The uncertainties and delays are causing a lack of business confidence and stress, as described in the evidence of Dr Collins. …
>
> In my opinion, progressing PC2 secures N leaching loss reductions sooner. Delaying action secures no immediate reductions and allows the uncertainty that has prevailed for these activities since 2017 to persist until at least 2027. All in a context of acknowledged water quality degradation in the targeted [WMSZs].

B. OUTLINE OF SUBMISSIONS

[11] These submissions:

(a) Provide an overview of PC2 and its history;

(b) Briefly outline the Council's functions and statutory obligations;

---

8 **[[202.1065]]** Statement of Evidence of Christine Foster (7 October 2023) at [187]–[188].

(c) Outline the relevant framework applying to the Court's decision, particularly under the Resource Management Act 1991 (**the Act**) and other relevant planning documents;

(d) Address the key issues raised by the appellants, including that:

(i) There is no need for an alternative consenting pathway for existing IFLU;

(ii) The tools proposed (in both DV-PC2 and AV-PC2) abandon/undermine the natural capital approach in the operative One Plan, and/or constitute 'grandparenting';

(iii) The use of a risk assessment tool is too uncertain for this regulatory purpose – or, at least, it is less certain than the use of Overseer would be;

(iv) PC2 will not achieve satisfactory water quality outcomes;

(v) The Council failed to meet its consultation obligations under sch 1 of the Act with iwi and hapū;

(vi) PC2 fails to give effect to or will frustrate the implementation of Te Mana o Te Wai/the National Policy Statement for Freshwater Management 2020 (**NPSFM**);

(e) Confirm that the risk assessment tools are within the scope of PC2.

C. OVERVIEW OF PC2

Background

[12] The history of the One Plan has been briefly summarised in the decision of the Independent Hearing Panel (**the Decision**).[9] PC2 is the first 'substantive' change

[9] **[[101.0265]]** Proposed Plan Change 2: Panel Report and Recommendation at 2.1–2.2.

to the operative provisions of the One Plan.[10] It relates to the regulatory regime for existing IFLU – dairying, irrigated sheep and beef farming, cropping, and CVG.

[13] As described by Ms Patterson, the IFLU provisions of the One Plan aim to regulate nitrogen levels from intensive farming to mitigate the impact of those land uses on freshwater values.[11] At the time, managing nitrogen leaching through Table 14.2 (and the CNLMs) was considered to be a step towards improving water quality in the region.[12]

[14] In the operative One Plan, existing IFLUs are not universally required to seek consent for their operations.[13] Instead, consent is only required for existing IFLUs within targeted WMSZs.[14] Access to a controlled activity pathway for existing IFLUs in these targeted WMSZs is contingent upon demonstrating compliance with the CNLMs outlined in Table 14.2 (among other requirements).[15] If the IFLU cannot comply with those CNLMs, the activity falls to be considered as a restricted discretionary activity under r 14-2.

[15] The circumstances which led to the need for a plan change to amend these provisions are discussed in the evidence of Dr Daly and of Mrs Foster.[16]

[16] To summarise, the Table 14.2 CNLMs became harder to achieve over time, as progressive updates of Overseer meant that it was modelling greater nitrogen losses from the root zone, despite practices on farm remaining the same. This led to farmers not being able to meet their CNLMs. Further, the policy framework supporting Table 14.2 was essentially unworkable, preventing

---

10 The One Plan was amended in 2016 and 2018, to give effect to mandatory national direction. Since the Decision was released, Plan Amendment 2 (2022) made changes to align the One Plan with the NESFW, NESPF, NESSTO, NPSFM, and the NPSUD.

11 **[[201.0164]]** Statement of Evidence of Maree Patterson (6 October 2023) at section I.

12 **[[201.0166]]** Statement of Evidence of Maree Patterson (6 October 2023) at [58].

13 Consent is necessary for new IFLUs under rr 14-3 or 14-4 of the One Plan throughout the region.

14 Set in Table 14.1 of the One Plan.

15 One Plan, r 14-1.

16 **[[201.0012]]** Statement of Evidence of Elizabeth Daly (6 October 2023) at sections H–I; and **[[202.1010]]** Statement of Evidence of Christine Foster (7 October 2023) at section I, respectively.

consideration of resource consent for activities which exceeded Table 14.2 under the restricted discretionary pathway.

[17] Advice prepared by Beca and Ellis Gould at the request of the Ministry for the Environment (**the MfE Advice**) in 2018 is instructive:[17]

> … under the current provisions of the Plan, whilst there is a theoretical consenting pathway available for existing dairy and horticulture activities, where they do not meet the leaching maximums, this is not a viable "pathway" as, while the rule regime implies opportunity for discretion, the policy regime of the Regional Plan does not appear to anticipate that applications can be granted where they do not "comply" with the nitrogen leaching maximums set in Table 14.2, irrespective of the potential environmental outcomes of such a proposal.

[18] The MfE Advice also concluded that the recalibration of Table 14.2 should not occur in isolation – a point with which the Panel agreed.[18] Rather:[19]

> In respect of recommendations on how a consenting pathway could be provided for that is consistent with the broader Plan, we consider that there are a number of alternatives. On the basis that Horizons is considering a first step to amend Table 14-2, we consider that further amendment should be made to Policies 14-5 and 14-6 to provide clear management guidance by which to evaluate the appropriateness of an application against the 'matters of discretion' listed in Rule 14-2.

[19] The Council therefore resolved to progress a plan change to address these issues, in addition (parallel) to the proposed plan change process it was planning to address freshwater under the (then) NPSFM 2017.

[20] In the words of the s 32 report for PC2, its purpose is:[20]

---

17 **[[201.0030]]** Statement of Evidence of Elizabeth Daly (6 October 2023) at Attachment A [**MfE Advice**], page 7.
18 **[[101.0308]]** At 3.129.
19 **[[201.0039]]** MfE Advice, page 9.
20 **[[301.0072]]** Section 32 Report (July 2019) at section 6, page 30.

> To improve the workability of the provisions for intensive farming land use provisions by updating the nitrogen leaching maximums and providing a viable consenting pathway for activities that do not comply with them, in order to enable a return to effective regulation of existing intensive farming land uses through the One Plan as soon as practicable.

[21] PC2 is intended to provide that workable regime for existing IFLU. It allows consenting and regulation of existing IFLU to recommence until the freshwater planning instrument is completed in accordance with the NPSFM process within the Region (known as **Oranga Wai**).

PC2 as notified

[22] As notified in July 2019, PC2 amended Policy 5-8 of the Regional Policy Statement (**RPS**) and introduced/amended various provisions within Chapter 14 of the Regional Plan. It sought to:[21]

(a) Recalibrate the CNLM values in Table 14.2 (to Overseer version 6.2.3 equivalent values);

(b) Remove the narrow exceptions from Policy 14-5, under which exceedance of the Table 14.2 CNLM values by existing IFLU activities were to be considered (as noted, the circumstances qualifying for exception had been found to be very limiting and not practically available to most remaining unconsented existing IFLU activities);

(c) Replace the narrow exceptions in Policy 14-5 with two other 'pathways' for existing IFLU activities as discretionary activities, including, where:

(i) 'good management practices' (**GMP**) were implemented to reduce N leaching loss;

---

[21] The provisions as notified are included in the s 32 report: **[[301.0095]]** At Appendix A.

(ii) an existing IFLU activity was intending to transition to an alternative non-intensive farming land use within five years;

(d) Insert a requirement for GMP to be considered when making decisions on all applications for consent for existing IFLU activities;

(e) Insert considerations to guide decision-making and the imposition of conditions of consent for existing IFLU activities; and

(f) Replace the restricted discretionary activity rule in the operative Plan with a discretionary activity rule for the 'exceptions'.[22]

[23] Submissions on the notified PC2 sought the inclusion of an additional controlled activity pathway where compliance with the CNLMs in Table 14.2 would not be achieved.[23] The reasons provided for such an alternative pathway for pastoral farming varied, including arguments that expected nitrogen leaching reductions should be achievable for most farmers, and that proportional water quality improvements could be made without reliance on Table 14.2.[24] In relation to CVG, it was argued that Table 14.2 CNLMs were not representative of CVG activities and, again, that water quality improvements could be made without reliance on Table 14.2.[25]

[24] In response to these submissions, Mrs Foster recommended two additional (alternative) controlled activity rules alongside the current r 14-1. The two additional rules provided for existing pastoral and CVG IFLU activities that did not meet Table 14.2, but which meet alternative nitrogen leaching standards, including:

(a) the adoption of good and best management practices;

---

22 Being the two categories of exception specified in Policy 14-5.
23 For example, Federated Farmers, Dairy NZ and Horticulture NZ.
24 **[[201.0421]]** Statement of Evidence of David Horne (6 October 2023) at [47].
25 See, for example: **[[101.0066]]** Horticulture NZ's submission on PC2 at Part C.

(b) the reduction of nitrogen leaching by specified amounts (35% for CVG, and 20% for pastoral); and

(c) for, pastoral farmers sitting above the 75th percentile value for nitrogen leaching in the region a reduction to the 75th percentile value if it was greater than the 20% pathway (essentially a "whichever is the greater" approach).[26]

[25] Together, these became known as the 'specified reduction pathways'.

The Hearing Panel decision

[26] The Decision was issued on 19 March 2021, with the Hearing Panel recommending to the Council that PC2 be approved with amendments. The recommendations of the Panel are reflected in DV-PC2.

[27] The Panel aptly describes the effect of PC2 in its Decision:[27]

> [PC2] provides an interim 'fix' to a presently insoluble consenting paradox that will allow the Council and the community to move forward while achieving some environmental gains.

[28] The Panel's decision, as Mrs Foster recounts, records that:[28]

(a) PC2 is an interim initiative which cannot give full effect to the NPSFM;

(b) PC2 will contribute to improved water quality in and downstream of targeted WMSZ (although this improvement will be modest);

(c) PC2 is consistent with the higher order policy framework;

---

26 **[[202.1031]]** Statement of Evidence of Christine Foster (7 October 2023) at [113]. These recommendations developed over the course of the hearing.

27 **[[101.0306]]** At 3.122.

28 **[[202.1031]]** Statement of Evidence of Christine Foster (7 October 2023) at [115].

(d) Controlled activity is the appropriate 'entry level' consent pathway for existing IFLU activities, provided substantive specified reductions in nitrogen leaching are demonstrated within a defined time period;

(e) Discretionary activity is the appropriate activity status for existing IFLU activities that cannot meet the controlled activity conditions (in particular, that do not meet the nitrogen N leaching reductions);

(f) A more stringent policy framework is appropriate for discretionary activities, providing for greater consideration of Māori cultural values, water quality state and likely impact, and the impacts on coastal lakes;

(g) Urgency is required – there should be time limits for lodging consent applications, for achieving N loss reductions and limited consent duration (maximum ten years);

(h) Differences in the rule framework for CVG are warranted, requiring a greater reduction in N loss (35% for CVG);[29]

(i) In other respects, all forms of existing IFLU activities should be treated the same; and

(j) To avoid the prospect of Table 14.2 becoming outdated by future version changes, an Overseer reference file system should be adopted to monitor and account for changes in Overseer.

[29] Importantly, the Panel accepted the Council's view that the inclusion of the specified reduction pathways as alternative controlled activities (in addition to the Table 14.2 recalibration) was the most appropriate approach out of all the potential options before it. These options included updating Table 14.2 with no other changes, updating Table 14.2 and making policy amendments but not

[29] Acknowleding the greater gains made by pastoral farming in mitigations since the One Plan became operative.

inserting an alternative controlled pathway, and inserting a non-complying pathway proposed by some parties.[30]

[30] The Panel considered that the specified reduction pathways both provided certainty to plan users as to the availability of an achievable consenting pathway, and provided clear expectations for the community as to the level of nitrogen reduction necessary on-farm to access that pathway.

The Overseer peer review report

[31] As noted above, following the Decision (and appeals), the Science Advisory Panel concluded that it lacked confidence in Overseer's outputs when determining nutrient loss impacts from farm management changes.[31] The Government, in response, echoed those concerns.

[32] This was obviously a significant emerging issue for the Council – with the reliance on Overseer within the operative One Plan, and DV-PC2. The review suggested that the pathways reliant on Overseer may not be fit for purpose. Further, Ministry guidance to regional councils was that Overseer outputs should not be used as absolute numbers in a regulatory context and alternative tools and information should be considered wherever possible.

[33] Therefore, while the Panel's rationale for including the specified reduction pathways in PC2 remains valid, the Council considered it sensible to explore whether an alternative approach to that same end could be found.

Development of AV-PC2

[34] In June of 2022, the Council convened a facilitated expert conference of its, the appellants', and the interested parties' farm systems and planning experts.[32] This conference was to explore whether there was an alternative to the

---

30 **[[101.0306]]** At 3.124–3.127.

31 Science Advisory Panel *Overseer whole-model review: Assessment of the model approach* (Ministry for Primary Industries and the Ministry for the Environment Technical Paper 2021/12, July 2021).

32 Along with an invited independent expert, Dr Brent Clothier.

Overseer based pathways within DV-PC2 – that is, a qualitative assessment tool which did not rely on Overseer outputs for individual farms.

[35] The details of the process are outlined by Professor Horne, Dr le Miere, and Dr Jolly in evidence,33 and in the joint witness statements (JWSs) produced through that process.34

[36] As designed, the CVG and pastoral tools:

(a) Use a scorecard approach, based initially on (or in the case of CVG, informed by) the Fonterra Nitrogen Risk Scorecard;

(b) Assign maximum risk scores for land based on its biophysical characteristics (annual rainfall and Profile Available Water), which are listed in Tables 14.2A (pastoral) and 14.2B (CVG); and

(c) Require a 'low' level of nitrogen leaching risk for the land. That is, a farm must adopt risk mitigation practice changes (listed in a Schedule) to bring their risk score below the relevant maximum listed in Table 14.2A or 14.2B to qualify as a controlled activity.

[37] AV-PC2 incorporates the pastoral and CVG risk assessment tools, replacing the specified reduction pathways, as alternative controlled activity pathways to Table 14.2. As will be discussed later in these submissions, and for the reasons set out in evidence, the retention of an alternative pathway in some form is considered necessary to achieve the purpose of PC2.

[38] The AV-PC2 provisions are explained in detail in Mrs Foster's evidence.[35] To help initially orient the Court, for the Regional Plan the AV-PC2 provisions:[36]

(a) Recalibrate Table 14.2;

---

33 **[[201.0425]]** Statement of Evidence of David Horne (6 October 2023) at section J; and **[[201.0563]]** Statement of Evidence of Anne-Maree Jolly (6 October 2023) at section G.

34 **[[204.2271]]–[[204.2480]].**

35 **[[201.1051]]** Statement of Evidence of Christine Foster (7 October 2023) at sections S–T. These include some changes since filing of the Council's provisions in September.

36 Noting that these build on the changes to the One Plan from DV-PC2.

(b) Prescribe a controlled activity status for existing IFLU in targeted WMSZs which can (among the other activity standards in r 14-1):

(i) Meet the CNLMs in the recalibrated Table 14.2; or

(ii) Using the appropriate scorecard from the new schedules to the One Plan, achieve a risk score lower than the value applying to the farm under Table 14.2A (for pastoral farming) or Table 14.2B (for CVG);

(c) Require IFLUs which do not meet the controlled activity pathways apply for consent as a discretionary activity;

(d) Replace Policy 14-3, which is to consider industry-based standards when consenting IFLUs, with a requirement to adopt GMP;

(e) Amend Policy 14-5 to provide for consents to be granted under the new risk-based limits in the rule framework (provided that applicants apply within 12 months of PC2 becoming operative;

(f) Replace Policy 14-6 with a new framework for consenting IFLUs which reinforces the approach in Policy 14-5 and provides for:

(i) Consents to be granted for discretionary IFLU activities, subject to a series of considerations limiting adverse effects (to which the Council must have regard/particular regard), for a duration of no more than 10 years; and

(ii) A pathway to transition from IFLUs to non-intensive land uses within 5 years.

[39] In relation to the RPS, the AV-PC2 provisions:

(a) Amend Policy 5-8 to:

(i) Require the Council to establish limits in the Regional Plan which minimise nitrogen leaching risk generally, rather than specifying that CNLMs be established;

(ii) Allow for consents to be provided to IFLUs which exceed those risk limits but only where their risk is minimised to the extent practicable in the shortest feasible timeframe, and having regard to the environmental effects of that leaching;

(iii) Provide a pathway for short term (5 year) consents to be granted to IFLUs which are transitioning to a non-intensive land use, where it is demonstrated that their nitrogen leaching risk will not increase during that transition;

(iv) Require implementation of GMPs for IFLU activities;

(b) Insert a new Method 5-12, which is to support innovative land use research, particularly in WMSZs where nitrogen leaching is an issue; and

(c) Insert a new Method 5-13, which is to collate and publish information on nutrient management models or risk assessment methods which are appropriate for determining the risk of on-farm nutrient losses (including updating Table 14.2 where necessary).

D. STATUTORY FRAMEWORK

[40] PC2 is a change to the RPS and the Regional Plan which is intended to be complementary to existing objectives within the One Plan. There are no changes to existing objectives of the RPS or the Regional Plan.

[41] Consistent with the Act, PC2 is also focused on giving effect to higher order instruments (including as far as reasonably practicable, the NPSFM 2020), and, to the extent it involves a change to the Regional Plan, the RPS.

[42] The RPS and Regional Plan assist the Council in achieving these statutory functions in order to achieve the purpose of the Act. The purpose of the Act, and therefore these regional planning instruments, is to promote the sustainable management of natural and physical resources.[37]

[43] A regional council must change an RPS and any regional plan in accordance with, relevantly:[38]

(a) Schedule 1 of the Act;

(b) Its functions under s 30 of the Act;[39]

(c) The provisions of Part 2;

(d) Any national policy statement or NZCPS;

(e) Its obligations to prepare and have particular regard to an evaluation report prepared in accordance with s 32.

[44] When preparing or changing the RPS, the Council shall have regard to the matters and instruments listed in s 61, including (among others) any management plans and strategies prepared under other legislation. The Council must also take into account any relevant planning document recognised by an iwi authority. The RPS must give effect to a national policy statement, the NZCPS, or a national planning standard.[40]

[45] Those same matters apply when the Council is preparing or changing its Regional Plan.[41] Regional plan policies must implement objectives, while any

---

37 RMA, ss 59 and 63(1).

38 RMA, ss 60–61 and 65–66.

39 These will be well known to the Court and are not set out within the submissions. Suffice to say that ss 30(1)(a), (b) and (c) are relevant to this plan change.

40 RMA, s 62(3). "*Give effect to*" simply means "*to implement*". On the face of it, this is a strong directive that creates a firm obligation. However, the implementation of this directive will be affected by what it relates to, that is, what must be given effect to by the plans: *Environmental Defence Society v New Zealand King Salmon Co Ltd* [2014] NZSC 38 at [77].

41 RMA, s 66.

rule must implement the policies.[42] In making a rule, the Council shall have regard to the actual and potential effect on the environment of activities, including any adverse effect.[43]

[46] The Council must ensure that any regional plan gives effect to the RPS.[44]

[47] Section 32 of the Act requires that the Court evaluate whether:

(a) The objectives of the plan change are the most appropriate way to achieve the purpose of the Act.

(b) The provisions of the plan change are the most appropriate way to achieve the objectives;

(i) Identifying other reasonably practicable options for achieving the objectives; and

(ii) Assessing the efficiency and effectiveness of the provisions in achieving the objectives, including:

- Identifying and assessing, and if practicable quantifying, the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated; and
- Assessing the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

[48] PC2 is an "*amending proposal*" under s 32(3) because it seeks to amend the existing One Plan. The objectives in the One Plan are unaltered by PC2. Under s 32(3) of the Act, where the proposal amends an existing plan, examination of whether the proposed provisions are the most appropriate way to achieve the objectives must relate to:

---

42 RMA, s 67(1).
43 RMA, s 68(3).
44 RMA, s 65(6).

(a) The purpose of PC2;[45] and

(b) The relevant and continuing objectives of the One Plan.

[49] "*Appropriate*" in the context of s 32 means suitable. It does not mean the most "*superior*" method. Section 32 requires a value judgement as to what, on balance, is the most appropriate when measured against the relevant objectives.[46]

[50] In examining the efficiency and effectiveness of the provisions:

(a) "*Effectiveness*" assesses the "*contribution new provisions make towards achieving the objective, and how successfully they are likely to be in solving the problem they were designed to address*".[47]

(b) "*Efficiency*" involves the inclusion of a broad range of costs and benefits, many intangible and non-monetary. A wider holistic exercise of judgment is required, weighing market and non-market impacts, to ensure a thorough approach to examining provisions.[48] Economic efficiency involves a comparison of the net social benefits of the objective in question with the social benefits of the best alternative (often the status quo or the "*do nothing*" or "*do minimum*" scenario).[49]

[51] Section 32AA of the Act requires a further evaluation to be conducted for any changes that have been made to, or are proposed for, the proposal since the original s 32 evaluation report for the proposal was completed. Mrs Foster has undertaken a s 32AA analysis, which is set out in her evidence.[50]

---

45 As set out at paragraph [20].
46 *Rational Transport Society v New Zealand Transport Agency* [2012] NZRMA 298 (HC) at [45].
47 Ministry for the Environment *A guide to section 32 of the Resource Management Act: incorporating changes as a result of the Resource legislation Amendment Act 2017* (2017) at 18.
48 See, for example, *Carter Holt Harvey Limited v Waikato Regional Council* [2011] NZEnvC 380 at pages 59-67.
49 *Self Family Trust v Auckland Council* [2018] NZEnvC 49 at [311]–[313].
50 **[[202.1090]]** Statement of Evidence of Christine Foster (7 October 2023) at sections HH–JJ.

[52] Section 290A of the RMA provides that, in determining an appeal or inquiry, the Environment Court must have regard to the decision that is the subject of the appeal or inquiry.

[53] For the avoidance of doubt, the Natural and Built Environments Act 2023 does not directly alter the statutory regime applicable to these appeals.[51]

Treaty settlement legislation

[54] Mrs Foster identifies the 9 Treaty Settlement Acts which apply to the Region in her evidence.[52]

[55] No conflicts with that legislation have been identified, which is acknowledged by Mr Carlyon.[53]

Part 2 of the Act

[56] Mrs Foster identifies that ss 6(a), (e), (g), 7 and 8 are relevant to PC2,[54] but does not identify any conflict between PC2 and those provisions. Mr Carlyon takes a different view, suggesting in evidence that 6(a) and (e), have not been adequately recognised and provided for in PC2.[55]

[57] Having considered the evidence, Mrs Foster remains of the opinion that AV-PC2 would better recognise and provide section 6 matters for iwi and hapū, particularly the relationship of mana whenua with water, coastal lakes, and other values than the other options within the context of this plan change.[56]

---

51 Parts 3 and 5 of the RMA continue to apply until a region's NBEA plan becomes operative: Natural and Built Environments Act 2023, sch 1, cls 5–7.
52 **[[202.1088]]** Statement of Evidence of Christine Foster (7 October 2023) at section FF.
53 **[[204.2094]]** Statement of Evidence of Gregory Carlyon (6 November 2023) at 7.42.
54 **[[202.1077]]** Statement of Evidence of Christine Foster (7 October 2023) at [226](k).
55 **[[204.2085]]** Statement of Evidence of Gregory Carlyon (6 November 2023) at 7.2.
56 **[[202.1169]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [80]–[86].

E. RELEVANT PLANNING DOCUMENTS

[58] The planning documents which the Court must give effect or have regard to in these appeals are discussed in detail by Mrs Foster in her evidence. The key aspects of those documents are summarised here. Importantly, some of these post-date the notification of PC2 and will be given effect to through other processes, being the NPSFM (through Oranga Wai) and the National Policy Statement for Urban Development 2020 (through Proposed Plan Change 3, notified in November 2022).

National Policy Statement for Freshwater Management 2020

[59] Te Mana o te Wai is the fundamental concept of the NPSFM. It imposes a hierarchy of obligations which prioritises first, the health and well-being of water bodies and freshwater ecosystems. The other priorities are second, the health needs of people, and third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.[57] Mrs Foster examines the objective and policies of the NPSFM in her evidence, alongside the implementation provisions and National Objectives Framework. In her opinion, PC2 implements the NPSFM to the extent it can at this time, and further, is not inconsistent with those provisions.[58]

[60] The specific concerns of the appellants relating to the extent that PC2 gives effect to the NPSFM are addressed later in these submissions.

Operative One Plan

[61] Mrs Foster considers that One Plan Objectives 2-1, 4-2, 5-1, 5-2, and 14-1 are relevant to PC2, and concludes, supported by the evidence of Dr Snelder and Ms Patterson, that PC2 will contribute to achieving these objectives.[59]

---

57 **[[302.0871]]** NPSFM, cl 1.3.
58 **[[202.1077]]** Statement of Evidence of Christine Foster (7 October 2023) at section Y.
59 **[[202.1087]]** At section CC and paragraphs [289]–[291].

[62] Objectives 5-1 and 5-2 require that the Council safeguard the life supporting capacity of surface waterbodies and recognise and provide for the values set out in Schedule B of the One Plan. Surface water quality must be managed to maintain water quality where it supports those values and enhance water quality where it does not.

[63] Objective 14-1 requires that the Council's management of discharges:

(a) Safeguards the life supporting capacity of water and recognises and provides for the Schedule B values;

(b) Provides for the Chapter 5 objectives set out above; and

(c) Avoids, remedies or mitigates adverse effects on water from discharges to land.

[64] Notably, the management of IFLU is intended to contribute to, but not in itself achieve, the achievement of Schedule E water quality targets.[60]

Other documents

[65] In terms of other national direction, the New Zealand Coastal Policy Statement 2010, the National Policy Statement on Urban Development 2020, and the Resource Management (National Environmental Statements for Freshwater) Regulations 2020 (**NESFW**) are relevant to PC2.

[66] Mrs Foster discusses these instruments, ultimately concluding that each of these are consistent with PC2.[61]

[67] When considering the NZCPS, and the suggestion of the appellants that the alternative pathways are not sufficiently precautionary, [62] the Council relies on

---

60 **[[201.0335]]** Statement of Reply Evidence of Maree Patterson (13 November 2023) at section C.

61 **[[202.1085]]** At sections Z–BB.

62 **[[204.2093]]** Statement of Evidence of Gregory Carlyon (6 November 2023) at 7.40; and **[[204.2234]]** Statement of Evidence of Michael Scott (6 November 2023) at 9.17. Policy 3 of the NZCPS requires a precautionary approach to be taken in relation to activities with potentially significantly adverse effects on the coastal environment.

Dr Snelder's modelling. Dr Snelder demonstrates that there are only negligible differences between the modelled in-stream SIN levels for the operative One Plan and for the alternative pathways. Mrs Foster therefore considers the alternative pathways to be as precautionary as the operative One Plan settings for existing IFLU – a position supported by Ms Patterson.[63]

[68] Mrs Foster also identifies 8 iwi management plans, the Rangitikei Rivew Water Conservation Order, the Lake Horowhenua Accord, and the Manawatū River Leaders' Accord as relevant to PC2.[64] It is not considered that any of these are in conflict with PC2.

F. OVERSEER

[69] As noted above, Overseer is a key part of DV-PC2. In Table 14.2, Overseer was used to set the threshold values. Similarly, under the specified reduction pathways, a modelled percentage reduction in nitrogen was required. While other models exist, applicants were considered most likely to use Overseer to demonstrate that they could achieve the required reductions.

[70] The appellants' preference for the use of Overseer can be seen in their evidence (particularly in that of Dr Dewes). Part of their argument refers to the Overseer redevelopment programme's report, which describes improvements made to Overseer, before rating its performance in estimating nitrogen leaching – 'very good' for pastoral, 'satisfactory' and 'good' for cropping – following validation work.[65]

[71] These matters, and the redevelopment programme are addressed in the evidence of Professor Horne, Dr Jolly and Dr le Miere.

---

63 **[[202.1179]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [125]–[127]; and **[[201.0337]]** Statement of Reply Evidence of Maree Patterson (13 November 2023) at section D.

64 **[[202.1088]]** At sections DD–EE, GG, and Attachment E.

65 **[[301.0546]]** Ministry for Primary Industries *Overseer Redevelopment Programme Report* (Technical Paper 2023/12, August 2023) at 7.

[72] Uncertainty around its use in a regulatory framework for IFLU (and generally) remains. Notably, the Ministry for the Environment's unchanged advice, despite the Overseer redevelopment programme's reports, is that:[66]

(a) Regulators should continue to use a range of tools when assessing farms and catchments when managing nutrients in a regulatory context; and

(b) Overseer outputs should not be used as absolute numbers.

[73] As expressed by Mrs Foster, "*persisting with reliance on OverseerFM without other alternatives available for use, creates risk for the implementation of the One Plan*".[67] This is not an insignificant risk, given these that the very issues that bring us before the Court relate to the implementation of the One Plan. The purpose of PC2 is once again significant in this context.

[74] It is clear there are a range of views on the merits of Overseer. However, the Council's primary focus is the need to manage nitrogen leaching from farming activities through a workable consenting pathway. It has responsibly looked to respond to Government advice using the best available information at the time. This has involved significant investment in an expert led process to consider and design an alternative tool for managing nitrogen leaching from CVG and pastoral IFLUs, that can sit alongside Table 14.2 as part of a range of regulatory options within the One Plan.

[75] As a consequence, AV-PC2 proposes to replace the specified reduction pathway with an alternative that does not involve specified limits/values based on Overseer modelling (the risk assessment tool). Both pathways achieve the same or similar practice management mitigations on farm and water quality outcomes, but the latter avoids the issues with the use of Overseer as a direct regulatory tool.

---

66 **[[302.0712]]** Ministry for the Environment *Responding to the Overseer model redevelopment review: A guide for councils* (ME 1732, July 2023) at page 6.

67 **[[202.1146]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [17](a).

G. SUBSTANTIVE ISSUES

[76] Many individual issues are traversed in the parties' evidence, and it is not considered necessary to respond to all of those matters when opening the Council's case. That is a matter for reply. Instead, several key themes arising on appeal and in evidence are introduced for the benefit of the Court below.

The need for an alternative approach

[77] The Council considers that there is a clear case for a controlled activity consenting pathway as an alternative to the recalibrated Table 14.2. In DV-PC2, this was the specified reduction pathway. In AV-PC2, this is the pathway provided by the risk assessment tool.

[78] As Mrs Foster records, the alternative controlled activity pathways inject into the One Plan a much greater degree of certainty for existing IFLU than currently exists in the One Plan or in the publicly notified PC2.[68]

[79] The reasons for this are well described in the Panel's Decision:

(a) Recalibrating Table 14.2 without policy changes would be ineffective and insufficient, given the clear policy barrier to the effective implementation of the IFLU provisions in the One Plan.[69]

(b) Further, retaining the operative restricted discretionary activity status for IFLUs exceeding Table 14.2 (and not including an alternative consent pathway) would neither be effective nor efficient, as:[70]

(i) It would fail to address the uncertainty for resource users as to what level of exceedance of Table 14.2 would (or should) be authorised;

---

68 **[[202.1154]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [32].
69 **[[101.0308]]** At 3.129.
70 **[[101.0308]]** At 3.130.

(ii) This lack of specificity would require case-by-case decisions, risking inconsistencies in approach; and

(iii) Recalibration of the policy settings in the One Plan would likely be needed to provide sufficient direction to decision-makers in order to decline consent where appropriate.

[80] The appellants' planners, Mr Carlyon and Mr Scott, both appear to challenge the need for an alternative consenting pathway to the recalibrated Table 14.2. The appellants' contentions are dealt with in the Council's reply evidence – being that the alternative pathways:

(a) Are not "easier" than Table 14.2;[71]

(b) Are "*not disengaged from natural capital*" (in relation to the specified reduction pathways) as they drive nitrogen leaching reductions which approach the Table 14.2 CNLMs, or adopt a natural capital approach (in relation to the risk assessment tool);[72]

(c) Do not lead to the effective abandonment of the Schedule E water quality targets given the small number of farms we are dealing with, and particularly given that Table 14.2 are not intended to be the sole method by which the Schedule E targets were achieved.[73]

[81] Further, in the Council's view, this approach would fail to address:

(a) The issue that failing to include an alternative pathway in PC2 would neither be effective, nor efficient;

(b) Mrs Foster's point that options which include alternative pathways would achieve the purpose of PC2, as defined in s 32(6) of the Act.[74]

---

71 **[[202.1157]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [43]–[57].
72 **[[201.0472]]** Statement of Reply Evidence of David Horne (13 November 2023) at section E.
73 **[[201.0335]]** Statement of Reply Evidence of Maree Patterson (13 November 2023) at section C.
74 **[[202.1149]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [19]–[35].

[82] The Council therefore continues to support the inclusion of an alternative controlled consent pathway to Table 14.2 in PC2.

Risk assessment tool versus Overseer-based modelling

[83] The Council supports the risk assessment tool for the reasons explained in its evidence and within the JWS. The evidence, including of Federated Farmers and Horticulture NZ, demonstrates a robust, and well considered process.

[84] The risk assessment tool has been developed by farm system experts and draws on industry research, testing, and decision support tools.[75] The tools drive the practice changes which are empirically demonstrated to reduce nitrogen leaching from IFLUs.

[85] Care has been taken to ensure the risk assessment tool shares characteristics with Overseer. The tool mirrors the approach of Overseer (and the specified reduction pathways) in many ways:

(a) It drives the adoption of GMPs in the same way, providing confidence in the nitrogen reductions likely to be achieved;[76] and

(b) It accounts for the same central biophysical characteristics that affect nitrogen leaching in Overseer – the need for a tool which accounted for biophysical characteristics (soil and rainfall) being a critical consideration for the Council's experts in the process.[77]

[86] For pastoral farms:[78]

(a) The risk assessment tool is based on the widely used and evaluated Fonterra NRS, the 2019 peer review of which suggests a good agreement between it and Overseer;

---

75 **[[202.1257]]** Statement of Reply Evidence of Andrew Barber (13 November 2023) at 6.

76 **[[201.0422]]** Statement of Evidence of David Horne (6 October 2023) at [52]–[54]; **[[201.0563]]** Statement of Evidence of Anne-Maree Jolly (6 October 2023) at [41]–[42]; and **[[202.1258]]** Statement of Reply Evidence of Andrew Barber (13 November 2023) at 11.

77 As is explained by Professor Horne: **[[201.0477]]** Statement of Reply Evidence of David Horne (13 November 2023) at [41].

78 **[[201.0476]]** Statement of Reply Evidence of David Horne (13 November 2023) at [38].

(b) The risk assessment tool improves on the NRS by accounting for those biophysical drivers of nitrogen leaching;

(c) The tool has been calibrated by Professor Horne and Dr le Miere specifically for the Region, using relevant farm data; and

(d) Ultimately, the risk assessment tool identifies very similar GMPs for adoption to Overseer.

[87] For CVG:[79]

(a) The tool avoids both the issues identified in the Overseer whole model peer review report, but also the pre-existing well-accepted difficulties with Overseer modelling CVG activities;

(b) It also drives the GMPs which are best known to manage nitrogen leaching from CVG operations;

(c) The tool has been tested by Mr Barber with a minimum of 4 growers, covering a productive area of 866 ha (covering approximately 90% of the vegetable growing area within the Horowhenua), with positive results.[80]

[88] Both tools are supported by a body of robust work, as set out in evidence. Professor Horne, Dr le Miere, and Dr Jolly are available to take the Court through the risk tools (pastoral and CVG) when called to give their evidence.

[89] The question of whether Overseer is now fit for use in a regulatory context is not one that the Council can answer. It remains of the view that the AV-PC2 provisions provides another method to regulating IFLU nitrogen loss, while avoiding the need to rely on the use of Overseer outputs as 'absolute numbers'.

---

79 **[[201.0590]]** Statement of Reply Evidence of Anne-Maree Jolly (13 November 2023) at [19].

80 **[[202.1240]]** Statement of Evidence of Andrew Barber (13 October 2023) at 60–66; and **[[201.0570]]** Statement of Evidence of Anne-Maree Jolly (6 October 2023) at [65].

This approach provides a workable consenting pathway, while not 'closing the door' on Overseer at some point in the future.

[90] The evidence for the Council (particularly Dr Snelder, Professor Horne, Dr le Miere, and Dr Jolly) demonstrates that the same outcomes will be achieved under the risk assessment tool as under DV-PC2.

Consultation

[91] Ngāti Turanga have reiterated concerns raised at the hearing about the adequacy of the PC2 consultation process.

[92] The statutory requirements in relation to consultation for plan making are set out in sch 1 of the Act, and relevantly include:

(a) Clause 3(1)(d), which require that the tangata whenua of the area who may be affected are consulted through iwi authorities;

(b) Clause 3B, which sets out how iwi authorities recorded under s 35A of the Act are to be consulted; and

(c) Clause 4A, which provides for a copy of the proposed plan change to be provided to iwi authorities in advance of notification for consideration.

[93] Ngāti Turanga are a hapū of Ngāti Raukawa, so at the time of PC2's notification consultation with them had been occurring through their iwi authority, Te Runanga o Raukawa Incorporated.

[94] The elements of consultation are well known and can be summarised as follows:[81]

(a) It requires a meaningful opportunity to comment at an appropriate stage on a proposed exercise of power.

---

[81] Outlined in *CTS Investments LLC v Palmerston North City Council* [2023] NZHC 1742 at [41] (footnotes omitted).

(b) Those to be consulted must be provided with details of relevant information the decision maker is likely to take into account so that intelligent responses may be made.

(c) Sufficient time must be allowed to enable a reasonable opportunity for those consulted to express their views.

(d) Consultation cannot be treated as a mere formality. By the same token, it is not negotiation. There is no requirement that those consulted should agree with the final decision.

(e) A decision maker must maintain an open mind and be ready to change its mind or even start afresh in the context of resource consent decision-making.

[95] As demonstrated in Dr Daly's evidence, both the Council's cls 3–4B obligations and its general consultation obligations have been met through the PC2 process.[82] The consultation process began well before notification, with sufficient detail and adequate time provided to consider information, and with Council open to changes or suggestions at all points of the process.

[96] Where opportunity for meetings and feedback was taken up, the s 32 report records[83] the response of Horizons, including, a request not to introduce any changes into the RPS and/or Regional Plan;[84] to not change the requirement to maintain and/or improve water quality in Objective 5-2; and making clearer the (previously implicit) requirements for GMP for any IFLU.

[97] The draft PC2 provisions were provided to iwi in accordance with cl 4A of sch 1 to the Act, with a month until notification.[85] Prior to this, a workshop in May

---

82 **[[201.0019]]** Statement of Evidence of Elizabeth Daly (6 October 2023) at section L and Attachment B.

83 **[[301.0057]]** Manawatū-Whanganui Regional Council *Proposed Plan Change 2 – Section 32 Report* (July 2019) at 15.

84 In order to not unsettle the water quality objectives to maintain and enhance.

85 **[[301.0057]]** Manawatū-Whanganui Regional Council *Proposed Plan Change 2 – Section 32 Report* (July 2019) at 15. The draft s 32 report which Council considered at the June meeting explicitly stated that it was anticipated that further discussions were to occur with iwi and hapū

2019 was held with invited participants, including Ngāti Raukawa, where they were given the opportunity to consider and provide feedback on draft provisions through consenting scenarios.[86]

[98] Efforts to engage have continued beyond notification with hui and discussions in an effort to understand the issues of importance to Ngāti Turanga.[87] This included discussions at an organisational level, and between experts. Those latter discussions have resulted in changes within AV-PC2.[88]

Water quality outcomes

[99] The Council's position through evidence is that the water quality outcomes for the Region will be maintained and/or enhanced by PC2, in accordance with Objectives 5-1, 5-2, and 14-1 of the One Plan.

[100] Dr Snelder outlines this conclusion in his evidence, supported by his 2020 analysis using the model described in Dr Cox's evidence. Specifically, Dr Snelder recounts the water quality modelling undertaken for the Council-level hearing of PC2, and his conclusion that the specified reduction pathways would result in 4–5% reductions in mean relative difference for downstream SIN concentrations from a pre-regulation scenario.[89]

[101] Assessing data provided to him by Dr Jolly and Professor Horne about the leaching reductions expected through use of the risk assessment tool, Dr Snelder further concludes that "*the proposed amendments to the DV-PC2 have the same modest water quality benefits as the DV-PC2*".[90]

---

before notification, which was set a month out from the resolution to notify to allow for those discussions with iwi and hapū to occur.

86 **[[201.0101]]** Statement of Reply Evidence of Elizabeth Daly (13 November 2023) at [10](i).

87 **[[201.0098]]** Statement of Reply Evidence of Elizabeth Daly (13 November 2023) at section C.

88 **[[202.1169]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [57] and [80]–[86].

89 **[[202.0666]]** Statement of Evidence of Antonius Snelder (6 October 2023) at [53]. The term 'mean relative difference' is explained at [65] of Dr Snelder's evidence.

90 **[[202.0674]]** At [68].

[102] As this comparative assessment involves the initial modelling work that Dr Snelder and Dr Cox undertook, that modelling should be briefly outlined.[91]

[103] The modelling predicted the level of nitrogen loss from existing IFLU activities will decrease within the WMSZ. This is the logical outcome to expect from a regulatory regime, as proposed under PC2, that would see all existing IFLU presently in excess of Table 14.2 required to work to reduce nitrogen leaching within a stipulated timeframe.

[104] These reductions are predicted to produce only a small increase in the number of assessment points that achieve the One Plan SIN target. The predicted changes in SIN concentrations and status of assessment points with respect to One Plan targets are small because IFLU contributes only a component of the total nitrogen load in the Region's rivers.[92] The modelling was also conservative, with allowances made for existing IFLU to 'leach up' to the CNLM in Table 14.2 where they were presently below the threshold.[93]

[105] At the time, Mrs Foster proposed a number of changes, including a precautionary approach to coastal WMSZs. These remain in the AV-PC2:[94]

(a) Existing consented IFLU are unable to opt into consenting pathways, thereby preventing 'leaching up' to any new limits. As increasing loss rates up to the CNLM has been an option under the One Plan, this is an improvement on the existing situation.

(b) Additional support was provided through additions to Policy 14-6, which recognises the state, sensitivity, and absorptive capacity of the receiving environment and of downstream lakes and wetlands.

---

91 The reports detailing those results are at: **[[202.0678]]** Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment A; and the methodology is explained at: **[[202.0810]]** Statement of Evidence of Timothy Cox (6 October 2023).

92 **[[202.0670]]** Statement of Evidence of Antonius Snelder (6 October 2023) at [63].

93 **[[202.0738]]** Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment A.

94 **[[202.1179]]** Statement of Reply Evidence of Christine Foster (13 November 2023) at [125]–[127].

(c) Additionally, the matter of duration remained a matter of discretion for all consent pathways (with a maximum of 10 years imposed).

[106] There are suggestions in farm systems and planning evidence for the appellants' that Dr Snelder's work/analysis is uncertain,[95] that the improvements are insufficient,[96] or that the results overestimate the improvements by measuring from too early a starting point.[97] Dr Snelder addresses these criticisms in short order in his evidence.[98]

[107] As well as there being no evidentiary basis for the appellants' concerns, there is no legal basis for their preferred outcome – to maintain the status quo.

[108] First, in relation to uncertainty, the appellants have sought to raise a s 32(2)(c) argument – i.e., that the risk of acting here is too high. However, it is submitted that the appellants are demanding certainty where, as Dr Snelder points out, it cannot be provided.[99] Uncertainty is an unavoidable feature of attempting to model the future. In any case, an appellant is not entitled to certainty as to effects – rather, the Court must conclude on what the risk of acting/not acting is, as s 32(2)(c) sets out.[100]

[109] What is clear is that not acting (the status quo) represents the worst modelled outcome for PC2. This is evident in the Table attached to Dr Snelder's evidence.[101] The status quo is represented by something akin to scenario 'Post Regulation A' with no, or very little, further reductions in nitrogen from IFLU able to be achieved in the short term.

[110] In contrast, Dr Snelder's evidence is that there will be "*modest*" water quality improvements from implementing either DV-PC2 or AV-PC2. In real terms, the

---

95 **[[204.2125]]** Statement of Evidence of Elizabeth Parlato (6 November 2023) at 6.24.
96 **[[204.2070]]** Statement of Evidence of Hayden Turoa (6 November 2023) at 4.8; and **[[204.2270]]** Statement of Evidence of Michael Scott (6 November 2023) at Attachment B, at (i).
97 **[[204.2118]]** Statement of Evidence of Elizabeth Parlato (6 November 2023) at 5.6.
98 **[[202.0806]]** Statement of Reply Evidence of Antonius Snelder (13 November 2023) at [9]–[11] and [63].
99 **[[202.0806]]** Statement of Reply Evidence of Antonius Snelder (13 November 2023) at [11].
100 *Johns Road Horticulture Ltd v Christchurch City Council* [2011] NZEnvC 185 at [59].
101 **[[202.0801]]** Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment B.

reductions in SIN levels would be modest.[102] However, on an individual farm basis, the changes could be significant in terms of farm practice change and nitrogen losses.

Extent to which PC2 gives effect to the NPSFM

[111] A feature of all the appellants' appeals is the assertion that PC2 fails to give effect to the NPSFM. The Council considers that its ability to give effect to the NPSFM in this process is limited by the scope of PC2. This is natural, given that the NPSFM was promulgated after PC2 was notified, and as PC2 was never intended to give effect to the NPSFM (or its 2017 predecessor).

[112] The appellants seem to accept this in part.[103] However, they continue to argue, in particular, that PC2 fails to give effect to Te Mana o Te Wai.

[113] As this Court has recognised, giving effect to the concept of Te Mana o te Wai (as articulated in the NPSFM 2020) includes allowing time for its implementation through the appropriate planning instruments.[104] Given its scope, that planning instrument cannot be PC2, despite the appellants' ambitions.

[114] The "*appropriate planning instrument*" in this case is under development through the Oranga Wai process. Dr Daly explains its key features in her evidence.[105] That process (Oranga Wai), including consultation with tangata whenua and the broader community on their visions and values for freshwater, is ongoing. Oranga Wai also the forum in which broader issues, such as the degradation of non-targeted WMSZs and freshwater values (as outlined by Ngāti Turanga's evidence) will need to be considered as part of the implementation of the National Objectives Framework.

---

102 This is not because of the extent of change farmers are being asked to make, but due to the extent of influence the number of unconsented existing IFLU can have: **[[202.0670]]** Statement of Evidence of Antonius Snelder (6 October 2023) at [63].

103 **[[204.2232]]** Statement of Evidence of Michael Scott (6 November 2023) at 9.4.

104 *Re Otago Regional Council* [2021] NZEnvC 164 at [91].

105 **[[201.0022]]** Statement of Evidence of Elizabeth Daly at (6 November 2023) at section M.

[115] As Mrs Foster points out, it is appropriate that PC2 not 'run counter to' the direction of the NPSFM. Neither DV-PC2 nor AV-PC2 do so. Both sets of plan provisions seek to provide a workable consenting pathway for IFLU, while still providing for improvement of the health of freshwater ecosystems.

[116] Additional policy support has been included in DV-PC2 which ensures that the values held by mana whenua of the relevant catchment are given particular regard in considering applications for consent.[106] This was intended to address tangata whenua concerns raised through the Schedule 1 process around the effect of consenting under PC2 on their waterways.[107]

[117] The Council is also mindful of the need to avoid creating legacy issues by granting long consents.[108] PC2 is recognised to be an interim plan change, which is why consents under it will have a maximum length of 10 years. Consents are required to be for a shorter duration than this maximum where continued high risk of leaching remains.[109]

[118] Further constraint on term is now provided under the Natural and Built Environments Act 2023 which establishes an 'affected consents' regime for discharge permits by way of amendments to the Act.[110] If these remain in force, consents under PC2 will be limited to 5 years after the first NBEA plan for a region has legal effect.[111] Given the uncertainty around the freshwater plan process and timing, no changes are proposed presently to the provisions relating to term in AV-PC2.

Method for recalibrating Table 14.2

---

106 Policy 16-6(e)(i), One Plan.

107 **[[202.1082]]** Statement of Evidence of Christine Foster (7 October 2023) at [246].

108 **[[101.0317]]** At 3.171–3.173.

109 See Policy 14-6(e)(v), One Plan.

110 Certain resource consent applications made during the period between the date of Royal assent and the date the first NBEA plan for a region has legal effect are now subject to maximum duration requirements. It includes a land use consent for an activity that would otherwise contravene s 15(1)(b) by discharging a contaminant onto or into land in circumstances that may result in the contaminant entering freshwater.

111 RMA, sch 12, cl 39.

[119] Mr Day's notice of appeal raises issues with the approach to the recalibration of Table 14.2.[112] However, from the evidence this issue no longer appears to be 'live', with the recalibration of the table seemingly accepted.

H. SCOPE

[120] The appellants argue that the risk assessment tool is outside of scope of the appeal. The appellants' exact arguments on scope will need to be addressed in closing. However, to assist with framing the Court's consideration of these issues, the Council's view on scope is set out here.

[121] In discussing what is in and out of scope for these appeals, it is necessary to start with what PC2 does and does not do. PC2 does not:

(a) Alter the underlying regime for regulating new IFLU, or any other land use or discharge;

(b) Expand the geographical application of the rules regulating existing IFLU (for example, by including new areas as targeted WMSZs);

(c) Require fewer (or more) farmers to obtain consent for their farming operations than the operative One Plan would;

(d) Pre-empt the NOF process required under the NPSFM; or

(e) Exempt unconsented existing IFLU from making practice changes.

[122] What PC2 *does* do (and has always done) is:

(a) Recalibrate Table 14.2 to align the current version of Overseer, using the original methodology for deriving that table,[113] so that its CNLMs are achievable by farmers as originally intended;

---

112 **[[101.0027]]** At 6 and 8.2.

113 Or as close as possible to it: **[[202.0941]]** Statement of Evidence of James Hanly (6 October 2023) at [43].

(b) Amend the policy framework to allow for certain consents to be granted for IFLUs which exceed the Table 14.2 CNLMs;

(c) In either case, require farmers to reduce nitrogen leaching to obtain consent; and

(d) Require that those nitrogen leaching reductions be achieved by way of adoption of practice change on-farm.

[123] The Council's overarching position on scope is set out in its proposed provisions.[114] It considers that the appellants request to reject all of PC2 except for the changes to Table 14.2 and in the case of Ngāti Turanga the transitional deintensification pathway, places the alternative pathways and the related plan framework directly at issue. Reformulation of those alternative pathways as part of the appeals is therefore within scope.

Law on Scope

[124] The Environment Court's jurisdiction to make changes to the One Plan is not unlimited.[115] Any amendments made through the appeals process must be:

(a) Within the scope of a notice of appeal on PC2; and

(b) Within the scope of a submission on PC2.

[125] To be within the scope of an appeal, it is sufficient if the changes can fairly be said to be foreseeable consequences of any changes directly proposed in the notice of appeal.[116]

[126] The key consideration is procedural fairness as "*adequate notice mut be given to those who might seek to take an active part in the hearing before the*

---

114 **[[301.0001]]** At page 1.
115 *Mawhinney v Auckland Council* (2011) 16 ELRNZ 608 (HC) at [111]
116 *Scholes v Canterbury Regional Council* [2010] NZEnvC 29 at [13].

Environment Court if they know or ought to foresee what the Environment Court may do as a result of a reference".[117]

[127] The appellants refer to *Royal Forest and Bird Protection Society of New Zealand Inc v Dunedin City Council*, which says at [42] that "*it is axiomatic that an appellant cannot ask for more than the submissions on which the appeal is based*".[118]

[128] Some care must be taken with this quote from the *Dunedin City Council* case.

(a) First, while an appeal can only be made on a "*provision or matter*" referred to in a person's submission, these words should be given a liberal interpretation. A broad reference to the provision or matter in the submission is sufficient to give the Court jurisdiction to consider the appeal.[119] Notably, in the *Dunedin City Council* case, the relief being sought related to provisions in another chapter of the plan, which had not been signalled or discussed.

(b) Further, and importantly, as stated in *Re Vivid Holdings Ltd*:[120]

> It is difficult to see how a submitter can refer directly in their submission to provisions or matters which a decision proposes to include or exclude unless their submission has been accepted by the local authority in which it is unlikely the submitter will be referring the matter to the Court. No one can reliably anticipate the collective mind of the local authority.

[129] *Vivid* goes on to set out the orthodox test for scope (footnotes omitted):[121]

---

117 *Westfield (New Zealand) v Hamilton City Council* [2004] NZRMA 556 (HC) at [74].

118 *Royal Forest and Bird Protection Society of New Zealand Inc v Dunedin City Council* [2023] NZEnvC 79. Even in *Avon Hotel Ltd v Christchurch City Council* [2007] NZRMA 373, which the Court cites as authority for that view, the Court states at [18] "*I can find no direct authority for that proposition*".

119 *Option 5 Inc v Marlborough District Council* (2009) 16 ELRNZ 1 (HC) at [15].

120 At 19.

121 At 19.

> I consider that in order to start to establish jurisdiction a submitter must raise a relevant "resource management issue" in its submission in a general way. Then any decision of the Council, or requested of the Environment Court in a reference, must be:
>
> (a) fairly and reasonably within the general scope of:
>
> (i) an original submission; or
>
> (ii) the proposed plan as notified; or
>
> (iii) somewhere in between …

[130] It is also trite that scope should be approached in a realistic workable fashion rather than from a perspective of legal nicety.[122] It is not fatal that a submission does not identify the provision that is sought to be amended.

[131] A "*workable*" approach requires the whole relief package to be taken into account, and it is sufficient if the changes made can fairly be said to be foreseeable consequences of any changes directly proposed.[123] In this sense, the Court is not restricted to accepting or rejecting the relief sought in any given notice of appeal – this would be artificial.[124]

[132] Further, consequential relief may be granted, subject to the considerations of fairness and the application of *Motor Machinists*.[125]

Appeals

[133] In this case, the Fish and Game and Ngāti Turanga appeals requested the Court reject or refuse DV-PC2 with some exceptions. Specifically:

---

122 *Royal Forest and Bird Protection Society of New Zealand Inc v Southland District Council* [1997] NZRMA 408 (HC) at page 10; and *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59 (HC) at [56] and [59].

123 *Albany North Landowners v Auckland Council* [2017] NZHC 138 at [115].

124 *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59 (HC) at [55].

125 *Arthurs Point Outstanding Natural Landscape Society Inc v Queenstown Lakes District Council* [2019] NZEnvC 150 at [69]

(a) Fish and Game requests the Court "*reject the proposed changes in Plan Change 2 with the exception of the changes to Table 14.2 "Cumulative nitrogen leaching maximum by Land Use Capability Class*".[126]

(b) Ngāti Turanga requests the refusal of DV-PC2 other than recalibration of the CNLM in Table 14.2 and the transitional pathway to deintensification in Policy 14-6(d)(ii), and seeks the addition of additional sub-zones to the targeted WMSZ.[127]

(c) Andrew Day requests relief relating to recalibration of Table 14.2 and further if the Court saw *"...merit in providing a consenting pathway for farms with intensities beyond what Table 14.2 allows for, that this potential pathway is based upon the natural capital of the land farmed*".[128]

(d) All three appeals seek such other and further relief as would meet the concerns in the submission, or reasons for the appeal.

[134] While the original submissions did not specifically raise concerns with the alternative controlled activity pathway (the specified reduction pathways), this is because it was not part of the notified version of PC2, and arose out of relief sought by other submitters, including Federated Farmers, Horticulture NZ, and Dairy NZ. However, as noted, this is not considered fatal, nor even unusual, as per *Vivid*.

[135] In this case, the original submissions of the appellants raised the matters which are the subject of the appeal now. In summary only:

(a) The submissions of Ngāti Turanga related to "***<u>the entire plan change</u>***" (emphasis from original).[129] All key provisions are listed, with specific discussion of among other things, the planning framework for IFLU

---

126 **[[101.0033]]** Notice of Appeal – Wellington Fish and Game Council at 8.1.
127 **[[101.0024]]** Notice of Appeal – Ngāti Turanga at Heading 2.
128 **[[101.0028]]** Notice of Appeal – Andrew Day at 8.3.
129 For example: **[[101.0210]]**.

which do not meet the Table 14.2 CNLMs, use of GMP, and the failure to provide a list of GMP and identify any minimum standard or bottom line. [130]

(b) The submission of Fish & Game opposes all changes proposed in PC2 (as notified) other than the technical changes with Table 14.2. It disagrees with the proposed framework for providing a pathway for consents that exceed the Table 14.2 CNLM provided GMP is implemented, does not support changes to rules which reflect GMP instead of compliance with the CNLM, challenges broader exceptions to circumstances where the CNLM are exceeded, requests a non-complying activity for activities exceeding the CNLM, and seeks that the pre-notified wording for Rule 14-1 is reinstated.[131]

(c) The submission of Andrew Day supports the framework of Table 14.2 but not the recalibration approach, supports GMP within the values stated in Table 14.2 but not when used to "*justify intensity of environmental impact beyond these levels*", and no longer supports a restricted discretionary activity for exceedances of Table 14.2 as it is not adequate or sufficiently transparent.[132]

[136] It is submitted that the submissions and appeals put the alternative pathways at issue before the Court. Further, anyone reading the notices of appeal in these proceedings would understand that reformulations of the alternative pathways (from the specified reduction method to another method) would be a foreseeable consequence of the notices of appeal.

[137] The s 274 party notices are illustrative of this, with the s 274 party notices of FFNZ and HortNZ both identifying the importance of, and their interest in, the consenting pathways for existing IFLU provided in DV-PC2.

---

130 **[[101.0219]]** At paragraphs 26, 31, 33, 35–37.
131 **[[101.0252]]** At paragraphs 7, 11–13, 16, 21–22 and 31.
132 **[[101.0248]]**.

Risk assessment tool

[138] The appellants' likely framing of the risk assessment tools as "*entirely new*" somewhat misses the point.[133] The wording is new, as any reformulation of a provision on appeal would be.

[139] The requirement for relief to be within the scope of the appeal is not that a person reading the appeal would be able to foresee the specific formulation of the provision arising out of the appeal process. Such narrow, technical arguments on scope should be avoided.[134]

[140] Just as the Table 14.2 and the 'alternative pathways' in DV-PC2 do, the risk assessment tool assesses (estimates) the risk of nitrogen leaching from IFLU to determine consenting pathway, while having regard to the same factors (biophysical features and on-farm practices). In this way, the risk assessment tools are simply 'recastings' of the specified reduction pathways, which:

(a) Achieve the same water quality improvements;

(b) Drive the same practice changes; and accordingly

(c) Accomplish the same regulatory purpose.

[141] Further, the risk assessment tools apply to the same farmers in the same priority WMSZ, and therefore the same set of unconsented existing IFLUs.

[142] Scope is ultimately a fairness issue – whether allowing an appeal or relief outside of scope could see parties not participating in a process that they may have otherwise.[135] The parties represented in this appeal are notable in this regard, with representatives of tangata whenua and key industry and environmental groups all present. It is unlikely that any party interested in this plan change would not already have their interests provided for by the interest

---

133 As suggested in Joint Memorandum of counsel for Ngāti Turanga, Fish & Game, and Forest and Bird (1 July 2023) at 2.

134 *Option 5 Inc v Marlborough District Council* (2009) 16 ELRNZ 1 (HC) at [15].

135 *General Distributors Ltd v Waipa District Council* (2008) 15 ELRNZ 59 (HC) at [55].

groups and other parties participating in the appeal currently. As noted above, the same WMSZ and existing IFLU are also impacted. In this sense, the appellants' concerns around scope are somewhat illusory.

I. SECTION 293

[143] Even if the Court were to have concerns regarding scope, s 293 would remain available for the Court to use to resolve those scope concerns.

[144] The s 293 discretion is to be exercised in a principled manner – the Court's discretion under s 293 is not unlimited.[136] However, this is submitted to be a prime example of a case where the use of s 293 would be appropriate.

[145] The Environment Court summarised the factors contributing positively toward directions under s 293 in *Invercargill Airport Ltd*:[137]

(a) where the application has been jointly made, particularly where it involves many or most of the main parties or the main landowner;

(b) where there has already been a Council hearing, along with a submission process, and where the proposed changes address issues already raised at the Council hearing or in the Environment Court process and where it is unlikely there are interested parties who are not already involved in the proceedings;

(c) where the amendments proposed relate to a discrete piece of land and not to rules affecting the whole district or district wide policies and objectives;

(d) where there has already been consultation over what is being proposed;

---

136 *Federated Farmers of New Zealand (Inc) Mackenzie Branch v Mackenzie District Council* [2014] NZHC 2616 at [121].

137 *Invercargill Airport Ltd v Invercargill City Council* [2018] NZEnvC 9 at [33].

(e) where the amendments proposed are supported by evidence from witnesses for more than one set of parties, particularly where that evidence shows that the amendments may achieve the purpose of the Act or the objectives of the relevant plan; and

(f) particularly where the delay has already been considerable, to avoid further delay.

[146] At the least, factors (a), (b), (c), (e), and (f) apply here. The risk assessment tools have the support of multiple parties, the relevant industry representative players are parties to this appeal (and have been involved in the creation of those tools), r 14-1 only applies to discrete physical areas (targeted WMSZs), and there has been significant delay already in resolving the issue of consenting the existing IFLU which PC2 addresses.

[147] The appellants have signalled an argument that only evidence strictly within the scope of an appeal can be heard, and then only issues arising from that evidence can be the subject of a s 293 application. This argument appears to be made without authority:

(a) First, evidence is admissible if it is relevant to a proceeding, and it is relevant if it has a tendency to prove or disprove anything that is of consequence to the determination of the proceeding.[138] This already broad approach to the admissibility of evidence is only broadened by s 276 of the Act, which permits the Court to receive anything into evidence which it considers appropriate to receive.

(b) Second, the leading case on the use of s 293, *Federated Farmers of New Zealand (Inc) Mackenzie Branch*, states that the fundamental purpose of s 293 is to give the Environment Court power to direct changes to a proposed plan which are not within jurisdiction due to the scope of the

[138] Evidence Act 2006, s 7.

appeal before it.[139] The appellants' approach would negate that purpose – if only evidence 'within scope' can be heard, and the s 293 can only be used in respect of issues arising from that evidence, then no out of scope issues requiring the use of s 293 would be able to arise.

[148] The appellants have referred to *Briggs v Christchurch City Council* and *Hamilton City Council v New Zealand Historic Places Trust*.[140] Neither support the appellants' approach here. Even if a nexus was required (between the appeal and relief sought) there is one in this case – the risk tool, for reasons explained in evidence, is intimately connected with the earlier pathways.

[149] It should also be noted that both *Briggs* and *Hamilton City Council* are distinguishable from this proceeding for another reason, given that they deal with the spatial application of plan provisions, where the difference between what is 'in' and what is 'out' as a matter of scope is often quite stark.[141]

[150] As such, if the Court does not consider that there is scope for the amendments now sought by the Council to DV-PC2, then it is submitted that the Court has the power to instead direct those changes under s 293.

J. CONCLUSIONS

[151] PC2 is not a complete solution to the issue of water quality in the Region, and it does not pretend to be. It seeks to solve a regulatory problem which has caused significant uncertainty with application of the One Plan to existing IFLU since 2017 (at least). It does so while ensuring that modest water quality improvements are achieved.

[152] The issues PC2 seeks to resolve remain at large today. For the reasons set out in evidence, the Council seeks to have in place an amended consenting regime

---

139 *Federated Farmers of New Zealand (Inc) Mackenzie Branch v Mackenzie District Council* [2014] NZHC 2616 at [120].

140 *Briggs v Christchurch City Council* EnvC Christchurch C045/08, 24 April 2008 at [231]; and *Hamilton City Council v New Zealand Historic Places Trust* [2005] NZRMA 145 at [152] and [253].

141 See *Palmerston North City Council v Motor Machinists Ltd* [2013] NZHC 1290.

without further delay, providing for nitrogen reductions (and improved water quality) from existing IFLU through a settled regulatory framework.

K. WITNESSES

[153] The Council intends to call the following witnesses:

(a) Dr Elizabeth Daly – Strategic Overview;

(b) Maree Patterson – Water Quality and State of Environment;

(c) Dr James Hanly – Overseer Version Changes and Table 14.2;

(d) Professor David Horne – On-Farm Management Practices;

(e) Dr Paul le Miere – Pastoral Farm Systems;

(f) Dr Anne-Maree Jolly – Commercial Vegetable Growing;

(g) Dr Antonius Snelder – State of Environment and Water Quality Modelling;

(h) Dr Tim Cox – Water Quality Modelling;

(i) Dr Heather Collins – Social Impact Assessment;

(j) Kerry Mayes – Economics;

(k) Christine Foster – Planning."

COURT ADJOURNS: 11.29 PM

COURT RESUMES: 11.54 PM

THE COURT: JUDGE SEMPLE

Ms Johnston, just a couple of questions I think for you. Firstly just in relation to this question of scope, so I understand the argument that you're putting in terms of the, if I might put it bluntly, effectively the argument that, you know, there has always been an alternative consenting framework that ended up as the specified reduction pathway, various submissions seek that that is deleted effectively and so scope is open for pretty much anything between those parameters and so I appreciate that. I think for me the area that is just troubling me a little bit is the connection between the move away from the specified reduction pathway, really probably the reason for the move away from the specified reduction pathway and the extent to which that is a matter that was raised by parties to the proceedings. So my understanding of what you have said and my review of the evidence, but you'll appreciate that it is highly technical and there might be things I've missed, but my understanding is that primarily the move away from the specified reduction pathway was precipitated the government's position in relation to Overseer and what I'm concerned about is the extent to which that is a relevant but extraneous kind of matter to PC2, it doesn't arise because of something that's arisen within the context of PC2 and, you know, I'm just interested to explore that. If there's anything that you can help me with in creating that and understanding the change and why it happened, that would be useful to me.

MS JOHNSTON:

Well I think I could start Ma'am with the fact that the challenges with Overseer aren't unique to the appeal process.

THE COURT: JUDGE SEMPLE

No.

MS JOHNSTON:

So Overseer was discussed at the first instance hearing, it was raised, the use of Overseer was challenged by various parties. So firstly, Horticulture

New Zealand would have preferred Overseer not to have been used through Table 14.2 or any alternative pathway and there was evidence to that extent.

THE COURT: JUDGE SEMPLE

Yes.

MS JOHNSTON:

There was evidence from Federated Farmers and Dairy NZ about the challenges with Overseer and its limitations. Professor Horne for the Council spoke to the merits of Overseer and he refers to that in the evidence before you. He evaluated the different models and decided that Overseer at that point was the best tool but it wasn't taken as a given, it's always been part of this process. The tool needed to address and to model or to estimate nitrogen leaching loss has always been part of Plan Change 2. So it wasn't just with the emergence of the Overseer review that these issues came about. So I would sway that they've always been fairly part of the discourse and part of the decision making framework that led to the decisions version.

Parties around this table or before you today were at odds around the use of Overseer and its merits. I referred you to Dr Jolly who supported the 35% pathway but her evidence at first instance, repeated before you, is that there needs to be workarounds to help Overseer work for CVG and she recommended a user guide as part of the decisions version. So to reassure Ma'am, Overseer didn't emerge post-appeals it was a live matter addressed in submissions and before the hearing panel.

THE COURT: JUDGE SEMPLE

The difficulties with Overseer?

MS JOHNSTON:

Yes absolutely.

THE COURT: JUDGE SEMPLE

Yes, but as I understand it, no party appealed the – so the decisions version came out with specified reduction pathways with Overseer as the tool to establish those, with all of the issues that had been raised through the evidence with for example the difficulties of commercial vegetable growing and how it would fit with that but no party appealed the specified reduction pathway for those reasons.

MS JOHNSTON:

Well except for the appellants say that the specified pathways do not do enough and that the method that they used to determine how to assess that is not articulated necessarily directly on point but the whole premise of the OPLs is that those specified reduction pathways and those percentage changes and the estimates of those are insufficient and they do not do the job. So I would say, given again the breadth of appeals before you, that that is a relevant consideration. Also Mr Day's appeal does refer to the fact that he supports the confines of pathways within the CNLM and anything above it that doesn't use that CNLM type approach is insufficient, so there's breadth in my submission in that appeal. So I'm comfortable that the appeals do that job. I'm also happy, Ma'am, to obviously reflect on that specific question in further detail.

THE COURT: JUDGE SEMPLE

Yes, I am just – it just struck me and perhaps it's just the way that the submissions were phrased, but it suggested to me that the catalyst for change from the specified reduction pathway to the risk model was really the, or maybe "catalyst" is the wrong choice of words there, maybe the final straw was the government's position in relation to Overseer.

MS JOHNSTON:

I think that the council's position on this also is that the plan change has always been premised on good management practices and essentially Overseer is the black box that everything gets put into but always at issue has been the on farm practice change that needs to come about in order to meet the thresholds in the table or the specified reduction and you will see that in the evidence, the experts

talk about unpacking Overseer, if you like, to draw out the key aspects of it to reflect it in the risk tool, but fundamentally Overseer is just the mechanism by which the N loss is measured and the factors that you put in, the inputs that you put into Overseer, the farm changes, the stocking rates, rainfall, soils, all of those factors were discussed and at issue between the appeals in the first instance proceedings.

THE COURT: JUDGE SEMPLE

Yes.

MS JOHNSTON:

Those issues are raised through the appeals. It specifically put at issue that on farm practice change isn't enough and how you measure the output of that farm practice change is through a model, but that the underlying drivers here are about what happens on farm and how you manage N loss through the root zone and Overseer is the way you model it but also through the decisions version it was never going to be the only way potentially. And that was a deliberate decision to broaden that modelling option through the definition of the nutrient management plan.

THE COURT: JUDGE SEMPLE

Yes, yes. Okay, can you just take me slowly through that, because that's another matter that has been niggling in my brain, just around that definition of nutrient management plan, do you mind just taking me through that, because that also seems to go this question of how different, new or otherwise, the risk matrix tool is?

MS JOHNSTON:

So I can take you to – it's volume 3, 301001 of the bundle. And in particular, the definition of nutrient management plan is on 3010027.

THE COURT: JUDGE SEMPLE

I'm not sure that we give Commissioner Hodges time.

MS JOHNSTON:

Oh, no, that's fine, thank you.

THE COURT: JUDGE SEMPLE

He's ended up with his volume of materials arriving down here but him not, so we're just navigating that as well.

MS JOHNSTON:

With note, that the definition of nutrient management plan was the subject of submission. Are we able to go there now?

THE COURT: JUDGE SEMPLE

Yes, thank you.

MS JOHNSTON:

So nutrient management plan, I think that the point that I will raise here in terms of the change that came through plan change 2 into the decision's version is that it deletes the wholesale reliance on Overseer inputs and out file of – inputs and I think the out files and they were Overseer-based only. And it provides for those nutrient management plans to be prepared with regard to recognised nutrient management models so include copies of the input and output files of a recognised nutrient management model used to prepare the plan and identifies all current and relevant nutrient management practices. So it removes the wholesale reliance on Overseer and expands the breadth of that.

THE COURT: JUDGE SEMPLE

Yes.

MS JOHNSTON:

And then looking down, it provides for the ability of that NMP to slot within a certified freshwater management plan and it again repeats the recognised nutrient management model. So that was in recognition of some of those points that I raised with you that through the submissions there was concerns around that management plan being wholly reliant on Overseer and there was a

deliberate decision as part of Plan Change 2 and reflected in the decisions version to enable people if they wished to model something using something else, that they could.

The general understanding as I understand from discussions with my experts and reflected in the evidence is that most people, particularly in the pastoral sense would use Overseer but hearing the evidence and the submissions of other parties broadened that to anticipate future changes, scientific models that get further ground, particularly in the context of CBG, to provide that flexibility.

THE COURT: JUDGE SEMPLE

All right, thank you, that's helpful. I do have a couple of other questions but Commissioner Hodges, I think you had a question more specifically related to that line of questions that I just had around Overseer and the risk model or the specified reduction pathways and the risk model, do you want to ask that now while I gather my thoughts on other matters?

THE COURT: COMMISSIONER HODGES

Thank you, your Honour, yes I think it's an appropriate time. Ms Johnston, one of the issues that's been going through my mind is what consideration was given to using both Overseer and a risk tool in some complementary way, for example say having an Overseer nutrient budget at the start and done again after five years to confirm the direction of travel, in the meantime using a risk scorecard to provide annual checks on how things were going? Was any consideration given to that in your process?

MS JOHNSTON:

I'm not privy to the ins and outs of the discussions within the expert conferences other than the witness statements that have come out of it Commissioner, but as I understand it, part of the reason of leaving Table 14.2 in was to provide that opportunity for Overseer to be utilised and also Professor Horne talks of the use of Overseer to road test or to derive the values within the risk matrix, the risk assessment tool but I'm not aware of a specific discussion about use of both within the framework. I don't necessarily have a closed mind to it but I

don't recall anything specific on that point but certainly hasn't been divorced from that process and I think Professor Horne talks to that quite well in his evidence about Overseer has been used to ground truth road test if you like the workability of the risk assessment tool within the region.

THE COURT: COMMISSIONER HODGES

Yes, I will have some questions for Professor Horne on that. But your Honour, there is just one further question that arises from this is freshwater farm plans require a risk management approach, the starting point is to undertake a risk management approach and my understanding of what the change to the definition of nutrient management plans is that that's incorporated in your thinking, isn't it?

MS JOHNSTON:

That's right, yes and that was one of the reasons why, as I understand it, they're deliberately left open for the ability for the NMP to slot within that freshwater plan and there's also alignment with the future direction of risk assessment processes in terms of the thinking of how the experts embarked on this process post the Overseer reports.

THE COURT: COMMISSIONER HODGES

Yes, I don't think it fully answers the question that the Judge just asked but I just wanted to confirm that was the case, thank you very much. I will have a couple more questions later but I will wait for the Judge first.

THE COURT: JUDGE SEMPLE

The only other matter I think that I just wanted to understand a little bit further, at your paragraph 109, where you talk about, at 108 you rightly identified the Court must determine a risk of acting or not acting under section 32(2)(c). I'm interested to just explore with you what the status quo is because the status quo currently is some really significant number of unconsented activities occurring and I'm just – I've been contemplating whether that is – whether the continuation of unconsented activities is the status quo or whether the – and provocative as this question sounds and I'm not suggesting that this, you know,

where the Court is heading in any way, but I want to understand your position. Because there must be an argument that if those unconsented activities were to continue that they should, in fact, cease to operate, that there would be some enforcement proceedings that would ensue which would mean that the consented activities would ultimately come to an end and I'm interested to understand where we sit in terms of talking about a status quo, the risk of acting or not acting and the implication of that, say, for water quality?

MS JOHNSTON:

Well, I think that it's the starting point, there's two parts that I'd like to respond on that regard. The starting point would be firstly in terms of the water quality outcome which I will take you to and that's at – it's attachment B of Dr Snelder's evidence. That attachment is at 2020 –

THE COURT: JUDGE SEMPLE

Can you give me a volume? And I apologise that one of the difficulties we have with our quite compressed timeframe is that I have reviewed most of the evidence on separate documents that are not part of the – that haven't been identified with the bundle.

MS JOHNSTON:

That's fine.

THE COURT: JUDGE SEMPLE

So I'm between two sets of documents.

MS JOHNSTON:

This is volume 2, book 2 of 4 and it's tab 12. It's right at the end, it's the last page. This sets out those scenarios that I referred you to in opening. And it sets out a pre-regulation scenario right through to the different proposed pathways which reflect the end loss reductions traversed by Professor Horne and Dr Jolly. And then some other scenarios that this was for the purposes of the first instance hearing that were requested by various industry groups. And you will see from pre-regulation that's nitrogen leaching rates in 2012 prior to

consenting. So that's before any consents were issued. And then post-regulation A that's where the end leaching rates for consented IFLU is set to their consented rates. And the non-consented are just at the rates that are within the database held by the council, so in terms of their current leaching.

THE COURT: JUDGE SEMPLE

Current leaching.

MS JOHNSTON:

As known to the council. Through the 2012 records that the council held.

THE COURT: JUDGE SEMPLE

Yes, right.

MS JOHNSTON:

So that's why post-regulation A is the closest to the existing situation. And the point of moment from my perspective and this is certainly the evidence of Dr Snelder is that the difference in terms of mean relative difference between that and if you go to proposed pathway B which is the 20% reduction, in Dr Snelder's evidence that percentage change is not significant in terms of a water quality outcome. That the water quality outcomes are the same. But that brings into play the other factors that you consider in terms of the purpose of plan change 2 and providing the pathway for unconsented farms to apply, because the enforcement issue you raise, the council accepts that it has a job to implement to its plan. An enforcement proceeding though, where you're asking activities to cease when people couldn't obtain consent or not attain – apply for consent in a realistic and workable fashion would be difficult, in my submission. So we have to, in my submission, apply a degree of pragmatism to that. And this range of simulations and these scenarios enable that to occur. Now, I know my friends are going to say "Horizons should be enforcing its plan". This problem has been at large since 2017. And through the declaration proceedings which some and not all were involved in, I'm not going to say that I am privy to the ins and outs of that, but what I will say is that the Court indicated that "Horizons, if you have a problem with the plan, you need to get on and fix

it through a plan change" and that is what Horizons is trying to do. And it's 2023. So I take the point, Ma'am.

THE COURT: JUDGE SEMPLE

Yes, I am just trying to get to the – to understand that, you know –

MS JOHNSTON:

What it means.

1215

THE COURT: JUDGE SEMPLE

That's right and there must be an argument that water quality improvements can occur by activities that are unconsented ceasing, that must be part of the argument that we will hear and I was really trying understand that difference between what that post-regulation A actually means and what that other, you know, there is another scenario which might be considered to be not quite the status quo but an ongoing lawful status I suppose.

MS JOHNSTON:

Well that would be represented potentially, there's the proposed consented implementation of PC2 with no provision for a discretionary activity pathway, so everybody has to comply or nothing. There's also proposed consented strict, which is the year 20 implementation of PC2 and I'm down at the third to last row, with no provision for a discretionary activity and adherence to consented rates where they're below Table 14.2 and requiring everyone to reduce to those rates where they're above them.

THE COURT: JUDGE SEMPLE

Yes, yes.

MS JOHNSTON:

And again it's 40.9 compared to 40.7, sorry 35.3 compared to 40.7 and the difference between those numbers in Dr Snelder's expert view is negligible.

THE COURT: JUDGE SEMPLE

Yes, all right, that's helpful thank you.

THE COURT: COMMISSIONER EDMONDS

I just had a question on a rather different matter and that's section 293 and I guess in the time I've been on the Court I've had a bit of experience of section 293 and it's often common, as it was in the One Plan where it's a relatively minor issue and there's been evidence on it and there's general support, then the Court has been pretty comfortable about saying okay well everyone's in the room, we've got the evidence, we'll give that one the tick off without needing any further process but where there is much sort of bigger issues at play and there's a concern about the people that may not be in the room in terms of the proposition that's now – that might then be in front of the Court or some refined form of the proposition that the council might develop up, that it would be better to err on the side of caution and open the process up to at least a round of public submissions before the Court then addresses the 293 on the merits and goes with it or doesn't go with. So I was just wanting your response to that point in relation to your suggestion that everyone was in the room, if I could summarise it that way.

MS JOHNSTON:

Well thank you Commissioner, and that certainly is my – it's one of my submissions which is that we are dealing with a discrete area within the region where it's a discrete number of farmers impacted in terms of at least of the consenting regime aspect and that there are sector and industry groups that are representative of the range of issues that we might expect to traverse in respect of that. So we just don't have the farming industry present, we also have iwi representatives, we also have environment sector groups and we also have individual farmers here and the breadth of those participants in my submission is important to bear in mind when looking to how to exercise 293. The council would be inviting, at least as a primary point, the use of 293 without further procedural steps, given the timing issues at play here, however, I'm mindful of the fact that that is also another opportunity that the Court has in terms of how it exercises its discretion under 293 but I also pointed out in

opening submissions also that there have been other parties that have been involved in these proceedings and have withdrawn at various juncture because they're comfortable with the direction of travel and also other parties that have remained on the distribution list and have taken no steps, even though they've been fully abreast of the issues that have been emerging with the risk assessment tool through filing of joint witness statement and evidence and the like. So I would submit that there is a lot of understanding and knowledge of what is before the Court in terms of the suggested change. Does that help?

THE COURT: JUDGE SEMPLE

I hear you.

MS JOHNSTON:

The other point that I would raise and perhaps it's not necessarily the appropriate point to do so, but I do want to note that the specified reduction pathways and those drivers that they respond to were well-traversed at the first instance hearing and to the extent that the risk tool now I think we described it as just different re-castings of that type of approach. It's not entirely novel or new. This was something that was born out of evidence that the hearing panel heard and was well-tested by a large number of participants at first instance.

THE COURT: COMMISSIONER HODGES

Ms Johnston, can you please turn to your paragraph 39 in your submissions please. Are you there, okay?

MS JOHNSTON:

Yes.

THE COURT: COMMISSIONER HODGES

Is A1, is that saying the council is intending to do an allocation strategy to meet the revised attributes states, is that what 1 is saying?

MS JOHNSTON:

No and there's a specific footnote in the proposed provisions that says that the use of limit in the provisions is not used in the way that is referred to within the freshwater planning process, Sir. That refers to the risk limit or the limits that are being set through the risk tool.

THE COURT: COMMISSIONER HODGES

Is there any intention to set a, to put an allocation risk – sorry, a nitrogen loss reduction allocation strategy in place in the new plan?

MS JOHNSTON:

Those options are all open for discussion as part of that freshwater planning process. Dr Daly can speak to this, but where the council is in terms of that is that they have just gone out to consultation on the initial information that is informing target attribute states so still in the early phases of that discussion but progressing well. I think Dr Daly's evidence has been, along with Ms Patterson, that there needs to be a lot done in terms of freshwater in the region and this plan change doesn't look to take that mantel on, but equally it doesn't impede that work that is under way.

THE COURT: COMMISSIONER HODGES

Okay, when you mean "this plan change" you mean PC2 rather than –

MS JOHNSTON:

That's right.

THE COURT: COMMISSIONER HODGES

– the annexed, yes, okay, good, yes. And one other thing that is exercising my mind is the environment doesn't see nitrogen leaching risk, it sees nitrogen leaching and from a resource management point of view I thought the key issue is nitrogen leaching rather than the risk, do you have a comment please?

MS JOHNSTON:

Well, the risk tool acts as a proxy for another way of assessing that nitrogen leaching but the evidence is clear that you look at the risk of that leaching as opposed to a modelled output. I think Dr Horne – or Professor Horne talks to the fact that you cannot compare apples directly with apples in that regard but that the risk took does a very good job of acting as a proxy of what might occur. And that, that stems back to that –

THE COURT: COMMISSIONER HODGES

But surely the plan –

MS JOHNSTON:

Sorry, Sir, I am just going to say, that stems back to the on farm practice change that is known to manage the end loss, so the whole idea of the risk tool and specified reduction pathway and how they have been designed and the work that Professor Horne has done has been about looking at "well, what do we need to on farm that we know will result in an end loss reduction and how do we represented that through a rural or a plan framework". So the 35 and the 20% reduction was arrived at by Professor Horne modelling on farm practices and working out where, I think he – the diminishing return point where you've driven it to a point where the water quality improvement doesn't get any better but we know that on farm practices that he has looked at to get it there and then the same approach has been taken with the risk tool in terms of what is actually driving end loss through the root zone and it's what happens on top of the lands, subject to the biophysical characteristic.

1225

THE COURT: COMMISSIONER HODGES

I do understand that all of that very clearly thank you but it does concern me that the primary resource management issue is to minimise leaching of nitrate, not just to minimise the risk. I'll leave it at that for the moment but I probably will explore it with some of the experts, thank you. Thank you, your Honour.

THE COURT: JUDGE SEMPLE

Thank you. All right, thank you Ms Johnston. I do want to provide an opportunity for the other parties, Ms Ongley, Mr Anderson and others to talk further to question of scope and so I will do that before we proceed with your witnesses, if we proceed with your witnesses. So I might just check whether any of the supporting parties want to say anything in relation to that question of scope before we move to those parties who have a difficulty with scope issue.

MR MAJUREY:

Thank you Ma'am, just checking your guidance, reflecting on the minute which seemed rather clear and I should add I'm a bit of a Johnny come lately so there may be a bit of jarring language in terms of getting to the vibe of PC2 rather than PC1 where many of us have been involved with as well, where in the minute the Court's indication it wanted to hear the evidence before addressing that, so I appreciate that. So if you're really interested in the contradicter position, I'm happy to yield the floor. I can certainly add supporting comments but I'm in your hands as to how you'd like to proceed at this stage.

THE COURT: JUDGE SEMPLE

Yes, I mean certainly from the Court's perspective and you can see by the conversation that I've had with Ms Johnstone I suppose that, you know, understanding what is being proposed requires an assessment of the evidence which is what we originally thought and am probably still minded to think that hearing the evidence is going to provide us with the best opportunity to make the best decision. So, you know, to the extent that that position is challenged, I'm probably more interested in hearing from those that challenge that position than supporting.

MR MAJUREY:

I apprehended that Ma'am, thank you.

THE COURT: JUDGE SEMPLE

All right, Ms Ongley do you want to – or Mr Anderson, who is up first? Mr Anderson.

MR ANDERSON:

I've got the talking stick first.

THE COURT: JUDGE SEMPLE

You've got the talking stick, all right, thank you.

MR ANDERSON:

So I guess I just want to start by going back to last week and what happened last week with the memo that we filed. So that memo was an objection to evidence that was out of scope. Now my friends have filed memoranda which are critical of the appellant parties for doing that, referring to it as being re-litigation and disruptive. That wasn't the purpose of it. The purpose of it was to – and we'd foreshadowed it months ago when we said if you proceed with the full evidence, we're probably going to have to check to evidence on scope. So that's simply that's what that was and so now the Court has to address that objection. So the Court has to make a ruling on scope in order to make a ruling on the admissibility of the evidence.

My submission is that the ruling on scope comes first and the Court should make a ruling on scope. The Court has already indicated it wants to hear the evidence. I mean as I'll get to in a moment, I think it's a pretty straightforward case that there is no scope for this and the Court can make a ruling on that basis without hearing the evidence. I'll get on to some important points about that. Make a ruling on scope, parties can accept or appeal it and then make a ruling on the admissibility of evidence.

One of the fundamental concerns we raised in our memo last week was this concept of what the Court's role on appeal is and whether – the problem that Forest and Bird has, is if the Court takes a lax approach to evidence and hears a whole pile of evidence that is not within the scope of appeal, is effectively fulfilling the role of a planning authority and so that's the troubling issue here, is that the Court is a court, it's got appellate jurisdiction on appeal to hear appeals, it doesn't have a planning authority to decide what the best outcome in this situation is and it may be that the risk assessment matrix is or isn't a good idea

but the problem is that there is – for the Court to embark on that journey it has to fulfil the role of a planning authority because this concept of the risk assessment approach is not raised anywhere up until bang, the government discredits it. At that point in time risk becomes an issue. You look at the documents and try and find risk anywhere in the original submissions, the appeals, there's no mention of the concept of risk and that is why I say it's a straightforward case.

Both ourselves and my friend has referred to the Dunedin City Council case which I was counsel in for Forest and Bird and in that case we – there were many similarities to here. We all went along to the hearing, the Court indicated that – the parties had indicated we were comfortable to hear scope and substantive at the same time, at the start of the Court – at the start of the hearing, the Court expressed a concern about scope, so we truncated the hearing down to just concerning the issue of scope and as you will see, the Court found that scope was not available and we all went home. Evidence unheard, and that is in my submission an available approach in the circumstances to do the same thing. So now moving to what the council has said and repeating the submission earlier made, this is straight-forward. Scope is nowhere – sorry, risk is nowhere referred to anywhere and your – you made a question of my friend about the catalyst for it and it is plain the catalyst is the Government's discrediting of it. Dr Horne, Professor Horne refers to it in his evidence when he at paragraph 62 of his evidence-in-chief, that is 201044 – 0424, he there talks about still being positive about Overseer as a tool for doing what it has been doing for a long time before it got discredited. And then at paragraph 63, he is very clear about and this is what he says: "However, I accept that the Overseer reports and the Ministry advice, ie, the discrediting of Overseer, means that Horizons must look to other options to assist in regulating end loss on farms. In my view, the nitrogen risk assessment tool that has been developed as a part of the PC appeal proceedings is an effective tool in this regard." Couldn't be clearer. Went through the process of council hearing, council appeal, after appeal, report has come out discrediting it, Horizons goes off in a different direction and looks at risk rather than Overseer. Clearly the catalyst was the government's decisions to do that and that's why I say the

appropriate approach in this situation is not to try and shoehorn this into a scope section 293 approach. The council has gone and developed a tool, it needs to put that through a proper planning process, a variation of plan change, where it can be properly tested.

And another point I would make is what is quite different about this is that this is not a situation where, as in Dunedin, a party was a certain scope from its own submission, so Forest and Bird goes along and says "we think – here's our submission, here's our appeal, we think we have got scope", here we have got a situation where a number of parties have lodged appeals and they're saying "we don't think there is scope for this" but the council is saying "oh, yeah there is, yeah there is scope" and I think that that's – that having an outcome in a scope context forced on parties who are saying "actually, this is not what we wanted" that that is a really strong telling point and in fact there isn't scope for this because you would think that if the parties wanted this approach they'd be standing up and saying "yeah, we agree, there is scope for this within our submissions and appeals".

Now, I just want to briefly respond to some of the specific submissions points that were made by my friend in opening, so in paragraph 123, my friend makes the submission, makes the submission: "The council's overarching position on scope is set out in its proposed provisions. It considers that the appellants request to reject all of PC2 except for the changes in Table 14 and in the case of Ngāti Turanga the transitional deintensification pathway, places the alternative pathways and the related plan framework directly at issue. Reformulation of those alternative pathways as part of the appeals is therefore within the scope." That's the nub of the issue. Can you sit there and say "we've got a submission that says decline the whole thing, let's just do whatever we like", my answer is the answer to that is "no". That matter must have been raised in a submission and in an appeal in order to provide scope. Simply saying "we sought the deletion of it, or a very narrow recalibration of the Table 14.2", the fact of seeking a deletion does not open everything up. That can't be right because all you can do then is say "I want to delete it" and you are opening

the door to any relief that you might seek. That's the submission point on paragraph 123.

And so in paragraph 129, I just wanted to clarify the position, I think it's a position that my friend takes as well, is that the reference to the submissions of other parties doesn't mean that those parties, the original submissions provide scope. The scope for the appeal has to come from the original submission of the party who was – who has lodged the appeal. And now I also want to move to paragraph 139. And so here, my friend says: "The requirement for leave to be within the scope of the appeal is not that a person reading the appeal would be able to foresee the specific formulation of the provision arising out of the appeal process. Such narrow technical arguments on scope should be avoided." We're not saying that you needed to see the particular formulation, what we're saying is we're not even in the same ballpark. We've got the plan change and appeals that are aimed at Overseer, the reformulation that is proposed by my friend is not a reformulation of words, it's a whole new approach. It's a whole new approach that Overseer doesn't apply in some circumstances. So the framing of these changes as a specific reformulation, it's not a reformulation, it's an entirely new approach.

And finally, I wanted to respond to paragraph 142 of my friend's submissions, where my friend says: "Scope is ultimately a fairness issue – whether allowing an appeal or relief outside of scope could see parties not participating in a process that they may have otherwise have." Then she identifies the parties present as being industry and environmental groups. My submission on that point is the fact we're all here doesn't provide scope. Clause 14 makes it crystal clear that you have to raise these things in your original submission and in your appeal. Simply that we're all here provides the basis for an entirely different approach, that is not the correct interpretation of clause 14.2. Those are my comments on scope.

THE COURT: JUDGE SEMPLE

That Dunedin City Council matter.

MR ANDERSON:

I'd rather not.

THE COURT: JUDGE SEMPLE

Well it's my home town. I mean the idea that we will pack up our pencils and go away on the basis that, you know, whether or not N RAT is in scope is one part of this matter of this hearing, there are also other matters relating to, you know, surely one of the outcomes here is that the decisions version of the plan is upheld.

MR ANDERSON:

Yes.

THE COURT: JUDGE SEMPLE

And so the reduction pathway is upheld rather than the NRAT and that's really been occupying my mind in terms of proceeding with the substantive and trying to narrow out a scope question and then saying right well, you know, the only answer is if you don't have scope for NRAT is that you, you know, because this court could determine that the reduction pathway should remain in contradiction to your appeal and if the council chooses to pursue a plan change in relation to the NRAT it then can do so, but at least in the interim there is some operative pathway in place. That's an option that's open to this court. You're not suggesting that it isn't?

MR ANDERSON:

No not suggesting it isn't, what I'm saying is there's a whole pile of evidence in this case which is directed at the NRAT and that's problematic.

THE COURT: JUDGE SEMPLE

I understand that.

MR ANDERSON:

And we've tried our best to identify that in the memorandum where I've said: "This isn't the evidence that shouldn't be here", but we're clearly not saying that

we need to throw everything out but it's just the stuff about the NRAT which I think is problematic and which I think –

THE COURT: COMMISSIONER EDMONDS

Well, yes I was struggling with that because I was thinking, you know, having read the submissions sent in, we don't have a set of provisions that might be prepared to have or that you're pursuing other than what you've put in your submission. I'm sort of very aware that witnesses have put in evidence about possible formulations and the policy provisions and those sorts of things, so where is Forest and Bird and the other appellants on that front?

MR ANDERSON:

I'm accounting for the other appellants because (inaudible 12:39:36) party but in relation to where we're seeking and trying to get to note and what we'll address is that we support to the provisions that have been attached to Mike Scott's evidence which there's one minor tweak but for present purposes and I can deal with the minor tweak in opening, for present purposes the provisions that are put in and attached in Mike Scott's evidence are those that are supported by Forest and Bird.

THE COURT: COMMISSIONER EDMONDS

And Mr Carlyon I think in his planning evidence referred to those as well.

1240

MR ANDERSON:

Yes, sure.

MS ONGLEY:

Yes, can I just clarify that Commissioner?

THE COURT: COMMISSIONER EDMONDS

Sorry, I –

THE COURT: JUDGE SEMPLE

No, no, no, no, I'm very happy.

MS ONGLEY:

All right, no, I just wanted to clarify that Fish and Game's position is still that there should be the Table 14.2 as a controlled activity pathway with the applicant's not able to make 14.2 going through a discretionary activity pathway and if the Court finds that that – the primary position is, that doesn't need to be changed but if the Court finds that the discretionary pathway needs to be opened then also supporting Mike Scott's position, planning statement.

THE COURT: COMMISSIONER EDMONDS TO MS ONGLEY

Q. And in terms of the policy amendments that's Mr Scott has got, his –

A. We, well, yes –

Q. I mean, some of those I think might have been discussed in planning conferencing and things as there is reference to that in some of Ms Foster's evidence, for example?

A. Yes.

Q. So in terms of those things, of the policy?

A. Well, I was going to, like Mr Anderson, going to make some minor tweaks in legal submissions as well, yes.

Q. Just from our perspective, it would be really helpful –

A. All right, well, I have –

Q. – to know what it is that the parties are pursuing.

A. Yes, yes. So in preparing for the case and as you know I've been involved in the PC1 case, so the – I've looked through the section 32 provisions which followed the independent Ministry for the Environment advice and the iterations for that, that are set out in the rebuttal evidence to Ms Daly and what it seems to be is it started off as a pathway where there would be an ability as a discretionary activity to go through if you showed that you had very high – needed to have very high investment in order to meet Table 14.2 or that you needed time to transition to another land use, and the – as I think Ms Johnston used the word, the path – the discretionary pathway has sort of morphed following that and then it became using the words "what practicable, feasible, et cetera, for a farmer to achieve".

Now, Fish and Game's strong position is that it does not like those words so the concept would be and I think this is set out in Mr Scott's evidence, that it go back to something that is a little bit more objective than what is practicable on farm and what is feasible and I think Mr Scott's proposed wording such that you look at and this, this is similar in what came up in PC1, what's – you look at the scale of the farming operation and so what's – your financial assessment is against what the scale of the farming operation is. So that's – concept that I understand that I understand Mr Scott's planning evidence looks towards rather than a very, very wide discretionary pathway. Does that help?

Q. We're going to need to see it, aren't we, isn't that the reality?

A. What – I didn't hear that?

THE COURT: JUDGE SEMPLE

And I think that this is trying to tease out all of these strands, I think, is the difficult part of it.

MS ONGLEY:

Well, yes, it is.

THE COURT: COMMISSIONER EDMONDS

The point I was making is that it would make more sense if I saw it.

MS ONGLEY:

To have something in writing? Well, it is essentially Mr Scott's provisions.

THE COURT: JUDGE SEMPLE

Mr Scott's, yes.

MS ONGLEY:

That's getting into the substance though and I did have a few comments to make on the scope issue.

THE COURT: COMMISSIONER EDMONDS

Yes, sorry, I –

THE COURT: JUDGE SEMPLE

No, no, no, that's right. Can I just ask, I just want to finish off with Mr Anderson, just in relation to that matter of kind of where we go from here. And you know, given the available options for the Court, it seems to me that it is, yes, you know, it is open to the Court to rule sections of evidence as inadmissible for – on the basis that NRAT is out of scope and we could do that. I'm not persuaded that it's necessary for us to do that because I think that we can continue to hear the evidence and still make an evaluation that NRAT is out of scope and that is not a – that that therefore doesn't form the decision and I'm just interested in your concern that that material is identified now as being inadmissible and what you think is achieved by that as opposed to the Court working through the process other than, other than we perhaps waste time and cross-examining in relation to a tool that ultimately is found to be out of scope.

MS ANDERSON:

So yes that was the two responses, one, yes you're correct the critical concern is the amount of time that parties are going to spend in here when we could spend less time. The second point is a few months ago you issued a minute saying we're going to hear the case but one of the purposes of the minute was to put in clear – sorry our memorandum, to put in clear contest the question of the admissibility of the evidence. So I mean it's open to the Court to make the ruling now or to make it later but it's got to make it.

THE COURT: JUDGE SEMPLE

Yes, but of course the issue is our understanding of the NRAT, in order to make that, is based on the evidence that's in front of us which if it's then admissible I'm not sure what I'm basing an order to make my scope argument, my scope decisions and yes.

MS ANDERSON:

I think there are two distinct step, the first step is make your scope, make your ruling on scope. I mean I don't think you need to hear the evidence but it's your decision as to whether or not you do hear the evidence.

THE COURT: JUDGE SEMPLE

It's quite hard to understand the tool if you haven't seen the evidence, I have to say.

MS ANDERSON:

I'm just saying that my view of the submissions and the appeal is that we're not even close to finding scope. I mean you've indicated you want to hear the evidence so I'm not going to re-litigate that's the decision that the Court has made. I mean it could, in light of what has now been said, it could change that decision and decide to go but what I'm trying to say is that the Court can hear the evidence make a ruling on scope but then it has to make a ruling on admissibility. So the evidence that goes up to that point is relevant to the ruling on scope but you make your ruling on scope and that determines how you deal with the substantive decisions. So that's the way, when, by we filed the memorandum (inaudible 12:47:19) because we knew (a) that you'd made the decision that you wanted to hear the evidence, so despite what my friends say, we're not seeking to re-litigate that objection to evidence, so the correct steps in the process are making a decision now about whether you hear the evidence for the purpose of scope, hear the evidence if you choose to do that, make a decision on scope. Depending on what that outcome is, then if you rule the NRAT out of scope, make a decision on the admissibility of the evidence, then make a scope decision. Then you don't get into any problems of – that you referred to before.

THE COURT: JUDGE SEMPLE

Relying on appropriate and relevant material for the basis of the decision.

MS ANDERSON:

Yes, so that's my – that was the way in which that had been formulated in my mind in the responding memorandum.

THE COURT: JUDGE SEMPLE

Yes, I understand, I understand what you're saying. All right thank you. Ms Ongley.

MS ONGLEY:

I just wanted to start by setting out a few issues for Fish and Game. I will comment on Ngāti Turanga shortly. So it is clear that the catalyst for the NRAT was the whole model peer review of Overseer and I just want to acknowledge that did raise difficulties for all parties in this hearing and Fish and Game did enter into the conferencing and the workshop process and Dr Parlato's evidence for Fish and Game sets out what occurred after the mediation in March which was Fish and Game had a number of questions about the tool which didn't consider was satisfactorily answered and so that's why we're all here today.

Now I was going to ask Ms Daly some questions about this but a game changer for Fish and Game was when it became aware that the Ministry for the Environment was developing its own risk index tool and Fish and Game essentially saw that on the web in around June and it had been the subject of discussion with regional councils. So that's part of the reason also that we're here today.

One of the main issues that Fish and Game has with the risk index tool and this will be the subject of evidence of course, is the lack of transparency but also just on scope, there is an issue with a tool which comes out with numbers and those numbers have developed by Dr le Miere and Professor Horne, where there are parties who may have wanted to make submissions on those numbers that aren't in the room, such as farmers, farmers that have consents that are issued under Table 14.2 for example, but other farmers may want to make submissions on those numbers as well as the actual change to the risk tool.

Now, there's this – quite apart from the separation of powers issue about whether the Environment Court has to follow Ministry for the Environment advice, the submission will also be that the advice from the Ministry was misinterpreted and that the Ministry didn't say that you cannot continue consenting with an Overseer tool.

The point touched on by Mr Anderson regarding relying on somebody else's relief. So the case for the Regional Council substantially misunderstands the Fish and Game and Ngāti Turanga appeals. So, the appeal, the appeals essentially sought removing the discretionary – sorry, removing the control pathway and relying on Table 14.2, adding another control pathway to so-called objectify the BPO does not respond to either of those appeals because it fundamentally alters the natural capital LUC regime and it does that because it changes the structure of the plan by introducing a new controlled activity pathway alongside Table 14.2 and your Honour and members of the Court may need to hear evidence on this, but I'm with Mr Anderson submission is, that the NRAT is so far out of scope I don't consider that there needs to be extensive amount of evidence heard on it.

Just going back to the judicial telephone conference that I think was in July, the regional council was directed to set out its positions with the planning provisions and the scope for those.

And it filed the planning provisions with comments bubbles. That wasn't that clear. It was never said to Fish and Game that, clearly, that the regional council or Horticultural New Zealand was relying on the consequential relief in Fish and Game's appeal and you would have seen the memorandum filed on Thursday withdraws that relief once it became apparent that that was the relief that was being relied on.

At the judicial telephone conference, we did have a discussion about whether hearing on the NRAT would lengthen the hearing and create a lot more evidence and I think my friend for Horticulture New Zealand said that she didn't think it would. Well, it has born out, in my submission, in the evidence before

the Court, that there is a lot of evidence on the NRAT which is a concern in terms of length of cross-examination that is going to need to occur, so I'm not seeking to relitigate your Honour's decision on that but I am just noting it.

I don't think the definition of a nutrient management plan provides scope. The – if there's another tool that's better than Overseer, the essential submission is that that should wait for the council to do a plan change or the 2024 plan change. That would be the appropriate time to introduce that tool, given what we now know.

1255

THE COURT: JUDGE SEMPLE

Now you did raise something that I wanted to ask about in relation to the memorandum on Thursday and you're right, part of the minute that came from our pre-hearing conference was to endeavour to flush out this issue of scope with the provision of submissions, identifying the scope that was being relied upon to support those. Can I just ask why it took until two days before our hearing started to address that matter? Because it did seem to me that if that had alerted you to issues of there is clearly not scope to – or the scope that's being relied upon is inadequate, I might have expected to hear from Fish and Game or indeed Forest and Bird a bit earlier in the process?

MS ONGLEY:

All right, well apologies for that your Honour but we were directed that you wished to hear the evidence, so I think that's why Fish and Game has filed evidence on why it prefers Overseer.

THE COURT: JUDGE SEMPLE

Yes.

MS ONGLEY:

And I think that's all I can say about that.

THE COURT: JUDGE SEMPLE

That's all right and I mean I think from the Court's perspective reading the evidence has been helpful to us. I'm not certain that we could have traversed any of these discussions without reading the evidence, because, you know, for those of us who are new to some of these concepts, it's important to have read what it is we're actually talking about. So that's been helpful to us I think in understanding that and I think, you know, if that's created additional work, then, you know, that is a consequence of us having to come up to speed and understand it.

So from your perspective then, sorry just – I wasn't quite sure in the memorandum whether the consequential relief was being withdrawn or whether it would be withdrawn if that was what was being relied upon. Is it Fish and Game's position that that consequential relief is withdrawn?

MS ONGLEY:

Yes, it is. I should say that I didn't get instructions from Ngāti Turanga whether to withdraw their consequential relief but I really think there is an issue with the council seeking to rely on a hapū's consequential relief when that hapū say that it doesn't meet its consequential relief but that's another issue.

THE COURT: JUDGE SEMPLE

Well I think that's a variation on Mr Anderson's theme, isn't it, that if it doesn't do what the party that's asking for it intends it to do then there's a question as to that.

MS ONGLEY:

Yes. I should also note, if I may, that the Horticulture New Zealand section 274 notices oppose the relief of Fish and Game and the other appellants.

THE COURT: JUDGE SEMPLE

I think I know the answer to this but I'll ask it for the avoidance of doubt, the position of Fish and Game on a 293 process?

MS ONGLEY:

Yes, the position is that the Invercargill factors do not support a 293 process here and it would oppose a 293 process and part of the rationale for all of this is of course that we're embarking on a, it's called the Oranga Wai process in the Manawatu-Whanganui region which is considered to be the better process for these, unless of course the council wanted to do another plan change before that but it's coming up quite quickly, that date.

1300

THE COURT: JUDGE SEMPLE

Well, the notification might be coming up quite quickly, but the operative – an operative plan might not be coming up quite so quickly, I would suggest.

MS ONGLEY:

And, of course, we don't know what the new government is going to do.

THE COURT: JUDGE SEMPLE

Indeed, we don't know – we're not yet entirely sure what legislation we're operating under, so yes. A brave new world awaits.

MS ONGLEY:

Yes.

THE COURT: JUDGE SEMPLE

All right, we are nearly at –

MS WRIGHT:

Your Honour, I did want to make some brief comments on behalf of Mr Day.

THE COURT: JUDGE SEMPLE TO MS WRIGHT

Q. Yes.

A. I appreciate it's nearly 1 o'clock, but it will be very brief if you want to get the comments on scope out of the way so that you can reflect over lunch.

Q. Sure.

A. Or happy to wait, it's up to you.

THE COURT: JUDGE SEMPLE

Yes, well, I was contemplating the idea of some reflection and decision making over lunch, but then I thought to myself that Ms Johnston might have more to say to us on some of that and Mr Majurey is looking like he would like to leap to his feet as well and Commissioner Edmonds also has I think some questions of Ms Ongley, so I think we are going to adjourn and take this into the afternoon and then the other matter that we need to contemplate is that in order to get Mr Hodges on a plane at a reasonable time we will need to adjourn early this afternoon so that he can transport himself from Auckland to Wellington, so it may be, depending on where we to with the rest of the discussion this afternoon, Ms Johnston, you might if we adjourn at 3.30, we don't come back until two and we hear from – some questions of Ms Ongley and we hear from the other two parties and then maybe Federated Farmers may also have some comments to make, we may find ourselves with a break that actually enables you to have some time to reflect overnight and I'll reply in the morning. I'm not – I don't know if we'll get to that or not, but that may be the position we find ourselves in.

MS WRIGHT:

If it's any indication, your Honour, I will be very brief because Mr Day is not delving into the detail in scope, it's just a comment on his specific appeal –

THE COURT: JUDGE SEMPLE

Relief, yes.

MS WRIGHT:

– appeal and submission

THE COURT: JUDGE SEMPLE

Yes, yes, thank you.

MR MAJUREY:

I mean, I am conscious of lunch, but it may be the matter that I want to raise will be relevant for parties to reflect on over lunch. I just wanted to pick up on your comment about decision making because I thought where we started was the minute prevails and any determinations on the scope will be post the hearing, the actual hearing of the evidence. That's the basis on which I was happy to yield, so I just wanted to check that would be (inaudible 13:02:46)?

THE COURT: JUDGE SEMPLE TO MR MAJUREY

Q. Well, I mean, I think that we are being urged to make a decision on scope –

A. Appreciate that .

Q. – ahead of hearing the evidence. I haven't reached a position at the moment and we haven't had the opportunity to discuss that. Certainly our position where when we commenced this morning was that we saw no reason to deviate from the position that we had adopted which was that we would hear the evidence and that if there were matters of scope that they would be dealt with as part of the substantive decision. I want to check that with the panel over lunch, but most certainly I think and after, if there are matters that you want to address to the Court, I mean, we're being urged to make a different decision and so I –

A. I hear this, I hear the – yeah.

Q. – I certainly want to hear from you if you think we should not make that different decision?

A. Yes, it's apparent the strength of conviction, Ma'am.

Q. Yes.

A. But we've relied on getting to this point on that minute.

Q. Yes, yes, I understand that.

A. So I will want to address you if there is a potential for change on that, Ma'am.

Q. Yes, I understand.

A. Thank you.

THE COURT: JUDGE SEMPLE

All right, Ms Johnston, is that?

MS JOHNSTON:

I'm in your Honour's hands, I think we proceed to lunch and come back.

THE COURT: JUDGE SEMPLE

Yes, yes, all right.

MS JOHNSTON:

Take stock, at that point.

THE COURT: JUDGE SEMPLE

Take stock, always good. All right, well, we will adjourn for an hour, and be back just after two. All right, thank you.

COURT ADJOURNS: 1.04 PM

COURT RESUMES: 2.08 PM

THE COURT: JUDGE SEMPLE

Welcome back everyone. So questions Commissioner Edmonds.

THE COURT: COMMISSIONER EDMONDS

I just had one question which was a bit of a follow up to what I asked you earlier. So looking at the council proposed version of the provisions and the comment boxes and I'm noticing that a lot of the policy changes made in all of the policy changes seem go back to I think consequential relief where your client keeps getting mentioned.

MS ONGLEY:

Yes, yes. So is your question Commissioner, whether that would meet the consequential relief or what my comment is or that we should've spotted that?

THE COURT: COMMISSIONER EDMONDS

Well I suppose there's two issues, one is if you abandon your consequential relief well that presumably wouldn't then be available, that's one thing, but secondly, would you consider those things to be consequential relief?

MS ONGLEY:

Yes, so if I can first –

THE COURT: COMMISSIONER EDMONDS

And I'm just looking at policy 58 for example. I mean it may be that a lot of these things don't amount to much anyway so you'd be happy to abandon them, I don't know but you did mention earlier that you weren't opposed to the discretionary pathway and I think quite a number of these changes have been made to assist in terms of applying that pathway.

MS ONGLEY:

Yes, so Commissioner Fish and Game found itself in a difficult position where the NRAT was being promoted as meeting the consequential relief which is the

reason that Fish and Game has withdrawn its consequential relief and so the primary position of Fish and Game has to be if that relief is withdrawn then you simply update Table 14.2 and don't do anything else. However, the position I'm going to advance as the secondary position is to support other parties' relief that seek some widening of the discretionary pathway and it should be relatively obvious why Fish and Game has withdrawn its consequential relief and that's because my understanding of the arguments from the council and potentially from Port New Zealand is that the additional control pathway meets Fish and Game's consequential relief because it puts parameters around the best practicable option or reduced to as low as practicable and so the position of Fish and Game is that it doesn't met the concerns expressed in the notice of appeal, so that's why the consequential relief has been withdrawn. Now it is still within the powers of the Court to widen the discretionary activity pathway and that would be based on Ngāti Turanga's relief and I think Mr Day's relief, although I'd have to go back and have a look at Mr Day's appeal. So in a way it has been a strategic move, I acknowledge that but Fish and Game's very strong stance is that it does not wish to have the nitrogen risk assessment tool imposed through this hearing process. So that was the primary reason for withdrawing the consequential relief. I don't think it affects what the Court may do with the discretionary pathway.

THE COURT: COMMISSIONER EDMONDS

And you'll address that point when you come to make your own case, is that where you'll be heading with that?

MS ONGLEY:

Yes and I have written some draft submissions around the fact that although as you would know I didn't appear for either DOC or Fish and Game in the original One Plan hearings on the water quality aspects. I was appearing for DOC on the biodiversity part of that decision but I didn't appear in the water quality aspects of the 2012 decision but my submissions were going to be along the lines of that Table 14.2 was in a way supposed to be the limit and in that respect was potentially ahead of its time because limits are the best way to manage cumulative effects and so the primary submission was going to be that there is

no need to open the discretionary pathway. However, I do have to acknowledge the developments in *King Salmon and R J Davidson* potentially meant that the two confined circumstances where you could argue and the policy pathway that you didn't need to meet the 14.2 limits, was potentially not the only pathways that Court anticipated at that time and I had another look at the High Court decision on the One Plan and Horticulture New Zealand argued in the High Court that those two exceptions and one was to do with rainfall and the other was to do with allowing the applicant a certain period of further time, the counsel for the regional council in the High Court said that it was acknowledged that those weren't only two circumstances where you could go beyond Table 14.2 limits. So I've got those in my legal submissions.

THE COURT: JUDGE SEMPLE

Commissioner Hodges, anything additional from you?

THE COURT: COMMISSIONER HODGES

Could I just – can you hear me okay or not?

THE COURT: JUDGE SEMPLE

Yes, you're quite quiet but we can hear you.

1415

THE COURT: COMMISSIONER HODGES

Okay, I'm getting an echo back, that's my problem.

THE COURT: COMMISSIONER HODGES TO MS ONGLEY

Q. But my question is, in the Rotorua case, on PC10, the evidence before us that Overseer had a variation of plus or minus 30% and up to plus or minus 50%, the Parliamentary Commissioner's decision came out at the same time and gave exactly the same figures, so one of the concerns that I have is placing reliance solely on the Overseer numbers leaves quite a bit of uncertainty and I just wonder what your view would be on possibly having a risk scorecard in some kind of non-regulatory role, would that be something you would consider or not?

A. Dr Dewes is the person to ask questions on the uncertainty of Overseer, but my reading of the government advice and Fish and Game and Ngāti Turanga would not have any problem with – if you go through the controlled activity gateway which is based on Table 14.2 which is an Overseer analysis and we are yet to get to arguments about the specified reduction pathway but that could also be a pathway if the Court approves it, both of those are based on Overseer. Once you get through that pathway, there could be a mechanism whereby I think as you raised it before, Commissioner, if for example an activity was stable, may not need to do Overseer files for years and years to come to show that it is complying with its consent conditions and/or do Overseer files alongside another, another risk tool or model, but this particular risk tool it has to be acknowledged does not do the same thing as Overseer in terms of assessing risk of nitrogen leaching below the root zone. So there is a question whether this tool would actually complement Overseer and I see from memoranda filed in the Waikato that some further work is proposed to be done on the comparison between the Fonterra Nitrogen Risk Scorecard and Overseer because the existing peer review work as was outlined in that case and it's in the Abacus – it's called the AbacusBio Report and I had that up because I anticipated this question, it's 203, it's in the bundle at 203.1922. I don't know if you need to go to it, but if you –

Q. I'm quite familiar with this.

A. It will come, it will come out in the evidence, but it says that the Nitrogen Risk Scorecard which is the basis for the NRAT does not have a high predictive power in terms of N leaching. So whether that tool could be used in a complementary manner once one is through the per cent gateway is still an issue.

Q. Yes, I don't know the answer to that and that is why we are keen to hear the evidence because there are many questions about the Risk Scorecard that are unanswered at this stage and so that was one of the reasons we wanted to hear the evidence. But if you in principle, you are not absolutely against the possibility of using a Risk Scorecard from some method, provided it got through the gateway first?

A. That's right, Commissioner, but I should also clarify that Fish and Game doesn't believe it should be – it needs to be named.

Q. Okay.

A. Mhm.

Q. Yes, thank you very much. Thank you, your Honour.

THE COURT: JUDGE SEMPLE

Right, thank you, I think that's it from us for you.

MS ONGLEY:

Thank you.

MS WRIGHT:

Thank you, your Honour, now Mr Day was not a signatory to the memo provided by the other appellants to the Court on scope.

THE COURT: JUDGE SEMPLE

Yes.

MS WRIGHT:

And I don't propose to delve into scope in any detail and Mr Day is happy to see where the Court lands on that. However, in response to submissions from my friend for council, I do want to address the fact that from Mr Day's perspective the risk matrix wasn't a reasonably foreseeable consequence of his appeal and this is very much a matter in response from my read of the council provisions that were circulated in September, they did not identify Mr Day's appeal as being one of the appeals providing scope. So this is new as of today from Mr Day's perspective. As I've said, your Honour, from his perspective it was not a reasonable foreseeable consequence and I don't propose that you need to go there, I can take you through at a high level but so you have the reference, his appeal kicks off at 101.0026 but Mr Day sought essentially the decisions version was entirely thrown apart from the recalibration of Table 14.2 as a starting point and his primary reasons for that is that this is a decisions version controlled other pathways, the percentile and percentage 1 were a grandparenting approach with which he does not agree and then he made the

point in his appeal that the Environment Court and the High Court have already found in support of the Table 14.2 approach which is based on natural capital but importantly based on natural capital underpinned by an LUC regime.

And then turning to his formal relief, just in terms of whether it was foreseeable on that, and that's at paragraph 8, paragraph 8.1 talks about trading, the risk matrix is clearly not foreseeable from that. Two talks about the recalibration of the table, it's not foreseeable from that. Para 8.3 is the paragraph that my friend for the council has now relied on and your Honour in context of the rest of the appeal and Mr Day's position, that was directed at if there was going to be a, you know, if you don't meet controlled activity, you're now into a discretionary or, you know, RDA in terms of what the One Plan currently is, then that needed to be directed towards making sure you were thinking about natural capital and that's what Mr Scott's provisions do or are intended to do, your Honour. It certainly wasn't intended or anticipated that it would result in the introduction of another controlled activity pathway based on risk and there is, as my friend for Forest and Bird has pointed out, no mention of risk or a risk assessment tool in Mr Day's appeal and nor does that come up in his submission which is also in the bundle, your Honour.

The only other point I wanted to make and emphasise to the Court is that there was a bit of discussion before with counsel for Forest and Bird about whether this issue would result in a situation of us needing to pack up and put our pencils down and that is definitely not what Mr Day considers that the consequence of this discussion needs to be. There are, as your Honour has identified, other matters before the Court in relation to what the decisions version had for alternative controlled activity pathways which my client says should not be adopted and seeks to be removed and then there is the question around what the policy framework should say, thinking back to the, you know, one of the two underlying drivers for this plan change, which is making sure that that policy framework enables a consideration of farms that can't meet the controlled activity pathways on merits. So there is definitely still an important conversation to be had and from Mr Day's perspective this is essentially a conversation that has been going on for 17 years and we need to get it sorted.

THE COURT: JUDGE SEMPLE

I don't think I have any questions in relation to that. Commissioner Edmonds, any questions from that?

THE COURT: COMMISSIONER EDMONDS

No, it's very clear thank you.

THE COURT: JUDGE SEMPLE

Commissioner Hodges, any questions from you in relation to those submissions? I think we've lost the audio. You might be on mute.

1425

THE COURT: COMMISSIONER HODGES

No thank you, your Honour.

THE COURT: JUDGE SEMPLE

Thank you, all right. Thank you. Mr Majurey?

MR MAJUREY:

Yes, thank you, Ma'am. So to start with, Horticulture New Zealand respectfully adopts the submissions on scope from my friends for the regional council. And a powerful submission was made by my friend which I am going to touch on a few times because I think it does capture why we are here. And that was at paragraph 2 on the last sentence: "The effect of this has been uncertainty, stress and a feeling of being limbo for the farming community and delays in water quality improvements in the greater targeted catchments within the Manawatū/Whanganui region and in that sense Hort New Zealand feels council has played a very important role here in terms of an honest broker type role and trying to address those matters in the way that it has during the process. I will take it a bit slow, Ma'am, in terms of giving these orally, so appreciate unfortunately you are having to take some notes.

THE COURT: JUDGE SEMPLE

That's all right, thank you.

MR MAJUREY:

As this Court is aware, these are familiar issues in terms of the place of Overseer and alternative pathways given parallel proceedings in PC1 and PC2. So reference has been made to the minute and it would seem that despite the protestations otherwise, some of the parties are seeking to relitigate the minute because that is the upshot of what they are seeking from you in some very firm terms, as is their right to do that if they wish. For its part, Hort New Zealand has relied on the minute, the logistical arrangements that have been made and been ready and prepared for this fixture that has been set down, so if there is going to be and recognising with respect the role of the Court and it is for its decision making in terms of how it conducts the hearing, if there is going to be a striking out of evidence then there are going to be real issues of procedural fairness arising, especially as you have noted, Ma'am, and was in some of the memoranda, this being raised very close to this hearing being set down and heard and despite the exchange I am not sure that there was a cogent reasoning for it being left so long given the timetable we have all been working to.

So we have a fixture, the parties are here, the witnesses have been arranged and so we are ready to proceed and in terms of the apparent difficulties raised over admissibility and the like, it will be the judgement call of the parties, depending on the outcome of the Court's decision on this matter, as to how it prosecutes its case, for example, by way of cross-examination, and we say that there is little utility in ruling on admissibility insofar as the point that the Court has made, that it is well able to consider the merits of the case and make its various conclusions and finding in its ultimate decision.

Reference has been made by my friends for the council in terms of the way that the parties have conducted their case and I confirm as should be apparent in the evidence that Hort New Zealand address the issues of utility, operation of Overseer and alternative pathways at the hearing at first instance and has been noted it lodged its 274 notices.

And just on that, in terms of the 274 notices and the decision that has been taken by some of the appellants, or most of the appellants insofar as consequential relief, we made comment on that in our memo so I do not need to pursue that. There is a question as to even with that relief being removed, the powers of the Court, I was going to say in hearing, but the powers of the Court in terms of how it makes its decisions, I can't point to authority at this stage, but it seems on my recollection and experience there is an ability of the Court to find consequential relief as a result of the substantive matters in an appeal, so the fact that there wouldn't be words in a notice that say "consequential relief", there is a matter to pursue insofar as whether the Court can do that nonetheless.

1430

The cases insofar as what's relevant as to scope, admissibility et cetera have made reference to matters coming out of left field and as has been reflected in the evidence and the submissions, we say that it hasn't come out of left field in the sense that that phrased is used in the cases and a very important indication of this is the joint witness statements. Those have been referred to, but they are of real importance here because they track the path of discussion and starting in about February, well going back, there were conferences from last year as the Court is aware and from February this year there was a period where these conferences were taking place every month for a period and I want to refer the Court to the April statement, this is the joint witness statement of the planning experts. Sorry I have the bundle number Ma'am, I don't have the folder set up in the way – would the number be of assistance?

THE COURT: JUDGE SEMPLE

The page number will help, yes thank you.

MR MAJUREY:

So if we start at 204.2423 and this is the 17 April JWS. Do you have that Ma'am?

THE COURT: JUDGE SEMPLE

I do.

MR MAJUREY:

Commissioner?

THE COURT: COMMISSIONER HODGES

I was (inaudible 14:32:20) but carry on.

MR MAJUREY:

So there are some important statements here insofar as where the parties were at and what they were working on as far back as April this year and it wasn't the first time. So at paragraph 2, mediation held on 15 March 2023, the parties agreed in principle the amended PC2 provisions, attached as annexure A to the 15 March mediation agreement. The amended PC2 provisions include an alternative controlled activity consent pathway based on the risk assessment approach recommended by the farm systems experts. The parties agreed in principle at the 15 March 2023 mediation to pursue the risk assessment process approach for pastoral and commercial vegetable growing and intensive farming land uses. The agreement in principle is subject to Fish and Game, Forest and Bird and Andrew Day have an opportunity to further consider the proposed risk assessment frameworks.

Paragraph 4 confirms the respective planners and they were there for all parties. And in the section on agreed matters starting at paragraph 8, there are various references to these types of matters, so 8B referenced the commercial vegetable growing experts, the final review prior to inclusion of the One Plan. Over the page at H, text and tables contained in annexure C, nitrogen leaching risk limit tables, I, reference to the risk scorecards, J, the risk assessment frameworks, K(ii), the nitrogen leaching risk limit and important to acknowledge paragraph 10 where Mr Carlyon considers the implementation of the PC2 plan provisions is a relevant matter for consideration by planners by conferencing.

Reference has been made in the appellant's submissions in evidence as to what it has said there was going on but these records are on their face quite clear what was being discussed. So it's for the parties to confirm their respective positions but here we have the parties in collaboration, working on this very risk assessment tool. So to now say somehow this has come out of left field, we shouldn't touch it, just doesn't square.

Reference has been made to section 293 and I don't need to go further than my friend for the council did on that, other than noting that it does provide an alternate approach but of course it's for the Court to consider whether it's an appropriate approach in this case.

1435

Having said that, in terms of trying to find the solutions for the merits to be considered, the utility of the appellants' approach does seem somewhat unclear. If council is required to go back to square one, what does that really result in other than several years it would take to come back to be in the same position if there was still a contest over these pathways being included and that reminds us of that powerful submission from paragraph 2 as to what the consequences of delay would be in terms of the effect on people and the delay of water quality improvement.

Your Honour raised a matter, understandably so, in terms of the status quo and where matters might go with that with – and again recognising the context in which it was said – the potential for enforcement. Of course, when it comes to enforcement, other than actions under the RMA from third parties, that is a matter totally within the discretion of council and, of course, water quality is a relevant matter but so too is people because they are a part of the environment as defined. So the fact that folk haven't been able to receive consents is not a matter of their own making, it's this whole dynamic in terms of the regulatory regime and the very troubled life cycle of, if that's a way to describe it, of the Overseer model.

Finally, Ma'am, in terms of where we go to from here, because those arrangements have been made, as I have mentioned and we're all aware of

people are still to travel here including Commissioner Hodges, I would respectfully raise is one approach the Court could take, once it hears from the parties, it could retire, reach a position that it comes back to and albeit Commissioner Hodges may be in the air, but in terms of delivering the outcome of the Court's deliberations we could have an indication at the least of a decision with reasons to follow so that we know where we're going, one way or the other. I say that respectfully, because that is your call, not mine. But those are the matters I want to raise with you, Ma'am.

THE COURT: JUDGE SEMPLE

All right, thank you, I will just check if there is any questions in relation to any of that. Commissioner Edmonds, any questions?

THE COURT: COMMISSIONER EDMONDS

No questions.

THE COURT: JUDGE SEMPLE

Commissioner Hodges, questions from you?

THE COURT: COMMISSIONER HODGES

No thank you, your Honour.

THE COURT: JUDGE SEMPLE

All right, thank you, let me just –

MS ONGLEY:

Your Honour, can I just respond to one point?

THE COURT: JUDGE SEMPLE

Yes, yes, let me just check if I have questions first for –

MS ONGLEY:

Sorry, sorry.

THE COURT: JUDGE SEMPLE

I am just reading back through my notes, that's all, just to see if there was anything that I wanted to check. No, I understand all of that, thank you.

MR MAJUREY:

Thank you, Ma'am.

THE COURT: JUDGE SEMPLE TO MS ONGLEY:

Q. Ms Ongley?

A. Yes, thank you, my friend has pointed out a joint witness statement and what was referred to in that.

Q. Yes, yes.

A. My only comment was that I think that the joint memorandum of counsel that was filed on the 15th of June should take preference over what the witnesses put in their joint witness statement and that was signed by all parties and it set out what the understanding was at paragraph 5 of the basis upon which Fish and Game and Ngāti Turanga entering into the workshop process and I can read that if you like?

Q. I recall it, but just read it out to us?

A. All right, it said: "The parties agree to explore ways to address the implications of the Overseer Science Advisory Group Report within the context of the appeals on PC2 with a view to responding to the issues it raises while continuing to regulate existing intensive farming land use activities within the priority catchments. On the part of Fish and Game and Ngāti Turanga, this agreement was without prejudice to their primary position in the appeals which canvassed broader issues."

Q. Yes.

A. And then further on in that joint memorandum it talked about the outcomes from mediation which set out that Fish and Game and Ngāti Turanga wished to go away and have a look at the risk assessment tools, so I just wanted to – that was at paragraph 11 –

Q. Yes.

A. – sorry Fish and Game, Forest and Bird and Mr Day agreed to consider the risk framework approach further and report back and then

discussions between Ngāti Turanga and the regional council would continue with a view to resolving Ngāti Turanga's wider concerns. So my submission is that that should take preference over what was said in the JWS. Thank you Ma'am.

THE COURT: JUDGE SEMPLE

Ms Johnston, there are matters arising from all of that that you would want to address us on?

MS JOHNSTON:

Two points Ma'am, if I may. You indicated before lunch in terms of a reply on behalf of the regional council, I think there's two ways I can address that. I'm happy to address you now on the council's position in terms of hearing the evidence before a determination on scope. If you're looking for a more fulsome reply on this scope argument in its most full manner, I would probably prefer to take that time because my anticipation had been that we were going to run the evidence and I can explain to you why I say that still should be the case and then I would close in terms of 293, the merits of it, admissibility and scope in its fullest manner. I submit that that should be the case. For all the reasons I've set out to you previously in the pre-hearing conference which led to your minute, and having heard my friend's arguments today, my position remains that this is a de novo appeal, you have the ability to regulate your own proceedings, there is no one size fits all approach to determining scope. You must decide the best way for you to make your decision in the context of the proceedings before you. You must do so having regard to fairness and efficiency and when you consider all of those things, my position is that the evidence must run.

I say that even hearing the technical questions put to me after opening, my friend herself just alluded to the fact that Dr Dewes can answer some questions better than she can in terms of Overseer and its current status, to enable you to determine whether or not the risk assessment tool is in or out of scope and also to consider the specified reduction pathway which still remains a live matter before this Court because the council's position, as I put to you in opening, was that an alternative pathway is necessary. You need to hear the technical

evidence in my submission. So that remains my primary point and I would like the benefit to call my witnesses and then close on scope in a fulsome way.

I also note procedurally Ma'am, that all the council witnesses are here, they're ready to go. We have put a position since September on scope and my friends' arguments came Thursday afternoon. So procedurally I would also raise concerns around the fairness and efficiency point that I alluded to at the outset.

I note also and I agree with the Court's comments earlier, that you are able to make a decision once hearing the evidence, as to the appropriate steps and to the manner in which you can resolve, (a) the question of scope and (b) the question of admissibility. There is nothing that prevents you from taking that course of action and the council urges you to hear the evidence and the make that ruling in good time.

The only final point I'd make on that, and it reverts to that technical point and the need to hear the evidence, is that there has been careful steps taken to ensure that the risk assessment tool does reflect the approach of Overseer, just in a different way, and I don't think that I eloquently addressed Commissioner Hodges' questions as well as Professor Horne, Dr le Miere, Dr Jolly and other witnesses here today could and I submit that the council and other parties should receive the benefit of letting that technical evidence run and your decision being reasoned and made on the full basis of the evidence before you. That's as far as I can take it today.

THE COURT: JUDGE SEMPLE

Thank you. I think we need a short adjournment in order to –

MS EDWARDS:

Sorry, your Honour, may I please have an opportunity to the scope issues that have been raised on behalf of Federated Farmers?

THE COURT: JUDGE SEMPLE

Yes, yes you absolutely do, thank you.

MS EDWARDS:

And one thing I've just noticed from my end, Commissioner Hodges, it looks like you're logged in twice and that might be you're getting feedback when you talk.

THE COURT: COMMISSIONER HODGES

Okay, I'll change it.

MS EDWARDS:

I don't know if there's anything you can do about it but from my end there's two Commissioner Hodges online and I wonder whether you're – when you talk you're getting –

1445

So thank you your Honour, there were several points I wanted to respond to and just by way of background I wanted to say that Federated Farmers is participating in a role of support of the regional council and seeking to provide a farmer perspective. Federated Farmers participated extensively in the hearing doing a joint case with Dairy NZ and both the Federated Farmers and the Dairy NZ appeals clearly sought an alternative controlled activity pathway because of concerns about the numbers of dairy farms that would be needing to go through a discretionary activity pathway and the need for certainty and efficient and effective pathway for them.

Federated Farmers has also participated extensively in the expert conferencing. It's had a planning expert at the time, Jarod Willis, and Dr le Miere and Mr Gavin Marshall, who was the Fonterra staff member at the time that had developed the risk tool and was responsible for implementing it. They participated throughout the conferencing.

There are just several points that I wanted to make in response to some of the comments that have come from the bench this morning. So the first was comments by Commissioner Hodges about the focus of the RMA being on managing nitrogen leach and not nitrogen risk and my understanding is that the RMA is not about managing nitrogen leaching but about managing adverse

effects on the environment and my submission is that effects includes risk of effects. The nitrogen risk scorecard is focussed on or the nitrogen risk tool that's been proposed here is focussed on reducing nitrogen risk and by reducing nitrogen risk you will inevitably reduce nitrogen leaching. Also I wanted to say that not all nitrogen that's discharged to land ends up in water. So it's only when you apply nitrogen in inappropriate circumstances or when you apply too much that you get an effect. So not all nitrogen has an effect and then there's also the issue of attenuation and not all nitrogen that leaves the root zone reaches the receiving water body and therefore not all nitrogen has an effect.

So in my submission the nitrogen risk scorecard is entirely consistent with the management framework that focusses on managing effects. It does that by risk and in my submission as a consequence you are managing the effect.

The second thing I wanted to respond to is issues about the Overseer peer review report and as the Court is aware we are grappling with the same issues in plan change 1 in that significant issues have arisen about the use of Overseer in regulation, that none of us, in my submission realised the significance of the issue. We knew Overseer had issues but we didn't know the significance of it until we had that August 2021 peer review report and PC1, as in here, this all happened after the filing of appeals, so no appeal says don't use Overseer, use a risk tool.

Something else that PC1 and PC2 have in common is that in my submission parties representing interested or potentially affected people are present, such that if the Court at the end of this process was to consider a section 293 process, that could be a focused and truncated process.

In my submission the key difference between PC1 and PC2 is that PC2 always had, well the decisions version, always had two alternative controlled activity pathways, using two different metrics and that PC2 required a specific nitrogen loss amount, in this case we're talking about the 20 percentile whereas PC1

didn't specify a numeric reduction, other than – no sorry it didn't specify a numeric reduction.

In my submission, in light of the Overseer report, it does not seem appropriate to continue to require a farm to make a 20% reduction in Overseer when we now know that that number might be 50% too high or 50% too low and Commissioner Hodges, as you were aware, we were involved, Federated Farmers in PC10 and I think the difference back then is we knew it had a plus or minus 20 or 30% potential inaccuracy, we just didn't know how significant that was and we didn't know that – now we've got this very firm advice about don't use it in regulation or be careful solely to base regulatory decisions on Overseer.

So for the reason of the Overseer peer review report, a significant amount of work was invested by all parties in this joint conferencing of experts. In my submission, in terms of section 32 it would not appropriate to use Overseer in a way that MFE says that we shouldn't be using it, ie to require on-farm specific N loss reduction.

The other matter I wanted to respond to was the suggestion that Horizons could enforce compliance with its plan change and farming that doesn't make Table 14.2 should cease. In my submission that would mean that there would be no pathway for about 58 to 76 dairy farms if they can't meet that LUC pathway and the suggestion that they should cease immediately would have very, very significant economic and social cost and it would mean that you're relying on Overseer in a way that MFE has told us it shouldn't be used. So I would say from section 32 perspective, it doesn't stack up as the most appropriate option.

Then the other matter I wanted to respond to was Commissioner Hodges' question about could you use a nitrogen risk assessment tool and then also require an Overseer budget every five years and in my submission that could be useful for indicated a direction of travel and if the drafting gate was based on the nitrogen risk tool as has been proposed here, but the Overseer is used as a reporting tool, to show that you're going in the right direction, that to me is

entirely consistent with the MFE guidance because you're not solely relying on Overseer. I'm also aware of other regional plans where the proposals is not – how they're being implemented is not dissimilar from that kind of a proposal. So in Canterbury what I understand is happening down there, they've got an operative plan which requires reliance on Overseer but they are – what the council considers is another risk based metric first and if that number changes, then it goes and has a closer look at those at the Overseer budgets for those farms. So for example dairy farms they're looking at more than a five per cent increase in feed eaten is cause for going and having a closer look through Overseer.

They are in a slightly different situation in my submission because they've got an operative plan, whereas my submission is we have before us is a proposed plan and the Court does have available to it options to look at the risk, a potential risk tool.

1455

The last submission I want to make is that Federated Farmer's strong position is that substance should be preferred over form. Counsel for Mr Day referred to, you know, these issues being going on for 17 years. I cannot emphasise enough the disruption that's been caused, even from the last seven of farmers not being able to get consent and the fact that these dairy farmers, the evidence is that there's around 194 unconsented dairy farmers are left in limbo.

In my submission there is an immediate solution to the problem and it would mean that we could get a return to regulation in the short term and make some real progress in water quality improvements. The tool is not irreversible and there are additional measures that can be written into the plan now to make sure that information is gathered or there are checks and balances, whether that's requiring retention of the inputs which go into this risk tool which are very similar to Overseer inputs, whether it's a requirement for additional information to be provided through farm plans or whether it's also Commissioner Hodges' suggestion that an Overseer budget is also required to be obtained alongside the use of this tool and my submission those checks and balances can be achieved but in terms of your regulatory point of compliance and the tool that

you're being used to determine where you're going, we can get around the issues that have been identified with Overseer. So thank you, your Honour and I apologise for trying to deliver these submissions online, I know it's never the same as being there in person.

THE COURT: JUDGE SEMPLE

No, no that's fine, none of us can account for the vagaries of the weather and Air New Zealand's system at the moment I don't think, so thank you. Commissioner Hodges, do you have any questions in relation to that?

THE COURT: COMMISSIONER HODGES

Thank you, your Honour, and thank you Ms Edwards. First of all, thank you for getting rid of a second version of me, I'm sure that was a relief and one of the things that I always do in coming into these cases is put some ideas out at the beginning so that people can tell me if I'm wrong and I think you've sort of suggested there are a couple of things where I might not have got it right and I take those on board and I'll consider them very carefully, so thank you. But we've come into this cold compared to most parties. As you know I was sitting on PC1 until just over a week ago, so we're coming to terms with what all this means and we want to make sure that our decision is the best that can be done for the environment. If there is no scope for us to consider the risk scorecard in this case, what is your view on us either hearing the evidence or not hearing the evidence in relation to making a decision on 293?

MS EDWARDS:

Your Honour, my submission is that you need to hear the evidence in order to make a decision regarding scope anyway and I think that hearing the evidence would also help in terms of making a decision on section 293 and the issue of how – whether this is suitable for going through a section 293 process. So in my submission I do – and I support what my friend said for the council, I do think that the Court really needs to hear all of the evidence first.

THE COURT: COMMISSIONER HODGES

That's fine thank you, I just wanted to get your views on that and just one comment, I didn't understand the MFE to be saying Overseer cannot be used for comparative reduction purposes, it says you mustn't use those absolute numbers but if all the baseline factors are the same, surely if there's a 20% reduction required through a risk scorecard, couldn't that be the same of an Overseer reduction of 20%?

MS EDWARDS:

Commissioner, my understanding of the issue in that regard is of course there is the dairy pathway relies on a reduction to 75th percentile fixed number that's in a plan, so in that sense my submission would be that that part of it is an absolutely reduction. In respect of the 20% reduction it's against a baseline from 2012 and my understanding of when I've talked with the experts about what that science advisory panel report actually says, is it depends on how much farm system change you need to implement to make that 20% reduction against something you were doing many years ago and the greater the amount of farm practice change to achieve that reduction, then the less confidence you can have that the Overseer number is accurately showing a 20%. So my understanding has been if you don't need to make that many changes within your farm system, then you can have reasonable confidence in light of the latest report that's come out, that you're going to be achieving a 20% reduction but when there's a greater range of farm practice change, you can't have the same confidence.

1500

In saying that I'm paraphrasing how I understand and what I've interpreted that report to say. Dr le Miere would be a good expert to ask exactly that question of, as I imagine Professor Horne and other witnesses for the council.

THE COURT: COMMISSIONER HODGES

Thank you, you've actually hit on a very important point, is that we've had a lot of information thrown at us based on what reports say, but we haven't had the chance to test those and I've certainly got quite a lot of questions on all of those

things, so that's one of the things we have to consider in our decision. Thank you very much indeed, thank you your Honour.

THE COURT: JUDGE SEMPLE

Thank you. All right thank you Ms Edwards.

MS ONGLEY:

Sorry to jump up again your Honour, but I just wanted to say one more thing before you adjourn because I have been thinking about Commissioner Edmonds' question about the discretionary pathway. As Fish and Game have withdrawn its consequential relief, their discretionary pathway is still within the bookends because the decisions version opened for discretionary pathway and the Fish and Game relief sought it to be closed back up again, so of course between those bookends is a scope for that. So I just wanted to –

THE COURT: COMMISSIONER EDMONDS

But in terms of the policy that's going to inform the application of the discretionary activity –

MS ONGLEY:

You want to see that in black and white Commissioner?

THE COURT: COMMISSIONER EDMONDS

Well I do but the question is where is the scope for that coming from because it's one thing to say there's a rule that provides for a discretionary activity, it's another thing that you can amend the RPS and some regional plan provisions.

MS ONGLEY:

Yes well I will be submitting that those high level provisions shouldn't be amended and I think that gets back to the *Dunedin City Council* but I haven't prepared submissions on that. I understand what you're saying now.

THE COURT: COMMISSIONER EDMONDS

Well I think something was said about that to be fair in the material that we were sent about the higher order policy provisions.

MS ONGLEY:

Yes, that's Mr Anderson.

THE COURT: COMMISSIONER EDMONDS

And the RPS might've been particularly mentioned but I think chapter 14 was also mentioned and the rule as changing rules is applying, you know, how far up can you go in terms of policy, if you've only got scope in terms of your rule.

MR ANDERSON:

So that is the submission that was made which is that if you made a submission on a lower provision in the hierarchy you can't use that to drive change in the policy. So a submission that you should recalibrate the table that talks about nitrogen loss, is that can't drive a policy change to bring in a risk management because that's what the *Dunedin City Council* decision held among other things and so that's an important part of determining scope. If the submissions that are relied on are in relation to the table, recalibrating the table, changing the policy 5.8 as a consequence of that isn't available because there's a submission for lowering the –

THE COURT: COMMISSIONER EDMONDS

Okay, well that's for that but in terms of the discretionary activity and the policy changes, it might be a slightly different point I'm not sure but you're on to it are you and we'll hear in due course?

MS ONGLEY:

I am, I will address it in submissions or attempt to at least.

MS JOHNSTON:

If I may Ma'am, I just have a point of clarification because there's been a bit of discussion about the council relying on the consequential relief, as I read the

comments and the provisions filed in September, we actually rely on Fish and Game's primary submission at 8.1 and 8.1 is referenced through those provisions and that is the requirement to reject the proposed changes in plan change 2 with the exception of changes to Table 14.2. So that's the deletion of the alternative pathways which we say is at issue through the appeal. The consequential relief is at 8.2 and that isn't cited in the regional council provisions.

The passage that my friends have relied on in their memorandum refers to the evidence of Ms Foster, where she talks about the breadth of the appeal and she does so not in the narrow way that my friends have put in the memo, but in the way where she refers to the request to delete or to reject plan change 2, along consequential relief and in their totality that's brought, it was never the submission that they were relying or council was relying on consequential relief alone.

THE COURT: COMMISSIONER EDMONDS

And that's not reflected necessarily in your comments on the side or have I just not read them carefully enough?

MS JOHNSTON:

No it does refer to 8.1 Commissioner, yes. Mr Sinclair is going to check for us this afternoon but as I understand it 8.2 hasn't been explicitly referenced in those. Consequential relief is still open to the Court on the basis of that notice of appeal, in my view it's not constrained necessarily by the provisions as filed but certainly the indication there was 8.1 which I can give you the page reference of that. That's volume 1, tab 4 and it's page 101.0033.

THE COURT: COMMISSIONER EDMONDS

Sorry where did you say again, I think I'm looking in the wrong place?

MS JOHNSTON:

It's volume 1, it's title "Appeal documents and pleadings".

THE COURT: COMMISSIONER EDMONDS

Yes I have that.

MS JOHNSTON:

It's tab 4, and it's paragraph 8 and it says: "Fish and Game seeks the following relief", and then it's across two subparagraphs 8.1 and 8.2."

THE COURT: COMMISSIONER EDMONDS

Oh or as otherwise consequential.

MS JOHNSTON:

Yes.

THE COURT: COMMISSIONER EDMONDS

Is that the point I missed, is that what you're saying?

MS JOHNSTON:

Yes and our primary position is that the scope is found in 8.1. I also take the point of my friend for Horticulture New Zealand that there is the ability for the Court to exercise some powers around consequential relief regardless in my view but that's a matter we could close on but I just wanted to correct that for the purposes of today.

THE COURT: COMMISSIONER EDMONDS

Well look that's helpful, the more we can get this out there the better really, thank you.

THE COURT: JUDGE SEMPLE

All right, anything else before we take what will be possibly a shortish afternoon tea adjournment. I'm conscious of Commissioner's Hodges need to get on the road in order to join us tomorrow and indeed is joining us tomorrow. So we will take an adjournment now and the registrar will advise you when we are ready to come back and we will give you some indication of where we think we're at.

COURT ADJOURNS: 3.07 PM

COURT RESUMES: 3.24 PM

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – EVIDENCE TO BE HEARD (15:24:08)

COURT ADJOURNS: 3.31 PM

5

COURT RESUMES ON TUESDAY 21 NOVEMBER 2023 AT 10.02 AM

LEGAL DISCUSSION – HOUSEKEEPING

MS JOHNSTON CALLS

ELIZABETH EMMA DALY (AFFIRMED)

1005

Q. Good morning, Dr Daly.

A. Good morning.

Q. Your full name is Elizabeth Emma Daly?

A. It is.

Q. And you are the General Manager Strategy Regulation and Science at the regional council?

A. I am.

Q. You prepared a statement of evidence dated 6 October 2023?

A. Yes.

Q. You prepared a statement of reply evidence dated 13 November 2023?

A. I did.

Q. Are there any corrections you wish to make to those briefs of evidence?

A. No, it's fine.

Q. And you will confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. I will ask you proceed to read your summary statement and then remain to answer any questions from the Court and my friends.

A. Thank you.

WITNESS READS SUMMARY STATEMENT

A. "Morena, my full name is Elizabeth Emma Daly. I am currently employed as the Group Manager Strategy Regulation and Science at the Manawatū-Whānganui Regional Council Horizons. I have been in that position since July this year. Prior to that, I held the position as Science Manager at Horizons. In my role as Group Manager I am responsible for the oversight of Horizons' science programme including the state of environment monitoring, policy development, monitoring and

evaluation work including in relation to the One Plan and the National Policy Statement for Freshwater Management 2020, as well as the regulatory functions in relation to the processing and monitoring of resource consents. I was not involved in the council level hearing for PC2 but as part of my current role I now have oversight of Plan Change 2. It is my understanding that Plan Change 2 was designed to be an interim measure to address implementation issues with the One Plan. Those issues arose due to progressive updates to Overseer and the static nature of Table 14.2 leading to the difficulty of consenting intensive farming land uses under the policy and rule framework which was not fit for purpose. The PC2 process has resulted in the generation of a risk assessment tool. The risk assessment tool generates an assessed risk profile for nitrogen leaching based on the nature of the activity to be consented, pastoral or commercial vegetable growing, and the biophysical characteristics of the area in which it will occur. In turn, the proposed accompanying rule framework requires reduction of diffuse discharge risk to specified levels. I understand that the risk assessment tool would operate as an alternative consent pathway to the Overseer-based cumulative nitrogen leaching maximums in Table 14.2. In parallel to Plan Change 2, Overseer has been on its own journey which resulted from the Overseer Whole Model Peer Review Report and the government's advice in response which was that regional councils should look to use a range of regulatory options rather than relying solely on Overseer values as absolute numbers. I understand that although validation work completed by Overseer has provided more confidence in the model, MFE advice remains unchanged regarding its use in a regulatory framework. Throughout the planning of PC2, Horizons sought ongoing engagement with iwi and hapū. These discussions helped shaped PC2. It is my understanding iwi were of the opinion that water quality must be regulated and notwithstanding the interim nature of PC2 water quality must not decline. An overview of the engagement with iwi leading into notification of Plan Change 2 was attached to the evidence of Dr **Pete** (**spelling** 10:08:58) for the council level hearing in 2020 which I have also attached to my evidence. Horizons is conscious of its vital relationship with tāngata whenua. In this

case, I do not consider that Horizons has failed to meet its statutory consultation obligations. In addition to work on Plan Change 2, I note that Horizons is required to publicly notify a freshwater planning instrument to give effect to the NPS-FM. The Oranga Wai work programme is ongoing with Horizons and its policy and science teams seeking to actively involve iwi and hapū in freshwater management and decision making processes. Freshwater values and visions and the regional interpretation of Te Mana o te Wai are being examined as a part of that process. The underlying freshwater rule framework is also being reassessed as part of that process. PC2 seeks to address the challenges which have emerged with implementation of intensive farming land use provisions of the One Plan over recent years. It is important for Horizons to be able to provide certainty for plan users, tāngata whenua and the community through effective and consistent regulation. These same drivers for the plan change remain in 2023. Plan Change 2 is not the full solution for achieving water quality targets in the region. It seeks to contribute to water quality improvement as a step on the way to that goal. Its purpose is to enable Horizons to regulate intensive land uses through improving on farm management practices towards improved water quality."

1010

CROSS-EXAMINATION: MS ONGLEY

Q. Morena, Dr Daly. I would like to commence by asking you whether you are familiar with the concept of the natural capital and the approach of the One Plan which allocates nitrogen allowances based on the LUC or land use capability, are you familiar with that and the rationale that was developed around that?

A. I am at a very high level, but not in detail.

Q. And so have you read the Environment Court's decision on the One Plan in 2012, the water quality component of that?

A. In 2012? I probably –

Q. Which developed that approach?

A. So skimmed, but not in detail, no.

Q. That's fine. Now your evidence says that Horizons ceased consenting those applicants that did not meet Table 14.2 following the declaration proceedings in 2017?

A. Could you take me to where that is in my evidence, is that okay?

Q. Paragraph 56.

WITNESS REFERRED TO STATEMENT OF EVIDENCE

Q. So it says there: "At the time of the council hearing on PC2 in 2020, Horizons had effectively not consented IFLU since declaration proceedings in 2017, the exception were the IFLU activities which complied with the cumulative nitrogen leaching maximums in Table 14.2"?

A. Yes.

Q. And do you know how many consents were granted following those declaration proceedings in 2017 for applications that actually met Table 14.2?

A. No.

Q. So the sensitivity of the values in Table 14.2 to changes in Overseer versions were investigated following the declaration proceedings in 2017, as I understand it, and I'm not sure if it's Mr or Dr Hanley was involved in that?

A. I believe that to be true.

Q. Mhm. Now, I have a document here, I have some documents I'd wish to put to this evidence that aren't in the bundle because I haven't managed to get all of them into the electronic bundle, so I'd like to hand you a document which was the resolution to expand the scope of PC2 of 26 February 2019 which you refer to at paragraph 61 of your evidence?

WITNESS REFERRED TO MINUTETS OF HORIZONS REGIONAL COUNCIL MEETING DATED 26 FEBRUARY 2019

Q. So, if we go to page 3, so initially Plan Change 2 was going to update Table 14.2 to the One Plan was my understanding and in this resolution at (c), so paragraph (c): "The council agrees to proceed towards notification of a plan change that will include both an update to Table 14.2 in the One Plan and changes to associated rules and policies with the intent of providing a realistic consenting pathway aligned to the RPS," or

Regional Policy Statement, so that was, that was when it was decided to widen the scope of Plan Change 2?

1015

A. I was not involved at this time, but looking at the – what you have provided, then yes.

Q. All right, okay. And I wanted to point to (e) as well: "Notes that's the chair has written to the Minister for the Environment and offered ongoing engagement with the Minister and his officials a the plan changes are progressed."

MS ONGLEY:

So would – can I produce this with consent as it is a council resolution, I think the witness is not familiar with it, but it is –

THE COURT: JUDGE SEMPLE

I think, I mean, it is referenced in her evidence, so I can't imagine there is difficulty.

MS JOHNSTON:

No difficulty. It is a matter of public record, Ma'am.

THE COURT: JUDGE SEMPLE

Yes, thank you.

EXHIBIT 14 PRODUCED – MINUTES OF HORIZONS REGIONAL COUNCIL MEETING DATED 26 FEBRUARY 2019

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. I know you weren't fully involved at this time, it was Dr Pete, but you have also attached to your evidence as attachment A the Ministry for the Environment's opinion that also followed the declaration proceedings and I want to take you to that at 201.0033, please.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. And this is attachment – in attachment A to your evidence, so is it your understanding that this opinion followed engagement that had occurred between Horizons, Environmental Defence Society and Fish and Game regarding the implementation of the One Plan following the declaration proceedings?

A. It is.

Q. I will just wait for the Court to get a copy of that.

A. Sorry, there was, I believe, after some additional engagement as well, but yeah.

Q. Yes.

A. Yeah.

Q. All right, so if we go to this page 201.0033, the opinion was authored by Dr Claire Kirman of Ellis Gould and Amelia Linzey from Beca and you will see above the heading there "Workshop on 18 October" the words: "In our view a key constraint to any consenting pathway remains the lack of catchment specific data by which an applicant can consider the potential effects of a single farm operation within the context of wider catchment dynamics."

A. Sorry, can you just direct me to exactly where that is?

Q. Yes, you will see the heading "Workshop on 18 October"?

A. Yes.

Q. It is immediately above that?

A. Thank you.

Q. So that talks about the need for, shall we call it, catchment accounting so that an individual consent applicant can consider potential effects of a single farm and you're aware of that issue, no doubt?

A. Yes.

Q. Can you provide an update on where Horizons is at with that catchment accounting?

A. So some of the challenges that we have in this space is the accuracy of information and the availability of information, so the modelling is one of the ways that we manage and deal with this. So in terms of absolute farm specific data across whole catchments, that is something that is not easily available to us.

Q. And with regards to an individual applicant obtaining data for to trying to assess what the effect might be in a sub-catchments or a catchment, you're still working on that sort of accounting framework to assist individual applicants?

A. Can you ask that again, sorry?

Q. It's difficult for an individual applicant to assess what effects they are having at a sub-catchments or catchment scale because you need to understand the cumulative effects and what else is going on in that sub-catchment and catchment?

A. Yeah.

Q. And so are you still working on providing that sort of information to assist that sort of analysis?

A. I think it is fair to say that that work is ongoing and I think that those questions might be best directed to Ms Foster around it.

1020

Q. Ms Foster, right, thank you. If we can turn over a few pages to 201.0053. Now, at – the conclusions actually commence at 0052, but paragraph 8.4 of the MFE, I'll call it the MFE opinion, has a summary and it says: "The amendments proposed would lead to greater consistency and approach between the RPS and regional plan in the management of water quality of lakes and rivers in the region. This approach is likely to result in environmental outcomes sought in the RPS being delivered over a more extended timeframe but will allow existing activities to transition to better management practices for managing N leaching that meets the maximums or were that is not possible even over the long-term transition to other land uses." And then it says: "There would be some existing activities that would still not be capable of obtaining consent but that is in line with the RPS policy 5.8." And so that opinion didn't recommend amending RPS policy 5.8, is that your understanding?

A. Ah, again, I'm not a planning expert and I feel that questions on the amendments of policies would be best directed to Ms Foster.

Q. All right, no, that is fine. I will just ask you a general question then. This phrase "workable pathways" is in a lot of the evidence for Horizons Regional Council and when your witnesses talk about a policy

barrier for consenting farms, is it your opinion that all intensive land use activities in the targeted zones should be provided with consents, is that what is meant by “workable pathway”?

A. So I think that the intent is not that all intensive farming land uses should necessarily be able to get consent, but that there is a pathway that enables most but not all to gain consent and I think that that is one of the challenges that has been identified through this process is that the operative version of the One Plan does not have that and I think that Horizons and farming communities have been operating in a state of flux for quite some time and that it's really important that a pathway is found through that, so that consenting and consent monitoring can be well implemented and Horizons can implement its plan.

Q. Well, we will come back to whether Horizons can implement its plan or not, but just going back to this MFE advice, for farms that cannot make Table 14.2 within the timeframe set out in the existing One Plan, you could provide a pathway, couldn't you, that longer timeframes for those where having to make major investment could be discussed with applicants and that could be under a discretionary activity pathway or is that again a matter for Ms Foster?

A. Again, a matter for Ms Foster.

1025

Q. Right. So in your rebuttal evidence, you have helpfully provided the consultation package that was a precursor to the section 32 and the notification of Plan Change 2 and I wanted to take you to a few of those documents. Firstly, could you please go and this is your rebuttal to 201.0109. So this, this was part of the consultation that occurred with iwi and hapū and it's your attachment B, now if we look under the heading obviously is “What is the intent of Plan Change 2” and then half way down the page it has in italics: “Ensure policies and rules effectively deliver on the One Plan objectives for surface water quality.” Now, bullet point 3 there is: “Clear and practicable criteria to determine whether a consent can be issued including direction on when consent cannot be granted, ie, on the basis of overall environmental impact.” At that time that was to be done under a discretionary activity pathway, wasn’t it?

A. Ah, this, yes, I think so.

Q. Right. So then I want to move through to 201.011 which is attachment D and again this is part of the iwi consultation package. And under the heading "Nutrient management plan change" it says: "We're making good progress towards our first set of changes to the nutrient management framework. This is a discreet set of proposed changes that include, point 1, recalibrating Table 14.2, et cetera, point 2, changes in policies and objectives to provide a viable pathway for intensive land users to apply for consent if they cannot meet the table values." And then if we go through the attachments to that, that were provided to those consulted on 201.0115. There was a change proposed at that time to policy 5.8 and you will see there that under (ii)(a) it was proposed: "That transitional provisions would be established in the regional plan to provide exceptions" – and this is to the Table 14.2 values effectively – "where high levels of investment are required to achieve the values or persons wishing to convert to an alternative non-intensive farming land use require appropriate timeframes to achieve this." And then if we can go over a couple of pages to 201.0120, policy 14.6. That also provides exceptions to the CNLM and it has good management practices referred to at (ba)(i) and then it says: "And either high levels of investment are required or the applicant wishes to convert." So GMPs were at that time set alongside these other two criteria it seems, high levels of investment would be required to achieve the maximum or the applicant wishing to convert. Now, you may not be familiar with this, but what I'm wanting to put to you is that when consultation occurred with Ngāti Raukawa at the workshop on the 15th of June, Ngāti Raukawa expressed discomfort with these draft provisions and the wording changes and that is in your evidence. But then if we move on to what happened next, if we can go to 201.0127.

1030

That is a letter to Dennis Emery from Ngāti – to at Ngāti Kauwhata 18 June 2019 and it says: "Summary of changes. Bullet point 1, update the Table 14.2. Bullet point 2, a pathway outside of this nitrogen loss table has been created for the applicants to apply for consent. The pathway gives applicants a choice to either apply for short-term consent

if they wish to transition to a non-intensive land use or a longer-term consent if they use good management practice plus alternative mitigations and demonstrate the best practicable option." So it appears that this is when the BPO became more prominent in the proposals from council?

A. Could you just, sorry, take me back to the page we were on prior to the letter?

Q. We were on 201.0120?

A. Thank you.

Q. And perhaps we can, if we want to do a direct comparison, we can go to – between that policy that I have referred you to and the next iteration of it, we can go to 201.0139. And so at (d) there it says: "Provide for exceptions to (a)" – which is the CNLM – "where, one, good management practices are implemented along with additional innovations and measures or, two, continue for no longer than five years in order to enable the transition to an alternative land use." And then it goes on to talk about the best practicable option further and at this time if I can also take you please to 201.0145. At that point, if you look at the final column there under "control discretion", it's been deleted: "The extent of non-compliance with the CNLM item has been deleted," so that is no longer something that you would look at, rather good management practices have been added in (b). And I put it to you that although you did consult with iwi, that didn't really respond to their concerns because it went further away from the One Plan cumulative nitrogen leaching maximum creating more uncertainty than the previous version?

A. So I think, again, I have to say that I was not involved at this time and I am – have not had anything to do with drafting the provisions at that time, and that the questions around that are probably best directed to our planning expert.

Q. Right, thank you. Now, you have met with Mr Tūroa from Ngāti Turanga?

A. I have.

Q. And I understand that you are seeking to improve the practices of council engaging with iwi going forward and he has asked me to ask you that you now understand, don't you, that Ngāti Turanga, although it is a hapū of

Ngāti Raukawa, has affiliations with many other iwi and other hapū and wishes to be consulted directly like other hapū such as Ngāti Kauwhata and Ngāti Whakatere, and I understand that you are accepting that going forward?

1035

A. Across the region we are working in general to work at a more place-based approach, so working a lot more with hapū and engaging directly with them rather than with the iwi statutory authorities.

Q. Thank you, because Mr Tūroa has concerns that the consultation with Ngāti Raukawa the council to better understand the values held by Ngāti Turanga.

A. So I think that it's important there to clarify that what we are doing moving forward had not necessarily been the practice previously in the past and there have been some really important learnings from Plan Change 2 around the way that we engage. Throughout the process, we were engaging with the understanding that Rūnanga o Raukawa was representing Ngāti Turanga and received correspondence from them up until, I think, possibly quite early 2020 but I can probably check that for you that that was the case. I want to make it really clear that despite that being the case, that does not mean that, you know, there can be kind of two truths in that, that one entity can speak on behalf of a number of entities and that doesn't mean that that Ngāti Turanga can't also speak and engage on their own behalf, so I want to make that clear. But it is certainly something that throughout PC2 has been a learning and something that council has moved to improve on through the Oranga Wai processes.

Q. Thank you. Now I just want to turn briefly to the government advice that is dealt with in your evidence at your paragraph 27 and at paragraph 56 actually. At paragraph 56 you say: "Since the government's Overseer advice, the consenting of IFLU that meets Table 14.2 has now stalled as well."

A. That is what I say.

Q. Now that – if we can go to exhibit 13, which is in the bundle behind you.

A. Could you tell me exactly where sorry?

Q. There should be something labelled “exhibits” and it would be in volume 2 of that.

A. There's two volume 3s.

Q. Try the second volume 3.

A. Can you give me the tab number. Could it be 13 maybe?

Q. Yes, it’s volume 3, tab 13, yes. And can you go to 302.0716 please. So that’s the heading “using Overseer FM and resource consent processing”, and then if we go to 302.0717, under “assessing resource consent applications”, “Counsels are legally required to continue to process resource consent applications in a way that promotes the objects and policies of the plans irrespective of the matters raised by the review report and where a regional plan requires Overseer FMBUs this remains a legal requirement.” So first of all did you consider that a part of the advice?

A. Yes I think to be clear, when we say that consenting has stalled, I think to be clear if we were to receive a consent we would process that consent through the plan that we have available to us. We are not receiving consents at this time.

1040

Q. So is your interpretation of the advice that you do not need to enforce a plan that requires farms to be consented according to an Overseer tool?

A. So Horizons is in a tricky position where we have been since the beginning of this process, in a bit of quandary I suppose where enforcement is quite complex. So the reason that people are not able to become compliant is because of some well known and well documented challenges with the plan that have led us to PC2, it’s the reason that we’re here. Horizons is working really hard actually to address those issues through the plan change and I think it’s kind of fair to say that, you know, there's been a number of things proposed there including a risk assessment tool and even that doesn’t get us quite there, it’s council’s position that there needs to be an alternate, we need a resolution to this, we need to be able to implement a plan but at the moment we’re in a very difficult situation where people are non-compliant or, you know, not able to be compliant because of our plan in some ways. So it is a really difficult situation for a regional council to be in.

Q. Has Horizons received advice that about ways that it can continue to implement its plan and not use an Overseer number on a consent issued but use other controls on the consent and here I refer to 302.0718 in the second paragraph there: “Input based controls may help reduce adverse effects, they range from very simple to sophisticated. A simple input control may be a maximum stocking rate or in fertiliser application rate. More sophisticated input controls et cetera.” Has the council considered continuing with consenting with the applicant providing an Overseer file for the purpose of the consent and then different ways of controlling that consent, for example through the use of input controls?

A. I can't off the top of my head or if we've had any specific advice around that but I think it’s kind of important to be quite clear that through PC2 we have been looking at a range of options that could allow consenting to continue and that one of the challenges that we have is that people with the current state of flux are not necessarily applying for consent.

Q. Can I take you to exhibit 8 please, which may be in the other volume. Just let me know when you’ve got that.

A. Yes.

Q. So my reading of that and apologies it’s quite small writing but this is the recent advice and it’s dated 13.11.23 and that screenshot is taken from the Horizons Regional Council website and it talks about the findings of the Overseer peer review report and it goes down to talk about what it means for the regional council, it’s an integral of the regulatory approach in the One Plan and then it goes down to talk about MFE will be producing council guidelines et cetera and then it says: “Horizons will continue to administer its regional plan, the One Plan and gives advice to existing consent holders.” It doesn’t provide much of an expectation that non-regulated IFLUs should continue to apply for consents and is that because Horizons doesn’t think they should have to?

1045

A. I think to be clear it is not that Horizons doesn’t think they should have to, it is that there is currently a difficult consenting pathway. People could apply currently but there remains like quite a state of flux for applicants. It’s not so much that we necessarily don't want people to apply or don't

think that people should have to apply but that through that process it's challenging and there's not a lot of certainty for those people.

Q. Okay, if we go to the bottom of this document it says that Horizons is seeking meetings with the government on the implications, and this is the implications for plan change 2 and is working with other regional councils that have plan changes that use Overseer currently underway. Did Horizons, in its discussions with government sought clarification on what the government meant when it said you shouldn't use Overseer as an absolute number?

A. I haven't had any, personally, discussions with government on that, however – so probably it's not fair for me to comment specifically on that.

Q. In your evidence at paragraph 27 though, you do refer to the government guidance and your understanding of what it means.

A. So I can provide you with my understanding but I have not been involved in conversations with government.

Q. Okay, well perhaps you can provide me with your understanding.

A. My understanding is that absolute numbers from Overseer are not appropriate to use in a regulatory framework.

Q. Such as in a consent gateway that delineates a controlled activity from a discretionary activity?

A. Or a compliance space, yes.

Q. Because they're quite different, I'm going to make submissions that they're quite different, conditions on consents is quite different from the gateway issue but do you think the absolute number means that you can't use them for either a gateway or –

A. I think again that's possibly a planning question for Ms Foster.

Q. All right, thank you. Now a couple more things, I wanted to ask you some questions around when Horizons became aware that the government was preparing its own risk index tool because you have received correspondence from Mr Teal of Fish and Game that that was a game changer for Fish and Game going down this pathway of a nitrogen risk assessment tool. So you're aware of Mr Teal's position on that, aren't you?

A. I am.

Q. Now at what point did Horizons become aware that government was preparing its own risk index tool I think it's called?

A. I really can't answer that with any certainty, I became aware of that tool in my role as science manager, it was probably in – I couldn't give you an exact date on that. I can talk to the role that we have played in that and the engagement that we've had with MFE around that, but I couldn't give you an absolute date with any certainty.

1050

Q. All right, I would like to give you a document that may assist and this is a government document but it outlines around when the government started looking at this. I seek to produce this through – unless counsel are happy for it to go in by consent, I'll seek to introduce it through one of my witnesses Ma'am. So there was a group set up called the Expert Advisory Group or the EAG?

A. Mhm.

Q. And the members of that group are listed on the front page, perhaps most notably Mr Willis who has been for Federated Farmers involved in the conferencing here on the risk assessment tool for Horizons. Now if we can go to the table at the back please on page 8. At this point in time, which was 6 May 2021, the EAG were considering the risk index approach against several other approaches including input controls, status quo, fixing Overseer et cetera and they were looking at the materiality of the panels and that's the science advisory panel's concerns. Was Horizons aware of that process?

A. I can't speak to whether Horizons was aware of that process, I was not aware of that process and I am not aware whether Horizons was aware of that process, if that makes sense.

Q. Yes. And then this group provided recommendations in June 2021 and you would have a similar answer that you weren't aware whether you were aware?

A. Well I am aware of whether I was aware or not but I'm not aware of Horizons. Without seeing that document and knowing what it was. Do you have it?

Q. Well I do have it here.

A. I can be clear if I have a look at it.

Q. What I do have, and I should clarify this, is just the summary from it, so it's not the full document. It's recommendations of the EAG on the use of Overseer during 2021 and I should clarify to the Court that this is the summary page from it but it may jog Dr Daly's memory and then on – so subparagraph 5 of the summary of recommendations: "Immediately investigates a risk based tool, risk index for property scale management. This investigation should include the continued use of Overseer's user interface and input data files and subject to sensibility, sensitivity and uncertainty analysis to ensure that the output can be used to justify land use practices and contribute appropriately toward quality outcomes."

A. I can say that I have not seen this report, however, at the time that this was put out, I was also not involved in the PC2 process. So I can't speak to whether anybody else at Horizons has ever seen this.

1055

Q. Well can you just provide the Court then with, in your earlier capacity as science manager, your understanding of this process.

A. The PC2 process?

Q. No the government process on formulating a risk index or the recommendations around that.

A. So in terms of the risk index tool and what I'm aware of is that the MFE is developing a risk index tool. There have been some engagements with the Horizons science team on that which have been sort of presentations as to where they are at and what they thinking sort of is. It's been reasonably high level and we've had staff members attend those, I think there might've been two presentations in the hope that it would be informative as part of our Oranga Wai process, thinking forward for that. There was, I think it's fair to say, not enough to detail in those presentations for them to be especially informative to help us kind of through that part of the next round of thinking in that it remained fairly high level. I know that this risk index tool has been imminent for quite some time now but we've still yet to see it and I know that the sector in general and I know this from my role currently, is really keen to see a test version of that or the user guidance or kind of the general information that sits

around that but we have yet to have any of that released to us. So we're looking forward to seeing what MFE has in that space but currently everyone feels a little in the dark about it.

Q. You do have a copy of the MFE slide deck though because that's on the internet.

A. That's publicly available, yeah. That was I think a presentation that people attended, so it was people speaking through that presentation.

Q. All right, you don't need to go to that but that's at exhibit 5 in the bundle. So you can't tell me when Horizons started talking to MFE about the MFE risk index tool?

A. Probably I could go back and look for a calendar invitation around when we were invited to that public or that sort of regional council presentation that I think is reflective of the slide deck which is available online but in terms of to my knowledge Horizons' conversations have been more a receiving information from MFE rather than providing a two-way conversation to my knowledge.

Q. No that's fine because the issues for Fish and Game is that we all launched on this path with the Horizons risk assessment tool and it seems from June 2021 the government was receiving with a risk index tool, so I'm not talking about the absolute perfect information, do you know even the year in which or the quarter in which Horizons understood that the government was doing its own tool?

A. So I remember when I personally heard that the government was doing its own tool and I remember commenting to a colleague that PC2 must be on the right track because there was a risk index tool for PC2 as well. So whether I was very late to the party or not.

Q. And so when was that that you remember you becoming aware?

A. It would have to be in 2021 and probably or maybe early 2022. I honestly – I can remember standing in an office, as the science manager, I became the science manager in 2021 so it was after that time.

Q. And do you know why the workshop group getting together on plan change 2 wasn't told about that?

A. Wasn't told about?

Q. That the government was doing a risk index tool.

A. From Horizons or from MFE?

Q. From Horizons.

A. Well I think that once we were aware of it, that would have been information that was passed to them or not. I have no idea sorry, I can't comment on that.

1100

Q. Now just finally, just a question around Oranga Wai, I have another exhibit. This is from the internet, Horizons' website printed out, Sunday the 19th of November and I'll wait for you to get a copy. And this is part of the consultation with Oranga Wai which is Horizons' freshwater plan change process.

A. Mhm.

Q. And does this look relatively familiar or reasonably familiar to you from the website?

A. It does. It's printed slightly differently but yes I'm aware of this work.

Q. Yes and on page 3 the key didn't transpose so I've printed that out separately on the last page there. Blue is meets target and where there is green small reduction required, orange moderate reduction required, red, large reduction required. So it's your typical traffic light system. There on page 1 the red contaminant must reduce between 50% and 100% in this subzone, orange contaminant must reduce between 20% and 50% and green up to 20%. So when we look at the map, there are going to be some very significant reductions required under Oranga Wai, aren't there?

A. There will under the provisional targets.

Q. Yes and you're consulting with the community on water quality targets as well but those water quality targets will have to meet compulsory values such as the value of the ecosystem health.

A. They will, however, for periphyton which is here, nitrogen for periphyton, to control periphyton growth in rivers, these targets are currently set above the bottom line.

Q. Yes, that's in the One Plan at the moment for some and DLP.

A. And so for this round of engagement, my understanding is and this would be a question maybe for Ms Patterson if the Court chooses, but my

understanding and it would be worth double checking with her, is that currently the targets for periphyton are sitting closer to a B band than a C band and I believe that C band is national bottom line. So these current provisional targets are more stringent.

Q. Right, okay. Now with the LCU natural capital approach and you may or may not be able to answer this question, had a plan or a signal to plan for the future for the community on how targets were going to be met in catchments that required very significant reductions, do you understand that it provided a signal for the future as well as the actual controls on IFLU in the One Plan or is that –

A. I'm not sure I quite understand your question, are you able to rephrase it a little bit please.

Q. Yes, I will rephrase it, I'll just say does Horizons have a plan on how it is going to achieve the significant reductions required, particularly in the red zones which will potentially require more than best management practices, good management practices?

A. So I think kind of the best way to answer this, it's something that we're working through as part of the Oranga Wai process. So we're working through the national objectives framework and consulting with communities on the way through that. So we've done some work around visions and environmental outcomes, we've gone back out with provisional targets and what it might take in terms of best management practice to get there and we're checking back in, you know, it's an iterative process, so we sort of go back and ask: "Does this feel about right?" I don't think that we're at the stage where we have necessarily looked at all of the options as to how we're going to get to necessarily those provisional targets or otherwise.

1105

Q. Have you considered whether putting dual consenting pathways in PC2, one of which is the existing natural capital, LUC approach and the other, and I'm not talking about the risk index now, say it's the reduction approach, the specified reductions approach, have you considered that that will be confusing and sending messages to the community about

what might be required in the future, because they're two quite different approaches?

A. So I think that that's probably a question best directed at Ms Foster. So in general I think that those are two quite separate processes. We're attempting at the moment to get ourselves to an operative plan that we can effectively work under and the Oranga Wai is like a separate process which will revisit all of that. So whether there's confusion or anything that crosses between those two is a planning question for Ms Foster.

CROSS-EXAMINATION: MS WRITE

Q. Good morning Dr Daly, I act for Mr Day, just to give you some context from where I will be coming from. The first group of questions I want to ask you about just relate back to those drivers for plan change 2 that you've already covered right at the start of questions with Ms Ongley. So you've talked about this with Ms Ongley as I've said and so I'm hoping sort of capturing this correctly for you but am I correct in your mind if I say that at a high level there were two drivers for plan change 2 and the first of that was one Table 14.2 was out of sync with the estimates that were being generated by the current version of Overseer and the second was that the policy framework was framed in a really narrow way, so it was really difficult for farms that couldn't meet Table 14.2 to get through, is that –

A. I think that's pretty fair, yeah.

Q. And so thinking about the first issue, the recalibration Table 14.2, Dr Hanley's recalibration work means that Table 14.2 isn't out of sync with the current of Overseer anymore?

A. That's my understanding.

Q. And so turning to the second issue, the policy framework issue, so the level of proposition, understanding that there is a bit of dispute between the parties about the specific words, but if you have a discretionary activity pathway and you open up the policy framework to allow an assessment on the merits, as opposed to focusing in on those two very narrow situations in the operative version, that addresses that second issue, doesn't it?

A. That sounds about right, yeah.

Q. So in combination Table 14.2 and that discretionary activity pathway, that wider policy framework, that creates a workable framework in the sense that all existing intensive farms will have a genuine opportunity to apply for consent?

A. If the policy framework and the table are able to operate in that way, then absolutely, yeah.

Q. And in some of your answers to Ms Ongley just before, you emphasised that the current situation is creating a lot of uncertainty for existing farmers and some of Mr Day's colleagues for example.

A. Mmm.

Q. And so it's fair to say that a policy framework that had a, you know, recalibrated Table 14.2 in that, brought a discretionary pathway so that genuine opportunity to apply for consent, that would help to provide that certainty for people, that they could apply for consent and have an opportunity to get grant of consent?

A. I believe that to be the case, yes, so if there's a pathway through that allows most people to be able to find a way through, then absolutely.

Q. And it's your understanding that Table 14.2 is achievable by most farms if the recalibrated version of Table 14.2 is achievable by most existing intensive land uses?

1110

A. That's the advice that I have had. It's probably a question better posed to the expert.

Q. So it's advice from Professor Horne, but you'd accept Professor Horne's advice?

A. I absolutely would accept his advice, yes.

Q. Now I've just got a shift in topic, I've just got a couple of questions on the risk matrix and MFE's risk matrix and council's risk matrix and in response to a question from Mr Ongley in relation to MFE's risk matrix, you said that council is keen to see a test version of the risk matrix but you haven't had that yet, is that correct?

A. Yeah, all councils are really keen to see what that's going to look like.

Q. And presumably that's so that you can have a look, get a feel for it, test it, interrogate it, those sorts of things?

A. Yes.

Q. So you haven't released a test version of Horizons' matrix to other people to test and interrogate though, have you?

A. So I think that the risk assessment tool was developed with a number of the parties that are present today and so they've all had a contribution to it but to my knowledge we haven't released it publicly.

RE-EXAMINATION: MS JOHNSTON

Q. I just wanted to take you Dr Daly, to the exhibit that my friend tabled with you, it's the Overseer Expert Advisory Group meeting minutes and she referred you there to a list of the attendees. Could you review that list and advise the Court whether the regional council was represented.

A. Horizons Regional Council was not represented.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. One of the things with plan changes that precede another plan change, as in this case, is that any outcomes of this case could be overturned by the future plan change and my reason for making these points is that farmers could make decisions on farm management practices to reduce contaminants by a certain amount in this plan change which maybe achievable from their personal points of view and then find in five years' time that they've got to do much more that meant if they done that now they'd have made different decisions. So these are very important issues in terms of equity and trying to make the right decisions. So I've got a couple of questions, recognising that our decision is only on plan change 2, I'd like to understand the options being considered for the next plan change in broad terms. I'm not expecting you to say this is what we're going to do, because I know that's not possible but first of all I'd just like to start with a clarification, in my first involvement with the One Plan several years ago I was unable to understand if there was any linkage between nitrogen leaching rates and water quality in the environment. Can you tell me whether there is any linkage or is it purely on land use

capability without any expectation that the water quality targets would be met?

A. Sorry can you go through that question again.

Q. Sorry it was a little bit long. Is there – if the Table 14.2 limits are met in all cases would that meet the water quality targets in the One Plan?

1115

A. So I am probably in fairness not the best person to ask that question to. Ms Patterson may be able to provide a better answer to that than myself, but I think the answer to that is probably no.

Q. Okay, thank you. An issue that is out there for me is the definition of "most farms" and that different experts have put their view on it and I think it ranges between 60% and 80%, I'd like to understand if the regional council has any corporate position, for want of a better word, on what "most farms" actually means?

A. Not to my knowledge.

Q. In terms of the next plan change, is it intended to have an allocation policy that will get to this issue of what individual farms have to do to collectively ensure that the water quality targets are met?

A. So could you explain what you mean by an "allocation policy"?

Q. Well, if we work on the basis that nitrogen has to be reduced by 50% across the catchment, for example, across the whole catchment, does the – it comes back to the accounting policy that Ms Ongley talked about. Does the council expect to use Overseer in that, for example? Does the council expect it to be purely on a land use classification basis? Does it expect it to be on a sector reduction basis? Has the council given any consideration to those kind of issues? Not saying which one it is going to be, but are they options that the council is looking at?

A. So I don't know that we are far enough down that path to be quite there, but that may be a question – Ms Foster is also quite involved in the Oranga Wai plan change and that may be a question that she or Ms Patterson may be able to answer.

Q. Okay, I understand I think it's from Mr Day's evidence that there was a public meeting where the council indicated that it was expecting to me water quality targets by 2055, is that correct?

A. So I think that needs to be probably provided with a little bit of context. One of the things that NPS-FM requires us to do is to set timeframes around when water quality targets might be achieved. I think there was some indication and guidance that ideally that would be within a generation, so I think that that is kind of looking at that and is testing it. I don't think that those are necessarily when targets will be met. We are still waiting to hear back from our community and look at the feasibility of what those might actually – those timeframes might actually be.

Q. Okay, no, that sounds good, thank you, because I am very much aware that in the Waikato they are talking about a 80 year timeframe.

A. Yes.

Q. And do you see Table 14.2 or something similar being part of the next plan change or is that something I should put to Ms Foster as well?

A. It's probably something for Ms Foster, but I want to make it really clear that we are not at the stage in the Oranga Wai plan change where we have evaluated all of the options as to what might actually end up in the final plan.

Q. And I don't expect you would have, but I would expect you to know what the options you are going to consider and so that's why I am asking you these questions.

A. Yeah.

Q. Has the council considered the option of using both Overseer and the risk assessment tool in some kind of combination? As with all of these cases, there is no obvious answer, otherwise we wouldn't be here, so is that something the council has considered?

A. For the Oranga Wai plan change or?

Q. No, for PC2?

A. PC2, ah, I'd have to review the documents to say that and you know I think that currently there's, rather than using those necessarily both together, they're sort of two alternative pathways, Table 14.2 being left there so that if improvements to Overseer were made and the MFE advice changed, potentially it could be used in a different way again.

Q. Thank you. No, that's all my questions, thank you very much indeed. Thank you, your Honour.

1120

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. No, I don't think I have questions but I am just working across two sets of documents, so I am just going to check my original set for any margin notes that I had. I suspect that this might be a question for Ms Foster as well, but it follows on from this – the question that Commissioner Hodges asked you and also the questions that Ms Ongley asked you about this – about "most farms". I too was interested in that and I'm just interested to understand the strategic position, I guess, behind that as a driver which it sounds like it's. The expectation is that most farms would be able, can you just explain the background as best you understand that? Not necessarily what the number is, but why is that a starting assumption?

A. That's a really good question and I think I will probably defer mostly to Ms Foster on that. But I guess in terms of a strategic approach is that I don't think the plan is looking to ensure consent for all parties. There will be cases where it is not appropriate for consent to be granted and so most but not all is a, I suppose, a way of capturing, capturing that.

Q. And is that based on an understanding that shutting these farms down will have detrimental impacts for food supply and for – I mean, I take it that that's the –

A. Yeah, so –

Q. – that that's the basis for it, ultimately, is that there is an understanding that those farms, that there should have been some sort of opportunity for those farms to be assessed and the expectation that a number of them, whether it is most or whatever the number is, but an expectation that at least some of them would be able to get a consent. That if there wasn't an expectation, if you couldn't meet Table 14.2 that's it, you were shut down, is that a –

A. Yeah.

Q. – is that a sort of fair assessment –

A. Yeah, so there's –

Q. – of where things were at?

A. Absolutely, and economic and social impact –

Q. Yes.

A. – of, of the consenting structure and I think we heard yesterday, you know, that shutting down all of the non-consented farms would be – like, it's a fairly significant effect, so –

Q. Yes.

A. – yeah, things to consider.

Q. All right, so then in relation to the questions that were asked of you from Ms Wright, if you have a discretionary activity status or existing activities that don't meet Table 14.2 recalibrated, so the table is recalibrated, you still don't get through the drafting gate there, and you defer if you, if you apply for consent in relation to that you defer to a discretionary pathway, would that not allow for those matters of economic and social impacts to be taken into account?

A. So I think problem specifically for Ms Foster to kind of cover the ins and outs of that.

Q. Yes.

A. But what council is looking for is a way of being able to implement the plan effectively.

Q. Yes, yes.

A. And what that looks like I think we are quite open to, providing it provides some certainty and workability.

Q. Yes and is it your understanding and again this is probably for other witnesses, but is it your understanding that at the moment the difficulties and the reason that people don't apply if they don't meet Table 14.2 is that they immediately get to the policies that say you have – effectively, you have to meet Table 14.2, so there's – so you're stuck in a loop?

A. I think it is, yeah, it is a bit circular, that sort of policy framework. So I would say yes, that is probably a huge reason people are not applying.

Q. Thank you.

1125

THE COURT: COMMISSIONER HODGES

Your Honour, there is just one point if you don't mind. I don't have a great understanding of the Port Otago decision but I understand it's been one of the

outcomes of that is that you should provide as much certainty in the plan rather than leave it of consenting phases and this issue of “most farms” comes very much into that, because it could be down to who interprets that and you’ve also got the issue of the NPS-FM coming up which when you’ve got degraded waterways can you actually grant any further consents to put more in that’s then – that could contribute to the ongoing degradation? So those are the sort of issues that we may wish to discuss with the Ms Foster, so I just put them on the table now so that she can start to think about them. I am sure she is already doing that, but anyway, just –

THE COURT: JUDGE SEMPLE

She might have a full notebook from the number of questions.

THE COURT: COMMISSIONER HODGES

So no questions, but just trying to indicate something that is exercising our minds, basically.

WITNESS:

Thank you.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

COURT ADJOURNS: 11.26 AM

COURT RESUMES: 11.47 AM

THE COURT: JUDGE SEMPLE ADDRESSES MS JOHNSTON (11:48:20) – **WHETHER MS PATTERSON TO BE CALLED**

MS BUXEDA CALLS

ELLERY TAPPIN (SWORN)

Q. Would you like to confirm that your full name is Ellery Tappin?

A. That's correct.

Q. And did you prepare evidence-in-chief dated 13th of October as contained in appendix C to Ms (inaudible 11:51:06)'s evidence?

A. I did.

Q. And do you confirm that your evidence is true and correct to the best of your knowledge and believe?

A. I do.

Q. I'm just going to take you through a few questions before I leave you to answer questions from the panel. I believe that my friends have no questions for Mr Tappin. In your evidence you talk about the large proportion of MG's green vegetables which are sourced from the Horizons region, I take you specifically to paragraph 16 of your evidence, where you deal with that and you note that restricting supply of green vegetables from a significant region such as Horowhenua would have a significant impact. Could you just elaborate on that please?

A. Sure, I guess I look at it from a sort of a big picture perspective and the role in which Horizons plays in the production of green vegetables in New Zealand. Market Gardeners Limited, the company that I'm here representing the company I work for is a grower owned co-operative. So we have a network of growers and markets the depth and breadth of the country, so to provide some context around that, we deal with around about 47% of the entire green vegetable production in New Zealand and we source 31% of those green vegetables from the Horizons region. So it is a significant volume and it plays a significant role in lots of different ways in terms of the way the market works. It provides – it's linked to pricing and price certainty. I guess it crosses over into affordability, it

provides continuity of supply and I think while the industry is quite complex, there is a depth and breadth of growers of green vegetables throughout New Zealand. We need all of those parts working together collectively to (a) provide access of fresh healthy produce to everyday Kiwis, to have that continuity of supply when things like weather events happen, we need all of those parts working together to maintain affordability for Kiwis. I think the point I really want to make is that green vegetables, we're not talking about a luxury item, we're talking about everyday item, something that Kiwis eat every day, it's important, it's something that we need to produce inside New Zealand, it's not easily imported. In some cases you just simply couldn't import those products. So it's important from an industry perspective that areas such as Horizons are given certainty and are protected and are viewed within the context of the importance of green vegetables in a national context.

Q. And just one follow up to that comment, you noted that food security, especially in situations of extreme weather events is really important.

A. Yes.

Q. I note that you deal with this at paragraph 18, could you just elaborate on the role that Horizons plays and played in extreme weather events in New Zealand's food security?

A. Yeah sure, I mean horticulture is inherently volatile and weather plays a significant role and the ebb and flows, supply and demand of vegetables, I guess wearing my sustainability hat at Market Gardeners, it's obvious that, you know, those weather events are becoming more frequent and more intense and we certainly as a business have to plan around that to make sure that we have continuity of supply and it goes back to that point that I was making before about all parts of the industry working together or regions working together making sure that we can fill those supply gaps when such events do happen. It's not something, you know, vegetable production is not something that somebody in a different region can pick up at the drop of a hat. So taking a significant volume out of the market such as Horizons region would really have a detrimental effect on I guess that risk mitigation factor. I think, you know, a case in point would be if you reflect back to the, you know, those floods earlier in the year, the

early part of the year, the impact that that had in the Pukekohe region which is another significant vegetable growing region in New Zealand. I mean it's difficult to imagine what the supply situation would be without the likes of Horizons filling those supply gaps throughout the country and it is, while that region – while the growing regions primarily focus on that part of the country as their main source of supply, in situations like this they do actually extend the depth and the breadth of the country to make sure those supply gaps are filled.

1155

CROSS-EXAMINATION: – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I'm just going to ask you a couple of questions and you may not be able to answer them but you're the first of the witnesses, so I'm going to ask the questions anyway.

A. No problem.

Q. I was interested to understand as part of the co-operative, the extent to which – well first of all do you have a sense of how many of your co-operative members are growing in an unconsented situation?

A. No I wouldn't have a sense of that level. I mean we as a business have certain checks and measures that we have in place with our growers to make sure they meet sort of standards, things like NZ Gap, things like social practice add on, we have our own responsible sourcing policy which outlines our expectations around it. They have to manage their business in accordance with local laws, so to that degree we advise them of our expectations but I wouldn't sorry be able to give you a definitive number on the number without consents.

Q. And I guess that flows into another question of mine around the extent to which as a co-operative this issue of, you know, effectively having

potentially unconsented activities occurring has been identified as a risk for MG as a business or as a co-operative?

A. Yeah, it is, it is. I mean compliance generally we've identified as quite a significant risk and I mean I know today we're talking about Horizons but, you know, every region is grappling with the compliance side of their business. I mean, you know, again taking that big picture approach with horticulture generally, I think it's not always well understood the way that horticulture hangs together. While we have an ISTI 80/20 rule in terms of large commercial growers, but we're actually made up of a significant number of smaller growers, Ma and Pa, like literally Ma and Pa growing, so compliance generally is a real challenge for them. So to sort of elaborate further on your question, I think a risk that we see in relation to the compliance is the uncertainty factor and so walk a mile in the shoes in a grower who has maybe a small holding, 20 hectares or fewer, you know, without sort of having some sort of certainty or a pathway from which they can make decisions, it's really difficult for them to take a long-term view. It's difficult, and they do have other options. I mean their land can be used for multiple purposes and that's a risk for us as a co-operative, we need supply, we need to feed New Zealanders, you know, take that role very seriously but when growers are kind of grappling with their future, the long-term decision making that they want to make, whether they invest the capital, they need certainty and I think that feeds into this issue that we're all grappling with here today.

1200

Q. I noted that as part of the evidence that your evidence is appended to, there was a letter from the then Minister for the Environment in relation to the National Policy Statement on Freshwater Management. I don't know if you have got familiarity with that?

A. I don't sorry, no, that's not something I'm familiar with.

Q. That's all right, I was just interested to understand the extent to which the industry had been pushing for commercial growing to, you know, to be identified as something that – and I wondered if you had any information about that, but that's absolutely fine if you're not aware of that.

A. No, sorry, I mean, we – yeah.

Q. No, that's fine. All right, thank you, I don't have any other questions for you, thank you.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

LEGAL DISCUSSION – CALLING MS PATTERSON NEXT (12:00:52)

MS JOHNSTON CALLS

MAREE ELLEN PATTERSON (AFFIRMED)

Q. Good morning, Ms Patterson, you thought you were off the hook, so the adrenaline will be back in the body, I am sure. We will take it nice and easy. Your full name is Maree Ellen Patterson?

A. It is.

Q. And you are currently employed as the Senior Environmental Water Quality at the regional council?

A. I am.

Q. You prepared a statement of evidence for these proceedings dated 6 October 2023?

A. I did.

Q. And you also prepared the statement of reply Commissioner Hodges just referred to dated 13 November 2023?

A. I did.

Q. Do you have any corrections you wish to make to those statements?

A. No.

Q. And will you confirm your evidence is true and correct to the best of your belief and knowledge?

A. I do.

MS JOHNSTON:

Ms Patterson did prepare a summary statement, but perhaps given the particular issue that we're going to traverse, we go straight to questions. I understand there is no questions from my friends.

EXAMINATION CONTINUES: MS JOHNSTON

Q. Ms Patterson, you would have heard the question from Commissioner Hodges earlier which I think that we should let him put, but I understand that it relates to the relationship between Table 14.2 and water quality in real terms.

A. Mhm.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning, Ms Patterson, I assume it's still morning – oh, no, it is just into the afternoon. I am sorry to have given you a bit of a rough ride in terms of letting you off the hook initially. It is quite an important issue and Mr Tappin highlighted that in terms of the need for certainty for growers and farmers and regulators and one of the things that is exercising my mind is that if a reduction target of 20% is set in this plan change, and then in the next plan change they have got to do another 30% to achieve the limits, it is best to know about the total picture now rather than in the future. I know that's not possible, but if you can give me some indication of your best assessment of what kind of additional reductions might be required to achieve the limits, do you – are you able to answer that or to give me some idea?

A. Yes. If I can take you to my rebuttal evidence?

Q. Yes, please.

WITNESS REFERRED TO WITNESS REFERS TO STATEMENT IN REPLY DATED 6 OCTOBER 2023

A. I'll just find the reference for you. It's in 201 and from – on page 201.0336, at paragraph 9.

Q. Mhm.

A. I use the Upper Manawatū monitoring site, Manawatū at Hopelands is an example to show that Table 14.2 alone would never have achieved the water quality targets in Schedule E of the One Plan.

Q. Yes.

A. So if you look at Table 1 there, we have the measured load of SIN which 786.5 – sorry, tonnes per year, I didn't put that in the table there. The target SIN load to meet the One Plan Schedule E target is 364.3 tonnes per year. The point source contribution of that load is 24.15 tonnes per year and the diffuse source load is 762 tonnes per year. At paragraph 10, the contribution of the dairy footprint as Dr Roygard and I had modelled at the time was estimated to be about 262.7 tonnes or around one third of the measured load. And all of the IFLU in the catchment were estimated to be around 34% of the measured load. So the non-dairy intensive farming land use has contributed approximately 1%. Now, that

measured SIN load is more than double the target load. And so where we get to is a point where 16% of the land area is in intensive farming land uses and it is contributing 34% of the load. If we reduce those to the Table 14.2 numbers, Dr Roygard and I modelled that to be about a 12% reduction with an 11% intensification of that footprint in terms of expansion of that footprint and so even if we removed all of that IFLU land use, we wouldn't be achieving the target of Schedule E in the One Plan because it's more than 50% reduction that we are required, are required to get to.

Q. And that's why I asked the question originally, because I thought that might be the case and I had read your evidence and I picked it up for this – for the Hopelands catchment.

A. Mhm.

Q. How representative is that of other areas of degraded water quality?

A. It would be similar in the Mangatainoka catchment. It's quite considerably higher than its target and that's in that kind of red area in the, in the exhibit that was presented from our Oranga Wai engagement around targets and reductions to meet targets. In the Coastal Rangitikei catchment –

Q. Sorry ,which one was that?

A. The Coastal Rangitikei.

Q. Oh, yes.

A. Which is Rang 4A to 4D, that catchment was included in the plan, it was meeting its One Plan targets for SIN. It was included in the plan because there was the ability for access to water, so intensification of the existing footprint and so we wanted to try and manage that, not just the expansion, because the expansion is covered by the conversion rules in the plan. And so in that catchment, although it was meeting its targets, intensification of the existing footprint could occur and the modelling by Dr Roygard and myself saw an increase in SIN in that catchment with the implementation of Table 14.2.

Q. Okay, so just going to those numbers, if you're achieving a 12% target now, that presents difficulties in achieving the 20% reduction target to start off with, doesn't it?

A. That's a 12% reduction in river.

Q. Oh, in river.

A. Yes, yes.

Q. Okay.

A. Sorry.

Q. So they match in that case roughly.

A. Yeah, so that's making a reduction from farm and that's translating that into an in river target, in river outcome which is a 12% outcome.

Q. Okay, but in certain catchments they're going to have to do an awful lot more than just achieve the Table 14.2 or a 20% reduction?

A. That is the case as current – as the targets are currently proposed for in that engagement round, yes, and even in Schedule E we would have to do more to meet that, those targets.

Q. And is that information available for the whole region on a sub-catchment or catchment basis?

A. So the Oranga Wai engagement has the load reductions required on the region, for the whole region on a sub-catchment basis.

Q. Good.

A. For the proposed targets for chlorophyl A, so periphyton biomass in rivers, where do we need to get nitrogen and phosphorous to in terms of the load reduction to give effect to those to the best of our knowledge with the models that we have available.

Q. Okay, that's very helpful. So when making decisions on Plan Change 2, farmers will have access to that information and so will have the best available information to make the right decisions, is that correct?

A. That is publicly available information and there have been a number of road shows across the region to present this information to the public as well, from where we're at, at this current point in time.

Q. Thank you, that's very helpful indeed. Thank you very much.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

LEGAL DISCUSSION – (12:10:02)

1210

THE COURT: COMMISSIONER HODGES

You Honour, one thing I'd just like to say here is that I'm very familiar with what happened in the Waikato but most members of the Court aren't, so I think we just need to be a little bit careful because they are different cases. My mind is still swimming from PC1, so getting onto PC2 it's swimming anymore now but I think we just have to be fair to the other members of the court.

WITNESS EXCUSED

MS JOHNSTON CALLS

JAMES ANTHONY HANLEY (AFFIRMED)

Q. Your full name is James Anthony Hanley?

A. Yes.

Q. And you prepared a statement of evidence in these proceedings dated 6 October 2023.

A. Yes, I did.

Q. You did not prepare reply evidence in this proceeding, just for the benefit of the Court.

A. No I didn't prepare.

Q. And are there any corrections you wish to make to your statement of evidence today?

A. No.

Q. You confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes it is.

Q. Do you have a summary of your evidence to read to the Court today. I'll ask you to read that brief and then remain available for questions from my friends in the Court.

WITNESS READS STATEMENT OF EVIDENCE

"My name James Anthony Hanley and I'm a senior lecturer at Massey University. I teach undergraduate, post graduate and professional development courses in soil fertility and nutrient management agriculture, including the use of the Overseer software model. My evidence details the approach taken by the Horizons Regional Council with the recalibration of Table 14.2, cumulative nitrogen leaching maximums to reflect changes in Overseer. My role in the PC2 has been and remains solely related to the recalibration of Table 14.2. Overseer version changes have resulted in substantial increases in the modelled nitrogen losses from farms. These changes are primarily due to changes in the model values, not changes in actual leaches, as the main farm information used in the model is close to the original information. The One Plan Table 14.2 CNLM values which were derived in earlier version Overseer relied on lower estimated nitrogen losses. These Overseer

model changes therefore made it harder for farms to comply with the Table 14.2 values, meaning that recalibration of these CNLM values was needed to achieve a similar outcome as was intended when the table was originally created. I therefore worked to recalibrate Table 14.2 CNLM values using up-to-date versions of Overseer, using the methodology described in my evidence. The recalibration of Table 14.2 that I undertook closely followed methods used to create the original CNLM values, therefore in my opinion that the methodology was sound and fit for purpose. Since the decision version of PC2 was released, ongoing updates of Overseer have caused further changes to the Table 14.2 values, which need to be reflected in the final version of Table 14.2. As Overseer will continue to be updated as time goes on, I support an approach that allows the Table 14.2 CNLM values and the transmission coefficients to be updated with changes in Overseer. This reference file approach can relied upon to address my recommendation that further Overseer value changes should be accounted for over time. However, I note that this approach should use the same methodology and farm information used to provide the original and recalibrated CNLM values. There was little concern raised in relation to the recalibration of Table 14.2 in the council hearing process, with most submitters accepting the need for and benefit of the recalibration."

CROSS-EXAMINATION: MS ONGLEY

Q. I just have a couple of rather non-technical questions actually but I see that you've updated Table 14.2 was updated from, is this right, version 5.2.6 to version 6.2.3, you looked at that change and then since then it's 6.5.2 and there was quite a significant change, if you can call it that, between 5.2.6 and 6.2.3 compared to the subsequent analysis.

A. That's right, yes.

Q. And any model that undergoes continuous improvement is going to have some changes like this in terms of the outputs it produces, you would expect that wouldn't you?

A. I'm not a modelling expert but when you've got models that model relatively complex biophysical processes like nitro leaching, they involve

multiple different inputs, soil information, climate information and management information and so if any one of those components gets updated, it can just be the soils information that's brought in from SMap could be updated, so that your algorithms and the model may not change, and that will cause differences in nitrogen leaching, so in this case a model like Overseer, we'd expect to see changes. If the information like soils or climate have been updated, that will feed through as well into changing those leaching values.

Q. Is it my understanding that as a model goes through this continuous improvement process and particularly obviously in relation to Overseer that we are less likely to see in the future, do you think, the significant changes that occurred between the versions 5 to the version 6?

A. Yeah, I'm not expert on the model side of it, my expertise is more round the use of Overseer but yes so it's hard to say in terms of my experience. There has been a lot of development that's on gone on with Overseer and so the hope would be that it would get to the stage that the amount of change wouldn't be to the same extent that we saw earlier on. It was also the long time period between the earlier version 5 and 6.2.3 would've impacted that change as well. Because there's different components to the model, including as I mentioned, the soils information, that information currently the way it's modelled, if you bring in more detailed soils information that alone could change the Overseer estimate, even without Overseer changing. So it's very difficult for any specific farm to say what the future nitrogen leaching model value to be without knowing how some of that detailed farm information might change over time, in terms of getting more detailed information.

Q. I see, thank you, but you're comfortable with the reference file system that's been proposed?

A. Yes I am because that keeps the input information fairly constant and so that way you can tell whether the changes are due to model changes, yeah.

1220

RE-EXAMINATION: MS JOHNSTON – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon Dr Hanley, with regards to the reference file system, you haven't actually put that in your evidence have you? Is that clearly set out what the reference file system involves?

A. In my reports I've used essentially the reference file system for my reports. So I went through and developed files for each of the different LUCs and used those same files to update the results coming from Overseer. I briefly talk about in my evidence but I haven't gone into detail in my evidence about the reference file approach.

Q. I'm just aware that a reference file system was used in the Lake Rotorua catchment, are you familiar with that system?

A. I'm not familiar with the Rotorua situation but I'm familiar with the use of reference files, so keeping the farm information constant and seeing how the results vary with different versions of Overseer.

Q. My only concern is that's sort of potentially a significant issue if it's outside of the regulatory framework and you're just saying it stays outside of the regulatory framework, we have no idea how that system works and that always makes me a little bit nervous. I'm not quite sure how to proceed on this because I would like to understand it because it is potentially relevant to how the plan change works in the future. Is it possible to make some kind of description of your reference system, file system available?

A. Yes I can make it available to the regional council. I'm not clear exactly how you want that made available in terms of description because the information that I've used is provided in the reports that are appended to my evidence. So the information I used that go into those Overseer files have been provided.

Q. Okay so if I review in more detail, I've looked at them obviously but I haven't worked through the sort of the numbers in detail and you think it I do that I will be able to satisfy myself on how it works?

A. You'll be able to see that all of the information I used to model each of those different LUC values have gone into those different Overseer models.

Q. Okay, that's fine, that should be fine, so I'll have a look at that anyway. And you say that you're more an expert in the user of Overseer than the model itself.

A. Yes, that's right.

Q. You're aware that in the risk scorecard the proposal is that biophysical elements will be represented by profile available water and rainfall, are you?

A. I'm not familiar with the detail of the risk assessment tool, I haven't been involved in that part of the work.

Q. What are your views of profile of available water and rainfall as being important drivers of nitrogen leaching from farming operations?

A. They are key drivers because the amount of nitrate that moves out of the root zone is influenced by the movement of water which is strongly driven by rainfall and the profile available water influences the water holding capacity and so that increases the rate at which water moves. If you've got a soil with a low profile available water, for the same rainfall you end up moving nitrate out of the root zone more quickly. So they're both really important components of defining factors that influence nitrate leaching.

Q. Are there any other important soil characteristics that you think are particularly important or of equivalent importance shall we say?

A. Well in pastoral systems the key driver is the urine patch and that results in an excess amount of nitrate in a small area and so it floods the amount of nitrogen in that area so it tends to have a large influence on the nitrogen concentration, the available nitrogen concentration. So I would say that two of the more influential soil factors will be, well the main one is profile available water and also another key one is drainage class. So soils that are purely drained, they influence the movement of water and also the amount of other processes that lead to nitrate not leaching the root zone. So when nitrates, when there's a waterlog situation you have more denitrification which leads to more gaseous loss of nitrogen and less of that nitrogen leaches. So soil drainage class would be another important component as well profile available water.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. I was just wondering, does slope have an influence on those things that you've just been talking about?

A. Yes, slope is really important for phosphorus loss because it's mainly influenced by surface loss. For nitrate it's more the movement down the soil profile. In steeper slopes more of the water will run off the surface and less of it will go down through the soil profile, so it can have an influence that way. So you get less downward movement in steeper slopes, so that's where it could have an influence on nitrate leaching.

Q. And so Overseer, in terms of slope, how is that factored in?

A. It includes slope. I know it strongly influences phosphorus runoff in Overseer. It will have an influence on how much of the drainage water moves through drainage and how much of it moves through surface runoff. I'm not sure how well that's modelled in Overseer but it may have an influence. When you get to steeper slopes, because of the real challenge of modelling how much water goes as surface runoff and drainage, Overseer doesn't provide a drainage value at some of the steeper slopes because surface runoff is strongly influenced by rainfall intensity and that can be highly variable from year to year and even over short periods of times, so it becomes – it's one of those things that's much more difficult to model but Overseer does attempt to do that at some of the less steep slopes. So for flat, easy topography it does try to estimate how much is surface runoff and how much is drainage.

Q. So it has a cut off point, does it in terms of what you've just mentioned?

A. Oh in terms of topography?

Q. Mmm.

A. Yeah, some of the steeper slopes it won't provide a drainage value. It may still be, I'm not sure whether it uses it in the model, but in terms of what the user sees, it doesn't provide you with a drainage nitrogen concentration, even though it still models nitrogen loss.

QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL

QUESTIONS ARISING – NIL

WITNESS EXCUSED

MS JOHNSTON CALLS

HEATHER MILDRED COLLINS (SWORN)

Q. Good morning Dr Collins.

A. Good morning Ms Johnston.

Q. Your full name is Heather Mildred Collins.

A. Yes.

Q. And you prepared a statement of evidence in these proceedings dated 6 October 2023.

A. Yes.

Q. Do you have any corrections to that evidence today?

A. No I don't.

Q. And for the benefit of the Court, you'll confirm that you did not prepare any reply evidence in these proceedings?

A. No I didn't.

Q. To the best of – you'll confirm that your statement of evidence is true and correct to the best of your knowledge and belief.

A. Yes.

Q. And you do have a summary statement, it has arrived.

A. I do.

Q. So we will pass one to you and copies to the Court. I will ask you to proceed to read your summary statement and then remain for questions from my friend and the Court.

WITNESS READS STATEMENT OF EVIDENCE

A. "My name is Heather Mildred Collins. I am a self-employed community engagement facilitator and a rural social scientist. I specialise in bringing diverse groups together and undertaking social science research with farmers and with rural communities. In 2018, Manawatū-Whanganui Regional Council Horizons engaged me to identify the social impacts associated with proposed Plan Change 2 and potential strategies that may mitigate any effects of this plan change. This work explored the impact of two scenarios, status quo which was no change to Table 14.2 and PC2 recalibration of Table 14.2. I gathered data through community meetings, social gatherings, official meetings, interviews and other meetings. I then collated and analysed the information collected which is

presented in the social impact assessment attached to my evidence. In summary, the findings described in my social impact assessment are that the status quo is anticipated to decrease the well-being of farmers and commercial vegetable growers unable to obtain an IFLU consent. These farmers and commercial vegetable growers talked about the uncertainty around current operation and about their future in farming and growing. Many also described being in limbo, feeling they are caught in a situation beyond their control and uncertain what will happen next. At the council level hearing, I also considered the recalibration of Table 14.2 to account for changes in Overseer over time and the introduction of alternative consenting pathways including a discretionary and transitional change in land use pathway in terms of social costs and benefits of Plan Change 2. Further controlled activity pathways were also proposed throughout the course of the hearing, the specified nitrogen reduction pathways. After considering these proposed changes, my view was that the alternative pathways would further mitigate some of the negative social impacts on individuals and communities when compared with he status quo. The negative impact on well-being from the status quo has ongoing ripple effects. The uncertainty and stress that these unconsented farmers and growers feel is also felt by their families, their staff and their staff's families. Particularly vulnerable are the older farmers who may be unable to implement their retirement and succession strategies, exit options are uncertain. Other concerns were shared, for example, financial institutions perceiving unconsented properties to be of increased risk and potentially applying pressure to repay loans. Some expected the valuations of unconsented properties to fall, therefore decreasing equity in their businesses. Uncertainty also ripples out through the community. If farming and growing businesses reduce production or exit, this could reduce the flow of product and money into the community. In turn, impacting on business owners, their families, their staff and their families. Some commercial vegetable growing workers are worried they may lose their jobs which in turn will impact on their families and their communities, particularly for the RSE or the regional seasonal employment workers whose families back home rely on this income. Families may need to

leave the area, for example, from a loss of jobs, impacting on school roles, sports teams, community services, with the associated loss of a sense of community and support networks and on the ripples go, reaching out to societal level, potentially causing concerns about a reduction in the sustainable supply of locally grown fresh healthy food for New Zealanders. Since the decisions version of PC2 was released, the social benefits and costs of PC2 have not changed, except to the extent that the uncertainty reported on in the social impact assessment remains. The social impact assessment identify farmers and growers' concerns about the potential for ongoing court proceedings about the One Plan. The realisation of that concern through these appeals has increased the uncertainty of operation and increased negative social impacts on individuals, iwi and communities. As the appeal process continues, these negative social impacts continue and may be amplified for some. Approval of Plan Change 2 is expected to reduce the uncertainty and stress currently faced by the unconsented farmers and growers with a reduced flow-on social impacts to their communities, the region and society. Thank you."

1235

CROSS-EXAMINATION: MS WRIGHT

Q. Good morning, or good afternoon.

A. Good afternoon, yes.

Q. I've just made the same error.

A. Good afternoon.

Q. Dr Collins, I've just got some questions for you on two topics and the first relates to the impacts on social well-being from uncertainty.

A. Yeah.

Q. And I have understood your evidence correctly, haven't I, that one of the key impacts on social well-being is the uncertainty and associated stress for farmers not having a workable consenting pathway and workable in the sense that it provides all farms with a genuine opportunity to apply, is that correct?

A. I'm just going right down to make sure, not having w – so is to check, you want to –

Q. So a key social impact –

A. Is the uncertainty and stress from not having a workable consenting –

Q. A workable pathway, is that correct? That's one of the key social impacts from your perspective?

A. Yes and I use the word "uncertainty" in my evidence because that was the word that all the farmers and growers tended to use, so it was the very common theme that came through the analysis, so it's not my interpretation, these are words coming from the farmers and they also talked about the stress they feel.

Q. So Dr Hanley's recalibration work.

A. Yes.

Q. Now means that the Table 14.2 numbers line up with Overseer estimates, so that would alleviate stress for those farmers that can now meet Table 14.2, is that correct?

A. If the farmers are able to meet Table 14.2 and able to obtain an IFLU consent to enable them to have some certainty, yes, it would reduce for the farmers that could meet the revised 14.2.

Q. So for those farmers, that would help to alleviate that aspect of stress, associated with the (inaudible 12:37:42)?

A. Yes, for those individuals who could meet that, yes.

Q. And so then a discretionary activity opportunity with a policy framework that's wider, so it enables an assessment on the merits for every farmer that applies, that would help to alleviate stress for those farmers because they would know that they have the ability to put a consent application in and have it considered on merits?

A. I don't – I'm not a planner. I don't understand the ins and outs of the discretionary pathways. I can't comment on that aspect, but if that option would enable farmers or growers to obtain a consent and be able to continue operation then yes it would reduce some of the social impacts.

Q. And appreciating and you may not feel comfortable asking this – answering this question in light of your last comment, but you would have heard Dr Daly say that in her opinion Table 14.2 and a wide discretionary

pathway that allows everybody to apply for a consent and have some success on its merits is a workable framework and from your perspective, from a social well-being perspective, do you think that's a workable framework because it's giving everybody a chance to apply for consent and have that assessed on its merit?

A. Refresh me on, well, exactly what you want me to ask – answer on? Just get into a nice, condensed question?

Q. I think, I think we can leave it, it's all – it's fine, if you're feeling like –

A. Yeah, I think you're asking me about things that I don't –

Q. – it's going into the planning realm, then I'm comfortable to leave that.

A. Yeah, I'm not going to answer things in a planning realm, so yes, thank you.

Q. And I have just got a couple of questions on the social well-being impact of water quality.

A. Yes.

Q. So it is fair to say that there are impacts on social well-being from bad water quality, aren't there?

A. Social impacts on who? What, so you want me –

Q. Well, for example, if you can't swim in that river that you have always swum in, that would have an impact on your social well-being, on your sense of place, for example, or to use your words, how you live and play?

1240 CC

A. Are we talking about a perception of the water quality being declined or are we talking about an actual decline in water quality because these are slightly different and they will impact on social impacts differently.

Q. Sure, so in the type of catchments we're talking about there is degradation of water quality, they are degraded.

A. Mhm.

Q. So that's the context that my question sits in.

A. Okay, yeah.

Q. And so I'm putting to you that there can be an impact on the social wellbeing of some people, so on their ability to live and play from degraded water quality.

A. If we look at that, so what you're asking, I just want to check to make sure, so you're asking so if people can't live and play in water because the water quality has declined, then you're asking whether that is a reduction in an individual's wellbeing?

Q. Yes.

A. Yes, I would have to agree with that, yes.

Q. And you haven't considered those impacts in your evidence, have you?

A. Just thinking about how to answer that. I'm trying to think of a short answer. I think that – can I answer you based on other work I've done or do you want it specifically related to what is in the evidence of the SIA?

Q. Well my question relates to your evidence and the report that's attached to it, because that's the work you've done on plan change 2 and I'm putting to you that in that you have not looked at those social impacts of degraded water quality.

A. As part of the social impact assessment, I didn't just talk with farmers and growers, I talked with members of environmental groups, I talked with environmental organisations, environmental groups, members of the community and as part of that they discussed their – I'm trying to thing of the exact wording. I can go back to the SIA if you want me to.

Q. No I think that's fine.

A. So I guess the point I'm trying to make is that everyone has a different opinion on water quality based on how they are and what they do. So the point I'm trying to make is I didn't just talk with farmers and growers, I looked across a wide sector of the community and everyone had a different opinion. So in the compilation of this report you do something that's called a (inaudible 12:43:45) analysis. You look across at all the ideas and all the themes and you pull out the key themes that are coming out. So if I didn't write that into the SIA, that was not a key theme that came out in the work that I did, across all of the interviews that I conducted, would be the easiest way to describe it.

Q. I've just got one further questions that's come up on a different topic, that's just come up in some of the questions to other witnesses and that just relates to getting some context to we've got plan change 2 in the future plan change and how those two different processes interrelate. So would

it be fair to say that there is potential for an adverse effect on social wellbeing if a farmer is told today that they need to reduce by say 20% the nitrogen loss and then in a year's time they're told that actually they need to reduce by more? Would that have an adverse impact of social wellbeing in that sense of creating stress?

1245

A. I'm just trying to picture say an example. So this is if the farmer was told, and this is in the context of applying for a consent or is this just someone ringing him up and telling he or she that they needed to reduce by 20%?

Q. In a regulatory context.

A. Okay, so you're saying in a hypothetical example a farmer would apply for a consent and during the consent application process they would've been advised that they needed to reduce by 20%?

Q. So as is reflected in your evidence, one of the current propositions before the Court here is that there is a controlled activity pathway.

A. Mhm.

Q. So that means grant of consent is guaranteed.

A. Yes.

Q. If a farmer reduces their nitrogen loss by 20% from a baseline.

A. Yes.

Q. So that's the regulatory context and my question is if that changes, if that suddenly became 40% as an example, would that create an adverse impact on social wellbeing, would that create stress for that farmer, knowing that they had focussed on 20% and now more was going to be required of them?

A. Okay, so I'm just going to write down two points to remind myself. I think the first thing that comes to mind, if a farmer found that they were able to obtain a consent, it would reduce that uncertainty, so they'd go okay this is what I need to do and they would go ahead and make changes to be able to meet that point of 20% reduction. Then if at some point further in the future they were advised that they needed to reduce again, yes they probably would feel stressed but what's happened is, I mean these farmers and growers have been unconsented I think for six years, so there's six years of stress of this long slow burn. It's not the one-off, it's

that long slow burn. So I think anything that can reduce that I guess – I really can't answer that because I haven't asked the farmers and I don't know what they would say. So really I'll give you an honest answer, I'd have to say to you what would happen if today I said you could have it for 20% reduction but in a year's time or in two years or five years or next week you have reduce and if I'd been able to ask them that and they'd give me the answers and I'd been quite happy to share but I haven't asked them that, so I can't properly answer on their behalf.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just had a couple of additional questions and one of them relates to the question that was asked by Ms Wright around the scope of this social impact assessment and you said in your summary statement the social benefits and costs of PC2.

A. Yes.

Q. And I had a margin note just around how wide this scope of that assessment was and for the same reason that Ms Wright put to you, I noted that for example water quality impacts on the wider community hadn't been taken into account. So if you could perhaps just explain to me what the scope of the assessment was, that would be helpful.

A. Yes, now just give me a second. I actually made a note about where I would find the scope, just give me a second. Because when I heard the discussion around the scope yesterday I thought I'm going to write down what the scope and I'll just find it.

Q. A slightly different topic.

A. And I'll just find the reference for it. I actually did write it down this morning. Yes there it is, paragraph 14, just give me a moment I'll just find you the reference. So the bundle is 201.0341 and if we go into the social impact assessment which is page 14. One moment I'll just find the page number for you. Yes 201.0375 and it has stage 1 scope and context.

Then further over the page on 201.0376, I discuss the social area of influence which is on page 15 and 201.0377 I list the stakeholders who were engaged in the social impact assessment.

Q. Yes. And so as I understand it, that the question you were effectively asking is "what is the implication of the status quo remaining" –

A. Yes.

Q. – "or Table 14.2 being updated" –

A. Yes.

Q. – "and a consenting pathway being established"?

A. So when I –

Q. Or "workable" I think is the phrase that being used.

A. Yes.

Q. "A workable consenting pathway being established"?

A. Yes.

Q. So that was the comparatives, is that correct?

A. Yes. So there was, there were the two options and I printed you the options so I could always remember.

Q. Yes.

A. There was "status, no change, Table 2 and proposed Plan Change 2 which was a recalibration of Table 14.2".

Q. Yes and a consenting pathway?

A. Yeah, now I'm just going to go back and just give me a moment to refresh my memory. My understanding was when the consenting pathway was one of the mitigation strategies.

Q. Right.

A. That was identified as a way to mitigate, so when I was doing the SIA, it was A or B.

Q. Right.

A. There wasn't a consenting pathway as part of what I was discussing with members of the community and the growers.

Q. Right.

A. That was developed as an add on – not an add on, sorry, after the – I'd completed the SIA.

Q. Right and did that come from the consultation or from the discussion that you carried out with farmers and growers or was that identified as part of those discussions that that was needed or was it – were you simply advised by Horizons that that was proposed?

A. When we were having the conferencing before the – having a blank moment to think of the word I want – before the hearings, sorry, I have Long COVID and sometimes I just have absolute blank moments.

Q. That's fine.

A. And words just absolutely elude me.

Q. All right.

A. That was one of those moments. So when we were having the conferencing sessions before and I can't remember when this was, before the hearings, this alternative pathway was proposed and Ms Foster explained it to me and we discussed and with Ms Johnston as well discussed how this could be a mitigation strategy.

Q. All right.

A. And I can't – please don't ask me the timeframe because I can't remember.

Q. No, no, that's, no, no, that's all right. I understand that. And so just going into that question, yes, I think you said in answer to Ms Wright's question that if for example the community had a concern about water quality –

A. Yes.

Q. – if that had come through then it would, it would be in the report?

A. Yes.

Q. As something that was a –

A. Yes, I would have identified it.

Q. – it was an implication – right.

A. Yes.

Q. And the fact that it is not there, says that it didn't come through the discussions that you had.

A. Yes.

Q. So I was interested in that, because you say at page 201.0377.

A. Hang on, just let me find the page, yes.

Q. That environmental groups like Fish and Game, Forest and Bird, were identified as stakeholders?

A. Yes.

Q. And it surprises me, I suppose, that water quality wouldn't have been raised, for example, by those groups, but that's – you don't recollect that that was a matter that was raised at all?

A. All I can, all I can stand by is that the methods that I used, that are very sound and using thematic analysis, I would have gone through – I recorded everything, I wrote everything down and I used this method where I go through everything and look for the common themes.

Q. Right.

A. And if it had of stood out to me as a common theme, it would have been in the SIA and that's all I can say.

Q. All right.

A. I'm not saying that it wasn't mentioned by one person, but I conducted a lot of interviews, talked to lots of people, we had lots of people at the meetings. And if it had of been a key thing, I would have pulled it out.

Q. Would it be fair to say that the weighting of the groups and individuals that you spoke to was more towards those working in the industry, the dairy, growers, farmers, just looking at the list of stakeholders?

1255

A. Yes, yes.

Q. Dairy farmers, industry, industry groups?

A. So, yeah, so give an example, so there were a number of meetings that Horizons held.

Q. Yes.

A. To explain about what Plan Change 2 and they were all around the district.

Q. Yes.

A. So I went along to those meetings and I sat down the back.

Q. Right.

A. And I answer – I wrote down all the questions that the farmers and growers asked, but at that meeting were also all sorts of other people.

Q. Right.

A. All sorts of individuals could come along to these public meetings and I don't know exactly who each person was.

Q. All right, thank you. The other query that I had in relation to your evidence was just I wanted to understand whether from your perspective and I appreciate that you're not a planner.

A. Thank you, I'm not a planner.

Q. But I wanted to understand the extent to which when you were talking with farmers and growers and industry groups, whether the – whether your perception was that farmers and growers wanted certainty of whether or not they could get a consent, or whether the expectation was that if there was a consenting pathway then more likely than not they would get a consent? Because you will appreciate that having a pathway to apply for a consent doesn't necessarily mean you will get a consent granted and I wonder the extent to which that differentiation was understood when you were talking about the social, the social implications of this workable pathway?

A. So, you know, just to go back to what I mentioned before, when I was doing a social impact assessment, I wasn't asking or exploring workable pathways.

Q. Right, okay.

A. And so yeah, I guess all I was looking at was option one or option – well, not really option one or option two, but –

Q. And option one and option two were really Table 14.2 staying as it was?

A. Yes, status quo, or –

Q. Or being recalibrated?

A. – having 14.2.

Q. Okay.

A. And then through the process of the hearings and everything else then it's progressed and changed and so and I guess –

Q. Right, but when, but when – so when you reached some conclusions in here about, in your evidence about farmers having more certainty if there is a workable pathway.

A. Yes, yes.

Q. That is your assessment?

A. Yes.

Q. That is not something that you put to farmers and grower?

A. I have, I guess, in the work that I do, which is I'm based around New Zealand, I have also done other work since the SIA with farmers –

Q. Right, yes.

A. – dairy farmers, in Tararua.

Q. Yes.

A. Sheep and beef and dairy farmers and – I have forgotten what I was going to say, sorry, I just have these moments of blankness.

Q. All right, I understand that you have done other work around that. What, on what basis then –

A. Yes.

Q. – do you reach the conclusion that if there was a workable pathway available that would reduce stress? What's –

A. Ah, that's it.

Q. – what's the basis for your understanding of that? Is that if those farmers are granted a consent that will reduce stress, or if those farmers –

A. Yes, that's right.

Q. – can apply for consent, which may or may not be granted, that would reduce their stress? What were you thinking about when you made that assessment that stress would be reduced if there was a workable pathway?

A. I think there's – I've just written down the two statements – I think that there is two ways to think about it. So if you know you're going to get something, you go "yep, cool, I'm happy". If you think there's an opportunity to be able to get something, you go "yep, now I can finally get somewhere". So I think if the farmers and growers were aware that there were options, they'd go "right, cool, yep, what do we need to do". And I think, you know, that's really quite an important distinction that they're not expecting – oh, no, I shouldn't say that because I don't know, pretend I didn't say that comment.

Q. All right, I will.

A. All right, thank you, I don't have any further questions for you.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

COURT ADJOURNS: 12.59 PM

COURT RESUMES: 2.04 PM

LEGAL DISCUSSION – HOUSEKEEPING (14:07:19)

MS JOHNSTON CALLS

DAVID JOHN HORNE (SWORN)

Q. Your full name is David John Horne?

A. It is, correct.

Q. And you are a professor at Massey University in Palmerston North?

A. Correct.

Q. You prepared a statement of evidence in these proceedings dated 6 October 2023?

A. I did.

Q. And you prepared a further statement of reply evidence dated 13 November 2023?

A. Mhm.

Q. I'll have you confirm for the Court that you participated in a range of joint witness conferences between June 2022 and March 2023?

A. I did, mhm.

Q. Are there any corrections you wish to make to your evidence today, Professor Horne?

A. No.

Q. And you'll confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. I'll ask you to read your summary statement and then proceed to questions thanks Professor.

WITNESS READS STATEMENT OF EVIDENCE

A. "My name is David John Horne, I work at Massey University based in Palmerston North. I hold a PhD in soil science from Massey University. At the council meeting hearing I proposed, among other things, the following points, (1) that there was a wide ranging and effective suite of GMPs, BMPs that farmers could adopt to help them meet their CNLM values in Table 14.2. (2) However, as a pragmatic exception to Table

14.2 an alternative pathway for farmers who could not meet their CNLM would be helpful and effect for plan change 2. (3) That Overseer was fit for the purpose of helping farmers identify the GMPs, BMPs needed and (4) That Table 14.2, the alternative pathway, Overseer and GMPs, BMPs would foster the changes to farm management that are required to deliver the improvements in water quality at Table 14.2 was aiming towards.

At the time of PC2, Overseer was the most usable tool available to help regional councils develop their plans including setting limits and for farmers to demonstrate compliance with these targets. Since that time there has been a growing interest in the development of alternative tools to help achieve desired water quality outcomes, mostly because of the government's advice on Overseer following the whole panel peer review report.

Frameworks that assess risk are the most common type of tool. In my view Overseer was always a means to an end in the original PC2 which recognised that water quality was only going to improve as a consequence behaviour change by farmers which is to say the adoption of GMPs, BMPs. Given that the identification of GMPs, BMPs was the end game here so to speak, it might be argued that any alternative tool capable of doing this could be as effective and useful as Overseer. Therefore, in a series of conferences a team of farm management experts and I have developed a risk framework for use in the target catchments in the Horizons region to drive the adoption of these GMPs, BMPs. In my opinion this risk tool can provide an effective alternative pathway in PC2 which will result in the adoption of the same or similar practice changes and end loss reductions as the alternative pathway from the decisions version of PC2. This has been confirmed through analysis that I have carried out between the 20% specified nitrogen reduction pathway and the risk assessment tool.

Central to the risk assessment tool that we developed was the nitrogen risk scorecard as produced by Fonterra. The nitrogen risk scorecard

considers the risk posed by farm management and awards points according to the magnitude of this risk. The score from each of these factors is then combined to give an overall score for the farm. An overall risk rating is then given within the five bands, very high risk, high risk, medium risk, low risk and very low risk. The experts agree that farmer could be expected their farm management risk profile to within a low risk band. This was considered to robust and stringent yet still achievable for many farmers. The risk scorecard was modified slightly to reflect some local requirements.

As just stated, the risk scorecard identified the risk associated with farm management practices, however, the importance of biophysical characteristics when considering the risk of N loss from the farming activities is not recognised or accounted for, therefore the modified nitrogen risk scorecard was placed within a larger matrix which reflects the very significant influence of climate and soil type. As a result of a greater risk from biophysical factors, some farmers will need to achieve a lower risk score from their on farm practices in the scorecard, whereas other farmers with a lower risk from biophysical factors will have more flexibility to score slightly in the risk scorecard, ie make less on farm practice change to reduce the risk of nitrogen leaching.

I have considered how the alternative consenting pathway reflects natural capital. While the specified nitrogen reduction pathway does require reductions from a historical baseline, the entire rationale for that pathway and evidence for its effectiveness was how it forced farmers to meet or go close to meeting their Table 14.2 CNLMs. In other words they were never disengaged from natural capital.

1415

In relationship to the risk tool, it looks at the biophysical characteristics of the land and requires everyone to reach a low level of risk of nitrogen leaching which I would argue is the most appropriate form of natural capital to recognise here and in many ways is in keeping with the intention of the original plan. It is my opinion that as alternative method,

the use of the risk assessment tool will provide a workable consenting pathway as it is a tool that farmers can engage with and which will encourage them to adopt GMPs, BMPs required to reduce leaching losses for their farms.

In recognition of the effectiveness of this effort which in many cases will be costly and difficult to achieve, they will have the ability to access a consenting pathway and most importantly will drive the behaviour change required for the improved water quality we seek."

MS JOHNSTON ADDRESSES THE COURT: JUDGE SEMPLE (14:16:04)

EXAMINATION CONTINUES: MS JOHNSTON

Q. So that's volume 3 Professor Horne behind you, it's the one that has tab 1, it's volume 3, tab 1 and we'll start with Table 14.2A which is the pastoral matrix which you've just described and that's at page 301.0014.

A. Mhm.

Q. And you'll see that table there and you'll recognise that table Professor Horne.

A. I recognise that table, yeah.

Q. And when you describe for the Court the scorecard being reflected in a border matrix that includes profile available water and rainfall, that represents that.

A. That's correct.

Q. Is there anything you want to add to that for the Court or does that –

A. Would it be helpful if I described how we developed the risk matrix?

THE COURT: COMMISSIONER HODGES

Q. I'm reasonably familiar with that but I think if you think it would help us I think it would be good to have.

A. Okay.

EXAMINATION CONTINUES: MS JOHNSTON

Q. I just note that 301.0037 also in that document, Professor Horne, includes the schedule with the various practices and scorecard.

A. Thank you. If I – so a group of farm systems experts was convened to develop alternative, well perhaps not actually a complementary tool to Overseer, I don't think we ever saw it as being at loggerheads or, you know, completely opposed to Overseer and at that first meeting we identified the characteristics we thought that this risk tool would have and so I'm reading from paragraph 72 in my evidence that (a) it would be certain, (b) able to consistently be applied, (c) verifiable, able to be interrogated, (d) measurable, (e) able to show change in relation to a baseline, (f) evidence based and (g) accessible and I remember thinking at that moment once we developed that list that I was at that meeting, now would be a really good time to get COVID so I could go home. How were we ever going to develop a risk matrix that met all those objectives? As a scientist and I'm speaking very much as a scientist, I don't personally like risk matrices because they lack the precision of simulation models, that gentle sobbing you hear is Ms Johnston, but I think it's important that I note that because it reflects a journey that I have been on and where I have arrived with the level of confidence that I can express in the risk matrix. So I distinctly remember that first meeting. We developed this list of criteria and we were very carefully driven through that process by the facilitator. I think we recognised the importance of what we were doing then and that it might well end up in a forum like this where we would be defending it and so it had to square off with those criteria. We were in two groups. There were pastoral, intensive pastoral experts and vegetable, intensive vegetable production. And there was a great sense of relief, mostly by me, when one of the attendees there, Mr Gavin Marshall, said: "I might have just the very thing," and that was what I've been referring to the Nitrogen Risk Scorecard. And you know, the moment we opened it, all the pastoral experts thought "this is exactly what we want" and we felt very, very sorry for the vegetable people and glad that we weren't in their group. So the Nitrogen Risk Scorecard has been developed by Fonterra to identify the risk profile on dairy farms, okay.

And one of the things that most appealed to me was when – and I had – I get, I get – I suppose I had seen it on the web before but not paid a lot of attention to it, was the sense of comfort I felt given its similarity with Overseer. I could – it was immediately easy to relate to. And I point that out in my evidence as the very similar architecture or structure to these – between these two tools. So if one looks at the risk tool, Nitrogen Risk Scorecard, you see that it's divided up into six management factors and within each management factor – well, so perhaps I should list the management factors, they are stock management, nitrogen fertiliser, imported feed, cropping and cultivation, irrigation and effluent management. So they're the six –

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HAVE NITROGEN RISK SCORECARD? (14:22:21)

LEGAL DISCUSSION

EXAMINATION CONTINUES: MS JOHNSTON

Q. That is attached to Dr Dewes' evidence. Sorry, professor, I should have given you that reference.

A. No, I'm sorry, I should have made it clear that – I was playing show and tell.

Q. It is 203.1891, volume 2 book 3, tab 32.

A. Perhaps, professor, if you could direct the Court to the –

Q. Okay, page 11, well, sorry, no let's – I was talking about the six management factors, that's on – I don't know if they're labelled the same way, but if you turn over to – it's page 4 in this document, but it's – has this figure here.

THE COURT: JUDGE SEMPLE

Yes, that's the same, thank you.

EXAMINATION CONTINUES: MS JOHNSTON

A. So there are the – running down the left-hand side column there are the six management factors, okay. And if we now turn to page 11, I just show how a farm will get its nitrogen risk score, okay. And I won't go through every aspect but just perhaps the parts that make the most intuitive sense. So you will see, for example, there under 5.2.11, if a farmer for example is putting on 75 kilograms of N per hectare per year, they'd pick up a risk score of 10. If they're putting on 170 by way of contrast, just for example, they pick up a risk score of 50 and then the next one, there's a point for the timing and of application and so forth and so what you do within each of these management factors you add them up and get a score and then you fall into one of these risk bands in that nice coloured diagram there. We had available to us this risk scorecard and so my first point being that it looked and felt very much like Overseer. Very different in other ways I'm the first to admit but as I say in constructure and architecture. You can see that illustrated in the appendix to my reply evidence where I've got a diagram and on the left-hand side I'm showing Overseer and the right-hand side I've exerted parts in this document that we're currently looking at. So when one opens Overseer to –

THE COURT: COMMISSIONER HODGES ADDRESSES MS JOHNSTON (14:26:22)

EXAMINATION CONTINUES: MS JOHNSTON

Q. I can direct you to that, that's 201.0484, it's the figure in his reply evidence, section J, that's tab 7, volume 2, book 1.

A. So on the left-hand side of that appendix figure you see a screenshot from Overseer. So what one does when generating a new file in Overseer is you locate the farm and you trace out the farm boundaries and then you set about populating the different tabs and you can't see it in the diagram but the tabs going across read "climate, soil, drainage, pasture, crops, animals, structure, effluent, supplements, fertiliser and irrigation", in an almost one to one match, not quite, but very similar match with those management factors and that's not surprising. I mean just about

everyone in New Zealand working in this space has grown up with being trained on, being familiar with Overseer and, you know, all these models share a similarity or a common because there is a good way to set about modelling nitrogen losses. At the time I was also aware of a very thorough, and I mean very, very thorough comparison between the nitrogen risk scorecard and Overseer and that was commissioned by Fonterra. I have referenced. This is the AbacusBio evaluation and what they did in this was a very thorough comparison between Overseer simulations and the risk assessed by different components of the scorecard. So this is a very rigorous study and is, as I say deals with a lot of files in that and if I might just read from the conclusions, it says: "Overall the N scorecard is providing very useful feedback to farmers on their management practices. The moderate accuracy of predictions of Overseer N loss to water from the scorecard subfactors is encouraging, given that major environmental data which affects nitrogen loss to water is not included in the scorecard." So what they're referring to there is that there is no recognition of soil and climate biophysical factors which arguable for any given system are the key drivers of nitrogen leaching. So in some ways it was no small miracle that they got such good correlation between the risk scorecard and Overseer values and as I say that was for a lot of points. So what the risk scorecard does, it essentially – it operates in a very, very similar fashion to Overseer. There are kind of, if you like to think of it, two components. Firstly, you identify how much nitrogen there is accumulating in the soil profile, okay, and so an extensive sheep and beef farm not using a lot of nitrogen, not growing a lot of grass, is only – and not importing any supplements, only relatively small amounts of nitrogen are going to accumulate in the soil profile and be at risk to leaching and that's a little bit of the key point there, at risk to leaking. You take a intensive dairy farm on the other hand, highly stocked, lots of supplement use, lots of nitrogen fertiliser, lots of nitrogen is going to accumulate in the soil profile and be at risk to leaching and Overseer identifies that amount of nitrogen in the first step, okay and hence that's why you populate all those tabs telling how many animals, what their production level is, if they're on the farm or not in winter,

nitrogen fertiliser, how you manage the effluent and it then works out how much nitrogen has accumulated in the soil surface. What it does in the next step is it then works out what proportion or fraction of that nitrogen is going to leach and that will be dependent on soil and the amount of drainage and so what we recognised is, in the team of experts, is that the risk scorecard gets us halfway to an assessment tool that will be useful in plan change 2 and so what I simply did was I was thinking about how to describe this. I guess the best way is I reverse engineered out of Overseer the way it treats – so it identifies that fraction of N that's at risk to leaching and what Overseer does is it looks at how much drainage there is and the profile available water and it does that by admittedly running quite a sophisticated soil water balance and then putting that drainage through the pore space of the soil. So Overseer uses profile available water directly and so I pulled that into the risk framework. The risk tool can't compute a soil water balance admittedly but a very good proxy for that is rainfall. So the more rainfall you get then the more, all other things being equal the more drainage you will get. So rainfall is a proxy for the volume or the depth of drainage but profile available water is used directly in Overseer. So what we had there I believe was a good tool that mirrored Overseer in many ways. I don't know if now would be a good time to point out the similarities between what we did and the RIT or I wait for other questions, if that might be enough at this stage.

MS JOHNSTON ADDRESSES THE COURT (14:32:49)

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon Professor Horne.

A. Good afternoon.

Q. First of all I wanted to take you to paragraph 104 of your evidence.

A. Of my evidence?

Q. Yes and in your summary that you just read out, you confirm that you've carried out an analysis between the 20% specified nitrogen reduction pathway and the risk assessment tool, am I correct in that, and these

paragraphs of your evidence from 104 down to table 1 set out that analysis?

A. I think so, yes, mhm, mhm.

Q. Okay what I understand you've done and please correct me if I'm wrong, is you've used three generic or case study farms for each cell in the matrix and you've compared those against Overseer expected end loss reductions and they're sort of made up farms, aren't they?

1435

A. Yes they are. "Made up" is a slightly unfortunate choice of terms with all respect, they are better model or case study farms. So in anticipation of this very criticism, I did go to considerable trouble to get what I believe were very representative farms. So I had a workshop with Mr Mark Lawrence who is the lower North Island manager for Dairy New Zealand, and Mr Ian McNabb from land management team from Horizons to kind of ground proof those model farms and I then checked them off against the Fonterra database for risk score that I had yeah, mhm, but you are correct, they are not real farms in the sense that I didn't, you know, Mr Smith, you know, give you the address of these farms.

Q. Okay, no that's fine. So you've done three of those for each cell in the matrix?

A. Yes, mhm.

Q. And you have used the 2012 baseline for the analysis?

A. Correct, mhm, yes.

Q. So then if we turn to your table 1 please.

A. Yes.

Q. So you've said there for the Upper Manawatu, other Upper Manawatu, Rangitikei, West Coast Lakes and Horowhenua, you've compared the decisions version PC2 against average percentage decrease in N leaching lux that you'd expect from the risk matrix.

A. Correct. So this was remember a very approximate exercise, yeah, so…

Q. Well that's what I'm going to ask you.

A. Oh I'm sorry, excuse me.

Q. No, that's fine. So with the decisions version PC2, I understand that that was modelled on the basis of the farms using either Table 14.2 or the reduction pathway, they could choose which, do you know?

A. Do I know what sorry? What I did in my analysis?

Q. Yes, and the reason I'm asking you about this because it feeds into Dr Snelder's analysis as well. So the DVPC2 analysis used, an applicant could choose Table 14.2 or the reduction pathway.

A. Correct.

Q. But for the risk matrix column, it was just done on the basis of a risk matrix?

A. Yes. Well sorry, remember the risk matrix was informing the Overseer value for those farms, yeah. Because the problem was we have these kind of two unconventional outputs from the two tools don't we. We have a leaching flux from Overseer, kilograms of (inaudible 14:37:42) a year and on the risk tool we have a value with no real dimensions and so the challenge was, I was sort of reluctant to do this exercise I must admit because of that very problem, yeah. It is very difficult to compare them but as I pointed out in my evidence I did appreciate the need to demonstrate that the risk matrix would give a similar sort of reduction in N leaching and hence – well my argument that the risk matrix would drive similar behaviour or management changes, the similar adoption of GMPs, BMPs and that was where I wanted to rule off and I think with confidence one could say that yeah, and that could be fairly easily demonstrated but of course then the question is well will it really give us the same changes, reductions in N leaching, yeah and so that was what I set out to do in this, which I guess is what your driving at, very tentative exercise, yeah, and so it is why we went with the model farms and why we for those model farms said hey in these different catchments if the farms are conforming to the risk matrix then this is their likely Overseer leaching value. Having a likely Overseer leaching value we could then compare it with –

Q. Okay, so you can't have as much confidence in that exercise, is that correct, because you have to join quite a few dots in terms of the risk matrix aggregate score going back to the inputs, comparing that to Overseer, it's more approximate?

A. Look it would be foolhardy for me to deny it's anything other than approximate. What it is though, it's sort of what I did demonstrate and where, as I say, I would've been much more confident ruling off was it identified very similar GMPs and BMPs for adoptions, yeah, but as I said you have this problem of having two implementing values that you're trying to compare and this was maybe someone with more imagination or creativity could have come up with a better way but this was the only way I could think to do it, yeah, is set up these model farms and say if everyone is at low risk this is what they'll be leaching according to Overseer and then I was able to compare that with the PC2.

1440

Q. Thank you. Is there any issue that in the last column, if you've only done it on the basis of the risk matrix, some farms may actually choose to go down Table 14.2 because some farms on low LUC classes it may be more permissive for them to go down Table 14.2? You didn't attempt to look at that dual pathway.

A. No I didn't. I did think about that. I suppose I was of the view if they were going to meet their Table 14.2 CML then that was a good outcome, yeah, and so yeah this was a comparison. It wasn't like they could escape either pathway, yeah, mhm. So you're correct I didn't actually look at that but I did kind of think about it anyway.

Q. No that's fine, thank you. So I've finished questions on that. I just wanted to take you to some questions on the fitness for purpose assessment and I'll call it the fitness for purpose assessment in comparing Overseer to the risk assessment tool. Now first of all to be fair, when you entered into conferencing, you were never requested to do a comparison between the risk assessment tool and Overseer were you?

A. So you're talking about our risk assessment tool?

Q. Yes.

A. Between that and Overseer?

Q. Yes in terms of fitness for purpose criteria, because you were told that Overseer was effectively off the table.

A. Correct, yeah. I mean my view is that we'll always have these two alternatives. If they said that the risk assessment tool was going to be an

absolute replacement to Table 14.2, I probably wouldn't be here, yeah. It was always my understanding that we were developing an alternative that would be helpful to farmers, yeah but Table 14.2 was my understanding was always in play, yeah.

Q. I'm just wanting to ask a slightly different question.

A. I'm sorry I might not have quite picked you up there, what you were driving at.

Q. Well no you have correctly gone to Table 14.2 which uses Overseer but I wanted to sort of take a high level assessment of the Overseer tool versus the risk assessment tool.

A. Okay, yeah, so it's an interesting experience for me being here today in a way because at the original council level hearing I don't know that I was the only one defending Overseer but I was certainly the one championing the use of Overseer and if you look back at my original, I have two or three pages devoted to why I believe that it was fit for purpose, why I've always believed it was fit for purpose and it's no great credit to me but I serve on the Overseer Science Advisory Committee and have done for a number of years. So I have no doubts in my mind to the usefulness of Overseer and in part is why I guess, you know, I began maybe (inaudible 14:43:36) and some would like that, you know, with the quip about risk matrices but one of the reasons I do like this one is because of kind of the powers between it and Overseer, yeah.

Q. Okay, no that's really helpful thank you. Just to continue that discussion, can I take you to Ms Dewes' evidence because she has a table at the back of her evidence.

A. Now where would I find that sorry?

Q. It should be tab 31 of the evidence – sorry tab 32 and it's page 203.1875.

A. The table?

1445

Q. Yes. So here Dr Dewes undertakes a comparison of models and reporting tools and she has assessed Overseer. I won't ask you about the nitrogen cap, I'll just focus on the last two columns because the Horizons risk assessment tool is based on the nitrogen risk scorecard from Fonterra, isn't it?

A. Yes, that's correct, mhm.

Q. Now if we can go to the first functional ability, Dr Dewes calls it the relative risk of nitrogen leaching from the root zone. You have referred to the AbacusBio report but Dr Dewes has there 50% chance of being relative as a proxy. That is an approximate assessment of what the AbacusBio report found and I can take you to it if you want but is that your understanding?

A. I would've thought – no I'm not unhappy with that. I would have thought it's slightly higher but no, no.

Q. You would more know about the R value in models than I would.

A. Mhm.

Q. But in the AbacusBio report, sorry the R squared value, it gave an R squared value prediction value for the proportion of variance explained for Overseer N loss from the tool of 45.1% and that's at page, just for the record, it's 203.1949. What does that mean? Can you help me there, model R squared?

A. So that means that the risk scorecard in very general terms is able to predict about 45% or accounts for 45% of the variability and N risk values, yeah, so with that you'll be like, to put it crudely 45% of the (inaudible 14:47:14), yeah.

Q. And to be fair I understand and I'll ask Dr le Meire this, that Fonterra has made some adjustments to the Fonterra risk scorecard since this peer review report and of course the Horizons risk assessment tool adds the pore and the rainfall.

A. Exactly, yeah.

Q. Do we have enough information though to provide it a value or the risk assessment tool prediction of risk of nitrogen leaching from the root zone or is not for that purpose?

A. So perhaps if I go back to the framing of your question, as I kind of intimated that the NRC has an R squared value of 45% is quite striking really, you know, if you had said to me hey we're going to compare the scorecard as it stands with Overseer outputs what do you think the R squared value, I wouldn't have picked anything like 45% or 4.5 more accurately, given that it doesn't have the two key drivers here. So that

was the reason that I believe it was important to include those and so I think, you know, no we don't know what the R squared value for the risk assessment tool is but I don't think it's too much of a stretch to say with biophysical factors, pore value and rainfall, if we add that to the 50%, if you allow me a little latitude here, if we add that to the 50%, we're probably going to get up pretty close to the 75 or 80% accuracy of Overseer or an R square value.

Q. To verify that, to be fair also you'd have to do a type of study like this, wouldn't you?

A. Oh yes, that was just off the top of my head but I mean what I'm suggesting is that it's somewhat credible is it, it's not a stretch to say I'm going to turn, you know, this pigs ear into, you know, a silk purse. It's not as though the R squared is .1 and I'm arguing by putting biophysical factors in I'm going to get it up to .8.

Q. I see. So just on that first row though, I mean you have said in your evidence that Overseer is the best tool we have in New Zealand for estimating N loss below the root zone that's accessible, I'm not counting APSOM or SPASMO in there, would you agree with that?

1450

A. Yeah, I was very careful to use usable, I think, yeah because you're quite right there are other models. So models like APSOM and SPASMO are quite different, they're much more mechanistic. They don't work so well at the farm system level, so yeah, they're different sorts of models they're, you know, more for specialist, used by researchers and so forth. I mean they make an excellent job of predicting leaching losses under different kind of finely grain studies, you know, what happens if you put a urine patch out in July versus October, that type of thing, for one paddock, one soil, two years of climate data.

Q. Okay and I understand there aren't that many people around who can actually run those, so –

A. Correct, mhm.

Q. Well can we turn to the second row of Dr Dewes' comparison of models please and there she talks about verified inputs and she comments in her evidence that Overseer has the trained professionals, certified nutrient

management advisors, I think they're called and in her evidence she says that she considers that there would be superior quality and dependability with inputs with Overseer, now if we go to the last column there, compared to the risk assessment tool, she says: “Yet to be addressed”. Can you comment on what your understanding is on the current state of play?

A. I hope I'm not misrepresenting anything here but my understanding is Ms Foster has indeed addressed this, yeah.

Q. Okay, in your evidence you do say that one of the benefits is that it won't put a strain on council resources. I haven’t got the paragraph number in your evidence sorry.

A. I do say that, yeah, just as the alternative pathway may reduce stress on council resources, yeah. So that’s not unique to the risk assessment tool, yeah.

Q. So with that comment you were talking about the reduction pathways as well as the risk assessment tool?

A. Yes, yes.

Q. Well I want to challenge you on that with regards to the risk assessment tool.

A. Okay, fair enough.

Q. Because without the certified nutrient management advisors, council is going to have to audit and verify a lot of information itself, isn’t it?

A. Yes. I mean there would be nothing precluding independent people performing the risk assessment tool for farmers would there?

Q. There's nothing stopping it.

A. So you get your nutrient advisor who currently would do an Overseer file, they could just run the risk assessment tool for you.

Q. Yes, but it’s not required is it, it’s not going to be required and some say that’s a benefit.

A. Look I don't know sorry, you'd have to take that up with Ms Foster, yeah. I guess my point being there that is, and I agree with you that, you know, there does need to be verifications to make sure the inputs into the risk assessment tool are reliable and accurate and actually represent what's happening on the farm but without some layer of expertise, I imagine that

that can be managed, yeah, but, you know, farmers may choose to get someone in to perform the risk assessment tool for them, yeah.

Q. And maybe this is also for Ms Foster, but that information is going to be held confidential to council, is that your understanding? I think she's proposing that it could be shared with an expert panel but otherwise that information would be confidential to the council in terms of –

A. I'm sorry you'd have to ask Ms Foster that. I mean one point I would make and I was hoping I got the opportunity to make this, is that Dr Dewes makes an excellent point about the process a farmer goes through or land manager goes through to secure resource consent via any of these pathways. You know, it's a quite complex process and Table 14.2 Overseer, the risk assessment tool, only plays a relatively small part in that as pointed out by Dr Dewes, you know, because you have to think I need to make a change of this magnitude and often there are three or four different options in front of you and so you have to decide do I have the skills or resources to put which option in place, which is the most cost effective, will I be growing enough grass and so you're often bringing a whole range of tools together, as she points out FARMAX, you know, pasture growth models, thinking about labour availability, opportunity for investment and that type of thing and so – and I really like that point and reiterated in my evidence that, you know, so some of the different, you know, I think we're all focussing on this particular tool and forgetting that it just plays a role in a train of tools that has a quite complex process and so arguable, you know, maybe some of the small differences we're debating here, which is important, I will grant you, put in that larger context, well they need to be seen within that larger context but that was a nice point she made.

1455

Q. Well just on that point I'll come back to that. If I can take you to the top row in the column on page 203.1876, and this is can the tool be used to understand transit from N from the farm root zone to the receiving waterbody? Yeah I maybe have jumped ahead there but this is quite an important point actually because it's around the calculation of consequential outcomes for surface water quality and catchment

modelling and the ability of Overseer to predict concentration of N in the ground water leaving the root zone and loads per hectare and there is a concern that if persons don't do Overseer files at the consenting gateway, council won't be gathering enough information for catchment accounting or looking at comparisons between what's happening in the water and what's happening on farms. Would you like to comment on that in terms of is that a risk if we go to a courser tool and don't require Overseer files?

A. In some ways fair enough but they are slightly different exercises here, aren't they, that what we're here about today is about finding a way, you know, a plan change that's going to be effective in terms of driving the behaviour change, we need to see improvements in water quality. How that does and doesn't dovetail in or help Horizons in exercises in the future, what sort of weighting would you give that? It might be nice if they could go out and get that data but, you know, farmers might be thinking well if they want to know that they can go and measure it and get that information themselves, why should that be a great cost or inconvenience to us, you know, why would you build that into a plan change, yeah. So I don't dispute the point Dr Dewes is making there and I can see that it would be very useful but I suppose you'd see them as separate exercises, yeah.

Q. Has anybody thought about that though, looking at this alternative pathway/

A. Now which alternative, the risk tool?

Q. The risk tool.

A. The risk tool, no, we haven't thought about that. And I'd go back to, she is quite correct that the risk tool in the future will not give the sort of information that Overseer would provide. I guess my rejoinder is a little here so what, put it like that.

Q. Okay, got you. Now if we can go back to the 203.1875 and I want to ask you about the last row there. This is about the total farm enterprise and you have covered this to an extent in your rebuttal evidence because Dr Dewes, well she talks about two things, one is that it takes account the number of different land uses. Here she says dairy, horticulture, forestry,

dry stock and you've said I think in your rebuttal that you could do CBP and pastoral with the risk assessment tool.

A. Mhm, yeah.

Q. But you can't do a lot of different land use types like this, could you, as with Overseer in the same model? It's the last column of the last row.

A. Yeah, no we couldn't do horticultural or forestry. We don't have a risk framework to predict risks associated with those land uses, but I guess I would see those as a little bit of a subclause or related to her excellent point about retired areas, yeah.

1500

Q. Yeah.

A. So we can deal with retired areas quite easily and I thank her for pointing that out, that's something that hadn't crossed my mind, quite easily with modifiers as we have for wetlands and other types of practices and I guess we would do a similar sort of thing for horticulture and forestry, dry stock we could probably cover off in the pastoral one, but remember those aren't IFLUs and so again they would probably get – it would be a way of addressing it with a modifier. I don't think this would include a lot of farms but, I mean, she makes a valid point that we'd need to find a way to address that, but I think it can be done within the risk tool, yeah.

Q. Because she says and she gives an example actually of her Wai Kōkopu catchment project in the coastal Bay of Plenty, about how whether – if you go to a tool like this, will you be disincentivising diversification that might be required in order to reduce N leaching, because you're just focusing on pastoral or you're just focusing on CBP?

A. Mmm, that's an interesting question, I hadn't thought about that disincentivising. No, I don't believe so, I mean, I come back to the point that, you know, changing land use is, you know, a major decision and there'll be whole lots of things a farmer would be considering in making that. Granted their engagement with N leaching issues would be an important factor in there, I think that we – I think that the risk assessment tool could be modified to address that but no, that's – it's a good point to raise, yeah. We certainly would not want to do that, disincentivise land

use change, that would be important, yeah. I guess, yeah, this tool kind of was – had intensive pasture in mind, yeah.

Q. And when you talked about the retirement areas and Dr Dewes uses examples of riparian and also say if you wanted to plant our ephemerals or something like that –

A. Yes, yeah.

Q. – and retire areas of your land, I think that you've said that you're working with Ms Foster to include that?

A. Yeah. One of the advantages of the risk assessment tool as I see it is that it's very nimble or fleet-footed in terms of we can include practices, add them on as quite easily or simply, whereas with Overseer, to its great credit, it's the type of tool that requires a lot of scientific evidence before it makes changes, plantain being a case in point that, you know, there's many, well, a good number of years of data before they made changes there and so – and that's right and proper, they, you know, they have a protocol that they want you to follow so that you produce reliable repeatable data so that they can incorporate it with confidence and know the size and scale of – so we wouldn't want to shortcut that process but, as I say, the risk framework does allow you to kind of add mitigation options as they become available to farmers, yeah.

Q. Okay, thank you. No, just finally just on this sort of comparison approach, now even for the use that there risk tool is being promoted for which is driving good management practices and best management practices, which Dr Dewes refers to as scenario testing on a farm, isn't Overseer better for doing that as well? And it would use – it could encourage things such as pole planting, we've talked about retirement, vulnerable steep slope land retirement, but there are a lot more things that you can scenario test through Overseer is my understanding, than through the six subfactors in the Scorecard?

A. I'm – much of that is correct, I think, but remember that we're dealing – well, sorry, part of that is correct in terms of the relative usefulness of the two tools. Remember, we're dealing with pasture and dairy intensive pastoral land uses, mostly dairy, and so I think the risk tool does address the major levers one might push or pull to, firstly, identify the risk profile

and then drive it down. Yeah, so I kind of lost my train of thought in your question, did I address that or not?

1505

Q. Well, my question was, is Overseer better at scenario testing?

A. Scenario testing, yes, sorry, that's where you're going and then I got sidetracked –

Q. That's all right.

A. – thinking about the different twists or aspects to that. So certainly, I mean, the risk tool doesn't do phosphorous or things like that, which Overseer does, but more scenario testing, is it better? If I was a farmer, I suppose that's an odd thing to say because I am, I initially – I, I would use Overseer because I would like the specificity of it and as I say, it's, you know, because I'm going to be making an important decision and I would be taking the output from that, knowing my particular farm and inputting it into FARMAX or something like that. But having said that, I would be anticipating talking to the neighbour next door who'd use the risk framework and come up with exactly the same result, yeah, you know, same farm, so what I'm saying, I'm going to, you know, remove – and we weren't going to buy more maize in and I'm going to stop using nitrogen and I see that that's going to reduce my N leaching by so many kilograms of (inaudible 15:06:31) there and the neighbour coming up with exactly the same or a very similar result from using the risk framework, yeah. So –

Q. And you would prefer to use Overseer?

A. That's just because of the type of person I am, yeah, and as I say, it – there is no denying that the risk framework is more coarse and so, you know, some people by definition or personality might take comfort in the fact that they're going to get a trained nutrient management advisor and who is going to do it for them, versus someone else who likes a little bit more hands-on and thinks "here's a tool I can interact with and engage with" and so what, you know, my argument has always been that there's two tools that are equally effective and people can – and use them.

Q. But Overseer does the spin-offs for – sorry to interrupt –

A. No, no, you're right.

Q. – for phosphorous and greenhouse gas as well?

A. It does, yeah.

Q. Yeah, okay.

A. And it also does nutrient budgets for you as well, you know, if we're looking at – I mean, that's how it started life as a nutrient management tool looking at phosphorous, sulphur, yeah, all, yeah.

Q. Okay. Just changing tack a bit.

A. Sure.

Q. Just a couple more questions. For this, for the catchments that are currently red, I don't know if you saw exhibit 14, no, sorry, well, I am going to give it the number exhibit 17.

A. I saw that passed around this morning, I didn't actually –

Q. I haven't numbered them yet, sorry, Ma'am, but it's the web page. This may be outside your expertise and tell me if it is, but for the red catchments we're not going to achieve between 50% and 100% reductions in N if they're required through best management practices and good management practices, are you able to comment?

A. Well, I don't know who would be able to give you a definitive answer on that, but my view is that you will not, no. Because I'm of the view, sorry if I elaborate that –

Q. No, carry on.

A. – that going beyond a 20% will be difficult to achieve. That's the thrust or basis of my argument, yeah. So it will be very difficult to run profitable systems beyond 20% reduction. So but I think the – this, this soil science agricultural community realises the challenges in front of farmers here and so at Massey, just I'm not boring you here –

Q. No.

A. – we have a large programme around what we're calling "edge of field techniques". So farmers, you can contrast that with in field techniques, so those are changes that farmer makes to their management programmes, so using less nitrogen fertiliser, maybe building a herd home or barn and as I say that kind of – I think that it will be touch to go beyond 20%, so edge of field techniques are an entirely different approach and that's where you go and you try and intercept the drainage

water before it leaves the farm and treat it and so we're looking at things like wood chip bio reactors just for example and so they are very, very effective in that they can remove or strip out large amounts of the nitrogen and so, you know, in a way one might think what's the debate here today about if you've got to reduce it by 50%, but don't lose hope. Well I'm not losing hope because I think, you know, going forward, if we anticipate that this is the ask, then we need to develop the research programmes that will deliver the management techniques and even if they are very novel or new, that will help us achieve this, yeah.

Q. Okay but we're also going to have to have some land use change, do you think?

A. Yes. Well quite possibly, yeah. I haven't kind of given that a lot of thought. As I say my area interest is leaching losses and current land uses but, yes, no land use change, yeah, I mean the prospect of that has been with us since the beginning of the plan change, hasn't it, that some farmers would not be able to meet their CNLM and even a discretionary pathway wouldn't make a lot of sense to them, so they may well end up changing land use.

Q. Okay, well that leads nicely to the last question I wish to ask you, Professor Horne, which is about the natural capital approach in Table 14.2 which is based on the LUC and you've said that the RAT has a natural capital approach in it, but it's different, isn't it?

A. It is and it isn't, I mean I was thinking probably my biggest misstep in this whole process was using PAW. I did that profile available water because of the link to Overseer and that analysis that I performed. Maybe I would've saved all this grief if at the top of my matrix I had put class 1, 2 in the first column, 3, 4 in the next one and 4 to 8 and the third column, yeah. So it's, yeah, it's very, very similar, I mean –

Q. Well can I ask you a question on that because this might help you?

A. Yeah, sure.

Q. You don't need to go there but it's in Anne-Maree Jolly's rebuttal evidence at paragraph 15 and she talks about value C class 1 and 2 land has a high natural capital in terms of production but not necessarily a low leaching vulnerability, it's more, and I think it's – sorry to orientate you,

this is in the Hoki 1A area. They're highly valuable soils but they're not necessarily low leaching, whereas you've used, haven't you, natural capital in the sense of the environmental effects of low leaching soils through the pore.

A. I have, yeah, and I'm glad you raise this point.

Q. I'll take you there, I think your counsel wants me to take you to the paragraph. So it is page 201.0587 at paragraph 15. Once you're there, just let me know. And the point I wanted to put to you is that your natural capital approach differs to the LUC natural capital approach because the LUC approach is based on a productive capability soils.

1515

A. It is, yes, but as I said there's a close relationship. I brought something, if I can just find it, a summary that was made available to us. Well I had two points I wanted to raise in relevance to this matter, if I can just find my paper, I'm sorry I'm not as organised as you. This is a document prepared by Mr Gilliland when he first commissioned us to look at the table and as I understand Dr Akai endorsed this as a summary and I'm reading –

Q. Excuse me can I just interrupt you here, is that the document attached to Dr Dewes' evidence or sorry is it authored by Barry Gilliland?

A. Yes it is, yes.

Q. And it sets out how Table 14.2 was developed?

A. Developed, correct, yeah.

Q. I think that's attached to Dr McKay's evidence, 203.1822.

A. So I was just reading at point 22 where he says, you know: "Another underlying assumption is – "

Q. Sorry the members of the Court wish to get that, it's 203.1822. I think you can proceed.

A. Okay, so I'm reading here point 22: "Another underlying assumption is that higher, lower number LUC classes can achieve high production with lower inputs and have less potential for nitrogen leaching than poorer LUC class soils." So right at the get-go or the beginning I think there was this link between what informed Table 14.2 and the soils, the amount of nitrogen that leaches from the soil. The other thing if I could point you to

is Mr Scott's evidence, 8.1 I think through 8.3 where he really does embarrass me with the simplicity and elegance with which he expresses natural capital it's very clear there that it's, you know, it's about a soil's ability to retain nutrients rather than for them to leach. So I'm a fan of Table 14.2, you know, I don't want to undermine it but I guess I would argue that the risk assessment tool is more pointed than blunt, sharper in recognition of what is really at stake here in terms of natural capital, yeah. So I was a bit perplexed when people said hey here's a flaw with the risk assessment tool is that it departs from a natural capital kind of paradigm, yeah.

Q. Well I'll read you from Dr McKay's section 42A report which is also attached to his evidence for Horizons One Plan hearings because he talked about, and this is 203.1592 but you don't need to go there: "Productive capacity is product of soil texture, drainage, stoniness, depth, climate and slope." And then he talks about profile available water and then something called, and I don't know how to pronounce this, I should have checked Cation exchange capacity or CEC but there are a lot more factors with productive capacity of soils than pore and climate.

A. Yeah remember a lot of those are very interrelated, yeah, and that's why tools like Overseer for example, you know, it uses profile available water and as I say it's essentially a direct lift from what Overseer does, that particular part of the risk assessment tool, yeah.

Q. Just finally, your tool is directed at protecting the environment in terms of leaching, the LUC natural capital approach was also to do with a good macroeconomic outcome for the region by allowing growth while also meeting water quality outcomes through directing these land uses to the productive soils, wasn't it?

A. Yes. Remember that these two tools drive this, I mean they overlap so much in the sense that they're going to drive the same management changes and that I'm absolutely confident about, that I've tested vigorously is that they will identify the same management changes and so the spillover or implication of that is that they will have the same kind of economic, well similar sorts of economic outcomes for farmers, yeah.

Q. For farmers?

A. Well the region, yeah, similar costs for farmers, so yeah by inference I guess for the region. That's outside my area of expertise.

Q. I think I'll ask the economist.

A. It would be better if you asked the economist most certainly.

COURT ADJOURNS: 3.22 PM

COURT RESUMES: 3.45 PM

CROSS-EXAMINATION: MR ANDERSON

Q. Good afternoon, Professor Horne. I'm Peter Anderson, I'm the lawyer for Forest and Bird.

A. Good afternoon.

Q. Can I start by taking you to paragraph 14 of your evidence-in-chief, please.

WITNESS REFERRED TO STATEMENT OF EVIDENCE

A. Certainly.

Q. Sorry, not 14, 34. I am just going to start with some questions about, I'm going to –I'm not going to take a bit of a high-level approach to it, my friend Ms Ongley took so far.

A. Yes, certainly, no, that's fine. So I'll just find 34?

Q. 34?

A. Yeah.

Q. So in that, sorry, have you got that?

A. Correct, mhm.

Q. Yeah, no, so in that paragraph you're talking about the original intentions of PC2 and the intention was to get improvements behaviour by using GMPs within 20 years. Now, you've put in quotes in the second line "most", can you explain what you mean by most in that second line?

A. Certainly, so that relates to kind of the outcome of the council level hearing back in 2020 where I did some analysis looking at the different options that were on the table before the tribunal at the time, so to refresh your memory, at that particularly hearing Dairy New Zealand and Federated Farmers were arguing for 10 – so I – you either met the table, you had a 10% reduction or you, if you were leaching very large amounts, down to the 75th percentile value.

Q. Yeah.

A. And so I was of the view that that wasn't really in keeping with the spirit of Table 14.2 which remember had been well-substantiated and argued by a team including Dr McKay, of course, and so I was of the view that that would be insufficient and not enough farmers were going to go –

going to either meet their table CNLM or perhaps most importantly go close to it. And so if I can just – would it be useful if I gave you some numbers?

Q. Yeah, numbers would be useful, yeah.

A. Okay, so at the time, the – we're talking about far, we're talking about percentage values here in an aggregate way.

Q. Yeah.

A. But remember we've got these four priority catchments and they're very, very different.

Q. Yeah.

A. So the problem catchment was the Upper Manawatū.

Q. Yeah.

A. And there, only 23% of farmers were able to meet their – were meeting their CNLM, okay.

Q. Yeah, (inaudible 15:48:42).

A. Exactly and then if we had a 10% reduction then about 25% of farmers would meet their CNLM. Now, and part of the reason I argued for a 20% reduction was that if we had – if farmers were required to achieve a – either meet their table requirement or achieve a 20% reduction, then that number doubled to about 45% of farmers.

Q. Right, so in that particular catchment, it is still not "most", is it more than half then?

A. No, no, "most" relates to the aggregate number.

Q. Across the whole four catchments?

A. Exactly, yeah, so for in comparison, about 80% of farmers in the Rangitikei would have met their CNLM under a 10% reduction, about 92 would have met it with the 20%, yeah.

Q. Right, great, that's helpful. And now we go to paragraph 40 of your evidence-in-chief, and then –

A. Sorry, 40?

Q. 40, yes.

A. Thank you.

Q. So we have the original proposal and then we have some changes to Overseer and this brought about the recalibration that we've been talking about, is that correct?

A. Correct.

Q. And now you see there that the recalibration is accepted by the appellant parties except Mr Day, and so that's reflected in – I'm not sure if you're familiar with what their appeals actually said?

1550

A. No, no.

Q. Probably don't, no.

A. I best – I better plead innocence here.

Q. Plead innocence is probably safest there. But then in 41, the outcome of that recalibration is the same?

A. So the outcome of?

Q. The next paragraph you've got down there?

A. Yes.

Q. You still say that "not all but most farmers will be able to comply with the controlled activity pathway with GMP", so we've got the recalibration didn't change anything?

A. No, sorry, those numbers I gave you were for the recalibrated table.

Q. Right, oh, sorry.

A. Sorry, I should have specified that.

Q. That's fine, that's fine.

A. I took it at more or less as a – well, no, I didn't take it as a given, but the interesting scenario analysis that I was doing was on the recalibrated table.

Q. Okay, no, that's helpful.

A. Because clearly the table had to be recalibrated, yeah.

Q. Okay, great. And now, and then we go to page 49 of your evidence-in-chief.

A. All right.

Q. And that's where the 10 to 20% comes in?

A. Correct.

Q. And so you're saying that the 10 to 20% depends on whether – on how much, how much reduction is required, how close you get to meeting that, meeting the limit.

A. Mhm.

Q. And you support the 20% because you thought that would be better in achieving the outcomes anticipated by Plan Change 2?

A. That was one key part of it. The other part, if I could take you please to the final page in Dr Snelder's evidence, there's a table there.

Q. Yeah.

A. Where he's – maybe we don't need to go there – where he was in tandem looking at the outcome in terms of water quality.

Q. Right.

A. So a 10% reduction clearly wasn't going to take farmers near the table.

Q. Yeah.

A. 20% was going to mean more farmers went closer to the table, but, well, why – if that was achieved, if that was working, why not go 30, 40, 50%? So in Dr Snelder's table there, he ran a scenario for a 40% reduction and essentially there is no further imprisonment in water quality between a 20% and a 40% reduction, so it struck me as being kind of – I don't know what you'd say – you know, just bloody-minded to expect anything more than 20%, and 20% - not a sweet spot for the farmers, but if you get what I mean –

Q. No, I understand, and I –

A. – and drove farmers close to the table, so that was a win for water and then –

Q. Marginal returns above 20%.

A. Exactly, exactly, you were just going to inflict more pain for no gain.

Q. For no gain and that makes sense.

A. And whether that was right or wrong, I don't know, but that was the rationale we had upon that.

Q. Now, can we go to paragraph 61 of your evidence and you talk about, you talk about – the question is not whether to model or not, but what model would best suit the purpose or more directly is Overseer fit for purpose.

Now, I might be jumping a bit ahead of myself now, but would you agree with me that the RAT is not a model?

A. The RAT is – our risk assessment tool?

Q. Yes, correct?

A. Mmm, yes, I mean, if you're saying the RAT is not proven by mathematical algorithms then maybe it's not a model, but remember a model is like a model aeroplane or something, you know, it's a, it's an abstraction, a representation of reality and so in that sense it's a model. You know, we all have models in our heads to think about things and so I'm not entirely sure how to answer you. If you're, if you're getting – if you're asking me is it driven around mathematical relationships, equations, partial differential equations and that sort of thing, no, it's not.

Q. I mean, the way –

A. Yeah.

Q. – I see Overseer as a model.

A. Right.

Q. Because you put a whole, you put a whole lot of inputs into it and you come out with a number which is your output, so you've modelled the output based on the inputs you've put in. And then –

A. But you say same with the risk assessment tool, right?

Q. But the – so yes, so yeah, so –

A. Yeah.

Q. – but that's really the question. So when you use the risk assessment tool –

A. Right.

Q. – you're coming up with a score –

A. Yes.

Q. – which doesn't actually, like, Overseer represents a certain amount of N loss, whereas the Risk Scorecard is a number which isn't – doesn't kind of model an outcome in the same way?

A. No, fair enough, yeah, it doesn't. It gives you a dimensionless number that has no real basis. It – I mean, fair enough, it's not a nitrogen flux, it's a, it's a dimensionless number, yeah, but remember you model for a purpose, for an outcome, for a goal, yeah, and so I guess my objective is,

we are modelling, we are using Overseer which is far from perfect, our – to identify these management practices we need to achieve a 20% reduction. We use the risk assessment tool to identify these same practices and so it seems a strange com – no, you're not, I mean, fair enough on your part, but yeah, I'm not sure whether the comparison takes us anywhere, yeah.

1555

Q. So your view is that Overseer in the context of plan change 2 was applying methods of achieving the outcomes in plan change 2?

A. That was my view, correct.

Q. And that remains your view?

A. It remains my view.

Q. Yet, I'll say out of the blue that it's probably not a fair reflection of it. At paragraph 63 you say: "I accept that the Overseer reports and Ministry advice means that I must to look to other options to assist in regulate N loss from farms." So in that context the development of the RAT wasn't driven by a view of yours that Overseer and plan change 2 were deficient.

A. No, no.

Q. They were driven by the reports coming out of central government saying Overseer isn't working?

A. Yes, no I was happy to support Overseer and yeah I was kind of the middle of that storm around the review panel's outputs and wrote and part of the Science Advisory Committee a response to that and I'm fumbling round here, not kind of going to the thrust of your question but yes, no I was always of the view that Overseer was fit for purpose and remains fit for purpose. I guess why, you know, I began by saying that I am personally not a fan of risk matrices, maybe for the kind of reasons that you're alluding to, but I saw a role for one here and kind of felt some, well in agreement maybe that, you know, multiple tools can be useful, yeah and as I say there was kind of a mood at that time going back then to say hey maybe there is value in taking some of the heat of, you know, the models you're alluding to that come up with hard and fast number that one enforces belligerently or militantly verse something that seeks to

manage risk in another way. So I keep coming back to these dual purpose.

Q. And one of the reasons you ended up supporting the RAT was because you kind of almost retrofitted it with Overseer by saying well this is the outcomes we get from Overseer and then I'm going to kind of retrofit the RAT to it to make sure that it's working as we hoped?

A. Yes, but remember it was different yeah, but yeah it was kind of trying to have my cake and – well me sorry, it was a team of us, I apologise when I talk in thing here, because it was very much a team effort and my colleagues Dr le Miere and Dr Parlato in the room here, they should really taking the wrap for all this.

Q. They will I'm sure. So can I take you now to paragraph 14 of your reply evidence.

A. So sorry just kind of to continue my answer, yeah definitely I see them as alternatives and as you're nicely pointed out, they are different and they complement each other quite nicely. So similar enough for us to have confidence that I'm happy to defend, it's an unfortunately acronym you've developed, RAT, the risk assessment tool, yeah. My reply evidence.

Q. So you've got paragraph 14 of that there?

A. I have.

Q. So there you talked about: "As is well known, following the council level decision the Overseer whole model review report cast doubt on the use Overseer as a regulatory tool." And then you go to say you were part of the group convened by Horizons to develop that alternative approach. Now I had query when you referred to the group, is the group you refer to there the same group that was meeting through the expert conferencing process here or is it a different group?

A. The very first expert conferencing I think must have been in the middle of last year, June/July, that was a much larger group. So I think Dr le Miere was certainly there in that one. We had more council representation, Ian McNabb, I believe Dr Jolly was there, Mr Barber who is here I think was there. So that was a larger group, yeah.

1600

Q. I'm really interested in the words "convened by Horizons" in your evidence, just want to understand what you mean by that?

A. Oh, sorry.

Q. So there's this group, so the group was convened by Horizons, but I'm just not quite sure if that – how that interacts with the Environment Court conferencing process that you were doing. Were they developed – was it the same process or was the group convened by Horizons a separate group developing something in parallel?

A. I'm not entirely sure of the answer to that. I mean, my view as in this would be something that you need to talk to Horizons or Ms Johnston about what the kind of legal standing was or wasn't, but we met on the Horizons building, in facilities, and we were exploring the idea of a –

Q. Was the output of those the witness statements that we've got in these proceedings?

A. Yes, yes.

Q. So convened by Horizons, it effectively you were developing this tool through the Environment Court appeal process?

A. I presume so, yeah, I'm not, yeah, I, sorry I –

Q. Yeah, no, just it's the "convened by Horizons" really threw me, as a –

A. Oh, okay, yeah, yeah.

Q. – yeah, so and this was driven by the – you've referred to the Ministry for Environment guidance following the review of Overseer, it wasn't driven by Fish and Game, Mr Day or Ngāti Turanga, was it?

A. No, that's probably true, yeah.

Q. Now, now in paragraph 23 of your reply, just before – I'll take you there, but I am just going to ask you a question in advance –

A. Sure.

Q. – before we actually go into that detail about that. Now, you're familiar with the Plan Change 2 provisions that have been proposed by the council?

A. Yes, but –

Q. Just because looking at –

A. – I could – I might equivocate here, yeah.

Q. I'll ask you as specific question.

A. Okay, sure.

Q. You're familiar with the requirement, the intention that consents granted under Plan Change 2 are only granted for 10 years?

A. Yes, yes.

Q. Yeah, you're familiar with that?

A. Yes.

Q. So now –

A. So I mean, so that was why a lot of my analysis was on that 10-year timeframe, yeah.

Q. Yeah.

A. So you know before when we were talking about those numbers?

Q. Yeah?

A. That was meeting their 10-year allocation, so I can answer, you have an the affirmative there, yeah, I wonder where you're going, but, mhm.

Q. So now and I – now I'm going to come back to that paragraph 23, can I take you to your paragraph 39 of your reply evidence and I guess I just want to – I'm going to ask you some questions now about how complete the RAT is and whether it is in a fit state to put into a planning document.

A. Good, excellent. So sorry, what number, 39?

Q. So paragraph 39?

A. Yeah.

Q. Where it starts: "The appellants also point out"?

A. Yes I have that, thank you.

Q. So and this is the appellant's point out that the risk matrix is untested and you say: "This is fair but I am not sure how to respond to the criticism." And there you refer in the fourth line: "I wonder how given that we were developing an alternative tool to Overseer we could have arrived at this point with a field-tested tool." And isn't, so isn't the problem there that we are now trying to use a – an untested tool in a plan when if you'd been – if you were to do it properly, you would have had the opportunity to test this in a more complete way?

A. Thank you, that's a good point. I suppose in response I would say – raise a couple of points, is that to reiterate that, you know, any, any new initiative will, in a sense, be new, won't it –

Q. By definition.

A. – but Table 14.2 – exactly – when it was first put forward I think Dr McKay talks about 18 case study scenarios that they performed to demonstrate that it would be workable, okay. And so I'm – our evaluation at least matches that, so I think we're at a similar, we're not far behind kind of the confidence with which they would have rolled out Plan Change 2, sorry, Table 14.2. I go sort of back to the Abacus Report and as I say, that's a very thorough evaluation in one sense, one that – no, let me go back even more, one more. If I was here before you today saying "here is the risk assessment tool that we developed and we developed it in these four or six sessions, two or three hours each and this is the best distillation of the thinking of two or three people", you know, but one of the key things was very much and everyone was keen that we preserve the integrity of the Nitrogen Risk Scorecard, okay, so every farmer in New Zealand – sorry, every Fonterra supplier, excuse me, I was about to say the dairy farm – every Fonterra supplier in New Zealand has been run through the Risk Scorecard two or three times, so Fonterra has a huge database, yeah. So as I say, I could have easily been here, maybe one possible outcome was defending a Risk Scorecard that we had developed in those series of workshops but that's not the case. We have a tool that has been, you know, every farmer has a risk score for a number of years. We have the, the Abacus Report, we have a close alignment with Overseer, yeah.

1605

Q. And I'll get onto that, because that is an important point.

A. Okay and so that's a, yeah, no, thank you, and we have –

Q. So if we – sorry, I'll let you finish.

A. – Dr le Miere was also able to take the Risk Scorecard and road-test it in a way that using the Fonterra data that they would have never been able to do in Table 14.2 . So someone was asked this morning whether or not farmers or end users have had the opportunity to use the Risk Scorecard. I guess – sorry, the risk assessment tool. The obvious answer to that is "no, no one has had," but, you know, we've gone through a lot of in house evaluation, yeah, and as I say, it was building on tools that were already there, yeah.

Q. Now when you say, you say “it's not that far behind”, the farms that were used for Table 14.2 were actually real farms?

A. Yeah. I’m – yeah, no, I take your word for it, yeah, yeah.

Q. Yeah and whereas –

A. Yeah, sure.

Q. – whereas the, you’re using “made up” is an unfortunate word, but you had a better word than I have, “simulated”, I don’t know, in terms –

A. Yeah, model farms, coast study farms, yeah.

Q. – model farms, that’s better words and I didn't, I didn't mean to say “made up” that was unfortunate.

A. No, no, no, that’s fine.

Q. So and now can we go to paragraph 46 of your evidence-in-chief, sorry, your evidence-in-reply and there you are responding to Dr Dewes’ response that it doesn’t accommodate certain water quality mitigations?

A. Mhm.

Q. And you’re saying you are going to work with Ms Foster to consider how they should be best reflected in Plan Change 2, so that they should be – if Plan Change 2 were to be properly take those into account, there will be some amendments to the version of the council provisions that is attached?

A. Sure, yeah, I mean, Ms Dewes made a nice – Dr Dewes made a nice point, yeah.

Q. And paragraph 61 of your reply. In there, you refer to some of the comments made by Dr Parlato and you also indicate that further work needs to be done on Schedule X to reflect those positions?

A. Yes, yes, yes, yeah.

Q. So effectively the position as we currently are now is the plan change, that the risk matrix as included in the council’s provisions is not yet complete?

A. I suppose that’s the implication of that, yeah, that we needed to make those changes, yeah, before it is complete, correct.

Q. Now, I want to go back to the question I started on before.

A. Sure, mhm.

Q. Which was really one of the nubs of this issue, so let's go back to paragraph 23, your evidence-in-reply. And so what, as I understand it so far, is that the tools are quite different in the way in which they get to the outcome that you want. One use is Overseer which is a model which has relative amounts of N loss, the Scorecard is a number which just reflects an amount of risk. But in this here, you're saying that the differences between the two approaches is not meaningful?

A. Yes. That, yeah, is a – that simple exercise, Ms Ongley and I discussed earlier, led me to that conclusion, yeah.

Q. So that whether you use the RAT or the Overseer approach in plan change 2 the outcome is not going to be particularly different?

A. In terms of the – yes, I guess, because remember I – my argument is that they'll identify, although as you nicely point out, they're very different sorts of tools or models, they will, my argument being that they will identify very similar management practices that need to be adopted and –

Q. And that's one of the reasons, I mean, that in some ways is a self-fulfilling prophecy because you support the RAT because of that outcome? Didn't you say before that you – one of your tests in kind of developing in preparing the RAT was you went to Overseer and you looked at the outcomes and because the outcomes in the RAT were similar to Overseer, that gave you confidence that the RAT was working efficiently or appropriately?

A. Yeah, mhm.

Q. So that's, so it's surprising that we don't have different outcomes, because that was one of the tests you used to determine if it was working, going to work?

A. Yeah, I'm not quite sure I'm with you.

Q. Okay, given your answer, given you were in confident in Overseer and you prepare a new tool, you cross-checked the outcomes of your new tool with Overseer and one of the reasons you could support the RAT was because the outcomes were quite similar, so do you agree with the proposition I just put forward, can you speak it for the record? Can you answer the question verbally.

A. Oh sorry, yes, yes.

Q. So my final kind of questions for you is, and we can probably sync this around paragraph 49 and 50 of your reply evidence, isn't – in there you say: “I agree with Dr Dewes’ opinion that Overseer is the best model we have.” And why don't we use Overseer and use the method that was used in plan change 2 up until the Overseer reports came in and central government put it in doubt? My reading of your evidence is that you think that would be a perfectly inappropriate way of going about doing it and wouldn’t achieve particular different outcomes.

A. Yes, well that’s right, I mean and that’s why, as I said before, I'm here is because we have workable alternatives in front of us here that are going to achieve a very similar outcome and kind of meet I think this somewhat, I mean not laudable may be an exaggeration but I think this agreeable notion that, you know, we have got two options in front of us that are going to achieve the same outcome that people can use and they have the option, yeah unless a directive from government, you know.

Q. Can we get to that in a moment.

A. Oh okay, sure.

Q. If I read paragraph 49 of your evidence correct, you think that Overseer is the best way of going about doing it and would support the use of Overseer rather than the use of the RAT?

A. As I said, that’s me personally but, and this is a very important qualifier, I have great confidence in, well significant confidence, as much confidence in RAT as Overseer, yeah, because I've evaluated it and tested it and I see that it gives similar outcomes. You know, my job really was and kind of I guess you’ve unpacked this a little bit, was to develop a tool kind of help Horizons meet that central government directive, they had more than one option on the table, something that had advantages that Overseer didn’t have, you know.

Q. Now you’ve led me nicely to that point which you’ve been trying to do for some time, can I take you to the – there's an MFE report in the documents behind you, just bear with me for a moment. I can give you a page number but it will just take me a moment to find the volume number. It is volume 3, can you go to tab 13 and tab 13 is the MFE document, is that what you’ve got as well?

A. Responding to Overseer model redevelopment review?

Q. Yes. On the top right you'll see some page numbers, can you go to page 302.0715.

A. Mhm.

Q. And at the top of that page it says: “Proposed plans and plan reviews and process.”

A. Mhm.

Q. Now would you agree that that applies to the current situation, the reviews came out after plan change 2 was notified in the process?

1615

A. Sorry just run that by me again?

Q. This topic here is about proposed plan and plan reviews and process.

A. Right. This document here is about that.

Q. So can you go to the start of the document and just see if you're familiar with the document at all.

A. I apologise for being difficult, I'm just trying to get into that. Yeah, yeah, responding to the Overseer review, so this is by MFE, a guide for councils, yeah.

Q. You're familiar with that document?

A. No I'm not sorry.

Q. Well do you want to just read the first little bit of it just to familiarise yourself with it.

A. Sure, the introduction?

Q. Yeah, just so I'm not kind of blindsiding you, so you just get some idea of what this document is about.

A. Is it okay if I take some time to read it?

Q. Absolutely, I don't want you to feel like you were being unfairly treated.

A. Mhm.

Q. So if you go to the front page it says it’s a guide for councils about – effectively in response to the Overseer report and how councils could go about dealing with models in Overseer and it post that report. Is that consistent with your reading of the introduction?

A. Sorry, I would have liked more time to digest it but yeah, no I'm prepared to – yeah.

Q. You're happy with that?

A. Yeah.

Q. So if you go to page 302.0715. That page is giving guidance to councils about how to deal with the Overseer problems and proposed plans and plan reviews and processes, that that's consistent with your reading of it?

A. I haven't read this page but skimming down the headings looks a little like that, yeah.

Q. So you'd agree with me that the plan change 2 process fits under this, it's a plan review in process or a plan change in process?

A. I'm happy to go with your wording, you're the lawyer, yeah.

Q. I'm okay with that. So if you go to that heading which says: "Current plan hearings and appeals."

A. Mhm.

Q. It says: "Councils can continue with existing plan processes but are encouraged to take into account of the finals of the review and redevelopment reports where possible." So that's a recognition by the government, isn't it, that in some situations it may not be possible to take that Overseer review and the identified (inaudible 16:18:50) into account in plan changes?

A. Sorry they can or can't?

Q. Well the words "where possible" at the end of that.

A. Councils can continue with – yes, yeah.

Q. And so if it wasn't possible to take into account how far you were down the process for example, that the Court had no jurisdiction to change it, then that would be consistent with that advice, would you agree with me?

A. I'm sorry for being dense, I'm not quite with you.

Q. You're not being dense, don't worry.

A. If I could just read this again sorry, I apologise: "But they're encouraged to take account of the findings in the review and development reports where possible."

Q. If I can put the question, if it's possible to take into account because the Court doesn't have jurisdiction for example, then you'd agree that would be consistent with that provision?

A. I suppose so, yeah.

THE COURT ADDRESSES MR ANDERSON – A LEGAL QUESTION OR PLANNING QUESTION (16:20:01)

CROSS-EXAMINATION CONTINUES: MR ANDERSON

A. I'm very sorry Mr Anderson, I'm don't just quite know what this is driving at what the review –

1620

Q. The Judge is telling me that I shouldn't have been asking you that question.

A. Okay that's fine, thank you Judge.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon Professor Horne, as I said I act for Mr Day. I'm coming up the rear so I actually have too many questions left over for you, you'll be pleased to hear, so I don't think you'll be spending the night in an isolation cell. My first few questions are just going to relate to a couple of matters that have cropped in response to questions from Mr Anderson and Ms Ongley and the first, I think it might be helpful if you go back to the volume 3 bundle that you were just looking at.

A. Staying with this one?

Q. Yes, but to a less complex document I think, page 302.0779 and just to orientate you that will be part of the plan provision and just to orientate you, this is one of the policies in the regional policy statement in the One Plan and this so it's policy 5.8 and I just want to ask you a question here in relation to the word "most" which has come up in a number of situations over the last couple of days and probably will again. So you'll see here that we're talking about nutrients and then in (i) the direction is that nitrogen leaching maximums must be established in the regional plan which – so this is the RPS policy that's driving Table 14.2 and its maximums and then down at D we have: "Are achievable on most farms using good management practice." So this is where that concept of "most" comes up and my question for you can you explain to me what you understand by the word "most", "most farms should achieve", effectively this is saying: "Most farms should achieve Table 14.2." You've addressed

this in your evidence but I think it would be helpful if you could elaborate on that, what do you say “most” means in this context?

A. Right, so I'm fearful that I'm just going to repeat my answer before with Mr Anderson, was that where I gave some numbers?

Q. No I think this is a more simple question.

A. Yes.

Q. We have Table 14.2 and the question is do most farms meet that or not? If that’s the only controlled activity option you have, in your opinion do most farms meet that and I can take you to your evidence where you talk about it and you give a percentage.

A. Oh okay, yeah.

Q. And that’s paragraph 42 of your primary evidence.

A. Yeah I'm familiar with, I'm just quickly getting it.

Q. No, you're getting bombarded with questions, you do not need to apologise.

A. Yes, correct, mhm.

Q. So your opinion is that approximately 65 to 70% of farmers will be able to meet recalibrated Table 14.2?

A. Correct, mhm.

Q. And so in your opinion that means most farms can meet Table 14.2?

A. Correct.

1625

Q. Thank you, I just wanted to clarify that point. And the other question I wanted to ask arising from the questions before is about this idea of using Overseer and the risk matrix together.

A. Right, mhm.

Q. So in your opinion could you do that as part of an application for an existing intensive farm as a discretionary activity? So you would use both tools as part of your application?

A. Yes, I mean we didn’t consider that but yeah I think that there's a lot of merit to that idea, isn't there, that you’ve got two tools with different strengths and arguably different shortcomings and yeah they might complement each other quite nicely, I guess has been my argument.

Q. Are you able to give kind of a very quick sort of a feel about what that might, you know, in your experience of the two tools, what that might look like and, you know, what would be the benefits of that for an application for example?

A. So I mean I guess Commissioner Hodges raised the idea yesterday that perhaps you could, I might have that wrong, that you might have the risk assessment tool up front to give resource consent maybe and drive the immediate behaviour change you want and people becoming engaged with the tool like that and perhaps you could monitor those improvements with the numbers that people, like over time, to get more confidence in the direction of travel and so, you know, the two tools might inform each other in that sort of process. That's just one way that I can think of that has been floated, yeah.

Q. So I think that's slightly different.

A. Oh sorry.

Q. So if you were a discretionary activity, so it's not a Table 14.2 type situation, I can't meet Table 14.2 and now I'm going to put my application in, how would I use, if I was a farmer, how would I use those two tools together in my application to put a, you know, a good application in to council?

A. Okay, so that's kind of what I meant is that you would use the risk assessment tool to begin with, yeah and so then you could begin – you would secure your resource consent on the basis of the risk assessment tool and you would monitor compliance and improvement using Overseer and the two tools would inform each other because remember the risk assessment tool would put into place the appropriate management practices and Overseer would monitor those changes in a perhaps more meaningful, I hesitate to say that, in a way that you could monitor because you're getting numbers, yeah.

Q. So off the back of those two questions, the one about "most" and the one about using together and it may be strained planning so apologies if I do, but in your opinion would that – does that mean that a framework where you have Table 14.2 as your controlled activity option and then a

discretionary activity following next to that, is that a workable framework do you think?

A. There's probably lots of pitfalls in there being a scientist and not a planner I don't foresee but I mean as you stated there, it strikes me as being workable, yeah.

Q. I'm just going to ask you a few questions now about the objectives, sort of the underpinning of Table 14.2 and I will endeavour not to cover old ground but Ms Ongley has, it's just sort of to clarify a couple of points and also my understanding of those as well. So Table 14 allocates nitrogen loss based on the LUC class of lands, correct?

A. Correct.

Q. And then it's orientated so that more nitrogen loss is allowed on the better LUC land.

A. Correct.

Q. And less on the lower quality LUC land. So I guess the effect is and what's intended to do is that it directs or encourages more intensive land uses to that higher quality land and away from the lower quality land through the leaching loss incentive, do you agree with that?

A. Correct, yes, sorry.

Q. So in that sense, the end goal of Table 14.2 isn't just adoption of good management practice, it's actual about directing high intensity land uses to a certain part of the region, certain land classes, is that fair?

1630

A. I don't know if, I don't know if that's its stated intention, but you could argue that it might have that effect, yeah, mhm. It certainly does allow, have – class 1 and 2 have greater allocations than other classes of land. One point I would make though is remember that this is, this is natural capital, right, and so it reflects soils in their undeveloped state, or their unmanaged state, okay, and so and this was – there was a lot of contention around this when Table 14.2 was first developed and that is that, of course, we come along and we manage soils, don't we, and so class 4 land might have a wetness limitation, class 6 land – might have, might have, sorry, poor drainage, class 6 land might be very dry. So the first case you drain them, in the second case you irrigate them and now

they are equally productive. And so whether your statement there is exactly correct, you know, you could dispute it, so you're saying in some ways I'd rather go to class 6 land with irrigation because I know I can grow grass year around and I've got that excellent drainage on those coarse textured soils so I won't have plugging or treading damage in winter and I might out-yield or out-produce class 1 land, so I understand – you outline nicely I think the original thinking around Table 14.2 but that was a criticism that a lot of my colleagues had at the time about the kind of natural capital approach. Because it's not a static thing, you follow what I mean, we come along and modify soils and so yeah.

Q. It was always intended to be a proxy anyway, so I think this –

A. Exactly, exactly, and that's my point, and so what I have argued in the risk assessment tool, look, you know, I don't want to push this point but arguably we have kind of stripped away that proxy and gone right to the heart of the matter and say "which of these soil climate combinations are going to result in the most leaching", yeah, and so and arguably it is more equitable in that sense. I, no, I don't want to push that argument, because as I say I'm a fan of, supporter of Table 14.2, yeah.

Q. No, no, and I appreciate you're both based on natural capital.

A. Yeah.

Q. Where I'm heading towards, they're different and so you have made the point they're different natural capital approaches and that has implications. So I mean turning now to the risk matrix which that leads to. So that's not based on a LUC approach, that's you'd agree with?

A. Well, I'm not entirely prepared to concede that. I mean, it's not explicit but it, yeah, as I said, I could have easily had and I'm kind of regretting I didn't now, have made that more explicit in the way we framed the risk matrix and could have easily done that.

Q. And you made that point to Ms Ongley.

A. Yeah.

Q. However, some of the adjustments that were made to the risk matrix as part of development process as between yourself and Dr le Miere –

A. Yeah.

Q. – that resulted in kind of a, and this is a crude, non-scientist way of putting this, I hope it's clear –

A. Yeah.

Q. – kind of a balancing out of the nitrogen loss across the different types of land, as compared to your first version, it sort of evened the nitrogen loss out a bit more across those squares in your matrix, is that fair?

A. It's reasonably good. It's not quite right. I had attempted to even them out initially, yeah. I'd come at it from a more theoretical stance or view. As I said, I'd pulled those relationships out of Overseer based on the algorithms, the maths, the modelling that informs the way Overseer deals with the amount of that at risk N that I was talking about that actually leaches. So what – and Dr le Miere will explain this better, he came and this is to my point before that it has been road-tested and he came and he said: "Hey, I think, you know, it's going to be very, very difficult," he only adjusted a very small part of that saying, you know, he thinks I'd – that my numbers were too strict or too severe, too harsh in the bottom right-hand corner of the quadrant**,** that's not important, but, you know, that farmers there were going to really, really struggle to get down to those, so and likewise I had been a tad lenient in one of the other quadrants or sectors here. So with that very large data set, he sort of did the road-testing of those numbers and we tweaked them just a little, not much, yeah.

1635

Q. I think his words were "he was going to more equally spread carrying" – his words were "equally", in my words is the kind of equally spread carrying the burden of the nitrogen loss as between the different types of land?

A. Yeah, so and I mean, I guess that was –

Q. So that's the balancing?

A. Yeah, I, yeah, and so that's right, and that balanced in that sense. But my objective, my initial objective had been to do a similar thing, yeah, I just – when you kind of compared it with on the ground reality, my more theoretical analysis just needed that – it was very minor tweaking, really,

but it kind of goes to the point that you asked before about “has it been tested or evaluated”, you know, one answer is yes, yeah .

Q. So the effect of that kind of that sort of balancing approach, just going back to that, that means that the risk matrix doesn’t work in the same way as Table 14.2 to sort of direct more heavily intensive land uses to that, I guess, the equivalent of LUC 123 soil in the same way that Table 14.2 does, does it?

A. Well, it sort of, well, it does and it doesn’t. Maybe, maybe not in exactly that same way, but remember that certain rainfall and – so silt PAW combinations do have a higher score so they are given more flexibility there, sorry, lost my train of thought, where I was going. If, sorry, where I was going to say, if we had just left the Nitrogen Risk Scorecard as it was, I think your criticism today would have been much more point – you know, valid, yeah, so –

Q. So it would be fair to say it would direct – it directs intensive land uses to the higher capacity soils less than Table 14.2 does?

A. No, it's, it – what, so what the risk matrix does is it directs land use to those soils that are less leaking, yeah. And I suppose in part I concede what you’re driving at, that I am less fussed or focused on the ability of these areas to grow pasture and I am more focusing on the ability or extent to which they leach nitrogen, yeah. So I guess I am happy to concede, well, not concede, but agree with you in to the extent that this doesn’t directly replicate the Table 14.2 thinking around we will let these soils in their unmodified, or you know, natural capital state, we will let them leach more, yeah.

Q. Thank you.

A. Yeah.

Q. I think I’ll move on now to a sort of different topic of questions and these just relate to kind of as a starting point the process of preparing the matrix and I apologise if I am sort of going over things that I –

A. No, no, that’s definitely all right, no, no.

Q. – I, too, have come a little bit late into this, so –

A. Okay, no fine, uh huh, yeah.

Q. – I wasn't involved in the mediation, et cetera, time. But just to be clear, so the first version of the council's risk matrix, that was put to the parties about 10 months ago, that, so February 2023, is that about right?

A. The very first co – yes, so we, yes, I think that would be right, yeah, mhm, yeah.

Q. And then there was an updated version in March, so about nine months ago?

A. Ah, I'm not exactly, yeah, but that would seems roughly right, yeah, mhm, yeah.

Q. And then Dr Dewes in her evidence has identified some other things that you agree should go into the tool or be factored into the tool?

A. Sure, yeah.

Q. Where are you at with that process?

A. Ah, so, so we've only had Dr Dewes' evidence a relatively short period, which is fine, so Ms Foster and I have been talking about how we might include that, yeah, and then there was the issue that Dr Parlato also picked up that needs and that was my, that was my fault that, that the – so what happened for, I don't bore the Court, but we were considering the role of plantains in wetlands at one of these expert conferencing and we sort of threw some numbers up on the board as to what they might be, we agreed to go away and research them in more detail, you know, access the literature and research and then we met again and we had those more reliable numbers and somehow I failed to convey those through to, I think, so –

Q. So –

A. – so they need changing, as Dr Parlato noted, yeah, so.

Q. So do you think, you know, given those that we have just discussed and I guess, the concerns that have been raised in this proceeding, it would be fair to say that the matrix would at least benefit from, you know, testing or peer review or validation, that that would benefit the matrix?

A. Oh, certainly, yeah, I mean, all science, yeah, no, absolutely, I mean, just as Overseer goes through ongoing evaluation testing and, yeah, yeah –

Q. And do you think it –

A. – as a science I have no problems with that. I mean, I just would point out that, and I know you appreciate this, that we have kind of done a reasonable amount of that already, yeah, yeah, but no, no, I am very, very happy at the thought that...

Q. Do you think you would be – that it would be in a better state from where it is now in say one year's time when the Oranga Wai process is kind of – that's I guess anticipated notification time, can you do, can you do a good amount of work in a year?

A. We, look, of course, you know, things always develop and improve in time, science and our understanding, research doesn't stand still. I think certainly if you're asking "could we fine-tune it in the next year", obviously the ask would be yes, crazy if I answered anything other than that, but I think there's, is that that is what it would be, would be fine-tuning. And remember the Nitrogen Risk Scorecard has already been fine-tuned over three or four years, the, as I say, Overseer which I pulled directly, you know, out of there is – has been around for 20 or 30 years, yeah, it is not a radically new tool, you know, I – my – I suppose my one misgiving about it, or is that it would be great to have it, you know, field-tested by end users, yeah, and but certainly things can be fine-tuned and improved. I mean, Dr Dewes found something that we hadn't thought about, other people will do, do likewise, but as I say, the think I like, I come back to the point, is that the – or one of the advantages of a risk tool like that is that it can be quickly or easily modified, you know, it's in an overnight exercise, whereas Overseer, you know, you have a modelling team, it takes many, many months for changes to role through and things, whereas with the risk matrix, Dr Dewes points something like that out, I can see how we can change that more or less at the stroke of a pen, yeah, don't want to over-simplify it, but yeah. And that's the measure of a good tool, isn't it, it is robust and flexible and can respond to improvements.

Q. I have now just got a few questions that kind of I guess look at the matrix next to Overseer and these link back to some of the concerns that were raised with Overseer by the science advisory panel which it sounds like you will be intimately acquainted with, and just to get your opinion on some of those concerns.

A. Sure.

Q. So as between Overseer and the risk matrix tool –

A. Yes.

Q. – which better accounts for episodic events or response to climate variation?

A. Which better, neither, yeah, yeah. But that's – and sorry, I was just getting the – this document out and as it is nicely pointed out, neither of those, well, one of those criticisms is relevant, the other is not, because, you know, Overseer was always viewed as a long-term average, yeah, and so episodic events, you know, they're more important for something like phosphorus loss and run-off. Incorporating episodic events really is, as is pointed out here, is somewhat out of scope for Overseer and so and the same for the risk assessment tool, yeah.

Q. Which would better account for variation and in water and nutrient distribution in the soil profile?

1645

A. Oh, definitely Overseer there, this matrix doesn't do that, yeah.

Q. And which would better accommodate deep rooting plants, you know, in light of the extra work that has been done this year?

A. That would be a question better directed to Dr Jolly, yeah, yeah, she's given that a lot of thought, yeah. I mean, pasture's not ordinarily considered a deep-rooting species.

Q. But I'm correct that the work that was done in response to science advisory panel's concerns did increase how Overseer could accommodate deep rooting plants, aren't I?

A. You're correct on that, yeah.

Q. Which better considers surface water and nutrient transport?

A. Which – surface water and nutrient transport? Well, again, obviously Overseer, yeah.

Q. And then I'm correct, aren't I, that the matrix uses annual inputs, so for example, your stock number average over a year, aren't I?

A. Correct.

Q. So is this a coarser assessment of what is happening on a farm in a monthly time step?

A. Well, Overseer uses –

Q. Which Overseer?

A. Sorry?

Q. Which Overseer uses a monthly time step, which is coarser, the approach Overseer takes or the risk matrix approach?

A. Which is coarser? Well, probably – well, Overseer you put in, you put an annual average for – sorry, you said animal performance, what did you preface it, sorry?

Q. I guess I'm sort of – I should take it back to the level –

A. Yes.

Q. – proposition where the risk matrix is focused on annual inputs?

A. Yes.

Q. And Overseer is focused on monthly inputs or monthly time steps, which is going to give you a better picture of what is going on for you to manage the risk?

A. The risk matrix, not all of it is on an annual input, some is monthly, and so, you know, it recognises for some key parameters like nitrogen or when you're grazing animals on or off farm, has a time element to it, so it's not entirely true that it doesn't have any recognition of, you know, the calendar. So again, Overseer also operates at lots of its algorithms on a monthly time, sorry, in an annual time step, yeah, so I suppose your question being which one – sorry, just rephrase the start of it again, I've gone around it, which?

Q. Well, I mean, going from I guess which is going to give you a more refined picture of your, of your risk?

A. Ah, that's a good question, "a more refined picture of your risk", I guess I'm tempted to say Overseer because it doesn't have the level of aggregation that the risk matrix does, yeah, whether it's any more reliable or not, I'm not so sure, yeah, but mhm. No, your?

Q. I'm just going to move now to the final group of questions that I've got and these relate to the, I guess, the nature of the changes in nitrogen leaching as to explain the different controlled activity pathways, so just to, you'll be intimately acquainted, but refresh that Table 14.2 the specified reductions and then the risk matrix. So the decision, so the specified reductions

pathways would enable higher nitrogen losses than Table 14.2 as a controlled activity?

A. Correct. Yeah, you mean as a pop – as a population of leaching losses?

Q. Yeah?

A. Yeah, mhm.

Q. And so then on top of that, the risk assessment tool would enable nitrogen losses above those enabled by the specified reduction pathways also wouldn't it?

A. No, no. Sorry, no, I must have misunderstood you?

Q. Well, maybe if I take you to your table, to your – I think this is your primary evidence.

A. So I must have mis – I must have misunderstood your question, you said that strict adherence to table – sorry, the discretionary pathways would result in more leaching than strict adherence to Table 14.2, that was your first question, right?

Q. Yes?

A. Yes, okay, yeah.

Q. And then so –

A. Because not every farmer has to meet the table values, some only reduce by 20%, then yeah, as a population of leaching rates they will be greater, yeah.

1650

Q. So then if we just go to your evidence at 201.0436, page 25 of your own statement, if that's what you're working on and then down to the table.

A. So where am I starting?

Q. Page 25 of your statement.

A. Mhm, yeah.

Q. And then down to table 1.

A. Yes.

Q. So the risk matrix results in a lower average per cent of the increase in nitrogen leaching than the reductions, specified reductions pathway, according to your table.

A. No sorry I'm confused. DV-PC2 there will result in greater leaching rates than strict adherence to Table 14.2, are we agreed on that?

Q. Yes.

A. Because not every farmer has to meet the table right? Some have to reduce by 20% of meet this.

Q. Yes, yes, we're on the same page.

A. Okay, so what my argument is, is that the risk matrix will deliver the same outcome of that leaching population as DV-PC2 but it will be no worse than DV-PC2. That was the whole point of that exercise, yeah.

Q. But would it allow exactly the same or does it enable a slight increase. I mean you've said in response to questions that in your view it would drive the same management practices but in terms of leaching on the ground, the work you've done is the risk assessment tool likely to enable a slightly increased level of leaching than the reductions pathway?

A. Well I suppose what I've suggested is that I am not able to give you a definitive answer to that because it's a very difficult exercise to undertaken, as I was explaining to Ms Ongley and she agreed, because we have these two incommensurate outputs, we have a risk matrix that gives us a number verse Overseer that gives us a rate, yeah. So what I've done there is try to, as best I could, compare the outcomes. So what I've said is I'm very confident and because we've done multiple analysis showing that the two tools will identify the same changes to management practice, adoptions of GMPs, BMPs and as I kind of said before and I apologise for repeating myself, that's where as a scientist I would like to rule off but because of, you know, you are asking me and I can see that it's a very legitimate question, well please give me a little bit more confidence about what that means for leaching rates, I have gone ahead and done this, okay and so what you've all very nicely illustrated is that there are some shortcomings in that or gone around, pretend or what was the term, made up farms and so what I think is I guess we're saying here, pulling together strands, if you like, of an argument that we can have some confidence in, yeah, and so, you know, we've got a tool that, you know, has very large data sets that we're able to interrogate, this is the risk scorecard and we've been able to kind of ground truth those. We see we're going to get the same changes in management practice, the same adoptions of GMPs, BMPs and to the best of our ability kind of it also

would appear that when we – I suppose I should in there say and I have done, you know, 30 to 40 individual farm analysis, comparing the risk matrix with the scorecard or the risk assessment tool with Overseer excuse me, and then when we go up to the sort of catchment level again it looks like they're going to give us sort of equivalent outcomes. Now this last one here, which is your questioning on, by definition I have the least confidence in, yeah but it is part of a consistent argument, if I could put it like that.

THE COURT ADDRESSES COUNSEL – HOUSEKEEPING (16:55:39)

COURT ADJOURNS: 4.59 PM

COURT RESUMES ON WEDNESDAY 22 NOVEMBER 2023 AT 09.33 AM

THE COURT ADDRESSES MS JOHNSTON – HOUSEKEEPING (09:33:25)

RE-EXAMINATION: MS JOHNSTON

Q. Yesterday in answer to some questions from my friends, you referred to your involvement with a science committee, do you recall that?

A. Yes, mhm.

Q. And I just wanted to confirm with you that there are a number of reports before the Court from the advisory, the science advisory reports and also the redevelopment programme report, you're familiar with those reports?

A. I am familiar with those, yes.

Q. And I'll just get you to confirm you were or were not an author of any of those reports?

A. I was not an author of any of those reports. I'm sorry if I caused confusion, it is confusing. So Overseer the company has been a relatively long-standing committee called the Science Advisory Committee, SAC it's known as. The independent review was carried out by the Science Advisory Panel and that was a one-off appointment by the group and the redevelopment programme has been overseen by MFE and MPI and again that was independent of the Overseer company. So I have been involved with Overseer kind of over a number of years, both those two activities were independent and it was important that they were seen to be independent and not conducted by anyone associated with Overseer.

Q. Yes and in giving your evidence you're aware of your obligations for impartiality and independence?

A. I am, mhm. I apologise if I caused any confusion on that.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. I wonder, could you just put my mind at rest, where were you during the Foxton hearing? Were you somewhere in South America?

A. I was, I was in Chile, Commissioner Hodges.

Q. I was very impressed with the fact that we could actually make contact with you. I was quite intrigued at Ms Johnston's look at me when you

moved into the witness box, almost in anticipation of something about to happen and it got me a bit worried actually. Well I hope it's something to do with the fact that she expects me to ask for quite a few clarifications and I think that was a reasonable expectation.

A. Okay, very good.

Q. I try to work in a very structured way because these complex cases can go round in circles if you're not careful. I also try to work in bite sized chunks, starting at the beginning and in a way that I can understand things. In this particular case I think we need to start at the end before we start at the beginning which is what I'll do and I've go a number of topics and after I've asked my questions on each one, I'll provide the opportunity for her Honour and Commissioner Edmonds to see if they've got the other questions under that topic, so that you've given the best chance to have your brain in some kind of order, rather than go backwards and forwards. So I'd like to start with where to after PC2 and I've already given some indication that I think it's really important that there is some integration between what happens now and what's likely to happen in the future, so it's an efficient process that everyone understands what might come later and I'm not looking to try and prejudge the next plan change process but were you here when I was discussing the next plan change with Dr Daly?

A. I was, mhm.

Q. My understanding is that if the attributes states that we'll be setting that plan out to be met, there will be a need for further significant reductions in diffuse discharges of nitrogen from farming activities in the four target catchments, is that a correct statement?

A. As I understand it, yes, mhm.

Q. If that's to happen and assuming that legislation remains as it is at the present time, Horizons will have to develop an allocation strategy that sets out which nitrogen discharges are to be reduced by how much and so in terms of allocation strategies, do you have a view on the available tools that might be used in developing such an allocation strategy and I'll be more specific, is Overseer one of those tools, is the risk scorecard one of those tools?

A. Overseer would definitely – well, yeah, Overseer would definitely have a role in that sort of activity. The risk scorecard less because obviously Overseer generates leaching rates and the resource consent does not.

0940

0940

A. ... Overseer would definitely have a role in that sort of activity. There Risk Scorecard less, mhm, because obviously Overseer generates leaching rates and the Risk Scorecard does not. What, I guess, Ms Ongley showed me the map yesterday, I hadn't seen that before, suggesting that in some areas farmers might be looking, or sorry, they're looking for a reduction in nitrate leaching rates or an improvement in water quality of, you know, of the order of 50% and I think we'll all appreciate that's going to be very difficult to achieve and so I suppose I was suggesting that, you know, we – we'll most certainly find that very difficult to achieve and so what we need to do – the royal "we" – what, I mean, farmers need to be encouraged to do I believe is make those in field management changes and that the Risk Scorecard will help them do that and we, as I suggested, my analysis to date might suggest that there's a problem in front of us and I guess that might be what you are alluding to, is that perhaps there is a 20 to 30% reduction in leaching rates that farmers can already achieve, with tools like the Overseer and the Risk Scorecard using current suite of best and good management practices, you know, adopting all the technologies we currently have and that what I was saying, suggesting yesterday is perhaps that other 20-odd, 30% perhaps that we're looking for will come from current research and emerging ideas and I offered idea around perhaps edge of field technologies, you know, wetlands, bioreactors, I talked about drainage water recycling where we try and capture some of the drainage water and reapply it, so I guess to cut to the chase, you know, I think it's important that we get on with the job of encouraging, helping farmers make those changes that they control and can make and –

Q. I do understand that.

A. Yeah.

Q. I am really interested in that specific question of what are the tools that will help an allocation strategy and I think you've answered that and so do you think it would be sensible to remove, to put Overseer into such an insignificant role as part of Plan Change 2 when it might have a more significant role in a future plan change in terms of allocation, do you have a view on that?

A. Yeah, well, I don't envisage an "insignificant role" for Overseer in Plan Change 2, remember we're running both options and I suspect that many farmers will use Overseer and some obviously will use the risk tool. I suppose I come back to the fact that while the – it would be very useful for regional council in the future to have the large database, resource or allocation is a relatively, you know, complex sort of –

Q. Yes.

A. – you know, and it won't be just Overseer, that's where we'll need to start thinking about, you know, attenuation and flow pathways and so forth, so yeah, it will be – undoubtedly it would be very useful for the regional council or anyone doing that sort of resource accounting exercise to have a nice, large database of Overseer values, that's incontestable, yeah, but whether, you know, that's what Plan Change 2 is about or not, and as I say I don't really envisage, yeah, certainly not arguing that no one uses Overseer, yeah.

Q. Okay, are you aware of any other tools than Overseer and the Risk Scorecard that might be contemplated based on current knowledge?

A. Well, in terms of high resource accounting, sort of falls into two parts. You have to identify nitrogen that leaves the farm or root zone and then nitrogen that arrives at the river is very different.

Q. Yes.

A. And to cut to the chase, you have to be able to identify what that transmission or attenuation factor is, and so there are lots or a range of different models that you'd need to be using to identify that, mhm.

Q. Yes, thank you, but I do understand that and just to give you an indication of some of the problems we've had with models, we had a case where one model was put before us saying that 75% of nitrogen came from forestry and 25% from farming, and the other model said the exact

opposite, and so that presented a serious challenge. So the models I see as almost a different issue, the models for catchment modelling are different to the specific role of Overseer. So they're –

A. Sure.

Q. – which leads me onto my next topic, before doing that, I'd just like to ask her Honour and Commissioner Edmonds if they have any questions in this topic?

THE COURT: COMMISSIONER EDMONDS

No, I haven't.

THE COURT: JUDGE SEMPLE

I'm jotting down questions, but they're a bit more generic, so they might all come at the end, so I thank you, keep going.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. The next topic is uncertainty. And one of the things I found in quite a few of these cases is that there is an expectation that a number provides certainty. And my experience is that is far from a realistic expectation and so I think it's important that in making our decision we have a clear understanding of what the uncertainties are likely to be and that's relative uncertainties between Overseer and the Risk Scorecard. So that's where my next questions are coming from. There's been a lot of debate about uncertainties associated with Overseer and so I'd like your views on what you think is a realistic assessment of Overseer for an individual farm, taking into account what is known about any verification that has been done within the Horizons area. So could you give me your best assessment of the likely variability we can expect in relation to Overseer?

A. I guess, well, the reported figures, so as you well know Commissioner Hodges, are you know around that 20 to 30% uncertainty. I guess, you know, as an advocate or proponent of Overseer I have never seen that as very important and that might strike you as odd. The end game I always saw for Overseer, in terms of use on farm, was to identify from a whole range of practices what was most appropriate or suitable on

a particular farm to get those management changes that we need and so now the accuracy will be more important in the sorts of exercises we were just discussing around, you know, resource accounting, but if you're trying to reduce your leaching rate, and the end goal is to think, you know, "shall I modify my – how much fertiliser I apply or should I build a stand-off pad or, you know, buy more maize and use less urea," then in terms of those relative differences I think Overseer makes an excellent job and is quite reliable and accurate. The actual number possibly that, you know, that's where the uncertainty lies, but in terms of, as I say, what we have to ask the question "what's the desired outcome here"? And that where I think Overseer is very, very good.

Q. One of the issues we're dealing with is that there is an expectation that the Overseer number will be met, that the levels in Table 14.2, so it's a very live issue, but I'll appreciate your comment on that.

A. Mhm.

Q. Do you agree with that?

A. That, yeah, well, I suppose that's, that's the question around, you know, how Overseer should be used in the future and the, you know, and it's – this is my view, sorry, I should very much preface it with this, that it should be used in a way that appreciates some of the shortcomings of all models which Overseer is not immune from and when regional councils are looking at consenting a farmer or not they might be thinking about perhaps a farmer can't get to 40, but can get to 42 or so and might make interpretations along those lines of viewing it in a broader context, as I say, that perhaps it's not so much the number that's important, it's the number, it's the type and extent and magnitude of the management changes, the suite or raft of BMPs, GMPs, that have been introduced into the farm.

Q. I do understand the ability of Overseer to measure reductions.

A. Right.

Q. Hopefully they are reductions, rather than increases, but we're dealing with a situation where Table 14.2 is absolute, and that presents a problem, but and what I am trying to get at is whatever we have, if an Overseer number is used, we're going to be between 20 or 30% unsure

whether it is more or less than the actual figure that – the actual figure is either 20 or 30% more or less than the Overseer prediction and that's the point I'm trying to get at, is that a fair comment?

A. I think that's a fair comment, mhm, mhm.

0950

Q. And in relation to that, there's an understandable concern about LUC, land use capability and its role in Overseer, do you see that the issues arising from different LUC classes are likely to make any significant difference to the accuracy of that 20 to 30%. In other words if LUC was not taken into account at all, would it make a significant difference to the reliability of Overseer? That's quite a challenging question.

A. Well so I'm not quite sure I followed. There's no real link between LUC and the accuracy of Overseer, is there or am I missing –

Q. Well that's what I'm trying to establish because there's a fairly strong view that LUC should be given a lot of priority. Does that affect the issue of uncertainty at all, that's what I'm trying to understand and I think what you're saying is that no it doesn't?

A. No, no it doesn't, no.

Q. So whether we take a lot of account of LUC or not, you'll still be dealt with this 20 to 30% uncertainty, is that correct?

A. Correct, yeah.

Q. And my current understanding is that whichever method we use, it's not going to make any significant difference to water quality within the term of PC2, is that correct, whether we use a risk scorecard approach or an Overseer approach?

A. No I don't believe that's correct. It's I think about a five to seven per cent improvement.

Q. Sorry, I probably didn't explain that very well. So if we used Overseer, we achieve a certain reduction in nitrate concentrations in the receiving environment.

A. Correct.

Q. If we used risk scorecard, we'd achieve a similar type of reduction in the receiving environment, is that correct or not?

A. That's my argument, yes.

Q. So really there's not a lot of difference between the two tools on those two areas there, we're not going to be able to tell any difference whichever we use.

A. I suppose that is my argument, yes the two tools will drive the same practice changes on a farm, will result in the same – similar decrease in nitrogen leaching and therefore similar improvement in water quality, mhm.

Q. Yes, I'm trying to work through what is a very complex issue.

A. Sure.

Q. I'm sorry if I'm repeating your evidence but it's actually very important for my ability to make a properly informed decision.

A. Sure.

Q. One of the issues raised by Mr Day is the issue of grandparenting existing high nitrogen permitting activities, do you have a view on that in terms of Overseer and the risk scorecard?

A. Well the risk scorecard as I have pointed out in my evidence is sort of the exact antithesis of grandparenting. It treats everyone exactly the same. I mean it's an interesting exercise and as I say I don't want to undermine my support for Table 14.2 but you could argue that in a sense there's an element of grandparenting there, rather than in the risk scorecard in as much as, as myself and Ms Wright were discussing yesterday, you know, that Table 14.2 favours LUC 1, 2, 3 classes over the others and so that kind of embeds into that, you know, sorry favours farmers on those land use classes whereas other farms on other land use classes might say well, you know, because I've modified my soil I'm equally productive, look at the chaps on LUC 1 and 2 have been putting all the nitrate in the river and here's how they are rewarded, they get a greater allocation than I do. Now I don't want to make too much of that and certainly don't want to relitigate that but certain the risk assessment tool does not have an element of grandparenting in it, if that's your question, yeah.

Q. I'll just ask her Honour and Commissioner Edmonds if they've got any questions on uncertainty they want to ask at this stage.

0955

THE COURT: JUDGE SEMPLE

No, no thank you.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Now in terms of the options before the Court, there's the Table 14.2 option, the percentage reduction options for dairy and CVG and the NRR scorecard options, those are the three options that are before the Court at the moment. Is it your view that all three options would drive the same level of change in management processes?

A. Yes, that is my view, mhm.

Q. Do you consider that all three options would achieve the specified reduction targets or 20 and 35%?

A. Sorry, just back up here sorry, I might have misunderstood you, there's how many options two or three?

Q. Three.

A. So one of them is Table 14.2 by itself?

Q. Yes.

A. Sorry that will drive more change obviously than the other two, yeah because decision version PC2, not all farmers had to meet their nitrogen loss allocation from Table 14.2, some had only to reduce it by 20, well not only but reduce by 20% or get down to the 75th percentile. So sorry I misunderstood.

Q. No, that's fine. And do you think all three options would achieve at least a 20 or 35% reduction depending on whether they're dairy or CVG?

A. 25, 30% reduction in what?

Q. Sorry 20% for dairy and 35% for CVG, commercial vegetable growing.

A. Well I think, you know, if everyone is driven to the table they'll obviously meet that. Decision version PC2 has that built in and it's my argument that the risk scorecard will achieve a similar outcome to DV-PC2, decision version, yeah. So sorry just to make it clear and I appreciate you probably understand it, that Table 14.2 will drive the most changes and the other two I would put on a level footing if I could put it like that.

Q. Okay, that's helpful. Coming now to the Table 14.2 option, there's obviously the challenge with the MFE saying don't use it obviously for

absolute numbers and that's something we're going to have to think about but is it my understanding that with Table 14.2 you think that 65 to 70% of the farms would be able to achieve that with Table 14.2?

A. Mmm, correct.

Q. And is that for dairy farms only?

A. Yes, yes sorry, mhm.

Q. So do you have a view on what percentage of CVG operations would be able to achieve Table 14.2?

A. No, you'd be best asking Dr Jolly that question.

Q. And the decisions version of – sorry the decisions report at 332 says Dr Terry Parmenter, an expert witness for the council, carried out a study that indicated that implementing a range of GMPs, 82% of the dairy farms he looked at would comply with Table 14.2. So we've got a range of estimates of how many farms would comply, we've got your 65 to 70% and we've got this 80% from Mr Parmenter. Do you have a view on that?

A. Yes, what Dr Parmenter did, was he had a very stratified data set, so his data set was relatively small and quite focused or targeted. He was involved in a financial analysis. What I, back in 2020, had access to was a very large data set held by the regional council. So I had multiple files. So it will be the difference there in number of farms we were looking at, yeah, as I think he had, I'm running off memory, I think he was possibly looking at 20 or 30, whereas I was in the hundreds or hundred plus.

Q. I think he looked at 126.

A. He did?

Q. Yes.

A. Oh really, okay.

Q. Something like that. Yes, 103 or the 126 dairy farms he assessed.

1000

A. Mmm, okay, then no, I'm not sure why that difference would be there then, yeah.

Q. I think this comes back to the issue of uncertainty, because we, we're making decisions in an environment of considerable uncertainty.

A. Certainly, uh huh.

Q. Yes, okay. Now, if it wasn't or the MFE advice, about using Overseer for absolute numbers, would the Table 14.2 option be your recommendation to the Court?

A. Excuse me, if it wasn't for that, my recommendation would be the decision version PC2, so Table 14.2 with the 20% and pathway or down to the 75th percentile.

Q. Okay, thank you. I have just got one more question. Historically, there has been a difficulty in getting access to previous versions of Overseer files, or a previous version, is that likely to be an issue going forward?

A. That's a good question. It's always, yeah, it is very difficult to get access to historical versions. On occasions I've often thought it would be useful. I think we – I don't see it as a major impediment, no, we just have to keep, as you were discussing with my colleague yesterday, Dr Hanley, you know, reference files and try and keep abreast of version changes, sorry, if that is what your question is alluding to, yeah.

Q. Yes, it is, okay, thank you. Those are my questions on that topic, thank you.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. So it is just some questions that –

A. Sure.

Q. – arising from that, if you like, so you were asked about the percentage of farms that you thought would come within the table approach.

A. Mhm.

Q. But you weren't asked about what you thought would come within the decision's version, other pathway, the 20% reduction.

A. Right.

Q. So do you have an answer for me on that? What does that do in terms of that 65%, what would it go up to?

A. Certainly.

Q. If I could know for the 20%, but also down to the 75th percentile, if you could –

A. That's, yes.

Q. – explain that to me and what that does as well?

A. So, I – what happen – if those figures were broken down into the different, so we have the different priority catchments.

Q. Right, no, I understand.

A. Okay, and so they, 65, 70-odd % is an aggregate number across all of the catchments, so some of the catchments, the bulk of farmers can comply or relatively easily and in other catchments it's a real struggle. Mostly, as I said, as a consequence of soil type and rainfall, okay. And so the just kind of reading down the perhaps the most challenging one was the Upper Manawatū and so about 20, only 23% of the farmers there can meet there CNLM from the table. If we had a discretionary pathway whereby they – farmers had to reduce their leaching rate by 10% then that value went from 23 to 27, so not much of a shift, and that was the change argued for by Dairy New Zealand and Federated Farmers at the council level hearing. If those, if we said that farmers had to reduce their leaching rate by 20% or down to the 75th percentile which was what I argued for at the council level hearing, then that figure went up to almost 50, so 44, 46%. And it was on that basis that I argued for the 20% reduction, or down to the 75th percentile because of that major increase that we got when once made that pathway available to farmers of a 20% decrease and as I pointed out, I was weighing that against the associated improvement in water quality.

Q. So the – this is about Upper Manawatū, you've given me?

A. Correct, in, yeah.

Q. And then yesterday you did mention some other figures for there catchments?

A. Sure, sure, so, yeah, so –

Q. If that's in your evidence, you could direct me to that?

A. Certainly, well, for the Horowhenua, the three corresponding figures were 42, 65 and 68, yeah – sorry, 42, 63 and 68. And the Rangitikei where many farmers already comply, it was 83, 86 and 92, mhm. So that was my point, the kind of aggregate value didn't paint the full picture around the necessity of the discretionary pathway, that there these, there were a group of farmers that were really going to struggle to meet their table requirement.

THE COURT: JUDGE SEMPLE

Q. Professor, if I can just sneak in here, just so that I am clear in my notes, when you use the term “farmers” –

A. Yes.

Q. – in all of those answers to that question, are we simply talking dairy farmers?

A. Correct, sorry, yes.

Q. Thank you, thank you.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS

Q. So just so I’m clear about the 20% or the 75th percentile.

A. Sure.

Q. Could you just explain that to me?

A. Absolutely, yeah, no, absolutely. So imagine you have one of the priority catchments and you’ve got a number of farmers, maybe 100 farmers, and there’s a range of leaching rates and for argument’s sake, they’ll be clustered around a certain value because many of the farms are quite similar, you know, similar soil, similar rain, they’re running dairy cows, it's – they have the same climatic conditions and so perhaps they’re – the range is 30 to 50 kilograms of N per hectare leached per year, I think. Then you have kind of what we – you might call a tail or you have farmers who are leaching a lot more. As I said, mostly as a result of they’re getting a little bit closer to the ranges, the – excuse me, the Ruahine Ranges and as you go up in elevation rainfall increases quite dramatically, maybe the soil type changes and so you’ll have some farmers not leaching 30 to 50, but maybe sort of 80 to 100 and even greater if they’ve got very coarse soils, okay. So those farmers leaching those very large amounts, often it's no reflection on either their management ability or they’re very intensive farms, as I say, it's just a consequence of the conditions there. And so they, it's almost impossible for them to get down to their table value, okay, and so if you had 30 to 50, if you as kind of the range of most farmers, you’ve got a farmer at 120 and you say that farmer only has to

make a 20% reduction, then that's, what's 20% of 120, you know, 24 or something, you know, whereas we said that's really not enough, they've got to come down to the 75th percentile value. So you get the 75th percentile value in that case might have been, for argument's sake, 70 kilograms of N per hectare. So we were requiring those farmers that were leaching a lot to make major changes and that, about the best you could expect them to get down to is so that they fit, you know, back in that kind of three-quarters, if I could put it like that is, is it you understand the 75th percentile?

Q. Yes.

A. Yes, yeah, so thank you, so you get down to that value, yes, mhm.

Q. Okay. Thank you.

THE COURT: JUDGE SEMPLE

I think that makes sense to me, this is a question that might not be for you, it might in fact be for Ms Johnston.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON:

Q. Just is there somewhere in the evidence which looks at not just the percentage of dairy farms? I'm thinking about policy 5.8 and the most farms achievable policy, and wondering about whether there's a table or something somewhere that takes – so we know Table 14.2 recalibrated in the, you know, overall as an aggregate 65 to 75 to 70% of dairy farmers, so as one of the intensive land uses that's pertinent to the policy, we know that number would get through on – most would be able to get through on Table 14.2 alone. If that was the only question, we probably would be here, would we, that's relatively easy.

A. No, and certainly Dr –

Q. But obviously there are other intensive land uses where that number is either non-existent or very, very low and I'm – I would be interested, I don't feel that I've got that clearly in my mind and I get distracted by the 65, 70% of farmers meaning most, which it doesn't, it's very – it's a very specific number related only to those farmers undertaking dairy farming which is only one of intensive land use, intensive land uses?

1010

A. Well Dr Jolly has done that analysis for CVG, commercial vegetable growing and she has a different skill set to Professor Horne. I don't know if we've ever combined their numbers to produce an overall but that's work that we could do. Dr Jolly was – it was something that Dr Jolly reflected on overnight with some of the questioning yesterday about that proportion. She's ready to talk to you about that today. I think that it's fair to say that her evidence and the Bloomer report attached to it shows that the percentage of CVG that would meet Table 14.2 is much lower, much.

Q. Yes, much lower.

A. So, yes but I understand the point that the Court is making about some sort of aggregate across that.

Q. Yes I think it would be a useful, you know, a useful tool for us to have in one place because it immediately takes you into a space of going well, you know, without something else, whatever that might be, but without something else, then it might be difficult to suggest that the policy is met.

A. Yes, thank you Ma'am, and I was going to ask Professor Horne in matters arising, just his reference to pastoral farming which is what he deals with in that and how he has – it does pick up cropping and sheep and beef irrigated which are smaller components.

Q. Yes I think it is useful to just be quite precise with those terms when we are talking about that, because it does matter in terms of linking it back through to the policy framework.

A. Absolutely and the provisions presently reflect that the pastoral matrix applies to dairy, irrigated sheep and beef and cropping and CVG is separate but the values within those tables reflect those three intensive farming activities which is what Professor Horne talks to.

THE COURT: JUDGE SEMPLE

Q. Sorry that wasn't really a question for, I just wanted to get clarify about exactly what was being referenced. I don't think I had any actual question in relation to that but thank you.

A. No I apologise with that shorthand, that I'm talking dairy, irrigated sheep and beef.

Q. We all do it, but I just wanted to be clear.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Professor Horne, just so that I'm absolutely clear, the 65 to 70% applies to the Upper Manawatu, does it, not the whole of the region?

A. No sorry that does apply to the whole of the region, that's the aggregate value across all of the priority catchments.

Q. The whole of the priority catchments or the whole of the region?

A. No the priority catchments sorry.

Q. Okay, that's what I thought you were –

A. Yes, and the values were for Horowhenua and Rangitikei and Upper Manawatu separately.

Q. Now in terms of the specified reduction option, would the same 65 to 70% of dairy farms meet that target?

A. No that would go up.

Q. And what would that go up to?

A. I don't have that with me, sorry. I guess – sorry I don't have that aggregate value with me, you know, I could re-read values I just read out, so across the three catchments that I have that data for, if that would be useful.

Q. I'm just trying to get an idea of whether it's another 10% or another 20%. Do you have any idea, like if we said it was 65% in the case of Table 14.2 would it be likely to go up to 75% in terms of the specified reduction?

A. If I could just ballpark these figures sorry, so it went up 20% in Horowhenua, it went up 10% in Rangitikei and it went up 25% in Upper Manawatu. There are not many farms in Horowhenua, more in Rangitikei, a lot in Manawatu. Possibly with the 20% reduction, that discretionary pathway I would like to get an accurate to you but kind of eyeballing this, maybe 20, 25%, yeah.

Q. Okay, so that's quite a significant increase?

A. It was, and that as I say was why I advocated for the 20%, yeah.

Q. And in terms of the actual number of farms, are we looking at say another 40 farms?

A. Sorry I might be confusing you, those values I gave would be for the percentage of farmers who would meet their table requirement, yes.

1015

Q. And in terms of meeting the 20% reduction for dairy, the percentage meeting would go up by 20%, is that correct?

A. No, no, sorry, if we enforce farmers to reduce by 20%, okay, we would get 20% improvement but a co-benefit of that would be that they would then meet the table requirement.

Q. Oh okay. So really it's the same 65 to 70% of farms would be able to achieve the 20% reduction, is that what you're saying?

A. No I'm saying 65 to 70% of farmers would meet their table requirements, so that's Table 14.2, that's option 1.

Q. Yes.

A. If we said okay, if you we force farmers to reduce by 10%, so –

Q. No, just think on 20%, that's all?

A. Okay 20%, yeah, then as a result of that 20% reduction, then more farms will obviously meet their table requirement.

THE COURT: JUDGE SEMPLE

Q. But you can't separate out, I'm thinking now of sort of in some farming analogy some sort of drafting gate, so, you know, you've got your first cabs off the rank who can meet Table 14, they've done that.

A. Correct, yes.

Q. Let's put them over there somewhere. Now we've got a series of farms left who still – they can't meet Table 14, so we're providing them with a different opportunity.

A. Right.

Q. We send them down the specified departure pathway.

A. Correct.

Q. And see how many of them can then get consents such that they join our crew over here of someone that is consented where those limits are achievable. Do we know how many more we get through the gate and what's the lift from using a different pathway?

A. So as I understand it –

Q. And I'm happy for counsel to help here if we have – if we are picking this up such that the questions we're asking don't feel right, then jump up and tell us you think we've got it wrong.

A. So as I understand it and to use your metaphor, is that so you have farmers who can meet their table requirement and then you have a discretionary pathway where farmers made a 20% reduction and they get consent and a nice benefit of that but somewhat unrelated to that is that now a certain proportion of those would have fallen into that first group as well, they also meet their table requirement.

Q. I appreciate that. They don't need to be going through this 20% reduction process if they already met Table 14.

A. But sorry but they had to make changes to their farm system to get the reduction.

Q. I understand what you're saying, they now are at – they've made changes and they achieve it. One assumes if they can make changes on the farm in order to achieve Table 14, they would've done it to get through Table 14.

A. Exactly, well so some will.

Q. I don't know if you're double counting the benefit there I suppose.

A. No, no but it's very difficult for some to meet their table and so they are going to make a –

Q. So they make those changes.

A. So remember Dairy New Zealand and Federated Farmers at the time said, all that you can reasonably expect is 10% reduction because that's very costly and difficult and so we're saying no you need to make as a minimum a 20% reduction and one of the advantages of that is that it's aligns farmers much more closer with Table 14.2.

Q. Yes, yes, I get that but I'm trying to understand is how many more farms are consented, authorised, appropriately authorised as a result of that pathway being available to them? Do we have that number. Ms Johnston is going to leap to her feet. If you can help me I'm very grateful for that.

QUESTIONS ARISING: MS JOHNSTON

Q. Well to go back to the council hearing I think that why Professor Horne might be pausing is because the panel in that point asked you, you'll recall Professor, to actually run the figures to see what the 20% reduction would look like compared to the Table 14.2 entry way. So those are the figures you're speaking to. What her Honour is asking is when the table was recalibrated, there will be a certain number of farmers that can consent under that?

1020

A. Correct.

Q. There will be a proportion of farmers that can't and they would have two options available to them, they would either reduce by 20% and meet all this – or the 75th percentile, whichever is greater.

A. Mhm.

Q. Your evidence is that even then some wouldn't get there and they would have to go down a discretionary pathway. The question that her Honour has is how many wouldn't meet the table but would get through the specified reduction and then wouldn't need to default into the discretionary pathway, and –

A. So these are farmer who won't make a 20% reduction?

Q. No, they would, they wouldn't meet the table number.

A. Yeah.

Q. But then they would meet the 20% or the 75th percentile?

A. Right.

Q. So imagine three rows in front of you.

A. Yeah.

Q. The farmers going to meet Table 14.2?

A. Yes.

Q. Put them to one side.

A. Right.

Q. The second row is the farmer who could make the 20% or the 75th percentile whichever is greater?

A. Yeah.

Q. And then there's the third row which is they can't meet either of those controlled pathways and they're a full discretionary pathway and they need to be considered separately, so it's the second row that her Honour is asking you about and I do wonder whether your supplementary evidence, one of your further supplementary briefs from the first instance hearing would help.

MS JOHNSTON:

It's not in evidence, could I pass it to him on?

THE COURT: JUDGE SEMPLE

That's all right, I am happy to, I am happy to call for that if it helps me to understand this question.

THE COURT: COMMISSIONER HODGES

Definitely.

MS JOHNSTON:

I have got it online.

MS ONGLEY:

I don't have an objection.

THE COURT: JUDGE SEMPLE

Yes, yes. Thank you, Ms Johnston.

FURTHER SUPPLEMENTARY BRIEF OF PROFESSOR HORNE HANDED UP TO THE COURT

MS JOHNSTON:

Thank you. If we haven't answered it today, we would like the opportunity, Ma'am.

THE COURT: JUDGE SEMPLE

Then, absolutely, I don't have any difficulty with that and I'm acutely aware that when counsel have been working with these things over a long period of time, sometimes counsel can be super helpful in putting it in language that, you know, the witnesses understand.

MS JOHNSTON:

To be honest, it makes my head hurt, too.

THE COURT: JUDGE SEMPLE

A. Okay, so if I understand what the Court is saying, that in the Upper, so this, as I said, the most problematic case priority catchment was the Upper Manawatū.

Q. Yes.

A. With the higher rainfall.

Q. Yeah.

A. Is that approximately, if this is your question, approximately in that region approximately 56% of farmers would be seeking the discretionary pathway. Is that?

Q. And when we use the term "discretionary" does that, in fact, mean the specified departure pathway?

MS JOHNSTON:

Yes, Professor Horne has been referring it to the discretionary but it is the alternative controlled pathway.

THE COURT: JUDGE SEMPLE

Yes, it's the alternative controlled?

MS JOHNSTON:

Yes.

THE COURT: JUDGE SEMPLE

Yes, that's fine.

MS JOHNSTON:

Thank you.

THE COURT: JUDGE SEMPLE

Q. So sorry, tell me that number again, because I got distracted by the "discretionary"?

A. Okay, 56%.

MS JOHNSTON:

I would probably pause, there's lots of –

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. Chat?

A. Yeah, and I wonder Ma'am whether it might be better if we take the time to reflect on this question and have it entered into the record once professor has had a moment to reflect and –

Q. Yes, yes, and if it would be possible, I am a great lover of a table or a, you know, something that puts all of the numbers in one place rather than – so in my mind, I'm thinking, you know, would – there is a useful exercise, it would seem, for us, looking at policy 5.8, to say, you know "if Table 14.2 is recalibrated, what does that mean in terms of most intensive farm land uses, you know, what are the proportions that then have a workable consenting pathway, what does that look like"? And that needs to be for more than obviously just dairy farming, pastoral farming.

A. Absolutely.

1025

Q. And then if an additional controlled activity is provided either through the specified departure pathway or through the NRAT what does that look like across the – across those columns? And then there will be obviously, after that, there is a discretionary that will, you know, who would ever be able to assess, but some portion of those might get a consent if they had gone through and I'm just interested to get a clear understanding of that,

because it obviously provides a basis for why there needs to be an alternative control pathway or not.

A. Thank you, Ma'am, we will do that work and I do note that all the farm systems advisors that are appearing before you.

Q. They're probably whipping it up while I'm talking about it.

A. They're all, they're all here, so –

Q. Yes.

A. – we'll take the opportunity to make sure that that information is brought before the Court as quickly as possible.

Q. All right, I think that would be useful, thank you.

THE COURT: JUDGE SEMPLE

And that probably gets you off the hook and Ms Johnston would probably like her laptop back. All right, I don't know if I've entirely distracted all of us, but let's see if we can get back to – Commissioner Edmonds, did you finish that line, because I think I took over in the middle of that?

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS

Q. Well, I guess at the beginning I was trying to understand these different pathways they might go down and so I think what we're now suggesting is that we could have some numbers in relation to those, rather than putting you – having you do it on the hoof, that sounds very helpful. And so when you are doing these numbers, are you going to do each of these – the catchment areas, the different ones and then do a sort of an aggregate on it, is that intended?

A. If that's what you would like?

Q. I think that would be useful.

THE COURT: JUDGE SEMPLE

That might be useful.

THE COURT: COMMISSIONER HODGES

Your Honour, as some people in this room will know, I quite often ask for more information.

THE COURT: JUDGE SEMPLE

Mmm, I have heard that.

THE COURT: COMMISSIONER HODGES

And it's helpful if we take a few moments over morning tea.

THE COURT: JUDGE SEMPLE

Yes, we might have to all.

THE COURT: COMMISSIONER HODGES

To actually think what would help us most and I think you've covered a lot of them, but I think in fairness to everyone we should give you a clear indication of what we're actually looking for. Is that okay?

THE COURT: JUDGE SEMPLE

Yes, good. All right, back to you then?

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Well, I was almost going to say at the beginning, Professor Horne, that I think we have no idea where my questions will lead and certainly had no anticipation of getting to this point.

A. Very good.

Q. Thank you for your tolerance in trying to help us.

A. No, no, you're most welcome.

Q. So if we went to the specified reduction option, the 20% in dairy which is where you're talking about, would you see any advantages in that over a Table 14.2 option other than enabling a pathway for more farmers?

A. Not really, no further advantages in other than enabling more farmers to get that, but remember that I think the 20% is pitched at a level which is, you know, practical, achievable, it's going to be very difficult for farmers

to make greater changes than that and importantly even if we have more changes, it is not going to result in anymore or further improvement in water quality.

Q. Other than land use change, or something pretty dramatic, is that right?

A. Well, yes, yeah, really large-scale, sure, yeah, sorry, I'm assuming there would for dairy farming, yeah.

Q. Yes.

A. If we were going to – so dairy farmers trying to secure resource consent to continue in their business, it is going to be difficult for them to get more than 20%. I mean, for the odd farmer it will be slightly easier, but as a rule it will be difficult for the majority of farmer to achieve more than a 20% reduction which you might, so be it, if it results in improvement in water quality they may just have to live with it and as you've pointed out they may be required to make greater changes in the future, but as I said, I was kind of informed by both those, that the argument that it will be difficult and costly and that it wasn't going to after about a 20% reduction result in any greater improvement in the water quality.

Q. Okay, yes, that is helpful, thank you. Well, if there are no other advantages, are there any disadvantages in this option compared to Table 14.2?

A. Well, I suppose the obvious disadvantage is that they're not going to meet their Table 14.2 requirement, yeah.

Q. Mhm, but that, it comes down to as simple as that?

A. Pretty much.

1030

Q. So just so that I fully understand this, what you're really saying is that if they can meet their amended Table 14.2 now to get their consent control (inaudible 10:30:12) and then there's the alternative pathway where they must demonstrate that within a certain period they will achieve 14.2, that's the bottom line is it?

A. For what sorry?

Q. For 20%.

A. At 20% yes, yeah.

Q. Which will mean they'll achieve 14.2?

A. They will achieve their 10 year value at 14.2, yes.

Q. Now in terms of nitrogen risk scorecards, one of the things I found is that the world is constantly changing and new ideas come before us all the time, some of them are very good, some of them are not so good, and I guess the issue for us, putting aside the scope issue for the moment, is is a risk tool an appropriate way to move forward at this stage? So that's where my questions will be coming from. It's very obvious that a lot of experts have put a lot of time into coming up with this tool and it's also very obvious that it's a very high profile issue around the country at the present time. So there's a lot to think about in our decision here. Let me just go through my questions. You've indicated that the dairy risk scorecard is based primarily on the Fonterra risk scorecard, were many changes agreed by the experts through your process?

A. We did make the odd small change. Basically the scorecard remains in tact but there were a few peculiar, well not peculiarities, but a few specific things to Horizons' regulations currently in place, for example around effluent management, yeah, that had to be built into risk scorecard because they weren't an option, yeah, for farmers, so a slight tweaking but essentially it's gone through unchanged, yeah.

Q. Did you look at the relativity between point scores for different management areas, you know, there's the six management areas, was any work done on just comparing whether the fertiliser application rates were comparable with other areas for example?

A. So can I just go back to my former question that perhaps I should've also noted that we deleted the irrigation management factor, yeah.

Q. And the reason for that was?

A. Because it treats irrigation in a slightly unusual way. Well I suppose more specifically because again the requirements in the risk scorecard were already covered off by Horizons' regulation would be the main thing, was the main point but there were slight technical issues around the way the scorecard dealt with irrigation as well, that the experts agreed didn't sit well in the Horizons context.

Q. Well irrigation can certainly have a significant impact on leaching?

A. Absolutely and that's the key point, so thank you for reminding me of that. The thing is irrigation, you know, you grow a lot more grass, so you have more animals, so you use more fertiliser, you produce more milk. They were captured in other aspects of the risk scorecard much better. The irrigation component was around, you know, water use and how you schedule and as I say that was already covered off in quite stringent Horizons requirements. You have to metre water use and things like so it wasn't really going to add any benefit. The impact of irrigation on leaching rates were picked up better in other components of the scorecard, much as they'd done in Overseer as well, yeah, so. So I just wanted to be full on that answer.

Q. No, that's helpful because it dealt with the irrigation issue which I wasn't quite sure about. So just going back to my next question, for each of the six management areas, there are a series of points against each.

A. Yes.

Q. Was any checking done by your expert or the expert group to look at the relatively between points for different activities to make sure that they were proportionate?

A. We discussed that and thought, you know, that was, you know, it would open the proverbial can of worms so to speak and it was probably best just left as it was, that it was informed by considerations along those lines, there was the AbacusBio report and so forth. So yeah once you went down that pathway, you might have –

Q. Well I'm not reluctant to open cans of worms.

1035

A. No, no but I'd be here saying well why did you adjust that number there and, you know.

Q. Well perhaps I can come at it from this way, were there any obvious concerns raised about that aspect in your discussions?

A. No, no obvious concerns, no.

Q. I'm not suggesting there's a problem.

A. No, no.

Q. Because I've looked at them fairly carefully and there's nothing there that struck me as being a bit crazy but I'm not an expert in the field.

A. No well we arrived at pretty much the same opinion that, you know, perhaps as an individual, you know, we all thought oh that's a slightly odd number there in one of the factors but yeah nothing systematic or consistent and certainly no real gains or benefits to be made from engaging in that sort of exercise.

Q. I think you said yesterday that further changes to the risk scorecard are likely as time goes on and there's obviously a lot of work going on in other areas and I'm sure that some of this will come together possibly through the MFE programme. How do you see changes in the risk scorecard affecting the future management of nitrogen losses from farms in the Manawatu?

A. If I could answer that in two parts, Ms Wright and I were discussion, you know, how the risk scorecard might be improved and I was suggesting that, of course all tools hopefully are looking for opportunities to make improvements, structurally on terms of, you know, it does kind of address all the management practices we currently know about. So while there might be an element of fine tuning, I don't think there'd be any major changes but what might be emerging are new technologies or ideas and they could – that has happened in the past and they've been incorporated into Overseer and I was suggesting, you know, and one of the advantages and I don't know how significant it is, of the risk framework is that it would be more nimble and flexible and would be incorporating those changes into it relatively easily.

Q. One of my concerns is that Table 14.2 was put forward with the best intentions and on the best information at the time and has proved problematic, is there any possibility that the same thing could happen with the risk scorecard? That's where my concern is.

A. Oh I see. Perhaps less – no, I'll finish my sentence. Perhaps in that sense it is less problematic than Table 14.2 because it is very streamlined and simple in the sense that perhaps people were suggesting yesterday is problematic but here's where it might have an advantage in as much as it is very much focussed on management practices and adoption of those practices, so it doesn't kind of have a target leaching rate in mind so much or, you know, what the class of land you're on. Not that there is

anything wrong with that either but it is more focused on what farmers can do and achieve, you know, starting tomorrow.

Q. And I was very pleased you raised the AbacusBio report and I'm sure Ms Ongley was as well because it came up in PC1 which we're not allowed to mention but we couldn't get a lot of helpful answers unfortunately. I have to say I found it a very difficult report to understand as a non-farm systems expert and one of the key messages I took from it, rightly or wrongly is that both Overseer and the risk scorecard identify applied nitrogen, stocking rate and discharge destination as the main contributions of nitrogen leaching from farmers. Is that a fair statement?

A. That's a fair statement, mhm.

Q. You went on – and you very helpfully explained the 45% issue yesterday in terms of relationship to the nitrogen leaching component and why, when you add the biophysical things it comes up to a pretty respectable level really, so that was helpful, but why do you consider the report to be thorough?

A. Because it takes that – it's thorough in the sense is that it's trying to tease out the different components of the risk framework and relate them, square them off against Overseer. So it's not looking – it's not kind of ground truthing against measured field data, really it's just looking at the similarity between the risk tool and Overseer and what I like about it is how it kind of unpacks the different components as you just nicely pointed out and the relatively large data set that was involved with that, in that exercise, so you know, there's lots and lots of Overseer files, they had a very large population of risk scores broken down into the different, you know, sub-categories and so forth and tried to really tease out the nature of the relationship between the two tools.

Q. Yes and I think what you are also getting at is that question I last asked because in the bio – AbacusBio Report they did specifically look at the relative point scores.

A. Correct.

Q. And make adjustments. Is that, is that part of your?

A. Did they make adjustments? I don't recollect that?

Q. They made some recommendations?

A. Made some recommendations, yeah.

Q. Yes and I think the adjustments were made after that.

A. Mhm.

Q. Okay, thank you, that's good.

A. Sorry, yeah, I dare say that did spill out of the report, I didn't recollect them adjusting any scores, but yeah, mhm.

Q. We all take different things from reading reports.

A. Okay.

Q. Do you think we can place much reliance on the Dairy New Zealand research on Risk Scorecard and leaching rates, because I understand there has been some recent testing that's showing some reasonable correlation between Risk Scorecard and value – risk scores and leaching rates, do you have a comment on that please?

A. Look, I – it is remiss of me, I am not familiar with that research, yeah.

Q. Okay, that's all right.

A. But it doesn't surprise me.

Q. It's very new, as I understand it.

A. Yes.

Q. How far have you got with your discussions with Ms Foster relating to the inclusion of retirement of land in the Scorecard?

A. We have discussed that, mhm, yeah.

Q. I asked how far have you got?

A. Oh, how far have we got? In fairness, I don't think very far then, yeah.

Q. Okay. Because there are other mitigations, in terms of critical source areas, how are those dealt with in the Scorecard?

A. They're not dealt with specifically, no. But then I guess arguably they aren't dealt with in Overseer either.

Q. Okay, what about riparian planting and fencing and things like that, same discussion, they're not covered in Overseer, would that be right?

A. Riparian planting isn't, no, but again that is something that could very easily be slotted into the risk framework, yeah, mhm.

Q. Okay, well, from the Court's point of view we wouldn't like to approve a Risk Scorecard that is going to be modified almost straight after we have approved it.

A. Right.

Q. So how would you see that issue being addressed?

A. Which issue, sorry, the one that putting in the retirement and that, or?

Q. Well, just considering whether there are other elements to go in, like the retirement of land.

A. Yes.

Q. And possibly is there any way in which critical source areas could be accommodated or not, I don't know whether they would be able to or not, but it is certainly a big issue for a lot of these cases?

A. No, you could put critical source areas in very easily, mhm, mhm.

Q. Mhm. Okay, well, it's something to think about?

A. No, certainly, no, we'd – in fact, that's a good idea, you know, put critical source areas in, mhm.

Q. Yes, because obviously we want to sort of be able to get a decision out reasonably quickly.

A. Yeah.

Q. And there would be some work in terms of, shall we say, a tidy-up?

A. Yeah, I suppose critical source areas aren't quite as important for nitrogen leaching, not to detract from your very good suggestions.

Q. No, I – that's fair comment, yes.

A. But yeah, more an issue for, you know, sediment and run-off and that type of thing.

Q. Yes, I can see that.

A. But certainly it would be very easy to put into the Risk Scorecard.

Q. I can certainly understand your point on that. In terms of input data for the two options, would they be basically the same?

A. Very similar, yeah, Overseer requires a little more information here and there, because it kind of, as I say, it's, you know, more catered for individual farms but as I've kind of noted yesterday, you know, you – if I was to show you the two tools and I appreciate you're familiar with them, you're are struck by the way – the similarity in the way you work through and input the data, you know, pointed out the similarities and it's in my evidence, the bands, so that you navigate across Overseer to drop down the different menus to input nitrogen supplementary feed and similar sort

of thing as you work through the Risk Scorecard. So certainly you need more information in Overseer, I don't for one moment deny that, but the major, the key inputs, you know, stocking rate and nitrogen fertilizer are very, or almost identical in some ways and then –

Q. Yes, and again I'm thinking ahead, but if Overseer is going to be a tool in the future then it's important that the information is being gathered at the right time. Her Honour mentioned briefly the arable and sheep and beef components and I think it is important that those are covered in the table that you bring back, because we've heard very little about those and I don't have an understanding of numbers or anything. I know they're small, but it would be good to have that complete picture. How does a Nitrogen Risk Scorecard address farms that winter their stock off site?

A. Oh, it accounts for it very nicely, mhm, I won't bore you, but I can – it does, it does have a section and, yeah, winter practice, yeah.

Q. Okay, that's good.

A. Yeah, I just – I will wave it wildly at you, but it does account for very nicely for – to having stock off farms, because it, yeah.

Q. Okay, I hadn't gone back and checked that.

A. No, no, no, that's fine.

Q. It always worries me when farmers say that they winter their stock off site so it's not a problem, but I just wonder where the problem is turning up elsewhere.

A. Elsewhere, mhm, correct.

Q. So you've covered it, so that's good. Can you just explain the differences between Tables 14.2A and 2B because they seem to be – these are tables that show with the biophysical components incorporated, I don't know whether you have access to those two tables?

A. No, I don't, sorry.

Q. This is the last question, you may be pleased to know?

MS JOHNSTON:

It's volume 3 book 1 of 2, Professor Horne, tab 1 and it's page 301.0014. If I may, Commissioner Hodges, could I just address you on the Table 14.2B which is the commercial vegetable growing one?

THE COURT: COMMISSIONER HODGES TO MS JOHNSTON:

Q. Yes?

A. Ms Foster does refer in her reply evidence to the fact that that table has now been populated fully by Mr Barber and Dr Jolly.

Q. Apologies, yes.

A. And so it might be best if there are specific questions about that table, and that populated table will come in the updated provisions.

Q. Right.

A. Both Dr Jolly and Mr Barber address the reasons why it is now populated.

Q. Okay.

A. And the benefits of that in their evidence, but I just wanted to note that that's not complete just presently when you're addressing Professor Horne on it.

Q. That's very helpful. Because my question really relates is why in one case do you have ranges between 110 and 180 and others in between 20 and 40 and that may simply be a simple answer is just the way the points add up with negatives and positives?

A. Yes and certainly I think Dr Jolly and Mr Barber are best to speak to that particular table.

Q. Thank you very much indeed.

A. Certainly, it is premised on the same underlying approach which is put forward by Professor Horne.

Q. Okay thank you.

A. Thank you.

THE COURT: COMMISSIONER HODGES

Well, thanks Ms Johnston and thank you Professor Horne for your tolerance in answering my questions and to my fellow members of the Court for putting up with me.

THE COURT: JUDGE SEMPLE

No, no, that's all good, we've learnt a lot through that. Commissioner, do you have additional questions for this witness?

THE COURT: COMMISSIONER EDMONDS

Sadly, I do.

WITNESS:

No, no, no, the report went – could I just point, Commissioner Hodges might be interested in the risk index tool was topic of conversation yesterday, that's the tool currently being developed by MFE.

THE COURT: COMMISSIONER HODGES

Right.

WITNESS:

And I just wanted to note, this is from the slide index, the similarity, so is to, if there was any question in the Court's mind as to –

THE COURT: JUDGE SEMPLE

So, is this a hot off the press document?

MS JOHNSTON:

No, no, Ma'am.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON:

Q. No?

A. It's an exhibit, put forward by my –

Q. Oh, yes, I thought it was, I thought it might have been a, you know, like very recent movement from MFE?

A. No, no, no recent movement from MFE.

Q. Might have helped us all.

A. No, it is an exhibit.

Q. Sadly not.

A. And if I – need Mr Sinclair, to be honest, but I will find the exhibits reference shortly.

1050

MS ONGLEY:

It's a Ngāti Turanga, Fish and Game exhibit which is exhibit 5, volume 3.

THE COURT: JUDGE SEMPLE

Thank you, oh, yes, thank you, helpful.

THE COURT: JUDGE SEMPLE

Q. So that's dated 8 May 2023, is that the one that you've got in front of you?

A. So that's the risk index tool technical overview.

MS ONGLEY:

I believe that there's only one that the Ministry has put out, so that should be the same one, yes. I don't think it's been labelled very well – yes?

WITNESS:

Oh, no, sorry, that's – it's different, Ms Ongley.

THE COURT: JUDGE SEMPLE

No, I don't.

WITNESS:

Yeah, this is, this is a technical – this is the technical review, yeah.

MS ONGLEY:

Sorry.

THE COURT: JUDGE SEMPLE

Q. And does that have a date on it?

A. June 2023.

MS JOHNSTON:

Is that the when you go into the website an dyou go behind the slides there's the technical report June?

WITNESS:

Yes, yes, yes?

MS JOHNSTON:

That's not in evidence, but I am happy to produce it through this witness?

THE COURT: JUDGE SEMPLE

All right, thank you.

MS JOHNSTON:

But perhaps we'll take note for my friends over the break.

THE COURT: JUDGE SEMPLE

Perhaps we might take the morning tea adjournment now then, and then we are happy to give you some time just to work out, happy for you to talk to professor to understand what document he has.

MS JOHNSTON:

Thank you.

THE COURT: JUDGE SEMPLE

Other than that, no contact, but just so that you can understand what document and counsel can talk about it and then we can get a clear understanding and a copy of it.

MS JOHNSTON:

I am obliged, thank you.

THE COURT: JUDGE SEMPLE

All right, thank you, we will take a 15-minute adjournment now. Thank you.

COURT ADJOURNS: 10.52 AM

COURT RESUMES: 11.17 AM

THE COURT: JUDGE SEMPLE

It turns out that Commissioner Hodges does, in fact, have at least one more question for you before we get under way with Commissioner Edmonds.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Sorry, Professor Horne.

A. Not a problem.

Q. But at the very beginning I raised the possibility of some kind of joint approach using both Overseer and a Risk Scorecard. I mentioned the possibility of using Risk Scorecard as the gateway or the main tool and Overseer as a check, it would equally work with Overseer as the main tool and the Risk Scorecard in some supplementary role and it could, if there is a scope issue, it could be done on a voluntary basis or a non-statutory basis. Do you have a view on that please?

A. No, I suppose I like the idea, well, I warm to the idea of using both tools because they have different merits or strengths as we have been discussing. I haven't given it a lot of thought to how you would do that. I suppose without a lot of thought I guess it would seem to make more sense, and I do preface this as off the top of my head, that the risk framework perhaps as the gateway, identifying the practices and then the success or effectiveness of those practices being monitored by Overseer in the number, the flux it generates, but equally well you may be right, maybe Overseer first up, yeah, I don't know, I'd have to give that a little bit more thought, but in principle I, yeah, I do like the idea of using both tools, yeah, I could see they're complementary as I have said on a number of occasions, yeah.

Q. Sorry, the thought process behind that is it meets the MFE guidelines to use more than one tool.

A. Mhm.

Q. If Overseer is the primary took that is compliant largely with the existing One Plan and using the risk tool provides actual on the ground experience that can be used in the future.

A. Sure.

Q. So those are the sort of thought processes that are going through our mind. There is all sorts of legal issues that would have to be worked through, but I think it would be helpful if we could get comments back in due course from different parties on some of those ideas.

A. Certainly, that's a good idea, thank you.

Q. That's all.

FURTHER QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Good morning. So just looking at your reply evidence, paragraph 22.

WITNESS REFERRED TO REPY BRIEF OF EVIDENCE

A. Mhm.

Q. So we have been asking questions about the decisions version and the extra numbers.

A. Yeah.

Q. That might be – have access to a controlled activity consent pathway and controlled activities have to be approved, but you can place conditions on them.

A. Right, yeah.

Q. But there is a bit of a limit to what the conditions set can involve because it can't sort of render the consent unworkable. So I was interested in terms of your paragraph 22 where you, where I think you are talking about that alternative pathway.

A. Correct, then, mhm.

Q. More farms being able to go down the controlled activity, accepting that some may be left to do the discretionary thing, but I'm not talking about those, so you suggest that that approach reduces complexity and increases equity amongst farmers and I just want to ask you some questions as to why you think that it increases equity among farmers and I guess one of the things that is top of my mind, I suppose, is some of the things that are wrapped up in Mr Day's case in terms of questioning, in fact, the equity and certain ways of dealing with things in that people have quite a lot – a lot of people have had quite a long time to get their ducks in a row, you go down the table route and then here's an advantage for

the people who perhaps have been unconsented, accepting there is disadvantages of being unconsented, I am not disputing that, but they have had had the advantage of being unconsented and maybe not doing all the right things in terms of the management practices, so I am just wondering why you have made that, that statement?

A. Perhaps two separate points here. Firstly, if I address what I am saying here in this paragraph and then perhaps to the broader issue you raise with Mr Day. What I was alluding here is that if, if all farmers who didn't meet Table 14.2 had to apply for a discretionary pathway, then they would all be treated on an individual basis, correct, they'd all be applying for a resource consent down the discretionary pathway, and so that means that each case would be evaluated and so council staff would have to decide on what basis they would give the discretionary consent and so my argument here was having the hard and fast rule of 20% so to speak then all farmers will be treated equally, you know, one farmer is not going to get it slightly better treatment than a neighbouring farmer, as a result of the kind of subjective nature of the discretionary pathway and so it was equitable in that sense and perhaps less complex in that there weren't all those individual case evaluations ,you – a farmer just had to achieve a 20% reduction in the most efficient and best way for them in their circumstances, mhm. So rather than having to go down the discretionary pathway. To Mr Day's point – sorry, is that adequate, did?

Q. Well, I suppose what you're telling me is you think that it increases the equity for the people that fall into that category?

A. Well, yes, no, exactly.

Q. But in terms of the other people who are going down the discretionary pathway, that is one thing, there is no equity there, is there?

A. You mean compared with farmers who have already made the changes?

Q. No, I'm going to ask about them next.

A. Oh, okay, okay.

Q. The ones that have got to go down the discretionary pathway because they don't fall into the select category?

A. Yes.

Q. So presumably an equity issue for them?

A. No, sorry, the –

Q. They don't fall into the more favourable category of control?

A. I'm sorry, I might be confusing you. So if you, if you have Table 14.2, you meet that, right. If you don't, you have to go down the discretionary pathway.

Q. No, no, we're – I'm – this is the alternative controlled pathway and then the discretionary pathway.

A. Right.

Q. So I'm asking you about the alternative controlled where they get the 20% or the 75th percentile value –

A. Exactly, no, no, quite right.

Q. – whichever is the greater –

A. Certainly, yeah.

Q. – in terms of your evidence, because it seemed to be about that?

1125

A. Right, and so my argument is – what I'm arguing there is I'm trying to defend the control pathway and the 20% value, the need for that. So I'm saying it's very difficult for farmers to go beyond 20%. There's not much point in going beyond 20%. That's the thrust of my defence of the discretionary pathway. I then go on and make these what I think are related points is that having that pathway makes consenting of that group of farmers more straightforward and easy. It increases equity amongst that group because, yeah, no they all have to just achieve a 20% there's no subjective evaluation of each of their cases by council staff, if that pathway is not in place and their going down the discretionary pathway.

Q. I suppose when I read your evidence, I'd have to say that I did do a marginal note querying whether some of this was outside your field.

A. Probably is, yeah.

Q. And so when I came upon that I thought I would just try and understand what it was you were saying, so I think now I understand what you're saying but some of these questions of course are going to be important when it comes to asking the planning witnesses about the policy framework and the kinds of things that would be involved in the

consenting process for discretionary activity or a controlled activity. So perhaps I can just park that.

A. Yes, I'm sorry if I've confused everyone. I guess all I was saying is that kind of council staff will have to, you know, evaluate applications for discretionary pathway and having a fixed value of 20% might streamline some of that process, yeah.

Q. So I just want to ask you about good management practices and best management practices and I'm casting my mind back to all those years ago, when we had the One Plan hearings and I think there was a lot of debate about what were good management practices and what were best management practices and from my memory we decided to go with good management practices because in most fields, environmental fields included, what's best management practice today can be good management practice tomorrow and so it's a rapidly evolving field and I guess, casting my memory back again, we were concerned that there might be a whole lot of focus on whether is this the best management practice or isn't it and I note that when you've been giving evidence, you've been coupling those two notions and I also noticed that the provisions in front of us now from the regional council do have a new definition for best management practices and it also says there's a new definition for good management practices. So I think that changes the old one slightly. So I just wanted to understand from your perspective, when you were coupling them, was there a reason for that?

A. I suppose because I don't see any useful or meaningful difference between them. I mean what, you know, two experts will disagree on where you draw the boundary between good and best and you've made the very pertinent point what's good today – sorry what's best today is only good tomorrow and so forth. So I couple them in that way because that's the way I view it. I think that it's hard to really argue, you know, rigorously what any meaningful differentiation would be.

Q. Well given what it is you're trying to achieve here, you know, do you want your energies to be going into that point.

A. Precisely.

Q. Is that another thing?

A. Yes, no precisely, yeah.

1130

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I think we're on the home straight, you'll be pleased to know. You have been with us for some time, we appreciate your patience in answering our questions. My questions will be much higher level and more generic, when you contemplating this idea of a risk scorecard, you would have heard me ask, I think you've been here most of the time, you will have heard me ask the question about what the catalyst for moving to a risk framework was and I'm interested to know for you in the work that you have done, what was the catalyst for you in starting to think about and develop this?

A. I think I guess that for me it was thinking about what an alternative to Overseer would be. So I like models and models like Overseer and so what – it struck me as having another tool or model like that wasn't going to be so helpful. We've already got a range of them, you know, Overseer, APSOM has been mentioned, SPASMO and they're just two or three of a range of different models, so what would be something that would complement or be seen as different or an alternative to Overseer and I think, as I pointed out in my evidence, the mood there was around certain practices or activities on farms pose a risk to nitrate leaching and in turn water quality and so maybe if focusing on a number over here was an issue or a problem, or alternatively what would be a different type of tool then how might we manage risk down, yeah. And so that I guess was why –

Q. And so the need for an alternative to Overseer was driven by what on your understanding?

A. From my understanding it was the result of, and I'll be very careful here, of the Science Advisory Panel's review of Overseer, which I think again from my perspective was a little unfortunate in that if you read the review they make some very nice points about the shortcomings or flaws of Overseer which we all knew about but it was where they landed that caused the problems. So rather than saying okay let Overseer get on

and fix these problems, kind of out of the blue, without really a lot of, and this is my view, substantiation, they said that they didn't have confidence in its use and that's what caused the problem.

Q. That created the maelstrom, yes.

A. Yes, I mean having said that I suppose, you know, it's always nice to have two alternatives or different types of tools where, you know, they offer, you know, workable options that are going to give very similar outcomes.

Q. Sure, but just so I understand it, prior to the infamous report coming out and then the MFE guidance which might have not made it more or less muddy for councils and the community, prior to that, I understand from your evidence that you were comfortable with the specified reduction pathway as an alternative to Table 14.

A. I'm very comfortable, yeah. Kind of the other aspect, I was just re-reading over the tea break some of the work I did at the request of the hearing panel and sorry, there was kind of a third plank, I talked about why I favoured the 20% reduction was the two I've already mentioned but I was just reading that I also at the time looked at the likely change in nitrogen load, yeah, under the farms and so you've got, you know, a marked reduction in nitrogen load from between 10 and 20% from farms. So I've already mentioned, you know, there wasn't much improvement in water quality, that was information Mr Snelder gave me from leaching analysis. As I said I knew that 20% was difficult to achieve and then when I looked at kind of nitrogen balance, 20% was going to give a marked reduction but not much more after that, yeah. So, no, no I was, you know, very happy, very comfortable with where we arrived at the decision versions.

Q. Thank you, that's helpful. And so moving to the risk assessment framework and you said in your evidence that you were delighted to see that Fonterra had done a whole lot of heavy lifting.

A. Yeah, they had.

1135

Q. I wondered about the consideration that it was given to why, why and how you needed a different tool for dairy, I suppose, when the Fonterra tool sat there and existed and you seemed to have confidence in it, so if you could just take me through the thought process –

A. Sure.

Q. – of the group, and I understand that it was a group analysis and –

A. Right.

Q. – interrogation of that data, but one of the things I am interested in, for example, is whether there was thought given to continuing with the Fonterra risk card as it was and introducing CVG if it didn't deal with that, a CVG risk card?

A. Yeah. That, there was a school of thought that we should, amongst the experts, we should just continue with the Fonterra Risk Scorecard.

Q. Yes.

A. Mhm, but –

Q. And what's the downside of that?

A. There would have been absolutely no element of natural capital in that.

Q. Yeah.

A. Uh huh, yep, and but most importantly what, what the Fonterra Risk Scorecard, it was developed for a different purpose. So Fonterra developed that Scorecard to help farmers identify the risk on their farm. So now a farmer has absolutely no control of climate or soil type it's a given, and so they were saying “hey, here’s a tool that you can use, to identify the management practices on your farm” – you know, Upper Manawatū, Waikato, Canterbury, Southland – “and what are you doing that is posing the most risk and how you can manage it down”. So the soils and climate weren't really important because, as I say, the farmer had no control over those. We had a different purpose. We were trying to understand nitrogen leaching, what was arriving at the river and how that varied across the priority catchments.

Q. Right.

A. So, because I – sorry, to have raised this –

Q. That's all right.

A. – but there was some discussion about the risk index tool and it does go to your current question and what's outline – this is a kind of a progress report on MFE’s risk assessment index that

MS JOHNSTON:

If I may interrupt you just there, professor.

WITNESS:

Oh, sorry.

MS JOHNSTON:

I will just let the Court know that I talked about this document with my friends and this should have been in the bundle.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. In the bundle, mhm.

A. The slides are in the bundle, but the technical report was actually what Ms Ongley was wanting to have available.

Q. In the bundle, right, yes.

A. Copies are being made.

Q. Great, yes.

A. And I believe we have emailed it Mr Registrar.

Q. Right, all right.

A. So I just wanted to orient, thank –

Q. Alright, no, that's helpful, thank you.

A. Thank you.

Q. I can probably keep up with the answer though, so.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

A. So yeah, look, it's not, it's not a big deal, it's just this, so this MFE are developing I think a large project to develop the risk index tool.

Q. Mhm.

A. Yeah, okay, and so they – this is just kind of a high-level overview of it, so something by way of a progress report, an odd way to report science is a PowerPoint presentation but that's beside the point, so here's a nice diagram showing how surplus water moves through soils or runs off the surface, but here's what I wanted to draw the Court's attention to. This is something called the general structure, how the risk took works. And so

what they say is that the – that you basically get it by identifying, in their terms, the source.

Q. Yes.

A. Okay and so that's what we use the Nitrogen Risk Scorecard for, so "how much fertiliser are you using, effluent"?

Q. Yeah.

A. "How many cows do you have", and so forth and then they say they multiply that by the transport, okay, and so that's exactly what we did.

Q. Worked you way through, right.

A. And so here on our second page, I'm sorry, is that they are using APSOM to generate the transport functions and they give you a little bit of an insight as to how those transport functions and so I used Overseer to generate the transport functions.

Q. Right.

A. So the risk and the risk assessment tool are not identical obviously –

Q. No.

A. – because it's a much larger project.

Q. Yeah.

A. But and we were just in those few catchments, but they're absolutely identical in their, you know, approach and outlay so it is important that you have both the risk kind, well, sorry, the amount of N accumulating in the profile and those transport functions there.

Q. Yes.

A. So the Nitrogen Risk Scorecard got us half way there, but not the whole way there.

Q. And is it, is it a, I mean, this is probably is just simply a curiosity question, but is it a matter of happenstance that those two tools are similar, or are there the same – are there similar people working in a space, such that there's a propagation of the ideas going through?

A. I don't know, perhaps I should sue Mr Luxon if he ever gets a government in place for plagiarism.

Q. Well, I don't know.

A. No, no, it's a very standard way to do it, yeah.

Q. Right, right.

A. Yeah, so if you were, when we, you know, when we develop models, that's kind of the approach, you know.

Q. Mhm, and –

A. How is it seen getting in the soil and then, as I say, what proportion or percentage is that actually leaches, yeah.

Q. And one of the criticisms that I've seen in the, some of the evidence that has come through, particularly from people who are actually farming, is around the cost for example of running Overseer and then finding answers that don't get you anywhere in terms of the table and, you know, the difficulty and the stress that that's created.

A. Mhm.

Q. What's the situation with the risk tool, is it a propriety tool, is it a – can anybody just access it, can I just look it up on the web, or?

A. Yes, you can, you can, this is all it – this, sorry, this document I was flashing around, I just pulled off the web.

Q. Sorry, that's the Fonterra one?

A. Yes.

Q. What about the one we're talking about here, the RAT as Mr Anderson likes to call it, or the NRAT if –

MS JOHNSTON:

If I could assist, Ma'am.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON:

Q. Yes?

A. That's been created for the sole purpose of Plan Change 2 amongst a group of experts . There's no proprietary rights to it.

Q. Right.

A. It's been expert-led.

Q. Mhm.

A. But it's probably most appropriately said to be the Court's tool at the moment.

Q. Oh, well, goodness.

A. But in that context, there's –

Q. Yes.

A. – it's going to be a publicly available if it did form part of the plan.

Q. Yes.

A. It's different from what's happening at MFE but the same, as Professor Horne has talked about.

Q. Mhm.

A. But nobody owns it as such.

Q. All right, that’s interesting, okay, thank you.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

A. So we’ve – so I haven't been involved, but Ms Daly – Dr Daly and getting the PAW maps available –

Q. Yes, right.

A. – and they also have been discussions, again, not – I’m not privy to those about getting that NIWA data that’s necessary for the rainfalls, so yeah.

Q. Yes. And so my final question really is on this – and I know we’ve had some differences in terminology, but these – the alternative controlled activity pathway, in the decisions version the specified departure, in this version the NRAT. I, what I think I take from the weight of your evidence is that there is little difference between the outcomes, for farmers or for the environment, between one and the other?

A. Between which, sorry?

Q. Between the specified reduction pathway and the, you know, and the risk matrix pathway. The decisions version, we take out Table 14.2, don’t worry about that.

A. Yes.

Q. But between the decisions version and this appeals version with the NRAT –

A. Correct.

Q. – from your point of view, you see little difference –

A. From my point of view.

Q. – in outcome for either farmers or the environment?

A. Correct, that is the thrust of my argument.

Q. All right, thank you, that’s the only questions I have.

THE COURT: JUDGE SEMPLE

Any matters of re-examination arising from that?

MS JOHNSTON:

I will just reflect on that, Ma'am, but I do have the documents to table with you as well.

THE COURT: JUDGE SEMPLE

Oh, great, let's get those. Mr Registrar, you might just hand those, get those handed up for us. Thank you.

MS JOHNSTON:

Nothing from me, Ma'am, the matters that I had noted have been addressed through the course of the discussions, so thank you very much.

RE-EXAMINATION: MS JOHNSTON – NIL

THE COURT: JUDGE SEMPLE

I thought I, if I look to the last page of this, it might tell me when the MFE's new tool is being released, perhaps, but no? No.

MS JOHNSTON:

No, no.

THE COURT: JUDGE SEMPLE

No, such luck.

MS JOHNSTON:

No.

THE COURT: JUDGE SEMPLE

Q. Thank you, Professor Horne.

A. No, thank you, very much, thank you.

Q. That has been a lengthy piece of evidence across multiple breaks and it has traversed a lot of material. One of the things I sort of being up near, up the top of the batting order, is that all of the questions that we have got, we ask whoever is in front of us, we are not always as discerning as we might be, but thank you for your patience in that regard.

A. No, you're very welcome, thank you.

WITNESS EXCUSED

LEGAL DISCUSSION – HOUSEKEEPING (11:44:24)

EXHIBIT E PRODUCED – RISK ASSESSMENT TOOL

MS JOHNSTON CALLS

PAUL FREDERICK LE MIERE (AFFIRMED)

Q. Your full name is Paul Frederick Le Miere.

A. Yes.

Q. And you prepared a statement of evidence in these proceedings dated 12 October 2023.

A. Yes.

Q. You also prepared a statement of reply dated 13 November 2023.

A. Yes.

Q. You'll confirm for the Court that you participated in a range of joint witness conferences between 28 June 2022 and 15 March 2023.

A. Yes.

Q. And as part of that process you signed joint witness statements, is that correct?

A. That's correct.

Q. Do you have any corrections you wish to make to your evidence today?

A. Yeah just one in my primary evidence, it's paragraph 41.

THE COURT: JUDGE SEMPLE

Q. I've got it, it's 201.0498.

A. Yes.

EXAMINATION CONTINUES: MS JOHNSTON

A. The second sentence it says: “The Fonterra data set contained the scores for 194 Fonterra farms”, it should actually say 285.

Q. In all other respects, Dr le Miere or now that you’ve made that correction, you'll confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes it is.

Q. Dr le Miere doesn’t have a summary statement Ma’am, he will just proceed with questions from my friends and yourselves.

CROSS-EXAMINATION: MS ONGLEY

Q. This is possibly the second time we've done this in the space of a few weeks.

A. Mhm.

1150

Q. Can I take you to paragraph 65 of your evidence please which is 201.0504 and I wanted to discuss in particular figure 3 with you first. So this is where you’ve set out how you’ve adjusted or modified the original numbers in the matrix that Professor Horne set out, and so you’ve used, and I think you made a correction to the number of farms but you’ve used two data sets as you say in paragraph 65. Fonterra ones are based 2021, 2022 and Dairy New Zealand consented farms at 2017.

A. Yes, I had the Fonterra set was the full data set and then I cross referenced it with data from Dairy NZ to see which of those 285 farms were likely unconsented and then used those within the Fonterra data set.

Q. You haven’t been able to provide those data sets because they're confidential.

A. Yeah, well I had to delete them due to the agreement we had with Fonterra after mediation so I don't have them here at the moment.

Q. Okay. Then if we go to your figure 3, now you’ve worked out for the zones in the left-hand column or the catchments what sort of percentage reduction would be required from a Fonterra NRS 75th percentile.

A. Yeah so those farms that were for each those five catchments there for a farm at the 75th percentile what then percentage likely reduction was on that score.

Q. And you set out there what the reduction would be on Professor Horne's matrix and then what the reduction would be on what your matrix target is and then what the reduction would be for you matrix.

A. Yes.

Q. Dr Parlato, in her evidence, says that after mediation you realised that the 75th percentile column might have elevated numbers because it used irrigation risk scores from a Fonterra data set which would elevate your risk for some farms that use irrigation, whereas the matrix doesn't use the irrigation so that the 75th percentile could be elevated there.

A. Yes, this work was carried out before we came to that agreement around removing the irrigation CS but does include all of the –

Q. And so you haven't presented the adjusted table in your rebuttal following Dr Parlato's –

A. No as I say I don't have access to any data anymore so Professor Horne took over the reins for sort of analysing the data and did that work with his farms et cetera.

Q. Oh I see so you can't do that exercise?

A. No as I say my agreement with Fonterra, the agreement I had with Fonterra was just to have access to that original farm data till the end of mediation, they insisted it was deleted so I don't have access to that data.

Q. Can you go to Dr Parlato's evidence if you would. Now that is volume 2, tab 35 and if you could go please to 204.2127 and that is at paragraph 6.38. So she's saying if you remove that if you remove the irrigation management (inaudible 11:54:51) points, then you've done this, then you re-estimated the 75th percentile, you actually did that exercise did you?

A. Can I please read?

1155

Q. Yes.

A. Yeah I think Ms Parlato is right, I misspoke before that, that table 3 I think I did when I removed the irrigation from it to get the lower figures.

Q. So table – so figure 3 should've potentially been updated, okay. Well that's okay I'm going to ask you some questions about that. Dr Parlato says at her paragraph 6.38 at the end of the page there: "The results of the reassessment reduce the 75th percentile for four of the five target catchments. The reduction was relatively small for coastal Rangitikei, Mangatanoka and Upper Manawatu, however removing irrigation scores indicated that the 75th percentile farms in West Coast Lakes and Horowhenua would no longer have to reduce their risk scores by around 20%", which is the bottom right column at your table: "Rather a substantially smaller reduction of five per cent would be required." So that bottom right-hand, left square would need to go to five per cent?

A. Yes, from memory. Yeah, I'd have to go and double check to be honest with you.

Q. That's fine. So the issue here is that the 75th percentile farm for Upper Manawatu and (inaudible 11:57:50) Tamaki, West Coast Lakes, Lake Horowhenua and other coastal lakes under the change matrix would need to only reduce by five per cent and six per cent, that's not a lot of reductions, is it?

A. That's right, if they're at the 75th but you've got to remember there's a big tail above the 75th, a very long tail. So the distribution for the nitrogen score and nitrogen losses is a big tail so people at the 85th were about 20 to 25% of the 75th for example. It gets much harder as soon as you go above that 75th, so at that 75th but there's obviously 25% above that, so that can make a significantly bigger reduction.

Q. So in terms of the proportions that the Court was asking about before, particularly for the Upper Manawatu and the potential small percentage of the Upper Manawatu farms that can meet Table 14.2 based on the 2012 data set, does this show us anything in terms of what the Upper Manawatu farms might have done since then and we can expect potentially on the later data sets that more of those farms would meet Table 14.2 or can you not draw that comparison?

A. I would imagine there's been some improvement since 2012 but the magnitude of that improvement I don't know.

Q. Could you work that out from these data sets?

A. Well the 2012 the Overseer numbers and these data sets for the 2021 scorecard, so they're not really comparable, so I don't know, just from that point of view but I wouldn't know how to do that now.

1200

Q. It could illustrate though, couldn't it that relying on a 2012 data set for this is potentially quite outdated and that some farms would've already done a lot to achieve towards the 20% or Table 14.2 since that time?

A. Potentially, there might be some improvements but I don't have any data around that.

Q. Thank you. So with respect to – oh Commissioner Hodges asked a question around the way that the nitrogen risk scorecard and the matrix take into account riparian management and we're aware aren't we that it doesn't do it at the moment because it only refers to the grazed area and there could be further work done for riparian management and other areas of the farm that are retired for example?

A. Yes.

Q. Table 14.2 does take that into account, doesn't it, under the definition of cumulative nitrogen leaching maximum which is the total kilograms of nitrogen leached per hectare per year for the total area of the farm, including any land not used for grazing. Are you familiar with that?

A. Slightly, I believe it does, yeah. That would just be of the milking platforms of the dairy farm.

Q. For the grazed area?

A. Yeah.

Q. Okay, so we've established that that might be something that requires further work?

A. Yes and I agree with what Professor Horne was saying before that it seemed reasonable that people, from whenever the NRS for example is benchmarked that people then retire parts of the milking platform, the dairy farm, that they get a benefit for that within the scorecard and that should be looked at, yeah.

Q. Now with respect to Overseer, do you have the intermediate or the advanced certificate from Massey University for Overseer?

A. No, no.

Q. How many Overseer scenarios have you run yourself through Overseer FM?

A. Oh a few dozen over a long period, yeah.

Q. Because you say in paragraph 3(c) that you participated in an Overseer steering group in 2010.

A. Of my evidence?

Q. Yes.

A. Yes.

Q. Can you just advise what that related to?

A. So that was looking at development of Overseer, the way it should be developed, so I sat there for Federated Farmers over a time, giving advice from a regulatory point of view and from a Farmer's point of view, the farmers' input into that process.

Q. Are you aware that with many of these models and even with Overseer, a large amount of the error is related to data input error?

A. Yeah, done a lot of modelling, you would want good protocols around minimising data input. I think that's one of the advantages of the scorecard, you know, nitrogen risk assessment tool there is likely to be less, in my opinion, errors around that input.

Q. But that's self-reported though, isn't it?

A. Well it doesn't to be, it can verified and auditable by records and my understanding is the Fonterra portal has a number of checks and balances around it already to make sure data entered is valid.

Q. There has been very little information provided about how the Fonterra system works with external auditors, how those checks and balances actually work with how the information is validated in the Fonterra nitrogen risk scorecard, would you agree with that?

1205

A. Within this, yes. My understanding of talking of farmers in plan change 1 this is how to keep verifiable records and then it's verified by Fonterra.

Q. And it's still being developed how that would work in the Horizons region, do you consider that Overseer certified independent advisers sense checking information that goes into a model and having the independent professional there assists with that data error input error?

A. For Overseer do you mean?

Q. Yes.

A. Undoubtedly for Overseer it helps.

Q. Do you know if the Fonterra checkers or auditors have any background qualifications like the CNMA professionals?

A. My understanding is they did. My understanding was they part of the Tiaki farm plan, people that work with farmers on that work, so they will have some but not cross exact requirements.

Q. Sorry I missed that?

A. So not cross exact requirements of all –

Q. The chartered?

A. No the Tiaki farm plans, the farm environment plans that Fonterra does with its farmers.

Q. Right, okay. Now with respect to the way that you worked with Professor Horne and then adjusted some of the numbers in the matrix, would you consider that that's the sort of exercise that rather than yourself doing that, because it involves judgements on what farmers on high rainfall and leaky soils might have to do and softening the blow, so to speak, there, that that should be a conversation for the community, rather than one person doing that?

A. The process that Professor Horne came up with, his initial matrix, putting the physiographical information in, the group then decided we needed to stress test that effectively because I had at the time the Fonterra data, I could have a look at it and see what that meant and then report back to the group on what that would mean and I suppose I approached it from the point of view of most likely tweak of rebalancing of whatever was going to be very hard for farmers to make that lower score to get there and also the sort of (inaudible 12:08:27) that most farmers should be in the low category for the scorecards, whereas a score of 86 for example took them into the very low category. So it was done within those parameters.

Q. Just in terms of the cost of Overseer, as I understand it the annual subscription charge is $690 plus GST.

A. From my understanding, yes.

Q. And you've, I think said that the cost of getting an Overseer done may be in the range of $2,000 to $10,000.

A. Yeah, I've asked farm system consultants, that's the number I've been given back.

Q. And they charge by the hour is my understanding.

A. Generally, yeah.

Q. Do you consider that after a farmer does their first Overseer analysis, subsequent updates would take less time because the farmers will be more aware of what data is required for Overseer?

A. It will be variable. It would depend on the quality of the data there, the complexity of the farm and other parameters as to how much it is ongoing, yes.

Q. Would you consider that with further Overseers if a farmer knew that they were having to provide ongoing analysis, you could be in the range of say two to four hours or around $1,500 including the licence cost?

1210

A. I don't know, I'd have to look at that in terms of what sort of farms you're looking at obviously if it's done as part of regulatory, the sort of requirements you'd have there.

Q. But you would expect that it would be a lot less than the initial one?

A. It would be less, whether it would be a lot less would depend on a number of factors.

Q. Including the complexity of the farm?

A. Yeah.

Q. Now I want to produce another document, that came up in the Waikato proceedings.

THE COURT ADDRESSES MS JOHNSTON – ANY OBJECTION TO DOCUMENT? (12:11:36)

LEGAL DISCUSSION

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. Well first I should say that you did give evidence yourself in the Waikato proceedings for Federated Farmers, didn't you?

A. Yes.

Q. And a number of farmers gave evidence there as well, didn't they?

A. Yes.

Q. And in those proceedings it was proposed to use the nitrogen risk scorecard as a consent gateway.

A. Yes.

Q. And is it fair to say that there was a mixed view amongst the farmers giving evidence there as to whether that was preferred over an Overseer number?

A. Yes, yeah in the evidence from Mr Newman, he was the one farmer that had more queries about the Overseer number because the work we had done with him, which was quite crude, had given a different output than he expected basically.

Q. Yes and if I could take you to paragraph 10 of the Newman evidence, firstly this relates to dairy farms in the Waikato, in particular a farm called Broadland Dairy Limited, located in –

OBJECTION: MS JOHNSTON (12:14:51)

LEGAL DISCUSSION

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. So is it fair to say that a witness for the farming sector in the Waikato was concerned that the N risk scorecard needed to be accurate and was concerned that it needed to be independent and peer reviewed as well?

A. Yes, so the one farmer that who hadn't done the risk scorecard before, so it's new to him, went through that process with a spreadsheet we were given by Fonterra which we then subsequently found had some errors in it, the number he got meant he would be in a different drafting gateway than he expected and would be more stricter, so he then had concerns but, you know, his numbers, even his purchasing surplus and his Fonterra

purchasing surplus and Overseer numbers were bouncing up and down quite a lot as well. So having discussions with him, there was potential particular issues with his farm about how it was treated within Overseer and within the scorecard. So he was looking at making sure it was robust because, yeah, it just was not quite what he expected.

Q. And he was an open country dairy farmer which, like other producers, some of the other producers, other than Fonterra, uses Overseer with their farmers.

A. Yes, so he was used to get a Overseer report with an (inaudible 12:18:13) report and that sort of stuff rather than a scorecard type report from his milk company.

Q. And even with the Fonterra nitrogen risk scorecard, Fonterra doesn't actually use it at the moment to produce an aggregate number, does it?

A. No, my understanding, the report the farmers get puts them in the categories effectively. There is a number there. So for the nitrogen scorecard manual, sorry I don't know what exhibit number that is, I don't have that written down, apologies.

Q. Well that was in Dr Dewes' evidence.

A. It's attached to Dr Dewes' I think yes.

Q. Yes, so I believe it's 306.0014. Oh that's the manual, are you looking for the manual?

A. Yes the Fonterra manual.

Q. Yes that's here at, if the Court wishes to refer to it, 306.0014 in Dr Dewes' evidence which is tab 32, volume 3, sorry volume 2.

A. Volume 2, book 3, 203.1891.

1220

Q. Your Honour, there are two numbers and I've been looking at – because they've been stamped for two different proceedings. I will defer to my friend who is more onto it than I am for that.

A. So on page 4 there, there's the table. So Fonterra, because a number, the way they've been using it would be a bit of an abstract saying you've got a number of 160 or 170 or 120 for those six different farm management factors we were talking about and tells the farmer what (inaudible 12:21:23) they're in, low, very low, it gives them a colour

grading effectively. Also there's numbers behind those as you can see, but the farmer gets a representation of that to give them an idea of where they're tracking and shows them relative to their peers et cetera, rather than just an aggregate number.

Q. So when this tool gets introduced, be it for non-Fonterra farmers and Fonterra farmers, the numbering system and what the numbers mean are going to be relatively unfamiliar, aren't they?

A. They have access to the manuals, so they could look at what the numbers were but, yeah the total aggregate number hasn't been forward on the reports previously.

Q. Thank you. I have finished my questions on that line, thank you. So if I could now turn to your rebuttal evidence please and in your rebuttal evidence you comment on some matters made by Dr Dewes and in particular whether there's a linear relationship between reduction in profitability and reduction in nitrogen leaching, have I expressed that properly?

A. Yes, which paragraph are you looking at?

Q. From paragraph 11. At paragraph 12 you said that you: "Agree that the relationship between profits and production is not necessarily linear."

A. Yeah.

Q. Sorry I possibly didn't express that very well: "And that the individual farm systems may be able to reduce nitrogen loss and retain economic viability, however for all farm systems there is a tipping point at which reductions in inputs and/or intensity result in reductions in profits." And then you go on to discuss work that Adam Ducker did at first instance hearing.

A. Duker, yeah.

Q. Duker sorry. And Ms Dewes appends I think it's appendix 5 to her evidence a number of studies that have been done related to reductions in profitability of farm systems versus reductions in intensity and N leaching, sorry versus reductions in N leaching and other contaminant loss.

A. Yeah. I'd have to refresh myself on that one.

1225

Q. My only question was going to be do you agree that to do that sort of analysis you need to do it on a suite of farms with different soil types, different contour, different rainfall, whereas the comparison done by Mr Duker only compared it on very similar farms?

A. On that one I think that's right, however, I'd say it backs up what Professor Horne was saying before about the 20% tipping point, it's going to get much harder after the 20% tipping point. So there's more data out there.

Q. And it depends on what they've done already, doesn't it?

A. These are presuming they're a good management practice already in this case study, so if they aren't a good management practice, then it would be more costly potentially to get there.

Q. All right, it is though a very limited analysis of Scott Farm and No.2 at Ruakura with homogenous soil types, contour and rainfall on the farms.

A. No this was Tararua they used.

Q. Oh sorry.

A. Not Ruakura, that's Waikato.

Q. Sorry, I think I'm talking about your figure 2. So I'll move on from the Duker case study. Can I go to your figure 2.

A. In my rebuttal, figure 2?

Q. Yes sorry about that, it's 201.0529. So this is research regarding the relationships between N risk scorecard metrics, aggregate N risk score and purchased N surplus and rate of measured nitrate leaching for nine research farmers in the Waikato region.

A. Yes.

Q. And this is the one I wanted to put to you that they were on a suite of very similar farms with homogenous soil types, contour and rainfall.

A. Yes, as Professor Horne said, the scorecard doesn't take those factors into account, but what this data showed was a good relationship between the measured nitrogen leached and the aggregate score. It's got a nice grade of .7 there basically which is pretty good and while you're right it was done a limited source et cetera, it's taken part in the scorecard, it's not part of the scorecard, so I would expect what Professor Horne has put on the table in terms of the biophysical, the transport factors that drive

Overseer and get a better relationship or at least not a worse relationship. He's taken those bits you are talking about and added them into the assessment tool effectively for Horizons.

Q. Yes, no I understand, I'm just wondering how useful this is because we have the AbacusBio report which is on a much greater number of farming systems.

A. Well AbacusBio is different because that's looking at it compared to what you'd expect from Overseer to be a scorecard. This is looking for actual measured nitrogen leaching, so this is, you know, more valid I suppose from what is a reasonable proxy from what's been leached from a farm, the scorecard.

Q. Would you agree though that you'd need a larger sample set of farms with more of a spread to enable you to have confidence of that relationship between the N risk scorecard and the rate of measured nitrate leaching?

A. As I say, as it doesn't it for biophysical, obviously more data is better from a modelling point of view but I don't think the Overseer validation with more data in it has necessarily helped show that either. Yeah the more data is always better but I think it shows a reasonable relationship.

1230

CROSS-EXAMINATION: MS WRIGHT

Q. My friend has done a very thorough job, so I've just got a few questions on a couple of topics and the first is just following on from a couple of the questions Ms Ongley just asked you about the perspectives on the risk tool and you may have answered this first question but I got a bit lost with the discussion around the evidence, so I just want to clarify, but you accepted, don't you, that not all farmers would necessarily prefer an approach to managing nitrogen loss that uses a risk tool?

A. Yeah, hard for me to say but I imagine because there's a small portion that haven't used it they might prefer an Overseer because that's what they're more used to.

Q. So you would accept that my client, who is a farmer in the region, doesn't prefer the use of the risk tool to the use of Overseer in Table 14.2?

A. Is your client a dairy farmer?

Q. My client is an extensive sheep and beef farmer predominantly.

A. Okay, so it's built for dairy farmers, so he might not like it that it's built for dairy farmers.

Q. So may I just ask you a question on that, so the risk tool now being put forward as a controlled activity pathway is built for dairy farmers exclusively?

A. Well it was mainly configured for dairy farmers when we went through – and obviously it became tailored somewhat for Horizons' circumstances and for the biophysical transport pathways in there, Professor Horne has explained but originally it came from the Fonterra, it was work from the Fonterra dairy nitrogen scorecard.

Q. So putting commercial vegetable growing to one side which has its own matrix, there are other existing intensive farming land uses that are captured by this rule and how –

A. Into the irrigated sheep and beef.

Q. And how does the matrix factor the differences for those existing intensive activities in?

A. It would still take into account a lot of the – in fact it used a lot of proxy intensity metrics and then winter risk metrics et cetera, so it would account for quite a lot of, if that intensity was similar to dairy and irrigated, as irrigation can be filed to dairy.

Q. But it's been developed with a predominant focus on dairy it's fair to say?

A. It was originally, yes.

Q. And just taking back and thinking about the controlled activity pathways at that level, it would be fair to say that some farmers might find difficulty with introducing another controlled activity pathway that let's their neighbour leach more nitrogen as a controlled activity than they were able to, to be a controlled activity.

A. So can you explain that one again in terms of?

Q. Well it's my understanding that the leaching allowed under Table 14.2 to qualify for that is somewhat less than what would be enabled by meeting the risk matrix, is that your understanding?

A. They're different metrics, so it would depend where you would sit on that risk matrix. I think what Professor Horne was, if you took the alternative

pathway of the 20% or 75 percentile on Overseer versus the risk matrix the outcomes are very similar in terms of the changes farmers should have to do, so in that case I don't think farmers would have too much of an issue.

Q. I'll ask one more question on this and if we don't get there because I think we're getting some of the most – I'm going to go down a similar path we've just been but I will ask one and then I will leave it. Just so I'm clear if we have the Table 14.2 controlled activity pathway, say we're using 100 farms just as a theoretical example, 20 farms in our theoretical example might be able to get down Table 14.2 and then you'd have 80 farms that are a remainder, if you introduce the risk matrix, of those 80 farms that were remainder, are there some more that would be able to be controlled under the risk matrix?

1235

A. Yes my understanding from those figures Professor Horne said for Manawatu, you would have an increase of, well of either the risk or the Overseer alternative pathway compared to 14.2 you would have an increase in farms that could be controlled compared to discretionary.

Q. So for those farmers that had worked hard to get through the Table 14.2 option, do you think it's possible they might have some fairness concerns with the introduction of a new pathway that would let other people through as a controlled activity? Do it's a possibility?

A. No I think farmers are very much about fairness. I think if they saw that however they got to 14.2, if people were putting effort in, in a different pathway, whether it's a 20% reduction or risk pathway and they could get through, they would think that was equitable. I think they would be surprised if 80% of farmers couldn't get through the tables that they would have to go through discretionary.

Q. So it's not a possibility in your view?

A. I think the majority of farmers look at – realise farmers have a lot of different circumstances, so the number (inaudible 12:36:40), why there are different intensities et cetera and want people to be putting their best foot forward but I don't think they would expect everybody to do the same sort of cuts or getting down to the same number.

Q. In your evidence state that you support a discretionary pathway for those who can't meet a controlled activity pathway, so not expressing a view on which controlled activity pathways are in, just if you can't meet it, a discretionary pathway with a broader framework is appropriate. That's still your opinion?

A. Yeah, I think in my opinion there should be a pathway for those that can't meet for whatever reason, because you can design these things as perfectly as you can but they're not perfect so there's reasons that the farmer might not meet them but actually, you know, what they're doing is perfectly reasonable but it's just not accounted for in the Overseer or in the model et cetera, so it can then be considered by the council on its merits and see what's reasonable or it's very, very expensive for them to get there and council can look at that et cetera. So I think always, you know, for those smaller amount of people there needs to be an alternative pathway.

Q. And would you agree that risk tool and the score that it generates and the management practices it would help to identify could be used as part of a suite of information put forward in support of a discretionary activity application?

A. I think if they can't meet the alternative pathways, then it could be part of – there would be a lot of information, it could be part of the evidence of why it's too hard or whatever tool is being used is not accounting for their particular circumstances, there would be a suite I'd imagine of evidence.

Q. Thank you. Now I've just got a couple more topics, the first one just relates I guess to having a look how long the risk matrix has been around and getting an understanding for that. So paragraph 26 of your evidence and tell me if you'd like to – I can hold fire just so you've got it in front of you.

A. Yeah.

Q. You say, and I'll just paraphrase, that a key benefit of the risk assessment tool now being proposed is that it's based on the Fonterra tool which has been I guess used since 2017 and 2018 and possibly around slightly longer, is that correct?

A. I mean that's part of, well it's been tested as in how it works, it's also been validated by obviously the AbacusBio and also Professor Hedley from Massey and Lee Matheson from Perrin Ag have also validated it, so it's had a number of checks and balances over time.

1240

Q. But the risk tool that we're dealing with in this proceeding and for Plan Change 2, that at best has had about 10 months of existence, that's correct, since February?

A. Well, the – yeah, so the basic risk part of it is obviously majority is based on the Scorecard. The – so all the rainfall overlay comes, as Professor Horne was just explaining before, comes out of Overseer so that has work behind it. Yes, it has been validated by the experts and the – all the data we had within that process.

Q. So I'm correct that it's 10 months that it has kind of all been pulled together at the start?

A. 10 months of development, yeah, yeah, but I wouldn't say, yeah, so but the thinking behind it comes from lots of other work.

Q. But and then in terms of a final version that we all might be able to look at, that's not actually yet in existence, is it, because Professor Horne needs to do some further work to incorporate other aspects?

A. Well, the Scorecard, apart from maybe taking into account that point around retired land and the overlay matrix of that, but yes, there's a couple of tweaks in terms of that retired land which has been discussed that needs to be looked at.

Q. So if we're looking at, I guess to go back to your evidence, time and existence as being a key benefit, Overseer has about 30-plus years of time and existence, doesn't it?

A. Yeah, I don't know if that is relevant to how robust it is or how useful it is, but it has been around a long time. Obviously it wasn't developed for regulation at the start.

Q. I just now, Dr le Miere, have a couple of questions just about understanding some of the adjustments that were made to the risk matrix and when I say the risk matrix in this context, I specifically mean the biophysical aspect of the matrix.

A. Oh, yeah, yep.

Q. And I've been trying to use "tool" instead of –

A. Yeah, I know, there's two bits, isn't there, and it gets a –

Q. – yeah, so I know the language is getting a bit confused.

A. – a bit confused, yes.

Q. So when I say "tool" I mean the entire thing and when I say "matrix" I mean the biophysical overlay.

A. Yeah, yeah.

Q. So and I'm looking at paragraph 55 of your evidence as a starting point. So am I correct that you – Professor Horne first developed the biophysical matrix and then you took the matrix, did some work on it and based on what is written at paragraph 55 I guess adjusted that to balance out the contribution of reductions across the different PAW soils and rainfall areas, is that correct?

A. Yes, so Professor Horne came up using the Overseer work, as he said, with the initial numbers. The group then, (inaudible 12:43:50) the Overseer, asked to road-test it to stress test it and see what it meant for some of those low numbers, the 86, the bottom right quadrant for example, the 86 and what that actually meant in terms of on farm – likely on farm change. So I was tasked with going away and did that, I did that and then came back and reported back but we seesawed it around the middle effectively, so overall did the same sort of thing but slightly tweaked it with those numbers.

Q. And so is the effect of that, that it I guess balances out how much nitrogen is able to be leached across those different types of land and their soils, so more evenly equalises that for leaching amounts out, is that the effect?

A. It is slightly less stretch on the leakier soils and on the top left quadrant. The lower rainfall, better soils, it's slightly more straight, so it would depend what sub-catchment and other things, but yeah, the idea was not to radically change it overall, but to just rebalance it slightly.

Q. Would you, would you describe that as being a slightly different philosophy to that underpinning Table 14.2 which quite specifically, I guess, encouraged higher leaching to certain categories of land and I guess discouraged in other categories?

A. No, I think it still says same philosophy and there's still a, I don't know, 50% difference between the different quadrants, same as sort of Table 14.2, so there's still a good difference there. Obviously encouraging land use to different source will depend on lots and lots of factors, as Professor Horne talked about, but in terms of there is an encouragement I think it still has the same sort of effect.

Q. But it's not been designed with that outcome in mind, is that fair?

A. Well, it was designed as Professor Horne was talking about with that natural capital in terms of that, you know, the drivers of loss and nitrogen in mind and then looking at whether that was achievable for farms was, for those farms around the 75th, et cetera, was slightly tweaked, but it still has quite a variance between different places.

CROSS-EXAMINATION: MR ANDERSON

Q. I just want to start with – just bear with me for a moment – with something that Professor Horne discussed yesterday and this was the basis of N losses that were underpinning PC2, you're familiar with that?

A. Yes, I have not –

Q. Now, I don't need to take you to his evidence, but he, what he says is he thought a 10% reduction wasn't quite enough in terms of N losses and thought 20% was more appropriate and PC2 picked that up, I can take you to his evidence where he says, but are you familiar with that?

A. I'm familiar, that's what he, what he was looking at, and the hearing, yes.

Q. And so the underpinning of PC2 in Dr Horne's view was we need to get 20% reduction in N losses and that was what was adopted?

A. I think the underpinning of the – that alternative pathway to the table is what he was looking at, above 20% was, as he said, very costly, but it was more appropriate I think.

Q. Yeah, but what we're aiming at, 20%?

A. Is one of the options within that alternative pathway, rather than overall, I think.

Q. Now one of the – in Dr Dewes' evidence, one of the concerns she raises with the – and I can take you to it, can you go to 203.1865. Now, it's going

to be a challenge to try and – I will direct you to Dr Dewes' evidence in a moment, so that is in volume 2 tab 32.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. Now, on page 26, so it's 203.1865, Dr Dewes is talking about a – have you got that there? Sorry –

A. So which page, 20?

Q. 203.1865 on the top right?

A. 1865, yeah.

Q. And there's a paragraph there 20.3.

A. Here we go.

Q. I suggest you just read that and I can...

A. Yeah.

Q. And so in that paragraph, Dr Dewes is identifying a risk that the Scorecard might result in farmers believing they're at low risk when the reality is that they're not?

A. Around just the NRS?

1250

Q. She also refers to it as the scorecard there as well doesn't she?

A. Yes.

Q. In many cases based on the N risk scorecard they think that they're low risk when they're not.

A. That's what she says.

Q. Now just – because that would be a bit of a risk, wouldn't it, if you had this intention to try and achieve a 20% loss and that you went through the scorecard approach and that resulted in effectively an underestimation of risk and so farmers believed they were doing all that was needed for them to achieve the nominal 20% loss but they weren't and if they thought that they were doing it and they weren't doing it, that would be a risk because they would think they were doing all that was needed.

A. Yeah, I suppose this goes back to a conversation around certainty and errors within the models we're looking at. Personally looking at some of the Overseer work, I'd say there's more of a risk of Overseer giving a false or misleading number compared to the modified risk assessment tool.

Q. One of the things we've been talking about is the importance of integrating both the tools we've got, which in this case would be Overseer and the RAT, and I mean that would be useful, so we can cross check from the outcomes from the RAT and the outcomes from Overseer to then get a better idea of whether we were –

A. Yeah, I was thinking of Commissioner Hodges' questions to Professor Horne around using it within the alternative pathway, in my opinion I think the use of the risk assessment tool as the gateway and then using Overseer potentially on a five yearly basis or something within that as an indicative check would be more consistent with the MFE guidance than the other way round. So you could roll it in as a sense check to make sure and if there's a discrepancy then that could be investigated.

Q. I mean I guess what I'm concerned about is the use of the scorecard as the gateway when we haven't really done enough about it to ensure that it cross checks against what you're trying to achieve with the plan because that work hasn't really been done.

A. Well I think it has with Professor Horne's work, that you get the same degree of change et cetera. I'd had to defer to him but I think it has been done.

Q. Can I take you to your rebuttal evidence, go to the last page, so that's 201.0527 and here you refer to some evidence around farm modelling outputs and GMPs and BMPs, that's correct?

A. Yeah, paragraph 27 onwards.

Q. That's correct, yeah.

A. Yeah, it was a sustainable project there, it was just to give an idea that –

Q. Well –

A. – there are – sorry, no, you go.

Q. What I was intrigued about was paragraph 28, where you say: "Modelling of the nutrient loss reduction suggests that the nitrogen decreased on average by eight per cent and phosphorus by 16% as a result of implementing the practice in the SMPs." Now I take it from the paragraph above SMPs effectively means GMPs and BMPs, we've got too many MPs here?

A. No not necessarily and I don't want to get into the BMP, GMP argument because I have a slightly different take but –

Q. I might break it down.

A. Okay.

Q. So at paragraph 27 you talk about adopting GMPs and BMPs.

A. They're not the same as Horizons I would say. They were a limited subset but anyway, yeah.

Q. So those went into, in that context of your paragraph 27, the adoption of GMPs and BMPs went into developing and implementing of SMPs?

A. Yeah, so the industry were to (inaudible 12:54:23) farmers to try and look at getting farmers to GMP and some of you called BMPs, what would that mean in terms of outcomes effectively but it was quite a limited set of GMPs and BMPs to what we're talking about and there wasn't any – weren't trying to achieve any percentage gains in the ascent, it was just looking at on farm would could be done and what did that lead to.

Q. And in that situation it led to an average reduction of eight per cent. I assume that was done by Overseer, the number, you haven't actually said there, but I assume the eight per cent was Overseer model, is that correct?

A. I believe so.

Q. So in that area the GMPs and BMPs were adopted, I know it's not exactly the same but it's at a high level, in that location GMPs and BMPs were adopted and we got an average reduction of eight per cent, which is actually quite a long way away from the 20% that we were talking about here.

1255

A. Yeah, as I say, it was a very limited subset of GMPs and BMPs, compared to what we could be dealing with here.

Q. But the point, that really hasn't been road tested in the situation terms. Sure there's the proper correlation between what your GMPs and BMPs might achieve, taking into account Dr Dewes' point that we might end up with a false interpretation by the farmers as to what they're actually achieving and so I guess I'm suggesting to you we need to do more work in this space to make sure that we actually have got a proper correlation

between what we're achieving through the scorecard and what we wanted to achieve through PC2 and the 20% reduction.

A. No I don't think there's any – the risk assessment tool is any less inaccurate with what it's signalling to farmers than Overseer would be and looking at Professor Horne's work around using both and gives the equivalent, roughly equivalent range of changes on farm, I don't see any evidence around that.

RE-EXAMINATION: MS JOHNSTON

Q. I just have one Dr le Miere, if you can bear with me, but there were questions from my friend around your access to the Fonterra data set.

A. Sorry, yes.

Q. You'll recall some questions from my friend Ms Ongley around your access to the Fonterra data set.

A. Yes.

Q. Are you aware of the information Professor Horne had access to following your review?

A. I haven't seen it, but I'm aware he then had a subsequent newer set of data from Fonterra that he worked off of.

Q. And would you be able to comment on whether or not he revisited the quadrant or matrix in light of that data?

A. Yes he did, he did a redid a lot of that work and further work than mine, yes.

COURT ADJOURNS: 12.58 PM

COURT RESUMES: 2.17 PM

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Dr le Miere, just a few questions for you, I think, from the bench. First of all, I just want to get a handle here and counsel might need to assist us as well, but just in terms of your role, I understand that you are giving expert evidence for the regional council –

A. Yes.

Q. – in relation to your expertise as a – effectively in freshwater management, crop management and modelling, is that?

A. Modelling, farm systems, yeah.

Q. Modelling farm systems?

A. Modelling and farm systems.

Q. Modelling and farm systems?

A. Yeah, yeah.

Q. All right, thank you. And you've identified within part B and paragraph 8 that you are an employee of Federated Farmers?

A. Yes.

Q. But as I understand it, this evidence doesn't necessarily put a Federated Farmers' position, is that –

A. Not at all.

Q. Am I correct on that?

A. Yeah, not at all.

Q. All right, okay, thank you. So when – I just want to just explore a little bit with you your position in relation to the specified reduction pathway that is in the decisions version –

A. Mhm.

Q. – of this plan change and the NRAT or Risk Scorecard or whatever we are going to call it, let's call it the risk tool. Now, my understanding from what you say in your evidence and I'm looking specifically at, I think, section F of your evidence, but let me just find where you say, I think, somewhere in here, if I'm right, you say that around sort of paragraph 71 also, 72 also, I gained the impression that you have concerns about using

the specified reduction pathway with Overseer in terms of the veracity of its numbers, is that a – is that what I'm meant to take from this evidence?

1420

A. Yes, yes, yes.

Q. Right.

A. Yeah.

Q. And so your preference is to use the risk tool as opposed to using Overseer. Now, and that's my understanding.

A. Yes.

Q. Now you would have heard me ask Professor Horne about that and he reached the conclusion that there was very little difference for either farmers or the environment between the two, the two options, that was what I understood his evidence very clearly to be, so I am going to ask, I want to ask you the same question, if you are looking at the specified pathway reduction pathway using Overseer as per the decisions version or you are looking at the use of a risk tool as per the appeals version, what do you consider to be the differences to farmers and/or the environment as between those?

A. Yes, your Honour. Yeah, I agree with Professor Horne in the sense from the outcomes, the likely on farm changes that there seems like little difference. But the environment I can only go with the modelling that has been on, that seems to show the same. My preference from using, to use for the gateway I suppose, the Scorecard, the risk tool, let's call that, is i think based on a couple of things. I think it's the – taking the MFE guidance, even the latest guidance that's saying we shouldn't be using it for the outputs as an absolute numbers and we should be looking at other tools and then I do still have questions around that certainty side. And I think it's there less certainty that we're going to get those changes we want compared to with Overseer. I've done a little bit of work which might interest Commissioner Hodges as well to explain what I mean about some of that certainty, because there was the question to the professor before around the certainty of Overseer. If I may, can I take you to some of that work?

Q. Absolutely, mhm.

A. So this is the Overseer model performance report, so this is 301.0506.

Q. Right, give us a moment to get to that, 301, so volume 3.

THE COURT: COMMISSIONER HODGES

Q. Is this volume 1 or volume –

A. Volume 3, I think, Commissioner.

Q. 1 of 2 or?

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. Yes, I think given the number it will be 1 of 2. Right, give us the page number again perhaps?

A. 0522, tab 6 I think.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. Yes.

A. No, sorry, 0506 is where the report starts.

Q. Right, so *Assessment of Overseer model performance with experimental data from grazed pastures* dated August 2023?

A. Yes.

Q. Right, thank you.

A. And the page I was looking at was 0522, page 17 of that report.

Q. Yes.

A. And it's something I've been grappling with around that, trying to get a better handle on that certainty and you will see this is Overseer there was significant issues raised within the review of it.

Q. Mhm.

A. Overseer has then been doing some more work and I'm not having a go at Overseer here, I come from a modelling background and modelling is incredibly hard to do and this is trying to an incredibly hard job on a huge amount of parameters. What I looked at that graph and then thought there's quite a lot of scatter around there, but just averaging it down I think is un-useful, so I looked at putting it into bands of, you know, how many of the blue dots were within 25% of the actual measures compared to what was modelled, 25 to 50% and then greater than 50%, because there's a fair number there, you know, the model is 40 but Overseer is

saying 20 or vice versa, and doing a rough, putting the lines there and then counting the dots, I found roughly about 34%, about a third was greater than 50% of the – or that model data, was 50 to 100%. About 30% was in the zero to 25, sorry, 25 to 50 and then about 35% in the zero to 25 and that's plus or minus. So my conclusion is, you know, give or take, if you're running a number of farms from that calibration date or that measured version model data, you're likely to have a third of the farms being 50 to 100% out of the number, a third about 25 to 50% and a third up to 25% and I just thought that was useful thing to show there is some variability and I'm not trying to say the scorecard is way more accurate but I think from the data we have, I don't think it's going to be any less accurate.

THE COURT: COMMISSIONER HODGES

Your Honour, can I comment on that?

THE COURT: JUDGE SEMPLE

Yes.

THE COURT: COMMISSIONER HODGES

Q. I've seen a lot of different versions of those figures and I spent a lot of time, a year of my own time looking at Overseer because it sort of gripped me and the best I've been able to find out after about five years is that there seems to be a general consensus of 20 to 30% and up to 50% in some cases, are those figures you've heard or not?

A. I've heard that but I've seen actual data and actual work like this in Rotorua where it was more like 50 to 100% out, hence why I went back to that to try say okay rather than, you know, (inaudible 14:26:51) averaging, isn't it, I'm trying to average it down, what's the sort of spread we can expect from what is coming out and that's when I thought okay I'll do an admittedly crude way of just looking at the sort of spread, the likelihood of being in different brackets I suppose. So looking at that, it's a bit higher actually, the majority is in the 25 to 50%.

Q. And that's came out of the Rotorua, was that the PC10 information?

A. No that was a different – I'm not sure if that was in this one, that was a different report that Dairy NZ did in Rotorua on a number of farms.

Q. I certainly was unaware of that.

A. I think we could probably produce that if needed.

Q. No, it's fine thank you. Thank you very much, thank you your Honour.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. So I guess one of the things that troubles me a little bit about when we get into this sort of space, is we seem to be looking now between a model that has been extant for some time as being the subject of quite a lot of review and certainly a significant amount of review and has the ability to be checked and calibrated against actual, so then you start to see these discrepancies coming through with the degree of certainty. On the other side we've got a model that hasn't had that longevity, hasn't been operating out in the field necessarily, might or might not be more accurate and the challenge for the Court is to consider what is the most prudent approach, if indeed it's determined that an alternative control pathway is even necessary, so I put that qualifier on it. So just explain to me in the best terms that you can and the most layman's terms that you can but, you know, with your expertise, you know, where you get to in that conundrum. You've obviously come down from your evidence on the side of the risk framework, Professor Horne has come down on perhaps they're about the same and other witnesses come down on the side of sticking with the reduction pathway using Overseer. So just tell me how you've managed to land that question in your own mind?

A. Certainly your Honour. Yes I think, as I say, I fully accept Professor Horne's stance that the likely output is the drivers that on farm change will be roughly the same in the water quality. So looking at it from a – trying to be more consistent with the MFE guidance I suppose and the issues I have using Overseer in a regulatory context, that's why I would come down on the side of principally using the risk framework as the drafting gate but I do think there is merit with them backing it up in some way with Overseer, that's within, you know, five yearly checks or something because having both having the joint approach there, that it

can then have a sense check. Overseer, obviously if MFE says your output numbers should not be used as absolute numbers but they are indicative numbers, they can be used as a sense check to see if actually if this tool isn't picking up what you'd expect it or there's a discrepancy that can be investigated. So I'm not against it being used but I think it is more appropriate to use it in that way as a backup to the risk tool or within that consent role as a primary driver. In terms of certainty, I think while you're right obviously the longevity of Overseer, as I say it was not developed at the start as a tool for regulation and it's an extremely useful tool for the scientific community. I think the attractiveness of the matrix approach is that simplicity that we know does drive a lot of the nitrogen losses and there is work, not extensive as Overseer, that shows that it does and adequate job and probably the same job as Overseer that we can see.

1430

Q. Okay, all right. The guidance document is in the bundle somewhere, I don't know if I can immediately put my hand on it, I think Mr Anderson took a witness yesterday to the provisions that talk about what to do when a proposed, you know, if you're half way through, what to do effectively and one of the things it says is well, you know, in great Winston Churchill fashion, you know, keep going, if I could paraphrase that. It doesn't suggest, it doesn't say that, you know, and there's been no national policy direction that says this is it, you can't use Overseer anymore. There's some guidance but there isn't anything that legally says you've got to stop using it right now, it's too uncertain to rely on anymore. Does that change your view at all knowing that the guidance document says you can keep going with what you've got currently if you're half way through?

A. The way I've read the guidance on 302.0712, page 6 of it.

Q. Sorry just let me get to that as well. So I normally like to be more familiar with the bundle but we brought this on for hearing quickly, so the bundle has not been with me for long enough. Right, page number please sorry?

A. Page 6.

Q. Here it is, with the little orange tag on it. Yes, so okay you're at page 6.

A. So there's that last part of that page, basically says there the advice remains unchanged, that they should continue to use a range of tools and the important one to me is Overseer for output numbers should not be used as absolute numbers.

Q. Yes.

A. Obviously Table 14.2 is there and that, but I think my reading of what it says in the current plans and hearings and appeals on page 9 was to consider opportunities to use something.

Q. It says: “Councils can continue with existing plan processes but are encouraged to take account of the finance in the review and redevelopment reports where possible. Councils may wish to consider opportunities through the RMA schedule 1 process to complement the use of Overseer as a nutrient modelling tool.” So I guess I'm interested in your answer about, you know, ultimately you come down on the side of the risk tool because of the government’s position on Overseer and I'm not certain that I read the government’s position on Overseer as quite as strident as you might have.

A. Okay.

Q. Well simply on the basis that, you know, the government appears to be saying well you can continue with what you’ve got, it’s not so bad that we’re going to tell you that you need to change your plans immediately.

A. Yes.

Q. And that’s the guidance for now.

A. Yes, absolutely.

Q. That’s not to say that might not change but –

A. It’s not particularly helpful saying don't use it as absolutely numbers but sort of –

Q. But keep going.

A. – keep going initially. So my reading was, hence why I fought for the alternative pathway having a primarily drafting gate for want of a better word is the scorecard.

1435

Q. As a principal tool, yeah?

A. Because you’re not using it in absolute numbers.

Q. Yes.

A. But then backing that up in some way within that consenting conditions I suppose –

Q. Yes.

A. – are Overseer, then I think you are complementing Overseer.

Q. Right.

A. You're still using Overseer in some way, even if it is a sense check for the – and you're gathering some of that data and other things that we might want in the future. So that's why I preferred it that way around from that point of view, and my – and reading the, you know, the work that went for – through before around the calibrations and certainty and I thought that was the more appropriate, in my opinion, that's more appropriate way of going.

Q. Okay, all right, no, that's really helpful, thanks for that.

THE COURT: JUDGE SEMPLE

Commissioner Hodges, do you have questions leading on from that, or indeed different questions?

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Dr le Miere.

A. Commissioner.

Q. Were you involved in the original council hearing?

A. Yes.

Q. And what were you supporting there, were you supporting at that stage the alternative pathway of a 20% reduction?

A. Yes, Federated Farmers, I do farm systems for Federated Farmers, Federated Farmers was proposing a 10% reduction in the 75th but accepted in the end the 20% based on the evidence that came forward, so we were – Federated Farmers was very strongly looking at the alternative pathway there.

Q. Okay.

A. Obviously that was before the Overseer review and everything else happened.

Q. Yes. And do you have a view on the numbers of farms that cannot meet a 20% reduction?

A. I was getting a bit confused before, what was being bandied around. I, yeah, I think I need to go away and do some work on this, admittedly, but it seemed to me there would be a fair number, particularly in the Upper Manawatū where I think there is about 120 unconsented farmers and the figures that Professor Horne put out before around about 23% could meet the table and that goes up to about 44 to 46 I think he said that could do the 20% or the 75th, so which leaves you in sort of a 60 range, I think, of 60 farmers in that sub-catchment, I don't know the other sub-catchments, I'd have to go away and do the numbers, that won't meet either and will probably have to go through discretionary. Looking at it from another angle, when I've looked at the Scorecard and the, I'd say, the long tail, so we've been looking at the 75th, for example, the numbers around there to calibrate, but actually there's, as I say, there's a very long tail that goes off that.

Q. Mhm.

A. I'd say the difference between the 75th and the 85th is like 23% extra and then it gets even worse, so once you start getting up to that 85th, I think it will be very challenging for a lot of farmers to get to those numbers. So you'll have that proportion I think will be going through a discretionary, so it might be around the 15 to 20% of those, of those numbers, but I'd have to go and do the maths, as they say, to give you something more accurate.

Q. I think it's a very difficult number to predict based on the information we've got.

A. Mhm, mhm.

Q. So all I'm looking for is broad assessments and I think you have given us that, so thank you. Where does the 75th, why did you determine on or fix on the 75th percentile as opposed to the 85th or the 65th?

A. Just because of that. It was, it was obviously the alternative pathway had the same, you had to come down to the 20% or the 75th, whichever was the stricter, if you went through that. So we – I looked around the 75th as a – to see if that was the stricter, what the likelihood of people could come

down to that, effectively. Professor Horne then as we pointed out before, did newer data and did extra work beyond that, but that was my sort of calibration, if you want, of how far away were people from that, with that long tail and how hard would it be to get down.

Q. So law of diminishing returns, really, is that what you're saying?

A. Effectively, yeah.

Q. Okay, thank you. Do I understand from your evidence that most farmers are already at good management practice level?

A. Oh, I'm not sure if most, I think a fair amount. I didn't really approach it from that angle, it was approached from their – the scores that were there.

Q. Right.

A. There's obviously a fair proportion that can meet some of those targets, it could be argued. But I didn't cross-reference against the lists of GMPs and BMPs or anything like that.

Q. Okay, so you haven't really had the opportunity to look at how far the average farm is along the –

A. Not the, no, Professor Horne looked more around the averages and how far they were out and what they would have done and his work was more around that.

1440

Q. Okay, thank you. Do you have a view on if a farm is meeting the 20% now and there is the alternative pathway to Table 14.2, which you've got the alternative controlled activity pathway, do you see a difference between a farm that meets the 20% or could meet it in 10 years' time in terms of consenting status, do you think they're the same or one a higher risk? Do you understand what I'm saying?

A. No could you re – sorry.

Q. Well if a farm can now say yes I can meet the 20% reduction as of today and that would presumably go through a controlled activity pathway quite quickly.

A. Mhm.

Q. If the farmer comes along and says I can't do it today but I can do it in 10 years' time by doing this, this and this, do you see those as being the same kind of level of risk that should be given the same activity status?

A. Well I think the first to know the majority of farmers taking a 20% reduction will be over a time, I can't think of many scenarios as of now a farmer can just automatically do a 20% reduction that easily so I think whether it's, you know, a five year period or a 10 year period it would depend on the farm circumstances, so I think both scenarios will be over time, so will be quite analogous.

Q. Okay, that's good, thank you. One of the issues that's exercising our minds is the fact that we don't have a final scorecard for us to consider and that presents us with significant difficulties, do you have any thoughts on how long it would take to develop a final scorecard that all parties or the experts could agree on?

A. If it's adding in the couple of things we've been talking about which are essentially around if you retire areas of land, I think that would be pro rataring, I don't think there would be much disagreement around that, I can imagine, because I think it would be fairly quick, because the majority I think is accepted, so I think that's a fairly exercise.

Q. What about including critical source areas and riparian planting?

A. Yeah, I sort of just be slightly (inaudible 14:42:45) on that one. Critical source areas, as we've traversed PC1, that's quite complicated beasts, so I'd have to give it some thought but I didn't see a quick way of putting sort of relational, without a very crude, you know, giving you minus five points or 10 points if you do something about critical source areas but an actual more sophisticated proportionality approach, I struggled, without giving it some decent thought, how you put that one in but I'd have to work with the experts on that one. I think critical source areas is a bit more complicated, unless we narrow that down, beast to put in.

Q. But it does appear to be a very significant risk issue for some things. Not nitrogen I agree.

A. Not nitrogen, it tends to be more the sediment of phosphorus so it's not so much a nitrogen issue.

Q. Okay, yes, I can accept that, thank you. If we were to say the scorecard is the way to go, would that mean Fonterra farmers would have to deal with two different scorecards?

A. Potentially the majority of the data would be the same. I'd say the tweaking as being with some of the effluent scoring to make it consistent with the rules within Horizons, so you didn't get, you know, a positive benefit just because you were following the regional rules, you have to go beyond them to get benefits and then the extra mitigations around wetlands et cetera. So potentially, I haven't talked to Fonterra about that, but I'd say 90 something per cent of the data would be the same so I don't think it would be much of an imposition.

Q. You do have your biophysical accuracy through one and not the other.

A. Yes and the biophysical obviously is a multiplier afterwards or a target to reach, you don't have to collect that data, you just have to know what your zones are to reach, so it's not something that's done yearly effective, it doesn't change.

Q. Okay, I just felt it might cause confusion if you had to have two scorecards and they tell you different things but I suppose that's overcomable. You had some questions earlier about the Waikato study in the Upper Waipa catchment I think it was, you said there were only limited GMPs that were implemented to get the eight per cent nitrogen reduction. What additional GMPs are you relying on or would you rely on to get up to the 20%

1445

A. Well particularly the BMPs probably, which are going – GMPs are what every farmer should be getting no matter whether you're trying to consider where you're trying to reach a target or a reduction or anything around, you know, soil testing, if we put nitrogen on those sort of things. With BMPs it's much more of bespoke targeted actions, might be putting in feed pads or retiring land et cetera to try and more actively reduce your reduction. So those sort of things weren't within that from memory, it was more just around doing nutrient budgets and the sort of list of GMPs that you would normally consider basically. So there's a lot of BMPs as it's described here that could be added on top.

Q. So presumably you'd be getting into some quite big dollars in some occasions?

A. That's it, that's right and I think, you know, BMPs could, it's not an exhaustive list but it can keep going to small tweaks to whole farm system

changes and I think that's where Professor Horne is looking at that 20% and doing BMPs it takes 20% is with that sort of cost benefit sweet spot, after that the returns are a lot more cost, a huge amount more cost to not so much benefit, so, yeah.

Q. Okay, thank you. When you tweaked the biophysical factors, did that change the number of farms that would move out of the controlled activity status in the discretionary activity range?

A. No it was roughly the same, because I pivoted it around the average middle basically and it depends the catchment, it's roughly the same spread, it didn't change from memory much at all. It made it harder for some, and some slightly harder for some and slightly easier for others.

Q. And this is just for my own information, what's the difference between Overseer FM and the legacy version of Overseer that Dr Dewes described?

A. So a few years ago they completely changed the architecture of Overseer, it was written in a program language called Delphi and it was a standalone computer programme you could put on your computer was the legacy and then you got updates, then they went online with the FM version basically that you get a subscription for and you login, it just updates everything in the background and it's online.

Q. And when did that come in please?

A. Oh good question, six years ago something like that, from memory. Having a bit of blank there but a while ago, maybe a bit longer.

Q. Well you've given your views on the combined use of the tool, I'm still struggling a little bit about putting the risk scorecard first because of the emphasis on Overseer in the plan. So what would be the difficulty from your point of view if the Court went with an Overseer primary tool and then brought in a risk scorecard as a complementary one? Where would you see the problems with that? I think I know the answer, but I'd just like to –

A. I suppose from what I said before, it's around having that – I suppose there's a cost in terms of doing it yearly and the other things, so there will be some the other way round but also that certainty I think and the consistency, depending how you read the advice. From my point of view,

looking at this I think there's more certainty around the work farmers will do in them buying into it in terms of using the scorecard. It's an easy time to stand tall.

Q. Well that's an important point because buy-in is going to be important.

A. Mmm.

Q. If we were looking at using Overseer and have to go back to a 2012/13 baseline would the information be available to produce Overseer files for all farms?

1450

A. Oh, that's a good question. Not sure. That might be a struggle. I don't know how much – farmers, (inaudible 14:50:12) have some data around that and farmers, but I don't how much of that would be complete. Also, that is quite a while away now.

Q. Mhm.

A. So I'm not sure, I'm afraid.

Q. Okay, no, that's fine.

A. How much of that data is around.

Q. And one last question, you mentioned in your evidence that Mr Lee Matheson had done a peer review of PC1. I recall that evidence – sorry, of PC2, rather, getting mixed up in my PCs.

A. No, he did, he did a peer review of the, sorry, of the risk tool for Fonterra.

Q. Well, he reviewed it, but I understand it was at a very early stage and he said it – all I saw of the evidence was that it covered the main issues that could affect the leaching of nitrogen, is there another report that you are thinking of?

A. Yes, Professor Hedley, who was at Massey University, also did a review, I understand, I haven't actually seen that report from him, but I understood it was – he also did a review.

Q. And when was that review done, please?

A. I think before the AbacusBio Report but I'm not 100% on that.

Q. Okay, thank you very much. Thank you, Dr le Miere, thank you, your Honour.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS ARISING – NIL

WITNESS EXCUSED

MS BUXEDA:

Apologies Ma'am. I just have a comment to put before this Court about appearance of Hort NZ witnesses. We're having a bit of trouble with flights, as you might be aware, as I ascertain from your groans.

THE COURT: JUDGE SEMPLE TO MS BUXEDA:

Q. Yes, yes.

A. And I was just – I have talked to my friends and nobody has an issue but I was seeking permission from the Court for Gillian Holmes and Andrew Barber to appear remotely when Hort NZ's case is up and I apologise for this, I understand the Court is apprehensive about remote appearances, but this is a little bit out of our hands at this stage.

Q. I mean, I think it might be the best of a, you know, the best that we can do in the circumstances, unfortunately. I mean, yes, we are finding the technology doesn't work well. I think that's the difficulty that we have, so although, you know, often works well, we've all got quite used to working with it in our offices, it doesn't quite work as well when people are at home or in remote locations and we don't have any control over where they are. So our preference is to have people here in person, but absolutely understand that there is situations in which that just can't simply happen and given Wellington Airport's cancellation of nearly every flight and every flight out yesterday, I imagine there are no flights 'til Christmas, probably, now.

A. I understand that they would not arrive until Friday, Ma'am.

Q. Yes, that's, yes, yes, all right, well, look, we'll make those arrangements.

A. Thank you very much and I'll talk to them about getting a stable connection so that we can try and circumvent that.

Q. Yes, if you can. That seems to be the biggest issue at the other end is the extent to which they have a good internet connection, yes, all right.

A. Thank you very much.

Q. Thank you.

MS EDWARDS CALLS

AARON RICHARD PASSEY (AFFIRMED)

Q. Good afternoon, Mr Passey. I will let you pour yourself a glass of water before you answer my questions. So can you please confirm for the Court your full name is Aaron Richard Passey?

A. Yes.

Q. You are an unconsented dairy farmer in the Upper Manawatū, you are a Fonterra supplier and you are the Federated Farmers National Share Farmer Section Chair and the Dairy Section Chair for Federated Farmers Tararua Province?

A. Yes.

Q. You drafted – sorry, you have filed a statement of primary evidence dated the 13th of October 2023?

A. Yeah.

Q. You did not file any reply evidence?

A. No.

Q. And do you have – sorry, and also I was going to say, your Honour, that evidence is located in volume 2, tab 28, page 203.1436, book 3. And Mr Passey, do you confirm that your evidence is true and correct to the best of – sorry, should have first asked, do you have an changes you want to make to your evidence?

A. No, I don't.

Q. Do you confirm that your evidence is true and correct to the best of your knowledge and belief?

CROSS-EXAMINATION: MR ANDERSON

Q. Good afternoon, Mr Passey, I am Peter Anderson, I am the lawyer for Forest and Bird, I have just got a couple of questions for you.

A. Mhm.

Q. Have you got your brief of evidence in front of you there?

A. Yeah.

Q. Can you go to the top right at page 203.1450?

WITNESS REFERRED TO BRIEF OF EVIDENCE

A. Can you give me a clause, I'm sorry, I haven't got the right page numbers.

Q. Sure, paragraph 59?

A. Yeah.

Q. So I'm just going to ask you some questions about the risk matrix and just talk you through those paragraphs to get a better understanding of what is going on with them. So in paragraph 59 you say Fonterra provided you with a risk score of 111?

A. Mhm.

Q. That's correct. And then you say that doesn't mean anything but then you obviously consulted with Dr le Miere, that's correct?

A. Yeah.

Q. And he said that there's a difference between the Fonterra risk – oh, no, let's call it risk, risk score number and the one that would be used under the Plan Change 2 model prepared, that's correct?

A. Yeah, I think so, yes.

Q. In your evidence, you say that refers to the use of plantain on your farm?

A. So yeah, my understanding is that plantain is not recognised in the Fonterra list matrix.

Q. And so it is in the one that is being used in PC2?

A. Yes.

Q. And if I read your evidence correctly, that reduces your risk number by 10?

A. That is what Paul said, yes.

Q. That's what Paul said. And so that takes you to 100, I don't quite know how taking 10 off 111 gets you to 100, but that's by the by.

A. Well, it's 10% and so it's –

Q. Oh, 10%, right, okay.

A. – 11.1.

Q. Yeah, your maths is better than mine. Now, the – Dr le Miere goes on to say that under the Plan Change 2 risk matrix "low" is 130?

A. Yeah.

Q. And so you are well under – into the low, below that, is that correct?

A. Mhm. Yeah, I believe so, yes.

Q. And so if – does that not give you, if you were going to apply, if this came in and you could apply for consent under the low risk pathway, that would

allow you to remove some of your mitigation and still be characterised as low, is that the way you understand it?

A. In theory I could, yes. In practice, no, I wouldn't do that, because I've already done them.

Q. No, yeah, I wasn't – yeah, yeah, no, I understand, this is not about you, this is about the – I'm not, there's no, I'm not making any suggestion that you would or wouldn't, it's just about the system so I'm trying to get an understanding of how the system would work. So in theory, a farmer in your situation could effectively reduce their, reduce their mitigations and increase their N loss and still be classified as low risk under the matrix, is that your understanding of it?

A. Yeah, I guess so, yes.

Q. And so that would mean that, in fact, if we had this pathway that allowed the matrix to be used, you could in fact increase your N losses and still go through the controlled activity pathway?

A. Yes, but then is that not the same as being below the numbers on Table 14.2?

Q. I think I as the questions. I've got no further questions, Ma'am.

RE-EXAMINATION: MS EDWARDS – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Mr Passey, and thank you very much indeed for coming and I was probably the primary reason for having to get you to travel all this way, so I am very grateful for that. And I thought your evidence was very helpful, but I do like to sort of talk to the farmers themselves to get a practical understanding of some of the issues and I was very interested in your reference that the fact your dissolving organic nitrogen level in the stream was 0.19 milligrams per litre and the One Plan target is .444, is that correct?

A. Yes.

Q. It doesn't matter, just take it from me that those are the figures, but I am sure you don't keep those in your head, as well as you know the names of your cows or things like that.

A. Those are the figures that I was given, yes, but I do not understand much what they mean.

Q. Is your farm located quite high in the catchment?

A. So, yes the Whakaruatapu stream starts in the neighbouring sheep and beef farm and then it's spring fed and flows along our boundary and carries on to join up to the Mangaatua Stream and then the Manawatu.

Q. So it's really fairly high up in the catchment and there's not much farming above, is that right?

A. Yes, that's correct.

Q. Just for your information, one of the things that we have to consider is that when all of those streams contribute nitrogen, by the time you get to the bottom you may well be above what the target is in that particular catchment, so we have to look beyond the obvious in terms of individual farms, that's part of the challenge. I'm sure you understand that, is that right?

A. Yeah, there's obviously a cumulative effect as it goes downstream.

Q. Thank you. When you winter your cows offsite, where do they go? To a farm in the general area or somewhere else?

A. Primarily most of them go to Hawke's Bay, so we make it their problem, not ours.

Q. That's why I asked the question. Okay well I don't need to pursue that one anymore. You've obviously done quite a bit of fencing around the farm, are you now compliant with the relevant stock exclusion regulations as a matter of interest?

A. We were and then Cyclone Gabriel came through and it's taken out a few stream fences which need to be replaced.

Q. Okay, and please don't think I'm from an enforcement agency here I'm just trying to get an understanding of what's going on. Critical source areas is a big issue in certain situations, can you explain to me whether they're an issue on your farm and how you deal with them?

A. So yes we are quite rolling, so we have quite a few ephemeral streams that will form when it's rain and when it's wet and then they'll dry up once it's dried out again, so in that critical period through winter we'll fence them off so that we're excluding stock from them. Our medium term plan

is to start going through and fencing those off and putting culverts in to ease access through and around them. We've only had that farm for four years, so we're still trying to work our way through a list of dreams.

Q. You're obviously going in a good direction is all I can say.

A. We're also looking at putting in, well we have been looking at putting in I call them sediment protection ponds, also known as duck ponds, but yeah the forthcoming freshwater regulations around wetlands are putting a bit of dampener on that.

Q. So will you have much to do to comply with the new regulations, the farm plan regulations?

A. I couldn't tell you because I haven't actually had a good look at the farm plans.

Q. You've talked about the variability in the way the farm has to be managed in terms of reducing fertiliser application but bringing in more feed, have you done any work on whether that increases the risk of nitrogen loss on your farm?

A. No I haven't.

Q. You have indicated in your table 1 a range of actions to achieve a 20% reduction in Overseer nitrogen losses from the 2020/21 season, have you implemented those actions or are they still to be done?

A. So we have removed all of the cropping. We are still in the process of trying to reach 20% of (inaudible 15:04:16) in the (inaudible 15:04:16). We're currently sitting at 10%.

Q. And how difficult would it be for you to get to the 20%?

A. That is what we're working on at the moment with the plantain trial is trying to work out how to get there and how to keep it there.

Q. Is it a stretch?

A. I think to get to 20% isn't a stretch, it's how to maintain it at 20% is where the challenges lie.

Q. Is that because of the need to bring more stock on for some reason or not?

A. The persistency of the plantain.

1505

Q. You've introduced plantain on your farm, my understanding is that that's not always helpful to some farmers and there are some problems with doing that, do you see that as something that will become more of the norm later or is something that's going to be a bit of a challenge for most farmers?

A. There's so many variable farm systems and farms in general that it's not going to be everyone's magic bullet but it will go a long way to help for a lot of farmers where it can fit into the farm system. I know of farms that struggle to get it to grow because they extensive farming structure in the way herd homes and feed pads, so they have very little pasture damage and the pastures and thick and healthy and there's no space for the plantain to infiltrate, it gets out competed by the rye grass and also Canterbury, we were down there for the plantain conference last year, there were some farmers down there that really struggled to grow it and others that were growing it really well.

Q. Do you have any animal health issues arising from it?

A. Personally I haven't had any at all. The first day we grazed the straight plantain crop, I had a meeting and forgot all about them going on there and got back at 2 o'clock in the afternoon stressing a bit, but they were all still standing and looking fine, so that was all right.

Q. Based on your knowledge of the farms around you, is the sort of things that you're doing to reduce your nitrogen losses, is that common amongst farms around you or do you stand out as someone that's particular good or particularly bad, you don't have to answer that last question?

A. I think in terms of the plantain, there's been quite a big buy-in in Tararua, especially through the plantain project and, you know, they're seeing a lot more farmers incorporating plantain into their pasture mixtures and a few more growing it as (inaudible 15:07:39).

Q. What about the fencing of streams and management of critical source areas and things like that? How are other farmers approaching that?

A. In terms of fencing of streams, I think dairy farmers are compliant, I think there's probably still a fair bit of improvement that other settlers in there could do and probably (inaudible 15:08:20) is probably the next bit where dairy farmers need to up their game a bit.

Q. Thank you very much, that kind of information really helps us, so thank you very much indeed.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. I have a question that relates to the last page of your evidence in paragraph 64. So my question is related to your point after you say you appear to have everything ticked off and legal as soon as possible and then you say that hopefully getting the consents would reduce your debt servicing costs and that's a big incentive in itself, so are you able to explain to me what that means?

A. So yeah, being unconsented is a big business risk for our business which then it's flowing over into the banks, the matrix they put on our mortgage interest rates when they're calculating them.

Q. So does that mean that you move to a better position on the bank's risk matrixes, is that what you're telling me?

A. Yeah, it would reduce their believed risk in our business and in term relate to a lower interest rate. So we're currently sitting at 9.75%.

1510

Q. And the – can you tell me what it reduce to or?

A. I, no, I couldn't say.

Q. Well, but anyway, a worthwhile amount is that your point?

A. Even 25 basis points would help a fair bit this year.

Q. Okay, no, look, thank you. That – I thought you would say that, I just wanted to explore that a little, so thank you.

THE COURT: COMMISSIONER HODGES

Your Honour, could I just pick up on one other thing?

THE COURT: JUDGE SEMPLE

Yes, yes, certainly.

FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Look, it's a while since I read your evidence, do you do an annual Overseer budget?

A. No, so I don't have any requirements to do one. I did it with the Dairy NZ project but since then I haven't done one. Once the – once a subscription for the – that year we did it with the Dairy NZ expired, I haven't renewed it since then.

Q. Okay, so how do you know you couldn't comply with Table 14.2, the amended version of Table 14.2?

A. I don't, but then I'm not aware exactly what the numbers are in the amended table.

Q. Okay, all right, thank you very much. Thank you, your Honour.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just had a, again it's just to help me to understand how all of this works, really. So the first question I had just relates to this question about the what you get from your nitrogen risk score from the Fonterra and so that's at page, page 13 of your evidence, paragraph 58.

WITNESS REFERRED TO BRIEF OF EVIDENCE

Q. And then that refers me to a AP3 which is, as I understand and tell me if I am getting this wrong, as I understand it that annexure which is on I think attached to your evidence, but the evidence is all in one hit, so I'm – it might be easier for you to look at volume 2, book 3 of 4. And then go to tab 28. And then go to page on the top right there 203.1503 or 1504.

A. 1503.

Q. Now, is that – this is your farm insights report, is that right?

A. Yes.

Q. Right, okay, excellent, so you can help me just work out what information you get. So as I understand it, what you're saying is if we flick over to page – what is page 72 of the report, or no, that's a different numbering, 203.1508 up the top, that gives you at the bottom there on that six, six areas, your risk profile, is that right? So on a green, yellow, amber and no red. So then, so can you just tell me what you then do, once you get this, what do you do with this information?

A. Ah, I flick through to the back to work out what it actually means.

Q. Okay, just walk me through it?

A. I can't even find where this was. And then go through and looking at where changes can be made, so if you, if you go to page 203.1524 under “cropping and cultivation”, it's got “re graze” –

Q. Yes, so that’s where you got your –

A. – “re crops in the winter, medium”.

Q. Right, yes.

A. But in terms of our cropping, it's a plantain paddock which is in for 18 months.

Q. Right.

A. And does get grazed once over wintertime. So it's sort of it's a grey area, so in terms of that, I wouldn't make any changes because you could just as easily class it as a permanent pasture that is in for more than a year rather than a crop.

1515

Q. Okay. So how are you getting that, from this page, just help me to understand how, what, I guess what I am interested in understanding is that what we’ve heard is that these kinds of tools, not necessarily this tool but tools like it, drive change. They drive change in farmer behaviour and driving change in farmer behaviour is what ultimately drives changes in water quality, changes in environmental outcomes. And so I’m just trying to get my head around how something like this does indeed ddrive that change, what are you thinking and looking at that makes you go “right, here we go, now I’ve got a bit of pathway, I’ve got an understanding of what I might do differently, what I can do differently on my farm that is going to change my risk profile”?

A. If I had a red box I’d certainly be looking at, looking at that and how I could do it.

Q. Okay, so a red box, high alert.

A. Yeah.

Q. You go “oh, okay, there’s – that’s where I’m going to focus my attention straight away”?

A. I guess for me, this – the green box is reflecting what we’re doing is working.

Q. Yes.

A. And the medium box is – there's, well, it's as much a clarification error as it is to a – to that we're doing something wrong.

Q. Right, okay. So it doesn't, this doesn't necessarily suggest to you, you don't go through and it might just be because you don't have a lot of red or you don't have a lot of orange, I get that, but I am just trying to understand how a farmer would use that to potentially change behaviour. So if we look for example at I know your nitrogen fertiliser is very low, 203.1522, but there's something there about timing of application. So would I be right in thinking that if, I don't know: "Fertiliser applied during the winter months will significantly increase the change of nitrogen being lost," it says there, but it doesn't necessarily tell me what you should be thinking about doing?

A. Yeah and so that's an application of ammonium sulphate at the start of – the month we start calving to ensure we're getting enough feed on hand once the cows is in milk and our feed demand jumps up.

Q. Right. So not much point doing that –

A. Not unless we're going to have the –

Q. – in January, if you don't have calves, right?

A. No. And to –

Q. So you can avoid winter but it is not going to change anything for you?

A. Yeah and –

Q. If you were not going to do it?

A. – to avoid that, we'd also have to push our calving (inaudible 15:17:41) back 20 or 30 days and lose that production window.

Q. Right, okay, all right. The other matter that I just wanted to mention is that you'd said in your evidence that you didn't – you don't get the number, but I'm seeing a number, an actual number on page 203.1520, which his your 111?

A. I hadn't actually noticed it there, to be fair.

Q. Okay, well, there's your number, now you know where to find it.

A. Yes, thanks for, thanks for point that out.

Q. There you go, no problem at all, no problem. All right, okay, the other thing I just wanted to ask you about and it fits a little bit alongside the questions that Commissioner Edmonds just asked you about higher

interest rate and I'd made a note when I first read your evidence that I assumed that there's a penalty in place for risk based on lack of consents which the bank has imposed, can you just give me a bit of an understanding about how you thought this would pan out? I mean, you've been candid in saying that you bought the farm unconsented and in fact it was the reduction in cost as a result of not having consents that allowed you to get in the door –

A. Mhm.

Q. – how did you think it was going to go?

A. Oh, I would, positively, I thought that the consent pathway would open back up and we'd be able to, to get consented and, and out of that legal grey area we currently find ourselves in and which is – and we've been driving our farm to make the improvements to, it's a term I hate to use now, but making those changes now so we in effect can be grandparented into consent, because we've been shown that we make the reductions and do it.

Q. Mhm, mhm. And so are you, how confident or otherwise do you feel making, making those changes, when you don't have a consent in your hand? Because I assume, so, well, and perhaps some of those changes don't have costs attached to them, but if they do, how are you reaching that position or weighing those things in your own mind?

1520

A. It's how I want to farm, it's how we as a business want to operate, it follows I guess our plan, our strategy, our moral compass.

Q. So how much do these kinds of tools drive behaviour, versus how much you drive your own behaviour do you think?

A. Obviously where there's a cost involved the tools help a lot. So I know a farm that have missed out on getting the cost difference because their risk is just above the, well the supposed Fonterra limits, so there's seven cents a kilo gone just like that.

Q. So if there are incentives or disincentives in place that also sit within that framework, then they're going to drive behaviour, if you can't sell your milk or you can't sell it at the same amount then that's going to drive some of that change?

A. In terms of our farm we're highly indebtedly so profitability is a big thing for us, hence why we wouldn't consider shifting carbon date back a month and dropping out that July/August application of fertiliser.

Q. So it's fair to say that there's a balance going on all the time, thinking about those factors and what you do, where you invest your money, where you invest your time based on what it's going to mean to the overall operation?

A. There's constantly about 17 balls in the air getting juggled.

Q. Yes, I understand. Just in relation to this issue about, you know, if, I just can't recall the phrase that you used but something about the sort of grey area and if consenting started again. Can you just explain what you think the current state of consenting is, what you can and can't do at the moment or what you've been told you can and can't do?

A. What I believe is at the moment there was a time where you could apply for a consent if you met the Table 14.2 conditions and then all this started going on and Horizons stopped taking consents altogether or accepting consents.

Q. So your understanding is that if you applied for a consent tomorrow or left here this afternoon and applied for a consent, that the council wouldn't take it?

A. Yeah.

Q. And so there's an effluent consent that's on hold for your farm.

A. Yeah.

Q. And how long has that been on hold for do you know?

A. I couldn't tell you off the top of my head sorry.

Q. But it's not an application that you did?

A. No, it was applied for by the previous owner.

Q. Yes and you've been there for four years?

A. Yeah.

Q. So it's four years at least?

A. Mhm.

Q. And my understanding from your evidence is that is on hold because you don't have –

A. An intensive land use consent.

Q. Yes and have you applied for one?

A. No.

Q. Based on your answer I assume not but you haven't?

A. No.

Q. And has any work gone into preparing one?

A. No because I, for one didn't think that the Table 14.2 values and the consenting pathway wasn't there to be able to apply for it.

Q. All right, thank you, that's just helpful in understanding at least what you're position is.

QUESTIONS ARISING: MS EDWARDS

Q. I had a couple of questions just arising from the questions from the Bench, your Honour, Mr Passey, you will recall that Commissioner Hodges asked you some questions around plantain and some questions around reducing the Overseer numbers by 20%, have you looked at, if you didn't have plantain, have you looked at what mitigations you would need to do to reduce your Overseer number by 20%

1525

A. No I haven't, but I would assume it would involve large capital expense in the likes of a feed pad.

Q. Do you know how much a feed pad would cost?

A. Not exactly, but at a guess I'm picking a quarter of a million would maybe cover it.

Q. And you'll also recall you had some questions from her Honour about taking you through the scorecard and how that might – and some practices you might change, attached to your evidence was also a Tiakia Farm Plan, do you want to talk anything about that, about changes you've made as a result of that farm plan? So that's at AP2, I can give you a page number, 203.1453. That looks like it, if you go one more page the other way, that's the start of it. So do you have any comments about that farm plan and any changes you've made to your practices?

A. I'd just have to refresh myself on this sorry. So, yeah, we have done all of them bar the (inaudible 15:27:11) the old effluent pond.

Q. So what page are you on?

A. So it's 203.1461. The only reason that effluent pond is still there is because I'm still waiting for advice from the Rural Advice Team, as to whether I need a consent to get rid of it.

Q. And if you did need a consent would you apply for that consent?

A. Yes.

Q. And the last question I had, just by way of clarification, if you go to page 203.1520, is that a separate document from the appendix, oh annexure AP3 that precedes it? Is that part of the same document or is that a different document?

A. I'm not sure to be honest.

THE COURT: MS SEMPLE

Q. That's all right, I know where you're going, I've re-read your paragraph 59 and this is what you get if you ask for it apparently and you asked for it, that obviously doesn't necessarily come as a matter of course.

A. I recall, you would've seen the top bit, the purchase not as a surplus picture, but yeah, certainly from there on in, I don't think I've seen that before.

Q. Right, it's an interesting, I mean it looks like the kind of thing that's been designed to sit with the balance of the document, doesn't it and yet it doesn't appear to be given out to –

MS EDWARDS

Q. Yes, that was what I was wanting to take him to, is that, as he says in his evidence, that he asked Fonterra to provide him that document, the document they get is the AP3, not the document with the numerics in it, they only get that qualitative score in the farm insights report.

THE COURT: JUDGE SEMPLE

Okay, all right, I can't think of a reason why but I'm sure there is one.

QUESTIONS ARISING ALL OTHER COUNSEL – NIL

WITNESS EXCUSED

COURT ADJOURNS: 3.31 PM

COURT RESUMES: 3.49 PM

THE COURT: JUDGE SEMPLE TO MS JOHNSTON:

Q. Ms Johnston, are we back to your witnesses, I think?

A. Yes, Ma'am. And as you were entering, I was just about to grab some documents that had been put up there from Mr Registrar.

Q. I did notice you out of place.

A. I wasn't doing anything that I shouldn't have been, I promise.

Q. Untoward, all right.

A. But we have compiled the documents requested by the Court.

Q. Ah, thank you. All right, let's have a – let's just go through those, that will be helpful, thank you.

A. Yes, well, we've given our best attempt to understand, hopefully we've got it right.

Q. What we wanted, yes, yes.

A. So there is the notified version of the provisions.

Q. Right.

A. There is the decisions version of the provisions and then there is a clean version of the decisions version with the proposed provisions tracked and I can also add that those proposed provisions incorporate the updated Table 14.2B.

Q. Yes.

A. To reflect the fully populated table.

Q. Yes.

A. It also includes a Scorecard with a retired land component.

1550

Q. Goodness, okay, all right.

A. That's been agreed between Professor Horne and Dr le Miere.

Q. Yes.

A. And Professor Horne has talked about it but is very aware that Dr Parlato has only just seen it.

Q. Yes.

A. So it is not an agreed position, but the numbers have been given to Dr Parlato over the break so I am not asking – I am not suggesting that it is an agreed position, it's the council's provisions.

Q. Yes.

A. And hopefully they're of useful – or use to the Court before Ms Foster's evidence.

Q. All right.

A. Happy to take further direction as to anything else you might need.

Q. As notified. So this one with the appendix 2, this is the decisions version, is that the, is that right, with the green?

A. Yes, with the green.

Q. Mhm.

A. And that has the bundle number on it and then the unnumbered document shows the decisions version in black, the council's proposed provisions in red and then where the red text is highlighted yellow those are the further amendments proposed to address matters raised in evidence.

Q. Yes.

A. I should note that this is also in the table form that I referred to the other day when talking to the Court which shows Horizons' proposed wording and then the alternative wording proposed as we understand it from the evidence of Mr Scott.

Q. Yes, I see.

A. And also Dr Drury. Now, if it would assist, what we could do and we didn't have time today is we could just create a complete clean version of the decisions with just the council's proposed wording, but we did note particular Commissioner Edmonds' questions the other day about understanding the difference, so Ms Foster put this together in the hope that that would assist the Court.

Q. Yes.

A. She had been working on it anyway.

Q. Yes, yes.

A. But open to take guidance onto whether that's the best form.

Q. Well, certainly from my perspective I'm finding it immediately easier to read the provisions without the amendment that were made by the

Commissioners, you know, taking that as read and then adding to it is certainly helping me to immediately hone in on the parts that are here, yes. All right, that's helpful to me. Thank you, thank you for doing that, that is helpful.

A. I won't take ownership for it, Mr Sinclair did a bit of work on that today along with Ms Foster, so –

Q. All right, well thank you both. Yes, appreciate that. All right, where are we off to next?

MS JOHNSTON CALLS

ANNE MARIE JANE JOLLY (AFFIRMED)

Q. Good afternoon, Dr Jolly. Now we'll start with your full name, your full name is Anne Marie Jane Jolly and you prepared a statement of evidence in these proceedings dated 6 October 2023?

A. Yes.

Q. You also prepared a statement of reply evidence dated 13 November 2023.

A. Yes.

Q. You will confirm for the Court that you participated in a range of expert conferences between June 2022 and March 2023?

A. Yes.

Q. And you would have signed joint witness statements filed in these proceedings as a result of those conferences?

A. Yes.

Q. Do you have any corrections you wish to make to your statements?

A. No.

Q. And you will confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. I just want to have you confirm also that your role has been in relation to commercial vegetable growing aspect of the intensive farming land rest provisions?

A. Yes.

1555

Q. I will get you to proceed to read your summary statement and again remain to answer any questions from my friends or the Court. Mr Registrar, I have got copies here.

WITNESS READS SUMMARY STATEMENT

A. "My name is Anne Marie Jane Jolly and I am a senior sustainability consultant at WSP. I hold a PhD in soil science from Lincoln University and I am a certified nutrient management advisor. I specialised in soil and nutrient management across a range of farm systems for approximately nine years. I have been involved in Plan Change 2 since

early 2020 with my role being to provide Horizons technical advice on commercial vegetable systems. I continue to support the inclusion of the alternative consenting pathway within PC2. The alternative consenting pathway is not an easier pathway, rather the pathway that has meaningful reductions of nitrate leaching that will occur through an adoption of a range of improved farm management practices by growers. Through a series of expert conferences, a risk assessment tool for CVG has been successfully developed within the PC2. The risk assessment tool assesses the risk of nitrogen loss from commercial vegetable systems and activities while having regard to the biophysical characteristics of soil type and rainfall. It does not include other contaminants because they are outside the scope of PC2. The management tool that has been developed has been developed to target high nitrogen loss management practices. Management practices associated with nitrogen fertiliser and soil health have significant impact on nitrate leaching and the scorecard that sits within the tool focuses on reducing the nitrogen impact through the adoption of GMP and BMP that target these practices. In my view, the risk assessment tool will lead to large reductions in nitrogen loss. An important point to keep in mind here is that the nitrogen reducing management practices modelled in Overseer to determine the 35% reduction from the decisions version of PC2 are the same practices that are required for the adoption within the risk assessment tool. In light of the recent Overseer report being released and its suitability for PC2, I agree that Overseer can model commercial vegetable systems, however, a number of workaround assumptions and a user guide are required which impact the suitability of Overseer within a regulatory environment and therefore within PC2. The redevelopment programme with Overseer has included a validation modelling exercise for cropping. On the review of the validation report, in my opinion validation of the crop model has not been successfully completed due to only two crop rotations being reviewed. This makes it difficult to conclude how would Overseer model CVG effectively. The limited number of vegetable crops for selection within Overseer compounds this issue. This provides reasons on why Overseer should not be used within a regulatory environment at the

moment. On reviewing my approach to the catchment scale modelling for CVG and Overseer, I am comfortable with the approach that I have used. I acknowledge that the 75 – 70% is large, but there is several factors influencing this reduction. The primary reason is a baseline year of 2018. At this point in time, little to no GMP/BMP for fertiliser, for nitrogen, had been adopted by vegetable growers and this has resulted in more opportunities for growers to improve their nitrogen use efficiency. At this point in time, I consider the Horizons CVG risk assessment tool to be the best available tool for managing nitrogen leaching from CVG within PC2 even though MFE claim that phase 1 of their risk index tool is soon to be released and despite the recent report released around the redevelopment of Overseer I continue to support the use of the risk assessment tool over these other tools for the use within PC2."

THE COURT: JUDGE SEMPLE

All right, who is up first here?

MS JOHNSTON:

I, we – the parties here have asked if Horticulture New Zealand can go first because they're more aligned with the regional council's case

THE COURT: JUDGE SEMPLE

Yes.

1600

CROSS-EXAMINATION: MS BUXEDA

Q. Good afternoon, Dr Jolly. My name is Nicole Buxeda. I appear for Hort NZ. I have a few questions to run through with you. And I note that you specified in response to a question from my friend that this is in relation to commercial vegetable growing and that's where we'll be going today, thankfully. The first topic I would like to talk about is crop rotation which I understand that you are very familiar with. I just wanted to talk through briefly the importance of crop rotation, and these comments are

based on the comments in Michelle Sands' evidence which I understand that you are familiar with?

A. Yes.

Q. So you understand that crop rotation is important for a range of reasons, notably that reduce the risk of pests and diseases building up from one crop being repeatedly grown in the same location?

A. Yes.

Q. And it provides for restorative crops which are designed to bring the growing environment back to the desired state in that soil after years of growing depletive crops?

A. Yes.

Q. I also note that Ms Sands says that crop rotation supports the soil structure, the health, the crop root growth increases the water holding capacity, drainage, and various other benefits to that soil?

A. Yes.

Q. And you understand the temporal aspect of crop rotations in that a single grower will grow plants and fallow land in a sequence over time to protect that soil?

A. Yes, but –

Q. Thank you.

A. No, no, that's okay. Yep.

Q. Thank you. And you understand the spatial dimension, so temporal and spatial dimension of crop rotation where growers are limited in what they can grow by what phase the rotation is on that land and so they operate over multiple properties, which are generally owned and leased by the grower?

A. Yes, but I guess in my view a crop rotate – a grower has multiple crop rotations and therefore if a crop moves from paddock A to paddock B that's classed as a new rotation, and so in my view a crop has a fixed, a crop rotation has a fixed rotation. Land area can change but that's the beginning – if it moves along that's the start of a new crop rotation and if the original crop rotation is put into pasture for longer than two periods of – two years based off the definition, if I'm reading the definition correctly, or if I'm remembering the definition completely, that this means

that that area of land has dropped out of vegetables for that period of time and it's, yeah, so in my opinion a crop rotation is a fixed rotation. Yes, it can move, but that's a beginning or ending of that sequence of rotationing.

Q. Can we discuss that a little bit more, and I think we've just gone directly to the heart of what I did want to discuss with you as to exactly what your understanding of crop rotation is and how growers undertake crop rotation in the area, so I am just going to deal with there were two statements there that you made. First, if a crop moves away from paddock A that's the end of the crop rotation in your opinion, we'll deal with that first, and then secondly, I will take you to your comment about if a paddock or area is in pasture for longer than two years you consider that it has dropped out of vegetable rotation?

A. Yes, and we can probab – in I think it's Schedule Y there was a definition and it included a reference to two years, if I remember correctly, in the CVG Schedule Y definitions. Can someone point me to that?

Q. Yes.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. So Schedule Y is at 301.0037. That I am providing –

UNIDENTIFIED FEMALE SPEAKER: (16:04:38)

That's volume 3, book 1 of 2, tab 1.

CROSS-EXAMINATION CONTINUES: MS BUXEDA

A. Tab 1, yep.

Q. So I believe that what you were referring to here, Dr Jolly, is the definition of "productive area". We're looking at 301.0040.

1605

Q. So just for clarification for the record, this is not the definition of crop rotation that you're discussing, this is the definition of productive area?

A. Yes.

Q. So it sets that productive area does not include areas that cannot be cropped such as blocks and indigenous vegetation nor does it include permanent pasture, being land pasture for longer than two years.

A. Yes but in my opinion if it has gone over that two year period and it didn't go back into a crop, it would drop out of the crop rotation.

Q. Can I please take you to, and we are in volume 3, which I think you're already in, but I'd like to take you to tab 19. This is the definitions in the 1 plan. Just let me know when you're there.

A. Yes.

Q. We're looking at the definition of commercial vegetable growing here, which means using an area of land greater than four hectares for producing vegetable crops for human consumption, it includes the whole rotational cycle, being the period of time that is required for the full sequence of crops, including any pasture phase in the rotation and then it details crops, vegetables that a perennial, dry peas or beans are not included. So I just would like to deal with this opinion that land and pasture for greater than two years in not included in a crop rotation. We have the definition of commercial vegetable growing here which doesn't include that time limit, is that correct?

A. Yes.

Q. I also would like to take you to the evidence from Horticulture New Zealand which deals with exactly how vegetable rotation, crop rotation works in the area and that would be in the evidence on. It's going to be the evidence of Gilliam Holmes, volume 2, tab 23, let me know when you're there.

A. Yeah.

Q. 202.1338 is where I'm looking please and this is an appendix which describes how rotations work on the ground, if you'll excuse the pun, in the area. It starts of 1337, but we're looking at the description of the central region, Opiki Manawatu, Rangitikei where this is a description of how drop rotation works.

A. Yes I'm there now.

Q. You'll see that this, as I said, is a description of how it works in the central region and she states: "This growing area is important for the supply of fresh and processed potatoes and for seed potatoes. Processed peas are also grown. Potato production." It goes on to describe how this works in the Opiki District, "occurs with a mix of maize, dairy cattle and potato

production rotated on a shorter term due to the soil", and then she says at 202.1338: "As with the Northern Region rotation means that the land parcels used for vegetable growing are not static year on year. For example a land parcel may be inarable for one to two years and then pastoral for five years before back in vegetables for a year and this is how rotation works for this area."

1610

A. I understand that's how rotation work but I guess in my opinion I think this is probably more an issue with the lease land rather than an owner operated piece of land. The challenges that we've been faced with these definitions is we've got this crop productive area definition that has that two year time limit and so if it at once a piece of land moves out of commercial veg or in fairness if it falls within definition of any of the other IFLUs, if it moves out of that definition it would be probably more than the two year crop rotation, the partial phase period. To me it falls out of an IFLU. So, yeah, so therefore the crop rotation would end.

Q. The definition of IFLU in this example dairy is part of that rotation. Is dairy part of the definition of IFLU?

A. Yes, so if it stays –

Q. Sorry my question here is for this time it's an IFLU for the entire operation, where it's two years vegetables and five years dairy and back to vegetables, yes?

A. Can you repeat your crop rotation sorry, around where you just gave to me?

Q. "Rotation means that the land parcels used for vegetable growing are not static, the land parcel may be inarable for one to two years and then pastoral for five years before being in vegetables again for a year." So for that entire time it's an IFLU?

A. Yes.

Q. And you say that you have based your – so your understanding of crop rotation is that that is not inclusive of – well you've said how you understand crop rotation to be. Have you based your understanding from discussions with growers from the region?

A. Not directly. Not directly growers in the region but –

Q. Thank you. I would like to take you to further evidence of HortNZ based on growers in the region. Can I take you to Michelle Sands' evidence and we're looking at volume 2, tab 25. The pinpoint reference that I would like to take you to is 203.1354 and I just emphasise this is the – it's Michelle Sands' industry, in the area, she states at paragraph 22: "These vegetable areas grown in 12 to 14 year rotations with pasture, sometimes cereals, growing for eight to 10 years and then a mix of vegetables", so I just put to you that that is an example of a rotation with a significant pasture period within that process.

A. Yes, but I'd just like to highlight that it states under the subheading that that's in Ohakune and Ohakune is not in the priority catchments.

Q. But the Manawatu and Rangitikei catchments?

A. Some Manawatu catchments are priority catchments and some Rangitikei catchments, yes.

1615

Q. Excellent, thank you, can I take you to paragraph 28 please: "Seed potato production in the Rangitikei District operates across dairy pasture utilising a paddock once in five year period," and again, this is an example of a crop rotation with a significant pasture period to enable crop health?

A. Yes and I fully understand that.

Q. Thank you.

A. And I just would like to highlight this is some of the challenges that CVG have with the moving across the leased land and the understanding of whether it's a new or a current IFLU and to fall within the CVG rules and which – and if we're starting to talk about tools, which tools would they fall under and how that would be consented. Is it the owner of the dairy farm's requirement or if it's, yeah, and how, how can – there's a consenting issue that has to be looked at here and how do consents have to be applied for as the land leases? Prior to this, I worked with Ballance Agri-Nutrients and I was consenting dairy farms within this region, ah, within the Manawatū and a farmer, if he had a piece of leased land, he was required to incorporate that in his consent but if he – if that leased land, if that lease expired, a consent variation was required to remove that piece of land from his consent, so that's why I am basing some of this, these – and I'm

not a planner, I'm not a consenting officer and I've never done that, but my experience in the region is where I am basing some of this thought path on.

Q. Okay and just for the record, you don't have a planning qualification?

A. No.

Q. Thank you. Could I please and we were just discussing how consenting does work practically in the area, can I just take you down that path a little bit and day you to the evidence of Dr Charlotte Drury the planning witness, expert witness for Horticulture New Zealand, volume 2, tab 19. And I'd like to take you to 202.1217. And I'm aware that you don't – you're not appearing in a planning capacity, so please do tell me if – and I'll be aware that I shouldn't take this into the planning realm, but because we have talked about getting consents here, I just wondered if you'd be comfortable talking through Dr Drury's conception of how consents work in the area?

A. I understand the conception, but I do think questions to Ms Foster are most appropriate.

Q. I am comfortable with that, thank you. In that case, I will not talk through the consent if that's – I would like to emphasise in Dr Drury's evidence at paragraph 11, so I am just going to jump you back a couple of pages, my apologies. That Horticulture – are you aware that Horticulture is not – Horticulture NZ is not seeking to provide for new vegetable growing areas through PC2, just at paragraph 11 of Dr Drury's evidence?

A. Yes, that's what it states.

Q. Thank you. And the other part that I would like to discuss with you in Dr Drury's evidence is – and again we are flirting with the edge of planning here so we are going to be careful, but the definition of crop rotation and I take you to his as Christine Foster in her reply notes that you support the amendments that she seeks to the definition of crop rotation?

A. Can you just –

Q. Yes, so we have –

A. – point me exactly to that?

Q. Would you like me to take you to the reply evidence of Christine Foster?

1620

A. No, no, the definition of crop rotation in...

Q. So we are looking at –

A. Is it 31?

Q. Yes, 32. The proposal – I guess, it depends on whether, I don't have, I'm not working off the provisions of the plan, the provisions that have just been circulated, but the proposed definition of crop rotation is at 31: "The systematic planting of different crops in sequence over multiple years within the same growing space or across changing land parcels and often includes a pasture phase. This process helps maintain nutrients for the soil, reduce soil erosion and prevents plant diseases and pests." Which reflects our conversation earlier?

A. So yeah, I agree with all of it apart from the words "or across a changing land parcel".

Q. Would you mind just for my own records, really, pointing to where in your reply evidence you specifically seek that that's removed from the definition?

A. I provided feedback to Ms Foster on that and she put it through her evidence.

Q. Okay and there's no comments in – or there's no particular point in your reply?

A. I'll have to refresh, but I, I can't remember.

Q. If it helps, I think I'm asking because I looked for it and couldn't find it and I wondered if I was missing a trick?

A. I honestly don't know.

Q. So that was, is sort off my own –

A. I know I did give feedback through to Ms Foster on that point.

Q. Okay and I wonder if that came through, but not in your reply evidence?

A. I do have a point on crop rotation in my reply evidence on page 201.0585, paragraph 10.

Q. Yes, I wonder if we could have paragraph 10, but there's –

A. But I don't specifically re-write the definition.

Q. Excellent, thank you, and I think we'll leave that there. I suspect that the rest of this is better dealt with in planning and legal submissions, so there

are no further questions from me, thank you very much for your time. Thank you.

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon Dr Jolly. You say at paragraph 70 of your evidence that: "The CVG risk assessment tool has been developed through a collaboration of experts that understand the drivers for the One Plan and the complexities and uniqueness of CVG throughout the region, including the largest vegetable growing area the Horowhenua." Do you mean there the experts understand the drivers for the One Plan or they understand the drivers for P – it's paragraph 17 – for PC2?

A. The One Plan.

Q. All right, so the One Plan has a LUC natural capital approach in Table 14 that I will put to you one of the purposes for it, it doesn't reward the biggest polluters, it doesn't penalise conservative behaviour and does not disadvantage owners of undeveloped land. Do you understand that was one of the reasons for Table 14.2 in the One Plan?

A. Yes.

Q. And also it sends timely signals, establishes a target for mitigation practice, to find a threshold above which the capital investment in increasing production must be extended to mitigation technologies or significant modifications to farm device. Was – do you understand that was one of the purposes of Table 14.2 in the One Plan?

A. Yes.

Q. So just firstly discussing the 35% reduction pathway. Do you think that that would meet those drivers?

1625

A. A lot of them would, yes.

Q. Because reduction pathways are more akin to the grandparenting philosophy, aren't they?

A. They can be, yes.

Q. So reduction pathways wouldn't meet the first reason that I'll put to you which is it doesn't reward the biggest polluters because reduction pathways start at what persons are discharging now, so it doesn't provide

an equitable framework across land types without considering what people are discharging at the moment? Sorry, I don't know if I've expressed that very well. How would a 35% reduction pathway meet that reason not rewarding the biggest polluters?

A. (no audible answer 16:26:25)

Q. Do you understand what I mean?

A. Yeah, I understand. Sorry, yes, I understand what you are saying. Yeah, you have a fair comment there that, yeah, percentage reductions based off the current – I guess one of the challenges with CVG and meeting Table 14.2 is the – although I fully support and say that Overseer can be used for CVG and we have used it for modelling purposes, a lot of workarounds, there are a lot of assumptions that are required to do the modelling exercise, and it is my understanding that Table 14.2's development did not include growers, and so there is a fairness question for the growers, the CVG community, at this stage. It's been a long, drawn-out process for them. Is it fair for them to have N, absolute N numbers required for them on a tool that we've discussed this 20 to 30% uncertainty for Overseer. In my opinion that's very much a pastural uncertainty and the CVG uncertainty could go closer to some of those numbers that Dr le Miere were talking about, above 50%, and so, yeah, providing an alternative pathway that has been – that doesn't have – providing a pathway that is not associated with a fixed number which has been developed using modelling that hasn't factored in CVG is not really, it was such a high pastoral focus is, well, yeah.

Q. Well we'll get onto the risk tool, I was more just talking to you about the –

A. No, yeah, I'm not even talking about the risk tool per se, it's more giving the growers a pathway that doesn't rely on Table 14.2, a table that you could say that was created with not CVG inclusion.

Q. Oh, I see.

A. When you populated the numbers.

Q. I see, but a 35% reduction pathway still relies on Overseer?

A. Yes, but that removes some – you could say that removes some of that – you're not, using Table 14.2 and telling them they have to reduce to a number that hasn't really been calibrated to CVG, back even when the

One Plan became operative it was going to be a challenge because when the original modelling exercises and the files that Dr Hanley have been updated, there's no CVG information there.

Q. Okay. Is there an advantage in having a table in 14.2 that applies across sectors, pastoral and CVG-intensive beef so that all sectors are treated in a similar way?

1630

A. In my opinion you can lump all pastoral operations together but vegetables are so vastly different, it's not comparing oranges with apples. I definitely wasn't involved in PC2 original.

Q. You mean the One Plan?

A. I'm sorry, I definitely I wasn't involved in the One Plan originally but if I had I would've had a view that one table – I would have had issue with the modelling exercise that went into accumulating those numbers with no CVG representative and having a one table, because to me partial farming you can lump altogether, they're close enough, you're growing grass but CVG is not in it's –

Q. I understand what you're saying, when – if I could take you to paragraph 17 of your rebuttal evidence please. Actually sorry, yes if you could just leave that open, I'll ask you another question, when PC2 was notified, it didn't include the 35% reduction pathway.

A. No it didn't.

Q. Was there consideration given to leaving the controlled activity pathway with Table 14.2 and addressing this issue that you raise about CVG through different assessment criteria rather than having a different controlled activity pathway?

A. I haven't involved in any of those discussions, that was out of my brief.

Q. Right, more planning?

A. Yeah.

Q. If we take you to paragraph 17 of your rebuttal, there you say: "Dr Dewes states that Overseer is a better tool than a risk assessment tool. Overseer can model multiple enterprise farm systems where the risk tool cannot." And you say: "While this is true, the expectation within PC2 is for farmers and growers to improve on farm management practices rather than whole

farm system changes." Where does that expectation come from? Are you just saying that in relation to CVG?

A. I'm here to talk to about CVG, so yes I can't talk to pastoral. Yeah, so all the work that I have been doing has been around – it started off as asking a simple question is what is a good management practice and what's a best management practice, they were the type of questions we started at back in the hearing, and so we've gone from – and that's the work that I was asked to be involved in and working through simple questions like that. The work that I have been doing, there was always the assumption that growers – consent was never guaranteed, no matter if you went down the discretionary pathway. There was always the assumption that there are some growers that will be required to go down the discretionary pathway but to get a controlled activity consent, there was never, in my mind, and I may have misinterpreted this whole thing, but in my mind to get a controlled activity consent a grower would be still growing vegetables, they wouldn't be doing significant land use change and going into a different land use, it was just improving on their farm systems.

Q. And that's part of the reason you proposed additional or you were involved in proposing additional controlled activity pathway?

A. I personally didn't propose the pathway, I did work around providing evidence and how that pathway would look but I personally didn't propose the pathway.

Q. Thank you. Just in relation to some questions my friend asked you, are you aware when PC2 was notified that it proposed to change the way cropping was consented in terms of having tag leased land for rotations at the consenting stage, because I understand that Horticulture New Zealand is now proposing that rotations should be able to occur across a wider unit without specifying the land in the consent application? Was that part of PC2?

1635

A. I'm not across all the planning. I am aware of that proposal and I think that's where I've just been pointed and I suggested to talk to Ms Foster about it. But –

Q. That's fine, I'll ask Ms Foster. So there have been some questions asked around the pastoral scorecard or assessment tool that Horizons has developed and how it excludes consideration of say Riparian areas because it only covers the grazed area, now for the CBP scorecard, it covers the production area, that's right, isn't it?

A. Yes.

Q. And so it would have similar problems in that it would exclude cultivation strips around waterways if you were having a setback from cultivation. Should that be rewarded? I understand there are rules about that in the One Plan.

A. I'm not privy to all the partial discussions because at the time I was in the CBD discussions but in CBD we actually discussed this and it was a choice to leave buffer zones out. Yeah, through the thought process they were on the table at one point in time and it was an active choice actually not to include those in the scorecard.

Q. And why was that?

A. At the council level hearings I actually did some work around modelling the buffer zones, I think it's attached to one of my evidence, there are the original GMP, BMP lists that were required and there are setbacks, GMP, BMP around setbacks but when we developed the CBG scorecard, we were looking at the heavy hitting mitigations and so we chose to target mitigations that would really have effect to nitrogen reduction and in my previous modelling that I had done showed that setbacks would give a lower reduction but there's also this concept that a grower has previously spoken to me about when I was working through the council level hearings, was when they try to protect their total area of the land. So if they put a setback in, they will just get more land. So instead of shrinking their CBD productive area, they will make sure they buy, lease, secure more land so their production area doesn't decrease and so –

Q. There are some perverse incentives there possibly?

A. Yes. So that was one of the reasons why we didn't – yeah there was a robust discussion on why I had to actively leave riparian buffer zones out during the expert conferencing and I don't know off the top of my head,

but it would be covered in the second joint witness statement if there was anything captured on it.

Q. Thank you. Just to clarify, when you said that the CVG was developed by experts that understand the drivers on the One Plan, I just wanted to clarify that neither Ngāti Turanga nor Fish and Game had an expert in that conferencing, it had an observer, but it was felt that Dr Parlato didn't have experience in CVG so she didn't participate in the conferencing, did she?

A. No but I will point out that it wasn't just Horizons and HortNZ experts, there was independent party, Dr Brent Clothier from Plant and Food. So it was a wider – it was larger than just the experts giving evidence here today.

Q. And so it's been tested with four CVG properties, this is the new risk tool?

A. At the time of writing my evidence it was my understanding it's been tested before. Reading Mr Barber's evidence, he has actually tested it further since then, not greatly but it has been. HortNZ are taking it out to growers, introducing it to growers and doing some testing on it, just to have more confidence with it.

Q. That must be very recent?

1640

A. Yes, so Mr Barber did the original four back in early March I believe, you'd have to ask questions about his additional testing to him.

Q. And do you know how many growers there are over four hectares in the IFLU that haven't been involved in that testing?

A. So there's approximately 50 growers, but if we look at based off land areas the four growers actually covered approximately 90% of the land area required to get consent. There's a very large grower, or there's some, yeah, the large – we tested it with – we, it was tested with, well, a very large grower doing one system, it was tested with a potato and vegetable grower, so it was, so within my evidence I refer to three vegetable systems, brassica, potatoes and intensive veg. So it was tested with intensive veg, it was tested with potatoes and onions and then it was tested with two – you'd probably say "smaller growers" that had a range of crop numbers. One only had a couple of crops and I think there's

the fourth one had about six crops, so it did – it didn't just focus on one area of the CVG growers in Horowhenua.

Q. Okay, thank you. Is your expertise wider than just CVG?

A. Prior to this I did do pastoral but I'm not here in a pastoral capacity.

Q. Well, you might be able to answer this question but let me know if you can't. I understand that there are many tools around that do scenario testing, which is a word used by Dr Dewes, to support farm environment plans and some examples are the mitigator tool that Ballance uses, the landscape DNA tool, we've heard from Mr Barber about the new SVS tool that Horticulture are developing?

A. I've been involved historically on the SVS project and the mitigator tool, so yeah, recently when I was at work I worked along with Mr Barber with SVS tool and prior to my current role, so eight-plus years ago, I was involved in mitigator development at Ballance, so I am aware of those tools. But I probably can't speak to that one any further than that.

Q. But this tool is another tool of that ilk, would you say, that that assists farmers with scenario testing and can support FEPs?

A. The risk assessment tool?

Q. Yeah?

A. Yes.

Q. Can I take you to exhibit E, this is my final questioning of, which is the MFE slide deck. Thank you. So you've said in your summary statement that MFE claim that phase 1 of their risk index tool is soon to be released and that that claim was actually for November, isn't it?

A. That is my understanding, I will just – I have been on maternity leave and I still am. So I'm not 100 – like, I am across this information just enough to keep on top of it for PC2, I don't read documents like this at the moment for bedtime reading.

Q. I completely understand. You've got more important things to do. But I will just take you to –

A. I am familiar with it enough, yes.

Q. All right, then. Now can I take you please to page 17. So this talks about the mitigations and modifiers used in the MFE risk index tool and it says:

"All mitigations and modifiers are derived from published peer-reviewed and accessible literature." Is that the same with the Horizons tool?

A. The challenges with the Horizons tool is that there is not a lot of literature on CVG and as you noted, the SVS project one of its key outcomes is to get more data and so I think – and because, actually, it's Mr Ford for Hort NZ has also been involved in that tool, we have been privy to a lot of data that is currently unpublished and so we used some of that knowledge in creating the Horizons risk assessment tool, so yeah, we're just lucky enough to be on a project which is getting growers or the hort industry a lot more data on vegetables and we have used some of that data because they're in three and a half years of a four year project at the moment, and so we've used that knowledge to support some of our decisions when building the tool.

1645

Q. Right.

A. And that data will become public once it's published, of course, but it is not at the moment.

Q. Right, okay, thank you. If I can take you to page 19. It says: "The N loss observations used to develop the RIT 114" – this is the first bullet point – "measured and 41 modelled (via APSIM or SPASMO) observations." So the Horizons' risk tool has not been validated through that sort of measurement, has it?

A. No, but one of the concerns I did have with this page on this slide package is if everyone's eyes were really good, none of the data in my – from what how I read it, came from the Horowhenua vegetable growers. So yes the modelled vegetable growers but they actually haven't looked at it and this is an important point because Horowhenua is a large vegetable growing area in New Zealand and they actually haven't used any data in any of their observation work and I would have assumed, given the importance of the area, that they would have looked at Horowhenua as part of their dataset.

Q. Okay, if I can take you to page 26, it says there: "Upgrades (considered for future phases)" that includes "cropping system representation", I'm going to ask you a question in a minute and then if I take you to page 34,

the last bullet point there says: “The risk index tool will not categorise outputs as low, medium or high, council analysis will be needed to determine what the scores mean in their catchment contexts and what level of risk is acceptable.”

A. Mhm.

Q. To an outsider, it seems like a bit of a race to the finish as to whether the Horizons CVG risk assessment tool gets approved or we wait for the MFE risk assessment tool and it doesn’t seem that the two entities have really been exchanging information and talking to each other about those two risk assessment tools, can you advise on that at all?

A. I have had no involvement in the MFE risk assessment tool but you did point me to the cropping system representation and I hate the word “cropping” because what does it mean? Is it arable? Is it fruit and veg? It has such a vast – there is so many different types of crops, when you read that, yeah, it could, it could mean anything, so is it, “is it for vegetables”, is what I ask? So as I highlight in my evidence, I need a lot more information before I can make any conclusions on the MFE risk assessment tool as I haven't been involved in any of that work.

Q. Thank you very much, Dr Jolly. Thank you.

CROSS-EXAMINATION: MR ANDERSON

Q. I am going to start with your summary statement.

A. Yeah.

Q. Have you got that there?

A. I will find it.

WITNESS REFERRED TO SUMMARY STATEMENT

Q. Because what one thing that struck me in that statement and that’s in paragraph 4 where you say: “The alternative consenting pathway is not an easier consent pathway, rather is a pathway where meaningful reductions in nitrogen leaching will occur resulting from a range of good management practices by growers.” Now, I didn't take that from your original evidence, so I just want to question, a couple of questions about that. Whether or not it's easier, doesn’t that depend on the particular circumstance of the particular crop that you’re talking about?

A. In CVG sense, there's only one grower who can meet the table.

Q. 14.2?

A. Yes.

Q. That's in all of the priority catchments?

1650

A. The – yeah, there's a bit of a challenge with CVG in the sense that we know there's a large pool of growers in the Horowhenua and we know there's a couple in a couple of other catchments but they're locate – we actually don't know exactly where all the growers are or the number of them out there. So we know there's a large pool in Horowhenua and I guess historically that, because of that that's where all our work has been based on, but there are sprinkles of growers elsewhere but we don't actually know fixed numbers.

Q. I read the CVG and 14.2, so the RAT as alternatives, not necessarily (inaudible 16:50:48), just as alternatives?

A. Yes, it is an alternative, but I guess that point in my evidence, in my summary statement was highlighted an it's also covered off in my rebuttal evidence because there were comments around the alternative pathways being more easy and I think the other word used was "lenient" in evidence.

Q. Can I take you to paragraph – were you here when Professor Horne gave evidence yesterday?

A. Yes.

Q. Now I asked him some questions about the 20% that was used as the kind of reduction in the pastoral setting, were you here when I – when you –

A. Yes.

Q. And my recollection of his answers was that when you had a 20% reduction in N that achieved a certain quantum of water quality improvements, but the advice he received from Dr Snelder was that once you got to 20 you had marginal improvements depending on the amount of N loss, do you recall that answer?

A. Yes, I do.

Q. And have I captured it correctly, from your understanding of what his answer was?

A. Yeah. Once you go above 20 the water quality gains (inaudible 16:52:19).

Q. Now in relation to commercial vegetables, does the same apply?

A. That work hasn't been completed due to the lack of information we have to unravel all those questions.

Q. So in that regard there's no link between the number that we've chosen in relation to the original Plan Change 2 pathway of 35% and what's actually going to happen in the water quality?

A. We have looked at – so the original 35%, I wasn't involved. So I was involved in coming up with the 35% alternative pathway reduction. I wasn't involved in providing data to it was Dr Snelder at the time for the CVG water quality modelling.

Q. So that, because what I took from Professor Horne's response was that we got to 20% therefore there was not much point in going higher because of the diminishing returns in doing so. From what you've just told me, that now hasn't been undertaken with respect –

A. Yeah, we haven't looked at that so we can't draw –

Q. You can't comment on that?

A. No.

Q. So the 35% came from – where did the 35% come from?

A. It came from a modelling exercise that I completed but not for the purpose of coming up with 35%. I completed a small subset of modelling for my colleague at the time, Mr McNally, who completed the farm financial modelling, and so we had the Bloomer report that informs the water quality modelling but when it came to doing the farm financial modelling the scenarios that WSP had been tasked with didn't align with the Bloomer report so I selected just eight crop rotations out of the 62 and applied GMP and BMP as I read it at that point in time. And so the key purpose of my modelling was to give Mr McNally data to the farm financial modelling but we also saw some good gains and I think I –

Q. Good gains in what?

A. Percentage reductions, because my modelling was Overseer modelling and in my rebuttal evidence, if I remember rightly, there is a snapshot – or it might – it's definitely in the report attached to my rebuttal evidence.

1655

Q. I don't know if we need to go into it too much, the main point I want to understand is that the 35% wasn't derived with respect to water quality impacts, it was derived from what you've just told me in relation to the GMP and BMP benefits that you could achieve –

A. Yeah.

Q. – correlate to the – let me finish and I'll just get you test if I've got that right, with some financial information on what the impact of that would have on the financial performance of the farms, is that correct?

A. So the financial – so the modelling that I did was to inform the financial modelling but based off the Overseer modelling I did for that, I was asked was I comfortable – what percentage reduction was I comfortable proposing to get growers to achieve, after they've adopted a range of BMP and GMP and so it's got nothing to do with the financial modelling, that was the purpose of the modelling but then we just picked up that modelling and so based off that modelling I looked at a very small sub sample and when growers were asked to adopt a number of GMP, like a meaningful number, what percentage reduction would I be comfortable in proposing for them to have an alternative controlled activity pathway and at the time I was also asked what criteria would I be looking for and one of the key things that I said was that they'd have to be looking at adopting a range of BMP in addition to the GMP and that is still reflected in the scorecard approach or the risk matrix tool approach.

Q. So now you did some testing on this and you've prepared a table in there, and I'll just go to the table, it's at – the table you've got is at just above paragraph 69 of your evidence, page 17. Have you got that?

A. Yes.

Q. Now if we go above that, you have a brief explanation of what you've done which is you've gone to these growers and you've run the CVG and then had a look at Overseer and tried to correlate, is that a correct description of what you did?

A. Yes.

Q. And what you came up with was, I thought quite startling, because effectively what you're saying is that we've got 35% in the decisions version of the plan, but if you run the CVG against Overseer you get 70% reduction.

A. Yes but then we've got to look at all the provisos around the uncertainty within Overseer and there's actually – there's a couple of key reasons why this number is a lot higher than the decisions version 35. The modelling exercises were different. So some of the core information was the same but some of the assumptions around it have been different because when I did the 35% reduction modelling, I was privy to a lot less information. That information became available to me, so I've been using more robust information and there's differences in the inputs in a couple of things and then one of the big ones is the Overseer redevelopment work has included an update to the way that nitrogen is modelled at depth and so in one of my GMPs is the adoption of maize and so that's been fed into the model and so therefore nitrogen has been moved from a greater depth and so that's been reflected in this higher number. I haven't rerun the original data in Overseer because that's in different accounts and I'm not paying another subscription fee.

1700

Q. Right, that's a good reason not to do it but I wonder if you were to do – would this number be a better reflection of the 35% is in PC2 decisions version, do you understand that question? If you want to PC2 now with the information you've got now, would you go with 35% or would you modify it because of this information you've now got?

A. If I did the exact same modelling exercise back in 2020, I cannot guarantee that number, that number will not be 70.

Q. But I mean is 35 still a valid number in light of what you've now down in relation to commercial vegetables?

A. At the time it was a very valid number.

Q. That wasn't really the question, the question is, is it still valid now, given what we've done and then further information that we've got?

A. I think we're getting too fixated on a number that's come from a model with lots of uncertainties. I think that number there just reflects the benefit of adopting GMP and BMP on CVG properties. Because of the uncertainty within Overseer and I went through some of them earlier, the workarounds and all that that are required, I think that number just shows that the strength of if growers adopt GMP and BMP, large reductions in water quality can be made but we can't actually put a number on it and I always go back to the first principles in my head. I go back to the science and how the nitrogen is cycling in the nitrogen cycle. Even without a modelling exercise, I would've said a significant reduction, based off how the GMPs work but, yeah I try not to get too fixated on a number. I'm comfortable with my modelling approach, I'm comfortable with what I did.

Q. I'm not querying your modelling approach, I'm just querying whether, with the information we've got now, we'd come up - you know, we've advanced some information over the period of time since you did that original modelling, I'm just querying whether we'd come up with the same number now if we did it?

A. We may have come up with the same number. Would've I proposed for a consenting pathway, I probably wouldn't have.

Q. And that's because you don't like numbers as a –

A. It's not because I don't like numbers, I don't like the uncertainty associated with Overseer.

Q. That's a good answer to the question I was asking. So now one of the issues that – you're familiar there's probably going to be another plan change coming in a year or two to deal with the whole thing.

A. Yeah.

Q. And so how do you see – if the requirement to reduce nitrogen leaching with respect to commercial vegetables where closer linked to water quality outcomes, do you think we'd see larger reductions being required than is currently proposed by GMP and BMP?

A. I'm unsure.

Q. You don't know that?

A. The work hasn't been done.

Q. The work hasn't been done.

A. Yeah.

Q. And if, and again tell me if this is going – if that required significantly increased (inaudible 17:03:02) and end losses to ensure that water quality outcomes were met, would you need to do that over time, like it's proposed in here to ensure that that's fair and equitable or could that just be implemented in a relatively short timeframe?

A. Are you referring to like a consenting period?

Q. Yes, so what I'm getting at is the plan talks about three years to have a 35% reduction, would you have to do something similar in the future if a further reduction was required? Would you have to stage that over time and what kind of timeframes we'd be talking about?

A. So I was involved in coming up with that three year. Based off the GMP and BMP that the growers would have to adopt at that time, I felt comfortable proposing the GMP and BMP. I don't know what a grower has to do to do any future scenarios, so I can't put a timeframe on it.

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING (17:04:04)

COURT ADJOURNS: 5.09 PM

COURT RESUMES ON THURSDAY 23 NOVEMBER 2023 AT 10.02 AM

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING
(10:02:57)

CROSS-EXAMINATION: MS WRIGHT

Q. Good morning Dr Jolly and thank you for being here during your (inaudible 10:06:48), we all appreciate it and I know how challenging that can be, so thank you. My first few topics of questions, I am just going to ask you to cast your mind back to yesterday, so that hopefully that some of the questions that were put to you then are still sufficiently fresh and it's just a follow up on some of those questions and to get a bit more clarification around some of the answers and the first of those relates to Table 14.2 and the ability to achieve Table 14.2 and just on your understanding or, you know, best estimate, what is the percentage of growers that would be able to meet the recalibrated so the updated Table 14.2 for this?

A. Maths is not my strongpoint I will use approximately 50 affected by PC2 and it's my understanding only one or two growers will able to meet the table and they're known as the potato growers, the growers that primarily grow potato groups.

Q. So just kind of test that, and I'm not trying to catch you out, I'm just literally trying to understand, can I just take you to I think it's the evidence of Mr Mayes, the council's economist, and that's volume 2, tab 15 and just at page 202.0854 and then in that fourth paragraph and I understand sorry just to orientate you, so this is a WSP paper and that you were one of the authors of this paper, that's correct isn't it?

A. Yes, that's correct.

Q. So the fourth paragraph, and I'll let you have a read and then just clarify, but I'm just interested in if growers were required to meet the recalibrated Table 14.2 through the adoption of GMP and/or BMP, seven out of 10 example crop rotations model would meet that. Can you just explain how that – if that or how that matches up with the one or two growers you just gave me?

1010

A. So I guess, as I explained yesterday, my – this was a very high level modelling exercise to blend into farm financial model exercise, not around nutrient modelling. The one to two growers number comes out of the report that Bloomer and Associates completed and that was part of their brief to look at that. So yeah, this is only eight of the potential 62 crop rotations and so this is not whole enterprise modelling, this is not farm system modelling, this is just looking at potential crops, so this is a very high level exercise and so when you come conclusions around the numbers of growers that can meet Table 14.2, those conclusions have to come from the Bloomer report because that was a different modelling exercise and it was tailored to answering that question, well yes one of the - the scope of that was to answer that question whereas this wasn't meant to answer that question.

Q. Thank you for clarifying that. Now I just want to get a bit further clarification around some of the questions that Mr Anderson asked of you yesterday and it might be helpful for you to go paragraph 37 of your evidence and so the reference page for the Court is 201.0562 and so that was paragraph 37. So here it's my understanding based on this paragraph that I guess the exercise that you were looking at was what an appropriate reduction (inaudible 10:13:03) pathway would be and you've landed on the 35%, that's correct, isn't it?

A. I completed the Overseer nutrient modelling exercise to feed into the farm scale modelling and the alternative pathway approach came after that and so we inherently used that modelling to help inform that discussion but the purpose of that modelling was not to form that opinion, it came after the fact. So if I was asked to come up with a suitable number and to do a modelling exercise, the approach would've been different. The approach that my modelling – the purpose of my modelling was to inform farm system finance modelling, not informing the alternative pathway because that came a lot after. That didn't come until I think – the report that was completed, the WSP report was completed early September and I became aware of the alternative pathway not until council level hearing six plus weeks later. So, yeah, there was a big gap in between that and

so I inherently used the modelling I undertook but it wasn't the purpose of that modelling.

Q. So here you say, I guess within that context that you landed in – it's your third line: "That I consider the 35% reduction was reasonable feasible for a range of growers with a combination of GMPs".

A. And BMPs.

Q. And BMPs, yes. So it was I guess an appropriate reduction in that sense, that it was appropriate in the sense of being reasonable feasible?

A. Yeah, I went back and looked at the modelling exercise, looked at what GMPs and BMPs that growers would have to adopt and as I mentioned yesterday, there was an additional conversation with Ms Johnston and Mrs Foster what boundaries would I put in place and what certainty would I need a grower to do on a farm to be able to partake through an alternative pathway, and one of my criteria was that adoption of a significant number of GMP and BMP was required, and that's where I felt like to get a 35% reduction, enough of those practice changes would've had to occur on a farm to grant that consent.

Q. So in reaching that conclusion that the 35% was I guess you use the words here appropriate known as the alternative pathway, did you consider the appropriateness of that percentage in the context of – that we're dealing with here, which is significantly degraded catchments? Did that, as a consideration in the appropriateness of that reduction, did that factor in at all?

A. I'm very much aware, yeah, the catchments are significantly degraded and for growers at this point in time who a lot of them have had practices that haven't changed for a long period of time, getting on the journey of adopting a number of GMP and BMP was a lot more than what they're doing now and actually it was – it wasn't going to be easy for them. Some of the practices, if you read the GMP and BMP list attached to my evidence, on the front may seem quite simple but when you actually unravel them some of them are quite challenging for growers to adopt, and upskilling and all that, it wasn't going to be any easy task for them to make that 35% reduction for some of the growers.

Q. No, I very much appreciate that there are challenges in doing it. I'm just, I'm still not quite clear from your answer, and I'm sorry to labour the point, that whether the appropriateness of that percentage reduction, whether you specifically thought about the fact that we're dealing with degraded catchments, significantly degraded catchments in some instances, and making that appropriateness determination?

A. I guess I would've – I did definitely factor it in and it was getting to the point, yes, there is no modelling behind it all like Professor Horne was explaining with his 20% and all that, but in my opinion and as I stated yesterday, we were trying to drive practice change on farm, not drive growers out of the region. If we were getting too much above that 30%, 35% reduction significant land use change would've had to occur and that was – I wasn't really heading down that thought path, I was just – my purpose was trying to drive as much practice change to get any improvement in water quality, yeah, to start getting on that water quality improvement now rather than continuing to leave it until – because, yeah, growers haven't really engaged in this process to date for a number of reasons. There's been challenges for them with the table and with the One Plan, and so if we could get a pathway for them to actually start making practices and start making changes there would be overtly at least some water quality improvements happening rather than the status quo.

Q. If the pathway that was available was a discretionary activity pathway, are you familiar with the difference between controlled and discretionary?

A. Yes.

Q. Do you think there would be anything that would be helpful to include in the policies, the provisions that a decision-maker is having regard to in making a discretionary activity decision that is specific to growers, are there any specific things that you would like, you think a decision-maker should be thinking about?

A. In my evidence I think I was responding to Ms Dewes, so it must be in my rebuttal evidence, when we're referring to the use of a scorecard I made a comment that we would need more than just a scorecard approach. That might be where a suitable – the use of – even though Overseer presents its challenges that might be where a nutrient budget may be

suitable, and in the terms of nutrient budget, Overseer is one tool, we've got this programme that was mentioned yesterday, SVS, where that programme is developing a new tool, a new more suitable tool for growers and so that's another form of a nutrient budget, and so it doesn't provide an N loss number but it provides the thought of appropriate fertiliser application and that's where the Scorecard was kind of heading, using nutrient budgets and soil testing to inform practices, so just some output snippets to show what tools growers and what – what tools growers are using to inform their decisions on farm.

Q. So having and I guess I'm going to go to some of the practices in the risk tool shortly, but having a decision maker maybe specifically thinking about whether an application includes something like a nutrient budget to show that that's the, you know, the thinking and the actions that the grower is undertaking, that would be a useful thing for a decision maker to have in front of them and to be told to think about in a certain way?

A. Yes, definitely anything that a grower has already adopted to date, evidence of that is important to show what a grower has already achieved. Even though they might not be able to meet Table 14.2 or the alternative pathway approach, showing that they're already on the journey and evidence of that, or evidence of – there's a number of growers who have gone through the GAP NZ process and those farm plans and showing like what they've already achieved to date because growers are on this journey now.

Q. I just want to ask you now a couple of questions about the content of the risk matrix and that leads really nice into that. So I am correct that it focuses on two high-level practices, the nitrogen fertiliser and then soil health?

A. Yes.

Q. And from my understanding of your evidence, the basis for that is that those are the practices that have the largest impact on nitrogen loss?

A. Yes.

Q. So I mean, presumably there are other practices that can impact nitrogen loss as well?

A. Yes, there are.

Q. And what would those be?

A. I mentioned it yesterday when answering questions. There's practices that – like buffer zones and so that is a practice that you put in place for sediment and phosphorous loss, but if you're retiring land and not replacing it with additional land, you're actually making your growing footprint smaller, so therefore you're using less nitrogen fertiliser and so inadvertently that will reduce your leaching. And then there is attached to my rebuttal evidence on page – no, actually, I think it's attached to my main evidence, is the actual agreed GMP/BMPs list, I can point 201.0580 and 81, so the first page is the GMP list and the second page is the BMP list. So there's practices around irrigation that can reduce nitrogen fertiliser loss and around cultivation but at expert conferencing we did have in-depth discussions and we agreed that anything to do with nitrogen fertiliser and the soil health is primarily the time between the vegetable crops, what's happening to that piece of land in-between the vegetable crops. It could be one month, it could be up to two years and so you held what, how the grower manager manages that time, so that's what encompasses in soil health.

Q. But it would be fair to say that adjusting some of these other practices that aren't captured in the matrix at the moment would see reductions in nitrogen loss from a farm, from a grower?

A. In my council level hearing, I modelled each one of the – some of those practices individually and the other night I went back and refreshed my memory to see exactly what the Overseer output was. If you are looking at changing cultivation practice it only gave you on average across those eight – remembering I was only looking at eight crop rotations for that modelling work back at the council level hearing, they only gave an average of one kg reduction and so it's very minimal. Got to take into consideration that there's a lot of workarounds within Overseer, a lot of assumptions and then the buffer zones, there was about a 20% reduction but as I discussed with Ms Ongley yesterday, if a grower is actually going out and getting more land, that – the 20% reduction is only if they're not replacing that land. So if they're replacing that land, the, yeah, the – there's additional nitrogen loss from there, so there might be no actual

benefit from – a nitrogen benefit from using riparian buffer zones. There is other contaminant benefits, but no nitrogen benefit.

Q. I guess in the context of significantly degraded catchments, which I the context we're dealing with, do you think there would be, you know, merit in at least being able t look at those practices and determine if the extent of production that adjusting might give you and whether that is something that should be adopted or undertaken?

A. I guess, so cultivation is a challenging one because growers have to cultivate their land and it actually there was very minimal reduction. Riparian buffer zones is actually – if you're not replacing the land, you're losing quite a bit of cropping area so that can come at quite a big cost. Whereas targeting on the two big ones, fertiliser and soil health, they're actually a minimal cost to the growers and the biggest environmental benefits. And so we as an expert team developing the Scorecard, we really wanted growers to adopt nitrogen soil testing, adopt nutrient budgets, adopt better management practices between that – those crop times because that's where you get the biggest benefits and it's, if you weigh up the, the economic cost of buffer zones, you're losing that production, we felt that – we were all comfortable with that.

Q. I actually, I have a couple of questions about a couple of those practices and testing is one of them.

A. Yes.

Q. Right, and you might not – do you want to look at the tool while I ask or are you sufficiently comfortable that you feel like you know what it says? I can give you the reference for it if you'd like it?

A. I'll have the reference, thank you.

Q. I'm just having a look in the council proposed provisions version, so that's in volume 3 page 301.0038.

A. Can I get that reference again please?

Q. Sure, 301.0038. And I'll start with the nitrogen testing one but it's, I mean, I guess a similar, so you've got it in your mind, I have just got a similar query around the nitrogen balance and budget one. So I am correct – am I correct that the nitrogen soil testing requirement here would – you're getting points if you're undertaking the testing itself?

A. Yes.

Q. So does undertaking testing itself have any impact on nitrogen loss or is it the actions that someone undertakes as a result of that testing?

A. It's the actions that someone takes, but growers don't go to the cost of soil testing just to file them in their drawer, so the soil testing results will indicate how much nitrogen is in that soil and therefore they can feed that information into the nitrogen balance/budget and therefore it gives them a more accurate understanding of how much nitrogen fertiliser they need . So they've spent money on the soil test and they'll most likely recuperate some of that money by buying less nitrogen fertiliser. Yeah, growers don't go out to spend costs not to get a benefit from it.

1030

Q. No, and I'm certainly not suggesting they are. What I'm just trying to understand is that there is an element of uncertainty as a result of this as to the exact changes that that testing would drive, you know, an individual grower might have a number of drivers on that decision-making, and this, this action in and of itself is not what drives the change, it's the decisions that are made afterwards that drive the change. So there is an element of uncertainty in there in that you don't quite know what an individual is going to do. Would that be fair to say there's an element of uncertainty?

A. I think we may have oversimplified the wording in that and so I think we could come up with better wording rather than say that there's an element of uncertainty.

Q. I just have one more topic of questions and this relates to the use of Overseer and a risk tool I guess together, and this relates to some of the questions that you might've heard Commissioner Hodges put to some of the other experts.

A. Mmm.

Q. And I think it will just help with context if you – if I take you to paragraph 17 of your reply evidence. Apologies for making you flick through books. So we're back in a 200 level volume and paragraph 17 of your reply evidence is on page 201.0588.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Can you repeat that number?

Q. Certainly. So it's your reply statement, just for context, and the bundle reference, well we only need the bottom line but the bundle reference for paragraph 17 is 201.0588. And just at the bottom, and I will just take you through so that my question has context, you have stated that: "Both Overseer and the risk assessment tool are suitable" – turning over – "for the assessment of improved practices." And then it's the next passage that my question relates to where you say that if you couldn't meet the controlled activity pathway then in a discretionary context and it's at that pathway where additional tools such as Overseer can be used to inform on farm change. So my question is similar to that, that Commissioner Hodges has put to some of the other witnesses, which is couldn't you flip that, so you would use Overseer as the tool to determine your gateway I guess, controlled or discretionary, and then when you got into a discretionary application context you could use the risk tool to inform that application and indeed you could use the risk tool and Overseer to inform that application. Would that be a situation – do you agree with that?

A. I'm supporting the reverse of that. I'm supporting the use of a risk tool as the gateway. I've been sitting here for four days now and hearing questions and I just keep thinking of the complexity of CVG, the challenges that CVG have with Overseer and the uncertainty related to that, in my opinion I feel that grower engagement with the One Plan and getting consent and with the user testing it received great feedback, I just feel that will actually get progressed with the use of the risk tool, remembering that in the end the same GMPs are going to end up being adopted using the risk tool (inaudible 10:34:56) – that compared to Overseer. Overseer, the more I think about it, yes, it can be used but I do not support its use in a regulatory environment at this point in time, and the Overseer redevelopment work and the validation work on the crop model, reading those reports just recently really hammered home some of the issues with Overseer and the validation report talks about the crop model being validated, but I don't support those conclusions due to this very small sample of two crop rotations used to validate a whole crop model which has a range of different, like cereals, vegetables, fruit, it's

not validation in my opinion, so at this point in time I'm saying Overseer can be used but it definitely shouldn't be used as a gateway tool.

Q. But you are comfortable with a 35% - the 35% reduction pathway as an alternative?

A. At the time when it was proposed back in 2020, Overseer in my opinion was the only tool on the table. A lot further work has been done since then on Overseer. I guess I've had a few more years to process some of these issues and at the moment I'm supporting the risk tool that has been developed for the purpose of PC2. The risk tool wasn't on the table back in 2020. It is on the table now and I am supporting its use as the gateway tool.

Q. Thank you, Dr Jolly.

RE-EXAMINATION: MS JOHNSTON

Q. I do just have a follow-up question, Dr Jolly. Both my friends Mr Anderson and Ms Wright have put to you the connection between 35% reduction and water quality, you will recall those questions?

A. Yes.

Q. And you will be aware of the work of Dr Snelder –

A. Yes.

Q. – for the council? And if I could take you please to tab 12 it's Dr Snelder's primary evidence and the reference number is 202.0801, and we're in volume 2, book 2.

A. Can I have the page number again please?

Q. 202.0801, it's attachment – it's the table as attachment B to Dr Snelder's evidence, very last page. And your, through your work on Plan Change 2 you're aware that there's been a number of scenarios modelled by Dr Snelder, is that correct?

A. Yes ,yes, he has.

Q. And if I take you to that table, down to row 8 "proposed pathway E"?

A. Yes.

Q. You're familiar with that modelling exercise?

A. Yes, I am.

Q. And that shows a modelling exercise that involved a reduction of nine kgs hectares per year from non-consented, noncompliant IFLU and includes a 36% reduction for CVG?

A. Yes.

Q. And if I take you to the next row “proposed pathway F” you will be familiar with that modelling scenario?

A. Yes.

Q. And I will just highlight there, again, that involves 18 kgs per hectare per year for IFLU and then a 55% reduction for CVG, you’re familiar with that?

A. Yes.

Q. Thank you and the rest of the questions as to mean relative difference can be put to Dr Snelder but I just wanted to highlight those with you. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning Ms Jolly.

A. Morning.

Q. Dr Jolly, sorry. Do you know if growers generally use Overseer at the moment?

A. I am aware of one grower in Horowhenua who has used it once.

Q. Okay. And do you know if Overseer files have been prepared by you or others for various growers?

A. So currently there is one or two growers who hold consent in Horowhenua. So there will be an Overseer file but that’s the level of Overseer that has been completed today, it's one or two files. I, apart from doing modelling within Plan Change 2, I have not – I have modelled potatoes down in Canterbury in those systems, but I haven’t done client modelling for Overseer in my current role or previous roles, it's just I’ve been modelling for the purpose of PC2 Overseer’s not used in the CVG environment.

1040

Q. Okay, okay, thank you, that's good. Ms Holmes has got various values for Overseer figures in appendix A of her evidence and talks about Horowhenua intensive being 84 kilograms per hectare. Where would that

figure have come from? I will ask Ms Holmes that, there do seem to be some figure around, leaching rates, and I assume they're coming from Overseer?

A. You would have to direct that question to Ms Holmes.

Q. Okay. In your table 2, was that calculated using the latest version of Overseer? I had better go to that.

A. I believe there has actually been a couple of version changes since this – this modelling has been completed very recently, but I am – my understanding, there may have been at least one version change since I did this modelling exercise.

Q. Okay, that's fine, but my main question really is that I take those figures at face value and it says you can achieve it in the future with a 70% reduction of 17 kilograms per nitrogen – of nitrogen per hectare leaching rate and that strikes me as being well within Table 14.2, what's the purpose of table 2, it's telling me something that can't be true?

A. So table 2 fed into Dr Snelder's water quality modelling, but this was crop rotation modelling of just vegetable crops scaled up to a catchment scale level and it wasn't enterprise modelling so it's not actually representative of a single grower. So it's just the Bloomer report has 62 crop rotations and he did a similar exercise for the original PC1, PC2 hearing and so I've used his 62 crop rotations, fed in the GMP/BMP that Mr Barber established when he was interviewing growers and then I've scaled it up and proportioned it across the three different vegetable categories. So this is not – it's crop rotations scaled to a catchment level proportionate across the three different vegetable systems. It's not enterprise modelling and so in some ways it's not representative of what a single grower can achieve.

Q. Okay, but if this is what Dr Snelder used for his catchment-wide modelling and it's talking about 17 kilograms or even 57 and the actual figures are sort of 80 to 90 to 100, what reliance can we place on Dr Snelder's modelling?

A. I – can we go to Ms Holmes' evidence? I read Mr Ford's evidence and when I read that evidence the Overseer model version was quite old. I'm not too sure if it – so if those are the same figures in Ms Holmes' evidence

it is not like for like. And this was the – I've used the best information that I've had available to me. This was the agreed position from the Bloomer modelling and that fed into the hearing level modelling and so there I've just picked up that information and fed through to this additional modelling. I, yeah, this was just the best information that I had available to me to look at a modelling exercise to determine potential reductions and I guess this highlights some of the challenges with Overseer with all the updates and all the workarounds and all the assumptions that need to be undertaken and also Overseer versions. If Ms Holmes' numbers are from Overseer and they're not from the same version as I have used, you can't compare them.

Q. Well, I would have thought if 17 compared to 80 – or sorry, 57 compared to 100 or something like that is, that would only have been one Overseer change that resulted in those kind of levels of change, wouldn't it? Anyway, that's beside the point. I think this highlights the difficulty I am having and I am sure other members of the Court are having, we have got all these different figures and we have no way of actually knowing what the real answer is because some figure are used for catchment-wide modelling and some figures are used to illustrate the problem with CVG being able to comply with Table 14.2 and it's almost impossible to make a properly informed decision with the information we have got at the present time and it's not a criticism of you, I'm trying to understand, so if you can make a properly informed decision. I think we should go to Ms Holmes' evidence, tab 23 and 24, volume 2 of book 2. Don't worry about that but it is confusing when I see figures of 57 down to 17 and there are other figures that are significantly higher and so we have to find some way of trying to get some kind of relatively between different variations of Overseer. Okay, please don't take that as a criticism, it's just a challenge, a real challenge we're facing at the moment. I've seen other figures that talk about brassica being 93 kilograms per hectare and intensive growing 81 kilograms per hectare, so they are quite high.

A. So that number there is an average across the three systems and so we've got potatoes that definitely brings that average down. I could provide the Court across the vegetable systems, I do have that

information, the brassicas, the intensive veg and the potatoes because the potatoes are known to be lower leaching. The brassicas are definitely higher leaching crop rotations. So I could provide the figures before and after, at the next step up, at the three systems to give that level of information.

Q. It may not be that important but what I am confused about is we've got these levels here of the 81 and 92, and yet your table 2 refers to a figure of 57, what's the relatively between those?

A. The 57 is the whole catchment, all vegetable growers in the catchment, it's not just a single system. I can't provide you a single system but I can provide you the average potato grower number, the average intensive veg number and the average brassica number, I do have that level of detail for my modelling exercise.

Q. No, you've clarified that that's an average over the whole catchment and I hadn't quite appreciated that.

A. Yeah.

Q. You've mentioned there are some Overseer guidance documents about the difficulties of its use for CVG, are they publicly available, those documents?

A. So I'm just going off the official documents and my interpretation of them. So all the guidance documents, when I read them are very pastoral weighted. The recent redevelopment programme did a validation and when I went back to the validation report completed by Ag Research in August 2023, in my opinion that wasn't a suitable validation for Overseer for the crop model. I talk about user guidelines on how to use Overseer. They were drafted but never progressed for the purpose of PC2 because PC2 hasn't got anywhere yet, so we have draft user guide documents but when I'm talking Overseer documents, it's the ones that we've been talking about for the last few days, there's no individual CVG documents.

1050

Q. I just wanted to make sure there wasn't something we had missed, thank you very much. When you're dealing with crop rotation in this and you're looking at leaching rates for the moment, because that's what affects the environment, in the consenting process, would you work on the highest

value of say a brassica crop, when another time there may be something that leaches less than brassica, how do growers deal with the variability in terms of their nitrate leaching rates? Have you given any thought to that?

A. I've actually put quite a bit of thought to this over the last few days because vegetables are very complex and very challenging and the rotations change year to year and Overseer is a two year time step, so as I mentioned yesterday, historically I was consenting pastoral farms in Horizons as a consultant and we used a single year base file. I'm more going down the approach that you might need to do several years worth of modelling or scorecard approach and then average it out to get an average across several years, kind of what Canterbury do with their base file approach, they look at 2009 through 2014 and then they get a base file number. I'm more thinking going down that line to smooth the peaks.

Q. Good, I'm glad I asked the question then because it suddenly struck me last night that it's going to be variable over a number of different years and you've obviously thought about this but I don't see any provisions for dealing with it that way in the plan provisions. That's not your problem but it's something we'll –

A. It's one of those things where if this was my day job I probably would've put more thought to it sooner but as I only think about this in the evenings, these thoughts have come to me quite late so that's why they haven't ended up in the provisions.

Q. Okay, but it is a pretty important issue.

A. Yes, yeah.

Q. I've got to be quite honest, I didn't take a lot of comfort from your explanation of the 35% reduction. It seems that you did a little bit of work for a different purpose, went back and used that work to come up with an answer for a different question, you then discussed it with a couple of people at Horizons. Did you do any consideration or did you give any consideration to figures either side of 35% and did you do a section 32AA report for that kind of thing? We're talking about a really important decision here for growers and it probably hasn't been peer reviewed, it's

a big call based on the way you've described it in this court, to say that 35% is the right number. Would you like to comment on that please?

A. So in my council level hearing the original numbers were 35 to 45% range and I ended up settling on a 35% reduction but you are correct in saying that the work behind it is pretty coarse and no there's no section 32AA report.

Q. Thank you for your honesty, very good to hear but it still causes me a problem as to the reliability of that number. I guess there's nothing we can do about it for the moment but I really do appreciate your honesty, thank you and presumably there hasn't been any peer review of that number?

A. Not of my understanding. All I know is that at the council level hearing HortNZ were proposing a 20% reduction and they might have reviewed the 35 but I'm not aware of anything.

Q. Okay, thank you. in terms of the risk scorecard itself, with the dairy one, that's obviously had extensive trialling through the Fonterra one, my understanding of this one is that it's a totally new tool developed by a very small group, has not had any peer review, and not any long-scale, long-term use in the field. Are those correct assessments?

1055

A. Yes, but the only thing I would point out is I'm not saying the team of experts are the only CVG experts in the country, but the pool of experts is a lot smaller compared to pastoral so it doesn't look as bad as it is, yeah. Like – yeah, so the pool of CVG experts in the country is a lot narrower than pastoral and we had – there was four of us working through it and we were very comfortable with the approach that we've taken, and, yeah, we were – we had different backgrounds, different skillsets, but a strong focus on CVG. And as I mentioned yesterday, Dr Clothier from Plant & Food was also involved from an independent approach to help us work through the development of a scorecard.

Q. And presumably Mr Barber was involved in the PC1 and PC2 elements, is that correct?

A. We developed it for PC2 and then he's modified it for PC1.

Q. Okay, right, thank you. So there is some linkage between the work going on around the country, is what I'm trying to establish?

A. I believe he's modified it himself for PC1.

Q. Okay, and what about other groups working on CVG risk scorecards round the country, are there any others?

A. I'm not aware of anyone apart from the MFE scorecard or risk index tool.

Q. Yes. Did – in doing your work was it purely from the point of view of the growers and driving the changes in management practices rather than giving any consideration to how it might be used in a resource consent process?

A. I think I – I don't know if I was of understanding but I was of the assumption that it could be used as a gateway tool. When we went into expert conferencing we were developing a tool that could – didn't have a set purpose at that time. The use of the tool wasn't known when we were developing a tool at the beginning. We were there to develop a tool to drive practice change on a farm.

Q. That's fine, yes, thank you. And what does controlling traffic mean, because that was something that isn't covered in the scorecard but I didn't – it talks in some of the evidence about not addressing land retirement, buffer strips, and controlled trafficking. What does controlled trafficking mean?

A. Controlled trafficking is a practice used or can be used, it's not overly common, but it can be used where you have the same run lines down a field so the tractor will – you have set, it's like, it's nearly like a road in the paddock so you have a set area that's always where the traffic drives, so instead of the tractor going into a paddock to spread fertiliser and it changes location each time it goes in, it has a set location that it runs across so it becomes a bare piece of soil which doesn't get fertiliser, it's a highly compared area, it's an unusable area for crop, but it preserves the rest of the crop from continuous trampling or damage because the tractor is targeted just in a – purposely used with that purpose, and so therefore the remainder of the paddock has less compaction and less crop damage and associated issues.

Q. So in terms of its omission from the risk scorecard, it's not a big issue in terms of additional leaching that may occur, is that correct?

A. Well there's benefits and – you lose production area so you could lose some leaching but – I've lost my train of thought.

Q. No, don't worry. It's a relatively minor issue. I just didn't understand it, I wanted to understand that.

A. Yeah. It's quite a costly, it's quite a costly implemented tool, GM – BMP to implement because you've got to do a lot of machinery, it's got to fit down those roads and so it's not a cheap…

Q. Okay.

A. So for a small benefit it had a high cost.

1100

Q. Okay, that's fine, I just wanted to make sure I understood that. Now with your 70% reduction for addiction as being possible, Ms Sands' evidence includes a statement of evidence from a Mr Clarke of Woodhaven Gardens and he's talking about having achieved 40% reduction since 2015/16. He's obviously a very big operator and a very effectively and environmentally conscious operator from reading his evidence, so if it's taken him that length of time to get down to 40% and I think he said it would be very difficult to get much more at reasonable cost, how realistic is the 70%?

A. I put some thought to this overnight and I have a feeling that I'm defining things differently to HortNZ. So I haven't included large areas of land that might not be in vegetables for a period of time. I'm solely focusing on the crop rotation and so there's no delusion effect, whereas when HortNZ talk about it, they're talking about their full entire crop rotation and so there may be some delusion effect of that. So when we're comparing numbers we're actually not comparing like for like is my view that I've come up with why there might be different numbers floating around.

Q. I understand what you're saying, but it doesn't actually help us to get a clear understanding of what the heck is going on. Okay, that's fine, I accept the answer, that's certainly plausible. How we go from here I'm not quite sure. In terms of timeframe for change, I noticed the plan provides five years for a farm to get out of high intensity use and in my

view that's personally completely unrealistic based on my experience in Te Waikoropupū where we put 10 years, just to reduce the nitrogen level by 10% but in terms of CVG, if there was a requirement at some stage to make significant reductions, would that be possible without going from, you say a 35 to 60%, would that be possible over a certain period of time or would it put the whole viability of the operation at risk?

A. So if we were looking at the practices and the scorecard, a lot of those can be adopted quite quickly. The adoption of soil testing is not a challenging – there's an upskilling component that has to be undertaken but soil testing is not a challenging practice to undertake. The use of nutrient budget, when we use the word "nutrient budget", we're not advocating Overseer, we're advocating this new tool that I've been on maternity leave, so I'm not too sure how it's actually tracking but the programme ends in June next year and then we are hoping to have phase 1. Mr Barber can give you some more information about the S tool and how is it tracking but we were visioning that that tool would be available for adoption mid next year and so the growers can start using that and a lot of growers it has been road tested with and they're aware of that tool coming. So a lot of the practices within the scorecard are practices that can be adopted or introduced relatively quickly and as I mentioned earlier, they're low cost tools, compared to some of the other mitigations that are out there. So there's not a big financial – you don't have to wait to have capital to implement them, so I don't see the adoption of GMP dragging out for growers.

Q. But would that just get you to your 35%, those GMPS and BMPs were used?

A. So it depends which alternative pathway you're talking about. So there's the scorecard GMPs and BMPs and where they feed into the Overseer, so that would get you to your 35%. If you ended up down a discretionary pathway, you'd need to adopt a lot more GMPs or all GMPs or else you'd have to look at alternative strategies on what you're going to do and when more cost is involved, the time does stretch out for those costly –

Q. That's the part I'm talking about in getting beyond 35. So that's in the discretionary pathway, but it could take a number of years before those could be implemented, would that be the sort of situation?

1105

A. I guess it's a case by case situation and growers have lots of factors they have to factor in. If they have been thinking about plan change 2 and just waiting for it to become operative they may be ready to implement things a lot quicker, than people who haven't been thinking about what they're going do and in CVG and HortNZ's witness earlier on in the week, explained about the different – we've got big commercial CVG growers and then we've got small Ma and Pa and so the thought process between the different growers is going to be different and the speed at which they can roll it out is going to be different.

Q. Okay, look that's fine, I know it's a very difficult question but I think you've answered it as well as is possible to answer it. And one last question, you've expressed concerns about the difficulties and uncertainties with Overseer, how does the Court know there are any less uncertainties with the risk scorecard approach?

A. We don't know if there's any less uncertainty, but what we do know is that the same GMPs and BMPs are being fed into it and what we do know and my understanding and I'm assuming HortNZ's witnesses can go into this further, is that the growers, the scorecard has been well received and they're highly behind it and they support it and I think when you see the scorecard, you see what you have to do is really simply and if a grower – there's a lot of negativity around Overseer for growers, if they see a number, there's still of unravelling of what that number means the engagement is a lot of slower. So I think the social aspects of implementing the scorecard is a big benefit in the CVG sense because in my opinion I feel that they will get on and get things going through your use of the scorecard, rather than the use of Overseer and I think one thing that hasn't come up with in the CVG sense is the cost of using Overseer. We've got this one-off subscription fee that has to be paid, well it's not a one-off, it's an annual subscription fee but unlike pasture where there can be cost savings repeating it year and year, because of the way the crop

model works in my opinion I have a feeling that the cost is going to remain static, because you have to re-enter the data, redo your crop rotations within the model and so over the years it's not going to get any cheaper and so things like that, that negativity around Overseer is not with the scorecard and the scorecard is going to be slotted into plan change 2, there's no ownership of it or anything like that, there's going to be no subscription fees and just some of those more social aspects I feel is going to get a lot more engagement and actually move things along.

Q. Thank you, and thank you for your honesty, I really appreciated that.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just have probably one question I think and it relates to a matter that you've traversed with Commissioner Hodges and is in your reply evidence at paragraph 20, and it's just this question of workarounds for Overseer and you'll appreciate that a question of scope for the risk scorecard has been raised in this hearing, so even if we determined it was the right tool, we might find ourselves in a position where we can't apply it, so we're making sure to think about every option and address every option with every witness and so I just wondered if you could just tell me a little bit more about, in the council level hearing, where you've got to with this idea that there needed to be some additional guidance or user guide or something that went alongside Overseer for CVG, I just haven't quite got my head around how that would work?

A. So I guess the simplest example is to look at actual crops. So there's over 20 different crops grown in Horowhenua and Overseer only has about eight of those in the model and so if a grower is growing a crop that's not in the model, they have to pick a proxy crop and when I was talking with a colleague down south, we couldn't even agree on a proxy crop and so if we're having a model that's going to be used as a gateway and different proxy crops can impact nitrogen leaching differently, we need at least the drivers of Overseer using the same proxy crops. So that's the most simplest example but there's lots of other little tweaks and

nuances and I have, and Dan Bloomer and his team did the original modelling approach and he came up with a number of – he identified a number of issues. The other one is the time set. Growers don't talk monthly or yearly, they talk weekly and so Dan Bloomer came up with an approach to aggregate all the data up into a monthly but other consultants need to understand that approach and so there's consistency across the model because rightly or wrongly we've proposed a 35% reduction based off the Bloomer report and his modelling approach and then my modelling following on from that. If another consultant comes on board and picks up their own personal modelling approach, they will come up with a completely different number. So there needs to be consistency.

Q. Right, so it's almost sort of creating a sort of off-book adaption of Overseer that everybody understands and everybody uses that approach, that is consistency and the workarounds for the model?

A. Yeah, and then it also gives the Horizons consenting team confidence that the PC2 modelling approach has been used on this consent application, so therefore they can really go: "Yeah we're comfortable with that", put Overseer issues aside and continue on with consent processing application.

Q. And it's probably a question for Ms Foster I suspect, but you don't know to what extent or how that was incorporated in or could be incorporated into the plan provisions?

A. I'm not too sure how it was incorporated. I know a colleague of mine ended up drafting it when I was on my initial maternity leave but then it went on hold. So, yeah, I'm aware of a draft one floating around but I'm not too sure how it's been incorporated into the plan provisions.

Q. I can ask Ms Foster about that or someone can tell me about that in due course. So that's helpful, thank you, I just hadn't quite got my head around that, so that rounds out my knowledge, so thank you for that.

QUESTIONS ARISING: MS JOHNSTON

Q. Dr Jolly, Commissioner Hodges has referred to your 35% recommendation for the specified reduction pathway and you've referred him to your modelling but just now in answers to her Honour, you referred

to your modelling also being based on the Dan Bloomer report, is that right?

A. Yes.

Q. And that report is attached at your reply evidence at attachment A, is that correct?

A. Yes.

Q. And for the Court's benefit, I'll just give that reference 201.0597. What's your understanding of the modelling exercise that Mr Bloomer undertook?

A. He undertook a catchment scale modelling approach to feed into the original water quality modelling and if I remember rightly, because I can't find a reference, his catchment average was a 34% reduction.

Q. And do you recall, I think you mentioned it in an answer, how many rotations Mr Bloomer looked at?

A. Sixty two.

Q. Yes and you relied on that report in taking your modelling forward?

A. Yes.

QUESTIONS ARISING ALL OTHER COUNSEL – NIL

WITNESS EXCUSED

COURT ADJOURNS: 11.14 AM

COURT RESUMES: 11.37 AM

MS JOHNSTON CALLS

ANTONIUS HUGH SNELDER (AFFIRMED)

Q. Morning Dr Snelder.

A. Good morning.

Q. Your full name is Antonius Hugh Snelder?

A. Yes.

Q. And you prepared a statement of evidence in these proceedings dated 6 October 2023?

A. Correct.

Q. You prepared a statement or reply dated 13 November 2023?

A. Yes.

Q. Are there any corrections you wish to make to your evidence at this stage?

A. Yes, I have an error in my evidence. In my evidence I present water quality state as passes or fail at table 1 and 10 year trends at figure 4, at paragraph 29 of my evidence and elsewhere I say these assessments of water quality state and trends pertain to state of environment sites and tat these were selected so as to not be affect – significantly affected by point source discharges. However, the results presented in table 1 and figure 4 include both state of environment sites and impact sites, so impact sites are sites that are a short distance downstream of point sources. The analytical results for stating trends presented in table 1 and figure 4 are little changed if the impact sites are excluded and therefore the conclusions that I draw from my results are the same regardless of whether the assessment of state and trends are performed with just the SOE or with a combination of state of environment sites and impact sites.

Q. And for the Court's benefit that paragraph 29 is at reference 202.0653. The statement that Dr Snelder just read from could be made available too, I think he has those paragraphs typed, that would be useful.

THE COURT: JUDGE SEMPLE

Yes, I think that would be, although I think I have understood.

EXAMINATION CONTINUES: MS JOHNSTON

Q. In all other, well, now that you have made that change, Dr Snelder, you will confirm that the evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. I will ask you to proceed to your summary statement now and then, Ma'am, I am intending following the summary statement to put a map to Dr Snelder and it's this, it's a map that follows on from exhibit D that was put by my friend Ms Ongley yesterday, I have copies for the Court and I have mentioned it to Ms Ongley, it's available online, but I just wanted to signal that to the Court now so there's no surprises when I lead that evidence, thank you.

THE COURT: JUDGE SEMPLE

All right, that's fine, thank you.

EXAMINATION CONTINUES: MS JOHNSTON

Q. Thank you, Dr Snelder?

WITNESS READS SUMMARY STATEMENT

A. "My name is Antonius Hugh Snelder. I am an environmental management researcher and consultant and specialise in water quality analysis and modelling. Manawatū-Whanganui Regional Council Horizons engaged me to analyse water quality data to describe baseline state and trends and to develop, apply and interpret catchment models for it's region, including those associated with the management of nitrogen leaching from intensive farming land use (IFLU) under Plan Change 2 (PC2). I have been involved in several studies of water quality and water quality impacts of land use in the region over the last seven years. I have been involved in many similar studies throughout New Zealand over the last 25 years. One of the most consistent markers of agricultural land use on water quality is enrichment of nitrogen in downstream receiving environments being groundwater, lakes, rivers and estuaries. Receiving environments in catchments with appreciable levels of agricultural land use generally have levels of nitrogen that exceed

regulatory thresholds. This is true of the catchments that host IFLUs in the region. Analysis of Horizons' water quality data for the five-year period ending 30th of June 2022 indicates that a majority of state of environment river water quality monitoring sites fail to achieve the One Plan targets for four water quality indicators that are relevant to PC2. These include soluble inorganic nitrogen and three measures of periphyton biomass. Water quality temporal trends at the monitoring sites and for these four indicators over the 10-year period ending 30 June 2022 were predominantly degrading. I am cautious about why the 10-year trends were degrading because climate variation has a significant effect on trends, water quality trends at this time scale. However, climate variation has less impact on trends at longer time scales and trends in SIN (soluble inorganic nitrogen) over the 20-year period were predominantly improving. Over the same 20-year period, total stocking pressure in the region has decreased. I interpret this as evidence that over the long run changes in nitrogen management will result in reductions in nitrogen loads and concentrations in the region's rivers. I have made assessments of water quality outcomes for three scenarios concerning management of nitrogen leaching from IFLU on land across the region. Those three scenarios are the baseline, a scenario relevant to the decisions version of PC2 and a scenario relevant to the proposed amendments to the decisions version of PC2. These assessments were based on a quantification of nitrogen loss from IFLU made by Professor Horne and Dr Jolly for the baseline scenario which was 2012 for pastoral and 2018 for commercial vegetable growing and the reduction in these nitrogen losses associated with implementation of the decisions version of PC2 and the proposed amendments to the decisions version. My assessment of the water quality impacts of these three scenarios indicates that the future scenarios represent modest improvements to baseline water quality. These improvements are consistent with the predictions I made with my colleague Dr Cox in modelling work we previously performed for the decisions version of PC2. The differences in my assessments of the water quality impacts of the decisions version of PC2 and the proposed amendments to the decisions version are very

small. In my opinion, the two sets of results are not significantly or practically different to one another. That is, the proposed amendments to the decision's version will produce the same modest improvements to baseline water quality that we previously projected for the decision's version of PC2."

Q. Thank you, Ma'am, and Dr Snelder have you been present in court over the last I think three days now?

A. I have.

Q. And you would have heard questioning from my friend Ms Ongley resulting or relating to some maps that been prepared in our consultation on the Oranga Wai freshwater programme?

A. Yes, I did.

Q. If I could direct you to exhibit D and it's in the folder behind you, Dr Snelder, the one lying flat to the side.

WITNESS REFERRED TO EXHIBIT D

A. Exhibit D, yes, yes.

1145

Q. And there is a – I'll just wait for the Court to catch up. There's a map there at the second page. Have you seen this map before, Dr Snelder?

A. I have.

Q. And what's your understanding of that map?

A. This map represents the reductions in nitrogen loads that would be required from each of the 124 water management subzones that comprise the region and they are covered by the scale of the reduction that would be required. The blue colours represent water management subzones that currently meet their targets through to the red water management subzones which would require large reductions to meet the water quality target.

Q. Were you aware of modelling and mapping that demonstrates changes to that state, as demonstrated in that map?

A. Yes. With my colleague Dr Cox I have done that modelling.

Q. Yes, and I just going to put a map to you now. I'll just get you to describe for the Court what this map shows, Dr Snelder.

WITNESS REFERRED TO MAP OF EFFECTIVENESS OF CONTAMINANT-REDUCING ACTIONS

THE COURT: JUDGE SEMPLE ADDRESSES MS JOHNSTON – COPIES FOR COUNSEL (11:46:53)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

A. So this map represents a future scenario that's indicating the same variables that were shown on the first map being the degree to which current loads achieve the target in each water management subzone, but the scenario here that we have modelled is where a range of mitigations have been implemented. Those mitigations essentially involve all known mitigations on pastoral land and CVG and some changes to point source loads in various locations across the region, and what the map obviously shows is a difference for many water management subzones across the region as a consequence of those mitigation actions. So many of those water management subzones have changed from a higher load reduction required to a slightly or sometimes quite large change in the load reduction that would be required to meet the targets, and there are – there might perhaps be some – no, I don't think any, I don't think any water management subzone has changed from needing a load reduction required to entirely meeting its, their targets, but there has definitely been reductions in the total difference of the gap between current state and the target as a consequence of those modelled mitigations.

Q. And I will just get you to confirm that at the top there you will see: "Have your say, Horizons.govt.nz," this is a map that is presently out for consultation alongside the map that my friend produced through the earlier witness, is that right?

A. That's my understanding.

Q. And I will also have – are you able to confirm your view as to whether the mitigations feeding into this modelling included on-farm practice changes by IFLU in priority catchments?

A. They included those but they also included mitigations on other pastoral land use.

Q. Thank you, doctor. I'd like to produce this through the witness please, Ma'am, exhibit F.

EXHIBIT F PRODUCED – MAP OF EFFECTIVENESS OF CONTAMINANT-REDUCING ACTIONS

CROSS-EXAMINATION: MS BUXEDA – NIL

CROSS-EXAMINATION: MS EDWARDS – NIL

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning, Dr Snelder.

A. Good morning.

1150

Q. Firstly just in relation to the map that you've just produced, you say that for pastoral land use that looked on farm practice changes by IFLU and other pastoral – and other non-IFLU.

A. Correct.

Q. And were the range of mitigations provided to you by Professor Horne or –

A. Those mitigations came from published work that has been produced by the Our Land and Water Research Programme that have projected the possible mitigations that are available across a range of pastoral land uses. So we took those mitigations and we applied them in our model to produce the change.

Q. In Dr Dewes' evidence, it's her paragraphs 22.9 to 22.11, she talks about farm systems optimisations and farm systems change, including things like converting part of a farm to forestry and obtaining carbon credits by way of example, do you know if these on farm practice changes included those sorts of things?

A. I wasn't in involved in the Our Land and Water study but my understanding is that they assumed maintenance of the current system but applied mitigation. So I don't think they would've extended to the example that you've just suggested.

Q. Okay, thank you. So just – I just wanted to start by taking a bit of a high level to your evidence.

A. Sure.

Q. So in the National Policy Statement Freshwater, what needs to be managed are compulsory values including value of ecosystem health, as you'll know, and that includes biophysical components, doesn't it, water quality, water quantity, habitat, aquatic life and ecological processes. Maybe if you could just say "yes".

A. Yes.

Q. And in your evidence you talk about the effects of nitrogen in particular. In the latest version of the National Policy Statement Freshwater Policy 3.13, compared to the previous version, there's a wider range of attributes that are considered to be affected by nitrogen aren't there?

A. Yes.

Q. And they are periphyton, which you've covered in your evidence, dissolved oxygen, submerged plants, I believe that's for lakes, fish, macroinvertebrates and the ecosystem metabolism.

A. That's correct.

Q. And so going forward, if this NPSFM remains in it current state, there will need to be a wider assessment of the effects of nitrogen in catchments.

A. Yes.

Q. And so what you were asked to do at the council level hearing, as I understand it is model a number of different scenarios and possibly the scenarios increased over time because there are a number in your evidence, particularly the last page of your evidence, which is 202.0801. You don't need to go to that page but if I could take you to the pages before that, which 202.0798.

A. Yes.

Q. So at number 2 you say there's a general improvement in water quality over the predicted 2012 pre-regulation outcomes if all consented IFLUS operate at their consented and end loss rates and unconsented operate at up to but not exceed the Table 14.2 limits. We can't really say there will be a general improvement in water quality can we, you're just looking

at meeting or not meeting the SIN target but there are many other things that go into assessing water quality?

1155

A. I think probably that sentence is referring specifically to nitrogen when it talks about water quality which is not to say of course that some of those mitigations will be beneficial for some other water quality contaminants but this is really specifically talking about that impact on nitrogen.

Q. Which is fine because this is why we have targets in the first place and how we manage two targets. Can you tell me, when you read out your summary statement earlier and you said that you've assessed (a) baseline, (b) decisions version scenario and (c) the proposed amendments to the decisions version, what are you referring to there when we talk about the baseline?

A. The baseline refers to 2012 for pastoral farming and 2018 for commercial vegetable growing and so our model starts with that as the primary – that's the baseline, that's the primary scenario and then we look at the impact on the various ways of managing IFLU as other scenarios and our results are comparing always those future possible management scenarios with the baseline.

Q. No that's fine, I just wanted to clarify a bit more what the baseline means. You've referred to the years that a baseline means and so by baseline you mean you would assume that those – you looked at what had been consented then?

A. I don't recall to be honest whether that's any consenting or whether there were consented farms and unconsented farms at the baseline. I'd have to look that up.

Q. Okay the baseline, because there are other scenarios that deal with assuming all farms meet Table 14.2.

A. Correct.

Q. So that's not your baseline?

A. No. So the baseline is as best we could estimate the status of all farms in 2012. So operating as best as we could estimate on that date.

Q. And for CVG 2014?

A. 2018.

Q. Sorry ’18.

A. Yes.

Q. Now when Professor Horne was giving evidence, he talked about the 20% reduction pathway for pastoral and he talked about a sweet spot where beyond that you might not get additional benefits but you'd get more significant cost, that’s what I understand him to be saying anyway. Is that your understanding?

A. I did hear him say that.

Q. Mhm. Is that within your area of expertise or does the additional benefits that you'd get beyond the 20% reduction, is that more to do with the farm systems expertise about applying on farm mitigations?

A. I think you're correct, I think he was really referring the increasing difficulty of achieving reductions once you'd reduced to 20%. I don’t think he was really referring to the water quality outcomes in the rivers to respect to that comment.

Q. Thank you. So I think my friends are going to ask you some more questions about your scenario testing that was carried out at the council level hearing but the purpose or one of the key purposes of your primary evidence at this hearing, as I understand it, is to show that some modelling for the production pathways of 20% and 35% respectively, would achieve the same sort of improvement as compared with the decisions version, as compared sorry with the, we’ll call it the NRAT version, is that right?

A. Yes, that’s correct, yes.

1200

Q. At paragraph 52 of your evidence you do say that – sorry you do talk about, I’ll just move back a step, you do talk about the recalibrated Table 14.2 table, so you do undertake in that exercise some comparison between meeting the Table 14.2 table, meeting up with the discretionary pathway, versus the 20 and 35% reductions?

A. That was evidence that we presented at the council hearing, yes.

Q. Yes. Table 14.2 itself, even the 20 year steps was supposed to be a journey in time towards achieve water quality targets, do you understand

that, it wasn't intended, even at that time, to achieve those within the 20 years?

A. Yes, I understand that, yes.

Q. So just turning then to the purpose of your evidence with the decisions version and the NRAT, can I take you to table 4 on page 202.0669 and this comes from the work that Professor Horne did that I questioned him about relating to the synthetic farms that he prepared for each cell of the matrix, doesn't it, in column "proposed amendments to the decisions version"?

A. Yes.

Q. And you heard me ask Professor Horne about the development of that table and the fact that the column "decisions version PC2" looked at both the consented and the unconsented farms, whereas the last column here assumed all the IFLU would meet the NRAT, did you hear those questions?

A. Yes I did.

Q. So it's not comparing apples with apples potentially.

A. My understanding of what Professor Horne has done with preparing these numbers is that he's assumed that all farms would be compliant with Table 14.2 for the decisions version and all farms would be compliant with the NRAT for the amendments and that's all he could assume because of course we don't know what's going to happen to the non-complying. So in a way those numbers are the best outcome that could be achieved under both those two sets of regulations.

Q. I understand though for the decisions version analysis he looked at some farms going under Table 14.2, some farms going under the reduction pathways, whereas for the NRAT version he just looked at everything going under the NRAT, are you aware of that?

A. You'd need to talk to Professor Horne about that.

Q. But you did hear Professor Horne say that he didn't have a high level of confidence about the NRAT numbers because the difficulties that he'd been put in, in having to translate scorecard values to Overseer et cetera?

A. I think within modelling practice he did the best that could be done in what would be considered practice to simulate the effect of those two sets of

regulations across all IFLU in the region. So at the level of individual farms there would be high uncertainty, but once you distribute that error across the whole region, these results are going to be reasonable estimates of the average change that arises under these two sets of regulations.

1205

Q. But if they also proceed from the 2012 analysis, as you've said, so going forward we can't say whether they'd be a realistic reflection of changes in nitrogen loss because practices may have improved during that period of time?

A. Yes, yes that's correct.

Q. So essentially what I think you're saying is that there's quite a high level of uncertainty with what you'd achieve with a decisions version reduction pathways, there's quite a high level of uncertainty with what you'd achieve with the NRAT and because they're both uncertain they're probably similar?

A. But the outcomes under both sets of scenarios are uncertain as are all of these sorts of catchment modelling exercises, the important point is that we're comparing, for the same model, we're comparing the outcomes of the two separate sets of regulations, so most of the uncertainties associated with the catchment models that were used to generate that analysis are the same in both sets of simulations and therefore we don't have the same degree of uncertainty about the difference between the two sets of outcomes. We're much more confident in that there's very little difference between those two outcomes than the individual simulations pertaining to each set of regulations, if that's clear?

Q. Yes it is, so it's more about the difference in those outcomes?

A. Yes.

Q. If we want to try and look at what they've achieved from now, is all you could potentially say is that they would achieve maintenance, they wouldn't achieve going backwards in terms of water quality with SIN?

A. No both sets of regulations would achieve modest benefits or modest reductions in nitrogen in downstream receiving environments.

Q. Can we be confident of that for the NRAT and I'll read you a part of Dr Parlato's evidence: "While I consider it feasible that implementation of the risk assessment tool may start to bring about water quality improvements, in my opinion the magnitude of nitrogen loss reductions and water quality outcomes associated with implementation of the risk assessment tool remained very uncertain." Do you agree with that?

A. Yes, we are uncertain about the changes, however, if these regulations bring about on farm reductions through change of practice then we can be very certain the direction of travel will be towards improvement, that's not in question in terms of the modelling.

Q. Thank you very much Dr Snelder.

CROSS-EXAMINATION: MR WILLIAMS

Q. Dr Snelder, good afternoon, I don't have many questions for you actually, but just I want to focus on some of the scenarios that you've produced. So my understanding – so Professor Horne and Dr Jolly provided you with the quantified reductions in N loss which you then used for your two scenarios.

A. Yes.

Q. And those quantified reductions in N loss they were obviously, I'm assuming, produced using Overseer?

A. Yes.

Q. And then you've concluded that the future scenarios would represent a modest improvement at the baseline scenario which is the 2012, 2018 for CVG.

A. Yes.

Q. And just in complete layman's terms I suppose is that essentially because they represent lower rates of nitrogen leaching?

A. From the IFLU land, yes.

1210

Q. All right, but the sort of proviso to that is you've said there are many aspects of the modelling and the assessment which are uncertain, so it's not possible for you to say whether the two scenarios are likely to be – the two scenarios being the decisions version and the – sort of the

council's proposed version, not really possible for you to say whether they're likely to be substantially different?

A. No, we can conclude with high confidence that they are going to be very close and the reason for that is that the uncertainties are the same for the modelling that we did of the decisions version and the amendments, so those, those uncertainties are more or less the same and therefore the difference between those two, we can have confidence in that number, so that – and that difference was small so we can have confidence that there is little difference, a negligible difference in the outcome under those two sets of –

Q. I understand, and that's the answer you just gave to Ms Ongley essentially?

A. Correct.

Q. So when you say there is negligible difference is that in the sense that they both achieve a modest improvement?

A. Correct.

Q. So Ms Ongley did also refer you to sort of a fourth I suppose scenario, if you've – like, well you've got your baseline and the two scenarios we've been talking about and then there's also this scenario of a recalibrated Table 14.2 with just a discretionary pathway?

A. Mhm.

Q. So without either the 20% reduction or the, you know, those controlled pathways that we've been talking about or the risk assessment tool?

A. Yes.

Q. And you talk about that at paragraph 52 in your evidence. Perhaps I just take you to that, if I could. That's at page 202.0666.

WITNESS REFERRED TO BRIEF OF EVIDENCE

Q. And so there you say that, as I understand it, a recalibrated Table 14.2 and a then proposed discretionary consent pathway would also result in modest water quality improvements?

A. Yes.

Q. So again, it's not – well you could say that in terms, in the terms you're using the outcomes, we can have confidence that the outcomes are going to be sort of equivalent as best we can understand them to be?

A. Yes, so – yes. The point is that all of those scenarios produce, because they all decrease nitrogen loss from IFLU they all – but IFLU are only a small proportion, they all produce modest changes, and obviously our analyses show they quantify the magnitude of those differences and they are all quite small.

Q. Perhaps more modest?

A. They're all modest and the differences between them are very small.

Q. Oh, sorry, the difference small and they all create a modest improvement in water quality?

A. Correct, yes.

Q. And would you agree on that, and I think you've said really, that's an inevitable sort of feature of the fact that PC2 is only dealing with a limited class of land use in the region and there are lots of other things going on?

A. Yes, yes.

Q. But – I mean perhaps this is beyond your expertise, I don't know, but would you agree that, you know, in circumstances where you have to break things down and deal with different land uses in different areas the cumulative effect of modest improvements could be substantial?

A. They can be, yes.

Q. So it's important not to sort of dismiss modest improvements just because you're only dealing with a small area within a larger, bigger picture?

A. That's right, yes, yeah.

Q. But at the same time, it's difficult to distinguish between them, perhaps?

A. Between the –

Q. Difficult to distinguish between these, so difficult to distinguish between – I'm sorry, that wasn't very clear, but difficult to distinguish between the different options that we have before us in terms of ultimate water quality outcomes?

A. We've quantified the differences in the water quality outcomes and I think that's where my expertise stops. Choosing what outcome is acceptable given the costs of achieving those outcomes I think is another question that I'm not, it's not my expertise to answer.

Q. I might have this wrong, but is – there's a distinction between water quality outcomes and SIN levels in rivers?

1215

A. That's true. We are only dealing here with nitrogen and I guess that's because that's the focus of PC2 and sorry, and just to be clear nitrogen is one water quality issue, yes.

Q. And is it a reasonable assumption that any reduction in nitrogen leaching from land is likely to result in lower SIN levels in the receiving rivers?

A. Yes, yes.

Q. And that's likely to be sort of they're correlated, so it's not a bell curve or something like that, they just –

A. Technically it's a mass balance, so if you reduce by 10% in the catchment, you will see a 10% change in the river or in the downstream receiving environment.

Q. So did you find it surprising at all that when Professor Horne gave you very similar nitrogen leaching figures, which he'd derived from Overseer modelling, they resulted in similar SIN –

A. Not that was an anticipated – well that was, once he gave me table 4, that we looked at earlier, I knew that I was going to get the same or very similar answer because it is a mass balance, it's just arithmetic.

CROSS-EXAMINATION: MS WRIGHT

Q. Just to start, Dr Snelder, I just want to follow up on a couple questions that Ms Ongley put to you about the baseline, just to better understand that. So I'm correct that you used a 2012 baseline in establishing the difference between baseline decisions version interest matrix, is that correct?

A. Yes.

Q. But that's a sort of theoretical baseline now isn't it, in the senses that it's in the past and there is intensification or new activities that, you know, you may know or do know have occurred in the area?

A. Yes, yes.

Q. So in terms of the implications that has for how one would describe the improvements, if we were thinking about the reductions against, you know, a later baseline, say a baseline today, would we be looking at

modest enhancements or would we be looking more at a maintenance type situation? I know that's a bit theoretical but –

A. Well it depends on the change on IFLU subsequent to 2012. If they've stayed with their practices as of 2012, then we would expect a change that we've analysed. If they've changed their practices, then obviously it will be a lessening or indeed an increasing of the change that we've predicted, so it very much depends on what's happened on those farms subsequent to 2012.

Q. So I guess that adds a kind of additional element of uncertainty to the proposition that there would be modest improvements?

A. I think there's two things that we were trying to do here, one was the original work was showing that we expected a reduction in nitrogen as a consequence of PC2 and the second piece of work that's in my recent evidence, is showing that there is very little difference between the regulation under the decisions version and the amendments that are being proposed.

1220

Q. Thank you, that's clarified things for me. But to start I just would like to ask a few questions around your evidence on the current state and then I'm just going to ask a few other on the trends after that, just to follow on.

A. Sure.

Q. So in your evidence you explain that of the 78% of sites in the target catchments that are below the SIN targets, that 64% of those are 50% or more below the SIN targets, is that correct?

A. Above.

Q. Above, apologies, is that correct?

A. That's correct, yes.

Q. So would you – would it be fair to describe where we have a situation where you're 50% or more above a target, that that's a significant degradation situation in terms of nitrogen?

A. You're well above the target, is what I would say.

Q. And are you able to make any comment on what SIN levels being well above the target, to use your words, means in terms of ecosystem health?

A. The first thing that you would expect is increased risk or increased frequency and duration of high periphyton biomass, so the rivers would have high – they'd be green and slimy more frequently and for a longer duration as a consequence of the enrichment by nitrogen. That does have flow on effects to other parts of the ecosystem. So for example it could change the invertebrate communities and that then could then influence the fishery or the fish et cetera. So there consequences of those high biomass but the biomass, the algal biomass, periphytons we call it, is the primary thing that it would be noticeable.

Q. So moving from current state just to your trends analysis and I'll just ask a few questions to kind of make sure we're both on the same page. So I'm correct that you used 112 sites for the current state and the 10 year trend.

A. Yes.

Q. And both of those show that the majority were degraded or showing degrading?

A. They had degraded over the 10-year period that we analysed. That's an important caveat or important wording there.

Q. So then for the 20-year trend, that's only based on 27 sites, is that correct?

A. That's correct, yes.

Q. And it might help if we look at the figure, so I understand your response properly if that's all right and that's in your evidence at 202.0664 and that's figure 5.

A. Yes I have that.

Q. So this shows the 27 sites and most of those with the blue likely improving or very likely improving, down at the I guess bottom third quarter of the picture and then if we just turn back one page, where we've got figure 3, down at the bottom right picture is the SIN measurement points that we used for the 10-year trend. There are a number of those sites down the bottom there that were already blue in that 10-year situation, is that correct?

A. Some of those are blue in the 10 years and the 20-year trend periods.

1225

A. Yes, some of those are blue in the 10 years and the 20-year trend periods.

Q. So do you think, given those factors that some are consistent as between the two, that were using 27 instead of 112 sites and that, you know, we're predominantly looking at this 20-year picture at a cluster down the bottom, that it's fair to say this 20-year trend data should be, I guess, treated with some caution?

A. I think all trend data needs to be treated with caution and I've outlined this in my evidence that we're increasing in our awareness that trends are influenced by climatic variation in complicated ways, and so we do need to be very cautious about a trend. A trend tells us what happened in the river, that that's clear and there is no ambiguity about that, but the reason it happened, it tells us nothing about the reasons for that trend and sometimes climatic variability is part of the reason for the trend.

Q. But I mean, would you agree that a kind of a bald statement like "trends in SIN over 20 years were predominantly improving", doesn't quite paint the actual picture that a 27-site focused predominantly down the bottom of the area of interest gives?

A. Well –

Q. Is it a bit bald, possibly?

A. Ah, you could nuance it more and start talking about the geographic variation and that. It is correct as written, I think. There is a dominance of imprisonment at 20 years.

Q. Over the 27 sites?

A. Over the 27 sites, yes.

Q. While we're in this part of your evidence, I have a question just to – about your risk tool assessment and just a clarification point to start, actually in relation to table 5 and that's on page 202.0671. And I see that, so we're talking a percentage reduction in total nitrogen loss from the (inaudible 12:28:00) decisions version on the left and then the proposed amendments which I assume is the risk pool on the right, is that correct?

A. Yes.

Q. My question relates to the bottom row where under the proposed amendments you show a greater percentage reduction for the risk tool. If we turn back to table 4, which I understand shows the values from

Professor Horne that table 5 is based on, that bottom row shows a lower production loss for the risk tool than for the decisions version. So I'm just wondering how you got a higher percentage reduction?

A. That is a good question. I'd have to go back to my workings to answer that. I think it's probably because the West Coast Lakes and Horowhenua include the Hoki 1A catchment which is where the commercial vegetable growing is, so there's quite a large change in the commercial vegetable growing.

MS WRIGHT:

Your Honour, do you think that's something we might be able to get?

THE COURT: JUDGE SEMPLE

Absolutely, I've got no difficulty with the witness filing a supplementary statement that outlines that.

MS WRIGHT:

Thank you, I'm very –

THE COURT: JUDGE SEMPLE

Mhm, thank you.

1230

CROSS-EXAMINATION CONTINUES: MS WRIGHT

Q. So just with reference to table 5, have you prepared a similar comparison table to this one which shows Table 14.2 on the left and the decisions version on the right, just showing those basic percentage reductions?

A. No, I don't believe I've produced that in evidence, a table like that.

Q. If there was one, would the – it would be fair to say based on my understanding of your evidence and you can agree or not, that the percentage reductions in the Table 14.2 side, say that's the left-hand side, would be greater than the decisions version side because it's, I think your words were, "the decisions version is less strict"?

A. So you'd need to talk to Professor Horne to get the nuanced detail here, but that's his – the numbers in table 5 here represent Professor Horne's estimate of the reductions that would occur under the decisions version. Now, essentially that involves all IFLU being compliant with Table 14.2. So it's, as I mentioned earlier, that's a best case outcome because obviously some IFLU is not going to get to the table and under the decisions version, but this table reflects what would happen if everyone went to the table.

Q. So sorry, my understanding is that this table reflects if the decisions version title in reductions reflects if all farms met the specified reductions pathway –

A. Yes, yes.

Q. – not Table 14.2, so the specified reductions pathway being the –

A. Oh, sorry, yes.

Q. – 20% or –

A. Yes, sorry.

Q. – you're forgiven, it's very confusing.

A. It is confusing.

Q. I'm getting lost too.

A. What I meant was either met the table or the specified reduction, sorry, so they either meet the table or if not able to comply with the table they reduce by the amounts required under the decisions version. And my point was, sorry, that obviously there are some farms that might not even be able to do that but they're not accounted for, they're all assumed to get to the decisions version.

Q. But so it's your understanding and just that the – just so the decisions version, so the specified reductions pathways, that's the 20% percentile?

A. Yes.

Q. Are less strict than Table 14.2?

A. At least for some farms they are less strict.

Q. And is it a correct characterisation of the – of what table 5 shows, that the risk matrix, so the supposed amendments column, is less strict again, in terms of percentage reductions?

A. That's possibly – yeah, that's possibly true, you'd need to address that to Professor Horne exactly how he's thought about what happens with all farms under the NRAT, yes, that's a detail for him to answer.

1235

Q. Dr Snelder, would you please turn to the summary scenario table at the back of your evidence, and that's at 202.0801, and I just want to check with you to start that I have correctly understood the different scenarios. So starting with the proposed consented scenario is it correct that that's where we have consented farms at consented levels and then the rest at Table 14, assumed they're meeting Table 14.2?

A. Yes.

Q. Yes, okay. And then for proposed pathway A through D, is that where we have consented at consented and then all the rest assumed to reduce to a nine kg? Sorry, reduced by nine kgs?

A. No, I believe it's either complaint with the table, if they can comply or reduce by nine kg if they are unable to comply with the table.

Q. And so the same then applies to the 15 and the 18?

A. Yes, yes.

Q. And so you've described the proposed consented scenario as the best case scenario for water quality in your reply evidence, is that correct?

A. Well the best case is actually shown by the proposed consented strict which is the third from the bottom.

Q. Mhm.

A. That's where there's adherence to Table 14.2 for existing consents as well.

Q. So in light I guess of those two being the – I think you've described them as best case for water quality, do you – would it be fair to say that an approach that provided for the ability to push those down, those farms that can't meet the table, down to the table, you know, as close as you could to have a look at it and push them down as close as you could, would that be I guess the next best option from a water quality perspective?

A. Yes, from a water quality perspective as low as you can go with the IFLU will give you the best water quality outcome.

Q. Now I've just got a few questions around the mean relative difference figures. To make sure before I begin that I am understanding correctly again, so with the mean relative difference figure in this table we're talking about – first, apologies, when you say "target catchments" I did just want to check, you're talking about the targeted water management subzones or are we talking about a different –

A. Yes, the targeted water management subzones.

Q. No, that's fine. There's a lot of language, I just wanted to make sure I'm on the right – we're on the same page.

A. Yes.

Q. So with these mean relative differences you are showing an average across all of the 32 sites across all of those zones and the average percentage across all of those, it's higher than the SIN target, so a collective?

A. That's right. So just to be clear though, the points, the mean relative differences pertain to points in our mod – that are represented by a model in the rivers downstream of those targeted water management subzones. So they're not just at the bottom of the water management subzones. So they're not just at the bottom of the water management subzones, they're also further downstream, so that we catch the effect all the way down the river system of those changes.

Q. So because it's I guess a collective figure, and appreciating you're capturing downstream, but it's a collective across all of the targeted zones, does that mean that the actual difference between in river SIN and the One Plan target could be, you know, bigger or smaller than this within a particular zone?

A. Yes, exactly, this is an average, so there are some places which are better and some places that are worse.

Q. So there are some subzones where it could be, potentially be quite a lot more because it's the average you'd have?

A. Yes, that's right, yes.

Q. And I just want to turn now to ask a couple questions about the instream implications, so converting the theoretical numbers to what they actually mean. If we're looking at the table, the differences between the SIN target

in the One Plan and what we're actually seeing, what are the implications for ecosystem health, you know, between say 35% difference and a 41% difference.

A. Yes, so it would be hard to provide a meaningful narrative about that difference, but it's a very small difference. We're obviously well above the target and that difference between the best case and the worst case and the baseline case is small I would say in ecological terms. It would be hard to see that difference if you were standing on the edge of the river or making even observations at monthly intervals, it would be difficult, it would require many, many samples before you would actually be able to see that difference.

Q. So I mean you can have more localised effects from contaminants entering a waterway also.

A. Yes, so as you pointed out, some of those differences will be larger and some water management subzones where perhaps you might realise a larger impact, a larger benefit I should say.

Q. And if we're I guess pulling down into an even kind of more localised effect which I guess is reflected in your impact site type of measuring areas, just by way of example, can there be an appreciable increase or I guess appreciable, yeah increase in the benefit in ecosystem health at that kind of more localised scale from, you know, say an increased reduction in nitrogen leaching from 20% reduction?

A. Sorry I'm not sure if I understood that question.

Q. No it was put badly, apologies. If we're thinking about, you know, we've talking about the potential for there to be more localised effects and I'm trying to hone down on the issue of there being a localised effect so at particular points along the stream from contaminants coming in and I'd like to understand your opinion on whether it could make an appreciable difference for ecosystem health in a particular situation if instead of requiring a 20% in nitrogen loss from a particular activity, you required say a 40% reduction in a localised effect sense.

1245

A. Yes.

Q. Have I put that more clearly?

A. Yes, no that makes sense. Yes, so because these actions are happening in a patchy way and across the landscape, obviously immediately downstream of these actions we might realise a reasonable benefit that might be noticeable. These numbers that we present here are really more of a helicopter view, the overall – it's trying to demonstrate the overall impact of the proposed regulation and how they differ across the different options obviously but yes you're right, that the benefits of reducing nitrogen from IFLU immediately downstream of where that reduction occurs will be larger than what we see in these figures here.

Q. Thank you Dr Snelder, that's been very helpful and thank you for putting up with my slow putting of the scientific issues.

RE-EXAMINATION: MS JOHNSTON

Q. Dr Snelder, I'd like to take you please to the table attached to your evidence that my friends have taken you to, you've got it there?

A. Yes.

Q. And you'll recall a question that was put to you regarding Professor Horne's 20% and it was put to you about his sweet spot, if you like, the sweet spot he discovered in his modelling.

A. Yes.

Q. If we go to table 5 or sorry the table attachment B, proposed pathway B, do you understand the 12 kg to represent the 20%?

A. I do.

Q. And if you look then at pathways C and D, do they represent increases in that 20% if you like? There's further kgs being leached under those scenarios of nitrogen?

A. There's a reduction in nitrogen under those?

Q. Yes, sorry, there's a greater reduction.

A. Yes.

Q. Perhaps the key point, if I follow my eye along the row to the last column and you'll see the mean relative difference there between those three scenarios.

A. Yes.

Q. Can you tell me what that means in practical terms?

A. Well as we've discussed earlier, they are very small differences and would not be significant I believe from an ecological perspective. From a mass balance perspective, they are real numbers, we can trust those, but the impact of those on the ecosystem would be very difficult to observe.

Q. And then just one further question, my friends have put to you about the baseline and the figures and the numbers you relied on for 2012, are you able to explain to the Court the database that you used, did that involve the known farms or know data to Horizons at the time?

A. Yes, it included all the known farms.

Q. And what's your understanding of “known” in that context?

A. They were farms – mmm, I think it’s true to say that they were farms we had Overseer files and we understood their leaching rates. We also understood that there was IFLU that was unknown to the council distributed both in the target catchments and elsewhere.

Q. And so in that regard do you have a view as to whether or not your modelling was conservative or not in that context? Let me put it this way, did it pick up all IFLU that would be caught by this regulation?

1250

A. It picked up all IFLU that would be caught by the regulation and to answer your question it is difficult because the unknown farms, we had to make an assumption about what the current loss rates were and that was an assumption based on generalised information about what these IFLU produce in general and so we don’t really know, obviously they were unknown.

Q. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Dr Snelder. First of all your acknowledgement of the uncertainties and the need for caution when interpreting catchment model results was helpful and not unexpected and I think we’re on the same page on that one, so thank you for that. So based on that, is the bottom line we should take from your evidence that the modelled water quality changes for different regulatory methods are essentially so small as to be

well within the limits of modelled accuracy and cannot be used to support any particular regulatory framework over a number?

A. I wouldn't go that far.

Q. Mhm?

A. That the two sets of estimates for DV-PC2 and the amendments are very uncertain; however, the uncertainties are largely the same for both sets of predictions and therefore we can have a lot more confidence in the differences between those, so yeah, the differences have a lot less error than the absolute numbers that we're predicting, a lot less uncertainty.

Q. Say that again, sorry?

A. Ah, we can have confidence in the difference in the predictions for the two sets of regulations, so because we get – those two sets of predictions indicate that the – there is very little difference in the water quality outcomes of the decisions version and the amendments, and we – and that's, that's not an uncertain result, we can have high confidence in that result because the uncertainties are the same on both sides of that difference.

Q. Okay, what about in comparison to Table 14.2?

A. The same applies. That the modelled uncertainties largely are the same on both sides of that equation so you can have reasonable confidence in those differences. So that if I can refer to that table that we have just been talking about, those mean relative differences, the difference between those mean relative differences is something that we have a lot more confidence in than the water quality model results for each scenario on their own.

Q. So really, we have no means of differentiating between Table 14.2 and the other two methods, is that correct? In terms of these results here?

A. So if you're saying that those results are very similar to one another, yes, they are, the differences in my view, from an ecological perspective, are negligible.

Q. And therefore we couldn't use them as a basis for saying Table 14.2 or any of the other two were the preferred over the other, the others, is it?

A. Not, yes, that's correct, from a water quality outcome they are unable to be distinguished from one another.

Q. Thank you. The issue of trends in water quality, over time, you mention climate, that's the El Niño and La Niña situation, primarily, is it?

A. Correct.

Q. Okay, isn't that a 10-year cycle?

A. It's quasi-periodic, so it's not a regular cycle.

Q. Right.

A. And it does have a proximate period of between five and seven years, but it's variable. So it's some – it's difficult for us because it's irregular.

1255

Q. Yeah, I'm interested that the overall trend over 20 years is down, but over 10 years it's going the other way. And so I don't fully understand that, have you got any way of helping me out on that?

A. Yeah, I've done a lot of work on this so I could drone on for hours and I don't want to do that.

Q. Well, try and keep it 'til 1 o'clock if you don't mind?

A. Over any short period, such as 10 years, there is actually a trend in the SOI because at the beginning of the period we might be in an El Niño and at the end of the period we might have been in a La Niña so there's effectively a trend through that 10-year period. And that trend, because we know that water quality at an individual site responds to the phase of the ENSO cycle, the trend in the ENSO cycle can induce a – well, it needs, it produces a component of that water quality trend which is attributable to the ENSO cycle, so that's why at timescales of around about 10 years we don't have a lot of confidence that the trend isn't really reflecting climate variation or at least a large component of that trend is reflecting climatic variation. Once you get to 20 years though, you're starting to moderate out the influence of that cycle, so we can have more confidence that the trend we're seeing at 20 years is reflecting real changes in, well, not real changes, but changes in water quality that are less linked to the influence of climate variation because at that time scale obviously we're incorporated two or even three cycles, so that effectively the effect of the cycle becomes neutralised the longer time period that the trend is assessed over.

Q. Okay, yeah, it is a complex subject, yeah, I understand what you're saying, thank you. When you're referring to – when we were talking about this diagram here and you were talking about mitigation measures, were those the same mitigation measures that will achieve the 20% and 35% reductions or something different?

A. They are actually somewhat more ambitious than those, I believe, so they are mitigations that were suggested by a couple of papers that are referenced in my evidence in various places that were produced by the Our Land and Water research programme that are mitigations that are expected to be available in the not too distant future.

Q. Okay.

A. And so some of those include things like plantain I believe and so it's more than just the current best management practice, there is some additional mitigations that are incorporated and assumed to be achievable in the not too distant future.

Q. Okay.

A. So it probably represents an ambitious projection of what we could achieve by mitigation.

Q. Okay, now I'm very much a numbers person, unfortunately, only in terms of getting an indication of trends and I wonder whether it might be possible to prepare a table for us that shows for each of the sub-zones, the target sub-zones, that shows the SIN, the SIN target, the current concentration, the current loads, the reductions required to get to the targets, the load reductions that will be produced by Table 14.2 and what will need to come after that. I think the information is available from what Ms Patterson said yesterday.

A. Yes.

Q. We've probably got it somewhere but it is all over the place, I don't think we've got quite that much information.

A. Right.

Q. Would that be a difficult thing to put together?

A. No, that's achievable.

THE COURT: COMMISSIONER HODGES

Your Honour, would that be okay to have that produced?

THE COURT: JUDGE SEMPLE

Yes, absolutely, I think we have already suggested that this witness might need to prepare a brief of supplementary evidence in relation to the questions that arise and I think that could be added to that.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Yes, thank you, that would be very helpful, thank you.

A. So just to be clear, the model has assessment points and I think what you're asking for is those estimates that you've just talked about downstream of the target water management sub-zones, yes.

Q. The one that gives the best indication of the work required –

A. Yeah, the outcomes.

Q. – in a particular sub-zone.

A. Yeah, sure, okay.

Q. I've only got a couple more questions. Groundwater travel times and load to come, what is known about those in the Manawatū?

A. That's not my area of expertise.

1300

Q. Oh.

A. I think there is a reasonable amount known about that and I do know that it's variable across the region, and none of the – these figures are all steady state models so assume where we've waited long enough that everything has come to equilibrium, so we've completely ignored lag times in these estimates.

Q. Okay, well I look at it the other way as to how long it will take for farming improvements to show up in the environment?

A. Yes, absolutely.

Q. Because that's very significant in terms of what can be achieved in five years, 10 years, or 15 years?

A. Yes, I agree.

Q. So it's a very material thing and we've got no evidence on that. So, okay, that's fine thank you.

A. Yeah.

Q. And one last question, how did you determine that a 70% reduction in nitrogen loss using the CVG scorecard would result in a 20% reduction in SIN load?

A. Yeah, so that's – we had a 70% reduction on the CVG in the water management subzone where that pertains to is Hoki 1A and CVG as a component of all the land in Hoki 1A so it's a fraction of the total production of nitrogen in that catchment so therefore a 70% reduction on that fraction generates a 21% reduction in nitrogen loss from the catchment as a whole.

Q. How did you calculate that, what was your basis of reaching that conclusion?

A. So we know what all the other land is in that water management subzone and we have estimates from our water quality modelling of the loss rates from those other land uses in the catchment, including – well that catchment would obviously have urban land but it also has pastoral and possibly other mixes of land use, so.

Q. Okay, and similarly, the 50% reduction resulting in a 15% reduction in the SIN load?

A. Yes, that's right. So that's a scenario that I ran simply if we didn't achieve a 70% reduction from the CVG but we achieved a 50% reduction from CVG that would represent once you account for all the other sources of nitrogen, a 15% reduction from Hoki 1A water management subzone.

Q. Okay, and that's based on a 50% attenuation factor in the soil, is that right?

A. Well it doesn't actually matter what the –

Q. Okay.

A. Yeah.

Q. We won't go into all that because I –

A. Right, very good.

THE COURT: COMMISSIONER HODGES

Your Honour, I wonder whether we should do what we did yesterday and provide a written –

THE COURT: JUDGE SEMPLE

Issue a – yes, I think we will in terms of what – the various things that we've asked of this witness so that you've got it in writing what it is that we want from you in a supplementary statement. But if you don't have further questions I've really only got one for this witness.

THE COURT: COMMISSIONER EDMONDS

Well you go, no.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. So that means you can enjoy your lunch rather than us holding you over. That's what I'm trying to establish.

A. I see that, thank you.

Q. My question is simple and I think like Ms Wright my lawyer brain is not entirely designed for numbers so I'm working at my edge here, but I – can you just explain to me on that summary of the various scenarios where you've got your proposed pathway E and F, in the narrative and everything else we've heard we've talked about a 35% reduction for CVG, this talks about a 36% reduction.

A. Yes.

Q. Is there any – is there any importance in that, that I should take from it?

A. No, no. So this – no, I don't think there is. So this evidence here is from my decisions version evidence and –

Q. Ahead of the council hearing, at the council hearing?

A. It was – yes, during the council hearing, so –

Q. Oh, right, yes, where you were asked to go away and model?

A. – yeah, so I think some of these numbers got – yes.

Q. And so 36 was the number which has been subsequently rounded down to 35?

A. That's right, yes.

Q. All right. And in terms of your best practice, your pathway F, BMP pathway, so I take it from that in relation to CVG your 55, does that come from Dr Jolly's work or does that – where does the 55 come from because that wasn't a number I had seen in her analysis?

1305

A. That's right, so I believe it came from the Bloomer report that Dr Jolly referred to this morning.

Q. Yes, all right. And so in layman's terms as best you can, and I imagine it must be frustrating for scientists when we ask you to dumb things down so that we can understand them, so I do apologise for that, but can you explain to me when you talk about that mean relative difference between pathway E and F can you explain to me what that means in the simplest terms that you can.

A. Yes, so well first of the relative difference is simply at a water quality site, it's the concentration minus the target concentration divided by the concentration. So it's an indicator of compliance. So when it's positive and large, then we're far from compliance and we're well above, the current concentration is well above what it should be and obviously when it's negative we have the reverse situation. So we've done that for 35 sites that are downstream of all the land that we're considering under these regulations, all the IFLU hosting water management subzones, and we've modelled the outcome at each of those points. So those are points that at the bottom of each water management subzone but also that are distributed down the main stems of the rivers as well. To get an appreciation of how do these propagate down the system and reduce loads further down and so at each of those locations we have a relative difference and then we've taken the mean of all those as a sort of an overall helicopter view, indicator of the benefit that's achieved by each of these options or scenarios.

Q. That's good, I did understand it, so it's good to check that I had it in my head the way – that's great.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

COURT ADJOURNS: 1.07 PM

COURT RESUMES: 2.20 PM

MR SINCLAIR CALLS

KERRY ARTHUR MAYES (AFFIRMED)

Q. Your full name is Kerry Arthur Mayes?

A. That's right, yes.

Q. And you've prepared a statement of evidence in these proceedings dated 6 October 2023?

A. Yes.

Q. And for the avoidance of doubt, you haven't prepared a statement in reply or rebuttal evidence?

A. No.

Q. Are there any corrections you'd like to make to that evidence?

A. Just one, I noted this week that I omitted to put labels on the axis of my graphs.

Q. Could you take us there.

A. It starts in paragraph 36 and I have a graph for each of the crop rotations and it has numbers down the bottom and percentages up the side but I neglected to label those. The numbers are the annualised MPVs and the percentages is the probability and so that's the case for all of the graphs in there. I apologise to the Court for that because that's quite a rookie error.

Q. Thank you Mr Mayes. With that correction, do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. Now I understand that you haven't prepared a summary statement so if you could stay and answer any questions from my friends and from the Court.

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon Mr Mayes.

A. Good afternoon.

Q. You've been waiting a long time. Can I take you first to the introductory part of your evidence and at paragraph 7 you clarify that the initial

economic modelling for PC was carried out in 2020 by Mr McNally, you were a part of the team and Mr McNally developed farm scale financial methodology for determining the impact of GMPs and BMPs on the economics of intensive farming land use activities including CVG and pastoral farming and that's in your attachment A, isn't it?

A. That's correct.

Q. And then paragraph 10 you've updated the model to assess the economic impacts of PC2 to June 2023 dollars and paragraph 11, you draw some conclusions in relation to CVG.

A. That's correct.

Q. And at paragraph 42, in relation to dairy, after referring to Mr Parmenter's work which uses a farm cluster approach you say that due to constraints on time and date or availability, while you intended to model a range of farm systems covering the risk matrix, you've only been able to analyse one farm system.

A. That's correct.

Q. If I can take you to the appendix A please at 202.0860 and these – you say here at 4.3 that: "The term GMP has a range of definitions", and you say: "Horizons have defined it as evolving practical measures and methods, including those established in industry-based standards which are used at a sect or community level to minimise the effects of discharges to land and water." And then: "BMPs are commonly understood to be a tier above GMP and they're deemed more costly as individual interventions and/or require a significant system change for adoption within a farming operation."

A. Yes.

1425

Q. And then you go on to define what GMPs fed into your modelling and I want to look at pastoral ones. If we look at page 202.0862, the last paragraph on that page states the GMPs and BMPs were provided to WSP by Professor Horne and they're on the next page for pastoral, table 4.3?

A. Yes, but I was only one of the authors for this, so I'm basing this on, yeah, Steven McNally's work.

Q. That's fine. So if we look at table 4.3, the dairy GMP does include under "animals", increased grazing over winter months, cull cows more aggressively and earlier, do you know whether system change within a farm, and I've used the example of diversification of parts of a farm to other land users such as forestry which can provide income through carbon credits, they don't appear to have been looked at with the GMPs here and so can you confirm that that wider diversifications or system change have not been modelled?

A. That's my understanding that only the items on the list have been modelled, so yeah wider system changes have not.

Q. You're not a farms expert but Dr Dewes' evidence talks about farmers being needed to advised by cross disciplinary teams and this is her paragraph 22.5, who can run pastoral farm models as well as scenarios in Overseer and adapt the most appropriate land uses to the most appropriate land class and professionals would have expertise for example in forestry, agroforestry, native establishment on suitable land classes, so this exercise does not appear to have looked at those wider issues.

A. From my understanding no it hasn't.

Q. Thank you. And then if we can go to 202.0877 which is also in your appendix A, the fourth paragraph under the heading "dairy farms" says: "The introduction of the PC2 amendments means a more favourable position arises from a lower cost impact with a higher net profitability from the discretionary pathway to get to a point of compliance without needing to transition out of a land use." And then on the next page –

A. Sorry I'm just trying to – the PC2 amendments, I'm not sure what's meant by that. So that's a different pathway to the discretionary pathway, is it?

Q. Well I thought it meant, but if you're not familiar with it just let me know, but I thought it meant recalibrating Table 14.2 and providing a discretionary pathway for those who couldn't meet 14.2.

A. Yes I'm not familiar enough with the timing of this as to where it fitted into what was being – what would've been talked about as the PC2 amendments at that point sorry.

1430

Q. Okay, all right, well no that's fine. I'll just leave that there then because the report possible speaks for itself but if you can go to page 202.0882, paragraph 3 lists documentation that would be required in a discretionary pathway consent application and it says it would be more onerous, increasing the application costs significantly and there are some documents that might need to be included. So I understand that at the council level hearing there was some costings put on what a discretionary activity consent could involve, were you involved in that at all?

A. I was not part of that, no sorry.

Q. In terms of assessing cost of BMPs and GMPs on farms, would you agree that if you took more of a wider assessment as Dr Dewes is suggesting that on an individualised farm by farm analysis, you would get different results for effect on profit of a farm to achieve the Table 14.2 recalibrated targets?

A. So what was meant by "wider analysis"?

Q. So she's talking about if you have an assessment with a group of advisers who run farm models, looking at not just BMP, GMPs but also being able to use different parts of your farm for different land uses and the example I've given is forestry.

A. So, yes if you're widening the decision set, you would expect to get different answers, not always the case because it depends whether the alternative land uses do have value in the farm system, wider farm system. That's outside my evidence, but yes if you've got something differently, the chances are you'll get a different result.

Q. Thank you. And also outside your evidence is a macroeconomic analysis of achieving instream water quality targets and still maintaining regional GDP or if you want to call it.

A. Yes, so I NZIER did an analysis earlier. I haven't reviewed those results, I've just seen them very briefly. I would never argue with the results of NZIER they are highly qualified in that area, so their results suggested that even significant land use change wouldn't affect GDP, if that's helpful to your question.

Q. Thank you. My final question is, you're familiar with Table 14.2 of the One Plan which is the proposed to be recalibrated according to the updates in the Overseer.

A. I know of it, familiar will be a too strong a word.

Q. All right, would you agree that the Table 14.2 in the One Plan is a form of allocation of N loss entitlements?

A. No I struggle to see how it can be an allocation, it sets a bar rather than a – but that's me speaking past my evidence, so, you know, take everything with a grain of sale.

Q. Okay, you haven't been asked to look at that?

A. No.

RE-EXAMINATION: MR SINCLAIR

Q. You were asked by my friend about paragraph 42 of your evidence, if you could go back to that, that's at 202.0841. And you highlight that you've only modelled one farm system. Now from where did you get the data for that farm system?

A. So that was from Professor Horne.

Q. I understand and if you go down to 43(b), is that what you're referring to in that paragraph?

1435

A. Yes, that's correct.

Q. And you describe there that it was a representative dairy system.

A. Yes.

Q. What's your understanding of what that means?

A. So in that cell of the matrix, this is a farm system that represents all of the farmers within that quadrant.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Mr Mayes, good afternoon.

A. Good afternoon.

Q. I'm always interested in the extent to which models have been ground truthed and do you understand what I mean by that?

A. Yes.

Q. Okay, can you just comment on the extent to which your model has been ground truthed?

A. So I based the model on information from the experts, Dr Jolly and Professor Horne, so that information I've taken as read, then I've used only standard practice in valuations to estimate how you would turn that information into a simple cashflow. So there's nothing outside of the standard process. So I suppose you could – in the weighted average cost of capital, I've updated the parameters to be correct to current day and would be the factors for farming or commercial vegetable growing. The data for costs was based on the best information available, which was often the Lincoln farm budgets plus recent costs of fertiliser. The indices I've taken from Statistics, choosing the most appropriate one. So I've relied rather on taking that and going back to a ground truth of the results, I've taken the inputs and made sure they are from a respected reliable source. Does that answer your question?

Q. It does in part. I'm always interested in seeing what the people who are actually doing the job have to say about these things and going and talking to the farmers about how much a GMP would cost and these kind of things, so you didn't do any of that sort of thing?

A. No, so I've used the experts within WSP in farming, they were the ones putting together the numbers to make sure that the – so the fertiliser price was an appropriate fertiliser price. They won't have gone back to farmers in this exercise, they will have used their knowledge of farmers and farming.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL

WITNESS EXCUSED

MS JOHNSTON CALLS

CHRISTINE ANNE FOSTER (AFFIRMED)

Q. Your full name is Christine Anne Foster.

A. Yes it is.

Q. And you've prepared a statement of evidence in these proceedings, dated 7 October 2023.

A. Correct.

Q. You also prepared a statement of reply evidence dated 13 November 2023.

A. Yes.

Q. You'll confirm that you participated in a range of expert conferences between June 2022 and May 2023.

A. Yes.

Q. And you signed a number of joint witness statements that have been filed in these proceedings in respect of those conferences?

A. Yes I did.

Q. Do you have any corrections you wish to make to your evidence at this time?

1440

A. I do have one, it's more by way of explanation, in my reply statement at your system reference number 02.1162 and my paragraph 57 where I say that: "To address the issue of leaching up a policy change has been made to the decisions version plan change 2", more correctly it is a change to rule 14.1, condition A which prevents people who have already consent from apply again for the higher rate.

Q. And with that you'll otherwise confirm your evidence is true and correct to the best of your knowledge and belief?

A. I do.

Q. And you have a summary statement today?

A. Yes. I don't but you've prepared one. I will ask, in your time to read the statement and then remain for questions from my friends in the Court.

WITNESS READS STATEMENT OF EVIDENCE

"Plan change 2 is intended to address two problems in the One Plan provisions for managing existing intensive farming land uses. These

have been well described in the evidence of Dr Daly, Professor Horne, Dr Jolly and Dr Collins and they are the recalibration of the cumulative nitrogen leaching maximums in Table 14.2 to reflect the more recent Overseer model being version 6.3. Secondly, amendments to the One Plan policy framework to address policy obstacle, that means applications for consent for IFLU that exceed Table 14.2 cannot be granted consent. Theses problems were first identified in 2018. Since then there has been no confidence in the One Plan framework for managing existing IFLU by farmers, by growers and by Horizons. Consenting of existing IFLU in the targeted water management subzones has stalled, including the consenting of existing IFLU that could meet the recalibration Table 14.2 CNLMs. The entirety of plan change 2 is under appeal, including recalibration CNLM values. Mr Day's appeal is explicit on this point at paragraph 6 of his appeal. He supports recalibration of the table using Overseer 623 but expressly says not the values themselves.

Horizons commenced its freshwater future work programme in response to the 2014 NPSFM and in particular to implement the national objectives framework that was set out in that NPSFM. The NPSFM work programme was rebranded Oranga Wai in 2020. Plan change 2 is not intended to effect to the NPSFM. It addresses the discrete issues I describe above and as I understand the council considered that plan change 2 needed to be progressed separately and alongside the NPSFM work and ahead of preparation of the freshwater planning instrument because of the importance of progressing the regulation of existing IFLU, that is the importance of being able to secure reductions in nitrogen leaching from existing IFLU and also the importance of removing the uncertainty and associated adverse social and economic effects created for the farming and growing sectors by the One Plan problems. The decision version plan change 2 proposes a three part solution as recalibration of the Table 14.2 CNLMs accompanied by a reference file methodology and policy amendments to avoid similar issues in the future. Provision of alternative controlled consent pathways for existing IFLU that can achieve specified nitrogen leaching reductions and what I describe as tightened policy

framework against which to assess the applications that do not meet either Table 14.2 or the specified reduction requirements of the alternative consent pathways.

1445

The publicly notified version of plan change 2 proposed what the appellants are now proposing, that is the recalibration of Table 14.2, a controlled activity consent pathway for existing IFLU that can meet Table 14.2 and a discretionary activity pathway for existing IFLU that do not meet the recalibration CNLMs. The discretionary activity pathway was opposed in submissions on a publicly notified plan change 2 and in evidence to the council hearing by both environmental advocates, including the Director-General of Conservation, Fish and Game, EDS and I don't know who, that should delete and start a new sentence.

Reasons given for opposing the discretionary activity provisions included that it was insufficiently clear what range of N leaching might be authorised by that pathway and fears it would enable the continuation of high nitrogen leaching, concerns that the policy framework was ambiguous and did not sufficiently address potential effects on environmental values, including mana whenua cultural values. Reliance on GMPs with insufficient specificity about what those GMPs were required to achieve in terms of N leaching reduction, uncertainty for farmers and growers about what conditions might be imposed and about whether they could even succeed in securing consent through a discretionary activity pathway, the cost of potential litigation of individual applications involving third party submissions, concern that the discretionary activity pathway too lenient. Some submitters, including Forest and Bird and the Environmental Defence Society considered the discretionary activity pathway should be replaced by a non-complying activity pathway. Federated Farmers New Zealand, Dairy New Zealand, Horticulture New Zealand and individual farmers and growers requested the certainty of a controlled activity pathway instead of the proposed discretionary activity pathway.

These points were clarified and amplified in the pre-hearing meetings and pre-hearing expert conferencing that was held prior to the council hearing. The council engaged in multiple meetings to understand the issues and identify solutions to them. My response to the issued identified in submissions and through the pre-hearing engaged was to propose the alternative specified reduction controlled activity pathways for the reasons I explain in section 12.2 of my section 42, I report the council hearing which I've reproduced at paragraph 27 of my reply statement dated 13 November this year.

I remain of the view that an alternative controlled activity pathway is the most effective approach for delivering on the objectives and policies of the One Plan. That is because it delivers certainty of the size of the nitrogen leaching reductions required, the broad scope and policy framework of plan change 2 does not achieve this. It also delivers certainty of process and outcome for farmers and growers, they know exactly what they are required to do. The broad scope of a discretionary activity pathway does not achieve this. It is also in my view the most efficient approach, noting Professor Horne's advice that no material in the river SIN reduction benefits are delivered by demanding reductions in excess of the 20 per cent for pastoral and 35% for CVG reductions that were considered in the SIN modelling.

Having reflected on the evidence for the parties, my conclusions are that the issues in the One Plan framework that are preventing the regulation of existing IFLU can be resolved and should be resolved as soon as possible so that reductions in nitrogen leaching from those activities can be achieved as soon as possible. Alternative consent pathways are necessary in my view to provide certainty both of water quality outcome and certainty of the changes farmers and growers need to make. The alternative consent frameworks, either the decisions version or the amended decisions version involving a risk assessment approach will both achieve similar water quality outcomes to those intended by the implementation of Table 14.2 for all existing IFLU.

The ability to successfully implement the decisions version PC2, relies on the use of Overseer outputs as absolute numbers. Ministry for the Environment advice does not support this use of Overseer outputs at this time. Overseer is less suited to the assessment of nitrogen leaching for commercial vegetable growing IFLU than for pastoral farming and as long as there is uncertainty about the suitability absolute Overseer derived numbers in decisions version plan change 2, the risk assessment approach that Horizons has developed appears to be the more appropriate option to pursue. All of the options proposed by Mr Scott, Mr Carlyon and Mr Day involve recalibrating Table 14.2 and making minimal policy changes to the One Plan IFLU management framework. My view is that these options fail to address the core purpose of plan change 2, that is they fail to address the problems in the One Plan framework. They will entrench the uncertainties that afflicts the management of IFLU and will fail to achieve nitrogen leaching reductions and water quality improvements. These outcomes can be achieved by endorsing the Plan Change 2 alternative approaches, and my assessment is that they are a more appropriate planning policy response. The decision as to which alternative version of Plan Change 2 is a matter to do with the role and confidence in Overseer."

MS JOHNSTON:

I'm sorry Ma'am, I did overlook just referring Mrs Foster to the three documents that the Court has. I just want to make sure that she has copies of those with her for questionings either from my friends or yourselves. Mr Registrar, if you could just – so I will just confirm for the Court that Mrs Foster has provided, and these are with all counsel, the notified version, the tracked decisions version, and then the Plan Change 2 council versions with the comparative analysis. Thank you.

CROSS-EXAMINATION: MR MAJUREY

Q. Kia ora, Mrs Foster.

A. Tēnā koe.

MR MAJUREY ADDRESSES THE COURT – ADJUST MICROPHONE (14:51:30)

CROSS-EXAMINATION CONTINUES: MR MAJUREY

Q. As you may know, I am counsel for Hort New Zealand, and as I'm sure you apprehend, the daylight between Hort New Zealand and the regional council is very little in so far as the respective positions. Having said that, I do have a number of things to walk through with you insofar as you're aware and you know well the importance of the language used in terms of what's intended and whether it reflects that. So I'm going to take you through a few mechanical things just to test that, as it were. You've been involved in PC2 for some time, and as you have confirmed, you were involved with the first instance process?

A. That's correct, starting about 2019, early 2019.

Q. And is it fair to say, and this is purely an observation and it's common with planners, that as part of your conclusions you have relied or had reference to a number of technical experts, farm systems, et cetera?

A. Of necessity, yes.

Q. That's fair?

A. Yes.

Q. As I understand it certainly from memory and as Commissioner Hodges will be aware, you were involved in PC1 as well?

A. Yes, appearing for Beef + Lamb New Zealand.

Q. And for those who, and there's a number of folk here who were involved in both, there are similar themes in both plan change matters, aren't there?

A. There are some similar things, yes.

Q. Is one of those an alternative consenting pathway to Overseer?

A. Yes.

Q. I was going to frame my next discussion point probably unfairly given some of the technical folks seem to have a real attachment to Overseer, but is it fair to say that there are real issues with Overseer such that an alternative pathway is appropriate to consider, and that's what one of the outcomes of PC2 was in the first instance?

A. I rely on the evidence of Doc Jolly which I think is supported by your client's witnesses, which is that there are shortcomings in relying on Overseer to accurately model all of the vegetable systems that are likely to be found in the targeted water management subzones of Horizons Region.

Q. And we've touched on the background in terms of the first instance decision and you refer to it as well in your summary. I don't expect you to have it, I'm happy to go there if you want, but I just want to confirm a few sort of foundation points. So this is the recommendation of the independent hearing panel, the first page number, ma'am, is 101.0258 and there's a couple of paragraphs I want to refer you to. I don't think you will need it but if you do, if you do, you let me know, of course. So at 3.141 and the bundle reference is 101.0310, 3.141 records: "As with the pathway for dairying, Ms Foster found favour with a tailored control activity pathway being provided for CVG. We accept her reasoning that the particular challenges faced by CVG including the need for crop rotation underscore the need for such an approach which can be accommodated within the scope of PC2." I don't expect you to recall that, but that's correct in terms of your recollection of the process and what you said?"

A. Yes, that's – I proposed a pathway that overcame some of those issues and that was the panel's finding on that.

Q. Yes.

A. Yeah.

Q. And a similar question for one more paragraph and I'll read that out, that's paragraph 3.146 bundle reference is 101.0312 and the paragraph reads: "We accept Ms Foster's position on this and agree with the council's position as expressed in its closing legal submissions that a controlled activity status provides administrative certainty and efficiency over the limited life of a plan change and represents the least restrictive status necessary to achieve the objectives, thereby ensuring no wastage." Same answer as you gave the previous paragraph?

A. Yes, that was my view then and it remains my view.

Q. Yes. I am late to this party so I don't have the background that many do, so I want to ask a few questions which I don't know the answers to but is helpful context. So it's my understanding and you can correct me otherwise, that prior to the notification of One Plan, CVG commercial registered growing activity – as an activity did not require resource consent for land use?

A. I believe not.

Q. And with the promulgation of the One Plan, a controlled activity was then required at that time, if it could meet the parameters of Table 14.2?

A. I think that's the framework, yes.

Q. That's a fair?

A. Yes, yeah.

Q. And leaving aside the work of quality of the rule, which you have touched on in your summary, would you agree with me that's a sensible approach, the activity status-wise in terms of for the reasons of certainty in relation to nitrogen outputs and process, that that's an appropriate activity status?

A. I think it's appropriate where one can pin down the level of effects by quantifying the amount of reduction that is required and I think that controlled activity is the appropriate lightest touch regulatory to deliver that – regulatory response to deliver that, yep.

Q. And for completeness and this will sound a bit obvious but I think it is important, for completeness you have made reference to effects which are all aware of as a phrase, that relates to the environment, and we know the environment certainly includes natural and physical resources but includes people and socio-economic matters as well, doesn't it?

A. Yes, it does.

Q. So the effects on people and communities and socio-economic matters are also relevant?

A. Yes, yes.

Q. And that careful balance, is the word we're allowed to use, that careful balance or incorporation of those various considerations, do you agree with me that it would be perverse to require growers to seek a discretionary or a discretionary activity where those appropriate matters are provided for in a controlled activity, ie, dealing with effects on the

environment including nitrogen leaching and people in communities in terms of process?

A. Yes, I probably wouldn't use the word “balancing” but I think where correctly applying all of the section 32, 32AA considerations, one should look at the least intervention, regulatory intervention and controlled activity is – meets that expectation here.

Q. And teasing that out, again emphasising those matters of section 32 and nitrogen, et cetera, what utility would there be in requiring growers to obtain consent via discretionary or restricted discretionary that could be declined?

A. I can't see one, which is the reason for the recommendation I made.

Q. (inaudible 14:59:35) here, especially since my friend has gone to great trouble with the provisions, this is the bit that I want to walk through in terms of getting some real sense of understanding and certainty, so Mr Registrar, for the Court, for the witness. Just while that is being handed out, and I might have to take you through this, so hopefully this is the easiest and most efficient way to seek your guidance and understanding by reference to provisions that are in print.

A. Thank you.

Q. The bit that probably gets me into trouble is this is the bundle version of the plan change.

A. Right.

Q. I just found this, so there’s an important caveat, there’s been a lot of development or evolution since then, but the core things are here. I will also be picking up with you on a couple of matters where there is still some distance between yourself and Dr Drury in terms of a couple of interpretations, sorry, definitions.

A. Yes.

Q. But I think the essence of the regime is here. So let's see how we go. So just to get our bearings, as we will see, the title, this is the proposed version, this is the one in the common bundle, left-hand side is the reference points such as rural 14.1, the content is in the middle column and the right-hand side is the common bundle references, so hopefully that is helpful. And I’m not going to go through every line, of course. So

in the glossary box, as you are well familiar with, just emphasising there the asterisk and the whatever the right description of the inverted or the upward pointing arrow is, it either references the fact that it's defined or it's from the RMA, et cetera, you're aware of that?

A. That's correct, it's very annoying, but it's – that's the position.

Q. And I want to start with the controlled activity, so that's familiar to most and what I can also add here is those green highlights are mine because I just want to draw attention to the definitions. So in the controlled activity rule, we have the overall heading, we have the activity and then in (ii) we have the reference to the CVG that you are well aware of. Then we go down to the next set which is conditions standard terms and you can see the preamble as to why these definitions come up. So the first one is "commercial vegetable growing" and then we get to "baseline commercial growing area". Can I just explain, at the bottom of the page in (iii) I have got commercial in square brackets because that's not in this version but it's my understanding that's what's being referred to?

A. Should be corrected, yes.

Q. Yes.

A. It's a defined term and it's "baseline commercial growing area".

Q. So what the repetition of the rule tells us as to why those phrases are relevant in this part of the controlled activity rule, ie, CVG and the baseline commercial growing area, if we go over the page those definitions are repeated and this is where I want to just talk, talk you through these. So I am well aware you know the definitions, but just to emphasise in CVG in the third line there's an emphasis on the whole rotation or cycle, so you're well aware of that, that has temporal and spatial aspects?

A. Yes.

Q. Below that "full sequence of crops", you're aware of the sequencing that is discussed in the expert evidence?

A. Yes and the importance of it for soil health.

Q. Yes. And then further along that line is a reference to "pasture phase". What's your understanding of pasture phase?

A. Oh, that land that may be cropped for some purposes periodically returns to being grazed or it may be that it's land leased from someone who is a

pastoral farmer for a more temporary crop-growing and then goes out of that activity, so yeah, a number of possible ways it could occur, but yeah.

MR MAJUREY:

You want to say something, Ma'am?

THE COURT: JUDGE SEMPLE

No.

CROSS-EXAMINATION CONTINUES: MRMA

Q. And so at any one point in time, recognising growing is a rotation, is a cycle, there can be areas, I will use the words that are active and those that are non-active, fallow, pasture, however you want to describe it. So you can't at one point in time say that this is the commercial vegetable growing area insofar as what is in crop because it's part of that cycle?

A. Yes.

Q. That’s fair?

A. Yes, that’s right.

Q. Yeah. And you come to the baseline and commercial growing area, and that’s defined, that's a conjunctive phrase. I want to come back to this because as you know in your evidence, you and Dr Drury have some views on this, but just to get our sort of setting, our setting correct.

A. Yes.

Q. We’ve got that commercial growing area and there it talks about the aggregated area of land utilised for commercial, is that another way of saying it's the active growing area or is it something different, do you think?

A. Well, I think utilised for, it needs to somehow demonstrate that it is actually used for it.

Q. Yes.

A. And I think that’s important in the context of the daylight that may be between us.

Q. Yes.

A. Yes.

Q. Thank you.

1505

A. Yes, so, no, it doesn't to my mind mean that it must be cropped actively at that time but it must be part of an established footprint that is, that encompasses that cyclical rotation concept, yeah.

Q. And the definition goes on with on the face of it a conjunctive element and includes all land, et cetera. I want to come back to this because there is that discussion with Dr Drury and myself so important that we allow you to ventilate that. The end of that definition is the word "enterprise", is that the same enterprise that's defined below or is that different?

A. It's meant to be, yes.

Q. I'm not saying it's not, I just want you to confirm your understanding. And so "enterprise" walks us through in terms of different parcels of land, different ownership, et cetera, et cetera. That's correct?

A. Yes.

Q. Let me come to policy 14.5, management of intensive farming land uses. Again the preface wording there is set up so that we can follow how you get to (d) and then how you get to (iii) and the definition of baseline growing area. That tells us that that whole regime, what is relevant in terms of what's being managed and what the leaching of nitrogen limits are, and that it refers in (iii) to CVG. As the green confirms, there's the baseline growing period and the baseline is the 12-13 season, that's correct?

A. Yes, and again it should say baseline commercial growing – I was just checking in the version that's been handed up to the Court and I just on the hoof can't check (inaudible 15:06:48) that is corrected.

Q. Then we go to policy 14.6, resource consent decision-making for intensive farming land, and again the preface wording is there in terms of resource consent considerations, what the council must consider, and then we come down to (f) and there in reference to intensive farming land what has to be had regard to and then we come down to (ix), the operational crop rotation requirements of CVG (inaudible 15:07:22) to avoid swirl borne diseases and maintain crop health, and then we have the definition of crop rotation that we've touched on as well. Again

recognising that's a live discussion as to what the final form of the definition should be, nonetheless, the basic ingredients for the definition are that there are systematic planting of different crops and sequence over multiple years?

A. Yes.

Q. And that picks up the discussion we had earlier in terms of it being a cycle over different seasons and different areas, is that fair?

A. Yes, yes.

Q. And the final section you'll be pleased to know in terms of this walkthrough in Schedule Y doesn't seem to be, if I am reading the various papers correctly, doesn't seem to be any difference of view for those who are actively involved in the discussion of changes to the schedule, is that your understanding as well? No one is seeking to change this?

A. Broadly. Broadly I think that's correct, yes. With the exception of, and it's not expert-based, the change I propose to the definition of crop rotation is mine.

Q. Correct, correct.

A. Yeah.

Q. So if we just walk through here, this is Schedule Y, it's part of the assessment in terms of nitrogen leaching risk, we walk through the different sections, the next section headed applying the nitrogen leaching risk scorecard, then part A, more scorecard matters. And actually I should've just highlighted, if we go back to the box with the four numbers in 2 there's a reference to subpractices and I want to just confirm something with you on that when we walk through the subsequent ones. So topic 1, nitrogen fertiliser practices, if we go to A across the table, points proportionate of productive area risk score, and one example is given here from the conclusion of why that it is nitrogen fertiliser below 100 kilograms of nitrogen per hectare, and then over the page we go to the top of 2, soil health, practices between crops, cover crop, and then down to fallow. Is it a correct reading of this schedule that the line items in topic 1 and topic 2 are the subpractices referred to earlier on?

A. I think so. It's reason –

Q. I just want to confirm that my understanding is correct.

A. Yeah, it's reasonably straightforward, yes, yes.

Q. And then we come to the two definitions of a reference productive area and fallow. Fallow is defined there. I just want to pick up from yesterday, I don't know if you were here for it, there was a discussion when my learned friend for HortNZ with Dr Jolly was talking about the different definitions and she made reference to that last part of productive area, the pasture for longer than two years.

A. Yes.

Q. I took from the discussion and I may have got it wrong and I don't want to be unfair to Dr Jolly that the reference to two years, she also had in mind for some of the earlier parts of the discussion we've had around definitions and in my attempt to sort of work our way through it, that's not correct, that that may have been a conflation unintended but I just wanted to check with you that this is the home of the two year component in this part?

A. Yes, I don't see it as a limit and I squared that away with my colleague but I don't see it as having the effect as a limit in quite the way that was suggested.

Q. You'll be pleased that we're off the table now and hopefully we haven't caused even more confusion around different documents. I want to now come to your evidence and I am referring to your reply evidence. Could you turn please to, to start with page 46, it's at 202.1188. Actually stay there but I'll just go back in terms of – so this is section F of your evidence, response to Horticulture New Zealand, there's a subheading "crop rotation" the previous page, on the page that I have you at "CVG extension" and then a couple of pages over "FMU scale crop rotation". I am going to start with "expansion". You have a number of paragraphs on that, I just want to confirm with you at your 157, paragraph 157, you say: "I acknowledge that neither Ms Sands nor Dr Drury has proposed any amendments to DV-PC2 to address CVG expansion." That's quite important because I again want to be fair to you, I took it from of your discussion that it could be seen to said in terms of what you were covering that HortNZ is actively seeking expansion as opposed to discussing a

wider context in terms of the place of the industry, is that a fair way to put it?

A. Well there was a surprising volume of discussion in Ms Sands' evidence about expansion and how to provide for it but when one gets to the end of that there is nothing actually proposed and I simply acknowledge that there.

Q. Yes, I want to be fair to you but also Ms Sands, you'll appreciate and this has a national context, doesn't it, of the important of the production of fresh food, you've probably seen the letter from the Hon. David Parker, where the government was also raising the expansion of commercial growing areas.

A. Yes I have.

Q. So it's not surprise to have that discussion, given the importance of this region for fresh food.

A. No, not a surprise at all, no and I do recall discussions at the time of the council on this topic, so it's something that has been of interest to horticultural interests since the One Plan was contested, again in plan change 2 and there was an acceptance that given the limited of plan change 2, that was a matter for the freshwater planning instrument and I'm looking forward to the discussions that we about how to reconcile those different values.

Q. So again would it be fair to say it's not inappropriate for HortNZ and in fact helpful in the sense of the current setting and the importance of the industry, where things are heading to have that discussion but also been very clear as you've acknowledged that they're not actually seeking anything from this plan change on that matter?

A. I think it's helpful to clarify that, yes.

Q. If we then can go to "crop rotation" and this picks up as I alluded to earlier on that there is a bit of difference.

A. Yes.

Q. And if we could just walk our way through that. So we're at 154 of your evidence and in that part of the paragraph on page 46, so that's 202.1188 and there you discuss a number of matters and leading to your conclusions. I'm just thinking of the best to set this discussion up. So

you've got your definition, sorry you've got in your page 46 your proposed changes.

1515

A. Yes.

Q. Do you have Drury's evidence handy?

A. I'd have to navigate.

Q. It's on here side by side so we can all see. I was going to do this on my table but I ran out of time. If you go to page 12 of Dr Drury's evidence, reference 202.1216 and that's in her paragraph 32. It hasn't got a heading, it's the one in the middle of the page. Do you have that?

A. I'm reading from the comparison under the definition of crop rotation.

Q. Hopefully that's showing the same things and do call me up Ma'am if I'm confusing things. I don't know how you're one is set up, but I've got on my left-hand side Dr Drury's evidence and on yours the right-hand side. It doesn't have to be that way of course.

A. Conceptually similar.

Q. So there's a couple of things going on with the respective approaches that you have and I'll hopefully do the easy ones first, if there are any. If we start in the second sentence and Dr Drury's version, this process helps maintain, and in my version in yellow highlight, soil structure and nutrients, et cetera, et cetera and it goes on. As I read your para 154, I think you're acknowledging that that's supported by Dr Drury, Mr Barber and Dr Jolly, is that correct?

A. And me.

Q. And you?

A. That second sentence.

Q. You're happy with her changes in the second sentence?

A. Yes absolutely, I don't think there's any dispute about that.

Q. Can I go to the next one to the sort of three parts of this and at the end of the first sentence, again in yellow and what I have, Dr Drury has in hers after the phrase "pasture phase or fallow period", and again I think, and I might have this wrong, that –

A. I'm perfectly comfortable with those words, yes.

Q. So clearly there's a difference in terms of the changing land parcels and just to kick off this discussion, as I understand it, and the track change format hopefully confirms this, that phrase came from the decisions version, the changing land parcels.

A. Yes it did, bar the spelling error, yes.

Q. Yes and the spelling error and I've got a note here and apologies if it's not a doctor or professor, I've got Mr Hodgson and again somebody called Mr Keenan, apologies if they're doctors or professors.

A. They're not.

Q. And yourself, we're agreeing some of this wording, one of which was the changing land parcels.

A. Yes, that's correct.

Q. Yes. So is it correct then that in the event of ongoing process, ongoing evidence that you've reflected on that phrase and want to change it now?

A. Yes, and the discussion in the evidence of Ms Sands and Dr Drury, did raise some questions about the direction that people were thinking and I would characterise the amendment that I've proposed, which is to insert the words "comprised on the baseline commercial growing area", as one of those polishing amendments that occur to one through a process that may or may not be helpful.

Q. On one reading of your para 154 and I was going to say I think it's the fourth complete sentence in your 154 where you say: "I agree with Dr Jolly that this reference should be removed to avoid confusion about what is crop rotation and what is CVG expansion", and on that, and this harkens back to some earlier discussion, is that because you have an apprehension that somehow that wording allows for expansion when as we agree with each other no expansion is actually being sought?

A. Or that there may be confusion about that.

Q. And so in your mind, to avoid that confusion, replace "changing land parcels" with the "baseline commercial growing area"?

A. Yes, comprised in.

Q. Comprised in.

A. I think that's – and I'll be honest, I'm quite agnostic as to whether it appears. I think it's helpful because the rule requires it, the policy requires it, whether it's stated in this definition or not.

Q. Yes, yes, yes, that –

A. So it's –

Q. Thank you.

A. – it, I felt, was a consistent and helpful addition.

Q. And that nicely brings us back to that definition which I alluded to we'd come back to, so if you have your –

A. This is baseline commercial growing area?

Q. Yes, so there'll be different places, one of the places is back on the table that I handed up at page 2. Just let me know when you've got that in front of you?

A. I have it.

Q. And again recognising there is different iterations of this, but the one you have before you which is from the common bundle, I will read it out just to remind ourselves: "Baseline commercial growing area means the aggregated area of land utilised for commercial vegetable production in the 2012/2013 growing season and includes all land under the control, owned or leased of a single grower or enterprise." And if you hold that thought, and go to your paragraph 163, and to be fair to you it might be helpful for you just to re-read that to yourself to remind yourself what's been said there?

A. Yes.

Q. Thank you. You say in the second sentence: "The definition includes all land including leased land under the control of the grower or enterprise but the land must utilise the commercial vegetable production." And this links back to your discussion around what "utilise" means because as always with definitions and like there is different ways of reading this, so on its face with that conjunctive element, whatever "utilise" means, there are two parts, it's what utilised in that period and includes all land under control, owned or lease of a single grower or enterprise. On its face, that second part isn't subject to the first part, I know we can always read things in a different way, and perhaps talking about this, an example might be

helpful. So if we remind ourself, crop rotation cycles are over periods and states, in terms of an example that covers the second part, land under control, owned or lease of a single grower, I'm going to make up some numbers for a hypothetical, let's say that that's 15 hectares and over time there is cycling of rotations of 15 hectares, but at one point in time what is being utilised, if "utilise" means the active area, is 10, then that definition would cover the 15 not the 10?

A. That's correct, yes. What it wouldn't cover –

Q. Yes, of course.

A. – is the extra five not included in the baseline commercial growing area, that might be occupied in addition to, at some point.

Q. So you just said something there which I thought I may have misspoke, when you say "the extra five" did we agree –

A. Imaginary, we didn't, but imaginary, so it includes the 15 – yes, which is a specified area which may not always be 15 hectares of leafy lettuce.

Q. Thank you.

A. Yeah, that's right

MR MAJUREY:

Hopefully that's clear, Ma'am?

THE COURT: JUDGE SEMPLE

Yes.

CROSS-EXAMINATION CONTINUES: MRMA

Q. Thank you. I am having more and more senior moments as I am getting older.

A. I am sorry to prompt that.

Q. So to round that out, come back to what you intend by the definition of crop rotation, I know it's not going to be in here, but by moving from changing the land parcels to the definition, it's the 15, not the 10 of that hypothetical?

A. It's the 15, yes.

Q. Yes, thank you.

1525

A. It assumes the 15 is a defined area?

Q. Yes, yes, yes.

A. Yeah, mhm.

Q. When you say “assume” is that because of the way I had set up the hypothetical? I just want to make sure that we’re not apart in what we think we are saying?

A. I hope we’re not. It's a defined area, yes.

Q. Yes, okay, thank you.

A. And I say it because it was a subject of some cross-party discussion at the time of the hearing and I know that that was the intention, so I’m curious if that’s not what the outcome is.

Q. There’s – let's again tease it out because coming back to your evidence, there was just the potential for some distance, so if you have your 163 still in front of you, if we continue through, your last sentence on 163 says: “The definition attaches the baseline commercial growing area and therefore any consent to those specific site or sites.” Is that another way of describing the 15 in our hypothetical?

A. Yes, it is.

Q. Yes, thank you. And just one more in that vein, over the page at 164, Dr Drury’s proposition would allow CVG crops to float within the sub-zone or between sub-zones, that’s a different topic when you’re talking about that as opposed to what we’ve just been discussing?

A. Yes, if our understanding is as we have agreed, yes.

Q. Yes.

A. So it's helpful to clarify that.

Q. And perhaps just to really road-test this, you’ve reference Dr Drury’s evidence at para 38, so I just want to read out loud what your 164: “Dr Drury’s proposition would allow CVG groups to float within the sub-zone or between the sub-zones between different sites. For the purposes of PC2, Dr Drury’s approach would potentially involve expansion into new CVG areas. Dr Drury recognises this at para 38 and acknowledges that it should be considered in a future plan change.” In there 38, Dr Drury says: “In a future NPS-FM plan change it may be

appropriate to consider sub-regional scales such as the FMU scale as has been sought by Hort NZ in other plan changes; however, we consider this out of the scope of PC2." So she's not actually seeking that which you seem to be fearful of?

A. Not fearful of it. I accept that, yes. It was an unusual piece of evidence in that regard, to talk about it but not propose it and so what we did just then was we moved very quickly from the definition of crop rotation and the 15 hectares being site specific to a discussion under the heading of "FMU scale crop rotation" which I think is, is the different concept that Dr Drury is signalling only for discussion in the future freshwater plan.

Q. Yes, I understand that Hort New Zealand gets nervous when they hear the word "site specific" insofar as again –

A. I know they do.

Q. – what – and because what I was going to go on to say, on one reading that could get down to specific parts within the 15 hectares, specific crops, as opposed to what the definition is actually covering?

A. Yes.

Q. You understand that?

A. I understand the concern, but it was never the intention with the way that this framework was established, yes. As in you can only ever grow lettuce in this location.

Q. Lettuce, other vegetables or even mixed uses in terms of pastoral –

A. That's right, it's not intended to prescribe or proscribe.

Q. Right. Thank you very much. Thank you.

COURT ADJOURNS: 3.29 PM

COURT RESUMES: 3.49 PM

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon, Ms Foster.

A. Good afternoon.

Q. I want to start by taking you back to the mischief that Plan Change 2 was supposed to address and it would help if you have before you Dr Daly's evidence, which is in volume 2 tabs 1 and 2.

A. I have my own copy of it but it is the same, yes.

Q. Does your own copy have the page numbers, the court bundle numbers on it?

A. The reply does. The evidence-in-chief does not.

Q. Right. I will just wait for the Court to get that.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Remind me, what are the numbers?

Q. No, it's fine, I can take you through it anyway, Ms Foster.

A. Thank you.

Q. If I could take you first to attachment A –

A. Oh, that's – I'm going to fall down now. I do need – I haven't got all the attachments, so help me with that?

Q. So it's volume 2, tabs 1 and 2.

A. Book?

Q. I'm not sure what the book number is –

UNIDENTIFIED FEMALE SPEAKER: (15:51:14)

Volume 2, book 1.

CROSS-EXAMINATION CONTINUES: MS ONGLEY

A. 1, thank you.

Q. So I'm wishing to take you to attachment 8 in Dr Daly's evidence-in-chief at 201.0030?

A. I have it.

Q. So there is the letter to the Ministry for the Environment and this followed the 2017 declaration proceedings, didn't it?

A. Yes.

Q. And if I can take you to page 201.0052. Now Plan Change 2 was precipitated by the need to recalibrate Table 14.2 and the findings in this letter, is that understanding correct?

A. That's my understanding of what drove it, yes.

Q. So if we go to the conclusions there, and I did take Dr Daly through this, but the problem, the policy barrier as we are calling it is referred to in paragraph 8.2: "The apparent role in the policy regime does not seem to anticipate that applications can be made which do not comply with the maximums in Table 14.2," et cetera, and then paragraph 8.3: "With respect to a way forward, an addition to an update to the Overseer table amendments are required to regional plan policies 14.5 and 14.6 as arguably these policies do not give effect to the higher order RPS policy 5.8." So as we have established, it was not initially intended to alter RPS policy 5.8 and it goes on to say that: "Policy 5.8 requires that the nitrogen leaching maxima are achievable on most farms and that appropriate timeframes for achievement should be provided where there would be large changes to management practices and/or high levels of investment for such activities in order to achieve the maxima." So if I can call that the mischief, can I take you to Dr Daly's reply evidence at 201.0114? Sorry, 115. I've double-printed my pages. So there, this is the precursors to the section 32 report and involves consultation with tangata whenua amongst others, and there it was proposed to alter policy 5.8 with some limited exceptions, and this is in subparagraph (a)(2)(a): "Transitional provisions to provide exceptions where high levels of investment are required, all persons wishing to convert to alternative non-intensive farming land uses", and as I took Dr Daly through, I don't think I need to with you, in later iterations, prior to the section 32 report, it was also proposed to delete the assessment criteria that related to whether or the extent to which one diverged from the maxima and replace that with a reference to best management practices, is that your understanding?

A. Yes, amongst other things, but yes.

Q. So that's where best or good or best management practices started coming into the thinking wasn't it?

A. I thought there was reference to it previously in policy 5.8. There's an expectation that all IFLU adopt good management practices.

Q. Yes, that's the existing 5.8 in the One Plan isn't it?

A. That's right, and that's still there.

Q. So when you talk about the intent of Plan Change 2 being threefold, firstly to recalibrate Table 14.2, secondly to wider the discretionary activity pathway and thirdly, to place more prominence around good or best management practices, can you just explain how that third item was outlined in the notified version?

A. Did I say that?

Q. Well I read it, well what's your view on the –

A. I characterised the third aspect as being tightening the policy framework within rights on GMP.

Q. I'm just checking the section 32 report there. In the section 32 report at 301.0048 it says: "Horizons proposes to address the issue through Plan Change 2. It's aim at enabling a return to business as usual regulation of existing intensive farming land uses as soon as reasonable practicable. It does so by (1) updating the CNLM, (2) reinforcing GMPs as part of the IFLU and (3) providing a workable pathway." So that's where I had understood those three aims initially.

A. Okay.

Q. And initially the workable pathway was the discretionary pathway and the GMPs were to be considered under the discretionary pathway?

A. For those that, yes, that had to adopt the discretionary activity pathway, that's right but also in the framework of policy 5.8 they were an overriding expectation on all because 5.8 refers to all IFLU that seek to use the rules in part 14 of the plan, yeah.

Q. So as I understand your evidence and you've set out this in your summary statement as well is that the alternative controlled activity pathway was developed to put parameters around those who couldn't meet Table 14.2 and submissions at the council level hearing that it was going to be

uncertain on a case by case analysis as to what those who couldn't meet Table 14.2 would need to have to do.

A. Yes essentially, that was one of the key reasons.

Q. And I think the other day I called it objectifying the parameters but I should have said placing some objectivity around them would've been a better phrase.

A. Yes I did wonder at that expression but quantifying them.

Q. Yes. So in terms of the structure of the Plan Change, you've also said that you don't think that there was ever an intention to depart from the One Plan's LUC natural capital approach.

1600

A. No.

Q. Do you think that placing another controlled activity pathway alongside Table 14.2 fundamentally departs from the One Plan's LUC natural capital approach because it places a separate controlled activity pathway, right alongside where the One Plan dealt with the LUC natural capital approach?

A. And I suppose I'm heartened by Professor Horne's evidence in that regard in that he doesn't see it as being completely divorced from natural capital approach, in the sense that LUC is a proxy for natural capital, a proxy chosen for that purpose and particularly for the risk framework that he proposes, that's a different proxy format.

Q. Can we just talk about the specified reduction pathways to start with.

A. Yes.

Q. So if we do the specified reduction pathways, do you agree that that is a form of grandparenting?

A. I've said in my evidence that I think that it can be seen as a form of it, because the baseline is created by what you're doing that, so that establishes your baseline. I don't think it's grandparenting in the strictest sense where, for example you establish a right to operate your historical levels and you can leach up to that for all time, so the requirement is to proportionately reduce from there, so in that sense I think it's not strictly grandparenting.

Q. And are you familiar with the 2012 Environment Court's decision on One Plan?

A. Not very, I have read it a couple of times but yeah it depends what one is reading for, yes.

Q. So do you know that in that case Fonterra suggested an approach where for existing dairy farms the focus of reducing N leaching would be on the top quartile of farms assessed on a regional basis and they would have to adopt tier 1 mitigation options?

A. No I'm not intimately familiar with that.

Q. And are aware that this was referred to in the case as a hybrid form of grandparenting?

A. No I haven't come across that expression and that detail.

Q. So if we just look at the specified reduction pathway that's proposed here, do you agree that if you place that pathway alongside Table 14.2, you are departing from the One Plan's natural capital LUC approach because you're placing a hybrid grandparenting approach right beside it?

A. I'll agree with you that it does place alongside the Table 14.2 route, an alternative that's different from that, yes. I don't think it replaces it.

Q. Does it undermine it?

A. I don't think it undermines it to the extent that as Professor Horne's evidence I hope demonstrates, that it forces a scale of change on farm that is the same or similar to what would be expected to result from Table 14.2 changes. I think if you look at what the – if you see those mechanisms as a means to the end and the end is stated in the policies as reducing nitrogen leaching and judge it in those terms, then I don't see them as achieving very different outcomes.

Q. Professor Horne's evidence on the 20% reductions would bring people closer to meeting Table 14.2, somebody reading Plan Change 2, if it has Table 14.2 and then the specified reduction pathways, would not see that evidence would they? All they would see is an LUC table with nitrogen entitlements and next to that, what I'm calling a hybrid grandparenting approach. They wouldn't necessarily understand the evidence behind why the second one had been placed there.

1605

1605

A. Well, I think in a practical sense they might be more interested in what it demanded of them and that would play out on an individual farm basis and for some farms the – there wouldn't really be a choice, there may be some in the whatever shaped curve it is of practice and N leaching where adoption of mitigation measures, GMPs, BMPs, call them what you will, will – and they don't – they not linear, as I understand it, they will deliver chunks of N leaching reduction benefits, so they occur in chunks and you might adopt the best bang for buck ones first and get a big chunk, like get smaller chunks as you proceed through the list, and they might get you close to for some people, but not all the way there, and for other people it will be – it will land you in the same place, so you'll qualify under either route. But for some, it will get you close but not completely there, and so for those I accept that they might be able to avail themselves of a consenting pathway that places less, slightly less demands on them than Table 14.2 would, yes.

Q. Okay, I'm not quite sure whether you're answering the question that I asked.

A. I'll try again.

Q. Okay, I will just read you something from the One Plan decision which was that Dr McKay's evidence was accepted, that the LUC natural capital approach sends timely signals, it establishes a target for mitigation practice and defined a threshold above which the capital investment and increasing production must be extended to mitigation technologies including significant modifications to farm design. And so what I am proposing is that that Table 14.2 sent a signal for the future and it was a signal around, at that time, an allocation approach and what I am putting to you is that the controlled activity pathway of specified reductions confuses that signal because it puts a hybrid grandparenting approach right next to an LUC natural capital approach?

A. My view is that in a practical sense it sends the same signals of what is required.

Q. Well, that is in a practical – you're saying a practical sense, it sends the signals that you should adopt GMP and BMP on your farm, is that what you're saying?

A. That you have to reduce N leaching, yes.

Q. Okay, because the LUC natural capital approach was not necessarily all about that. It was also about directing intensification to those soils that had a higher degree of product – productive capacity, not rewarding the biggest polluters, not disadvantaging owners of undeveloped land, so they were quite – they are quite different?

A. Additional purposes, I think.

Q. The additional purposes of the natural capital approach –

A. They're additional purposes, yes.

Q. – are quite different from the hybrid grandparenting approach, aren't they?

A. Ah, they are – I think they're additional to those and the, the alternative controlled pathways that I have proposed do simply respond to the imperative in the policies to reduce, to regulate, in a meaningful way, workable way, and reduce N leaching, yes. They don't address productivity.

Q. Well, I'm putting to you and use the word "schizophrenic" that the two controlled pathways provide a bit of a schizophrenic message to the community in circumstances where in these catchments there's going to be a lot of nitrogen reduction required and Horizons is about to embark on a NPS-FM compliant plan change where it will need to discuss these very issues. So I am putting to you whether it is a good idea to send such a contrary message in the planning framework at this point in time?

1610

A. The way that Plan Change 2 has been framed in the section 32 material, throughout the hearing, through the pre-hearing engagement, and again through these proceedings, is as an interim to address a particularly discreet issue. I don't think there's any suggestion that that should be taken as signalling what's enough for the foreseeable future beyond that and I know that that is – I have a role with Oranga Wai in a peer review and mentoring capacity, so I'm aware of the messaging that is being

developed and the council is at a stage of engaging with its community and slightly frightening the horses on the scale of the change required in the future, so there should be no illusion as to the additional measures that are required on top of anyone who has achieved a consent once the freshwater planning instrument and it's regulatory, non-regulatory initiatives becomes more settled. It's about – I think that that – it's an uncomfortable message, there is resistance to receiving it, but I think there is clarity forming in the region about that fact.

Q. Wouldn't it be better to get farmers and growers on the path to achieving GMPs and BMPs in the meantime and before that process through a discretionary activity pathway?

A. Well, I considered that in detail for the first instance hearing and concluded that that, as it was worded at the time, the policies and the framework that shape the decision making under that were distinctly unhelpful in providing signals about just how much change was required, how much reduction was required and the – that's whence came my controlled activity alternative suggests, so I don't know that it is a question of the activity status as such, as the clarity around what is expected. And that's I think crystal clear in the alternative –

Q. We have the similar –

A. – specified reduction pathway.

Q. Right. We have the similar situation in the Waikato Regional Plan don't we where we have words such as "reduce to as low as practicable" in a discretionary pathway that hasn't been defined, that's right, isn't it?

A. The expression is used in Plan Change 1, yes.

Q. Yes. And so don't you think that as soon as you start putting – and I know you're relying on submissions that were made at the council level hearing including from Fish and Game, but once you start putting numbers on these things, you start creating expectations for the future about what is going to be required. Isn't it better to leave that to the wording in the discretionary pathway for the moment until we can make a fully informed decision about 20%, 35%, et cetera?

A. No, I don't, I don't agree, I don't agree that that's – because the, the – at the crux of that, was your concern about expectations, so it's the, the

consenting process that delivers a consent with whatever terms, that's what creates the expectation, so I think it's around how that process is managed really, so…

Q. Isn't the expectation though already there, and that expectation is Table 14.2 recalibrated and then you have assessment criteria where you can look at, and this is assuming Overseer continues, where you can look at the extent to which you diverge from that? I mean that expectation was already there?

A. Yes, yes. And I agree with you. What you could do is you could create a policy framework that says these are the specific parameters of nitrogen leaching reduction that we are going to require, so then I ask myself, what is the best activity status that goes with that, and I come to a different conclusion from you that actually the lightest touch for achieving exactly the policy outcome is not discretionary, it's control for efficiency and effectiveness reasons.

1615

Q. Right. Now this issue has also come up in PC1 as well, hasn't it, that there is an issue with making more consents-controlled activities in that with a controlled activity you can't place conditions on it but undermine the very activity that's been applied for, have you considered that in your thinking about whether these activities should be controlled?

A. Yes, I have, and the SIN modelling tells one what the result would be if everyone performed at that level, if everyone adopted those reductions, and in addition to or alternative to Table 14.2 and I think that gives you the picture or the worst case scenario so that people, if one applies a controlled activity to qualify you have to detail through your nutrient management plan what your commitments are, what the levels of reduction would be under one approach or where you will be in relation to a target under the risk approach, and that – I don't see that there's any scope through conditions to subvert that and I don't worry about it because the SIN modelling took the maximum or the worst case and modelled that, and it tells me that I get very similar environmental outcomes in terms of SIN to strict application of Table 14.2. I agree with

you, there is that feature of controlled activities that you are limited in what you can impose by way of condition.

Q. Well I go back to this idea of what the natural capital approach was about, and whether you should place a controlled activity as you're proposing on the basis of what appears to be microeconomic analysis of what will affect the financial viability of farms, versus 2012 more macroeconomic considerations such as what will be better for the region in the long-term to achieve water quality targets?

A. There's a lot in that.

Q. Yes.

A. Just perhaps help explain what you mean by in reliance on microeconomic analysis?

Q. All right. So part of the rationale through the council level hearing was, and Mr Mayes has provided evidence on this, was the impact on individual farms, the economic impact on individual farms.

A. It was a consideration in looking at who would be impacted and how but I think the decision about what water quality SIN improvements can be achieved by tightening the screws on – the settings on farming, farm practices and that I think is better explained in the evidence of Professor Horne and it came about from that. It wasn't really a – it wasn't so much a cost consideration as in not being worthwhile after a certain point, yes.

Q. And the natural capital approach in the One Plan though, part of the rationale was that it gave an optimal utilisation of a finite resource, which was soil. Are you aware of that rationale?

A. Yes, I am.

Q. And by directing nitrogen entitlements to those on the lower LUC 1, 2, 3 soils it would enable economic growth as well as achieving in the longer term, not necessarily 20 years but in the longer term, the SIN targets, so it had a dual purpose?

1620

A. Yes I understand that. It represents how one optimises growth from a pastoral systems, so it assumes that that's the optimal, basis for growth. I think the overriding evidence that I would probably draw on is the

evidence which is not before this court but was before the council level hearing and that is what is the impact on regionwide growth potential of the different scenarios and the effect was neutral because it would inhibit or enable growth because if the money is not spent in one part of the economy, them growing, it would be spent in another, so the impact is neutral. It provides equally for that potential for growth.

Q. All right, so that evidence isn't before this –

A. Possibly not, no.

Q. And they remain two different approaches and if you're going to change from one approach for a plan change that initially didn't intend to interfere with that approach, you should involve the whole community in a discussion in the Oranga Wai process, shouldn't you?

A. Well I think there's been pretty extensive discussion with the community about this plan change, so I think the luxury of time, different imperatives one might and these are decisions well beyond my pay grade and before my time about the need to progress at the time the importance of regulating, those who had for whatever reason, being able to – being not regulated and I think that is still the situation. I think the bigger issue is if you helicopter out and look at what, and there's two ways of looking at this too, but if you look at what the in river SIN reductions that are achievable from regulating this remaining body if existing intensive farming land uses, it's relatively small regionwide and if one can progress on that, I think that that would be a positive outcome, but it's progressing at this time, I don't see it as a major regionwide issue.

Q. Okay, just finally on that, are you familiar with this page which is –

A. It looks like the cover of the section 32 report.

Q. It is the cover of the section 32 report, yes.

A. Yes, I've seen it, I'm not familiar with it. Shall I get it?

Q. Yes.

A. Where is it?

Q. So it's 301.0043. So that was the initial proposal for Plan Change 2 and it referred to whether you met the recalibration Table 14.2 nitrogen leaching. Nobody reading that would have anticipated that there was

going to be a move away from the Table 14.2 nitrogen leaching approach in the way that has happened, as this has morphed.

A. I'll accept that. This diagram triggers my aversion to oversimplifying things. I think it oversimplifies a number of the concepts, even in the publicly notified Plan Change 2.

1625

Q. All right well I'll leave that then.

A. Not my brilliant suggestion or my authorship I have to say.

Q. Well I'll leave that there thank you. Just talking about the, I don't have many additional questions, but the government advice to regional councils on the use of Overseer following the Science Advisory Panel's report and we've had a lot of discussions about what absolute number means when they talk you shouldn't use Overseer as an absolute number. You sat through the Plan Change 1 hearings didn't you in the Waikato?

A. Yes, a large part of it.

Q. And you heard when Mr Willis gave his evidence?

A. Yes, most of it.

Q. And he's been involved in some of the Overseer EAG.

A. Yes he has, but I'm not sure –

Q. Expert Advisory Group, so did you hear him say that he didn't think that using Overseer as an absolute number at the gateway is such an egregious use of Overseer as other uses?

A. I don't recall him saying that, but I probably wouldn't disagree with him and that's because I think that as used in Table 14.2 for example it acts as a gateway to a discretionary activity and when it's applied to a controlled activity, the application it sets a limit, yes, it sets the limits that you must be under but also it logically follows that whatever you propose is a limit and so the output is used as a limit in that sense and I highlighted that in my statement of reply.

Q. So your issue is not so much the gateway as such, it's once you get through the gateway and placing that as a limit on a resource consent condition?

A. Yes, it's the way that Table 14.2 sets an absolute limit on you as a controlled activity and the process for you carries whatever your limit through and it's really a question I think of risk around how secure an approach like that is at the moment and I've highlighted the uncertainties of this. It is what it is for the moment and the picture is emerging and when we embarked upon this and the happy news was delivered shortly after the PC2 decision of the whole model review, we didn't have guidance at all, we had choices to make in the absence of guidance and it's been a risk management process.

Q. In the 2017 declaration proceedings decision, I'm not sure if you're familiar with it.

A. I have it, I wouldn't say I'm familiar with it.

Q. Well one of the declarations made was about the conditions that should be imposed on consents issued under One Plan for intensive farms and around having a condition that framed up the meets and bounds if you like of what you're allowed to do and one of the declarations said that should be your Overseer number. Now with the government advice, have you considered a solution where once you're through the gateway, you frame up the meets and bounds of what you can do through a different way, using an Overseer number along with other controls?

A. Well in fact that's really what's proposed through the alternative controlled activity pathways and my preference would be for that and that's in the way that a nutrient management plan is applied. That must be part of your application. It defines not a number or even a risk score but a set of practices and commitments to be implemented over a particular timeframe and I think that there are frailties in enforcing a model output number as a compliance absolute because quite simply you can put the same numbers in and get the same answer out. The more meaningful way of monitoring the success of the regime is to monitor the actions in the field. So from the outset of Plan Change 2, that has been what I have recommended be included and I think it's superior to using any sort of model, output or proxy as a compliance test.

1630

Q. Some people call that input controls, don't they, and it does reduce the flexibility of what can be done on farm?

A. Well in this sense it's the input controls that the applicant has proposed, so they are the mitigation measures and controls that are assessed as achieving the sufficient reductions to get you through, they're committed to through a nutrient management plan which could be a chapter of a freshwater farm plan and so they're not – in that sense they are obliquely imposed, they are the ones that are volunteered by the applicant, so…

Q. So if they're changed, would you consider that you would have do an application for review of consent conditions?

A. They become the consent trigger, so it would be sort of the usual case of how that plays out, they're either complying or seeking to vary it, that's right, yes. There are provisions in the definition of nutrient management plan and in the conditions of the rule as well around review of nutrient management plans. Those are really requirements that are going to be overtaken by the requirements of the freshwater farm planning regulations for certification and review, which is a little bit handy for Horizons. I think that kicks in in April next for them but I think they'll be superior to what's in Plan Change 2.

Q. In terms of getting farmers on the path to improving on farm practices to achieve contaminant reductions, the freshwater farm plan regulations which did you say become operative in Horizons in April?

A. I understand that from Ian McNabb who is the rural advice person at Horizons, so yes, quite close to that process, April, yes.

Q. That's going to achieve that as well, isn't it?

A. Yes, it should do, yes.

Q. Quite apart from this framework?

A. That's right, it should be, yes. IT should have a wider brief of course as well in relation to riparian management et cetera, yeah, stock exclusion.

Q. So just getting back to this consent condition issue, your nutrient management tools that support your farm plans and one is what we've been calling the NRAT, that's one option, they could be used in that fashion when Horizons is consenting IFLUs?

A. Yes, should be.

Q. Yes, and there could be a range of different options as well as the NRAT, you could leave it open, so that you could use the MFE risk took if and when that becomes available?

A. Yeah, I think that they are – I see them as assessment tools and I seen the nutrient management plan or the set of commitments to how you are going to achieve what you've assessed as being quite a different thing. One informs the other but they have a different purpose. So the nutrient management plan is a statement of commitments for how you intend to achieve your assessed, however that's assessed, level of risk.

Q. I see.

A. And in that sense Overseer is a risk assessment tool.

Q. I see so when people do their nutrient management plans, they can use different tools to do what Dr Dewes calls scenario testing?

A. Yes.

Q. Which informs their nutrient management plan.

A. Yes.

Q. And that doesn't prevent the use of Overseer at a gateway and then you translate that into actions in the nutrient management plan?

A. Yes, that's right and sometimes that will be an exercise in making transparent what is currently opaque through the Overseer modelling which can be a difficulty for enforcement, compliance enforcement, yes.

Q. Just finally, don't you think that with regards to naming the NRAT in the plan, and I'm sorry to call it that but that seems to be what people have been calling it.

A. That's right, and in today's context as well, I don't want to panic you but I've been doing my own RAT testing, but they're negative tests but we don't want to call it a RAT.

1635

Q. Don't you agree that it would be better, rather than have a bespoke risk assessment tool here in Horizons to have a national tool which MFE is developing and that is proposed to be adjusted on a region by region bases but so that New Zealand is using the same tool?

A. If it delivered what was appropriate, fit the bill region by region, I would agree with you. There is some doubt afoot about that and I'm not the

person to answer the questions about technically whether what's being looked at the moment does that, all I know is it isn't really there yet to be examined and Horizons hasn't felt the luxury of waiting so they've gone on, and you heard Professor Horne's answers about how happily have or his team has gone through the same exercise. So I think that were something to emerge, it's not going to be this side of Christmas apparently, according to a communique this week, then there would have to be a process of tailoring and testing to see that it fits particular circumstances of a region, so the jury is out.

CROSS-EXAMINATION: MS WRIGHT

Q. After Ms Ongley's detailed questions I don't have too much to follow up on. The first group of questions, I'd just like to follow up on some of the comments Dr Snelder made this morning, were you here for those?

A. Yes, I heard Dr Snelder.

Q. And it's also in his reply evidence, but you would've heard him confirm that from a water quality outcomes perspective, the best option is consented at consented levels and everyone adhering to Table 14.2.

A. Yes, and that's reflected in the table of the results of the scenario modelling, yes.

Q. And then you will have heard him answer in response to some questions, that the second best option from a water quality outcomes perspective would be consented at consented levels Table 14.2 met by those who can meet it and then the ability to drive everybody as close to Table 14.2 as you could. Did you hear that?

A. Yes, I heard him say that, yes.

Q. So a framework which was Table 14.2 and a discretionary activity pathway provides opportunity to do that, doesn't it?

A. In an uncertain way I think way and that's reflected in the water quality ESA modelling as well because when that process was embarked upon, it wasn't possible to say from the Plan Change 2 policy framework, how many existing IFLU who didn't meet Table 14.2 would have then discharges at different levels. So they modelled a number of them but the compelling finding from Dr Snelder's work is that all of those, some

maybe marginally more, marginally superior in water quality terms and they're all in the same ballpark is what I took from it.

Q. You would've also heard Mr Snelder explain that you can have localised effects from ecosystem health that can be increased from say, if you were looking at reductions, so a 20% or 40% reduction there could be a notable localised ecosystem effect difference, couldn't there?

A. That's right and that makes sense when you think about having identified a targeted water management subzone, if you can achieve reductions there, it will be felt most strongly, you'd expect, close to home.

1640

Q. And so a case-by-case assessment to allow you to determine if you needed to drive past that 20%, a discretionary activity will allow you to have that flexibility at the level of position. Is that fair?

A. It would, it would allow you to do that, yes.

Q. I just want to ask a few more questions about Table 14.2 and they sort of follow on I guess from some of the questions Ms Ongley was asking you in relation to the LUC, and as you covered with her, the effect of the table is that it directs nitrogen leaching to different land classes, so it's focused on land class, it's not dependent on land use, is that correct?

A. That's right.

Q. So that makes it easily transferrable to other zones outside the targeted water management subzone, doesn't it?

A. Yes, if that – on investigation, if that's appropriate, yes.

Q. And it would make it easily transferrable to other land uses either within the targeted water management subzones or outside, if you took it outside also?

A. With a bit of work, I'm sure.

Q. And that's a feature that supports and reflects integrated management, isn't it?

A. It's one aspect of integrated management I think in this context, yeah. But yes, it could contribute to it, yes.

Q. And you've already covered with Ms Ongley that it encourages those I guess higher leaching to the better quality soils in terms of their LUC rating?

A. Yes. It was interesting to hear Professor Horne say that in particular in his risk scorecard that he might well have replaced his poor available water with LUC categories because the central driving leakiness is represented in the same way, so that was just interesting.

Q. Do you think that's an efficient, an efficient use of resources?

A. Yes, yes, it is.

Q. And this approach which focusses on land type as opposed to current land use, it's equitable isn't it in the sense that it treats all land uses the same – land types the same, all land is treated the same?

A. Yes.

Q. While we're on the controlled activity pathways I'll just ask a couple of questions about that, the 35% for CGV – CVG, goodness, it's late in the day, apologies. In response to questions from the Bench yesterday Dr Jolly describes the 35, the work behind that 35% as being pretty coarse, were you here for that?

A. Yes.

Q. Do you think it would be fair to say that that's not really a sufficient level of confidence in a number being set to determine nitrogen leaching as of right in the sense that you can't decline resource consent when you're dealing with significantly degraded catchments?

A. Well it was – I think she gave part an answer. I'm aware that the 35% was at the lower end of the range that she had recommended as being achievable and was modelled as achieving certain SIN water quality outcomes, and it was at the top of a range from work done by (inaudible 16:44:10) and others involving a much broader range of 62 vegetable combinations. Yes, so it was a happy coincidence perhaps out of that which I think is what the hearing panel found, so.

Q. And in response to some questions from My Majurey before, and I might not have heard you correctly, is it your view that there is – did you respond with the view that there's no need to be able to define resource consent for horticulture applications?

A. Oh, you did mishear me. I don't know that I –

Q. Sorry, I think I must –

A. I don't think I've given that answer. I hope not.

Q. I just want to ask you some questions about the matrix –

1645

A. Just on that, I reiterate what I said in my statement of evidence and that is based on Dr Jolly's work, the expectation is that there will be some commercial vegetable growing operations that cannot achieve 35% reduction, so they will need to apply for the discretionary activity pathway.

Q. Do you think there would be utility in including some additional direction in the policy framework for those applicants on some of the things that are expected of them?

A. This has exercised quite a bit of time at expert conferencing and we are still looking for suggestions about how one might do that. So it's – and the expert conference, we had made quite a few changes in the hope that those – that the framework is now quite directive about what's not a good idea, it doesn't have specific parameters and it doesn't talk about situations where consent will be declined, but we really struggled to find the words for that. So I'm open to considering that but to date it has been – it's eluded us.

Q. Accepting it's not your view in terms of the controlled activities but as a hypothetical, if you had a framework that had Table 14.2 and then just Table 14.2 and a discretionary pathway, in terms of what additional policy direction might provide in that context, do you think, for example, referring to some of the specific practices that Ms Jolly talked about in relation to soil health, for example, it would be useful to point people in that sort of a direction?

A. Yes and there was quite a lot of discussion at prehearing meetings which involved non-experts and at expert conferencing before the council level hearing about what were these practices that would drive change and for commercial vegetable growing in particular I know that the experts effectively came up with a list and listing the practices is, I learnt, anathema to industry groups because there is a perception that the listing will limit people's future innovation. I have a different view, the hearing panel concluded that it wasn't appropriate to include those as lists and I do hold a view that the lists are helpful and I am confident that the work that was done by the experts for both pastoral and CVG before the council

level hearing, that will be dug up in the future as a benchmark of what is good and best management practice. And it may change, but I think the core elements of it will not. So for example, when Dr Monaghan did his work for the One Plan he made assumptions about what's achievable on most farms from a range of what he understood to be BMPs and GMPs at that time, and I understand from Professor Horne that many of those are now commonplace and they've kind of come down the list into GMPs, so I expect that might happen but yeah, I have a view that would be helpful but I don't think it's a complete answer, yeah.

Q. Just now turn to a few questions about the matrix. And you'll have heard a number of these questions being asked of witnesses over the last few days, but it's your understanding as well that the, I guess, the risk took has had about 10 months of life that it's in it's earliest conception and that we're – it's still kind of a work in progress, in fact, I've seen the provisions that we were provided yesterday, some bits have been updated, is that correct?

A. Yes.

Q. And so it hasn't been, it hasn't been peer-reviewed?

A. No.

Q. And only subject, I guess, to the input of a small number of experts on either side in terms of the two tools?

A. I accept that.

Q. So again, I mean, the use of a tool of that nature at this stage, it's not really an appropriate tool to achieve an objective of safeguarding ecosystem health in significantly degraded catchments, is it?

A. Well, it appears to be, subject to road-testing, achieving similar outcomes so there is a degree of confidence, that is all I can say, yeah, I'm not, not the right person to ask about whether it's had enough of that.

1650

Q. But from your position, I guess, as a planner, when you're thinking about the most appropriate tool to use, given that level of uncertainty and accepting it might have, you know, might have utility in future, but at this point in time, when you're dealing with significantly degraded catchments

and you have an objective safeguarding the life supporting capacity, is it really the appropriate tool to use?

A. Well, if one is compelled to use the best information available, it may prove to be.

Q. Do you not think that Overseer might be the best available information given its 30 years and most recent significant scrutiny?

A. Oh, I think there are differences for CVG and for pastoral which Professor Horne was, he was very plain about, so yes, adopt his approach in that respect.

Q. I just have one more group of questions and this relates to the – some of the turns of phrase used in the policy framework and in particular the use of maximum extent reasonably practicable or sim – or alternatives and Mr Scott has raised conditions with the use of that phrase in his evidence, but as you will have seen from the provisions he has put forward, he hasn't entirely deleted the phrase from the provisions in his version, he – aware of that?

A. Yes, yeah.

Q. And I just want to test with you or talk through with you the intent behind his thinking, if that, if that's fine, so he has retained a reference to the maximum extent reasonably practicable in terms of the reductions expected in policy 14.6 and that was included as an, I guess, an overriding expectation that that's the minimum that people will – are expected to put forward in an application. Would it assist Ms Foster to have a look at, if we can go to Mr Scott's provisions if that would help the conversation?

A. What I am looking at is the version that Ms Johnston handed up to the Court, so it puts Horizons' proposition on the left and Mr Scott's proposition in the right-hand corner and I just couldn't recall which clause of 14.6 it was?

Q. 14.6(d), I think it's on your page 11 of that document?

A. Thank you. Perhaps we haven't recorded that accurately then, because I don't –

Q. No, I think, let me see.

A. I don't see it there.

Q. So if you read the (i) – can I just give you a moment?

A. Yes. Oh, so it's – that was – so that's original wording retained, right, beg your pardon.

Q. Yes.

A. I thought he was inserting it.

Q. And I'm just testing with you the proposition that the – whether you agree with the intent that the starting point is that there is an expectation that an application will be putting forward reductions that are to the maximum extent reasonably practicable, sort of as that's your starting point, that's sort of a gateway for a policy for a person considering an application?

A. That's right. That's I think the – it's context specific and here I think it's a demanding expectation, yeah, it's not an out clause as those words sometimes used, this is a demanding expectation.

Q. And then the intent behind Mr Scott's other amendments through policy 14.6 where some references to the practicability proposition have been removed, is that once you've met that minimum expectation or gateway, it's then about turning your mind – a decision maker turning their mind back to whether or not the application has done enough, looking at the figures in Table 14.2, looking at the values, looking at the targets in the plan, is that at the level of proposition your intent also?

1655

A. Well it's the whole suite of 14.6 and I haven't had the benefit of hearing Mr Scott's explanation of how these work. We've had a telephone conversation but not at that time with the detailed provisions that he proposed. So I haven't, genuinely, haven't had an opportunity to consider that. But certainly that was the motivation for changes to the entire framework and for creating a sort of hierarchy within it of more important considerations. Yes, so – but it does retain, the version that I am comfortable with, retains consideration of practicability, feasibility, and inherent in that is cost, yeah, so that's – and I can't recall whether, I think he deletes that and I have a view that one, that it is likely to be relevant particularly where one was looking at particularly intrusive changes that need to be made.

CROSS-EXAMINATION: MR WILLIAMS

Q. I do have just really sort of two questions. I will keep it very brief, I'm conscious of the time. Ms Foster, you were referred by – oh, good afternoon.

A. Good afternoon.

Q. You were referred by Ms Ongley to a diagram in the section 32 report which I think you described as oversimplified. I'd just like to take you, if I may, back to the hearing panel's decision that you were referred to earlier. So I think that's in volume 1 and it's in 101.0328 I'd like to refer you to.

A. 328?

Q. Yes. And so this is really just for a slightly more sophisticated approach. So it's paragraph 3.231 and here the hearing panel is talking about the scope of the plan change and it says: "As the council observed in its closing submissions the parties to the plan change generally accepted PC2 does not provide a basis for relitigating the building blocks of LUC and natural capital that form the basis for the cumulative nitrogen leaching maximums." So that was the position of the council at that time, that was your position at that time I take it?

A. Yes.

Q. And then at paragraph 3.232: "These are matters for future changes to the One Plan to meet the FPSM." And the hearing panel agreed. So at that time, I mean no one reading this document would have any idea that or would have anticipated a move away from the CNLM approach, the output based approach to regulating nitrogen loss?

A. I think if they'd read the totality of the hearing panel's recommendations, they would've found that the hearing panel reconciled those two things, because that's exactly what they proposed.

Q. The hearing panel didn't propose a move away from CNLMs as the basis for regulating? It didn't proposes amending policy 5.8 to remove that requirement for nitrogen leaching maximums?

A. They recommended the decisions version Plan Change 2.

Q. Which didn't alter policy 5.8 to remove the requirement for CNLMs?

A. No, no it makes adjustments to policy 5.8 but retains that reference. I have to remind myself what 5.8 as amended says. That's right they

retained that and provided for other exceptions as well, that's a fairer way of putting it.

Q. I'll leave it there. Just to be clear, my understanding and I may be now oversimplifying things, by attempting to try and simplify some of these matters which are incredibly complex, but the intention is not to try and make, the intention of plan change PC2 now quite generally as I understand it isn't to make things easier for the intensive farm land uses by somehow sort of separating them out and then giving them special treatment.

A. No, I don't think so but the motivation has always been about addressing the unworkability in the consent and policy framework and applying the section 32 considerations, doing that in the most plan efficient and effective way, so that others construe in different ways.

Q. Do you think there might be a concern though that this is what's happening because when you sort of, you treat them as a separate small block then you, when it comes to considering the impact on water quality outcomes, you then place them back in to the wider context and that enables you to say that anything you do only results in modest changes or that they're all in the same ballpark? Do you see that there's a risk there that they've been given some kind of a special treatment?

A. Well I would probably worry about that if the result was some prejudicial in river nitrogen concentration outcome, but the evidence isn't suggesting that.

Q. Because that evidence, it relies on them being placed back into the wider context, so that you can say that any changes only result in modest differences in outcomes.

A. Well I think that's the entire context for the purpose of Plan Change 2, they can only do so much in themselves.

Q. Would it be better perhaps, to continue, perhaps your concern, which I think you appreciate, to continue to focus on the CNLMs because it allows you to develop a sort of consistent, more consistent approach to cumulative effects.

A. Can you put that to me again, so I understand.

Q. There's this concern about potentially sort of special treatment, I'm saying would it be to avoid that, might it be better to continue to focus on CNLMs because they help to help enable you to develop a consistent approach to cumulative affects?

A. Sure. The special treatment angle is interesting and there was a discussion around equity yesterday I think, some time this week, and there's a perception that this group of unconsented existing intensive farming land users are getting an easier ride and the evidence doesn't support that. There's an Excel spreadsheet, it'd dairy based, not CVG, but it's dairy based and it's I think part of a – it's been made available to parties earlier, I think it was available at the time of the council hearing and it describes the basis on which consents have been granted to existing intensive farming land uses and in all but a few instances they have been for nitrogen leaching rates, a good deal higher than a 20% reduction would achieve and that essentially goes to the background to the declarations that that was special treatment. So I don't really understand what the special treatment is that you're talking about because they are being –

Q. I can try and explain it one more time. The special treatment comes when you put them back into the wider category in order to assess the impacts on water quality and then you can't differentiate because they're such a small part of the bigger picture.

1705

A. Isn't that just the reality of how they fit within the nature of the problem, that is the contribution made by intensive farming land use activities, the ones that are already consented and the ones that are not consented, to the state of water quality, the degradation that is occurring in Horizons region. I just think that we have to respond to that reality. I don't that's special and I think when we create a rule framework targeting anyone who creates difference or differentiation to address an effect.

RE-EXAMINATION: MS JOHNSTON

Q. I just, Ms Foster, want to take you to the section 32 report that's been put to you. Do you still that in front of you?

A. I'll just have to unearth it.

Q. That's volume 3, and it's tab 2. Firstly, the front page that's been put to you as a summary, it's your understanding that that's a cover page?

A. I've always been confused by its purpose. The report doesn't have what I would call a standard cover page but that is all it is.

Q. And if you turn over to page 6, the last paragraph.

A. Yes.

Q. Horizons proposes to address the issue through Plan Change 2, is that your understanding of what the purpose of Plan Change 2 is?

A. Yes, it is, it's stated there and it's elaborated on elsewhere in the section 32 report in slightly different but similar principle words, which I've referred to in my statement of evidence, but yes.

Q. And if we could go through to appendix A, that's page 301.0095, actually the page before that, 301.0093: "The reasons for deciding on provisions".

A. Yes.

Q. And questions put to you about the cumulative nitrogen leaching maximum within Table 14.2, and you'll remember the questions being put to you about the appeals version or the decisions version stepping away from those CNLM, does your – well you confirm for the Court whether the decisions in the appeals versions retains the CNLM as part of the proposed provisions?

A. Is does, Table 14.2 recalibrated.

Q. And then if you move to section 9, the start of paragraph 2, it refers to the draft plan change wording as set out in appendix A, at the first bullet point, could you read that.

A. "Policy 5.8 is amended to provide for exceptions to the general position that existing intensive farming land use must use the nitrogen leaching maximums."

Q. And is it your understanding that the decisions version and the appeals version provides for exceptions to the CNLM?

A. Yes deliberately it does.

Q. And that was contained in the notified version as well, wasn't it?

A. Yes it was.

MS ONGLEY:

Well what I'm about to say might be of interest to Mr Majurey because I'm in a bit of a predicament about the extent of evidence that I might have to prepare cross-examination on from Horticulture New Zealand about the ability to rotate at a wider scale and I think I heard before that's not actually being sought for this particular plan change, so I'm not quite sure whether I should cross-examine on it or not because it doesn't appear to be relevant for this particular plan change but Mr Majurey might want to clarify that and what the purpose of that evidence is because I will be otherwise preparing for it.

THE COURT: JUDGE SEMPLE

I've certainly taken from the exchange between Mr Majurey and Ms Foster that Horticulture New Zealand were signaling a desire or identifying that that was a matter that would need to be dealt with subsequent plan changes or in a freshwater plan but was not a matter that they considered to within the scope of this plan change am I incorrect in that assessment, Mr Majurey?

MR MAJUREY:

That's certainly the theme of the discussion we had and that was why I was wanting to focus in terms of the general discussion, if I can call that, and the specific changes that were being sought. Happy to continue the discussion after the break Ma'am, and see if we can land that. While I'm on my feet I was going on just to say as enjoyable as it's been this week, I won't be here tomorrow, so I will be taking my leave.

THE COURT: JUDGE SEMPLE

Does that answer

MS ONGLEY:

Well it does but I'm not sure if the purpose to have evidence on the record but rather than waste the Court's time with extension cross-examination if that's the purpose of it, I will simply be making a submission that it's not relevant to this particular plan change and probably leave that.

THE COURT: JUDGE SEMPLE

I understand that.

MR MAJUREY:

We need to make our submissions, I wouldn't say it's not relevant, it has a purpose.

THE COURT: JUDGE SEMPLE

Yes I understand.

MS EDWARD ADDRESSES THE COURT – HOUSEKEEPING (17:10:58)

COURT ADJOURNS: 5.15 PM

COURT RESUMES ON FRIDAY 24 NOVEMBER 2023 AT 10.05 AM

LEGAL DISCUSSION – HOUSEKEEPING

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Good morning.

A. Good morning, Commissioner.

Q. So I've spent a little bit of time thinking about how I can come from my questioning in terms of a higher-level approach rather than getting stuck in the detail of the drafting. It might be that it is always room for polishing of drafting, isn't there, so some of my questions might go to perhaps your thinking a bit further about them subsequently, and I'll think about them too no doubt and not lose sight of them. The other thing I have done is I was heavily involved with the declaration and the decision on that, so I have refreshed myself as to the problems that the declaration identified and the consenting practice that was going on and how the policy framework was being used, if you like, at that time, so I guess I might just have a few questions arising out of that. So I just wanted to talk quickly about good management practices, best management practices, et cetera, then I wanted to talk about the Nutrient Management Plan given that's a key document and move on to the controlled activity, just following up a little from yesterday so I can understand a little bit more about that, then move on to the discretionary activity and the equity point that came up yesterday, I just would like to return to that and then lastly there's the drafting changes throughout that insert the word "risk" and Commissioner Hodges I know also has some thoughts about that, so that might segue into his questioning so I have put that last on my list. So I will do the best I can to get through this so there is a bit of your day left. You certainly wouldn't want to be held over until we came back again. So just starting with the good management practices, the best management practices and additional measures often where necessary which is sort of these different drafting formulations that pop up in various parts of these revisions. For example, in 14.3 and 14.5 I think I might have noted that because of the additional measures point. So were you hear yesterday

– no, it would be the day before yesterday, when I asked Professor Horne about what he seemed to always be grouping good management practices and best management practices, were you here when I asked him about that?

A. Yes, I heard, I heard his answer to the question.

Q. And he said, oh, he very deliberately did that because, I took it, that he wasn't sure of the purpose and the value of differentiation. And so you've got different formulations throughout this document when you start to pick through them and then you've got some definitions of GMP and BMP and I think they're new definitions?

1010

A. Yes, they are.

Q. And they came in through the – I don't know whether they're in the notified version, one of them might have been, but they came in –

A. Yes.

Q. – via the decisions version and so you've got, for example, the GMP one you've got "practicable measures and methods" and in BMP you've got "maximum practical extent" in it. I've, I guess my question relates to the value of doing this differentiation, is this in fact not really going to be helpful in the end if there is a whole lot of arguments about whether this falls in this category and whether that falls in the other category, that's the first part of my question and the second part of my question is how does the - these notions relate to the policy that informs discretionary consenting with its different formulations such as the "reasonably practicable", you know, those sort of things? So that's a pretty big picture –

A. That's all right, that's okay.

Q. – question I think?

A. I'll go for the first part, first.

Q. Okay, thank you.

A. And the definition of "good management practice" was proposed through the plan change and "best management practice" came through the decisions version following submissions on it and there were in principal two schools of thought around good management practice and best

management practice. One is a view from people outside the industry that these are ill – poorly understood and ill-defined terms and they need to be better defined. The other is a school of thought within sector groups that we all know what they mean, but they're not ever written down but everyone seems to know what good and best management practice is. And that was teased out through discussions at expert conferencing and at pre-hearing between farmers and ordinary people and the council but also at expert conferencing, what is good management practice and what is the higher-end best management practice, and they exist on a spectrum and the relevant point for Plan Change 2 is Professor Horne's and Dr Jolly's view that a view that a mixture of both lower end on the spectrum and further along on the spectrum interventions, practices, will be required to achieve the sort of – to get to Table 14.2 or to achieve the scope of reductions that are proposed through that alternative pathway. So they are referred to in the qualifying rule as both best and GMPs and additional measures beyond that, you know, if they exist, so that's the reason for adopting those different forms of that concept. So that answers, perhaps answers part of it.

Q. It might do, mightn't answer some questions I might have about the drafting consistency.

A. No.

Q. But yes.

A. And as a result of that expert conferencing, I felt that there was a consolidated good understanding of what good management practice was and what best management practice was and the were consolidated under those headings and available and I did recommend to the hearing panel that they include those as indications of what those practices are. Not in an exclusive sense, but in an indicative and inclusive sense but it wasn't a view that was accepted, so that, that is – that was the intention to them. So I've forgotten the second part of the question, so?

Q. I suppose the second part of the question was, you know, was some of this consideration of whether one, these things fall in one category or the other, might that not be terribly helpful if you have big arguments in the consenting framework?

A. The –

Q. In terms of the definitions, particularly?

A. Yes, yes. I think the –

Q. Because things evolve with these, don't they?

A. Yes, they do, that's right.

Q. Like today's best management practice is tomorrow's good management practice.

A. Tomorrow's good management practice and that's been the experience that we observed –

Q. Yes, yes.

A. – in this particular issue, that is true. So for the entry-level controlled activity, the definitions were attempting to – both are required, potentially required to qualify so that is why the rule is – so if I just remind myself what it says, take you to that.

1015

Q. So that's the rule.

A. That's in the rule, yeah.

Q. I think it might be the policy.

A. Yes, okay.

Q. I wondered if it was singing happily with what was in the rule.

A. Which requires – requires the achievement of the reductions, the achievement of Table 14.2 or the reductions specified under the decisions version in order to make that, the reduction that's required. So either, so a combination of all of those measures would be required, and then the reserved matters refer to – we'd actually proposed taking that out but originally that was going to capture all of those measures, and that was – it was taken out because if one qualifies with the right number then the, there's no reservation of control over on top of that. So that makes sense, yes.

Q. Yes, I assume from what you said yesterday that was the position. So I think it's just something to reflect on in terms of the overall package, if you like.

A. Yes, and in terms – policy 5.8 proposes that the –

Q. That has both, doesn't it?

A. That has both, good management practices and best management practices.

Q. I did notice that. Yes, yes.

A. Because the expectation is that a combination of both of those will be required to meet the entry level, the threshold, that's right. And that beyond that there may be additional measures that are required to be imposed on those who are at the – perhaps you recall Dr le Miere's description of the distribution of nutrient leaching practices of individuals and it's got this long tail, a lot of people at the far end or a number that are a long way from the sort of median or 50, 75th percentile. So for them additional measures will be required but may not get them anywhere near where the threshold entry levels are. So the additional measures are things that will – of the kind that Professor Horne described, edge of field I am told is the –

Q. Edge of field?

A. Edge of field. Which I thought was something to do with a paddock but it is edge of our technological field.

Q. Yes, nothing to do with paddock, okay.

A. Yes, yeah.

Q. Thank you for that. So the nutrient management plan, that's obviously a very key document and I didn't ask if I could have a copy of the Code of Practice documents.

MS JOHNSTON:

I should update you on that, Commissioner. Dr Jolly does have a version available and I can get that for you, we're getting that for you this morning.

THE COURT: COMMISSIONER EDMONDS

So I've – thank you.

QUESTIONS FROM THE COURT CONTINUES: COMMISIONER EDMONDS

Q. So I guess I'm a bit limited in terms of understanding what that involves but I wondered if I could have a worked example given this is a foundation document?

A. That's a good idea. In fact, there's the Code of Practice and Horizons itself has a template that it has used historically and my advice to them is that that needs to be updated. So that's in part of their help to applicants part of their website, if you like, it's sort of a template for a nutrient management plan to assist, to ensure that all the right ingredients are there. So –

Q. Right, so that might be helpful but a worked example to –

A. It might be helpful but it's a little bit out of date in my view, yes.

Q. Yes. Well I suppose I had a bit of a worry about that in terms of, you know, was it done around about the time of the declaration or is it something that had been updated subsequently?

A. I don't think it's been updated.

Q. Yes.

A. That was my observation of it, that it wasn't – it didn't seem to be alert to the changes that were coming out of freshwater farm planning so – and I haven't seen anything more recent. I know that work has been done to meet the requirements of that so it may look quite different, but as a vehicle all I can say is there is a sort of template vehicle there to capture those things.

1020

Q. Okay, so the template is one thing, but how about –

A. That's right.

Q. – a worked example?

A. That's right, well, that's, and I'm sure –

Q. Or two?

A. I can't, but I'm sure that can be arranged, yes.

Q. And I think that would be really helpful, thank you very much. So I'd just like now to take you to an exhibit in 301.0578 and it's at the back of the, what number is this, volume 3 exhibits and planning documents. And it's the very last page. So do you have that?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Yes, I do, thank you.

Q. The last page, so there's a heading: "What this means for existing consent holders." And then half way down the section under that heading there's

a black line with a “jobs for nature” sort of off to the left, but it’s actually the first two paragraphs to the right of that that I’m wanting to have you look at. So yesterday you talked a little bit about how these nutrient budgets might be dealt with in terms of the consenting and conditioning and process for anything major to be changed, but those kinds of things?

A. Yes.

Q. So I was just wanting to understand and I don’t know whether you’re the person that can answer this question, but this idea that the annual nutrient budget that might be required as a condition of consent, the council basically says it's not buying – that it thinks it would be unreasonable to require that and so then it goes on to talk about focusing its compliance effects on whether the mitigations that are then committed to in the consent process and the management plans that, you know, are being implemented. So I didn't know what to take out of that paragraph 1, because, you know, if there’s a condition, there’s an expectation that’s followed and if there is a wish to change it then there are processes in the RMA –

A. That’s right.

Q. – for that.

A. So I don’t know what the background is to this page, or the information. And I wonder whether it's an issue relating to something that indeed is a feature of the One Plan rules which talks about how frequent, in the rule, how frequently the Nutrient Management Plan is required to be reviewed and I think at the moment it is annually, I will just make sure I am right about that, and there was quite a lot of discussion through prehearing engagement and with Horizons about whether that – when and whether that rule is actually implemented in that way and or whether the frequency of review of the Nutrient Management Plan once it has been established through a consent whether that should be specified in the Nutrient Management Plan itself, so rather than specifying it in the rule, so I don’t know that the two sentences are actually, or the two paragraphs are in conflict, that there is an expectation that there would be a Nutrient Management Plan and the thing that would be compliance tested is the

commitments made in there and the implementation timeframes for the actions intended to reduce nutrient leaching.

Q. So the – I think the, I think if I go back to the – or your marked up plan provisions, it did strike out “or annual”?

A. The annual –

Q. Is that –

A. It's the annual reviewing of it?

Q. Yes, the annual reviewing of it?

A. Rather than the requirement for it, so there’s –

Q. Right.

A. – a requirement for it.

Q. Right.

A. And, and the necessity for – because in many situations, for a stable farming system it may not be relevant to review annually, that was the message that was being received, but for others it will be relevant to review on some sort of basis, but that that is not so readily determined through the rule as through a consent process.

1025

Q. SO I suppose the question –

A. So I think the bit that’s a little confounding is the first paragraph which talks of it is not to – it would be unreasonable to require farmers to provide an annual nutrient budget, I think that’s – I don’t know the background to it, but it's, it's –

Q. No, I suppose the – having just read, re-read the declaration, I wondered when I saw the “as required by a condition of consent” and I just wasn’t sure –

A. Well, certainly not the intention.

Q. – quite what – where the council was going in terms –

A. Yes, but I don’t know where that’s coming from.

Q. No?

A. No. But certainly the Plan Change 2 provisions are coming from –

Q. Yes, yes, no, I –

A. – the intention that “thou shalt”.

Q. Sure.

A. It's a prerequisite for qualifying is to have one and Horizons needs to help with what formats that's in, what, you know, calibre of information it's got in it and what commitments it's got to make, how it has to demonstrate that that's going to meet the threshold, the number, threshold requirements of the rule, and to also consider whether that's likely to change and to consider including a requirement to review, you know, when things do materially change as well, so yeah.

Q. So often when we're involved in these plan hearings, we do have a consents officer –

A. Yes.

Q. – appear in front of us and give us an indication of what they would be doing when they were processing an application in line with the new framework, if you like.

A. Mhm.

Q. Have you involved any of the consenting people along the way? I mean, that's another way of looking at how these things might be working in practice or work in practice?

A. Yes, yes, yes. We have, we have had a lot of conversations with Greg Bevan who manages the group and with Jasmine Mitchell who is responsible for the team that does the consenting, so and I had a conversation, I had a communication with Jasmine this week about, for example, what they're doing currently and how they, how they – what messages they send to people who do make applications currently, how they process them, what advice they seek internally about verification of what's in an application and that sort of thing. So I haven't done any of that myself, so I have to rely on conversations with those people to understand that, yeah .

Q. Yes, it didn't seem fair to ask Dr Jolly when she mentioned she had been involved in consenting.

A. Yes, she's probably got a lot more –

Q. With any of these questions, I thought she had quite enough on her plate.

A. Yes, yes, but she certainly does have – she has the hands-on experience that I lack.

Q. Yes, yes, okay. So I just want to move now to the controlled activity pathway, or pathways, that's how I should describe it as, so the question that occurred to me yesterday is why would anybody bother to use the Table 14.2 pathway? Why would they do that?

A. For some, there may be no difference, I think that's correct. Because the actions that they have to take to meet, to achieve 20% reduction would get them in the same space as qualifying for the CNLM limits under the – under Table 14.2.

Q. So the other two, if we could park the Scorecard consideration and come back to what the decisions version applied, allowed if you like, why under the decisions version, why wouldn't they go with the two alternative pathways, one if they're doing the vegetable growing and the other for the other farm, the intensive farming, why wouldn't they go down that route?

1030

A. I think they probably would and it goes to where an individual growing or farming business sits on that curve of current nitrogen leaching I think, and for some of them who might be sitting if the entry point through Table 14.2 is here and a 20% required reduction and remembering that for pastoral farming it's 20% reduction or the 75th, whichever, so if you're close to the 75th percentile on this curve, 20%, you're required to make the 20% reduction to take you well below that. So a 20% reduction may get you close to Table 14 but not quiet there, and for others who are closer to the middle then it's going to drop them in a compliant space anyway. There will be others who it will bring them close to Table 14.2 but not quite there so that's worthwhile for them, and I think throughout his I have been mindful of the farm scale potential margin of precision around Overseer which is reasonably strong, and just mindful that the 20% reduction might bring you close to the Table 14.2 but not that far away when you consider the farm scale margin of error of Overseer. For others who are further away on this long tail then 20% reduction may not get them anywhere near 75th percentile, but the task for them to qualify is to try and get down to that, and that may not be possible either, and they're a long way from the median, the middle of that, of the body, a long way from Table 14.2. So I think that there are, and we will get the figures and find out, there

are – there is a body of intensive farming land uses that are close to but not quite there and the alternative pathways provide them an opportunity to apply and secure consent.

Q. Though people can choose presumably, they don't have to go down the Table 14.2 route?

A. That's right, that's right.

Q. And so the things that there are in terms of the consenting framework and what can be considered, I mean what – would there be any difference?

A. The contents of – so once they get through, that's right, the same requirements apply. The reserved matters apply to the contents of the nutrient management plan and securing the commitments that are made and implementation timeframes. Duration of course, consent duration, so those are the same regardless of pathway. That's right, yes.

Q. Yes, yes. So people can choose or maybe they won't choose Table 14.2?

A. No, they may not, that's right.

Q. And you've accepted that?

A. Yes.

Q. Okay. So my next question just relates to the controlled matters and perhaps you should get them up and I should as well.

A. Yes. I have those.

Q. I'm particularly wondering about the relevance of pols 14.5 and 14.6. I know 14.9 seems to be about is it…

A. It comes from the NPSFM, the interim have consideration for these matters out of the NPSFM, I think.

Q. So, sorry, just take me to the –

A. That's the – I think that's a reference to the compulsory policy from the NPSFM that was regional councils just –

Q. Okay, so let's just get that up then, it's important to be clear about that.

A. Sorry, I'm having trouble finding the – I'm not sure where I'll find that in the material I have here because it's not a matter changed by Plan Change 2.

Q. So which page should I be looking at?

A. I'm just going to find out. It's not amongst the – it's not part of the changes in Plan Change 2 so I don't have it here.

MS JOHNSTON:

If I could assist, Commissioner, it's in your bundle of documents, the One Plan, it's volume 3, book 2, tab 18, page reference 302.0808 and this isn't part of Ms Foster's provisions, which is the only reason why I'm assisting. She doesn't have that as part of her marked up, it's a –

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS CONTINUES

Q. I understand. So, this is 14.6 we're looking at, at the moment, not 14.5?

A. I thought the question was around policy 14.9.

Q. No, sorry, 14.9 I looked up before, it seemed to be about pig litter and things like that and poultry. I wasn't sure that it was relevant, so I was more interested in 14.5 and 14.6.

A. I have misunderstood your question, I thought you were that you were referring to policies.

Q. Well I am referring to policies in terms of if you go to the controlled activity, I'm just going to find that now, on page 23 of the provisions, it has the matters in policy 14.5, 14.6 and 14.9 and I don't think we need to worry about 14.9, that would be my very quick assessment, looking at the One Plan this morning. So perhaps we should start with 14.5. So when you look at 14.5(d), do you have that there?

A. Yes.

Q. I read that as being the policy book for the three pathways.

A. That's an accurate description.

Q. So I guess my question is, in terms of these activities, I recognise that there are other activities that may come under this rule but the ones that we're concerned about in terms of the nitrogen leaching, I went looking to see what else might be relevant in 14.5 and I seemed to go round in a circle rather and I wondered actually whether it records any function in relation to this controlled activity, in terms of the nitrogen leaching, that's sort of where I ended up.

A. That's a fair question. Whether it adds any value to your decision making, it probably doesn't.

Q. I don't think that it – well I couldn’t find that it did, but you might have another look and –

A. It probably doesn’t and the reference to policy certainly 14.6 and 14.9, they do have – they add value because they have other considerations but there were some submitters who are comforted by references to policies 14.5 and 14.6, but I agree with you, it doesn’t add substantive value, in terms of guiding, giving you guidance for decision making, 14.5 is the platform for the consent for the rural framework, yeah.

1040

Q. So if we could just go to 14.6 now. So it seemed to me that 14.6(d) is the policy hook for the discretionary activities, for the activities exceeding the limits that are set out in the three pathways that qualify for a controlled activity. So I wondered about the relevance of policy 14.6 in relation to the controlled activity?

A. Only in providing the policy support for the requirement that good management practices and your observation is correct, because in the policy it just refers to good management practices.

Q. Yes, well that was another –

A. Yes, so I think that’s probably a misalignment. So it provides the policy support for the framework which requires it and it has the consistent thread which goes throughout the land management policies relating to cattle exclusion from waterways because of the interest in nitrogen phosphorus fecal contamination and sediment, so that’s probably the limit of it and the other considerations, I think you're right, they have particular regard to matters and have regard matters for the discretionary activity applications.

Q. Yes, I just thought it would be more useful to actually identify things that are really relevant to this. The controlled activity status and the reserve matters, if they're not relevant, well they shouldn’t be in there, it’s really not that helpful.

A. No and the scope of reserve matters really is at that point I think sensibly what goes in the nutrient management plan, it’s a scope over those matters.

Q. Yes, so that would mean then that 14.6 is not particularly relevant or not relevant at all really.

A. Not helpful.

Q. I did wonder about 14 – in the policy, I might just take a moment to find it, I have marked it. Yes, I did wonder about policy 14.3, and I guess that's related to that point that I raised earlier in terms of the good management practices and this is the one that's got the good management practices in the additional measures.

A. Yes.

Q. And then it talks about addressing matters in some of those other policies we've just been talking about, so I did wonder about quite where that fitted into things.

A. In the sense that that might be more meaningful policy to refer to.

Q. Well I might, I don't know, it just seemed to me, yes, so it does talk about, as you've got it, require the implementation of, so perhaps it plays well with the controlled activity status in the nutrient management plan and those sort of things.

A. And as you observe more comprehensively describes the measures.

Q. Yes, I did wonder about that, so that's fine. That takes me on to the discretionary activity now and I guess in re-reading the declaration decision that was, I know it was in relation to your restricted discretionary status but, you know, there were a lot of questions about the application of objectives and policies and how they might work together and be weighted and so there's quite a lot – there was quite a lot of reference back to chapter 5 and the, you know, reason often given for giving consent, it was committed to good farm management practices, it will achieve reduction insofar as achievable in relation to this farm, which I assume is trying to relate it to the point about achievability in chapter 5. So I guess the question I have for you is where does chapter 5 sort of sit in your mind when it comes to discretionary consenting now there have been these revisions made to – proposed, if they were to come into force, how would that affect the way chapter 5 is dealt with?

A. It sits still I think at the upper end of the hierarchy within the plan as the regional policy statement of intent and it's sometimes locally referred to

as the strategy for water quality in policies 5.7, 5.8, 5.9. So that is still the intention deliberately through Plan Change 2, the purpose of this is still to meet that, so I see that policies in chapter 14 are subordinate to that, they serve that purpose still, and that has driven some of the changes that I have proposed so that the expression "to the maximum extent practicable", in other words, pushing things to happen to the most is to serve that purpose set out in the strategy, which is maintain where water quality is good and improve it where it is not, essentially.

Q. So dropping back down into the 14.6(d)(1) policy and Ms Ongley asked you about that yesterday in terms of would you see that as the starting point for exceptions, have I – is my understanding of that correct?

A. Perhaps just rephrase the question for me, so sorry.

Q. Well perhaps we'll find 14.6(d)(1) and hope that I've written down the correct policy. Yes, 14.6(d)(1) –

A. Yes, yes, and there were a number of wording options explored I know through the hearing process, "minimise" being one of them, but my view has always been that that wording that says "you must reduce to the maximum extent" is preferable to that. So that's intended to be quite a guiding policy that says you have to reduce to the maximum extent. It's still I think a notion of reasonable practicability has to still be included in that consideration but it's certainly the intention that it be to the maximum.

Q. I'm just trying to understand how you might apply these policies in this hierarchy so I wanted to start with that one because Ms Ongley asked you about that yesterday. And then we're dropping down to "have particular regard to" starting at (e) and then a lot later on we're going to get to "also have regard to" at (f).

A. Yes.

Q. So I'm just trying to understand the interaction of these various approaches in terms of the language used at the start of the policy. So how do you see the "particular regard to" policy in terms of the consent office or planning, planner, or whoever is looking at it?

A. I think – yes. And it comes, I think I can say this, it was an agreed matter out of expert conferencing and it was particularly to elevate considerations of the values held by mana whenua, particularly

responding to the concerns raised in the submission and appeal by Ngāti Turanga, so there was a view that that should be given particular regard, in other words be of greater significance in the policy hierarchy than other matters and certainly more in significance than the reasonable practicability considerations, so that was the intention behind differentiating with an E list and an F list of policy considerations, so that's the context for it and I think that that's – but I, the intention is that an officer would look at that and give, however they're expressed in a particular circumstance, however the values come to light through the application process, give those matters particular regard whereas – which is a stronger imperative than the particular regard for the other matters.

Q. So when it comes to weighting –

A. The weighting.

Q. – these things, you would, you would be –

A. Yes, that this should given greater weight, yes, intentionally, than the F list, the list under the F matters. And I appreciate it is a long list now.

Q. It is, it is.

A. And that's – this has been a journey and various participants have secured policy considerations to address a number of issues that I support still, yeah, but that's the framework, yes.

Q. Okay.

A. So there's still – it serves the higher purpose which is the "improve where things are degraded" and within that, the substantive –

Q. In chapter 5?

A. – in chapter 5, in the RPS –

Q. Yes.

A. – and that hasn't changed, so that's, that is still the purpose of the One Plan and the mechanics of it give great, within that, give greater weight to the "particular regard" matters than to the "have regard to" matters.

Q. So I just wanted to ask you a little bit about E2 because I have got a little – I was very aware at the end of the yesterday and somebody started talking about uplift?

A. Oh, leaching up, perhaps, was it? Or uplift, or?

Q. Well, no, I wondered when I saw the amendments to 2, that the exceedance of the limits that are specified in the policy that creates these different pathways whether it was a reference to that?

A. No, mmm.

Q. So when you're doing your discretionary activity, that you'll, I guess, you might look at all three of, all, well, you might (inaudible 10:52:53) all three, but would two at least possibly, that you might want to look at but you'd probably be wanting to do your comparison against the most favourable to you in terms of your farming operation, so I was wondering whether that was what was meant by "uplift"?

A. Oh.

Q. And if it is –

A. Yeah.

Q. – are you comfortable with that?

A. No, I don't, I, I hope that's not what it's intended, what's meant, but it certainly is to be read hand-in-hand with (iii) in my mind which is a decision maker looks at the extent of the exceedance, you know, how far away are we, and proportionality in requiring reductions, so I think that's the point of the decision making exercise is to see just how far away we are and ensuring that a high leaching loss is required to make proportionately large reductions, so that's, that's certainly the – I had read it as being a really – clearly direct, but I'm open to –

Q. Well, I'm just not sure, when I looked at it, I thought well you've sort of moved the goal posts a little, haven't you, in terms of the limits?

A. Where the – what the baseline is for this comparison?

Q. Yes, yes, you have for your comparison, so perhaps that was what was behind the question yesterday, but it was very late in the day and I thought, well, you would be looking to, I guess, do your comparisons around the one of those that was going to be most favourable to you.

A. Yes, yes.

Q. We all know how consenting runs in terms of these kinds of things.

A. Yes.

Q. So I wondered, yes.

A. So –

Q. And so...

1055

A. Well, I think, I think there's, again, I go to the curve, the practical curve, you know, where people are going to sit and that will tell us how far away they are and there will be some who are a long, long way away and the gap and the proportion required of them will – should be, will be, great. And the proportionate, perhaps, the gap will be smaller for those who are closer. And the differences between the – those, how far away you are from whichever benchmark you use as the starting point is going to be similar for the band of people who are closer to the thresholds, sorry. This is - this 2 and 3 are particularly addressing high leaching, high value.

Q. Yes, I – yes, okay. I need to think about that a little bit more. And of course, the whole issue of the cumulative leaching within the sub-zone and how far you can go with that in terms of applying some of these policies, I mean, that was a vexed issue.

A. Yes, it still is.

Q. Under the old provisions and it's still a vexed position, isn't it?

A. It still is, there isn't an information base that allows you to –

Q. No, that allows –

A. – to draw a thread between what's happening in the river and what's happening on farm.

Q. Right, okay.

A. And that's, I don't expect that is going to change for some time, it is difficult, yes.

Q. No, all right, well, I think we – that question has been asked of several other witnesses, so probably don't need to – you're just confirming that's your understanding –

A. That's right, that's my understanding.

Q. – as well. So –

A. Which is why the policy framework has attempted to, to drive the input – to guide the input, sort of the restrictions on the extent of the leaching rather than, you know, rather than demand that people demonstrate that their effects aren't this or aren't that, because I think practically that's, that's – I'm not sure what the point of that exercise would be.

Q. So what about the localised effects, we heard about them yesterday, but in terms of this policy framework for a discretionary –

A. Yes, there could be all localised improvements benefits, that's right.

Q. Yes.

A. Yes. It's going to be difficult to draw that connection to between what is happening on farm and what is happening in water. That's the reality, mhm.

Q. So much as it was in the declaration?

A. Yes, yes, yes, it was and I have read decisions on –

Q. This could – declarations were considered.

A. – on intensive farming land uses and for – and the other thing, too, that I am aware of is that the work that Dr Snelder has done, that Maree Patterson has access to, it deals with monitoring points and impact sites in main stems of rivers. There's an even more shaky information base for tributaries for those.

Q. Right.

A. That's the practical reality, yes.

Q. Right, a national, that's an issue as well, isn't it, yes, you really –

A. So I think I am a bit careful about a framework that sets people up to try and demonstrate something to qualify when you just couldn't – you can't – there isn't the information there to allow you, at the moment or for the foreseeable future, to do that.

Q. Right.

A. Mhm.

Q. Okay, so just another question, the NPS-FM, where and how might that come into the considering a discretionary activity, in your view?

A. Yes, well, it's certainly a section 104.

Q. Yes, it is.

A. It's a matter that must be given the regard that that section requires, so yes, it is certainly relevant and I think the same challenges that Plan Change 2 has had in terms of how one gives regard to it, that is the job of Plan Change 2 to set the framework under it, to make that acceptable and align with that, and rather than for individual applications beyond that to, to sort of litigate it individually, which is why I support it,

the structure, the framework that we've come up with, so that the ones that are forced into a discretionary activity are the perhaps a smaller group of more extreme nitrogen leaching for whom greater scrutiny is required. That's deliberate. Part of that has been the message that was imparted through prehearing engagement was, and it won't be any surprise to you, a lack of appetite for discretionary activities and the risks that goes with those by applicants and that I think, I have tried to make the discretionary activity framework quite a tight one as an incentive for people to try as hard as they can to bring their nitrogen leaching down to avoid it. So that's been done through a number of mechanisms I suppose or tweaks to what we have developed and one was Professor Horne's three per cent, which was pushing – there's was resistance to that. There was resistance to the 35% for CVG and the tightened framework, some people think it is a bit too tight but I think those work, all of that together, to try and bring people, to make the best effort possible to make meaningful reductions in N leaching because that seems to me, in terms of the policy framework, still to be the objective, to meet the higher purpose which is improvement in water quality generally and the lever where pulling is nitrogen, it's still to get the reductions practicable from those.

Q. It's quite interesting to hear on that because the original One Plan, incentivisation was very much around the controlled activity pathway but you're coming at it from a slightly different angle.

A. Perhaps, mmm.

Q. So that equity point that you – there was a bit of discussion of that yesterday, it was nearing the end of the day and I didn't – I'm not confident that I fully understood what it was that you were saying, so I think you were asked a question that led you to start talking about the consented ones, if you like, you know, noting the declaration. I don't think we had very good figures but there was 160 was mentioned, so and then did mention that pathway, at that time there was a pathway the understood the witness said and then you started to draw some comparisons.

A. Yes, it was in the context of a question that I found a little confusing, it was talking about special treatment, so setting that aside.

Q. Yes, you were talking this category that has special treatment and then you went on to say something about how there was a report that recorded what that special treatment actually meant.

A. Yes, not so much that, perhaps I've confused the picture but can I clarify with you what it is that you're interested in discussing about that? Is it what I've referred to or –

Q. No I suppose it's just this whole equity between who and, you know, it's not a straightforward thing by any manner of means, so I think the word "equity" did get mentioned yesterday. I don't know whether you mentioned it, someone else might've mentioned it, and then you referred to this special treatment.

A. Well the question of equity arises anywhere you, I suppose in a planning framework, intervene and seek regulatory interventions. You differentiate people for a purpose generally, so I don't think of regulatory interventions as interrupting equity necessarily but being a rational response to environmental effects. So that's the rationale for them but there was a discussion of the special treatment and there was a question I think that you put the other day about what about equity between the group of farmers who have already secured consents under the One Plan framework and those who would have to secure consents or have the option of securing consents under the alternative controlled activity pathway and I have been curious about that myself and have access, it's not a report so much, it's a data set and spreadsheets. It's public, I think it is anonymised data from DairyNZ based on Fonterra farms and their Overseer. I don't know which version of Overseer but for these purposes it doesn't particularly matter if we're talking about a percentage reduction. So I looked at what they had and what they were granted consent to leach to under whatever system and I've put in my own column and I haven't done this, this isn't the purpose of Plan Change 2, it's something that exercised my mind in the last two weeks, so I did that a week ago, put my own column in there of what would if it had been if it was 20% less and with about half a dozen exceptions it was more demanding by quite a lot. So in terms of that equity –

1105

Q. So that's a very useful piece of work.

A. Yes, so in terms of equity, if there was a perception that this group is somehow escaping scrutiny, I think theoretically they've had a period of time of one view not having to, but on another view not being able to make change but this will compared with their peer group who may have secured consents, some of those are at quite high leaching rates or very long terms.

Q. Yes, well I think that was the next point I was going to make, of course I don't think we've got any figures on that but it seemed like the majority, that's all of them got 20 years.

A. Yes, well we do have it.

Q. Is there a range is there?

A. Yes there is and we do have that, we can provide that, that's been information we've shared with the parties. There's a bunch of them probably expire 2030 to 2035, sort of that period and then quite a number out towards the 2036, 2037 period, so if that's useful to you. I found it useful in thinking through duration and legacy.

Q. Could we have that please?

MS JOHNSTON:

It's attachment D of Ms Foster's evidence. I can give you the document reference just for later, 202.1133.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS CONTINUES

A. So it's natural I think to assume that the peer group who have achieved consent did so on a particularly strict basis but I enquired behind it and found other ones.

Q. Okay, thank you very much for that, that was very helpful. So my last point which Commissioner Hodges is going to join in with, it's a sort of nervousness about this addition of risk throughout the provisions and it extends beyond nitrogen leaching, it seems to relate to other activities as well, in the way some of the provisions are worded that may not have been intentional and if you're going to – sorry I haven't an immediate

example to give you I don't think. I've written something down here but I'm not sure that it actually bears it out but I guess that's just something that we might need to keep in mind in that this plan change was dealing with nitrogen leaching, so there's a need to be a care in drafting, doesn't there, that there's no overreach in terms of other things here?

A. The first response is there's no intention to, these additions were made early in the work that was undertaken, so it was early expert gatherings around how to incorporate a risk framework if that was to be done when there appeared to be support for it and it was just an exercise in how you would support a risk approach through the policy framework, so replacing the expression risk, so that was the intention of it and if there's an unintended outcome of that, that it's capturing other contaminants, then that would need to be corrected in my view.

Q. That's fine, that's helpful but I guess my bigger point is that there's no definition in the One Plan of risk.

A. I think that's right, yes.

1110

Q. And, you know, when reviewing objectives and policies and things of that nature there's sort of two aspects to risk and one of them is (inaudible 11:10:06) and the other is consequence, and I'm – the effects definition in itself recognises probability and impact in terms of no probability and high impact (inaudible 11:10:23) and the NZCPS actually in the glossary talks about: "Risk is often expressed in terms of the combination of the consequences of an event including changes in the circumstances and the associated likelihood of occurrence," and then it refers to the a New Zealand-Australian standard November 2009. So I guess my question is, well, what are we really dealing with here, are we really dealing with the likelihood, the impacts of nitrogen and might get out into the wider environment rather more than the consequences, and at this point I'd like to hand over to my colleague. Commissioner Hodges I think raised this point first and it had been troubling me a little so I thought I would start and hand over to him.

THE COURT: COMMISSIONER HODGES

Leave me in the muck afterwards, is it? No.

WITNESS:

High risk of it.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Yes, Ms Edmonds is quite correct. The RMA is about management of effects and to me it's not the management effects of risk, it's the management effects of nitrogen leaching.

A. Yes.

Q. And there is much more to PC2 than just managing risk, its primary aim is to manage effects. And I think the inclusion of the word "risk" is diverting attention from the main purpose of the Act, which is to look after the water and reduce the amount of nitrogen. That's my concern. And certainly more than just risk scorecard options in this plan. So I am concerned about that because – and the main reason is that it diverts attention from what we're trying to achieve, which is minimising reduction, minimising nitrate loss from the soil. So do you have any thoughts on that?

A. Yes. I think that the building blocks that come, that follow from the risk assessment that Professor Horne and Dr Jolly have explained respond to that risk with real on-farm practices representing real reductions in leaching, so within broad ranges, so those are the things that respond to the potential intensity, duration, and consequence of practices that result in nitrogen leaching. So to me the important part of the formula, of the framework has been making sure that those are – that the framework demands those in the right proportion to the likely estimated intensity, duration, you know, consequence in the environment of the N sources creating that. So whether one assesses that using whatever tool the response to that is a real thing and not a theoretical concept of risk. So to me that's – I think it's covered off by the way that the plan change drives requirements to implement actual measures on a farm. So that's –

Q. Of course it assumes that the risk scorecard remains in PC2?

A. Well that's right, that's been – but under either approach that's the – that's the ultimate, the action required by the framework is still measures and in my view potentially superior measures under both of the frameworks that I advocate because they're not just going to, it's not just going to be farming to a number, it's implementing measures. That's the – to me the big change that comes from the message even from the declaration which is you can have all of the applications of this area and the numbers you like but what we really need to see is change on farm and that comes through commitments made in a nutrient management plan, freshwater farm plans, and enforcement of those which is a whole different topic, yes.

1115

Q. To me it's a change from an output based system to input based system. Overseer for all its sins produces a figure of what's leaving the farm. This one just controls what goes into the farm. They're both doing the same thing but I think to change it without thinking of the actual consequences could be risky. I need to do more work on it, but as I always do, if there's something on my mind I'll let you know so you can give me your thoughts back. So I understand what you're saying but I still have a concern about implementing risk or introducing risk when the key issue is preventing nitrogen or minimising nitrogen leaching. So that's all I had to say on that one and I'd just like to come back to something that took me a little bit by surprise yesterday which was Dr le Miere's comments about Overseer having variations of 50% plus. I was very much aware of the 20 to 30% range on some occasions you could get 50% where there was no localised verification that had been done. Now I'd just like to take you to the graph that Dr le Miere referred to yesterday and it's in volume 3, part 1 of 2, it's tab 6 and it's 301.0523. My reason for raising this is if you are – well maybe I'll start with the graph, in a couple of cases there, maybe five or six of the graphs, they're probably at least 50% above the predicted value and in some cases close to 100%. Now that is very significant and it's significant in terms of Table 14.2. If we take just an example, they're not actual numbers but if we look at an LUC class 1 where the limit was 40 kilograms of nitrogen leaching rate and you had a farmer who had got

an Overseer limit of 30, his number came out at 30, and he was 50% on the low side, that would mean his actual figure was 45 and if I'm not complying with PC2. Similarly a farmer who had an Overseer number of 60 and he happened to be 50% on the high side, when you brought it back down to the 50% less he would be compliant with Table 14.2. Now I don't know what these figures in the graph are based on but if they're right and those kind of variations can be expected in the catchments of concern here, then it brings into question the reliance that can be – a very significant question on the reliance that can be placed on Table 14.2. So I'm wondering is there any way in which we can be given further information on this graph and I think that your Honour you had some thoughts on that.

THE COURT: JUDGE SEMPLE

Yes, Ms Johnston we have been talking about this and the concerns that it raises for us and I don't think it was – I think it was some calculations that Mr le Miere had done and gave in oral, I don't think we've got anything in his written brief but more importantly we started to wonder whether we might want a piece of evidence from the – or the ability to ask questions of this report author, so that's John Tavernet, who seems to pop up in many of the working parties and so on in relation to Overseer, but I guess we're being asked to agree a recalibrated Table 14 and there's questions in our mind looming about the extent to which even a recalibrated table actually provides sufficiently accurate data and of course the veracity of Table 14 goes to the importance or otherwise of having alternate pathways. So it's a starting point for us in our determinations, it's a matter that's causing us some consternation.

1120

MS JOHNSTON:

Yes Ma'am, or there might be opportunity if we've got a February date for example for the exchange of briefs and I have noted that there has been some requests that I was going to address at the end of this around working examples and we might be able to use the January month sensibly.

THE COURT: JUDGE SEMPLE

Yes, that might be the case. You know, I mean the Court can request its own piece of evidence, so it may be that you say it is more appropriate for us to do that rather – well I'd like to come through you but I'd like you to think about that and to perhaps talk to Dr le Miere.

MS JOHNSTON:

I'd like the opportunity to talk to Dr le Miere and Professor Horne and reflect on that but I take on board your point and will exercise my mind and I will be able to update you maybe even before the end of the day.

THE COURT: COMMISSIONER EDMONDS

It exercised my mind from the time I thought of it at 2 o'clock this morning. I suddenly realised that this outside my realm of expectation and I thought if it's true it will be significant, but I'd like to just know if it applies in this catchment. If it doesn't my concerns will be – they will just disappear.

MS JOHNSTON:

Thank you Commissioner yes and I note that and I guess it goes to that whole conversation doesn't it about the different options and the pathways and I think why we're all here, which is to try and find a way –

THE COURT: JUDGE SEMPLE

A way through that's right and I mean there most certainly are qualifications and exclusions in the report so it may well be that there are matters that, you know, can be quite simply explained to us as to why that is a concern that can be relatively easily put to rest but it certainly in terms of, I mean it seemed to be occupying Dr le Miere's thought process as well.

MS JOHNSTON:

From memory he did make some qualifications around that graph, I need to check my notes on it. He did qualify that.

THE COURT: JUDGE SEMPLE

He did, yes.

MS JOHNSTON:

But I accept the point and I think we need to be able to provide you with that reassurance, so I will take that on board and reflect on the pathway forward.

MS ONGLEY:

Ma'am, I will talk to Ms Johnston about this, but because it did come up orally when Dr le Miere gave evidence, I will seek an opportunity for particularly Dr Dewes to be involved in that, but I'll talk to Ms Johnston.

THE COURT: JUDGE SEMPLE

Yes, and I think we'd reached a position where we thought Mr le Miere might need to produce a supplementary brief to bring some of that in. I think it was him that we thought might produce a supplementary brief which means that if there's, you know, anything cross in relation to that. And ultimately we want the best available information to make this decision.

MS ONGLEY:

Understand.

MS JOHNSTON:

Yes and we'll take that point up Ma'am but there are a couple of other matters in that regard I'd like to talk to you about in terms of potentially some supplementary and otherwise.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS CONTINUES

Q. Well Ms Foster, I raised the question and you didn't even have to give me an answer.

A. I'm worried that more poor grasp of the science and numbers was going to let you down.

Q. Well this one I am hoping you will be able to help me personally. The issue of the number of discretionary consents, there seems to be this expectation there's going to be a very small number, like that seems to be the impression I'm getting but I'm not sure I'm correct in that assumption or whether the assumption is correct. Do you know roughly how many consented activities, high intensity farming activities have been consented?

A. Not off the top of my head. I have asked recently but I never retain the number when I get it sorry.

Q. Because from the very rough information I've got, mainly from the declaration decision, there could be roughly a similar number of consented and unconsented, we'll get this information in due course I'm sure.

A. We will, yes.

Q. But if that's the case and the intention was that 60 to 80% of people would get the controlled activity pathway, that still leaves an awful lot of people that will be up for the discretionary activity. Do you have a view on that please?

A. The answer is we don't actually know and partly for the reasons I explained before is that at some point, people who are distant from whatever the threshold is that's set for them, 14.2 or something else, they have a decision to make about they intervene, how they interrupt their business to try and get down to it, whether they do that or whether they take their chances on a discretionary activity. So that's going to be a very individual, you know, to do with demographic, how old that person is, where they are in their business, what their mortgage looks, all of those considerations, so we don't actually know the number. But for the purposes of modelling, what Professor Horne looked at was let's assume that certain people make a decision to drive down by this much, and it was the nine kilos, 10, 12 kilos, 15 and 18. So that was how that was that was accounted for, but we don't know with any precision how people will respond to that framework, so that's, yeah, I can't – we can make some assumptions around it, but it is a behavioural issue, really.

Q. Yes, I can't help feeling there is a degree of optimism that may be unlikely to be achieved and some of the decisions that some farmers will have to make are very significant indeed and probably totally changing the land use. Making those decisions in the timeframe that is available is going to be really hard for them. So these are the kind of things that exercise my mind, not only from a regulatory point of view, but from the effects on the people that are going to have to.

A. And I would accept that, but for the fact that this process has been underway –

Q. Okay.

A. – since 2019. So the – Horizons has been engaged in conversations with its community and for those who have concerns about Plan Change 2 from perhaps an environmental sense but also with the sector groups so my view is that sector groups have some responsibility as well, duty of care, to make sure that people are ready and my view has always been that they have had, they have been on notice and they could have done a lot of work towards preparing Nutrient Management Plans for whatever regime comes, whenever, and freshwater farm plans have come in on top of that, so there can be no excuses and this regime –

Q. I accept that.

A. – yes, and this regime is intended to remove any. So people need to make a decision and deliberately we started out earlier on in 2020 with kind of a two-year period of grace to make, to lodge an application. That has been brought back again deliberately and with the support of the sector groups to a year so people, they know that if they don't make a decision in that timeframe they automatically fall to be a discretionary activity, yeah, so that's – yeah.

Q. Okay, no, that's fair, good answer, thank you, thanks very much, that's helpful. And I'd just like to get some understanding of where the NOF is likely to go and you did have some prior warning of this question coming, I think.

A. Yes.

Q. Is it intending – intended to include an allocation project – process in the plan change? I don't know what it is, I just want to know if that's going to be done?

A. No, no. The team working on this at Horizons is not at the stage of being able to say that it does or it doesn't. I can't, I can't say that it does. They are at the stage of engaging with, literally now, there have been team members here observing this and when they weren't here that were at engagement meetings with communities in the region on Oranga Wai and what it means for them and what the possible, you know, what the possible solutions to that might be. So and anything that I tell you is not on behalf of Horizons –

Q. I understand that.

A. – because it's not yet in any shape or form a corporate sort of position. And Horizons has agreed to a process that means that any draft material it puts out goes first to iwi and hapū, and the regional council, this is their preference, goes first to them, so that when it goes to the council we can say: "And this is what iwi/hapū partners think about it." So that, that process will be – will take time to, sort of to run the whole, but we, we don't yet know. I can't say it won't, I can't say it will. But we're also engaged in discussion with MFE and other practitioners around the country about exactly what limits look like and how you – because there's a lot of theory around it, exactly how that allocation frameworks might work, so, yeah.

Q. And there is some practice as well, because Rotorua was exactly that.

A. That's right, it is.

Q. Ms Edwards was involved in that.

A. That's right.

Q. I don't know how well it's working, but it seemed to be a very sound process.

A. Yes.

Q. But I'll be quite honest, I don't know how the plan can give effect to the NPS-FM if there is no allocation strategy?

A. No. And well, I think there is also just the broader question about whether regulation is the answer to the size of the problem that we have, which I think even on the mitigated coloured up map is challenging.

Q. Mhm.

A. So there is a place for regulation and for tweaking settings for – whether that's by allocation or by input controls for nitrogen leaching from farming activities, not just intensive farming land use activities but from rural sector so there will always be a place and that's that mapping shows that, but doing that will have some impact. But the size of what's left is impressive. I think the only catchment in which this is not a massive challenge is the Whanganui where there is a very large national park, so for that, the answer I gave, similar answer to one give at the Waikato hearing which is that regulation, in my view, can only go so far and I think it would be unfortunate if the question of how much reduction can you contribute gets litigated farm by farm when really they can't contribute that much and the bigger question is a catchment-wide question about which – where do we get the best results from, for example, retiring land in particular parts of the catchment, who do we talk to and for, in my view, a better investment of money might be rather than in fighting about regulation might be in investing in non-regulatory measures that actually take land out that's the source of problem contaminants.

Q. Well, your answer confirms why I asked the question, because I'm very firmly of the view it has to be a catchment-wide approach. It can't be a farm-by-farm approach.

A. No.

Q. But that has to come from the council as the regulatory authority –

A. That's right.

Q. – whichever it chooses to do it.

A. Yes.

Q. And I am just concerned that there seems to be no real commitment at this stage to looking seriously – no that's not right. I'm just concerned that if nitrogen reduction has to go well beyond what Table 14.2 requires –

A. Yes.

Q. – is that going to be addressed in the plan change, this really my, my question was?

A. Well, it has to be.

Q. And that's my point. But that must involve some kind of allocation strategy or at least a programme to get to an allocation strategy.

A. Mhm.

Q. Do you think that's likely to be considered?

A. Yes, it is likely to be considered. That's all I can say.

Q. Okay.

A. Yes, but I think my answer is really that there are agencies other than – or agents other than just the regional council and its regulatory plan that need to come together –

Q. Yes.

A. – and fund meaningful – and there has been success for Horizons with it's sustainable land use initiative programme in terms of sediment, so that's going to be some difficult discussions, but it involves parties other than the region, other than individual farms and in my mind it involves the government of this country as well.

Q. Okay, no, that's fine, it is very pleasing to hear the approach of working with mana whenua on the way through, because certainly in other cases I have seen that work exceptionally well, so.

A. Well, we're trying.

Q. That's good. Now, another thing that surprised me yesterday was when Dr Jolly came back with an answer to a question that she thought I might asked and I had only thought about it two hours I got into the hearing, so I was most impressed, Dr Jolly, thank you very much indeed. It's the relationship – it is the question about how you deal with the variability of commercial vegetable growing emissions of nitrogen losses, because it changes on year-by-year on a particular paddock, where you've got different crops.

A. Yes, yes.

Q. Has any thought been given to that?

A. Not before the question yesterday, but I think it raises a good –

Q. Oh, dear, I should to shut up, shouldn't I?

A. – a potential wrinkle in provisions, so I think some of that can be addressed through, through how activities are managed in a Nutrient Management Plan because that must address rotations and seasonality, so some of that will be, but the assessment of risk and what that is based on, whether that is a worst case or a, you know, the easiest case, that is an important question that needs to be factored in and I don't think it is at the moment.

Q. Okay, thank you. And a question I was starting to ask in a number of situations at the moment and I did at PC1 is how are stock wintered off site dealt with? Because the only situations I've seen is farmers' cases are that we winter our stock off site so we don't have to worry about the nitrogen arising from that. How is it addressed in Plan Change 1, how will it be – sorry, in the One Plan or Plan Change 2?

A. I'll tell you about the theory and I can't speak for whether this is what's, this is what's – plays out, but the One Plan seeks to manage both existing and new, so if a farmer winters off someone else's stock of dairying nature, that – and hasn't done so before, that would be classified as new intensive farming land use and that would require consent and be controlled separately. So if that's been an arrangement that's happened over a number of years and was established at the baseline date, 2014/15 whichever the date is in the Table 14.1 I think it is and established as existing, then it would have to be managed as part of the, in some way in the application for consent. It would be existing but if it's not then it's new.

Q. Okay, there's obviously been some surprise at that statement I think and you may well get a question from your counsel on that one but it is something that concerns me because it can fall between the cracks.

A. Yeah but I don't see how it can be because an application would be parcel specific, so I can't see that it would work in any way. I think that was the intention of the framework and as I say I can't speak for how it plays out but that's my reading of the rule.

Q. Just one last question, it relates to the risk scorecard because at this stage we have no view, we form no opinion on whether a risk scorecard approach should be included and whether it can be as a result of scope but it does seem to me to be something that will be required in some form

in terms of the new farm environment plan regulations, so if there's something that could be done in this particular plan change that linked in with that, I think that would be a very good start, even if it's only in a non-regulatory form in this particularly plan change. Do you have a view on that please?

A. Yes, I haven't turned my mind to exactly what that would look like, it simply hasn't been part of the, sort of the montage of alternatives that have been put forward by parties, so I think that it is a tool for determining a gateway status and for identifying the measures that are required to achieve nutrient reduction, so I think it has a role in informing how far one goes and what measures are included, for example in freshwater farm plans, in much the same way as is intended here but you still need those other elements of it, the nutrient management plan or the freshwater farm plan. So it informs decision making and as I understand it, individual farmers and growers use perhaps a variety of those tools to make on farm decisions about systems, so financial ones, ecological ones, stock health sort of decisions as well. So it's one of a suite and would continue to do so.

Q. Thank you.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just have a couple of questions and I'm trying to decide whether we'll adjourn for morning tea or I'll ask them quickly now. It's probably five minutes or so, is that all right?

A. Yes.

Q. And it just comes back to the questions that Commissioner Edmonds asked you about people's behaviours which of course is what this is all about, how do we drive behaviours, how do we incentivise the behaviours that we want to achieve the outcomes that we're looking for and I think you said, yes some people will look at Table 14 and what it would take to achieve that and then they will look at 20% reduction and what it would take to achieve that, if they're vegetable growers, they'll look at 35% reduction and what it would take to achieve that and the concern that I have is the extent to which Table 14.2 becomes effectively redundant so

that if it is, and I think you definitely did not use the term “easier”, but I did write down the term that you used yesterday in answer to a question. I think you said “slightly less demands on them to meet the 20% or the 35%.” I mean it must be something less than the table limit or you wouldn’t need the pathway.

A. That’s right, just some, just some, that’s right, yes that’s correct.

Q. And so is it possible that it could be regarded as a workaround, as an avoidance of Table 14 ultimately? That Table 14 becomes an artefact that sits in the plan but ultimately people are consenting to 20% reductions and 35%? Maybe the question is why wouldn’t that be the outcome?

1140

A. I think that it will but my answer is no different from yesterday, that some of those will coincide with where they would’ve landed anyway under Table 14.2.

Q. Yes, I get that, in terms of the outcomes might be generally the same.

A. That’s right, yeah.

Q. But what troubles me is whether that then fails to get effect to policy 5.8. So when you look at the wording of policy 5.8, what it requires you to do is to establish nitrogen leaching maximums and can we say that – would you, as a planner say that establishing a 20% reduction or a 35% reduction is establishing a maximum or is that the job of Table 14?

A. And I think that’s why the changes were proposed to policy 5.8, to talk about limit.

Q. Yes.

A. I’d see it as a limit rather than a maximum.

Q. And I have a question, and I think there are certainly questions raised about the extent to which you can use the plan change to make changes to these policies, yes, but you would see them as different things, one’s a limit, one’s a maximum, mmm, all right.

A. Yeah, and I'm not sure that any party has asked for – we’re in a groove, been on a journey and no one has said delete Table 14.2, so it’s not something that we have seen. We’ve seen it as a genuine alternative because practically people look at I think what they can do. Can they get

there, so it's not about I want to use that one or I want to use that one, it's where can I get to but, yeah I think that's right.

Q. I don't think that's how normal people read plans. So you look at what –

A. That's right, perhaps they should.

Q. Yes, maybe they should but I don't think they do and I think we heard evidence from Mr Passey about the way he looks at his Fonterra scorecard and goes well, you know, if it's red that's the thing that prompts me to change my behaviour or to think that I need do something. I think we understand the way that behavioural is led and perhaps in a different consenting framework, if we wanted to incentivise people towards Table 14.1, which I think it would be fair to say that is the best of – if people could achieve that, that would drive the most change in effects on the environment.

A. Yes the evidence says that.

Q. The evidence says that, so if we were intending to drive people to Table 14.2 as the primary tool, we would generally cascade the planning framework so that there was some planning advantage to Table 14.2 as opposed to the alternatives. Now as I read this plan framework, there is nothing – there is no planning advantage in Table 14.2 is there?

A. No. I think that's probably a reasonable conclusion.

Q. Yes, and have you given any consideration to whether there could have been? Whether there could have been some stepping or differentiation between adherence to the table as the gold standard and then an alternative?

A. Yes, I would've liked the luxury of having a clean slate to craft something at all but have come in at a stage where things were underway and it is an imperfect framework and its imperfections have been embellished by the process as always happens, so no it hasn't and the Table 14.2 is now viewed inviolate and no one has asked for its deletion so we haven't gone there frankly, a provocative thing to do in the current circumstance.

Q. I understand that. The other thing that I just wondered about is the way that policy 5.8 reads to me is that you have to establish nitrogen leaching maximum limits, the maximums are achievable on most farms and then the point of PC2, as I understand it, is to establish a limit that is achievable

on most farms because Table 14.2 has over the passage of time, the ability to meet that has been eroded and secondly to provide a framework for those, an appropriate, workable framework which I take to mean the ability to apply for a consent and not be stopped in a policy back, just the opportunity to apply, such that the regulatory environment can continue – work again, people can be granted or decline consents as opposed to being stuck.

A. Mmm.

Q. One of the things that seems to have happened in some of the evidence is almost a conflation of the policy idea that most farms should be able to achieve, almost what I think I'm hearing in some of the evidence is most farms should be able to achieve either Table 14.2 or obtain a consent through the controlled activity pathway.

A. So the –

Q. Do you – and I am saying I think the purposes of the plan change don't necessarily conflate those two things such that I don't think there's anything I read in the purposes of the plan change that say at the end of it most people should come out with a consent. Is that a fair statement or do you disagree?

A. I disagree to the extent that I read that overarching policy as wanting the limits to balance to be achievable, and there's some debate about the language, whether it was achieved, but had to be done, able to be done, on most farms.

Q. And when you –

A. So that could be by whichever route, yes.

Q. Right, so that's because you're using the term "limits" to incorporate the 20% or the 35% reduction as well as Table 14?

A. That's right, yes, it is.

Q. And if I was simply to read Table 14 as being the maximum and not talking about 25 or 35 limits then those two things would be different?

A. And hence the change. Hence the change proposed, yes.

Q. Hence the absolute necessity for the change to make everything else hang together.

A. Yes, that's true.

Q. Yes, okay.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. You might have – I'm happy to hold the witness though you have got matters arising I think, don't you?

A. I do, just – only just in terms of that last line of questioning, Ma'am, and I just wanted to take the witness to the decisions version of 5.8(a) and the plan change provisions of 5.8(a) and the discussion around maximum and limit.

Q. Yes.

A. And I was going to ask Mrs Foster when the word "limit" was introduced into 5.8. So I think that's relevant –

Q. Yes. That will be helpful for me, mmm.

QUESTIONS ARISING: MS JOHNSTON

Q. So Mrs Foster, if you could have the decisions version of 5.8(a)?

A. Yes, so that's 101.0498, top right page?

Q. Yes.

WITNESS REFERRED TO DOCUMENT 101.0498

A. Yes, so I go to – yes.

Q. Roman numeral (i)?

A. Mhm.

Q. And if you could read that, that's – and then if you could look at the decisions version 5.8(a)(i)?

A. So that's what I've got. So that's 5.8(a)(i), yes.

Q. And if you could compare the two and perhaps explain to the Court when "limit" was introduced?

A. Through the discussion post-appeals and expert conferencing, yes.

Q. And was that in relation to the risk tool –

A. Yes it was.

Q. – or the specified reduction pathway?

A. It was in relation to the risk tool.

THE COURT: JUDGE SEMPLE

Oh…

MS JOHNSTON:

Yes, cool. So it's quite an important point in terms of your line of questioning, Ma'am. As I understand your line of questioning, you'd assumed that the word "limit" was intended to encompass the specified reduction pathways, the 20 and 35%, and the risk tool.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. Yes, yes.

A. The decisions version which encompassed the specified reduction pathway included maximum. The limit only was changed.

Q. Didn't – yes.

WITNESS:

That's correct. I beg your pardon? Yeah.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. So the – you might be at risk of giving evidence from the bar here but it's all right – no, no, it's all right –

A. Well that's why – Mrs Foster did answer that question in her own volition.

Q. So the Commissioner has considered that – yes, okay, it might or might not change my question.

FURTHER QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. The question I have is if Table 14.2 by virtue of the specified reduction pathway, let's just think about that, not the risk tool, the specified reduction pathway comes in, for a start it seems to me, on the evidence we've heard, most growers, most vegetable growers will never look at Table 14.2 again.

A. Yes, the potatoes, yes.

Q. Unless they grow potatoes. So for them, for that group of people, Table 14.2 is no longer relevant to them. For the balance, they then have the

choice of Table 14.2 being relevant to them or choosing the 20% reduction pathway and I think what we've heard is that the 20% reduction pathway might be slightly less demanding for some of them and they will take that. So the concern I have is that by introducing these alternatives, Table 14.2, is I think the term that was used in cross-examination and questions of you, is that Table 14.2 is undermined and Table 14.2 is something, as you said inviolate, but perhaps inviolate because it's required by policy 5.8, because otherwise why wouldn't we just get rid of Table 14.2 in this process?

A. Mmm, well that's why the publicly notified version proposes the exceptions, it foreshadows exceptions, yes, as well the maximums in that table.

Q. But what is the point of Table 14.2 at the end of all of this?

A. Good question. Where we started.

MS WRIGHT

I just had a quick question just in relation to the – it came out the equity discussion between Commissioner Edmonds and we were pointed towards the consent expiry table. My question was just that it sounded like from the response there might have been an equivalent table relating to intensity and if there is, would we be able to –

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. Yes, thank you Ms Wright because actually I had put an asterisk next to that as well because I wasn't certain that that document actually represented what Ms Foster was actually talking and I wondered if there was another document because there was a discussion about leaching rates as well. I thought perhaps there was more data on what the current consented arrangements are, not just the duration which is what that table showed but perhaps what the terms of those consents are or some analysis of that.

A. Yes, I'd just need to check how available it is to people. I assumed it's anonymised but it's what I understand to be the dairy data set.

Q. Yes, I think that might be different from the document that was attached to your evidence.

A. It is. I haven't attached that. I referenced it but I didn't attach it.

Q. That would be helpful, thank you for reminding me of that, I had made a note and then forgotten about it.

WITNESS EXCUSED

THE COURT: JUDGE SEMPLE

Now I think that's the end of your witnesses.

MS JOHNSTON:

It is Ma'am, I just wanted to perhaps raise an issue before I end the council's case, is that obviously there's an indication of potentially some further information that the Court may wish to bring in. Yesterday during questioning there was also reference to the NZIER report that is footnoted and explained and relied on in section 32 and Ms Foster relies on it, I would like to introduce that report. It should have been in the bundle.

THE COURT: JUDGE SEMPLE

Yes.

MS JOHNSTON:

It is a notified document that went out with the section 32. I understand that my friends wish to reserve their position in relation to that. I wonder whether we could deal with it through the supplementary process if necessary that we are about to embark on it seems. So before I close my case, I just wanted to flag that as a live issue for me and wanting to put the best information available, was analysed, conclusions drawing on it in relation 32, notified with it, so open to how we deal with it, just wanted to alert you to that.

1155

THE COURT: JUDGE SEMPLE

I mean certainly from our perspective, we are grappling with what we think are some gaps and that often happens because things have been dealt with at first instance at council hearing and we think, you know, we've moved on from them and then we haul you back to some of those foundational principles and documents. So there are things that we are looking to see first hand. I appreciate that that creates some difficulty for counsel in terms of, you know, we're introducing material late and then you haven't necessarily had the opportunity to contemplate it or to ask questions in relation to it. So I have no difficulty if there are matters that are being introduced, if we need to re-call witnesses so that they can be cross-examined material, then I'm happy to reserve your ability to do so and my preference is that we get the information and we deal with any prejudice that has arisen by providing you with another opportunity, rather than we preclude the Court's access to that information.

MS JOHNSTON:

Thank you for that indication Ma'am. I'll work with my friends about what that might look like for you.

MS ONGLEY:

It may be an issue whether the document is introduced as evidence or just as a background document that informed the section 32, so I'll talk to Ms Johnston about that.

MS JOHNSTON:

And I'm very open to that.

THE COURT: JUDGE SEMPLE

If it's simply handed up, then there may not be any difficulty but if it's not a document that you were contemplating necessarily and you want to ask somebody questions about it, you've run out of witnesses, so we might need somebody to be re-called to do so.

RESPONDENT CASE CONCLUDES

COURT ADJOURNS: 11.58 AM

COURT RESUMES: 12.19 PM

MS EDWARDS OPENS

THE COURT: COMMISSIONER HODGES TO MS EDWARDS

Q. Just a couple of questions, Ms Edwards, thank you. How many consents for dairy activities have been granted since the declaration?

A. That would be a better question for the consents officer. My understanding is no, they haven't, and that's what I've – but I don't want to be giving – that's what I've heard from our farmers, yes.

1300

Q. Okay, that's fine. One of the concerns is always term of consent in these things, and 10 years is not very long in terms of many issues but I understand that's a maximum term. If the Court was looking at how to move things forward in a way that wasn't going to tie the future too much, what would be the reaction if a somewhat shorter framework was suggested under particular circumstances, how difficult would that be for farmers?

A. It depends on the extent of the mitigations they've got to do and this is the real issue, so it would depend on where the Court lands with what the alternative pathway is and if it was only a discretionary activity consenting pathway it would depend on what that guidance is around what you've got to do, and I take on board Commissioner Edmonds' questions with Mrs Foster around what's reasonably practicable and what are good management practices, best management practices, and additional measures and I think the farming community's real concern for that discretionary pathway is well what's the consenting officer actually going to require me to do, and some of them are a long way away from that Table 14.2, and if I was only going to get a five-year consent, I have to spend $100,000 on a resource consent application and I was only going to get a five-year consent and implement significant mitigations, they haven't got the length of time to do that. Those would, you know, they would also be good questions to put to – to ask Mr Holdaway about the likes of, you know, certainty for – the certainty they need to get, borrow

money to invest in these mitigations and I would just hate to see from a regulatory failure perspective if there were these very short-term consents granted farmers can't do them, does the system sort of grind to a halt or is there massive enforcement actions needed and what does that do in the meantime for water quality outcomes.

Q. I certainly understand the answer and it's something I'm very alert to, is the need for time if there's big money involved in working it and you talk about consenting, discretionary activity consents, do you think there's enough policy guidance in relation to that? Because every consent officer will have their own ideas as to what's acceptable. What are your views on that?

A. And this is the primary reason that – well that and the cost – so is around that lack of guidance and the farmers are very concerned about the potential inconsistency between different consenting officers as to what they're going to be required to do, and that was really why Federated Farmers did this, the submission it did for the alternative pathway was it was a way of getting consistency into what they would be required to do. Something I have been thinking of over the last couple of days is could you incorporate some way this risk tool into the discretionary pathway as a means of giving – it wouldn't address the concerns in my submissions around cost and the time of getting consent and things like that because you'd be going down a discretionary pathway but if there were scope issues is there a way of incorporating that tool through that discretionary pathway to make sure you've got more consistency about the extent of mitigations that farmers need to do. I think giving farmers that certainty before going to apply for consent, there will be a significant benefit in that.

Q. Yes, it's been something that's exercising my mind because it does seem a little bit loose at the moment in my view, but – the next one I think we're totally on the same page in terms of information gathering for possible future use of Overseer. I would hate to think of us being 10 years down the track and having to say: "I wish we had that information as you suggested," but it wouldn't be that hard to make some provision to ensure

that whatever is required for an Overseer file was produced, even if wasn't used to produce an Overseer file, would that be correct?

A. That's my understanding. And you can – and I, I would imagine that it's also as simple as the council on its portal just make sure that it's collecting through there, doing a simple comparison exercise, what you need for an input file for Overseer and making sure that the portal lists all the same information.

Q. Okay, thank you. And the other issue about the comparative use of Overseer, again I'm totally on the same page with you, but the information provided by Dr le Miere yesterday really opened my eyes to the extent of the possible variations. I agree that I don't think it should be you've got to get down to a specific limit, it should be able to demonstrate a 20% reduction whatever it starts from but there are issues with that and we need to think our way through that a little bit more?

A. Yes.

Q. When you said about the Federated Farmers and Dairy New Zealand relief, were you saying it specifically mentioned a risk?

A. No, no, no. I was meaning in respect of the – only in respect of the alternative specified reduction pathway and back then the relief that was mentioned back then was the 10% reduction or the 75th percentile whichever was greater and we ended up going for – the decision support was 20%.

Q. One last comment, thanks for picking up on my risk concerns, I think they're very easily fixed and just a few wording changes really.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

THE COURT: JUDGE SEMPLE TO MS EDWARDS

Q. I've just probably got two quick matters. At your paragraph 23, you talk about Federated Farmers providing a controlled activity pathway for a portion of the dairy farms that cannot meet Table 14.2, is less restrictive and you would've heard my exchange with Ms Foster about why would you aim for Table 14.2 if the 20% pathway is – is that something that Federated Farmers has given thought to? It just seems to me that most

of this is raised and if you can't meet Table 14.2 then here's an alternative but if you stand back and look at the way that it's been framed up, that's not quite the way that people behave?

A. During the council hearing we looked at – it was assumed in the modelling – during the council hearing Federated Farms NZ, we got Dr Grundel to do economic modelling for us and the assumptions – he was putting farms into different categories and the assumption he made is if you have to make a reduction of less than 20% in your nitrogen loss, you'd go with Table 14.2A because that's the least restrictive and this is why I'm really interested to see what Professor Horne and Dr le Miere come up with in terms of the numbers because my understanding from that was there was still a decent chunk of the farms that would be making that extent of reduction, so they would be going down that 14.2A. Then I also understand, in terms of the modelling that I saw and the distribution curves for the 75th percentile under the specified reduction pathway, there were a decent number of farms with these long tails, they couldn't - (inaudible 13:07:52) 75th percentile was more than a 20% reduction, they physically could not do it, so they would be going the discretionary pathway. So I've always understood it to be a portion but I do agree with you that in reality people are going to opt for the easiest pathway.

Q. The other matter just relates to the discussion on consent duration and this might be a matter for you Ms Johnston in reply as well, it's just I just would be interested to understand your understanding of if the NBEA remains in force which, you know, it does today, then I had thought, and to be fair this is in workshops preceding the passing of the legislation, I had thought that the intention of the shortening of the durations was to ensure that things weren't locked in place for when the NBEA plans came in and I think I read your submission slightly differently, Ms Johnston, so do you have an understanding of how you think that that transitional five year duration consent provision works in the NBEA?

MS JOHNSTON:

So my understanding is that despite what PC2, if PC2 said 10 years, the council could only grant consents for five years, that's the reality of where we're at and

I guess my submission would be, I mean it places us in a difficult position as long as it's there but my submission would be that in the event that it is no longer there, that's why we need the 10 years but also, you know, PC2 is different from, you know, it is already requiring significant reductions. It's not like it's allowing, you know, it's a consent to take water in an old plan that hasn't been reviewed for a long time and, you know, this is part of the step towards giving effect to the (inaudible 13:10:06) but legally they're going to –
1310

THE COURT: JUDGE SEMPLE

I appreciate that, yes, but I thought the intent was to almost provide a sort of a pause that said if we're ever going to – my understanding was that the advise was if we're ever going to re-set the parameters, there has to be some kind of, you know, sort of pause, because otherwise people will keep consenting on 30 year consents or even 10 year consents and we'll never achieve the reductions. I'm happy for you to address me on that in reply as well, Ms Johnston, because I just would appreciate a little bit more on how that works.

MS JOHNSTON:

Yes, I think there's a point where they interconnect. Once the NBA plan gets in place there's a limit. So there'll be a point where whatever the duration that's granted now under an existing consent or a consent application, that that term will – it will basically run into the NBA restriction.

THE COURT: JUDGE SEMPLE

Right, yes, okay. And I guess what it says is direction of travel is that there's kind of potential for this closing in, thank you.

MS JOHNSTON:

And I think the only thing I would just say in regard, when looking at Ms Foster's I think was it appendix D, the consent durations, the rates she had in there because that's granted and there are a lot out to 2035.

THE COURT: JUDGE SEMPLE

Yes I noticed that as well, mmm. There's some even harder days coming.

COURT: COMMISSIONER HODGES

It comes back to the term of consent and picking up something her Honour mentioned earlier, might some way of differentiating between the three pathways be that if you go the Table 14.2 route, you get a 10 year consent, if you go for some alternative route, you get a lesser term of consent? That may be a way of encouraging people to go for Table 14.2?

MS EDWARDS:

The only thing I would say in response to that, it depends on how difficult, like it's not necessarily that they even have that choice if they're so far off the limits, it's more the extent of practice change, so –

THE COURT: JUDGE SEMPLE

It's a feasibility issue?

MS EDWARDS:

Yes, it's not even necessarily that they have a choice because there's so much practice change that they need to do and the issue is more that by doing that, you end up not getting the same practice – you're giving very short consent so farmers I think would argue to do very little because they haven't got the certainty to invest. So Mr Passey's evidence around putting in a feed pad, I know that it several hundred thousands of dollars, he said it was quarter a million, if he had a five year consent and the return on investment was six to eight years which is what I've seen in some of the other evidence, he wouldn't be able to get the money to do that, so he'd be saying well I'll do smaller practice change and the arguments they'd be making, the case they'd be putting forward to the consenting officer as part of that, so I think I would say yes giving different lengths might appear to be an incentive to go Table 14.2, the reality is if you don't have available mitigations to get to Table 14.2 but you still want to encourage infrastructure investment like a feed pad, it won't get you to Table

14.2 but will get you a pretty good outcome, shouldn't you have left that option open?

THE COURT: COMMISSIONER HODGES

I would've thought that if they're talking about a feed pad, they're not going to meet any of the options, they're going to have to go to discretionary, aren't they or do you think they might be able to do it by committing to a feed pad?

MS EDWARDS:

Well I don't know, depends on – well in the stuff I've seen feed pads do make a big difference, depending on how long you use them for and number of days and depending on whether you've got the right farm system that can bring in the feed, I mean it's not as simple as the infrastructure cost, it's everything else that goes with it. So I think my submission would be just think very carefully about potential unintended consequences if you're looking at (inaudible 13:14:33).

THE COURT: JUDGE SEMPLE

I think we can just about determine that there's an unintended consequence at every turn.

COURT ADJOURNS: 1.14 PM

COURT RESUMES: 2.20 PM

LEGAL DISCUSSION – HOUSEKEEPING

MS EDWARDS CALLS

MURRAY HUGH HOLDAWAY (SWORN)

Q. Can you please confirm for the Court that your full name is Murray Hugh Holdaway?

A. Yes, I can.

Q. And can you confirm you are a semi-retired dairy farmer not in a target water management zone and you are the current Vice President of Federated Farmers Manawatū Rangitikei Province?

A. Correct.

Q. You drafted a statement of evidence dated 13 November and a statement of rebuttal evidence dated – sorry, you drafted statement of evidence dated 13 October and a sometime of rebuttal evidence dated 13 November 2023?

A. Yes.

Q. For the Court's benefit, they are at page 203.1527, I think that is volume 2 tab 29 and at tab 30, 203.1535. Do you have any corrections to make to your evidence?

A. No, I don't.

Q. Can you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, I'm the lawyer for Mr Day. My first question just relates to paragraph 19 of your primary evidence. Do you want to grab this, then you will be able to orientate yourself, if you have a look.

WITNESS REFERRED TO BRIEF OF EVIDENCE

Q. And you've said there that it's seven years since council stopped accepting consent applications, would you just be able to explain to me

what you mean by “the council stopped accepting consent applications” and what your understanding of what has been going on is?

A. My understanding is that because of the uncertainty around the consenting process, that they stopped processing those consents, consent applications.

Q. And I have just got another question on a different topic and that is about the Oranga Wai process which you talk about, so the future freshwater planning process that you talk about in your evidence and you specifically talk about the community engagement that has gone on and the importance of that community engagement when dealing with tricky issues like allocating nitrogen. In your view, is it important that that process, I guess, isn't undermined or predetermined before it has had an opportunity to get through working through those issues with the community?

A. Could you repeat that, I’m, I’m –

Q. Do you think that’s important that that process isn’t predetermined or isn't undermined by other processes going on, it needs to be run through and worked through those, the tricky question of allocation?

A. What, I certainly don’t think there should be anything done in the meantime to, to prejudice that, that consultation and discussion around those complex issues.

Q. And then my final question just relates to discretionary activity consent applications and I understand you’re familiar with discretionary versus controlled activity, for example?

A. Yes.

Q. If a farmer was in a position that they needed to apply for a discretionary consent, do you have any views on the sort of guidance or direction that would be helpful for that farmer to have when putting that application together so that they could I guess have the most confidence that that they would get consent?

A. From my understanding, that would around the impact that their proposed activity has on the water bodies and so it's more of a understanding the greater impact on the catchment as opposed to just their farm.

Q. So that would help farmers to have that understanding of that kind of bigger picture first and then to be able to (inaudible 14:27:21) on their farm? I'm trying to understand if, you know, you were preparing a discretionary consent application, what sort of things would help you to prepare, like preparing for that application, where would you like a bit of guidance or assistance?

A. Well, yes, around the absolute details of the impact of the activities that I undertook on farm that they would have on the water quality and therefore the total impact on the water body.

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon, Mr Holdaway.

A. Afternoon.

Q. At paragraph 40 of your rebuttal evidence, I think it is, you talk about your concern being that the cost to a farmer for a discrepancy activity consent is likely to be over $100,000 once consultants' costs are taken into account which are costs on top of your estimates of application fees?

A. Yes.

Q. Did you participate in the council level hearing?

A. Sorry, in the?

Q. Did you participate in the council level hearing on Plan Change 2?

A. No, I didn't participate.

Q. Right, okay. In the section 32 report and you don't need to go to it but it's at page in the – 301.0088, there's an estimate of costs of consenting and they estimated and this was based on a Parmenter report, they estimated the cost of a controlled activity at $8,500, and the cost associated with a consent process where Table 14.2 cumulative nitrogen leaching maximums were not achieved was estimated at 25,500 if non-notified and 45,500 to 55,500 if notified. Were you aware of that?

A. Not specifically, no.

1430

Q. Okay. Ms Foster's evidence also states at her paragraph 159202.1052 that she does not anticipate that applications will be publicly or limited notified and that's for applications that exceed the risk limit set out in

Table 14.2(a). If that were the case also for exceeding the cumulative nitrogen leaching maxima, would you find that more a reasonable assessment $25,500 for a non-notified application or could you not comment?

A. Well I'm unsure whether those figures include consultant fees to accumulate the information.

Q. I think they do.

A. They do?

Q. But it was based on some work that was done in the Tararua District. So if you're not able to – if you're unfamiliar with that work I won't press you on it, but my next question was just in terms of the information that you're going to need for consent applications, are you familiar with the new Resource Management (Freshwater Farm Plans) Regulations at all?

A. Not in detail.

Q. Do you know about the – I will call it an information package that councils are required to collate and provide publicly available known as the catchment context, challenges and values or the CCCV? Do you know about that?

A. No, not in detail again, sorry.

Q. No, that's fine.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Just one, Mr Holdaway. Your evidence was very clear, thank you, but you mentioned that farmers are making conscious efforts to improve their practices, does Federated Farmers do any surveys of that kind of thing over the years?

A. I'm not aware of Federated Farmers doing that but I mean contact with, directly with farmers and via Dairy NZ were aware of the practices that are being adopted.

Q. Right. Could you just outline some of those for us, please?

A. Plantain is one of the options. There's continual improvement on effluent discharge, on water use on farms to minimise the water use on farms, and continual improvement on fertiliser usage and efficiency of.

Q. And presumably there's some fencing going on as well, is that right?

A. Yeah, there's clearly some fencing going on or the majority of dairy farms would've been fenced for quite some time but there is probably – in fact I know there is because we've done some on our farms, some fencing beyond what is required under regulation or under Fonterra's terms of supply, so there is still some of that going on and planting, yes.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. I just wondered if you could tell me a little bit about your Tiaki farm plan, actually I see you're providing in terms of respective purchasers, so just your reason for doing that, what value do you think a potential purchaser will get out of that farm plan?

A. Those plans outline the resources on the farm and the risks of environmental impacts that they have. They note the mitigations on some of those resources to minimise risk and also note where further improvements could be made. So for prospective purchasers they are some assurance that the farm is meeting certain standards and what the purchaser may need to do to continue that improvement.

Q. So what year would that have been produced, the one that you're providing?

A. Offhand I couldn't tell you exactly, but it would certainly be within the three years.

Q. Right, comparatively recently?

A. Yes.

Q. So and had you had one before or was that the first one?

A. I'd had a less official one done some time before that, but that was the first official one through Fonterra.

Q. And in terms of the possible mitigations in the further improvements, have you been working on those over the last three years?

A. Yes, yes, we have.

Q. Can you tell me a little bit about that?

A. Well, they are similar to answering the previous questions, so there was a couple of small areas on the farm where we didn't have streams fenced, so they were noted and they have been fenced in the meantime. We have continued to upgrade our cow shed, the water use in our cow shed,

reticulate some of the water usage in there to reduce that and that also reduces the volume of effluent that we collect and therefore need to spread. We have done some additional fencing and planting on areas that actually didn't required it under the Fonterra regulations or rules, just to keep moving and make progress on protecting the waterways, so and I can't think of anything else offhand, but yeah.

Q. That's very informative thanks and just a final question, do you need to pay for these Tiaki farm plans as a one-off or is this part of the arrangement you have with Fonterra?

A. It's a co-operative so I pay for them one way or another.

Q. Thank you very much for that.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. And just following on from that, so we had a copy of Mr Passey's Scorecard I think in his, so you get a Scorecard in the same way for your farm?

A. Correct.

Q. And can you tell me what you do with that when you get it? Are they annual?

A. Yes, they are, yes.

Q. Yes and so it arrives either in your inbox or through the mail, what do you do with it?

A. I do look at it and I match it up with the Tiaki plan to see –

Q. Yes.

A. – yeah, to see if it matches with what has been noted as improvements I could make and I have a 50/50 sharemilker on our farm so it creates a discussion with him as to some of the areas where we may be able to improve. And then in general there will be if there is something that needs long-term planning to plan some capital to be invested, then I will talk that through with the sharemilker and start planning that.

Q. And you might or might not be able to answer this for me, but how does – if you chose to ignore everything that was on the Scorecard, what would the implication of that be for your farm, for you?

A. That's a really good question. I'll have to say I've never contemplated ignoring them.

Q. Well, that's good.

A. There is, there is some incentive payments through Fonterra through the Co-operative Difference Programme.

Q. Right, just explain that to me, that sounds interesting?

A. I'm not 100% sure whether they are linked to the Tiaki reports as such.

Q. Right.

A. But there is certainly a direction of travel from Fonterra and within the whole industry that those things, those sort of things will be included in incentive payments into the future.

Q. Right.

A. And so yes, I do personally have an attitude that meeting the community's expectations are actually above the Fonterra requirements anyway.

Q. Right.

A. And so yes, we intend to make improvements wherever we can.

Q. That's great. Thank you, thanks for explaining that to me.

QUESTIONS ARISING: MS EDWARDS

Q. I do just have a very brief question arising from the last questions that you asked Mr Holdaway. Do you know what environmental obligations are a condition of your supply agreement with Fonterra?

A. Again, we need to comply with our consents.

Q. Yeah.

A. And all environmental and in terms of – oh, you're just asking specifically about environmental conditions?

Q. Yeah?

A. There is some around fencing, around having a discharge consent for effluent and round water takes and meeting the consents around our water take.

Q. And do you know what the consequences would be if, for example, you didn't fence a stream that you were required to or you didn't have a consent for your effluent?

A. Well, I'm sure if I didn't have a consent for my effluent there is – that will be part of the Co-operative Difference payments, so yes, I need to have consents.

Q. And do you know more broadly if you don't comply with your supply agreement, do you know what the consequences are?

A. Potentially, ultimately, they will stop picking up milk.

Q. Yes, thank you. Thank you, your Honour, that's just what I wanted to clarify.

WITNESS EXCUSED

FEDERATED FARMERS CASE CONCLUDES

HORTICULTURE NEW ZEALAND:

MS BUXEDA MAKES OPENING SUBMISSIONS

THE COURT: JUDGE SEMPLE TO MS BUXEDA

Q. I just had one question in relation to your paragraph 27, you refer there to national direction, I take it you don't mean that in the sense of national direction as in a national policy statement you simply mean there is –

A. No, central government direction.

Q. – central government direction or is at as far as direction or is guidance?

A. Guidance.

Q. Because I think there is some quite specific qualifiers around –

A. Maybe “direction” is too strong a word, your Honour, “guidance” is possibly better there but as you're aware those documents, especially attached to Ms Sands’ evidence are quite strong in their importance.

Q. Yes, but I think they also, on the facing page inside the cover, make the point that they are not legislation.

A. I do accept that point your Honour, thank you.

THE COURT: COMMISSIONER HODGES TO MS BUXEDA

Q. Just one request please, you’ve heard my questions about how to deal with variable nitrogen losses from CVG over time, would you be able to lead the relevant witness on that?

A. Yes, I am able to do that, thank you.

THE COURT: COMMISSIONER EDMONDS TO MS BUXEDA

Q. Well it’s just that this morning I was discussing the nutrient management plan with Ms Foster, yes and I asked about the deletion of the word “annual” and so it may be something that I'm missing in the set of provisions. It’s been a long week and it’s Friday afternoon, but I was just wondering, in terms of your 43B in particular where you refer to the updated for annual use by submitting an NMP, so is there a specific provision somewhere in all this material, well sorry I'm referring to that provision that Mr Foster was cross-examined on, that imports that proposition that you had there?

1505

A. If you'll give me a minute to just double check that.

Q. It may be obvious, I just might be missing it, and Ms Drury may know anyway.

A. If I can't find this in the time, then I'm sure Dr Drury will have this but if you let me have a quick squiz.

Q. Perhaps I should have asked Ms Foster she may have known too.

A. I wonder if this is best pushed to Dr Drury.

Q. Sure, look I'm happy with that. I hope she is.

A. Well given the timeframe she might have a while to think about it.

Q. Oh okay, well that’s good, I was wondering about that.

MS BUXEDA CALLS

MICHELLE KATHLEEN SANDS (SWORN)

Q. Your evidence is volume 2, book 2, tab 25. Do you have that in front of you? Good afternoon, is your full name Michelle Kathleen Sands?

A. Yes.

Q. Did you prepare evidence-in-chief dated 13th of October 2023?

A. Yes.

Q. Do you have the qualifications and experience set out in paragraphs 1 to 8 of your evidence-in-chief?

A. Yes.

Q. Do you have any corrections to make to your evidence?

A. Yes I do, at paragraph 28, I'd just like to strike out the first word "seed Potato", and in the second sentence strike out the word "dairy" and just leave it with "pasture".

Q. Thank you for making those corrections. And do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. I just have one question to ask you to elaborate on for the Court, since you drafted your evidence Christine Foster has proposed wording changes to the definition of crop rotation, would the wording proposed to be added in the definition of crop rotation, as sought by Christine Foster, specifically a cross changing land parcels, enable crop rotation as required by growers in the region?

A. I mean she seeks to strike those words out, doesn't she?

Q. Apologies, yes.

A. No, it would not because crop rotation has, as explained in my evidence, both a temporal and special dimension and so over time crops do change in sequence on a parcel of land but the parcels of land that a grower users change too. So that is to say our understanding of the baseline area is an area as in the mathematical metre squared, it is not a fixed location. What we seek is that growers under the controlled activity are allowed to rotate within a target water management subzone over changing land, but such that their area of, you know, vegetable production does not change, does not increase or expand, the area is the same but the

location within that target management water subzone might change and that is very important to support soil health, primarily that is the fundamental driver for crop rotation, but there are also practical constraints around the change associated with leased land, and in some target water management subzones and in particular I'm thinking of the Rangitikei, coastal Rangitikei, there is a very high proportion of leased land. I'm aware of one grower, 140 hectares, 100% leased land. He changes his location of his vegetable growing annually but that area, 140 hectares has not changed.

Q. Excellent. Thank you very much for that very clear comment.

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – ORDER OF QUESTIONING (15:12:00)

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon, Ms Sands.

A. Hi.

Q. What's the process under the One Plan at the moment when consents are issued vis-à-vis crop rotations?

A. Well there have been no consents granted for vegetable – there is one consent, as far as I'm aware, that's been granted under the One Plan for vegetable growing and so it's unclear how that is provided for, although there is a definition for commercial vegetable production within the One Plan that speaks about rotation.

Q. And I understand when the decision of the Court went through in 2012 the anticipation was, and this was based on Ms Marrs' evidence, that the growers would need to nominate what areas they would need and a consent would be granted on that basis so that you would have to specify and anticipate the areas that you would need for your crop rotations?

A. What is proposed in Dr Drury's evidence is –

Q. Can I just stop you there –

A. Oh, sorry.

Q. – because I'm asking about what you considered the – I'm asking about the One Plan in 2012. If you don't know, just let me know.

A. Oh, yes. No, I mean what I understand is that there was the proposal that landowners would consent their farms on the off chance that a vegetable grower might seek a lease off them and that was considered, proposed by Ms Marr as being something that would happen. As far as I'm aware and at the time the evidence presented by Hort NZ by Mr Ford was that that was very unlikely and I, my understanding is that no farmer has gained such a consent as far as I'm aware. I've spoken to a vegetable grower this week who is in that position. He – the 140 hectares in the Rangitikei, coastal Rangitikei, and what he said to me is that he leases land off 15 unirrigated sheep and beef farmers who are permitted and that they would not contemplate gaining a consent for him on the off chance that he might seek a lease from them, and that's because they might have a 400-hectare farm, he might be leasing 10 hectares off them for a year, for a season, it's simply not an economic proposition for them to seek what might be, and I guess in your, you know, might, might be able to get through the table actually under that sort of situation, but that his assessment is that they simply would not do it, that they would prefer not to lease to him and that he would have no way of gaining a consent for his own activity through that table and be completely dependent on landowners to maybe to chose to get a consent or not for vegetable production when that's not their, that's not their activity as such, they just, you know, are considering the lease opportunity.

Q. So Hort New Zealand wants to get a global, like a global consent for crop rotation that would apply cross water management sub-zone or target water management sub-zone through this Environment Court appeals process?

A. Yes. Our understanding is that's actually what we sought in the evidence we presented at the hearing. We put forward this proposal that – we put forward the definition of the baseline area, the enterprise and the crop rotation definition and our understanding of the combination of those definitions was that they would provide that pathway for a grow other operator to gain the consent for themselves for an area of vegetable growing across changing parcels of land providing that didn't expand and so that proposal that we put forward in terms of the evidence presented

at the council hearing is very similar to the way that vegetables are consented in Canterbury so under Plan Change 7 and that decision has been made since the Plan Change 2 hearing as well, so we at the time the evidence that was put forward by our planner which is Mr Hodgson, he discussed the Plan Change 7 approach and so that also involves an area of vegetable growing in Canterbury, it's consented within a subregion and a grower can get consent for that area and then move it around and the update their Farm Environment Plan, so yes, we seek the consent to be issued to the operator and that is very consistent with the way that consents are granted under the, you know, the NES Freshwater and in fact the Freshwater Farm Plan where the consents are for the person who is undertaking the activity rather than the, you know, their landlord.

Q. But Horticulture – you made the decision, did you, that Horticulture New Zealand would not appeal the council decision on Plan Change 2?

A. No, we're happy with the definition as it is in the, you know, we're not seeking any changes to those definitions. What we're seeking through this court is really just to explain how we understand those definitions to work.

Q. Are you relying on clause 16 of the first schedule?

A. I'm afraid I don't know the answer to that.

Q. Did some of the changes that are being sought here, do you know if they came out of the NRAT or CVG?

A. Sorry, what changes are you referring to?

Q. The changes to the definitions?

A. There are no changes – Hort NZ is not seeking – oh, yeah, so we – the change to the definition to crop rotation that is sought by Andrew Barber and Charlotte Drury, they are just clarifications around soil, I think, and you know, the pasture, so they're just clarifications about crop rotation, they're not particularly dependent on the NRAT, they're just a from the farms systems perspective just a tweaking really of, of crop rotation, but we're not seeking that main part of the crop rotation which is around changing land parcels, that's in the decisions version.

Q. Okay and you do acknowledge at paragraph 102 of your evidence that there are some other matters that Hort New Zealand will be seeking in the NPS-FM plan changes?

A. Yes.

Q. But scope is limited for those at the moment?

A. That's right.

Q. In the NPS-FM plan changes, you're aware of the process of identifying FMUs?

A. Yes.

Q. And are you aware that part of the process of identifying FMUs is that it may provide the opportunity to delineate more sensitive areas of the catchment, for example, in this area the Horowhenua Lakes?

A. Yes.

Q. So that rotations could not occur that would have localised effects on very sensitive areas?

A. So, sorry, what's the question there? You're talking about the – that FMUs can be – have a spatial extent designed to align to sensitive areas? Yes, certainly, yeah.

Q. So with the – this also will be a question for your planner – but with the proposal from Hort New Zealand wouldn't it have the implications that if the NRAT were put in as a controlled activity pathway, you could have a controlled activity consent granted for rotations within the water management sub-zone area –

1520

A. Mhm.

Q. – without consultation required because it's controlled, without consultation required, for example, with hapū or iwi who might have particular sensitive areas within a water management sub-zone where they don't consider crop rotation should be placed?

A. Well, the – you know, the target water management sub-zones are quite small and so for – so the – and the land that is suitable for vegetable production is quite limited as well, so it is quite I think predictable where the crop rotation will be located within those target water management sub-zones in terms of at a broader scale, but our assessment is that the

water quality effects are the same at that scale other than the localised effects, very localised, and they can be managed through the farm environment plans.

Q. Which would go through as controlled and so you wouldn't necessarily be informed by a hapū, for example, who had a mahinga kai site or a particular wai tapu site or such things?

A. Yes, but the Farm Environment Plan would account for localised risks and growers would manage those through their farm plans.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Ms Sands. I just have one question and it's just in relation to content of the – of a Nutrient Management Plan that would be submitted.

A. Mhm.

Q. And would that include the area or period of time in pasture in the rotation?

A. Yes. Well, yeah, if it was part of the rotation and so the definitions are for the area – so the Nutrient Management Plan is related to the, the way that the land that is being farmed that is the enterprise and so that relates to the crop rotation and if the crop rotation in their enterprise, in their owned and leased land included pasture, a pasture phase, then that would be part of their crop rotation and be part of what they're managing. Some growers, the pasture phase, you know, like the – they might not lease land in the pasture phase so in which case it wouldn't be part of their enterprise and so it wouldn't be part of their nutrient and their nutrient management would be focused on their activity, but yeah, so it depends on the rotation, but if ro – if, you know, and similarly if they had cover crops that would be part of the management.

CROSS-EXAMINATION: MS JOHNSTON

Q. Yes, thank you, just briefly, good afternoon, Ms Sands. I just wanted to confirm that you were present yesterday for – and today for Ms Foster's evidence?

A. Yes.

Q. And you'll be aware, won't you, that Ms Foster has been involved in the Plan Change 2 process from the beginning?

A. Yes.

Q. And I believe her evidence that you would have heard was that that's been since 2019?

A. Mhm.

Q. And her view of the definitions that you have an interpretation of is that the definitions attach to a specific site or sites, that's her view, isn't it?

A. Yes, that is what she said but she also said that that was her view based on the evidence that was presented, but when you, when you look at her supplementary 42A evidence for that original hearing and where those words changing land parcel came from, they came from Hort NZ's planner, Lance Hodgson, and then if you look at his evidence and the – what he describes in that evidence, he talks about this area and changing land and he refers specifically to the Canterbury Plan Change 7 where this style of rotation is provided for. So I – it was really interesting to hear Ms Foster yesterday because that is not what we meant when we sought that definition and when that definition was provided for in the decision we were really happy, we thought, look great, here is our understanding of crop rotation provided for in the decision and we didn't appeal it, yeah.

Q. But her view, and we'll move onto the next question, but her view is that it attaches to – Ms Foster's view is that it attaches to specific sites or sites.

A. That is – yes, yes.

Q. And Ms Foster also participated in the expert conferencing that's been occurring since 2022, that's right, isn't it?

A. Mhm, yes.

Q. And HortNZ had a planner that participated in that conference as well, that's correct?

A. Yes.

Q. Mr Rustin.

A. Yes.

Q. And she never raised the issues with the definitions that Ms Foster had put forward through that process, did she?

A. Well Ms Foster had them strike out those words and that's just something that she struck out much more recently, so we were quite surprised to see that in her reply evidence, because Ms Foster didn't –

Q. But the provisions and the definitions were discussed, that's correct, yes?

A. Yeah, but they were discussed but we weren't seeking changes to them and neither was she, so she never suggested she was going to strike out those words and if she had have, I can't really say what, you know, what that conversation would have been, but certainly we were never seeking those words to be struck out.

Q. And then when she has understood the misalignment of your views, she has made efforts to correct those, hasn't she?

A. Yes, in her reply.

COURT ADJOURNS: 3.26 PM

COURT RESUMES: 3.47 PM

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL - HOUSEKEEPING
(15:27:18)

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon Ms Sands, you mentioned that there are 47 growers in the region registered with NZ GAP.

A. Yes.

Q. Would they all have farm environment plans?

A. Yes. So NZ GAP is the industry programme and you have to have NZ GAP in order to sell to a supermarket or a wholesaler or to export and it has requirements and including environmental management requirements as part of the core standard and that's required by the market. There's also an additional optional add-on which is called the environment management system and that is optional. So not all 47 growers in the region have that add-on, but most growers, like 90% or so of the area in the Horowhenua District and including those target water management subzones do have that environment management system GAP add-on which is a very comprehensive farm environment plan and also the growers in the, vegetable growers in the coastal Rangitikei target water management subzone, we are currently working with those on the environment management system. So the ones that I know of that would require consent under this plan change, to have that as well but there would be other growers, you know, particularly in permitted arm parts of the region who haven't opted to get the MS add-on yet.

Q. Okay, and are there any other people outside the NZ GAP programme that operate in the region that you're aware of?

A. Vegetable growers – so there are, yes, there are many more growers within the region and off our database there are maybe about – and the reason I'm uncertain of the number is because the number is diminishing at a fast rate but on our database about 90 vegetable growers in the region but they are very little, so that means that they're not selling through the commercial market and so they don't have – so there's

NZ GAP and there's global GAP but you need those to sell to a supermarket or a distributor or an export and if with those industry programmes you need the Food Act, and so we know about those, so that's the 47 but there are small growers who sell direct to consumers and they don't need the Food Act but they'd likely be below the permitted threshold.

Q. So really the number we need to be noting is 47?

A. Yes, but that includes, you know, growers within the target water management subzones and the permitted – you know, and the other water management subzones too.

Q. Have you done any work as an organisation looking at what level of management improvements have occurred since the baseline date of 2012?

A. Yes, so that is discussed in – well Mr Ford and Ms Holmes' evidence but it was specifically looking in the Horowhenua and so there was modelling done with using Overseer by Dan Bloomer and that was, you know, actually undertaken for council with close collaboration with HortNZ and the growers in terms of representing what we thought were three sort of typical rotations in that area and then applying practices that we thought, well, you know, farms systems thought were representative of practices at that sort of baseline time compared with now and probably the main change in practice was related to fertiliser application and related to an update in the fertiliser, the crop guide, basically how much fertiliser is recommended to be applied for certain crops and so that new guidance came in and that has influenced the way growers, you know, applied fertiliser.

Q. If the Court were to decide that Table 14.2 has to stay, what would that mean for CVG?

A. There are no growers of green vegetables and brassicas who can meet that table and in HortNZ's position, there were no growers of green vegetables and brassicas that could meet the table when it was originally put forward in the One Plan and they can't meet it now that it's been recalibrated and that's, you know, that table is based on, it's sort of a pasture base system. So it is not possible to grow green vegetables and

meet that table. So those growers, that's 20% of New Zealand's greens and brassicas would have to go through the discretionary pathway. But those growers also have, you know, relatively high leaching. Those numbers, Stewart Ford and Ms Holmes know though, so, you know, whether or not they'd get a consent through the discretionary pathway is uncertain, so that's all of those growers there in Horowhenua largely. There are a smaller number of potato growers who grow, you know, not just potatoes but other vegetables, but largely potatoes, mainly in that coastal Rangitikei and they are likely – oh there's one potato grower in Horowhenua too, and they are likely to have leaching rates that could come under the table, depending on, although in order for them to get under the table, they really need to a mixed farmer, they really need to be a farmer who grows potatoes, because they need to own their pasture phase in order for the pasture phase to be kind of counted in the Overseer modelling. So the Overseer modelling that caught – or the Dan Bloomer modelling that we use in our modelling includes that pasture phase in the potato rotation, so the five years of pasture, say, and that is how they get under the table. So if you are a grower who is a farmer and owns that pasture or owns the cropping block that you work across then you can get it, but if you're a tenant, I mean there is no greater environmental effect associated with growing your potatoes on a cropping block that somebody else owns, but you can't, you wouldn't be able – I mean other than the logistical problem of you moving around, but the part that you owned in terms of your enterprise would just be potato growing and it would definitely be above the table. So I guess it's – but, yeah, so there are definitely some potato growers, probably maybe about four or so that own their farms and there are others that lease. The numbers of growers is not that large so – and I suppose that's important to kind of think about the numbers of vegetable growers versus the proportion of vegetables that they grow, so just, you know, just to keep that in mind if you're thinking, oh, there's only 10 or whatever but they – you know, the thing about vegetable growing in New Zealand it's very consolidated, it's a very consolidated, or it's rapidly consolidating.

Q. I wasn't trying to come at it from that point of view, it's just that I understood Dr Jolly's evidence to say that a 35% reduction was possible with CVG and possibly up to 70%, and now you're saying that's not the case, is that right?

A. I mean that still doesn't get you under the table.

Q. To get – yes, to get under the table.

A. It doesn't get you under the table. Like 35% off a number, sorry, I don't know if I can get the numbers, they're in Dr Holmes' evidence but once that 30, once the percentage – well our, the modelling that was done by Dan Bloomer for Horowhenua models three rotations, there's a kind of a potato rotation which gets under the table, there's a brassica rotation, and there's a kind of it's called intensive greens rotations, and the brassica and intensive greens rotations are representative of the vegetables grown in Horowhenua.

Q. I have seen those so I am actually familiar with that.

A. And those – and the way that it's represented in the modelling that Ms Holmes does is to assume that the leaching rates are about a 50/50 of the brassica and intensive greens is probably what is representative for the growers there, and so even with the good management and best management practices assumed, our estimation is that they cannot get under the table.

Q. Okay, that's fine, thank you. In terms of term of consent, what's your view of the need for a 10-year consent? If the Court was to say that the risk scorecard approach was okay but was a bit nervous about giving a 10-year consent, how would your growers feel about that, do you think?

A. You know, there is a need, there has been such a lot of uncertainty for such a long time in this region for vegetable growing. There is, as far as we're aware, only one or is there is only one grower in Horowhenua who has a consent and he was able to get it in that moment before the declaration. The rest of them haven't, have never really been able to get a consent and so what we've seen is just such uncertainty and I think they feel like there is now direction, you know, in terms of the specified vegetable growing area that there will be a different sort of allocation framework coming in the future that vegetable growing will be provided

for with regulations that are workable. I think that if they were to get a really short consent they would find that quite difficult in terms of the level of investment they have been undertaking because they are very aware about trying to reduce their environmental impacts as much as they can and they're willing to do that more, but I would think that they would be quite dismayed at a very short consent term.

Q. Okay. I'm not suggesting that's going to be the case, I'm just exploring possibilities.

A. Mhm.

Q. Thank you.

THE COURT: COMMISSIONER EDMONDS

Q. Afternoon. I just had one question and that was in terms of the policy framework for considering discretionary activities.

A. Mhm.

1600

Q. If anything falls into that category. Has Hort New Zealand given any thought as to in terms of assistance with decision making whether there are any factors that aren't reflected in the policy as it is currently proposed? I partly ask this question because I have got an impression yesterday from some of Ms Foster's answers that, you know, maybe there may be some added assistance that might be a part of it, she – I understood her to be saying, well, it wasn't perhaps the complete answer as to how it is all looking at the moment?

A. Ah –

Q. I was just quickly looking, reminding myself about Dr Drury's evidence and she doesn't seem to have explored that at all?

A. Yes, so our expectation is that some growers would need to use the discretionary pathway and that is related to the cost of implementing the NRAT Risk Scorecard because to get, if they have quite a high risk at the moment and that would be probably related to them growing the lower margin crops, so the way that – anyway, there's a bit of back-story there, but, you know, some growers would be – potentially find it too expensive for them to perhaps take soil testing and every time that they apply

fertiliser which would be maybe one of the things that they might need to do to try and get their Risk Scorecard low enough to get through the NRAT and that would be just to do with in terms of their – the economic situation of their rotation and the crops that they grow, because some crops have higher margins than others. They might need to go through the discretionary pathway and then the difficulty would be that they would be the higher leaching activities, you know, and so then there's that criteria within the discretionary pathway that sort of kind of like compares you back to the table, they'd be quite some distance from the table, that's why they'd be needing to go through the discretionary pathway, so it becomes – it sort of becomes quite hard to know, and so then I think they'd have to be relying on the food security part of the discretion within there, so Dr Drury might be better to answer this than me, because I suppose –

Q. Sure, no, because I was just –

A. – from the way that I see it is that it is quite, it's quite – it's quite difficult potentially for those growers who can't and that was the same with the 35% so when we did that at the – and you can see this in the appendices to Ms Holmes and the modelling that is appended to her evidence, there were a range of percentage reductions which were predicted fr those different rotations and it was, it was the average, you know, like a weighted average at the catchment that achieved 35% but it wasn't the case that each grower could actually achieve 35%, it was easier for some than others and that depended on – it actually depends on the crops that they grow and they don't necessarily have the ability to switch out which crops they grow that's kind of to do with – it is sort of their choice, but it isn't really, it's kind of the markets, it's sort of to do with who else is gong to have a better position in terms of the market at growing a different crop, so they don't necessary have the ability to say "oh, gosh, I'll just grow fancy lettuces" or whatever "I can make more money off that". Some people are really having to grow those cheaper broccolis and cabbages and stuff. So anyway –

Q. So coming bac to my question.

A. Yeah, sorry, so coming back to your question, my concern is that I am not sure if the discretionary pathway for those growers that have the – less room to move, I think the only thing that they can really – that they would have to hang off there is that just, domestic words applied, matter of discretion.

Q. And in terms of policy, you mean?

A. In terms of the policy, yeah.

Q. Yes, okay.

A. Yeah, yeah, because I think that they'll struggle.

Q. Right.

A. Oh, well, they'll say "I'm quite far from the table and I can't get any lower than I'm getting," yeah.

Q. Okay, so this something I might explore with Dr Drury when we all come back again next year.

A. Yeah, yeah.

Q. Is that what you suggested?

A. I'd suggest, yeah, yeah, yeah, yeah.

Q. Okay, thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. And just following on from that exchange, I'm just interested in, again, in this issue of the 35% and I think you here when we were talking about or have been talking about the veracity of that number, so on your understanding there are still going to be a reasonable number of growers in individual areas who are not going to be able to get to that 35, so while an average across, fine but not forever.

1605

A. Yes, that was the evidence that we presented in the hearing and that's appended to Ms Holmes' and that was based on that Dan Bloomer modelling which considered to be a good representation of those rotations, quite complex and of the good management, best management practices that are available growers and so there was the brassica

rotation couldn't do it and the intensive vegetable rotation could but what we would say is that it isn't as simple as some people are growing one and some people are growing the other, they're actually growing a sort of a continuum of those two and so certainly not everyone would be – well it would be really hard with what we thought.

Q. So given that, an understanding of that and then given the answer that you've given to the Commissioner around your concern about getting through the discretionary pathway, what is your assessment from an industry perspective of where we end up at the end of this. So we get this plan operative in whatever form, people have a year to be able to, you know, apply for their consents, everything shakes down, we find ourselves two years now, what's your assessment, based on the current decisions version, appeals version, how do you see that panning out for the industry?

A. You mean once we have an operative decision?

Q. Yes.

A. Well I think as many growers as can will apply for consent and we will support them to do that because at the moment they're in a very vulnerable position but our focus is really on the next plan change, on the specified vegetable growing area on quite a different allocation framework. I mean for a start one that actually links the catchment limit to the target attribute states and sets interim target attribute states and limits but also a system of prioritization where, well we say that vegetables are in the second hierarchy of Te Mana o te Wai, we say that the principles of Te Mana o te Wai, you know, they include the principle of care and respect which asks decision makers to think about the care and respect fir the health of the nation and so it asks them to look wider than the catchment itself when they're thinking about allocation and so what we would anticipate is that vegetable growing would be provided with a still would have to operate and, you know, undertake good and best management practices to reduce its impact but we would not anticipate that vegetable growing would be the activity that would be triggered for land use change and that is what is being proposed here, that vegetable or particularly green vegetable growers should be exiting.

Q. So appreciating that position and also appreciating the discussion we just had about state flux, that the law might be in and where we might end up with national policy statements and so on, it's quite likely and I think on the evidence from various people and on the submissions of various counsel, it's very likely that there's going to be a gap, you know, we'll have an operative plan, then at some time in the future, which is why we're being urged to get PC2 operative because we can't wait for a new plan to come along. So what happens, I mean what I'm trying to understand is you've got, on the basis of your evidence, none of your growers can meet Table 14, so that's of no help to the CBG sector, you've got an alternative pathway and no matter how you calculate it, if you use Overseer with workarounds and a user guide or you use a risk matrix, my understanding is that, you know, you're saying a good portion still of your growers, from the sound of it, on an individual basis, and that's the way they're going to have to apply, will not be able to meet the 35% and then your next answer to Commissioner Edmonds was, and there isn't a lot of - you know, they're going to be relying on sort of food security effectively a sort of a weighting between food security and leaching and water quality to try and get through a policy environment that might or might not include having regard to a National Policy Statement on freshwater management to try and get a discretionary consent, which they may not get. What happens then? Because it still seems to me that this plan change might not be fixing your problem.

A. Oh it isn't, no it isn't.

Q. And what do we think is going to happen? Will you imagine that people will simply continue to grow on an unconsented basis? Because I guess what I'm saying is that by the time PC2 becomes operative, I'm not certain that the council is going to be in a position to withstand pressure not to enforce its plan.

A. Mmm, that's right. So, you know, most growers will be able to get through the – I mean the difficulty within, you know, the most grower – there aren't that many growers in Horowhenua, there's probably maybe 10, or something like that, that need the consent, it's definitely dominated by, in terms of the area of vegetable growing, it's definitely dominated by, you

know, one but maybe a couple of other growers as well, they will probably be able to get the consent. It's at the smaller scale for the growers that are just over the permitted threshold which will struggle. Yeah, so I suppose what we'll see is either they will, you know, they'll be enforced or, you know, they'll be forced out I suppose and we've been seeing, you know, since I wrote my evidence at the time for the hearing, there were 65 growers.

Q. The council hearing?

A. Yeah, the council, you know, I did the NZ GAP, there was 65 growers, there's 45 now. So we're just seeing the dropping away of vegetable growing and that increased volatility in the price as well in vegetables as that resilience in supply is eroded because it's eroded, you know, it is eroded partly by the contraction, you know, if there was a contraction in the area but even the number of growers, you know, creates some resilience as well.

Q. The other matter that I just wanted to ask you about, you attached the letter from the Ministry for the Environment to the Regional Council, asking questions about the way in which commercial vegetable growing is effectively going to be provided for within new freshwater plans, I noted there was a report due on the 19th of May with annual reports to follow, at least that's what he said, first report is required by the 19th of May, have you seen that report from the Regional Council at all in terms of –

A. Mmm, yes I have seen it. I can't quite recall – I think that really talks about the, you know, the beginning processes of their NPSFM consultations on –

Q. Okay, so it doesn't necessarily answer the question. That's not in the documents that we have at all is it?

MS JOHNSTON:

No Ma'am, as I understand it that letter went to all regional councils and it's about reporting on progress with the plan change. I know that Horizons has been responding to those requests, just updating where they are.

THE COURT: JUDGE SEMPLE

Right but not necessarily anything specific about –

MS JOHNSTON:

We're at the point of doing some modelling, going out for community consultation.

THE COURT: JUDGE SEMPLE

It's not going to help me is it?

MS JOHNSTON:

I can certainly make those –

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. No, I just wondered if from an industry perspective you were starting to see anything that was, you know, giving you some confidence about what might happen in the future.

A. No, no confidence, no we're not seeing, you know, we haven't seen anything like that and I suppose this letter did go to every regional council because this isn't the only region with completely unworkable rules for commercial vegetable growing.

Q. Oh yes, no I didn't anticipate it was specific to this region, I just wondered if – I mean I asked somebody the other day, I assume that Horticulture New Zealand has been advocating in this space which is part of why the Minister might have felt the need to write a letter.

A. Well I think it's because of the - you know, like I think when the One Plan was envisaged there wasn't, well the evidence that was put forward there was this kind of expectation, not by HortNZ but by the council at least that growers would be able to get through the table. They didn't realise the concerns about Overseer, they thought that it would be better for vegetable growing, they thought that the leaching was lower, whatever, but there was an expectation, they were very firm, that there was a way through but that hasn't been how it's played out and we know more now than we did then and – but there was also something similar that

happened in Canterbury, they had a different approach grandparenting but effectively what that did was it kind of like gifted the leaching rate associated with vegetable growing to the landlords and then the growers as they moved around had nothing and so then there was the plan change 7 change associated - that was required in order to provide a pathway for vegetable growing there but that's also for existing, there's no pathway for expansion in Canterbury, there's no pathway, I mean you could expand potatoes here in Horizons but there's no pathway for expansion for greens in Waikato as well, I mean it's like there's this really tight rotation rule which, you know, we've talked about rotation here and whether or not anyone really understands it. We're not really sure that rotation is going to be provided, we hope it will be provided for, we're not sure if it will. If it isn't provided for then the soil can't support vegetable growing and the expansion rule there is kind of provided for but very uncertain as well, a tiny amount of expansion to keep up with just Waikato's population but Horizons is not doing any expansion. Wellington, when they've got their regional food plan, they just take Levin into it. We say oh that's not actually part of your region, because there is no vegetable growing really left in Wellington, they allowed that to move to urban. So it's really a national problem which is I think what has prompted this letter, yeah.

1615

Q. And just to round this out for me, you mentioned, you said that there was an expectation that growers would be able to meet Table 14 and Table 14 was originally the setting of limits and you will have heard me ask questions about this policy 5.8 and what it's trying to achieve which is to set maximum, you know, for all of the intensive farming land and it's not just pastoral, has HortNZ, you know, done any work on an updated table that commercial vegetable could meet?

A. Well I mean it's different for the different rotations, right, so it really depends on – so there isn't one number for all.

Q. Potentially there could be some complex table that provides for different rotations?

A. Well I suppose the closest that you would have to that is kind of the modelling that's been done that's presented in Ms Holmes' evidence but even then you would require Overseer, you know, to match up against it and it's just not a reliable tool. So Mr Clarke can talk or Mr Ford can talk about that. It really depends on how you do the modelling. There's many things, you know, I say of the over – I think I say in my evidence there's like 38 crops or something but, you know, Mr Clarke can speak to this as well, maybe they grow about 20 crops perhaps five of them can be modelled in Overseer, so really what you're doing is like –

Q. Yes, and I think Ms Jolly gave us some good examples of that.

A. You know, so any number of – not really, not sensibly, no.

Q. So from HortNZ, that hasn't been a pathway that you've looked to try and have Table 14 –

A. Yeah we just don't consider that to be a sensible approach.

Q. – recalibrated specifically for CVG as opposed to recalibrated overall.

A. No, and, you know, the kind of idea that most farmers could meet the table, it really is most farmers, not most growers because there was never any work really done to see that most growers could, but there was evidence presented in some of those court cases, you know, where council said that they were confident that there was a pathway for vegetable growing but HortNZ at the time was far from confident that that was the case.

QUESTIONS ARISING: MS BUXEDA

Q. In response to questions, Ms Sands, you talked about the national food system and sort of more wide ranging national regulations, could you just discuss or answer questions as to why national consistency in rules is important?

A. Yeah, so the growers are very motivated by the idea of having nationally consistent rules because they compete with each other in the domestic market and so they do seek national consistency for that reason. So they don't really, even though they recognise the need to, you know, have also farm environment plans that respond to their local receiving environments, there no sort of suggestion that that wouldn't be the case,

that you wouldn't perhaps do additional things because you were, you know, near a sensitive receiving environment like Lake Horowhenua, for by and large they would like there to be consistency, so they aren't being I suppose out competed by a grower who happens to be growing in a region that has less strict rules or hasn't quite got to the same part of the planning framework yet because that's kind of what we see at the moment, there are still parts of the country that are committed to vegetable growing that haven't quite, you know, done this kind of really awkward – developed these rules that haven't worked yet for vegetable growing that we've seen here in Horizons, Canterbury and Waikato and other places haven't done it yet.

WITNESS EXCUSED

MS BUXEDA CALLS

STUART JOHN FORD (AFFIRMED)

Q. Do you have your brief of evidence in front of you?

A. Yes I do.

Q. Your full name is Stuart John Ford.

A. Yes it is.

Q. Did you prepare evidence-in-chief dated 13th of October 2023 and reply evidence dated the 13th of November 2023?

A. Yes I did.

Q. Do you have the qualifications and experience set out in paragraphs 1 to 7 of your evidence-in-chief?

A. Yes I have.

Q. Do you have corrections to make to this evidence?

A. Yes, just one, in paragraph 35 of my evidence-in-chief, I'd like to delete: "However, the data in table 1 also shows." So it should read: "The market for vegetables is in fact very dynamic."

Q. Thank you. And I'm just going to go through your attendance and signatures at expert conferencing, did you attend farm system planning expert conferencing on 28th of June, 7th of October and sign the joint statement?

A. Yes I did.

Q. Did you attend farm system commercial vegetation growing expert conferencing on 10th of February 2023 and sign the joint statement?

A. Yes I did.

Q. And did you attend commercial vegetable growing and planning expert conferencing on 14th March 2023 and sign the joint statement?

A. Yes I did.

Q. And do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. Yes I do.

Q. Thank you. And now I'd like to talk through, I have limited questions here, could you – mostly prompted by queries from the Court as to further information here and you will have heard this previously but could you

please provide the Court with your opinion and information about variable N losses over time in the CVG systems.

1625

A. Okay, if you have a look at my evidence at paragraph 60, where I talk about Dr Jolly's evidence and we have to realise that Dr Jolly has modelled what I call a partial rotation which two years, which is necessary in Overseer because the first year builds up the amount of nitrogen in the soil and then it's the second year which it reports and her evidence shows that the range of individual crop nitrogen leachings range from 22 to 226 kilograms of N per hectare per annum, which is, you have to admit, quite a significant range and I'd also like to point out that Overseer models everything on a 30 year climate change, an average of a 30 climate change, so in fact the range of actual leaching within that rotation is hugely affected by the amount of rainfall which occurs, so even in Dr Jolly's, you know, wide range, there will be a huge range in actual N leaching and what we find when we're measuring actual rates of N loss, that it's only when there are significant rainfalls that there's significant N leaching going through the soil profile. So our modelling shows this is quite significant ranges and experience, in terms of tracking, shows that the extremes are even greater than that. So there will be periods where there's very little N leaching through and there will be other periods where there's a massive amount.

THE COURT: COMMISSIONER HODGES

Q. So what I hear you saying is it would be very difficult to even pick an average over say 10 years for a particular crop rotation system, is that right?

A. Yes, it would, but what I've reported in my evidence in terms of Dr Bloomer's evidence is what's called a representative model, so you can see in my evidence in terms of Dr Bloomer's report, that there's quite a significant array of crops which he's modelled over a long period of time and he took that from the actual data from the growers in the Hokio 1 area. So that's a representative model which I think is representative of a high proportion of the growers, so in terms of your Honour's query

about, I think you were talking about averages, you know, some being above and some being below, I think the Bloomer data represents what a representative model would do. There may be people outside that who have significantly different combinations of the different crops, but the majority of growers would be within that representative model.

Q. Is that what you're talking in paragraphs 57 and 58?

A. Yes, yes.

Q. Okay, that sounds fine.

A. So there I'm talking about a high majority of the growers being within that area.

Q. Okay, well in 58 you go from 98 kilograms per hectare and with BMPs coming down to 61, so you're probably going to get pretty close to your 35% there, aren't you?

A. Yes, yes.

Q. And in terms of the rainfall issue that you talk about, I totally agree with that but over a year you'd get some averaging out, but probably what your concerned about is that you get wet years and dry years, is that right?

A. Yes, that's exactly right, yes. So you've got to view it on a much wider timeframe than an individual year.

Q. Yes, I do understand, thank you.

EXAMINATION CONTINUES: MS BUXEDA

Q. Mr Ford, I'd just like to ask a follow up question to that, how does NRAT address this variable N loss over time?

A. Okay, well as I explain in my evidence, I describe is a qualitative measure but it's been created out of the known drivers for N leaching that we get from Overseer and from APSOM and from SPASMO which are all very similar models with different characteristics in terms of modelling. So what we've done is take the factors them which influence N leaching and express them in terms of the wording of the questions in the NRAT.

1630

Q. And just one follow up of that, does adherence, in your opinion to the NRAT address this variable N loss over time?

A. Yes, I think it does.

Q. My final question just arose from her Honour's previous questions to Ms Sands, are you able to speak on the proportion of growers that can meet the 35%?

A. Well I think I've already covered that really, I think what was modelled was a representative model and so that covered the vast majority of the growers, so it's not an average model with some being above and some being below.

THE COURT: COMMISSIONER HODGES

Q. So can I just pick up on that because I think this is a very important question, so basically what you're saying is that if there are 30 growers for example then what sort of number of those do you think would be able to meet the 35% reduction? Would it be 25 of those or would it be a higher number? I'm just trying to get an indication of where consenting activity status might come in.

A. I honestly couldn't comment on that. It's my impression that it's a large percentage.

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon Mr Ford. Just in relation to that last question and this may be better addressed to Mr Barber, do you think the SVS tool is going to allow larger reductions in N leaching and perhaps may have been modelled through the Bloomer report?

A. Sorry which?

Q. The SVS tool. Do you know about the SVS tool?

A. Oh yes I do, yes, so sorry can you –

Q. As I understand it that tool is looking to be quite promising with achieving N leaching reductions.

A. Yes.

Q. And the Bloomer report wasn't done with that tool in mind?

A. No, it wasn't.

Q. Do you think that based on preliminary work with the SVS tool that it might influence the conclusions in the Bloomer report, if it were rolled out?

A. I don't think it would influence the conclusions from the Bloomer report because the Bloomer report was done for an entirely different, well for a similar purpose but an entirely different way, so I don't think there's any impact from what's going on in the SVS on the conclusions made in the Bloomer report.

Q. Do you think it would have an impact on the Courts trying to ascertain a percentage reduction figure?

A. I think you're probably better to ask that of Mr Barber, but it's my impression that so far it's looking promising.

Q. If Horticulture New Zealand was looking at Table 14.2 with a percentage reduction pathway alongside it and the 35% reduction pathway is being proposed, Horticulture New Zealand and the growers would need to work with Overseer with the workarounds and guidelines, is that sort approach with working with Overseer, how is that used in the rest of the country, in other examples of the country, can you give us some information on that?

A. Well it's not really because of all of the problems we've got with Overseer use in the CVG sector, so I mean the last 10 years of my career has been giving evidence to various councils about the inadequacy of Overseer in terms of particularly getting hard numbers out of it, but even getting any numbers out of it really and that's why in Canterbury we ended up with the N check which is an Overseer like means of determining it, and in Waikato Overseer isn't used.

1635

Q. I won't talk about the Waikato because that might complicate things but there is an NLLR proposed there, isn't it, so this issue is at large in the Waikato as well, isn't it?

A. Yes, yeah.

Q. So if – we're had a bit of discussion this week about using Overseer as an absolute number which you've just touched on, if it, and I know this is not what you support, but if it continued to be used as a gateway number and there's different views as to whether that means an absolute number, then you get through the gateway, could there be a regime where consent compliance or consent conditions are based on say for example a three year rolling average Overseer number sitting alongside another tool such

as the NRAT tool, so that you have multiple lines of evidence for compliance purposes?

A. As I said before, one of the problems I've got with that with Overseer is that it works on a 30 year climate data, so it averages the 30 year climate data, so an annual result isn't possible in using Overseer. So even a three year average Overseer result has no value in my opinion.

Q. So if we were to continue to use Overseer through a gateway and this is just a hypothetical, say on 35% reduction, you could use Overseer inputs once you got through the gateway as your point of compliance on a consent with another tool that estimated N loss, now the NRAT doesn't actually estimate N loss though does it?

A. No, no.

RE-EXAMINATION: MS BUXEDA – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. At 81, you expressed concern about the biophysical influence of profile available water and rainfall, do you recall that?

A. I expressed reservations about the way the table was created.

Q. Could you explain that further please.

A. Well the table was created as a matrix with different factors along both axis, what I was concerned with, was that they were just picked out of the air and I suppose it's my resource economist's mind that if you're going to create something you have to have some basis for it and as far as I could see there was no known basis for the choices which were made in terms of creating the axis of that table but as I say in my evidence, it's been trialled by Mr Barber and he says that it's satisfactory for the purposes.

Q. Okay, but you're talking about the actual numbers in each box, is that what you're talking about?

A. Yes.

Q. That's fine, thank you. You have expressed concern about Dr Jolly's 70% reduction achievable from CVG, do you recall that?

A. Yes.

Q. Would you like to comment on that first please, tell us the background to that.

A. I think, and Dr Jolly said yesterday, that her modelling is on a different basis than the modelling that we used and from Bloomer's which then Gill Holmes used in her evidence, to work out the 35% and I guess it's my resource economist brain as well that you've got to have a lot of faith in your base data that you use then to model or extrapolate from. I am just not comfortable that the very short timeframes which Dr Jolly used don't represent enterprise rotations.

Q. Thank you, that's very clear. Just one last question please, we seem to be in a situation where Table 14.2 is front and centre but can't be complied with and I'm very, very nervous, in fact I think I'd have great difficulty in sort of signing my name to a plan change that we know won't work, so if the 35% reduction pathway is available, do you think that's a fair way to go?

A. Yes I do, yes.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Probably just picking up on that exchange, I took from your evidence and from also what you said about having spent the last 10 years giving evidence that Overseer had significant limitations, the decisions version of this had 35% which you had to model using Overseer, that was the option and Horticulture New Zealand didn't appeal that, but would I take it from your evidence that, you know, you still would've had difficulties with the decisions version, given that it relies on Overseer?

A. At the time Overseer was the only thing we had which was practically available to farmers. In my evidence to the council hearing, I promoted a similar thing to N check which we had in Canterbury, which was calculated in APSOM which I'm much more comfortable in terms of using as a model for CVG, but I was reasonably comfortable that that was a satisfactory place for us to land on. I wasn't necessarily comfortable on

how we got there but I was comfortable in terms of what Ms Holmes worked out, that it was achievable.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

5 **THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING** (16:42:33)

COURT ADJOURNS PART-HEARD: 4.46 PM

COURT RESUMES ON WEDNESDAY 7 FEBRUARY 2024 AT 10.37 AM
COURTROOM CHANGE: LEVIN DISTRICT COURT 2

JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING (11:04:57)

MS ONGLEY CALLS

GREGORY JOHN CARLYON (AFFIRMED)

Q. Your name is Gregory John Carlyon?

A. Sorry, can I just have two seconds to put all my bits, it's a very narrow shelf here and I'll just get it sorted so I don't drop it.

Q. Certainly?

A. Thanks very much.

Q. Your name is Gregory John Carlyon?

A. Yes, it is.

Q. You're the director and practice leader planning at the Catalyst Group Planning and Environmental Ltd?

A. That's correct.

Q. And you have participated in a number of joint witness conferencing sessions that have produced a number of planning JWS's in these proceedings and you have filed a statement of evidence subsequently dated the 6th of November 2023. Do you have any corrections to make to your evidence?

A. No, I don't. There are minor typos there, but I won't take the Court's time with that.

1100

Q. And do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. Yes, I do.

Q. Mr Carlyon, as we have been discussing in court this morning, yourself and Mr Scott have in the adjournment prepared a further set of planning provisions and I'd like to give you the opportunity to briefly make some comments in order to orient the Court and the other parties with the changes that you've made, so do you have those in front of you?

A. Yes, I do.

Q. Now, would you like to speak to the table or to the operative track change versions?

A. It's my preference to speak to the documents that were provided to the Court, so that's the operative track change versions, but whatever works best for the Court?

THE COURT: JUDGE SEMPLE

That's fine, so that's at tab 16, yes, thank you.

EXAMINATION CONTINUES: MS ONGLEY

Q. Now Mr Carlyon, I will just let you commence with chapter 5 and explain any changes that have been made.

A. Thank you, Ms Ongley. Well, your Honour, my comments are very brief. I am imagining that a number of these things are going to be tested more fully by counsel, but just to orient the Court there is a number of things that I'd like to raise out of both chapter 5 and Wesley 14 that are relevant. Mr Scott and I went to the Christmas break with nothing better to do than to think about Plan Change 2 and –

THE COURT: JUDGE SEMPLE

Like all of us I imagine.

EXAMINATION CONTINUES: MS ONGLEY

A. But in reality we sat through the proceedings in the leadup to Christmas and spent some time thinking about the way in which we might assist the Court by coming back at the provisions so there are a number of different sets and what's been provided to the Court is the consequence of the work that we've done over that sort of month or month and a half. So there's two key elements. The first is in Policy 5.8 of chapter 5 and I will just raise these generally. A little bit more detail when we get to 14.6. but the essence of our approach at 5.8 was to try and, as Ms Ongley said a little earlier, maintain the status quo for the purposes of bringing the provisions to life without further complicating things. So there's been some minor, when you're looking at Policy 5.8 being some minor changes

in relation to various provisions, the removal of the reference to best management practice which was the subject of evidence from Professor Horne and others on the basis that his expert was that you were unable to tell the difference between those two approaches was one area that we considered it would be useful to be clearer and then simply with the remainder, remainder of those provisions in 5.8.2 effectively go back to first principles and remain with the plan as we understand it to be when it was originally drafted. The other element that's been added is at 5.8(a)(ii)(a) which talks about existing intensive land uses that do not achieve the nitrogen leaching maximum and that speaks to what is going to follow in chapter 14, sorry in 14.6 which I will lead you to now. There are other minor elements in there. Perhaps the other element that I would point you to is the method that's been inserted into the plan, just going back to the right reference. So this is 5.13. So this method is generally supported but in my view it goes to the concern I raised in evidence with respect to the way in which the Regional Council would implement these plan provisions. It's quite clearly in my view not implemented the plan that is in play at the present time, the operative plan, and I've expressed concerned in joint witness conferencing and any number of meetings with the council about the resourcing, desire and willingness to formally implement the plan. So this method speaks to data provision in particular and it's still not clear to me what is going to be sought by the regional council formally held and then made available in a transparent context and to my view if the risk taken with these provisions, it comes to life, then the implementation of the plan is absolutely critical and at the present time it's clearly the case that there is great uncertainty about how that might happen and I am happy to speak to that further. I then take you to chapter 14. The first element is at policy 14.5, there are other minor changes but I am really just picking up the critical ones at the present time. And that, this is 14.5(b)(ii), so this speaks to or provides clarification in relation to the time at which the elements that are addressed by regulation of the plan come to life and is a – is just further clarification on what is sitting there, it's more pointed around the specific dates that relate to the two elements spoken about.

1105

Q. And if I can just interrupt you there, Mr Carlyon, that was contained in Ms Foster's version as well, wasn't it?

A. That's correct.

Q. Thank you.

A. The next is 14.6 itself and this has changed substantially from the last set of provisions that were provided to the Court and it is setting out to achieve two things. The first is to be clear about those places in which exemptions could be made and that is particularly at (b) so there are – I have a correction to make here, sorry, your Honour. I should have raised it a little earlier. So the elements in (b)(i)(ii) and (iii), in my view they are the elements that allow consideration of an exemption, (iv) which starts: "For commercial vegetable growing, the growing area does not," in my view, when we drafted these it was sitting in the wrong home and it should be moved to become the new (ba)(g), so it should sit below in those criteria of (ba) which inform whether or not consent should be granted, so this, we're talking now about the discretionary activity.

Q. Yes.

A. Sorry.

Q. I can – we spoke about this earlier, so I can assist there. Policy 14.6(b)(iv), I think Mr Carlyon is saying should be moved to (ba)(g).

A. And while I'm moving things on the material that was recently provided to you, in that current (b)(iv) where it says: "Within three years of lodgement of the application," I think it would be more appropriate to say "granting of the application".

Q. So where it says: "For commercial vegetable growing, the growing area does not exceed the baseline growing area and within three years of lodgement of the application the activity, et cetera," that should say "within three years of granting the application"?

A. That's correct. The concern, whether I've got that right or not, the concern there is that the period of time from an application being lodged can be considerable, you know, with the number of applications they are informed by other uncontrollable elements. It could ultimately be a

notified application, it could have any number of other influences that is driving the timeframe which sits in and around lodging.

MS WRIGHT:

Your Honour, apologies, I just want to make one point. I haven't spoken to Mr Day's planner, Mr Scott, about these changes myself.

THE COURT: JUDGE SEMPLE

Yes.

MS WRIGHT:

So at this point, I just reserve Mr Day's position on these adjustments, thank you.

THE COURT: JUDGE SEMPLE

All right, thank you, yes.

EXAMINATION CONTINUES: MS ONGLEY

Q. Thank you, Mr Carlyon. Subject to those amendments, are the rest of the provisions as filed?

A. That's correct.

Q. And would you like to make further comment on policy 4.6(ba)?

1110

A. Yes, I would if that's all right. Just very briefly, these are the critical elements and this comes off the back of the work that Ms Foster and others have done over this past year. Mr Scott and I went through those provisions and did our best to cross-reference into what's been provided to the Court without dropping matters off. As you can see, it rationalises the list of criteria that had, either had particular regard or regard and to be fair to Ms Foster, that notion was mine. It came through in joint witness conferencing and on reflection I don't think that it adds particular value to the framework that we've got in front of us. It was developed as a consequence of trying to bring forward the values and interests of mana whenua into that framework and subsequently had other elements added

to it by industry representatives and others and so it becomes a, like many of these causes, kind of a, trying to do everything for everyone and on that basis wasn't achieving anything. But just to make the point in relation to (baa), both Mr Turoa and myself in my evidence-in-chief have commented both the necessity for that provision that talks about maintaining and enhancing mana whenua values, so the consideration of that in resource consent applications. But we have both, and Mr Turoa will speak to it at length on Friday, but we have both expressed concern about mana whenua being dragged into individual consent processes for the purposes of identifying the values they hold and having to address that on a per farmer basis over potentially hundreds of consents and that is a real concern for hapū and iwi involved simply because of the logistics and resourcing required but also it places a real tension into an already fraught process that is not of the making of mana whenua and it's my preference and I understand Mr Turoa's that those issues are better dealt with at a policy level and there simply was not scope for that. That was made clear to us when this process unfolded.

Q. Thank you, Mr Carlyon. Just finally, so is my understanding correct that these are the policy criteria for the full discretionary pathway and I won't take you to the rules at this point in time, but in terms of the gateway that we've been talking about, can you, it's your evidence, isn't it that's table 14.2 and you having placed the alternative pathways in the rule framework?

A. No, I haven't and my position clearly altered from joint witness conferencing through to my evidence-in-chief, but it hasn't altered since that time. In my view, Overseer is appropriate as the gateway for determining control and discretionary activities and it provides a consenting pathway and to my understanding, that meets the fundamental need of the plan change.

CROSS-EXAMINATION: MS JOHNSTON

Q. Good morning, Mr Carlyon?

A. Morena.

Q. And thank you for your evidence and also the update this morning. I'm going to ask you to bear with me a little bit because I prepared questions off the back of the provisions and some of your context this morning has been off assistance so we might be a bit fluid. Is that okay with you?

A. Thank you, that's my preference.

Q. Okay, good and I'm going to start just with a few documents top of mind. So I'm going to be referring you to your evidence-in-chief?

A. Yes.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. You have a copy of that and the Court no doubt does as well. That's volume 2 book 4 of 4 tab 34. I will slowdown, but it's CB2042075. We've already taken the Court to the appellant's provisions which we'll talk about and I also just want you to have handy please the joint witness statement of Farm System Experts and I'm not sure if you have a copy, but I can make one available, it's tab 15 of the new bundle.

1115

A. That was the 2nd February –

Q. Yes, yes, the most recent.

A. - (inaudible 11:15:12), yes, I've got a copy of that.

Q. Thank you. And I want to start at a high level today, because I want to understand your planning opinion now we've got the new plan provisions before us and like I say, you've gone some way to assist me, but you've authored those provisions with Mr Scott, that's right?

A. That's correct.

Q. And you're not accepting that there needs to be a pathway beyond Table 14.2 for applicants to seek consent?

A. Yes, I do.

Q. And we'll come back to the exceptions. I had written down there were four, but as I understand it now there is three and we'll go to them if that's all right, just so that I have that front of mind. So that's policy 14.6(b) and that's at 401.0456 of the bundle. So the first one is to enable the transition to an alternative non-intensive farming land use over a period of time not exceeding five years to a use that meets the CNLM?

A. Yes.

Q. That's right. And that reflects the transition pathway that had been part of the council's provisions, that's fair, isn't it?

A. That's correct.

Q. There's some slight changes which we'll come onto, but in effect it's the transition pathway, that's right?

A. That's correct. And for what it's worth, I think it's a pathway that's highly unlikely to be taken up by parties given the enormous economic implications of doing so.

Q. Thank you. And the second exception is the existing intensive farming land use cannot meet the CNLM but there is a trajectory towards meeting those CNLM within a reasonable timeframe and that's demonstrated, that's the second exception?

A. That's correct.

Q. And the third is where there is an exceedance of the CNLM due to the calculation against Table 14.2 overestimating nitrogen loss, as shown as by one or more scientifically robust models, there is an expert opinion alongside that and a trajectory again towards meeting the CNLM over a period of time, that's the third?

A. That's correct.

Q. And the – what I had understood to be the fourth is now a policy consideration under (ba)?

A. That's correct.

Q. Thank you. And all of those are exceptions to meeting the cumulative nitrogen leaching maximum in Table 14.2 aren't they?

A. That's correct.

Q. And all of those pathways or exceptions are to be considered as a discretionary activity, that's right?

A. Yes.

Q. And to be fair to you, you had contemplated in your evidence something other the recalibration of Table 14.2 as a consenting pathway, that's part of your evidence before the Court?

A. That's correct.

Q. And I understand and Ms Ongley referred us to it before, and you'd adopted Mr Scott's provisions, that's right?

A. That's correct.

Q. Thank you. And I understand that that was on the basis that if the One Plan operative approach wasn't preferred by the Court, your view was that a short-term consenting framework would be appropriate, that's correct?

A. That's correct.

Q. And you reflected that in a section 32AA analysis in your evidence-in-chief, didn't you?

A. Yes, I did.

Q. And to assist the Court, that's at section 16 of your evidence, CB204.2105. And that 32AA concluded that, again, if the operative plan wasn't preferred by the Court, your analysis supported the decisions version of Plan Change 2 over the appeals version, the NRAT tool version or Plan Change 2 is notified, that was your analysis?

A. That's correct.

Q. And your view was that among other things, the decision version of PC2 offered a precautionary approach appropriate for the short term, that's right, isn't it?

A. That's correct.

Q. And your view also off the back of that analysis for this was that the decisions version provided a clear consent pathway to be in play in advance of the National Policy Statement Freshwater Plan that Horizons is working on, that's right?

A. That's correct.

Q. And the decisions version Plan Change 2 included the alternative controlled pathway, that's right?

A. Correct.

Q. And your new provisions have removed that, hasn't it?

A. That's correct.

Q. Have you prepared an updated section 32AA, Mr Carlyon?

A. No, I have not.

Q. So there's been no assessment of the efficiency and effectiveness of the appellants' provisions before the Court?

A. No, there has not.

1120

A. No, there has not.

Q. Thank you. When you refer to the short term in your evidence-in-chief, that reflects Plan Change 2 is an interim planning response, doesn't it?

A. Yes, it does. Just for clarity, I think the context again is important. It was on the basis that there was a belief that Oranga Wai would come into existence in the near term and also as I highlighted early on that there would be a commitment to implementation and the sort of analysis and review and examination that was required if parties were going to be taking a risk with a relatively normal approach and that is not present in my view.

Q. Thank you and I was going to come onto implementation but since you raised it, could I just take you to paragraph 12.2 of your evidence-in-chief. It's at 204.2099 page 24?

A. Yes.

Q. At the beginning of that paragraph you express an opinion, don't you?

A. Sorry, which paragraph was it again?

Q. 12.2?

A. Yes.

Q. "It's my opinion that Ms Foster sets out a robust and appropriate framework for an implementation strategy. This includes engagement with mana whenua, a series of support packages for applicants and identification of the requirement to ensure compliance with the plan provisions. Ms Foster sets out methods by which data will be collected, maintained and shared with key stakeholders. This includes commitments to the development of exemplar applications, public reporting and the establishment of an independent advisory panel." That's your evidence, isn't it?

A. Yes. My evidence in relation to implementation goes on to say that there's no commitment to that. While the concept is laudable and work was put into that in the intervening period of a year since that work was done, there's been no progress on the record that gives confidence that that will come into play.

Q. Yes, just to be clear, the appeals before the Court ask for Plan Change 2 to be declined in its entirety, didn't it?

A. Yes, at 4, yes.

Q. Thank you. So I will just go back to my notes, thank you and we were talking about PC2 as an interim plan response and you have reflected on it but the objective of Plan Change 2 is to address a narrow issue pending completion of that freshwater plan process, that's right?

A. Yes.

Q. Thank you and Dr Daly describes that in her evidence to the Court, the work programme that's underway in this matter of Oranga Wai, that's right?

A. Yes. As I understand it though that is as you said before a fluid matter.

Q. And that reflects the approach that the Plan Change 2 work programme, it being interim, was initiated pre the National Policy Statement 2020, that's right, isn't it?

A. That's correct.

Q. And the Oranga Wai process has been running parallel to Plan Change 2, that's correct?

A. Yes, it has.

Q. And that includes ongoing engagement with mana whenua, yes?

A. Not by my observation. I understand that it's had, there have been attempts at engagement with mana whenua.

Q. Yes?

A. But I've got, I haven't seen anything on the record that shows that engagement has produced results to speak of.

Q. I think it was Dr Daly's evidence that there's been engagement with iwi and hapū about the meaning of Te Mana o te Wai in terms of a local context, that there's been draft objectives and visions and values shared. That was her evidence to the Court, wasn't it?

A. As I understood it Dr Daly said that the council hadn't got past raising the issues at a conceptual level at either with mana whenua or the community. So the easy bit is to say we all agree that water quality has degraded and we would like to do something about it. When that rubber

hits the road it's a different proposition and it's nowhere hitting the road from what I can see.

Q. Thank you and you'll agree that the National Policy Statement Freshwater Plan process is subject to very specifical procedural requirements, wouldn't you?

A. Yes, I would, as was the development of Plan Change 2 in relation to engagement with mana whenua.

Q. I'm just talking about the NOF in terms of values and visions, limit setting?

A. Yes.

Q. Yes, thank you, and that's going to result in new objectives and policies in forming freshwater management in the region, isn't it?

A. Possibly it is and possibly it's not.

Q. And we'd all agree, wouldn't we Mr Carlyon, that that work is still to come?

1125

A. Yes.

Q. Thank you. So giving effect to the NPS-FM is constrained by the timing of that process, isn't it, within the Plan Change 2 context? Let me rephrase that, giving effect to the NPS-FM within Plan Change 2 is constrained by the timing of that Oranga Wai process, isn't it?

A. Yes, except that the NPS has been around a lot longer than 2020, yes, there's a new version, but it's been around and so has the concept of Te Mana o te Wai.

Q. But your evidence accepts that PC2 couldn't fully implement the NPS-FM, that's right?

A. I think from a completely pragmatic view it was appropriate to advance the proposition as council did.

Q. Thank you.

A. Which was to update 14.2 and provide a consenting pathway and that required parties to put to one side whether or not there was a consenting pathway, but yes.

Q. Thank you. And to be fair to you, both you and Ms Foster have considered the objective and the policies of the NPS-FM in your evidence?

A. Yes.

Q. Thank you. And there's a point of difference around the objective and how Plan Change 2 gives effect to it, isn't there?

A. That's correct.

Q. And if I could just take you to your evidence now, paragraph 7.28.

A. Sure.

Q. It says there: "It is not at all clear that PC2 will contribute to the improvement in the health and well-being of degraded waterbodies. As outlined in Dr Parlato's evidence, at best the improvement is marginal. On the other hand, the focus of the regional council is on providing a wide consenting pathway that has the potential to entrench degradation of water quality," that was your evidence?

A. That's correct.

Q. And you're aware of Dr Snelder's evidence before the Court about modest water quality improvements as a result of Plan Change 2?

A. Yes, I am aware of that and the discussions that circulated around what that margin might look like, but in the back of my mind is the context that the limits within the plan only go some way to addressing water quality degradation anyway and that the difference between the marginal improvement – is it Dr Snelder?

Q. Yes?

A. Yes, and Dr Parlato and others have raised is, is playing around on the edges of where a water quality improvement needs to go. There's a substantial gap, so it might be at best "less worse".

Q. And we'll come onto some of those scenarios shortly, but you rely on your opinion there expressed in that opinion on the evidence of Dr Parlato, don't you?

A. No, I've read the evidence of other witnesses in this case, but appears to me that it may or may not be the case that there is modest water quality improvement and for the purposes of the conversation on the degree to which Plan Change 2 provides for the plan objective, it doesn't go far enough to convince me that it is on that path of making improvement where water is degraded, which it most certainly is.

Q. And Dr Snelder is the water quality scientist with evidence before the Court, isn't he?

A. Yes, he is.

Q. Yes and other than Dr Holmes there isn't another expert that contradicts his evidence in the water quality space, is there?

A. That's correct.

Q. And you've read the evidence of Ms Patterson as well?

A. Yes, I have.

Q. Yes and their view is that the water quality modelling does show that there will be improvement of degraded waterbodies in a way that meets the objectives of the One Plan, that's their evidence, isn't it?

A. So there's two elements to that. One is the scientific contribution to that determination, but I think the other is a policy determination and it's my opinion that that is most unlikely in relation to the stretch that is needed to achieve the objectives of the RPS.

Q. Yes and that's your planning opinion?

A. That's correct.

Q. Thank you. Then I just want to move now to 7.21 of your evidence and that's common bundle 204.2089.

A. Sorry, what was that paragraph number again?

Q. 7.21.

A. Thank you, sorry about that.

Q. Please, no rush, read that if you like.

A. Yes, I've got that in front of me, thank you.

Q. Thank you. In that opinion, you express the view that the regional council has prioritised the economic and social outcomes of the hierarchy, and by "the hierarchy" I refer to the hierarchy as contained in the NPS, over the well-being of freshwater ecosystems, that's your opinion in that?

A. Yes, it is.

Q. That's not the evidence of the regional council though, is it?

1130

A. The council has commissioned significant evidence in relation to economic effects and implications.

Q. I'm referring there to the prioritisation that you have put in that paragraph, Mr Carlyon and that's not the position of the regional council, is it? Their evidence is that Plan Change 2 does require reductions in end leaching

in a manner that brings about water quality improvements, that's their evidence, isn't it?

A. Yes. Yes, I accept that the regional council holds that view.

Q. And again their experts are of the view that those changes do contribute to improving the health and wellbeing of freshwater and its ecosystems, that's right?

A. Yes, I accept they say that.

Q. And you would agree that the improvement of freshwater, and I think we've just had this discussion, can only go so far with Plan Change 2, can't it?

A. That's correct. I should just say I think that the appellant parties raise a number of issues that may have gone some way to addressing that matter, but the regional council from the outset determined that they're out of scope.

Q. But in terms of the simple proposition that Plan Change 2 in of itself can only achieve so much for water quality improvement in the priority catchments in the region. You'd accept that?

A. Yes, other than being bound by the NPS and other instruments.

Q. And that was the evidence of Ms Patterson before the Court, wasn't it? Her evidence was that the narrow range of activities that Plan Change 2 encompasses, the results from implementing Plan Change 2 are going to be constrained, that was her evidence?

A. Yes, constrained or modest I think is another description of it.

Q. And we've seen that in the difference and I think that you've just alluded to it before around the margins?

A. Mmm.

Q. We've seen that in the difference between the different consenting scenarios that were modelled by Dr Snelder, that's correct?

A. Yes.

Q. And it's evidence, isn't it, that between those consenting scenarios that the differences are negligible in terms of water quality outcome, in terms of one being better than the other?

A. Yes, yes, again modest.

Q. And in his view, all of those consenting scenarios bring about a modest water quality improvement, that's right?

A. Yes, at best.

Q. And I want to take you to a point and I think it's a point that is relevant when we're looking at recalibrated Table 14.2 and this is Dr Snelder's evidence at his reply where he notes that: "The differences to the modest improvement represented by the recalibrated Table 14.2 alone are not of practical importance to the environmental characteristics that are affected by river nitrogen levels." That was his evidence to the Court, wasn't it?

A. Yes.

Q. Yes and I think that's represented in your acceptance now that there needs to be a consenting pathway above Table 14.2, that's right?

A. I, I think, unless I'm misunderstanding what you're saying, part of the context for Dr Snelder is that there is such a gap between where we are or where we need to be that there is not a material difference.

Q. And you will recall Professor Horne's evidence, you were present in court for Professor Horne's lengthy evidence?

A. Yes.

Q. His analysis when he was looking at the reductions that might be able to be bought around on farm that was informed by Dr Snelder's water quality modelling analysis, wasn't it?

A. Yes, I understand that to be the case.

Q. So it's not the case that freshwater is being trumped by these other considerations as you suggest in the evidence that we just went to paragraph 7.2.1, that's not the evidence of the regional council, is it?

A. (no audible answer 11:34:00)

Q. I'm putting to you Mr Carlyon that you can put freshwater first and the health and wellbeing of ecosystems in freshwater and still have regard to a range of other considerations, you'd accept that?

A. I would accept that absolutely.

Q. And you'd accept in that same context that your evidence is that Table 14.2 does a similar thing, it's a balancing act, those were you words, wasn't it?

A. Yes, it was a balancing act and I think we can see from the further attempts to provide balance from Dr le Miere and others keep slicing away at that because 14.2 was a science based proposition that was then amended as a consequence of the world that we live and the challenges that 14.2 would face if it drove people to limits that produced a truly outstanding water quality outcome.

1135

Q. Yes and I think I just put to you and you've accepted that that same process has been embarked on by the regional council and its experts when it was looking at decisions version and appeals version Plan Change 2?

A. Yes.

Q. Thank you. I just want to turn now to some of the differences between the appellants' provisions and the provisions as filed for the council and I'm going to start with one of the points you make in your evidence around the National Statement, Coastal Policy Statement?

A. Yes.

Q. And you are critical there of the absence of a precautionary approach, do I understand that correctly?

A. That's correct. Can you just take me to the – oh, I think I've got them here, yes.

Q. Yes, I think it commences from 737.

A. Yes.

Q. 204.2093.

A. Thank you.

Q. Now, you'll recall, as this was the subject of joint witness conferencing, but that – but the council provisions contained additional policy support for sensitive receiving environments including lakes, wetlands and estuaries, you'll recall that?

A. Yes.

Q. And in particularly that was policy 14.6(e) of the council's provisions, you will recall?

A. Yes.

Q. And I'm just going to ask my friend Mr Sinclair whether he has the council's provisions there, he might have given them to me earlier, thank you. So that's tab 1, I think you might need, that's volume 3, book 1 and it's tab 1?

A. It helps when the spines of the folders are closed.

Q. And the bundle reference is 301.0009?

A. Yes.

Q. And so that, I just wanted to flag that really for the Court's benefit, that's FVI, the potential effects of nutrient leaching and runoff, faecal contamination and sediment losses from the land on surface water and groundwater receiving environments recognising the state sensitivity and absorptive capacity of the receiving environments and of downstream lakes and wetlands, that's your recollection of that policy, Mr Carlyon?

A. Yes, it is, I've got that in front of me.

Q. Thank you.

A. Thank you.

Q. And that was agreed and retained as between the decisions version and the appeals version between the planning witnesses, wasn't it?

A. Yes.

Q. And Ms Foster recommended that at a council level to represent a precautionary approach to some of the more sensitive environments that may be impacted by Plan Change 2 or nutrient management or nutrient leaching?

A. Yes.

Q. That's fair? And that was a provision that was in particular agreed with the Department of Conservation at the council level hearing, wasn't it?

A. I don't recall that, sorry, yeah.

Q. That was a subject of Ms Foster's evidence. I just want to confirm, that hasn't been carried forward into the appellants' provisions that have been filed with the Court?

A. No, it has not.

Q. And did that go some way to helping you reach the view that the decisions version of Plan Change 2 in your section 32AA representative precautionary approach?

A. Do you mean the provision that you have just taken me through?

Q. Yes?

A. I guess it might have contributed to that, but I –

Q. Thank you.

A. – I have reflected a great deal on producing a policy framework that is as directive as humanly possible.

Q. Thank you. And I had wanted to talk to you about some of the changes that had been made as between the council's provisions and the appellants' provisions relating to mana whenua values?

A. Yes.

Q. And you've addressed us this morning on that. Just to confirm that the policy addition that had emerged through discussions between the planners had stayed, recognising the importance of mana whenua values, that's correct?

A. That's correct.

Q. But the priority afforded to it within the provisions has been removed under the appellants' provisions?

A. That's correct. The most recent versions, that's the case.

Q. And you've indicated that that's something that Mr Turoa and Ngāti Tūranga are comfortable with, that's right?

A. I think that this is my – this represents my view.

Q. Yes.

A. I have heard the evidence of Mr Turoa and been through that, but the concern that I raised a little earlier on remains. But this is – this appears to me to be as far as we can get at this stage and I think in evidence I refer to the perhaps the council view that by achieving biophysical outcomes the rights and interests of mana whenua are provided for. I have a real concern about that. I think the policy needs to be pointed at those values and pointed at those interests in the same way we would do for biophysical values and we simply haven't got to that place yet.

1140

Q. And you'll agree thought that you've been participating in the planning process on behalf of Ngāti Tūranga for, since early 2020, that was your evidence?

A. Ah, yes, yes.

Q. And you've accepted and proposed these provisions up until Friday. To be fair to the council, that was your position on behalf of Ngāti Tūranga to that point?

A. Yes. So the context for that was twofold. One, the regional council saying: "We are simply not going to engage in a wider consideration of those rights and interests beyond the narrow scope that is claimed for Plan Change 2." And the second I've referred to just a little earlier was that there appeared to be a real commitment to detailed implementation and the ability to address the risks that Ngāti Tūranga and Fish and Game were taking in this process which has not eventuated to this point.

Q. But your evidence is that those sorts of factors could be picked up through the implementation stage, is that what you're saying?

A. Yes, but I think, I might be thinking about this wrong, but I think that the implementation needs to be codified at this stage and it is inappropriate to do so once the decision is made and I think I made that clear in joint witness conferencing and at every opportunity with council.

Q. Yes, I just want to take you back to a few points and this is the example of where we've been a bit fluid today because that priority that had been agreed with you on behalf of Ngāti Tūranga was important for the council. So I was going to put to you that that should be back into the provisions. So I guess that provides the context. We're freewheeling a little bit if you like here Mr Carlyon?

A. Yeah.

Q. So I understand that that position now is that you're comfortable from a planning perspective that those mana whenua considerations will be considered the other matters in policy 14.6 and that's the word that's used "consider". It's not "particular regard", it's "consider". You're comfortable with that?

A. Well yes, I am because when I'm thinking about these provisions it's very much on the same path as the previous policy that we were talking about that Ms Foster advanced. I think what is the trigger here for mana whenua to be engaged in this process, that's the driver for that provision and when I look at that provision I think who can speak to the contribution of mana

whenua values other than mana whenua? I don't think anyone can and so that provision was designed to ensure that mana whenua, hapū, iwi were engaged in a way that they could be given the very narrow scope that was available to them in this plan change. So that's all it's trying to achieve.

Q. Thank you –

A. Sorry, just to reiterate again, I think that presents great risk to those very same people that they are dragged into processes that are combative and frustrating and with their own neighbours in a way that's, you know, could be really hard for everyone considered.

Q. I understand that and you've referred to the narrow scope of Plan Change 2. You'd accept, wouldn't you, and we've traversed and there's evidence before the Court that those discussions about those broader fundamental methods and methodologies for engagement at a higher level earlier than a consenting phase are going to be picked up and have begun as part of the Oranga Wai process, you'd accept that?

A. Yes, I accept that the regional council says that. I don't accept that that wasn't possible in this process.

Q. On reflection though, let's pause there, did you make any other recommendations to Ms Foster that might have helped enable that within the context of chapter 5 and chapter 14?

A. No, because it was made very clear to us by council in a number of processes and in the expert caucusing that there was simply no scope for it.

Q. That wasn't the evidence of Ms Foster before this Court thought, wasn't it, she maintained that she had an open mind to receiving feedback as to how those values might be represented within the plan change framework?

A. I'm sure that she's right. I don't recall that discussion, but I want to reiterate that the scope for that was very narrow. So she might have had an open mind, but the regional council has had a closed mind to advancing deeper propositions in relation to Māori rights and interests.

1145

Q. Within the context of a Plan Change 2 framework, is that what you're saying?

A. That's right.

Q. Thank you. I want to turn now to the appellants' provisions, I think we're at that point.

A. Yes. Ms Johnston, you're talking about the Friday version, or last week's version?

Q. I'm just switching between folders, Mr Carlyon.

A. Yeah, yeah.

Q. Thank you for your patience. I am, so we're back at tab 16. So, we have in front of us and I'm just going to go back, essentially, Table 14.2 in the CNLM?

A. Yes.

Q. Plus a discretionary pathway, that's right?

A. That's correct.

Q. And we've traversed the three exceptions that's –

A. Yes.

Q. – that's set out within that pathway, and to be clear I just wanted to clarify now, on your reading, if you don't fall within one of those exceptions as a discretionary activity, you don't get consent do you?

A. That's correct. I don't think there was ever an assumption that everyone would get a consent.

Q. No, but I am just trying to understand how the exceptions work within –

A. Yes.

Q. – a discretionary pathway.

A. Yes, that's right.

Q. You understand that that's a little bit unusual, isn't it?

A. Ah, I'm not sure if it is or isn't, but I, yeah, I accept, I accept the proposition you are putting.

Q. Thank you. So that's the basis I ask that question.

A. Yes, yes.

Q. Thank you. So the application would firstly have to meet the exception, you'd have to show that you fall within one of the exceptions under (b)

and then you would be considered against the policy framework, that's right?

A. That's correct.

Q. And there's no alternative controlled activity pathway under these provisions, that's right?

A. That's correct. So 14.2 is the gateway effectively.

Q. Yes.

A. Yes.

Q. And I was – that was my next question.

A. I'm sorry.

Q. No, that's okay. The CNLM, CNLM are the only gateway for the controlled activity?

A. That's correct.

Q. That's right. And all of the exceptions that we've traversed, they're all linked to the CNLM and Overseer in some way as well, aren't they?

A. Yes, they are.

Q. So as I read it, the transition pathway, I am just going to go there now, the transition pathway, it needs to be to an alternative non-intensive farming land use that meets the CNLM, that's right?

A. That's correct.

Q. And I will put to you and we'll come to it later, but that's a new requirement, isn't it?

A. That's come through this process?

Q. Yes –

A. Yes, it is.

Q. – on the Friday provisions. Previously, the transition pathway didn't require the new alternative non-intensive farming use to meet the CNLM, did it?

A. Yes, because I think that might have been assumed, sorry. It seems entirely reasonable that that would be the case. If –

Q. Park that point, we're going to come back to it.

A. Let's, yeah.

Q. Okay. If we move then to the second, the trajectory towards meeting the CNLM over a reasonable timeframe, so again that exception is linked to the CNLM, that's right?

A. That's correct.

Q. And the further one, the third, is that if there is an exceedance of the CNLM due to Overseer, you need to show that through the other model, but it is still linked to the CNLM because you need to show a trajectory down to meeting that CNLM under that pathway as well, that's right?

A. Yes, and that proposition acknowledges what a number of experts have indicated and including through the joint witness conferencing that it could be subject to test.

Q. Yeah and we'll come to talk on that too.

A. Sure.

Q. But I just want to reflect on this proposal practically and I'm going to go back to basics, if you like, and I'd like to go take you to Table 14.1. So Table 14.1, if my notes are right, is at CB401.0459. And this is the starting point for any intensive farming land use application, isn't it, Mr Carlyon?

A. Yes, it is.

Q. You go to this table, you find the catchment within which you are located, it reflects your water management subzone and then it has there the date the rules of the plan have legal effect, that's correct?

A. That's correct.

Q. And if we look at those date ranges, you will see that those range from 1 July 2014 and we're in the – at the start of that table down to 1 July 2016 at the bottom?

A. Yes.

Q. So there's a, there's a three-year span?

A. I see that.

1150

Q. So if we look at the Mangatainoka, those legal rules, or those rules took legal effect on 1 July 2015 and the Upper Manawatū 1 July 2016, that's right?

A. That's correct.

Q. And then you would go to Table 14.2?

A. Yes.

Q. And you would look up the year that you were needing to meet –

A. Yep.

Q. – as at the date of your application and that year is from the year that the rule has legal effect, that's correct?

A. Correct.

Q. So again bear with me, but for a farm in the Mangatainoka, 1 July 2015 would be your year one and 2025 would be your year 10?

A. Yes.

Q. And 2025 would be your year 20, so the same applies say for the Upper Manawatū but we're one year out, that's right?

A. Yes.

Q. We then move down to rule 14.1 and these are with your provisions. If we go to (c). Now I'm into the conditions, standards and terms?

A. Yes.

Q. "The Nutrient Management Plan prepared under (a) must demonstrate that the nitrogen leaching loss from the activity will not exceed the cumulative nitrogen leaching maximum specified in Table 14.2," that's correct?

A. Yes.

Q. And those are those CNLM across year one, five and 20, aren't they?

A. Yes.

Q. Yes and in practice, if my farm was in the Mangatainoka, I would need, if I was making an application in 2025 to show that I meet the year 10 CNLM, I must not exceed that. That's an absolute limit, isn't it?

A. That's correct.

Q. And I would also need to establish that I was going to meet or undertake to meet the CNLM in year 20, that's right?

A. Yes.

Q. And I would have 10 years to achieve that CNLM, that year 10 to 20 CNLM?

A. Yes.

Q. Okay, good and if I don't achieve that, then I fall to be a discretionary activity, that's right?

A. That's correct.

Q. You've reviewed Professor Horne's supplementary statement, have?

A. Was this one sent out on Friday?

Q. I knew that you were going to say that because there has been a few, hasn't there. I think that this is the January supplementary statement, so not his further but his supplementary evidence and this is at tab 12?

A. Of the same folder?

Q. Yes. To be fair, I wasn't going to take you to a particular passage. I was going to put a proposition. I've just assumed that you've had the chance to read his January evidence?

A. There's an awful lot and I've got a very poor memory so if you can take me to it that's great.

Q. That's fine.

A. So tab 12?

Q. Yes, 401.0387.

A. I am in the wrong folder so can you direct me to the right folder as well?

JUDGE SEMPLE ADDRESSES REGISTRAR – SUPPLEMENTARY BUNDLE

(11:53:21)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. Oh, right, thank you Mr Sinclair. Mr Sinclair has once again proven his understanding of the bundle better than me. We're at tab 5, same bundle but tab 5 401.0030?

A. So not tab 12 which was the last supplementary?

Q. No, that was his further supplementary. We're at his supplementary, thank you?

A. Thank you, yeah.

Q. And one of the things Professor Horne did was look at the proportion of farms unable to meet year 10 at 2019?

A. Yes.

Q. Even having taken up G&P to date, that's right?

A. Yeah.

Q. His evidence doesn't account for the Upper Manawatū. He didn't have enough data to analyse the 2019 position for the Upper Manawatū?

A. Yes.

Q. And his evidence there, just so you will know, is that that is the area where reductions and new leaching will be most difficult and also the largest number of farmers exist, that's correct?

A. Yes. Yes, and a highly degraded catchment at that, yeah.

Q. And Professor Horne's evidence doesn't account for commercial vegetable growing. That was addressed by Dr Jolly?

A. Yes.

Q. And her evidence, and I will put to you that, was that there was approximately two out of the approximate 50 that could meet the recalibrated CNLM, that was her evidence. So the point of that Mr Carlyon is that there is a number that will need your discretionary activity pathway under the appellants' provisions, that will not be able to meet the CNLM and will need to access the exceptions or attempt to access the exceptions under the appellants' plans provisions, that's your understanding?

1155

A. That is my understanding.

Q. Yes, okay.

A. And I think it's appropriate.

Q. I'm just going to take you to the joint witness statement now. This is the joint witness statement of the experts filed on the 2nd of February or dated the 2nd of February and that's tab 15. And before I do, I just want to reflect on your last point around the number of farms that need to access the discretionary pathway. I just want to confirm, you haven't assessed the number of those farms against the 32AA and the efficiency and effectiveness of those provisions in that regard, have you?

A. No, I have not.

Q. Thank you.

A. No, I –

Q. So –

A. – my primary consideration is “is there a consenting pathway” and the answer to that is “yes, there is”.

Q. Yes, my point was you haven’t assessed how many would need the consenting pathway as part of your analysis to date, have you?

A. No.

Q. Thank you. So I am just going to take you to the joint witness statement, and you’ve reviewed this statement?

A. I’ve read through it, yes.

Q. And you’ll understand that the experts agree that you shouldn't use Overseer for absolute numbers, that was their position recorded –

A. From a technical expert perspective, yes.

Q. Yes.

A. I disagree from a planning perspective.

Q. But we’re just referring to the joint witness statement at the moment?

A. Yes, yes.

Q. Thank you. And they also agreed that it wasn’t possible to quantify the error of Overseer predictions for an individual farm, didn't they?

A. Yes.

Q. And they went on to confirm and are all in agreement that there is a likelihood that some farms will be under and over the measured N loss on individual farm, that’s right?

A. Yes.

Q. And they also agreed that Overseer is a useful decisions tool for assessing the risk of nitrogen loss, that’s right?

A. I think they said it was the only model currently available for that exercise.

Q. Well, my recollection of reading it and we can come onto that, is that the statement that I am putting to you was clear, that they agreed that Overseer is a useful decision support tool for assessing the risk of N loss on a farm, that’s right?

A. Yes, yes.

Q. Thank you. And they all supported a multi-tool or a multi-evidence approach, didn't they?

A. Yeah, yes, I’m not sure about Dr Parlato but she can speak to that, but I think for the others, yes.

Q. Yes. And your provisions as filed on Friday, they don't reflect a multi-evidence or a multi-tool approach, do they?

A. Yes, they do. At the discretionary level, it allows consideration of any number of other methods or approaches for a determination on a consent.

Q. Well, could we, could we go to that exception?

A. Yes.

Q. And I think we should read it, just so that we're all clear that we understand the intent of it, because as I read it, I read it in a more narrow way.

A. Right.

Q. And that's that the exceedance of the CNLMs is due to the –

THE COURT: COMMISSIONER HODGES ADDRESSES MS JOHNSTON – WHICH PAGE (11:58:28)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. Sorry, Commissioner, we're back in the appellants' provisions, 401.0456, tab 16 of the latest book. So at 3, the exceedance, (b)(iii), the exceedance of the CNLMs is due to the calculation against Table 14.2 overestimating nitrogen loss as shown by the results of one or more scientifically robust model that estimates nitrogen loss.

A. Yes.

Q. And the opinion of a person who is a certificated completion advanced sustainable nutrient management from Massey University and a trajectory towards meeting the cumulative nitrogen leaching maximums within a reasonable timeframe. Now is –

A. So there's two part – there's two parts to that, isn't there.

Q. Yes?

A. The first is addressing the unders and overs issue that you have raised a number of times. The second is the trajectory towards the CNLM.

Q. Yes, towards meeting the CNLMs.

A. Yes.

Q. And yes, I was, I was comfortable with your answer to that in one of my earlier questions, so I understand that.

A. Yeah.

Q. Now what I'm reflecting on is the evidence of Professor Horne, Dr Jolly and Mr Ford filed on Monday which speak to the fact that practically the availability of any other scientific robust model to assist an applicant in making out that exception is very slim, have you read that evidence?

A. Yes, I read Mr Ford's and I'm sure I've been through the others, yeah.

Q. Well, I will put to you that that is their evidence, so Professor Horne spoke about the only credible alternative to Overseer being (inaudible 12:00:02)?

A. Yes.

1200

Q. And he spoke about how that wasn't readily available, it was very highly technical, there weren't many people trained in it?

A. That's correct.

Q. And Dr Jolly and Mr Ford took a similar view for CVG, complicated more on the face of their evidence about the fact that we're dealing with commercial vegetables, so I'm not sure if you've read the evidence, but I'm putting that to you that that was their evidence?

A. I accept that that was their evidence, yes.

Q. So you'd accept then that that pathway, that exception there, would be quite difficult for a farmer to access when they're dealing with the uncertainty around Overseer, you'd accept that?

A. I think there's more to it than that. I think that it's now in some cases 12 or 13 years since the opportunity was available to those individual landowners and industry bodies to collect the data, to apply the models, to modify the models and to produce a viable, sustainable proposition to address nutrient losses and so what you're now saying, is if I understand it right, is that some 10 or 12 years later, with little or no action, it's going to be really hard and I think the answer to that is, yes, it is going to be very hard and the context for that is a highly degraded environment and objectives of the RPS that drive us towards maintaining and improving water quality.

Q. Yes, but as I understood the purpose of this particular exception, was on your evidence to deal with the uncertainty –

A. Yes.

Q. – that the experts acknowledge exists around meeting an absolute in Table 14.2, that was your evidence, wasn't it?

A. That's right, for the purposes of the gateway.

Q. Yes.

A. Yeah.

Q. Yes. And so I'm putting to you that potentially the intent of that exception isn't lining up with the practicalities of what an applicant would need to do as a discretionary activity to overcome the uncertainty that exists with them being able to show that they need the CNLM, that's what I'm putting to you as a proposition?

A. I guess I think it's – I accept the view that there may be uncertainty about the ability to do that or otherwise, but I don't think the plan is required to resolve that and the appellant parties certainly aren't.

Q. It seems to be that the intention was when the provisions were crafted that –

A. Yeah.

Q. – there would be a difference in how this particular exception –

A. Yes.

Q. – would be dealt with in terms of the policy suite though, that's right, have I read that correctly?

A. For the purposes of getting through to examination under (ba).

Q. Yes. I'm just going to go back to them. Because I think it's important that we understand how –

A. Yes.

Q. – this is going to work in practice, so if I read your (ba), and I have the version obviously filed before your update this morning.

A. Yes.

Q. That (ba) applies to the exceptions specified in (b)(ii) or (iv) above, it doesn't apply to the pathway where you have an exceedance of the CNLM due to Table 14.2 or due to Overseer overestimating the N loss from that farm, that's right?

A. That – I may have this wrong, but that's not, not how I see it.

Q. Okay, could you explain that to us?

A. I think it takes either of those provisions at (ii) and (iii) on the basis that that assessment is undertaken and if so someone who has got the appropriate qualifications undertakes the assessment to indicate that on the balance of probability they can demonstrate a trajectory towards meeting the CNLMs then it's considered in the light of (ba) below.

Q. Well, when I read (ba) it doesn't have (iii) there? I had read this as creating a deliberate intent to try and create a more readily accessible pathway for farmers – and let's put aside the activity –

A. Yes.

Q. – status for a while that we're trying to do that as a discretionary, let's put that to one side –

A. Yes, yes.

Q. – but that the idea was that if a farmer was having to grapple with applying as a discretionary activity, because of Overseer estimating N loss too high, that they would not have to be assessed against (ba) but that they would be assessed against (c), that's right? Is that your understanding of the provisions as drafted?

A. Yes.

Q. Thank you. And to be clear, the mana whenua values and the regards we had to them doesn't apply to these particular activities?

1205

A. Are you talking here, going back before I modified this morning?

Q. To exception, to exception 3?

A. Ah yes, it was my view that it did apply to that.

Q. Okay, so is your evidence today that (ba) should apply to all three exceptions under policy 14.6(b)?

A. Yes.

Q. Thank you and that assists because I was going to put to you because if that had been the case, a consent applicant would have still had to have come back to the RPS, wouldn't they in policy 5.8?

A. That's correct.

Q. And let's go there, let's reflect on that. So policy 5.8 is at 401.0432?

A. Yes.

Q. And it reads at (ii)(i): "For existing intensive land uses that do not achieve the nitrogen leaching maximums established under (i)," and that's the CNLM, "the regional plan must provide that any consents granted take into account all non-point source"?

A. Yes.

Q. Yes: "Achieve the strategies for surface water quality and the strategy for ground water"?

A. Yes.

Q. "Recognise the productive capability of land and are of limited duration"?

A. Yes.

Q. And so my point had been going to be to you that regardless of how policy 14.6 was structured a decision-maker would have had to have regard to that directive policy?

A. Yes.

Q. Thank you and that requires all discretionary activities, including now on your evidence the application where a farmer defaults to discretionary because of uncertainty around meeting the CNLM, they have to establish, among other things, that the consents achieve the strategies for surface water quality and ground water quality, that's a requirement of that consent application, isn't it?

A. Yes and I think that's appropriate.

Q. You would accept though it's generally not possible at an enterprise level for a consent application to establish or demonstrate a direct impact on the Schedule B values and Schedule E targets, wouldn't you?

A. No. We have been through this process for a number of client farmers who wanted to consider these issues and make an application. I think it's possible. I think it's highly problematic and I think the primary place for that to be addressed is by the regional council and, you know, in catchment accounting which, as I understand it, is, is nowhere near.

Q. Yes, and so we will come onto that second point, but I just want to reflect on the fact you've read Ms Patterson's evidence before the Court?

A. Yes.

Q. And her evidence was that Table 14.2 and the framework was a step towards achieving the targets, not a silver bullet for achieving them. That was never the intention of the One Plan, you'd accept that?

A. Yes. I was involved in developing that and that was the approach and as I said earlier on it only went about half way to where we needed to be because of the substantial impacts on the rural economy.

Q. So you would accept then that a consent application does not have to show through its application that it results in those targets being met?

A. Well I think it's going to have to by virtue of the application of the policy that's in place and I'm comfortable with that after such a substantial passing of time.

Q. And similarly that applicant would also need to take account all non-point sources at a catchment level?

A. Yes.

Q. And I think that it was just your evidence that that would require regional council input, wouldn't it?

A. Yes because the contra position is that they don't do that and that there is no relationship between the activity and environmental outcomes.

Q. You're aware that one of the issues that Plan Change 2 was trying to address was circularity of provisions, aren't you Mr Carlyon?

A. Yes, I am.

Q. And the idea being that the consenting pathway needs to be workable. That was the objective of Plan Change 2, yes, you agree with that?

A. Yes.

Q. Thank you?

A. Yes.

Q. I just want to take you to those exceptions now. I will see how we are going for time. I am going to go back to the transitioning out over five years. You will recall I asked you just to put that to one side?

A. Yeah.

Q. I would like to go back there now. So we're at 14.5 again, 401.0456?

A. Yes.

1210

Q. (b)(ii) and for the purposes of this discussion I would like you to have the council –

A. Is that sorry (b)(i) or (b)(ii)?

Q. (b)(i)?

A. Yes.

Q. And I would like you to have the council's provisions alongside you please and they're at tab 1 of volume 3?

A. Yes.

Q. And in particular, just for the Court's benefit and your own, I'm going to be taking you to common bundle 301.0002 and it's policy 5.8(a)(ii)(b) and this sets the framework for the transitional pathway under the council provisions. So as I read your exception here it enables the transition to an alternative non-intensive farming land use over a period of time not exceeding five years to a use that meets the cumulative nitrogen leaching maximum, that's right?

A. (no audible answer 12:11:31)

Q. If I could just take you now the council's provisions. I had understood an answer you gave to me earlier indicating that that had been an intention for the transitioning pathway along the way, that that was your understanding?

A. Well, my understanding is that the shift from an intensive to a non-intensive land use is primarily occurring to reduce the nitrogen losses to the environment and produce an alternative environmental outcome over time or on a cumulative basis, yes.

Q. And if you look at the provision of the council provisions that I took you to, (ii)(b)?

A. Yes.

Q. "Existing intensive farming land use activities which do not comply with (ii) but which demonstrate a transition to an alternative non-intensive farming land use must be regulated to ensure that they are able to continue for a period not exceeding five years in order to enable that transition and only where it can be demonstrated that there is no increase and putting aside the use of the words "risk" for now, risk of, or previously under DVPC2 nitrogen leaching loss, from the existing intensive farming

land use activity." So it was about maintaining the same level of N loss from the activity. It wasn't linked back to the CNLM?

A. Yes.

Q. That's correct?

A. Yes, for the period of time of the five year period or less, that's correct.

Q. Yes and so I put to you earlier that this was a change in approach through this transitional pathway and you would accept that that's a change. It's now linked directly to the CNLM in Table 14.2, that's right?

A. Yes, for the purposes of being transparent, that you are going to ultimately perhaps after the five year period or whichever, whatever it's consented for, you're going to ultimately be producing nutrient losses that are in sync with the environmental outcomes and the schedule values in the plan.

Q. It was never the intention of Table 14.2 to regulate non-intensive farming use activities though, was it, Mr Carlyon?

A. In actual fact I think there was advice from, I'm not sure if it's appropriate to call it advice, but I understand that in 2012 proceedings there was clear direction to council that it should move on all farming activities for the purposes of managing nutrient losses.

Q. For the purposes of this plan change and Table 14.2 as we have all known it to be addressed and I took you to Table 14.1 –

A. Yes.

Q. – and Table 14.2 and how it works before, you'll recall?

A. Yes.

Q. It never regulated non-intensive farming land use activities, did it?

A. No, no, it didn't do that.

Q. Thank you?

A. But that was the regional council's approach and desire and I accept that that is the case.

Q. And the transitional pathway has not been overly contentious throughout these proceedings, has it?

A. I think as I said to you earlier, I haven't spoken to a single land owner that has indicated a willingness to move from intensive land use to a less intensive land use because of the obvious losses that would accrue.

Q. But certainly there are appellants that haven't sought the deletion of that transitional pathway, aren't there?

A. That's right.

Q. Yes and generally is supported by the appellants across the board that there should be the ability to transition out to a non-intensive farming land use?

A. Yes.

Q. And that that pathway should be enabling of that if that's what they wanted to do, that's correct, isn't it?

1215

A. Yes and the discussions that Mr Scott and I had and he can reflect his own view in this regard, is at the end of that period if that future land use is not controlled in some way then what stops it immediately reverting back and an application coming to council to utilise the land for a further intensive land use. Having made an investment over a five year period or being in a waiting kind of period until that occurs.

Q. I put to you that's a slightly different issue then, linking it back to compliance with the CLNM in Table 14.2 though, isn't it?

A. No, I think that it's a way of directing to that landowner what the future proposition is for that land. It's very clear that it can no longer be used for that purpose and I think that's appropriate given the substantial benefit that might accrue to them.

Q. And I will just be clear that that transitioning pathway is also subject to the directions that we traversed just recently –

A. Yes.

Q. – with policy 58, that's right?

A. Yes.

Q. Thank you. So I just want to move on to the second and we're dealing with the exceedance of the CNLM –

A. Yeah.

Q. – with the trajectory down to meeting the CNLM.

A. Yes.

Q. So I am just going to start with the wording “reasonable timeframe”. And that reasonable timeframe, would that be limited by the duration of the consent, Mr Carlyon?

A. If your question is “could it exceed the period of the consent”, the answer is yes.

Q. Okay. And we might come back to that point, but the maximum of 10 years under the appellants’ provisions, you support that? That’s the maximum of a duration for a consent?

A. A consent period.

Q. Yes?

A. Yes, I do, yeah.

Q. Yes, thank you. And I just want to, just for the record, confirm that the decisions version and the appeals version also had a 10-year duration as a maximum, didn't it?

A. Yes, I don’t think it's been particularly contentious in all the discussions we’ve had.

Q. Thank you. And have I understood it correctly that the intention is that a farmer needs to demonstrate a downward trajectory towards meeting the CNLM so that they do meet that CNLM eventually?

A. Yes, yes, you have.

Q. Is that right? So ultimately, the end goal is that at the end of whatever that reasonable timeframe is, the CNLM will be met, that’s right?

A. Yes.

Q. Thank you. What does a downward trajectory look like, in your view, Mr Carlyon?

A. We’ve talked about this a lot and I know that there’s any number of witnesses that don’t want, you know, fixed numbers on things but I – we’ve thought about it in the context of a decision maker exercising their discretion across a range of attributes and I don’t think it's possible to put a specific number on it. So it's not that you can say if it's 15 years or 20 years, but I think that the reality is that if you’re close to it at that point then it's going to be a much easier decision for that delegated decision maker, but if you are talking about a trajectory of 20 years or so, then it's

going to be highly problematic in the context of the policy framework that is sitting there.

Q. Yes, and you spoke about trajectory potentially extending to 20 years but just to be clear, the maximum of this consent will be 10?

A. That's right.

Q. Yes, how does a, how does a regulatory authority control what happens after the end of a consent?

A. Well, the activity requires reconsenting for a start. So it controls it by virtue of that next round of resource consents for that intensive farming activity.

Q. Okay.

A. It probably also controls it through a new plan that gives effect to the NPS, so in all probability, under the existing framework, a tighter rather than easier framework.

Q. Yes. And just to be – I just want to be clear, the timeframe could be shorter than 10 years?

A. Yes, it could.

Q. Yes. And where does a decision maker get guidance in terms of what a trajectory or reduction or the timeframe –

A. Yes.

Q. – where do, where do they find that guidance, Mr Carlyon?

A. I think that, yes, I think that guidance comes from the sort of mechanisms that we advanced to the regional council in expert caucusing and mediation which is an expert panel that sits alongside the implementation of the plan, an independent expert panel, for the purposes of digesting the data that is coming in, because that's one of the challenges here is there is there is a vacuum of data to inform decision making, so that expert panel would do exactly the same thing with consent. It would look at the way in which consents were being granted or not granted. As Ms Foster said to me on – I think on the record, it would be quite problematic to grant a consent in the discrepancy pathway, I think that was her view, and I am not sure that that is or isn't the case, but yes, so I think there are mechanisms like the expert panel that could inform that

and that means that the risks the appellants are taking are moderated to some degree by a critical assessment of practice over time.

1220

Q. And to be clear, this process which you have described would apply to all three exceptions that are within your discretionary pathway proposal, that's right?

A. Yes.

Q. Yes. You will recall, as part of your involvement at the council level hearing and beyond, that submitters raised questions, didn't they, and challenged the regional council around the absence of transparency around the extent of reduction required, the time over which it was to occur, you will recall those criticisms?

A. I wasn't at the council hearing, but I can imagine that submitters made those – expressed those views.

Q. You did participate in planning expert witness conferencing at the council level hearing though, didn't you, Mr Carlyon?

A. That's right.

Q. Yes, thank you. And it was a concern of Fish and Game at that level, wasn't it, and it's expanded on in their appeal, that without further guidance on minimum farming standards, extensive resourcing will be expended for little benefit with potential for inequities across farms, that was a position of concern for Fish and Game, wasn't it?

A. Yes, that's correct.

Q. And Ms Foster refers to that in her evidence, doesn't she?

A. Yes, she does.

Q. And you would agree that it's important to have certainty around these sorts of reductions in timeframes in the context where we are dealing with a short-term interim plan change, you'd agree with that?

A. I think it would be most helpful if the regional council had resourced and sat on those sorts of resources to assist applicants.

Q. And Ms Foster's planning response to those issues was to propose the alternate controlled activity pathway which required a specific reduction within a particular timeframe, that was her planning response, wasn't it?

A. Yes, it is.

Q. And just so that we're all clear, the application for that alternative controlled pathway needed to be made within 12 months, that's right?

A. Yes.

Q. And then the 20% reduction for pastoral needed to occur within two years, that's correct?

A. Yes.

Q. And the 35% reduction for CVG needed to occur in three years, that's right?

A. Yes.

Q. And under all of those pathways, an applicant had to specify the good management practices that they were going to undertake and the wording in the plan provisions was "demonstrate" how they were going to achieve those reductions at the time that they sought their consent, that's correct?

A. Yes.

Q. And it was only if that didn't occur that it would fall to the consider discretionary activity, that's right?

A. That's correct.

Q. And those requirements around reductions upfront in a short timeframe have been removed under the appellants' provisions, haven't they?

A. That's correct.

Q. And we spoke about the year 10 and the year 20 earlier, didn't we?

A. Yes, we did.

Q. And under your provisions a farmer has 10 years to meet – well, actually, under your evidence today they have more than 10 years to meet their year 20 CNLM, don't they?

A. That's correct.

Q. I want to take you to Professor Horne's analysis and this is his January evidence so we're back at tab 5. And in particular I am taking you to 401.0036, his table 5. Have you got that?

A. Yes.

Q. Thank you.

A. Thank you.

Q. Table 5, it's at paragraph 25?

A. Yes.

Q. "The number of farms who would not have met recalibrated Table 14.2 based on the 2012 actual data under the specified reduction pathway." If you look at the year 20 figures, this is the proportion of farmers that would have also met the CNLM, their year 20 CNLM if they had undertaken the 20% reduction controlled activity pathway, that's right, isn't it?

A. Yes.

Q. And so under these figures, that percentage of farmers would have met their year 20 CNLM within two years of having been granted consent and they would have had one year to have applied for the consent, so within three years their year 20 CNLM would have been met, wouldn't they?

1225

A. Yes, yes. I'm not sure that it's useful to look at it without the broader context, which is we're in 2024, inside a framework that's been operating since 2012 or '14, in which almost none of those reductions have occurred and activities have intensified in that landscape. So the, the forward commitment of what would happen I think there's a substantial risk that that may not happen as you forecasted, or sorry, as Professor Horne forecasts it.

Q. I think that – have you read Professor Horne's January evidence, Mr Carlyon?

A. Yes.

Q. Because he also describes, doesn't he, that the difference between the 2012 and 2019 figure that he presents is represents generally a 20% improvement in farming N loss reductions, doesn't he?

A. Yes, he does.

Q. Yes, so that shows that there has been some progressive change. We can put to one side whether you say that's enough, but I just want to be clear that Professor Horne's analysis does look at 2012 –

A. Yes.

Q. – 2019, year 10, year 20 CNLMs and he's done that work, that's correct, isn't it?

A. And as I recall it, is it Dr Jolly talked about the potential to make 70% reductions in her evidence relatively easily and there is no sign of that.

Q. Mhm. So I'm just going to put to you that the improvements that you would see under a pastoral pathway –

A. Yes.

Q. – would be faster under the alternative controlled activity pathway for a number of farmers in this region than under your discretionary pathway provisions, is that correct?

A. Getting them consented would be faster, absolutely, it's a, it's a speedy process that you set out.

Q. And I just want to reflect on your evidence earlier which is that the efficiency and effectiveness of your discretionary activity provisions has not been assessed to date?

A. No.

Q. Thank you. I was going to turn now to the 35% reduction for CVG.

A. Sure.

Q. Because I had understood that that was a – that that had been going to be another exception. But as I understand your evidence now, CVG is assessed alongside all the other exceptions, they have to meet one of those three exceptions above and they will have some policy direction within (ba) that might assist –

A. Yes.

Q. – their case?

A. Yes, I think that's fair.

Q. Why have you, why have you given that distinguish – why have you distinguished CVG in that manner, Mr Carlyon?

A. I'm not sure if I understand what you're saying, I think –

Q. Why did CVG get some policy support under the discretionary pathway?

A. As opposed to intensive farming, other intensive farming?

Q. Yes, like it's just curious for me that they have a specific reduction that they are given to –

A. Sure –

Q. – to meet under that policy framework and that they get some policy support, I just was curious as to your reasoning for that?

A. I think it's an acknowledgement of the evidence that has been before this court that Overseer is not particularly well attuned to CVG and that other

mechanisms might provide for those outcomes in concert with the application of Overseer and I think Mr Ford in his most recent supplementary statement talked about the way that Overseer might be utilised for decision making. In contrast to the original position that was held through the development of synthetic data sets and whatever might be required.

Q. I just want to test though my understanding of your provisions now though is to get to that point where that may be assessed.

A. Yes.

Q. You apply as a discretionary activity, you have to meet once of the three exceptions under (b), and then that 35% reduction is considered alongside all the other policies in (ba)?

A. Yes.

Q. And also in light of the direction under policy 58, that's your evidence?

A. Yes.

CROSS-EXAMINATION: MS BUXEDA

Q. Good afternoon.

A. Kia ora.

Q. My name is Ms Buxeda, I appear for Horticulture New Zealand and my friend has sort of started to touch on the CVG aspects but you and I are going to talk about vegetables.

A. As long as it's not kale, it's fine.

Q. But apart from kale, you're generally a fan of vegetables?

A. Yeah, yeah.

Q. Okay, we'll leave kale aside, personal preference, but generally, generally vegetables are a good start. Look, I am also going to more of a discussion, given what I consider to be quite substantive changes which have been introduced to the Court this morning?

1230

A. Yes.

Q. On provisions which were provided on Friday. We are going to start with a few comments that you made in response to my friend that you've tracked changes to the One Plan and you said the changes to the policy

is to try and maintain the status quo. Did you refer to the changes that you're seeking in this, in these provisions that were circulated Friday, the changes try to maintain the status quo in the One Plan?

A. Yeah, sorry, if I wasn't clear, I was talking about and going back to first principles, if it's not broken at the level, particularly of the RPS, then don't, don't amend.

Q. Excellent, thank you. So can I just have a few questions about that. If it's not broken don't fixture it, evidence for Horticulture New Zealand is overwhelmingly that the One Plan is broken for CVG and doesn't not work to consent vegetables. I would take you to evidence that was produced from the council on Friday that show that one CVG operation has gained consent under the One Plan and my understanding, and I know that my experts will be able to talk to this a bit more was that that actually wasn't specifically consented under the One Plan. Is this correct. Do you understand that one CvG operation has got consent under the One Plan?

A. Yes. I don't know what the, I don't know what the background to that is.

Q. But currently one operation has got consent under the One Plan?

A. Yes, but I'm not sure what your point is.

Q. I guess you said you wanted to keep it to the status quo of it's not broken don't fix it. One operation being able to get consent over the last decade –

A. Yes.

Q. – in my estimation would not show that the One Plan is functioning for CBG, would you agree?

A. No, I do not agree. I don't think there's enough information to support that proposition. For a start, I don't know how many applications have been made and what part of the framework they've been made and what the outcome of that is. It's my understanding that very few applications have been made and those I've dealt with in the Horowhenua have steadfastly, declined to get engaged in the process because of the direction that's come from the regional council itself that they shouldn't. So no, I don't think it's a reasonable proposition to conclude that because there's only one it's broken. Sorry, the other thing there is I think Dr Jolly's evidence of the real possibility of a 70% reduction, I think it was her

evidence that on that basis they are more than likely to have met 14.2 limits.

Q. Okay, there's two parts to discuss there?

A. Sure.

Q. Let me just, this is going to be a bit fluid, so let me just note that down and come back to that. So we're still going on the One Plan not broken?

A. Yes.

Q. Don't fix it pathway?

A. Sorry, sorry, I don't mean to be that general. I'm talking in relation to the RPS and the directions that are contained in that. So that's not to say that the plan is nuanced and appropriate for this day and age at all. I'm not intending that that be taken from me.

Q. Okay, and I guess my understanding of PC2 was a recognition that if the consenting pathway is not functioning there needs to be a consenting pathway provided that is functioning for growers and this is reflected in the evidence of Dr Jolly in the supplementary statement that came through on Friday I believe?

A. Yes. That was the position of industry and council from the outset was to create a consenting pathway.

Q. Yes and you don't agree that one is necessary?

A. No, I think we've, in the most recent provisions there is a consenting pathway available to parties and the point is that at the level that nutrient losses are so great into the environment that they contribute to the cumulative effects that are clearly present, then it is appropriate to assess that in a discretionary regime as we do for any number of other activities in the environment.

Q. Look, and what I plan to do is sort of talk you through that discretionary pathway –

A. Yes.

Q. – and whether that actually, whether there's evidence before the Court that that actually provides a workable consenting pathway for CVG. But before we go there, can we just jump back to your comment about growers are likely to be able to meet Table 14.2. You referenced Dr Jolly's evidence there?

A. Yes.

1235

Q. Let me just pull that up please. I'm sorry I'm still working off the electronic copy due to the late circulation.

A. So for clarity the point being that she says that it's conceivable that losses could be reduced by 70% and as a result it allows you to meet those CNLMs.

Q. That evidence is contested by the evidence for Horticulture New Zealand.

A. Yes.

Q. You accept that?

A. I accept that it's contested. That's no surprise.

Q. Thank you. So I'm just looking here, if I can take you to it, to Dr Jolly's supplementary statement in the supplementary bundle, tab 4, that's common bundle 401.0025.

A. Sorry, again, tab 4.

Q. I can repeat that, tab 4, 401.00 – no, I'm actually going to take it a little bit more specific, 0027, 401.0027.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Yes.

Q. At nine: "CVG within the Horowhenua were split into three systems for the purposes of nitrogen modelling. We have potatoes and onions. We have intensive vegetables and we have Brassica dominant. There is one potatoes and onion system. It is unknown how many of the other approximately 50 operations fall into the other two categories." And then at 10: "The nitrogen modelling by Bluma indicated that only the potatoes and onions system can meet the recalibrated Table 14.2. Therefore, the number of growers that are able to meet Table 14.2 is approximately two." That would stand in contradiction to your previous statement where you said that a number of growers could meet Table 14.2, is that correct?

A. I accept that that's what Dr Jolly is saying in this supplementary statement.

Q. Thank you and just to take things back to your own qualifications, your qualifications are in planning not farm systems, modelling.

A. Yes, that should be clear.

Q. Excellent, thank you, that is clear. So we've talked about the evidence that CVG cannot meet the Table 14.2 for the council and for Horticulture New Zealand and I'd just like to talk you through hypothetically getting a consent for a CVG operation under the provisions that you've proposed. I think that would be helpful not only for the Court but for also my understanding, I have to confess. So all CVG which does not meet Table 14.2 must go through the discretionary pathway.

A. Yes.

Q. So if you don't meet Table 14.2 based on the evidence of Dr Jolly, there are two people in the area who can do that, everyone else discretionary.

A. Yes.

Q. Okay.

A. At present, as you said, there's one person with a consent there.

Q. Excellent, thank you. Going through a discretionary pathway. And just for clarity, that's rule 14.2(a) existing (inaudible 12:38:48) is not complying and that kicks us back up to policy 14.6, resource consent decision-making for intensive farming and land uses.

A. That's correct, yes.

Q. And that's where we're going to be looking. Unfortunately, I don't have the common bundle reference, my apologies.

A. I've got it in front of me, that's fine, thank you.

Q. You've got it in front of you, excellent, and the Court is sitting with us at police 14.5, thank you. Ensure the nitrogen leaching from the land is managed in accordance with policy 14.5 so that requires compliance with table 14.2. If that's not the case, you kick down to (b): "An exception may be made for existing intensive farming land use in the following situations." And we have removed Roman numeral (iv) that is no longer an exception.

A. That is correct.

Q. So if a CVG operation, under these, a CVG operation required to go through, or required to go through discretionary, they can't go through Roman number (i) unless they plan to transition out of intensive land use, they would be therefore be forced to go through Roman numeral (ii) the

intensive farming land use cannot meet the CNLMs but a trajectory towards meeting those within a reasonable timeframe is demonstrated.

A. Yes.

1240

Q. We've had discussions about what trajectory looks like and I know that there have been discussions from the experts for Hort NZ around the realities of crop rotation and how that fluctuates nitrogen leaching over time, how does your trajectory account for crop rotation leaching?

A. Look, I'm not sure that it does. I think that's an issue that Hort NZ has brought relatively late to, to these proceedings for the purposes of trying to find resolution in this plan.

Q. But sooner than you produced these track changes on Friday?

A. Yes, yes.

Q. Thank you.

A. This is an attempt –

Q. So you, you produced this base knowing Hort NZ's concern about crop rotation?

A. Yes, yes, we did.

Q. Thank you. Okay, so going through that, so we're looking at (ii) trajectory, towards the CLNMs. Would that require Overseer modelling?

A. Yes.

Q. And have you heard or read the evidence of Horticulture New Zealand and from Dr Jolly that Overseer has some significant fundamental failings for modelling CVG?

A. Yes, I have, I have read evidence across the board that there are serious challenges in relation to the application of Overseer to CVG.

Q. Thank you.

A. And equally the challenge associated with there being almost no data from that sector to inform decision making through the period for which it would be relevant for a decision.

Q. Now I would like to just take you on a slight side tangent there.

A. Yeah.

Q. You mentioned in response to my learned friend, Mr Ford's supplementary evidence and you intimated that that counteracted Hort NZ's position?

A. I don't think I said that.

Q. Oh, sorry, it stood, it stood in – where is it – made in contrast to other material in response to questions from the Court. So I just want to take you through Mr Ford's supplementary evidence.

A. Yes, I have got it here.

Q. Excellent, thank you very much. That is tab 9. And this evidence was made in response to a query from the Court and at paragraph 3 he says: "My answer should not be taken to be approval of the suitability of Overseer in PC2." Are you aware of the fact that his answer was in response – in an attempt to provide the Court with confirmation from an expert in respect to a particular question they had in regards to Overseer, that that shouldn't be taken further?

A. Well, I think as you said, it didn't – it doesn't require his approval but he's saying that it's problematic but when I read his paragraphs 6 through 10, he then goes on to explore the way in which with appropriate application Overseer could be utilised, so he talks about the ability to construct an Overseer file, he talks about the sort of people that might assist to do that, and he talks about the sorts of practices that could be addressed through Overseer modelling. And then he concludes with: "In my opinion, Overseer has no advantage over the NRAT approach," which would mean that the NRAT approach has no advantage over Overseer.

Q. He then follows it up with the comment: "The NRAT approach offers the advantage that it is tailored to support vegetable growers to adopt practices that reduce nitrogen losses"?

A. Yes, because it's –

Q. Thank you.

A. – about risk management as opposed to environmental outcomes.

Q. Taking you back to (ii), there is no – no, sorry, I can't see it myself – there is no alternative to Overseer that would require CVG Overseer modelling?

A. That's correct, yes.

Q. To get through there, so –

A. Yeah. So at the, at the point of a discretionary application, then the sorts of tools that you're talking about are entirely appropriate, as part of that assessment.

Q. But in order to get through the (ii) gate, a trajectory must be demonstrated in Overseer?

A. As a controlled activity?

Q. As a discretionary activity?

A. Oh, sorry, yes, yes.

Q. Yes.

A. That's what –

Q. Yes.

A. – that's what it makes clear.

Q. Yes, thank you. Okay. So we have our application, we've gone through this, we've gone through (ii) because (iv) has been removed.

A. Yes.

Q. We've now used Overseer to demonstrate a trajectory although that fails to take into account the realities of crop rotation. We then go to (ba): "Where resource consent is sought for an existing intensive farm, farm and land use on the basis of the exemptions above" – sorry – "we have the possibility of exceedance of the CNLMs due to calculations."

A. Yes.

Q. But I have been unable to find evidence whether that would be appropriate for use for CVG.

A. Right.

Q. So the decision maker must and then consider and I know my friend has taken you through these particular points, and those points now consider, now include for CVG.

1245

A. Right.

Q. So the decision maker must in considering, I know that my friend has taken you through these particular points, and those points now consider, now include: "For CVG the growing area does not exceed the baseline growing area and within three years of the application the activity will achieve a minimum reduction of 35%"?

A. Yes.

Q. If the CVG is unable, or if this decision maker and they must, considering those policy points that they must consider, if they're not satisfied with one of those, would consent be possible for CVG?

A. Yes, I think it would. I think that's the application of discretion and decision making.

Q. Regardless of the word "and"?

A. Yes.

Q. "And considering must, consider all of these"?

A. Yes.

Q. Have, is there evidence regarding the ability of CVG operations to meet these provisions which must be considered by the decision maker?

A. In the form that they've been presented to the Court in various times, no.

Q. Are you able to be satisfied therefore that CVG could get consent with these policy considerations in place?

A. I think that's a really important question and yes, I am satisfied that with –

Q. Based on no evidence?

A. There's no evidence before this Court, but over a period of since 2004 to now I've undertaken work for commercial vegetable growing clients, for iwi and for the regional council in that space and have an understanding of the challenges and the rigour that's applied to these processes.

Q. I will stop belabouring that?

A. Sorry, look, I was just going to add the counter – as much as you don't want me to, but the counter to that is we're being asked to accept the application of an NRAT in this space.

Q. Yes?

A. For which there is evidence from experts in the farm system space, but for which there is little or no knowledge of the application success that might come from it. So as I said to Ms Johnston earlier on, if there is to be a risk taken in the application of that approach, there needs to be a counter disciplined response from the regional council that allows the application of those processes to be thoroughly assessed and reversed where concern is raised.

Q. But look, and I believe that our expert Mr Barber will be available today to talk to the Court about that we have a worked example of an NRAT for a growing operation in the region?

A. Yeah.

Q. And I do just wish to emphasise that this evidence is before the Court?

A. Yes.

Q. Thank you. One further point that I would like to emphasise, the changes I do think have removed a lot of policy support for CVG and that might not have been appreciated. But in the council's version of the provisions at 3.10010, sorry, 301.0010?

A. Yeah.

Q. This is looking at when determining whether to enable an existing intensive farming land use to continue have particular regard, also have regard to and we have the operational crop rotation requirements of CVG if necessary to avoid soilborne diseases and maintain crop health and the importance of maintaining food security for New Zealand to support community wellbeing. These provisions have disappeared in the provisions suggested by yourself, is that correct?

A. Yes, that's correct.

Q. These are no longer a policy consideration?

A. That is correct.

Q. Excellent, thank you. Is there any alternative policy recognition for CVG in the provisions that you have proposed?

A. In relation to food security, no, I don't think anything is required, but if you're talking about –

Q. In relation to crop rotation?

A. Can I think about that and come back? I don't want to close that off.

Q. You may think about that, but my reading is that that has disappeared. Thank you. You said in relation to my learned friend that you didn't consider the efficiency and effectiveness of these provisions, is there any consideration of the cost of this to growers? Remembering, obviously, that growing is a commercial operation and that continuing to grow is obvious a commercial consideration, is there any consideration of, of the impact of these provisions proposed for growers?

1250

A. No, and for clarity the process that Mr Scott and myself went through was to produce draft provisions which I understand were shared with all legal counsel last Wednesday and then subsequently lodged with the Court by counsel so it precluded us from completing the sort of exercise that you might do in the very short time that we've got available.

Q. Thank you, look, I'd just like to finish, in response to questions from my learned friend you said and I quote "provisions need to be workable", did that comment include workable for CVG?

A. Yes, it did.

Q. And you stand by the fact that these provisions that you have proposed are workable for CVG in their current state?

A. Yes, I do.

CROSS-EXAMINATION: MS EDWARDS

Q. Your Honour, I just have a couple of very brief questions because I think my friends have covered all the questions that I had been thinking about. But Mr Carlyon, I do just want to ask you a couple of things just to clarify the – my understanding of the discretionary pathway, because this has all been quite new.

A. Yes.

Q. We have only just had the provisions and there has been a –

A. Yes.

Q. – couple of changes you have made today. And as you will anticipate, I am particularly interested in understanding the pathway for an unconsented dairy farmer who wants to continue dairy farming and you will recall that he focus of Federated Farmers' case was on unconsented dairy farms and ensuring a workable, efficient and certain pathway that would result in them getting a return to regulation as quickly as possible?

A. Yes.

Q. So as I understand it, the only pathway for a farm that can't meet Table 14.2 CNLMs by the set dates is a discretionary pathway?

A. That's correct.

Q. And that discretionary pathway is narrow, in that there are only three options or three routes that you could qualify for that discretionary activity pathway?

A. Yes.

Q. And they're essentially either you transition to a lower N loss, which wouldn't help my dairy farmer member –

A. Yes.

Q. – who wants to continue dairy farming.

A. Yeah.

Q. Or you show a trajectory towards achieving the CNLM in a reasonable timeframe?

A. Yes, that's correct. And I thought a lot about Mr Passey when we were producing these provisions.

Q. And the only matter for discretion, so if you are one of these unconsented dairy farmers, wants to continue dairy farming, the only matter of discretion is the reasonable timeframe for meeting the CNLM, achieving it at some point, achieving it within a reasonable timeframe is non-negotiable?

A. I'm not sure that that is how I read (ba) at all, that the only element for discretion is the one that you've just described. Sorry, I might have misheard what you're saying.

Q. What I'm meaning is that you have – it's non-negotiable, you have to achieve the CNLM at some point.

A. Yes.

Q. And what those matters at (ba) are about how you might assess the trajectory or the timeframe by which you have to achieve it, or how staged reductions –

A. Yes, I see.

Q. – are made towards achieving it –

A. Yes.

Q. – but getting to the CNLM –

A. Yes.

Q. – is non-negotiable in the sense that you have to show that. And then in terms of the, the pathway (b)(iii) about an N loss model, the reason that

you can't achieve the CNLMs is because Overseer is overestimating your N loss, you couldn't use the Fonterra N Risk Scorecard to assist you with that, because it's not an N loss model is it?

A. That's right.

Q. And I think you accepted when my friend asked you this, that there's no model currently available to farmers or their farm advisors at a farm scale that could be used to demonstrate that Overseer is overestimating their N loss?

1255

A. Yes, I guess that that would – it's my understanding from the evidence that Professor Horne and others that in relation to your dairy folk that you talk about, that Overseer is more suited to that than almost any other application of the model.

Q. But there's no alternate, there's no other – but to the extent that Overseer was overestimating nitrogen loss for a dairy farmer –

A. Yes.

Q. – which the joint witness statement has said that it might be, there will be unders and overs, at the moment there is no model that could be available to use, to be used to demonstrate that?

A. No, no, and you know, I expressed and probably it was probably inappropriate earlier on, the frustration that in the decade that we've had to collect those Overseer files from landowners through the consenting process, there is almost nothing available to inform exactly what you're saying. So the contra position now being advanced is that an NRAT is the, is the method by which we do that. A method that is less disciplined, hasn't been subject to peer review, and is risk-based rather than focused on environmental outcomes, so yeah.

Q. And look, the reason for my question is I am going to understand your pathways.

A. Yes.

Q. And the question I have is why do you need (iii) if both under both (ii) and (iii) you have to demonstrate a reasonable trajectory toward meeting the CNLMs and if there's no model currently available to a farmer to show that N loss is being overestimated, why do you need (iii), why not just

have (i) and (ii)? So essentially there would only be one pathway for a farmer that can't make the CNLMs and wants to continue dairy farming?

A. Well, I guess that (iii) was, was effectively industry and for individual landowners as a mechanism to utilising, you know, expert advice and support to play out those matters and if it's not something that is needed or wanted by industry then I am comfortable that it be removed. But I think the leeway that that provides is helpful.

Q. Except that they still both have to demonstrate the reasonable trajectory.

A. Yes, yes, that's the other part of it.

Q. So if you have to do that anyway, that's my question, why do you need to in addition demonstrate that you're being over – there didn't seem to be any merit in showing that you were – Overseer was overestimating your N loss.

A. I think the notion is that if you can demonstrate that, it gives you a different starting point and potentially a different finishing point and potentially a different finishing point.

Q. And have you spoken with industry about that provision that you've drafted, (iii)?

A. No, no.

Q. No. And the only other question I had was just around just clarifying this pathway for CVG, so my understanding is they would go through (ii), so they've got to show a trajectory towards meeting the CNLMs in a reasonable timeframe and they have this additional requirement in (ba) that they have to make a 35% reduction in nitrogen loss in three years, so in that sense part of the trajectory – is it correct that part of the trajectory for them is fixed and then over and above that they need to show that they're going to meet the CNLMs, they need to show the trajectory beyond those three years towards achieving the CNLMs?

A. Yes.

Q. Thank you.

THE COURT: JUDGE SEMPLE ADDRESSES WITNESS – LUNCH BREAK (12:58:41)

COURT ADJOURNS: 12.59 PM

COURT RESUMES: 2.19 PM

CROSS-EXAMINATION: MR ANDERSON – NIL

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Mr Carlyon.

A. Kia ora.

Q. I've just got four questions for you this afternoon. The first relates equity and as you'll be aware from the evidence that's been filed and your previous experience, one of Mr Daly's key focuses is that all farmers are treated equally in terms of the expectations around the reductions in N leaching they make from their farms. Can you please comment on how you see the provisions prepared by yourself and Mr Scott and provided to the Court on Friday provide for equal treatment between farmers.

A. Sure. I think Mr Daly has been in this process for I think nearly 20 years in one form or another and has consistently advocated for equity across farming interests through that process and part of the foundation for the approach that the One Plan takes is the protection of the concept of natural capital in allocation and it's survived through this process to a degree, in my view, the provisions that Mr Scott and I have prepared largely protect that position I guess to, with the exception of the 35% reduction which is sitting there in (ba), it's (ba)(g) now which gives some preference to commercial vegetable growing, but I think I answered a question in relation to that and why I went along that track.

1420

Q. Ms Johnston when she was asking you questions earlier, she asked you some questions in relation to Dr Snelder's evidence.

A. Yes.

Q. Did you her Dr Snelder give oral evidence in the first week of this hearing?

A. Yes, I did.

Q. And did you recall hearing him say in response to questions in cross-examination and, your Honour, just the references in the transcript to this are pages 390 and 391, that from a water quality perspective, the best option was if everyone met table 14.2 and the next best option was

if everyone who could meet table 14.2 and there was an ability to push everyone else as close as you could to table 14.2, could you please comment on what that water quality evidence says to you as a planner in terms of what the most –

A. Look, I don't, I've got to admit I don't recall Dr Snelder saying that but I'm sure it's the case given it's from the transcript, but what it says to me as a planner is what I'd responded in previous questions that 14.2 is appropriate as a gateway for responding to control and discretionary activities and it's also appropriate in any further assessment for a discretionary activity alongside other models. Sorry, not models, tools I think is a better description.

Q. That actually leads me to the next question which is about multi evidence approach and just to orientate you in response to questions from Ms Johnston, you indicated that you saw the discretionary activity pathway as enabling multi evidence approach, can you please comment on the extent to which in your view having two totally separate controlled activity pathways which each use a different tool is a multi-evidence approach.

A. Well, I don't see it as a multi evidence approach. I see it as an either/or, yes. Sorry, just to add to that, it's also clear to me that using the risk assessment tools is a preferable path in relation to control activities because it's going to get more consents through the door so that the regional council proposition which we've heard a great deal in caucusing was that it's important to have everyone in the tent so that we can then make the changes that need to be made on a kind of a collective basis but I just think there can be little confidence that that will be the case based on the evidence of the past five years of consenting.

Q. My final question actually relates to the evidence that we have on historical consenting and I will take you to the document just to help you orientate because I'm personally finding the table quite small, so that's in the table that's attached to Ms Foster's supplementary statement and I think you have the bundle over there.

A. Yes, I have got the bundles here. I'll just get all of that material out.

1425

Q. So her charter is in tab 3(a). Oh, electronic bundle, sorry. No, I only have a –

A. That's the 17.1.24 supplementary statement?

Q. Yes and it's the Excel. Do you have the Excel spreadsheet Mr Carlyon?

A. I am just going to have a look and see whether it's there.

Q. That's all right?

A. Yes, it's not, it's not sitting there in that evidence, so that would be even helpful thank you. Thank you very much.

Q. Now, I'm just going to take you to one line by way of example and to orientate my question. So if you wouldn't mind Mr Carlyon just going down to row 115 in the table.

A. Sorry, can someone point me to that row? I'm, I think I might be looking at a different document.

MS WRIGHT ADDRESSES THE COURT – APPROACH WITNESS (14:26:27)

CROSS-EXAMINATION CONTINUES: MS WRIGHT

A. Ah yes, I see why. The printed copy doesn't have the row number next to it, so that's helpful, thank you.

Q. And just so we know we're both looking at the same thing, we're at line 115 and it's a dairy and an existing?

A. Yes.

Q. And then if we look at column D, that's the year in which the consent was granted?

A. Yes.

Q. And just for the Court I will just note that that's 2020 which was after the declaration proceedings and then if we go along we have column H and in column H that's effectively what Table 14.2 is for that farm and then if you look in column I, we have the consented leaching level –

A. Yes.

Q. – of 39. Now, just taking a moment Mr Carlyon to kind of orientate yourself with this and have a look at what the Table 14.2 numbers would've been and that consented leaching level of 39, are you able to provide some comment on what this says to you in terms of how directive

the provisions as they are to be changed from, by PC2 need to be in terms of what they're telling council to do with future applications?

A. If I'm reading this right, the consent has been granted above the 14.2 levels. What this process says is that it must be granted at the 14.2 levels or it's a discretionary activity and needs to be considered on that basis. Does that assist?

Q. What I'm interested to know from you, or seeing if you can comment on Mr Carlyon is this was a consent that was issued after the declaration proceedings which dealt with the issue of consents in excess of Table 14.2 and if that makes you feel there need to be specific, anything specific in the plan relating to that sort of a gap as between Table 14.2 and applications that don't meet it?

A. Thank you. Well, I think what it indicates is there needs to be a high level of specificity to assist decision makers in the exercise of discretion.

RE-EXAMINATION: MS ONGLEY

Q. Mr Carlyon, you answered a question from my friend Ms Johnson on Table 14.2 and compared to the other pathways which are the SRP and the NRAT and you discussed with Ms Johnson that Table 14.2 was a science based approach but was modified to take into account you said: "The world we live in." What did you mean when you said that Table 14.2 was a science based approach?

1430

A. I think Dr Mackay is going to give evidence a bit later this week or early next week on the way in which that framework was developed. I was involved in providing instructions to him and Dr Clothier on development of that framework and we very clearly sent them off to address the issues from a science context and it was when that table came back and we applied it to the Upper Manawatū and other sites that were under significant pressure that it was overwhelmingly the case that there would be little space for intensive farming in some of those catchments and, and, and that was the decision made at that time in the absence of the sort of specific directions that are in the NPS and I guess the concern I have is having made that call at that time that we are, we continue to slice

the salami as we look for balance in the allocation of resources either to consumption or to the environment and that appears to be, to me, to be what's occurring with this particular approach.

Q. Thank you. I just have one more question which is on the provisions that have been filed –

A. Yes.

Q. – on behalf of the appellant and you were asked about, by Ms Johnston, about the multiple pathways in relation to the new provisions suggested in policy 14.6(b)(ii)?

A. Yes.

Q. Which talks about where the calculation against Table 14.2 overestimates N loss and then Ms Buxeda asked you a bit of a broader question about, or you at least answered about how multiple tools could be used in discretionary consenting. Can you elaborate there on what you meant by that, are you talking about multiple tools being used in a means other than Policy 14.6(b)(ii)?

A. I'm talking about in the application of discretion at 14.6(ba). So when the decision maker is exercising discretion for the purposes of determining whether a consent should or should not be granted.

Q. And what sort of tools would you be talking about there?

A. Well I think in that case Professor Horne has talked about other models that are available, but they are specific and there is very little talent there for the purposes of applying them, but also the potential for the NRATs to be brought through at that time. So yeah, the notion being that they're emerging technologies but they need to be benchmarked against knowns but can assist decision making.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Afternoon, I just have a few questions of clarification (inaudible 14:34:03) that you can give me, but there is a lot of material?

A. My apologies, yes.

Q. We have got more material that has come in of course recently. So I just want to understand a little bit more about this question of duration and what informs that in terms of we will start with the operative plan. We

want to ask you about the decision version and then your proposition which I note I have a 10 year date under a particular maximum duration under a particular provision?

A. Yes.

Q. So if we go back to the operative plan and you came along with your consent application under Table 14.2 and said: "You confirm everything you needed to do," in all those different years. Then what was the maximum duration then, was there a policy that said the was a limit or –

1435

A. Yes.

Q. – what was the position in the One Plan document?

A. The founder, it was 20 years, but the foundation for that was that it took time to make change and that a generation was an appropriate time for that. And so if we accept that a generation is, you know, is roughly 20 years and that you would make those changes gradually through time rather than being consented to do nothing for 19 years and then, you know, flash your way through it in the last year. So that was the concept.

Q. So that was the reason for having the –

A. Yes, so that you could –

Q. – the different for the, what was it, the five, 10 –

A. That's correct.

Q. – and then 20, is that how it worked?

A. That's correct.

Q. And so that some of that was a bit front-loaded, was it in the first 10 years and then the next 10 years it wasn't quite the same expectation?

A. Exactly and –

Q. Is that how I remember it?

A. That's correct, but I think the challenge we're at now is that having done, in my opinion, so little in the last decade, we're being asked to just leap out again and so that's, I absolutely understand the concerns of legal counsel in relation to what that trajectory towards the CNLMs is, because it takes time to make that change, but I guess the environment is not able to wait while we step away, you know, for another decade and another generation.

Q. So that operative plan, that 20 years, that applied to everything, did it? For the new, the new farming operations?

A. Yes, it did.

Q. The sort of nature and –

A. Yes, so –

Q. – existing ones that met –

A. Yeah.

Q. – the table requirements, what – and were a controlled activity?

A. There's a couple of – yeah.

Q. And what about the ones that came along and tried applying for a restrictive discretionary activity or a non-compliant activity or whatever they were doing?

A. Well, we don't know what that looks like because of the, of the framework the regional council put in place, but I guess that one of the issues that's been raised with regional council on multiple occasions is that new activity that was required to comply with 14.2 from the get go, not over that generation, and it's my observation within the region that there is a significant amount of that activity and I have characterised it as unlawful because it's not consented, no consent has been sought for it and a consent is required and it's been when we're thinking about the total cumulative load to the environment, in my view that is an important consideration that we have been unable to characterise to this point and not for want of, not for want of asking. So, so for those new unconsented activities, it appears to be the case that they are simply sitting waiting for this process to conclude itself and for the existing activities, they went through a variety of different approaches and one of those included granting consents for nutrient losses well in excess of 14.2 and, and as I understand it outside of the directions that were provided out of the declaratory proceedings. So it is a hard space to work out what is happening with consenting because there is so little record available.

Q. I understand that it's all about the duration point with these consent only being granted for 20 years or were some of them being granted for longer?

A. No, sorry, Ma'am, my apologies, it's my understanding that a substantial number in the Upper Manawatū were granted for a period longer than 20 years, but it would – you would need to check with Ms Foster or others that that's the case. And often those were also consented for very high nutrient losses.

Q. So that you're talking about existing ones?

A. That's correct.

Q. Yes.

A. Yes. So there was a period in time where the expectation was that consents would be granted and there was obviously a council resolution to that effect.

Q. Well, I recall –

A. Yes.

Q. – I was involved with the declaration.

A. Yes, so –

Q. I'm just trying to make sure that my memory on some of these is correct, so –

A. Yes, it would be way clearer than mine, Ma'am.

Q. So thank you.

A. Yeah.

Q. That has helped me. So now looking at the decisions version.

A. Yes.

Q. And this question of the duration and whether that might be some way be limited, so the Table 14.2 controlled activity.

A. Yes.

1440

Q. Where would I look in the decisions version to see how that might specifically treat (inaudible 14:40:13).

A. I will have to dig that material up.

Q. I'll come back to the question about the five years and the shifting to a, you know, your exemption 1 that you were asked about, I'll come back to that.

A. Sorry, I can't recall where it is at the present time.

Q. You can't, okay.

A. Thank you.

Q. I couldn't recall either. I thought you might be able to help me but I did find one thing so I might just ask you about that. So I'm looking at in the decision version, do you have that there?

A. Yes, I have that in front of me.

Q. So I'm looking at policy 14.6.

A. Yes.

Q. And then I'm going onto page 11 and I'm looking at (e) 10 and (d)?

A. I'm just coming to it. Yes.

Q. So looking at the chapeau, it talks about: “In determining whether to enable an existing intensive farming land use to continue under (d1),” have particular regard to so then I go back to (d1), can you do that for me?

A. Yes.

Q. And can you tell me what you understand by (d1), what is it actually covering?

A. This is good management practices?

Q. Yes. Well, no, it says “only where”. It talks about exceeding the parameters and then it talks about “only where”, so can you tell me what you understand by that?

A. Yes, can I please get someone to take me to a – I'm in a different version. I've got about three open in front of me, so could I get someone to take me to the same version that you're in, if that’s all right, just one of the tabbed versions?

Q. Well, the one I've been working off is 101.0498 –

A. Yes.

Q. – so presumably I got that rather early. I hope that’s the same one that’s shown up later on.

A. I'm sure it is, but I've got photocopied copies without those numbers on them. So that was –

MS ONGLEY:

It’s called “Appendix 2 – Recommended Amendments to PC2 Provisions” on the top, that’s the…

UNIDENTIFIED SPEAKER:

Volume 1, tab 21, final tab in that book.

WITNESS:

I'm just going to get rid of a little bit of the…

THE COURT: JUDGE SEMPLE

Predominantly in black and green if that helps.

WITNESS:

Thank you, yes, and what was the page number again please? I've got the 101.

REGISTRAR:

0507. Sorry, 0506.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS

A. Yes.

Q. Sorry, I'm probably lost here. I've started with the (e), the chapeau 2(e).

A. And it was at beginning: "Extent of the activity."

Q. That cross-reference back to the (d1), I wanted you to go back to the (d1) and tell me what you understand by the (d1).

A. I may be being a bit thick here, but (d1) in here is good management practices.

Q. Yes.

A. Okay.

Q. But (d1) over the page does, well, I really want to ask your opinion about this but it rather looks as though it's trying to take you back to compliance with table 14.1 but I just want to understand your take on it. Though when I look at it again, it talks about the maximum reasonably practicable expense, so might contradict what I just said.

1445

A. Yes. Yes, I was just going to make that point, that I think that it would need to be clear, in my opinion, if that were the case that was taking you back to 14.2 is an absolute.

Q. Yes, okay, yes, no, I accept that now I've had a look at it. So I guess my starting point was looking at (e)(vii).

A. Yes.

Q. Which has a reference to consent duration.

A. Yes.

Q. Limited to a period not exceeding 10 years?

A. Yes "or shorter", yes.

Q. Yes so what would you understand that then to relate to?

A. Ah –

Q. In terms of this point about compliance with Table 14.1 or a consent that was otherwise granted?

A. I would see it relating to any consent that's granted within this policy framework. That was my understanding through the caucusing process as well, be it controlled or discretionary or RD.

Q. In terms of these decision version provisions?

A. Yes.

Q. So even the control one?

A. That's been my understanding, yes.

Q. So even the specified reduction pathway, the controlled activities that were introduced in the decision version, the alternative pathway, if you like, to the compliance of Table 14.2?

A. Yes, Madam Commissioner, that is my understanding. And I think what's sitting behind that for me is the fact that as Ms Johnston said this morning, that this was an interim measure until Oranga Wai came into place and that it was endeavouring to avoid generating legacy issues regardless of the status of the activity.

Q. So is there any – so you're not aware of anything else in the decisions version that speaks to this duration question, I think you said you weren't?

A. No, not offhand, my apologies, yeah.

Q. Okay, well, it might need to ask a few more questions in relation to that point, we have probably gone as far as we can with it, so can I now –

unless there is anything else you wanted to say before I move to your provisions?

A. Yes, no, thank you, no.

Q. So now I wanted to talk about your Friday, sorry, Friday?

A. Yes, yes.

Q. There were Monday, weren't they, sorry, I think.

A. Possibly.

Q. Anyway, never mind.

A. Yep.

Q. Going back to in here you had included in policy 14.6(c).

A. Yes.

Q. So –

A. "Consider the extent of"?

Q. – you've got a new (iii) and then you've got a (iv) and your (iv) is resource consent is not granted for a period exceeding 10 years? I mean, you might have pulled that over from the one that you –

A. Yes.

Q. – had in front of us from the regional council, I'm not sure if it –

A. That, that's where it came from.

Q. That is where it came from.

A. As I said this morning, it was broadly agreed across all of the parties.

Q. Yes but it –

A. So that's – yeah.

Q. – does refers to where in is an exception is made on (c).

A. Yes, yes.

Q. So, so when you're not making an exception and you're applying under Table 14.1, complying with the – what's in the table, you can have 20 years, is that your understanding?

A. No, it's –

Q. Knowing –

A. – it's not my understanding.

Q. Not your understanding?

A. My understanding is 10 years.

Q. And why is that, given the chapeau is where an exception is then if you do comply with the Table 14.1 (inaudible 14:50:02)?

1450

A. I come back to what I said a little earlier Commissioner which was that all of the discussions that we've had are about an interim measure and an interim provision in the plan that would allow council to come back fresh to resource allocation once it's addressed any number of other outstanding matters, total cumulative flow in the environment, unconsented activity, or the like. It might inform the amount of allocation that is available for contaminants in the future.

Q. I am a little puzzled by this given that it starts and where an exception was made?

A. Yes.

Q. If you've taken this from the regional council region map, it might explain it partly but I, you know, might need to go back and have another look at that?

A. I'm not sure that yeah, yeah. I'm not sure that I can explain it at the present time.

Q. Oh okay, that is fine. I was just wanting to be a little bit clearer. I'm not sure I am quite. I'm going to have go away and think about these things more. But I guess this issue about the year one and the steps with the five and the 10 and then the 20, as you said earlier, that some, and I'm not – some of these things in terms of the steps to be taken –

A. Yes.

Q. – are going to fall outside of the consent duration?

A. That's correct, yes and that's why I think in two and three it refers to a trajectory towards meeting cumulative nitrogen leaching maximums and in answer to Ms Johnston this morning I said that trajectory may exceed 10 years.

Q. Sorry, the trajectory may?

A. Yeah, towards meeting the CNLMs may exceed 10 years. It might be a –

Q. Sorry, yes –

A. Yes.

Q. – okay, (inaudible 14:52:41). So at that point I'm just wondering about the implications beyond. I mean is it realistic that in the future consenting regime where there may be quite a ramping up of expectation or requirement of what needs to be done, or I'm going to be referring back to what was proposed in the consents that people have then applied for, or is that just sort of background noise basically, we need to relook at the position?

A. Yes. I think at that time you would have to come at it fresh, but that context of the previous consent would inform the future. If you were on a trajectory to meeting the CNLMs five years into a new consent, it strikes me that that is really important information for the regional council considering a future application.

Q. So I'm also just wondering about you know we all get involved in a lot of things where section 124(1) or whatever it is that it means that you get in your replacement consent application and it takes a while for that to be treated as it must be as a new application, you can run along provided you meet various timeframes?

A. Yes.

Q. And that kind of thing. So how does that fit into this regime in terms of some of these limitations on where you have to do things by that sort of thing and how long they can last of that nature? Is there any block on the 124(1a) whatever it is situation?

1455

A. No, not as I understand it and I have reasonably serious concerns about monitoring compliance and reconsenting as outcomes of this process. It's not clear to me exactly how those things would play out and just to take you back to my comments this morning about the implementation plan and the regular independent examination of practice being a way to inform that, so it is not clear to me on the face of it what it looks like both for a replacement consent or any consent as it actually is or that process of compliance with might lead to enforcement. They're separate things I know but there's similar challenges.

Q. Well, have you got any suggestions as to how that, those concerns might be dealt with or is that a whole other topic that would be better not to get into, too hard?

A. It's a whole other – I think it's critically important to this matter and the most obvious solution I have at the present time is to adopt the work that Ms Foster has set out in her implementation plan that allows for better informed decision-making with time and to give you an example, I know, Madam Commissioner, you've been involved in this particular issue through a number of events but when designing the One Plan, the concept was that we really didn't know what it was going to look like in a decade's time but with people providing the Overseer files, making resource consent applications and with an active engagement in the consenting process, you would get to the end of 10 years and you'd be in a place to follow on with the potential outcomes you described just earlier which is a more onerous regime and for the purpose of allocating rights to pollute in the future, you would be in a really comfortable constructive position. As it turns out we have none of that and so we are in the place of having to develop synthetic data sets of having to inform ourselves via backwards engineering and, long story short, I guess my other solution to what you're asking is that if there is concern about the ability to address things through either review or replacement consents, then you would bring those timeframes back and simply produce outcomes within the life of the consent itself so it could be either a longer consent or a more onerous shorter consent and the reason, a critical reason we adopted the 10 year timeframe was that that was about the time that Oranga Wai was forecast to come to life but I don't know how much confidence we can have in that process or that statute that will inform that process now.

Q. Sure, so I just want to shift topic because my second question and final question I have and I think this morning when you were being cross-examined by the regional council, you spoke a little bit about refining the policy matters that were going to help inform the consenting process and, in particular, you were referring to your revised policy 14.6(ba) where you have a much reduced set of matters of the decision-making that must reduce, so I guess my question relates to the extensive

policy matters that were in the decisions version as well in the revised decisions version that the regional council is running with, which don't appear to take that approach. There seems to be quite a big wish list so…

A. In the (a) here?

Q. In the decisions version –

A. Oh, yes.

Q. – as well as in the regional council revised one –

A. Yes.

1500

Q. – in terms of forming the discretionary activity pathway, if you think about it that way.

A. Yes.

Q. Whether that's a very small number of applications or a very large number of applications. So I was just wondering whether you had a view in terms of the long list of matters, policy matters, to inform a discretionary activity, whatever that looks look, whether a somewhat shortened version with more direction might be more helpful than the long wish list that we seem to have?

A. Yeah.

Q. Your words?

A. Yes, it is my strong view that a short directive and clear set of criteria is far preferable to a wish list, if that is what I said. If it would assist the Court, I am very happy to work with Mr Scott and other planners who may have an interest to provide you with cross-referencing between those matters and this. It's just a factor of time that we haven't provided you with that and you have my apologies for that, but we satisfied ourselves when producing these provisions that we stepped our way through that wish list and found a landing, a landing place within those criteria in (ba).

Q. So what you're saying is that if you start down some of these, there's a whole lot of sub-issues that were separately –

A. Yes.

Q. – addressed in this wish list that would come under the umbrella of those?

A. That's exactly it.

Q. Is that what you're suggesting, if you did a mapping exercise?

A. Yeah, there's two, there's two elements, exactly as you say, and the other element is what really matters and getting that as refined as possible and it's quite clear from cross-examination this morning that it's not perfect by any stretch.

Q. So there's what really matters but there's also the issue of what you can really do about it.

A. Yes.

Q. And I think the cross-examination this morning asked you some questions about that so in terms of this interim regime with a limited duration, do you think there might be some value in refinement. That is the things that will actually bite, can actually bite, because there's some way of dealing with them, the information available or whatever, is there some way they could be more focussed perhaps?

A. Yes, I entirely agree with that proposition, yes, and I think there is – it's not for me to direct these proceedings, but I think there's time for planners to explore those issues if directed.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Mr Carlyon.

A. Kia ora.

Q. I'm a little bit unclear what planners and experts mean when they talk about a decision support tool because we've heard views that obviously it can be used as one and the NRS can be used as one, is there any differentiation between Overseer and used as a drafting gate and as a decision support tool, can you explain what you mean by a decision support tool because it's not clear to me?

A. I'll do my best, Sir, and there will be other farm systems experts who can speak to this with some considerable experience, but when I think about the application of Overseer, I think about a disciplined model that's been tried and tested over the long period. It's been subject to review and analysis and criticism and rebuild on the back of that and it has standing. When I think about the NRATs, I think about a process that was begun, and I considered them to be decision support tools, I think about a

process that was begun some time ago with the Fonterra Scorecard but really a year or so ago in relation to the NRAT for CVG and intensive farming and they are not peer-reviewed. They have potential unknowns with them in terms of the kind of aerates that they produce and it's clear that from the evidence I've cited in the last week that they're still building and so I guess I'd say it's the second teer of machinery that you could rely on for decision-making in contrast to a model like Overseer.

1505

Q. So coming back to my basic question, you're seeing Overseer as a tool that can be relied on as a drafting gate because of what you just said, it's so well tried but with a nitrogen risk scorecard, it can only be used as a complimentary tool, is that what you're saying?

A. I think that's fair and we use mechanisms like Overseer in any number of planning frameworks where we specify a limit, a noise limit, a vibration limit, a speed limit on the road. We use these mechanisms all the time, but they are not fixed in time and Overseer certainly is not. You know, there was a new round of Overseer came out just last week I think which would, under the framework we've got in front of us require a further plan change from the regional council to adopt that, so it's got some rigger about it and on that basis, I think it's safe for the purposes of saying you're on this path or you're on this path because it's a relatively known quantity through time.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I think if I could start, I'm going to take you to the table of comparisons. It's at 401.0481, it starts so that's in that supplementary volume, volume 4.

A. 401?

Q. 401.0481 so it's the comparative table which shows the latest version.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS – VOLUME 4

A. Yes.

Q. And again these questions are really just about making sure that I understand what I'm reading. So you were – so if you go to 0514, 401.0514 which is rule 14.1 and this is to do with, in part, perhaps to do

with this question of reconsenting. In the version that's been put forward by the regional council, you'll see there that in the one, two, three, fourth from the left column, the first condition is the: "Existing intensive farming land use was not granted a resource consent under rule 14.1 or 14.2 prior to 22 July."

A. Yes.

Q. Now that's come out of your version, as I understand it, can you just explain to me why that is and what it means?

A. Out of the version of the provisions that were provided this week?

Q. Yes, that's my understanding. I may have got that wrong, but it looks like it's not in there anymore which to me means it has, that your set of provisions has wider application than these provisions would.

A. I'm sorry, I think I might've misheard you. Did you say it's come out of the provisions as opposed to –

Q. It's not in.

A. Yes.

1510

Q. That might make it – I might be clearer –

A. Yes, okay, it's not in, yes.

Q. – if I say it's not in the set of provisions that have most recently been circulated and so as I understand that, rule 14.1 will have wider application than under the regional council's version.

A. I'm sorry I can't assist you there. I have to have a think about that, my apologies.

Q. All right and counsel might be able to help me in relation to that too because one of the questions that I had before I looked at this was about what would happen with the reconsenting of those consents that fall due. Some of them reasonably soon.

MS ONGLEY:

If I may, Ma'am, that is a matter that's addressed in Ms Foster's evidence. This was a deliberate insertion to address a concern that those with existing IFLU consents could pass them in, reapply and be able to leach up to the recalibrated table so it holds them –

THE COURT: JUDGE SEMPLE

Yes, and I understand the leaching up but the part that I am then not clear about is when I come to reconsent, so I've got a consent, I'm one of the number on the table that have achieved a consent and that consent expires and it needs to be, I need to reconsent that, I'm not clear what set of provisions I am reconsenting under if I'm excluded from 14.1, what am I included in, would be my question so Ms Foster might be able to answer that at some point.

MS ONGLEY:

I think it anticipates probably the idea that this –

THE COURT: JUDGE SEMPLE

There's a new plan by then?

MS ONGLEY:

Yes, that's exactly the point.

THE COURT: JUDGE SEMPLE

Which is all well and good, isn't it, unless there isn't, yes. Okay, well, that might – so, yes.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. Sorry, Mr Carlyon, I was just hoping that you might be able to answer all that for me –

A. No.

Q. – because I thought, oh, he's made a deliberate decision there so he'll be able to explain all of that to me. All right, no problem with that. So if I can then take you –

MS WRIGHT:

I'll ensure that Mr Scott is ready to address that for you when he presents.

THE COURT: JUDGE SEMPLE

Thank you, that would be helpful, thank you very much.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. All right, so I then just want to work through with you this revised policy 14.6 and so whatever version is easiest, I've got it on page 401.0456.

A. Yes, your Honour.

Q. So we've got our policy framework that effectively starts us off and places us by saying that nitrogen leaching needs to be managed in accordance with policy 14.5 and the matter of interest to us in 14.5 is (d) predominantly in terms of talking about meeting the cumulative nitrogen leaching maximum values.

A. Yes.

Q. Can you just – I don't think I've seen projected long-term average leaching defined, but can you just outline to me what that is and how an applicant for consent and a decision-maker will know what that is when they're making those decisions?

A. Yes. As I expressed probably a little bit awkwardly this morning, it's my view that the regional council should be undertaking, commissioning that work and holding that information so when I think about an applicant having to respond to those questions around the contribution to total cumulative load, that is information they should readily get from the regional council.

Q. Yes.

A. That is –

Q. And it's not available currently?

A. It is not available currently and it is hard to imagine even though it's been a requirement to undertake catchment accounting for some period of time, it is not available and it would take quite some time to build a model that allowed you to play around with those sort of outputs and inputs. I know there's been discussions on that, so it's problematic but I don't think that's a reason not to have it in the framework because it goes to the very reason of the plan and might be a defence for an individual landowner in relation to their total nutrient loss in a catchment if they had that picture they were contributing to putting aside Mr Daye's issues about equity.

1515

Q. Mhm.

A. So in my view, the regional council has to have that available to the community at large.

Q. Yes and I guess – I mean one of the issues that has perhaps led to things being where they are is a defence I guess that's been available which is I can't consent my farm because there are issues with the way that the plan works.

A. Yes.

Q. And what we are likely to want to avoid is the same assertion that we can't administer this plan, you know, we can't apply because we don't know what our contribution is to the projected long-term average leaching. You're asking us to effectively comply with something that we have no way of ascertaining.

A. Yes.

Q. And I just wonder as a planner, I mean, I understand your point which is I don't know if I can do any better than that but it does, from a planning perspective, raise issues about the administration of the plan and whether it can, in fact, be administered appropriately.

A. Yes and I've tried very hard through this process to be respectful and not to go – there was a methodology that was adopted into the operative plan and that's the holy grail because it is simply not.

Q. Yes.

A. That was thinking that developed in 2006, '07, '08, '09, it's a long time ago and so things will certainly move on but I think it's also, as the day goes on I'm using slightly coarser language, but I think it's a cheap shot, in my view, to say the plan is broken and then to spend a decade proving that it's broken, or not even proving it, that would be really helpful had there been an evidential basis for that through consenting frameworks but instead, what the community faced was a council that subverted the plan. I think the words used by the Court were that the regional council's approach was unlawful and so that didn't assist. There was a direction for parties not to apply for consent so it was really difficult to go: "Let's try, let's see where this takes us and learn from that." So there's been no kind of iterative thinking going into amending the plan as a consequence of finding that, it's a circular policy framework which is one of the

arguments that's put because it's just simply not been tested. It's a series of assumptions so then we get to where you are which is going, we don't want to do that again and so Mr Scott and I in developing what's in 14.6, or refining it in a way we thought might work, have been really careful about thinking is this a further circular kind of policy that you don't get through, it's controlled, some get through, you come to discretionary and you don't get through there and the answer following that, as I've said, is you don't get a resource consent and I think the evidence and the positions of the parties is that that's acceptably, you know, that's acceptable, tough for individuals but it might be the case that some just should not be farming in those environments because of the contribution to total load.

Q. Yes, but I guess my question is if the discretionary pathway doesn't work or is too narrow, then you've got as much as a pickle on your hands as you have now.

A. Yes. I completely understand that and if it's too wide, the consequences, because the argument's been put are we need certainty for landowners, we absolutely do, there's no question and some confidence about what the future looks like, but I think there's been some evidence that the consequence of certainty for landowners is uncertainty in the environment.

Q. And I guess we've got some higher order policy guidance in terms of 5.8 which tries –

A. Yes.

Q. – and I think you used the term, you know, we've got some real world, you know, there's table 14 but it's been modified and I am going to make the assumption not having been involved in this plan before but that policy 5.8 really sets out some of those balancing things that there, you know, there is an intention to, you know, obviously achieve the strategy for surface water, recognise the productive capacity capability of land are achievable on most farms using good management practices so that's trying to strike, I assume, that balance that you talk about, this real world, trying to find that middle ground.

1520

A. Yes, and the difficulty, of course, is that all of that decision-making is happening in an environment that's highly degraded.

Q. Yes.

A. So we've past a point where we can always find a kind of a win-win and what these, in my view, what these policies are doing is choosing who the loser is, you know, to put it as plainly as I can. That seems to be what this takes us to and I completely appreciate that and am party to that quite often, so I think that's actually the decision we're making so in relation to 14.6, the approach in (ba) is to be as tight as possible.

Q. Yes.

A. And to force some thinking. We had Mr Passey give evidence for Federated Farmers and I think, his representative will tell me if he's wrong, but he's in a leadership role within Federation Farmers. He bought a farm knowing it was non-compliant. He's overcapitalised. He's had no engagement with regional council to find out whether he would or would not meet the forwarding two maximums and I've had some feedback that maybe he would have and yet his evidence is in this environment of uncertainty, how can we possibly operate and so we've bumped into people like this for decades now who are working night and day. They've got off farm income to cope but he made a decision to purchase a property on the basis that the barriers which were going to be environmental would somehow move aside.

Q. All right, so all of that in mind, so we've got a policy framework that says you can apply for a discretionary consent, really there's only unless you're transitioning your use, which is, you know, we put that to one side as something that's quite specific.

A. Yes.

Q. Really only is a, you might get a consent, there's a discretion available to the decision-maker to grant you a consent in circumstances where they're satisfied that you are, that you've produced sufficient evidence that you are reducing that you're on some pathway towards meeting those limits and I think you said that you expected that that might be on a pathway to meet those limits that extended beyond the life of the consent.

A. Yes.

Q. I'm struggling with our a decision-maker is going to pick that up and know what to do with it, in a sense of I don't know if I was not involved in this process whether, for example, I would think about the fact that you could be on a pathway that gets you to the total 10 years after your consent has been, 20 years after your consent has been granted.

A. Yes, against a 10 year consent.

Q. Yes and so I'm not – I'm struggling to see how the decision-maker is going to know and I know you talked about expert panels and advisory panels none of which is sort of in the plan so wouldn't immediately be apparent to anyone picking up the plan, so I just wonder if you can explain to me why that is to be preferred over a specified reduction pathway and I know that some of those questions were asked in cross-examination, why an uncertain trajectory towards an end goal is a better planning response than a certain trajectory in a specific timeframe.

A. Just so I'm clear, are you talking there about the application of the NRAT for the purposes of –

Q. No, I'm talking about the specified reduction pathway so this has elements of the reduction pathway, but it’s differently phrased and it sits in a discretionary activity status rather than a controlled activity status under the decisions version.

A. Yes.

1525

Q. But they both look to reduction –

A. Yes.

Q. – in circumstances where you can’t meet the table, the next best option is that you at least reduce in some way?

A. Yes.

Q. And I understand that when they are both controlled activities, that does not become the next best option, it might become the option that you choose and I will explore that with you in a minute.

A. Yeah.

Q. But in this circumstance where we’re saying if you can meet the table all well and good” –

A. Yes.

Q. – you'll get a controlled activity, if you can't meet the table then you can have a go at getting a consent provided you show reduction, but how much that reduction is and how long it takes is entirely within the discretion of the decision maker.

A. Yes.

Q. Why is that a better planning response than the decisions version which has a specified reduction pathway, how much you have to reduce and in what timeframe you have to reduce?

A. Yes. I don't think I'm – I don't think that's what I'm suggesting in decisions for discretionary consents. I think it needs to be specified and it needs to be clear, needs to be capable of being monitored and for compliance action to be taken against it or everyone involved is in the wind and there's no clarity.

Q. So but the plan itself doesn't give you any direction other than the 35 for vegetables.

A. Yes, yes.

Q. The plan doesn't give you, under your version, the plan doesn't give you any, as a decision maker, any direction on what that – we know the end point we're trying to get to, it's the rates in Table 14.2 –

A. Yeah.

Q. – so we know that –

A. Yes.

Q. – but how we get there and over what time period and what the, what the steps might be is entirely up for the decision of the –

A. Yes.

Q. – so the decision maker can entirely specify that?

A. Yes but – yes –

Q. And it might be different as between different applicants and different decision makers?

A. I'm sure that would be the case, that's our common experience, yeah.

Q. So I guess I wonder why, having taken the 35 and put that in for CVG, why you might not have taken the 20 and put that in for dairying?

A. Yes, so the – yeah –

Q. So that there was some framework?

A. Yeah, what may have coloured my view on this was a regional council decision some years ago to effectively instruct farmers to come through with consents that reduced their total losses by 10% and on that basis a consent would be granted. And so we saw nutrient loss limits of 70 or 80 kilograms dropping down to 64 or 60 and it's completely nonsensical because there's no relationship between that outcome, firstly, it's not a, a true reflection of what's happening on farm, it's simply gaming the system, but it also is not connected to environmental outcomes in any kind of measurable way and if in five or 10 years' time the regional council is minded to produce another state of environment report that is informed by the kind of data these processes need, there needs to be some cause/effect relationship that they can play out from the consents that they have granted. And so the 20% loss, you would need to then model that into an environmental outcome in a way that I don't understand you can do at the present time. So your specific question and I guess it's just to repeat what I said this morning which was that for commercial vegetable growing, there seems to be more of a challenge in the application of Overseer than there is for intensive farming more generally for arable and dairy, for cropping, and so I think the means is available in a way that it is perhaps not for commercial vegetable growing.

Q. But aren't they in a situation where even if you are a commercial vegetable grower, you still have to show your – ultimately your trajectory has to get you to table, to the table, which is the Overseer number which we have identified is difficult for CVG?

A. Yes, yes, yes.

Q. So you still – I'm struggling to see –

A. Yes.

Q. – the difference in a specified reduction pathway and a non-specified reduction pathway, if I can put it that way.

A. Yes.

1530

Q. So we have got here a non-specified reduction pathway and we've got in the decision version a specified reduction in pathway?

A. As in 20 or 35%.

Q. As in 20 or 35?

A. Yes.

Q. And I guess I'm struggling to understand how the non-specified trajectory gives you a better outcome?

A. Yes, I guess I haven't thought about it as non-specified because it is about compliance with 14.2 –

Q. Yes.

A. – with numbers that are specified.

Q. Yes.

A. So you know there's real concern about Overseer and absolute numbers. Yet with the specified departures were talking about exactly that. With the NRATs we're talking about exactly that. Yeah, yeah.

Q. But does, I mean you mentioned, you said, you know, that the 10% was a, you know, gave people an opportunity to gain?

A. Yes.

Q. If you don't have a timeframe within which you need to meet the Table 14 numbers –

A. Yes.

Q. – aren't you providing a pathway to do the same thing?

A. Yes. Yes, I'm sorry if I didn't make that clear. I think that needs to be specified and it needs to be time bound.

Q. In the consent?

A. In the consent.

Q. But the consent can only last 10 years?

A. Yes.

Q. So the only thing that a decision maker can do by way of condition relates to the first 10 years?

A. That's correct.

Q. So if my plan says I can get down to those in 30 years, and I have to go quite slowly in the first 10 but I'll do most of it in the subsequent 20 –

A. Yes, yeah, that's right.

Q. – which is not in any way controlled by my 10 year consent?

A. Yes.

Q. Doesn't it just lead to that same game that you were concerned about?

A. So yes, as I responded earlier on to the Commissioner, I don't think it can be flatlined and then everything is done in year 19. I think that's completely inappropriate. The impact on the farm system needs to be felt from day one and to be specified and clear because it's going to be no different with the specified percentage in terms of compliance and monitoring. You simply cannot do it in the ether. It's a concern enough the point at which, the number at which the regional council would say to a consent holder: "You are non-compliant," whether it's Overseer or NRAT or a specified number that they're reducing to.

Q. And given those concerns that I've expressed –

A. Yes.

Q. – do you think that that policy framework is tight enough to take into account all of those things so that a decision maker, delegated decision maker, a decision maker coming in and looking at this and going: "Okay, what am I," is going to know that that's what that this graduated stepped is, you know, either frontloaded or not frontloaded, are they – is the plan going to regulate that discretion proficiently to get those outcomes, do you think?

A. Mr Scott and I and Ms Foster will have a view on this as well, but Mr Scott and I tried pretty hard to put ourselves in the shoes of a, you know, a consent's officer –

Q. A consent's officer, yeah?

A. – because it's, that's how it works, so, you know, the level of experience can be quite low. The directions can be quite, can be quite tough on people that come from outside of the plan.

Q. Yes?

A. So if I'm being asked would I be tougher and clearer than it currently sets out, then the answer to that is an absolute yes.

Q. Right?

A. I think that it is a, it would be of benefit to delegated decision makers and equally to consent holders to know where they stand with the – except that no one wants to hear that the likelihood of you getting a consent is low, or it's hard, even though that's, you know, it's got a degree of certainty about it.

Q. Okay, all right, I think that helps. I did have a question and it's similar to a question that you were asked in cross-examination and I still don't feel as though I am clear on the answer and that is the difference that you see between Policy 14.6(b)(2) and (b)(3)?

A. Yes.

Q. And so in (3), this is, you know, if you can show that Overseer is overestimating your nitrogen loss?

A. Yes.

Q. What difference does that make because ultimately what I have to show as an applicant is a trajectory towards meeting regardless of why I can't meet Table 14?

1535

A. Yes.

Q. I mean, the reason I can't meet table 14 is irrelevant, isn't it –

A. Yes –

Q. It's that I've got to show a trajectory towards meeting it so what does three add?

A. Well, I think, as I said earlier, I think if council and industry don't want the kind of flexibility that is provided for in there, it doesn't –

Q. Well, I don't know what flexibility it provides because the test is the same.

A. Yes, the test is the same but where you start in determining that trajectory and where you might finish could be different things if it's overestimating it, so on the back of expert review and involvement, there might be an argument to be made to council that that trajectory, the shape and look of that trajectory needs to be different.

Q. Oh, I think I, thank you, I think that lightbulb's gone off in my head in relation to that so what you're saying is that if I come along with a different tool, and the Overseer says my starting point is 80 kilograms but that's wrong, that's not the number because Overseer is overestimating so that my true starting point that I've calculated with this other tool that might or might not be available is 60 kilos and my plan goes from 60 down to 45 not from 80 down to 45.

A. Yes, it might be either that or it might be application of a particular good management practice that's been under or over-assessed.

Q. Right.

A. So those, you know, with time those things will change so the notion behind three is to have the door open to the farming community saying, well, it doesn't actually work quite like that for us in our situation.

Q. Okay, yes. I think that might, with respect, need a little bit more refinement in the wording because it certainly wasn't –

A. So I've explained it about four times and got it wrong every time so, yes, that's clearly the case.

Q. Yes, I understand what you're saying, all right, that's helpful, thank you. Now, I just had a couple more questions which relate to your evidence-in-chief.

A. Yes.

Q. So that is at 204. I can probably tell you what tab it is might be easier, it's tab 34, volume 2, book 4.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS – VOLUME 2

A. Yes.

Q. And I just wanted to make sure that I understood –

A. Sorry, which page number was that, your Honour?

Q. Perhaps if we start at 204.2105 and it's your section 32AA analysis.

A. 2105.

Q. 2105, paragraph 16, your section 16. Over the page to 2106 at 16.5, option 1, operative 1 plan, am I right in understanding that that is operative 1 plan but with table 14 recalibrated?

A. Yes, I think that's fair, yes.

Q. Yes, all right, thank you. So you say in a number of places, but let's go to 16.9: "I consider option 3 provides a precautionary approach for a short-term response should option 1 not be accepted," and so option 3 is the specified reduction pathway?

A. Yes.

Q. And just interested in, and forgive me but a lot of this information has come to us, you know, and relatively late so we're just trying to get our heads around it, but can you just explain to me again, and I think it is again I'm sorry, what the shift has been from option 1.

A. Yes.

Q. Recalibrate the table, that's actually all we need to do and if you need option, you know, if you need another pathway then the specified reduction pathway to where you've got to now.

A. Yes, so option 1 is consistent with the view that I express in the summary of my evidence which is effectively the status quo notwithstanding 14.2 is updated. Option 4, which you've talked about, is where we had got to in the process with the regional council and other parties for the purposes of trying to find a way through. So again I say in evidence that the direction from my clients was to be pragmatic planner and to work to develop a set of provisions which gave some confidence to the landowning community that they could apply for consents and within reason get them. And as I made clear in the joint witness statement and in evidence, from the get go that was a significant risk to place confidence in relatively untried mechanisms in a regulatory context and again to put it crudely the quid pro quo for that was the confidence and security of an implementation plan that allowed those parties like Fish and Game or Ngāti Tūranga and others to see what the workings were like and to have independent contributors to oversight of that plan. The regional council made a very clear decision and I can't remember, Ms Johnston will recall, but in April or May of last year that it was not going to do any further work in that space and everyone went to their corners for the period of the 10 months to where we are now and I, I was going to say it at the start, but one of my colleagues, Pete Taylor, who produced evidence into hearings on this subject over the past decade and a half, he worked for the regional council, he worked for Fish and Game, he worked for farmers all over the region and he knew these issues and was deeply involved in and he died a couple of years ago and I think he would be pretty disgusted with where we have got to, quite frankly, be we're – we've gone to our corners and we haven't got kind of common ground that we can keep working with. So it was very much my view that without the confidence and security of council's commitment to an implementation plan – and that's not just "a plan", it's the resources, the staff, the competence, the external oversight – then the parties were, from a planning perspective, it was highly problematic to have confidence that we would get to where we

need to go to. So the sorts of suggestions Mr le Miere – sorry, Dr le Miere has made around the recalibration of the NRAT in that space, that might be valid, but you know, in the process to developing plan provisions it's an enormous leap of faith to say let's embed that in those provisions and not have a chance to come back at it, given that you can review plans at any time and this is really the first time this plan has been reviewed in 13 years for this one discreet element. So, yeah, sorry, long story short, but I lost confidence in relation to option four and I know that it's important that there is a pathway, a consenting pathway, I agree with that proposition, and it's been described, my approach has been described by Ms Foster and others as "kicking the can down the road" or a "do nothing" option and I am, I am not interested in being a party to that context, given the environment in which we are, you know, we are advancing propositions before you. So that's what's led me to the provisions that are in front of you now.

1540

Q. Okay, I understand your point. I think you use the phrase in here, I have marked it, your section 10 which talks about the decisions version, so that's option three.

A. Yes.

Q. You talk about that creating an easier consenting pathway.

A. Sorry, can you take me to the paragraph where I have mentioned that?

Q. Yes, 10.2.

A. Yeah.

Q. Page – bundle reference 204.2097. Now, am I right in thinking that you would say it's an easier consenting pathway because both Table 14 and the specified reduction pathway decisions version are controlled activities, you'd look at it and go "well, which one is easier for me to meet, a 20% reduction or the numbers that are in Table 14", is that –

A. That's –

Q. – is that what you mean by saying "it's an easier consenting pathway"?

A. Yes, it is, yeah.

1545

Q. And I think I asked this question of Ms Foster, if, you know, would anybody use table 14 if you had, you know, or what's the incentive or the benefit to using, to getting to the levels at table 14 if you've got the 20% reduction?

A. I think it's entirely natural –

Q. If that's a lesser number.

A. It's entirely natural that people take the path that gains consent most readily with the least stress.

Q. With the least work, the least investment, the least change to your farm practice.

A. Absolutely, yes.

Q. You say there as well, you talk about it being a voluntary, voluntary good management practices, wouldn't it though on a controlled activity be secured by consent so wouldn't that be the same under your discretionary pathway, those matters that are in your management plan including your good management practices would be secured by way of condition of consent so it wouldn't be a voluntary arrangement?

A. No, in relation to that paragraph, I meant about those GMPs that were adopted so across the suite of GMPs that are available –

Q. Yes.

A. – we tend to take the lower senior fruit understandably and anything else is just simply too difficult.

Q. Right, but either way, through your discretionary pathway –

A. Yes.

Q. – or through the controlled pathway, your management plan is going to set out what are those things that you need to do in order to get your – you've got to show your trajectory and you have to show what you're going to do to get to your trajectory I imagine.

A. Yes.

Q. And the consent would come out conditioned on you adhering to those matters –

A. Yes.

Q. – one would assume in the ordinary course of events, so it doesn't become a voluntary arrangement, it's a consented arrangement, isn't it?

A. Yes, your Honour, you're correct.

Q. Okay, all right.

A. So it’s a move in the philosophy of the One Plan which was about managing for outputs –

Q. Yes.

A. – to effectively managing a whole series of inputs.

Q. Yes and that would be, as I would understand and read your amended provisions with your amended policy framework, that’s what you'd be looking for on a discretionary consent. If you got a discretionary consent based on a trajectory, then the expectation would be that your nutrient management plan would identify how you're going to meet that trajectory, some waypoints, some milestones within that what you're going to do to achieve it and that would be conditioned.

A. That's correct.

Q. So either way that would be how the council would manage that downward trajectory.

A. Yes, that's correct.

Q. Okay and so really the difference becomes the activity status and the level of prescription around pastoral.

A. Yes, your Honour.

Q. All right, good. I think we're nearly there. You'll be delighted to know that, let me just check. Yes.

FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. You might’ve noticed, Mr Carlyon, and I've been very quiet on this issue, which is quite unusual for me, but I've also had an advantage over you coming up to Christmas because I had PC2 to think about and if I couldn't get any further on that, I went to PC1 so I've had plenty of time on that but I have to just express similar views to her Honour and Commissioner Edmonds have just expressed about the discretionary activity pathway.

A. Yes.

Q. Because it strikes me that in reality, it's going to be a prohibited activity pathway for a number of parties particularly for the higher emitting discharges at the present time, do you have a view on that?

A. Yes, I do, Commissioner. I don't view it that way. I view it that it is a discretionary activity and if you can't get through on that basis, then the activity is not provided for, you know, you're effectively stopping farming so I don't, in my view, it's not helpful to describe it as a prohibited activity. It's just simply the continuum on which decision-making is made so, yes.

1550

Q. But I think there's some real messages coming through in terms of, you know, the difficulty for some farmers when they're on those higher levels of discharges, is that a fair comment?

A. Yes, I think that is certainly the case and I think it's appropriate that that is the case. When you open chapter 5 and the first thing that you see is a diagram for the region that shows the degraded waterbodies that decision-making is being made against, I think it's indicative that there's an enormous challenge there.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

MS ONGLEY ADDRESSES THE COURT – WITNESS VIA AVL

COURT ADJOURNS: 3.51 PM

COURT RESUMES: 4.09 PM

MS BUXEDA:

Good afternoon. At this point in time we resume the case for Horticulture New Zealand.

THE COURT: JUDGE SEMPLE

Yes, thank you. Now just to reorient me just to where I find this please.

MS BUXEDA:

Where are we going? So we are looking for evidence –

THE COURT: JUDGE SEMPLE

Book 3 perhaps.

1610

MS BUXEDA:

Yes, book 3. I will just doublecheck. Volume 2 evidence and joint witness statement.

THE COURT:

Yes.

MS BUXEDA:

And we are looking for the evidence of Michelle Sands which is at 25 of that, 203.1347.

THE COURT: JUDGE SEMPLE

Thank you.

MS BUXEDA:

And the evidence of Mr Clark sits within that at, it starts at 203.1375.

THE COURT: JUDGE SEMPLE

Yes, thank you.

MS BUXEDA CALLS

JOHN JOSEPH CLARK (SWORN)

Q. Good afternoon, Mr Clark. Can I confirm that your full name is John Joseph Clark?

A. That is correct.

Q. And did you prepare evidence-in-chief dated 13th of October 2023 as contained in Appendix B to Michelle Sands' evidence?

A. I did.

Q. And do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. I do.

Q. Excellent, thank you. I have a few questions that I would like to run you through which have come, sort of arisen through discussion with the Court and with counsel in cross-examination and the first one actually is something that arose from cross-examination previously where the evidence, supplementary evidence produced from council indicates that one commercial vegetable grower holds consent. Do you have any knowledge about that, the granting of that consent and how that was gained by that grower?

A. Yes, I do. So for that particular grower, that consent was granted when the regional council was granted consents under a good management practice framework. That consent pathway was later shut down as a result of a court decision is my understanding. So no growers have been able to successfully gain consent under an Overseer pathway and I think points to the viability of that pathway as it stands.

Q. Excellent. Thank you very much. There's been a lot of discussion in the court about the modelling of crop rotations and the various deficiencies of that modelling and I think you spoke to that about Overseer and can I ask you from your actual on and in the ground experience, could you give the Court some details of how crop rotation is required and achieved at Woodhaven Gardens and how the land area that you're allowed to rotate on affects all this?

A. Yep, so I can't overestimate the importance of getting a pathway for crop rotation and the correct definition of what crop rotation actually is into a

viable consenting pathway. So crop rotation means a lot of things to growers. The first is actually rotating through a variety of crops and that is important for soil health reasons. So if you continue to grow similar crop families time and time again on the same parcel of land you will develop soilborne diseases that you cannot eradicate from that soil, so your only option is to rotate various crops across that soil to avoid that problem. Even in terms of trying to limit the likelihood of those disease types occurring, they can develop and preserve and your only choice then to continue to grow particular crop types is to move away from that land. So you may be forced to retire a block of land and move onto fresh soils and spell them for a lengthy period of time. Something like clubroot in Brassicas to completely go through the lifestyle of the, lifecycle of the spores, you might be looking at something like 15 odd years before you could go back and with a great Brassica crop and be guaranteed to be clubroot free. So there, it's not like we're just spelling something for 12 months in a cover crop and then moving on. The other part that's really important is being able to rotate your land and where it is based on losing leasing land. So commercial vegetable production is highly reliant on leased land. It's one of the things that makes it commercially viable. I think if most growers were forced to own all of their land, the return on capital would make it uneconomic. So we are highly reliant on leased blocks of land. If we lose one of those leases, so if a particular landowner wants that lease back, in order to be able to continue our businesses we need to be able to move onto other blocks of land to grow that food. It's important from not just a business continuity perspective but also a food security perspective, so in terms of you look at the importance that leafy green vegetables in particular play for food security and human health in this country, there's only very few growers and very small amount of land area that actually produces all of that food and if you lose substantial amounts of that leased land we couldn't replace it, that food wouldn't be in the system. So we've got to make sure that we are able to find a new home for that food production if we do lose leases and if you look at it in a small subcatchments perspective, that could be extremely difficult if we were limited to that. So that would mean that we had to try and find an

available block of land in a very finite area and that the likelihood of doing that in the timeframe required would be very unlikely, so rotation right across the FMU is really important from that perspective so that you can look to other subcatchments to potentially replace land that you've lost in another one. So giving you a real-life example of that, we lost a block of land through very unforeseen circumstances at the back end of last year. It represented 100 acres of actual productive area, so we grew 100 acres of actual crop on that block. We had about two months to try and find another 100 acre block to continue that on or else we are laying staff off and that food isn't on the shelves. So fortunately we were able to do that and we rotated. The other part that's really important is defining what the rotated land area actually is. The title is – size is almost irrelevant, it's the land area of cabbages or broccoli that you're actually growing in that particular parcel of land that's important. So you might have a block of land that again that's 110 acres, you're able to grow 100 acres of crop on that particular block because there is no environmentally sensitive areas around there so you're not having to retire a whole lot of land in buffers, et cetera, it's highly usable land. Now, you might go to a next block because it's the only block that you can pick up where 40% of that farm is gullies and you're not going to be farming it, so it's going to be fenced off and left, so you're actually only farming a very small portion of that, that title and your, your land use percentage on that block might be a lot lower. So it's important that it's defined as the area of cabbages not the title. That's also an extremely important definition to get right from the perspective of growers being able to implement good environmental mitigations on their farms. One of the things that we do under good management practice and best management practice is things like vegetative buffer strips, retiring land for controlled traffic tramways, we're actually taking land out of production. So we're not growing broccolis on that particular area of land anymore and therefore it is not having any leaching, so the environmental impact on that land is reduced. If we can't find a home to put that production, our businesses will cease to operate the size they are and again we don't have the food being produced. So being able to support growers and being able to implement good

environmental mitigations in their farming system, part of that is enabling rotation of crop based on crop area, so hopefully that's clear. It's very clear to me as a grower, but I understand these things, and hopefully that's clear to everybody involved what we are trying to achieve there.

1615

Q. Fantastic, thank you. Just a few more questions here. Just given, you know, the ability of yourself to give examples of exactly how this works on quite a large-scale operation, there has been a lot of discussion that you will have heard attending the hearing at the first week in November and today over the need for an alternative pathway which does not involve Overseer.

A. Mhm.

Q. Could I ask you to briefly describe for the Court the ability of growers in the region to meet the Overseer figures in the One Plan, or in the alternative to meet the 35% reduction?

A. Yep. This is quite a complicated area, so if the Court will forgive me taking time to answer it because I think there's quite a lot of areas that we need to touch on here and I'll try and argue – answer it from a Woodhaven Gardens perspective and from other growers that I know, so I believe Woodhaven Gardens is one of the only growers in the country to fully undertake an Overseer calculation, so we did that back in 2018, I believe, where we modelled our three years in the past and three years into the future and we modelled that under current practice and with some practice improvements in place. We did that for one-fifth of our farming operation so we did that for the sub, all our sub-management signs so we didn't do it for the entire farm. Look, out of that experience, there were a few things that shone a light why it was just not a practicable workable tool for commercial vegetable growing so Overseer was specifically really designed for pastoral farms in which they grow one crop over the entire farm. So they don't really have a new planting date, a new harvest date but for their grass unless they're coming in and out of pasture on one specific block, but the bulk of it is going to be relatively simple for them to implement so they might have sections of their farm they going to apply fertiliser on at a specific rate and they may have some irrigation events

that they put across that farming block. For commercial vegetable growing operations, when we're putting data into Overseer, we have to put in data for every single planting and sowing for every single crop that we grow, so you take Woodhaven Gardens, we grow 24 different crops, we plant or sow at least once a week. Some crops are multiple times per week so now you're at 24 times 52 minimum, it's actually more realistic for us as probably 24 times 75 sort of farms that we have to model within our farming system, so we have to have a crop establishment date for that so when the crop is planted or sown, we have to record every single date and amount of every fertiliser application. We have to record every single irrigation event that happens to that crop, then also our harvest is not just one day or one harvest so we don't just go into a crop of broccoli and cut all that broccoli at once. So we might go into that crop of broccoli four or five different times which Overseer doesn't provide for at all so you have uncertainty over harvest date. I think when we got to it, our Overseer file for one-fifth of our farm was something like 7,000 rows long and it was by about eight or nine columns wide so for one-fifth of the farm, so you're getting into the hundreds of thousands of data points that we would be expected to capture. The cost of which we estimated to be somewhere $100,000 and $200,000 to do that for one-off episode for our farm for one-fifth of the farm, so it was extremely onerous for us to try and do that. There was further areas of inconsistency amongst all experts involved in Overseer about how and what data we actually put in and so I'll give you some examples where Overseer doesn't sort of work too well. If you think about yield, there was inconsistencies around whether that yield was the number of lettuces actually grown in the paddock, so I'll give you broccoli because I know the matters, we grow about 29,000 heads of broccoli to the hectare. The vast majority of those broccolis will actually grow into some form of a mature broccoli, but unfortunately market specifications will dictate whether those broccolis are harvestable or not. Overseer is attempting to model the nutrient uptake of those 29,000 broccolis but what it asks you to put in is the yield that you actually exported. It asks you to do that in weight which is also huge probably because we don't weigh our broccolis, we sell them as eaches so you'd

be forcing growers to go and weigh every single thing that they take off their farm which would be hugely costly so you're either going to have a large degree of inaccuracy in your number because you're going to take a really, really broad assumption or you're going to put in a level of compliance burden that would make it unviable, but even then when you go and put that number in, it then, the model Overseer assumes that that's only the number of broccolis that you grew so instead of assuming the nutrient uptake of 29,000 broccolis, it only assumes that, say you've taken up 20,000 broccolis worth of nitrogen so then it looks at your fertiliser and says you've applied way too much fertiliser because you've only grown 20,000 broccolis not 29,000 broccolis. So the unit says there's way more fertiliser available for leaching than actually exists and blows the leaching number out of the water. So there's some real problems there around how Overseer actually works on farms just from a practical point of view and from a technical point of view in its ability. From what I have seen, it relies hugely on assumptions and if it was to be used in a regulatory framework I don't know how that would stand up in court to actually hold a grower to account to a leaching number, because if you were holding somebody in breach of a leaching number you'd better be sure that it was accurate and they'd actually breached it and I don't know, given the number of assumptions that you would have to use to get any form of Overseer model out for a commercial vegetable production business, how that could possibly stand up in court because it could be wildly different in reality to what it says. So there's some issues there. I think also probably the single biggest issue is it regulates things that are outside of the grower's control. So the biggest thing that is going to determine the amount of nitrogen loss in a commercial vegetable growing system is going to be the amount of rainfall that a grower experiences on a given year and on the amount of yield that they can take off. Now I say "rainfall" because those of you that are familiar with Overseer will know that Overseer uses an annualised average rainfall number. It's rainfall in terms of when it rains we will have losses and if we don't sustain sort of a base concentrate of nitrate in the soil of around 30 kgs to the hectare our crop will deteriorate and eventually die and become unmarketable so

we won't be able to sell anything, so if we don't reapply after large rainfall events we will lose our crop. So what will happen is that a year that you get more rain, you will have to use more fertiliser. So but that is out of our control. We unfortunately don't determine the amount of rain. I wish we did, my life would be a hell of a lot easier if we could. So you're driven to if you want that food, you're driven to meet the crop demand of nitrogen that that crop requires to get it to a saleable point. The other part is the yield factor. Your yield is again not determined by the grower. If I could just say "look, I get 99 out of every 100 broccolis I put in the ground" it would be fantastic. But pest and disease, climatic events like hail or frost, or even market events in terms of us growing product and then the market not wanting to take it, will determine how much crop we can actually take off and those that are familiar with nitrogen losses and commercial production will know that the actual biggest determinate of nitrogen loss will be the amount of crop residue. It won't actually be fertiliser use that drives that and again, unfortunately, that's completely outside of the grower's control and that points to one of the benefits of a good management practice type framework where you're actually regulating on elements that are inside the grower's control, that we can link to lower nitrogen losses and therefore lower environmental impact. It was talked about by previous witnesses the importance of making sure whatever tool we use is evidencable and consent holders are able to be held account and council can monitor that. To me, like that was very much counter to the argument to use Overseer because when you are using good management practice or best management practice you can see that a grower's tractor has got GPS on it. You can see that their fertiliser spreader is banded fertiliser. You can see that they're doing their nitrogen testing to make sure that the crop actually requires the nitrogen that they're putting on. These are things that can be audited and are clear when somebody comes onto the farm. You can't actually see the amount of nitrogen loss and whether Overseer has called that correct or incorrectly. So in terms of being evidencable, Overseer also really lacks, so I think there's areas there. I just wanted to also touch upon it, I think one of the Commissioners asked the question around it being a decisions

support tool and something like a Nitrogen Risk Scorecard is a decisions support tool because it actually lays out ways that growers can grow the food that the community wants, while reducing the risk of nitrogen loss and again we can make that very, very evidencable where your Overseer is never going to be the determinant of whether you put nitrogen on your crop of not. So your determinant of whether you are going to put nitrogen on your crop or not and how much is going to be based on the nitrogen concentrations available in the soil. Now, that is a big and new step for commercial vegetable production units because it's tools that weren't available to growers in the past. Growers had to look at a crop of broccoli and see that that crop was maybe not doing as well as they would like it to and they're going to guess that it needs more nitrogen applied to it. We are now using tools like a quick end test, we can go into that crop and we can see how much nitrogen is available in the soil profile and we can determine whether putting more nitrogen onto that crop is actually going to help correct that deficiency or not and I will give a real big example of this, again real life, where my father still likes to grow by eye and the number of times he'll ring up an agronomist and say: "You need to put more nitrogen on that crop," and the nitrogen will – the agronomist will go and do a nitrogen test, a quick nitrogen test, and come back and go: "No, John, we're sitting on 60 kgs to the hectare equivalent, we've got plenty of nitrogen under there." And it will be a clubroot problem, it will be a magnesium or potassium deficiency that's actually driving that. Where under his way of growing, he just would have put more nitrogen on because it was cheap and a lot of the times it might work. Now, nitrogen is horrendously expensive and we live in an environment where we can't do that and we have got tools to actually allow us to be better growers and that's another area that something I could call a best management practice. You can tie it to better outcomes for the grower and incentivise them to pick these things up. So not only from an environmental perspective are we going to get better results, but one of the biggest ways in commercial vegetable production that you get a better result for the environment is to get a better yield. If we can get a better yield, there's less crop residue so less risk of leaching from there, you don't need to

grow as many hectares, so there's less risk from there and you get a better economic outcome. So tying the commercial incentives of the business to the environmental management perspectives is a really powerful thing compared to just a very blunt compliance tool like Overseer.

1630

Q. Excellent. Thank you very much for those examples. I just have a few more short questions. Could your operation at Woodhaven meet Table 14.2 and PC2?

A. No it couldn't. We know, we have had a pretty good play again with Overseer and those numbers. We are, and this is going to sound almost arrogant, but we're probably renowned within the industry for being if not the leader, one of the leaders in terms of continuing to produce fresh healthy vegetables for this country and reducing our impact on the environment across a range of methods. Clearly there is nutrient loss, sediment loss emissions et cetera. In doing so we have seen significant reductions in our input use. But even with that we wouldn't get close to meeting the table and that has come through the intensification where it has made sense both from an environmental perspective and a commercial perspective. So again, I will give you some examples around that. So that is the use of say when we're trying to reduce sediment loss is put in vegetative buffers. Well that's ground that we don't, we don't grow on anymore. We implemented full control traffic farming in our farm quite a while ago, but the result with that was we were going, running over crop with tractors. So where we put an irrigator, where we put a spray tractor, a fertiliser tractor we would travel through the crop and even with high clearance tractors you damage the crop. So on those beds where we were driving through, instead of getting like 80% yield off of that area, we were maybe getting 30 or 40% yield, but that area got the same amount of fertiliser, got the same amount of irrigation, it got the same amount of chem application. So when we were looking at ways that we could improve, it then became logical that you just wouldn't grow crop in that area, so that area now experiences zero losses. We have moved that production elsewhere, but then it yields higher so our total overall

losses go down. So there are some very costly steps that we have taken and I am talking multimillion dollars' worth of mitigations in terms of changing our farming system and changing equipment and we can't get there, so the step to get there would be so brutal, I don't think that we could continue.

1635

Q. Thank you. Now, one final point, I'm just going to hand up a document to the Court. The Court asked to be provided with examples of the proposed instruments and I understand that you'd like to provide the Court with a work example of an NRAT from your farm.

A. Yes.

Q. Excellent and I'll give one to you as well, or the registrar will hand one over, but if you could talk to that with the permission of the Court, that would be fantastic, thank you. And just for the record, this is a nitrogen risk assessment developed for Woodhaven Gardens as part of the grower testing process for the NRAT authored by Andrew Barber, who will be appearing to give evidence later with a grower visit undertaken on the 7th of March 2023, historical contents added and reviewed by Dr Anne-Maree Jolly in 2023.

EXHIBIT I PRODUCED – NITROGEN RISK ASSESSMENT DEVELOPED FOR WOODHAVEN GARDENS – ANDREW BARBER 2023

Q. Do you have a copy of this?

A. Yes.

Q. Excellent. Would you mind talking us through your understanding of how this has worked for Woodhaven Gardens please?

A. Okay. So the nitrogen risk assessment tool, is that where we're going with, essentially tries to establish some baseline, rough baseline levels of risk by kind of looking at your intensification across your farming system so it looks at things like our annual fertiliser applied, what our rate of fertiliser applied per application is and whether we are looking to balance our nitrogen applications to the crop uptake so that's via the nitrogen balance or budget so those are your areas that sort of establish your baseline risk and your business. Then there are a whole lot of mitigations through practice and process that then offset that risk so whether it's you

testing so we come into the example that I gave where you're actually ensuring that the fertiliser is only applied if it is needed by the crop. How you're applying that fertiliser, for example, your root zone is in quite a narrow area. We don't have roots where our wheel marks are. We don't have roots where our controlled traffic trams are so if we're coming in and broadcasting fertiliser and chucking it everywhere across the paddock like you would in a pastoral farming system, there's going to be areas where there's zero update of that fertiliser so using something like GPS banded fertiliser application ensures that that fertiliser is right where it needs to be with really highly precise dosing capabilities, so we're able to prescribe our nitrogen applications sort of down to the single kg per hectare which is highly precise. Through all of those mitigation processes that are described within the nitrogen risk scorecard, it then offsets your original risk score and places you in certain categories. So this is a really practical tool in terms of determining risk and likelihood of nitrogen loss and providing pathways for growers for things that they can implement that would help mitigate that. I'd like to point out that this is not the only tool that growers use. There was a comment that growers potentially had 10 years to do something and have done nothing which was disappointing to hear that because the particular witness has been to our place and heard a whole lot of things that have been done and one of the other things that has been done alongside the development of the nitrogen risk assessment tool is the horticultural EMS audit that forms part of New Zealand GAP. Now that is a high prescribed highly detailed process that steps growers through what good and best management practice are like and also counter to that evidence very clearly says what is a good management practice and what is a best management practice, so that definition is very easy for a grower to determine or a regulator to determine because it is written down what practices are good and what practices are best, that steps growers through other ways that they can mitigate their environmental effect in a holistic manner, so one of the real important parts in all of this is not just understanding how our management of nitrogen and other inputs that affect waterways affect the environment, but what our total environmental effect is. So things like

emissions, for example, right, well, yeah, you could say to people, right, you could get your N loss down to whatever number because you're just gonna grow less crops per hectare, but then in order to do that we've still got to feed everybody, right? So we're still going to grow the same amount of food, so now we're gonna go and cultivate more soils and each time we cultivate more soils we're going to increase the loss of sediment, we're going to increase the loss of carbon into the system, so we're going to increase our overall environmental effect everywhere by doing so. So one of the balancing acts that all parties need to be considering here is the overall environmental efficiency of the food production system. That without wanting to rant, the entire globe has a problem of how we're going to feed all ourselves, feed ourselves, feed ourselves healthy food and do so in a way that is minimising the impact on this planet and if we become so singly focused on one area and one input we risk becoming really detrimental to others and we've got to make sure that we're taking steps forward in this journey that are actually sustainable for the planet holistically across all areas of environmental impact, so we – it's where something like the EMS does a fantastic job course it takes into thing – regard things like sediment loss, biodiversity, et cetera, alongside nitrogen losses.

1640

Q. Fantastic, thank you very much for that.

CROSS-EXAMINATION: UNKNOWN FEMALE COUNSEL – NIL

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Mr Clark.

A. Afternoon.

Q. I'm Ms Wright and I act for Mr Day who is a local farmer. I just sort of got two groups of questions, the first just follows on from some of the questions counsel was just asking you.

A. Yep.

Q. Do you have consent as an intensive farming land use under the One Plan?

A. No.

Q. And to clarify, you said there's no say you can meet Table 14.2, are you referring to the operative version or the recalibrated version or both?

A. Both.

Q. And have you heard the discussion in the Court about the 35% reduction?

A. Yes, I have.

Q. Would you be able to make a 35% reduction in your nitrogen leaching?

A. Ah, potentially. There are some real pragmatic difficulties that would need to be considered and I'm happy to step through those. So for example, I'll speak for myself but also –

Q. No, that's what – I just, just the question is would you be able to?

A. Oh, I'm un –

Q. No, do – would you be able to make 35% reduction?

A. I'm unsure. And I could give you the reasons of why I'm unsure if you're interested.

Q. I think that's fine, thank you, just for the purpose of my question. The second group of questions just relates to your primary evidence, do you have that in front of you?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. I do, yeah.

Q. And the page reference to begin is 203.1404.

A. Yes.

Q. And paragraph 87.

A. Yes.

Q. And that second line, you say the relationship between soil and nitrogen concentrations and yield is often described as a logarithmic curve?

A. Yes.

Q. And then you refer to figure 2?

A. Yes.

Q. Are you intending to refer figure 3 which is on the other page, the next page?

A. Yes, I –

Q. And then if you go to your next paragraph, which is 88.

A. Yes.

1645

Q. There you say: “In the fresh cut sector, the relationship between nitrogen and yield becomes more of a flat bell curve shape, see figure 3.”

A. Yes.

Q. I don't think you have another figure representing that curve.

A. No, I can describe the process so with crops like potatoes, if the potato plant starts to run a little bit short of nitrogen, it will just set less tubers so instead of getting six potatoes per plant or seven potatoes per plant, you might get four potatoes, but you've got four saleable potatoes. For leafy green vegetables, take a lettuce or a broccoli, if you start to run short of nitrogen, the crop will yellow and 100% of that crop will essentially become unsaleable so you inversely by short-changing your fertiliser, you actually increase your nitrogen losses because you'll return the entire crop to the paddock so your crop residues will go up, and you would have heard me describe before they're actually your biggest contributor to nitrogen losses, your amount of crop residue that you're returning, so your total overall losses by putting on less fertiliser and not getting your crop will go up. I think it’s really important to draw everybody’s attention to the fact because then your logical mind says, right, let’s make all the growers take all the crop off all the time. Crops require, well, also will require a balance on their organic matter so unlike a pastoral farming system where the grass stays there, the grass gets eaten by the cow and then the cow, I'm in a court, urinates or defecates on the soil returning those nutrients back into the soil and that organic matter back into the soil, we have an exportation system so we're taking that lettuce or broccoli off of the farm. So if we continue to just take everything off and not put organic matter back into our soils, we'll decertify our soils, we'll have no soils to produce food in 100 years’ time and we already see examples in some long-standing growing areas where they are pushed, growers were described as pushing their soils too hard, they've exported too much crop off where their organic matter and soil carbon levels are dangerously low. We've got examples of that in Gisborne and in Pukekohe as growing regions, so we actually want to enable growers to grow in an environmentally holistic manner and that’s often described as

regenerative farming and a big part of regenerative farming is making sure that your crop residues are returning to your soil and then actually supporting that with cover cropping to add organic matter into those systems.

MS WRIGHT:

Your Honour, I'll leave it to the Court to decide if they want to ask for the figure that is missing here.

WITNESS:

That might've been my fault that certainly deleting it, apologies.

MS WRIGHT:

Thank you, Mr Clark.

RE-EXAMINATION: MS BUXEDA – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon Mr Clark.

A. Good afternoon.

Q. I think you should apply your management techniques to the restaurants in town after what you told us at lunchtime.

A. Hopefully they served you some fresh, tasty, healthy, Horowhenua grown vegetables with your lunch.

Q. One of the things that's intriguing me is if this is an issue now that you can't comply with table 14, were you ever able to comply with table 14.2?

A. No. So table 14.2 has been part of the One Plan I believe from its existence and the reasons in that is no growers have gone through the consent process to date is because they have been told by experts that they would not be able to meet the table and like I explained, the only one grower who got consent didn't get consent under the table got consent under good management practice when it was very temporarily a pathway

available. We actually applied also during that timeframe. The one grower who got it, their application was processed first. We were second on that list and the door was closed by the time our application was reviewed.

Q. Okay, thank you. I understand that you've actually achieved a 40% reduction in nitrogen loss over the last few years, is that correct?

A. That's what we modelled under our future state and that's why my answer was could we achieve it, I'm unsure. We haven't gone back and done it with actuals. It was, that was based on looking at our suite of practices we were going to implement and then come up with the number of what that modelled out to be. Now, we know what our input use is or isn't. I'm not comfortable disclosing that to the Court under advice from legal counsel in case future action was to happen. But I can say that that reduction was significant through the suite of practices that we implemented, but how that translates in Overseer I am unsure.

1650

Q. So you haven't actually modelled it in Overseer?

A. Not with actuals, no.

Q. Okay, thank you. We've had a lot of evidence based on theoretical approaches that up to 75, up to 70% is achievable by good management practices. From your experience as an on the ground get your feet dirty and your hands dirty type approach, how realistic is that as a figure?

A. Yeah, I'm glad that you asked that thank you, Commissioner. I nearly fell off my chair when I heard that figure. I do not believe that is achievable in the crop, cropping systems that are most likely not to be able to meet Table 14.2. So what I mean by that, there may be some specific crop rotations in an imaginary world that somebody is growing that could go from there to there and get 70%. I'm unsure. I have seen Ms Jolly's exact work in terms of what crops she suggested were in the rotation and what fertiliser application levels she applied to those crops to be whether they would actually produce a marketable yield because you can grow a broccoli, right. You can grow actually quite, a broccoli, that weighs quite a lot but it doesn't actually have a head. So if you haven't met the nutrient needs of the broccoli in the right timing, all you will grow is stem and leaf.

You actually haven't grown something that you can sell. You can grow a lettuce, but that lettuce will be a giant puffball, right, and the market won't take it because you will go like that and it will be all squidgy. The market wants a firm head of green lettuce. So there's a difference in the world of academia where you're looking can you physically grow something and can you grow something that can sell in the real commercial world. They are very, very different and will allow for different levels of input restrictions. So I think that's another thing that's a really important concept for the Court and stakeholders to understand is there's a difference between growing a plant and growing a plant that's consumable and is marketable. They are very, very different things. So I absolutely do not believe that 70% is achievable. Also, I'm not sure if anybody has touched upon yet, I don't think outside of Woodhaven Gardens anybody else will have any data. So when you're talking about your – they might even have data now. so when you're talking about 2013, they absolutely won't have any data. So Overseer requires you to know exactly how much fertiliser went on every single planting of every single crop. That level of data capture just is simply not there. So when you're looking at a reduction pathway, how do you establish what your baseline was if you don't have the data for what your baseline was? I find it difficult to understand how that's going to be a practically achievable pathway with any sense of rigour in behind it.

Q. Yeah, I understand what you're saying and one of the important things for the Court is to understand both the theoretical approach and the practical and we have to be able to balance both of those things?

A. I think if I may Commissioner just add, there was a statement made about kicking the can down the road. Now, if 10 years ago the growers' feedback had been listened to and we had implemented management practice and best management practice, we would have that data. We would also have had a suite of practice changes that would be leading to better environmental outcomes and we would've had that for a decade. But if parties keep coming to the table with essentially options and you described it yourself as it doesn't sound so much like a discretionary pathway, it sounds like a prohibitive pathway, if that is the only option to

growers then growers are so worried that they're going to lose their livelihoods and the businesses that they don't take action at all because why are you going to spend a whole of money improving if you're going to be told that you're going to be closed down tomorrow? So you'd be nuts to do that. We did that at Woodhaven Gardens, we did it as a huge risk, because we could see that we were gonna be stuck in this tension point of people saying "let's do good management practice" and then other people say "but that won't deliver any change". So we put our hands up and we rolled the dice and we went out there and did it and like I said, we've done it at huge cost, so it's not that growers aren't saying that there's no sacrifice that they're willing to take here, they are willing to move. No growers are saying "don't regulate me" or "that the way we do things are perfect, that we're not willing to change". So we've got things on the table but you've got to regulate us on what we can actually control. We can't put our businesses and our livelihoods and the food and our staff well-being at risk on the fact that it might rain too much one winter and we get shut down. That's just not a way that we can possibly go forward. So if we move into this where we can take a step forward, and I know there's – unfortunately Viv's not – no longer in the courtroom with us, but Viv's on the other side of this debate and saying "oh, my lake's got poor water quality" and Viv also gets veges from us every Christmas and we have a conversation and she understands that we need healthy food available in this country and there is a tension point there. And in Plan Change 2, in my mind, provides a step forward for us to demonstrate how we can deliver environmental improvements while ensuring that we have this really important taonga which is our healthy food. And the result of that is healthier people and we talk at lengthy about things in this country like health and equality, well one of the single biggest drivers of health and equality in this country is inequitable access to healthy diet and we have just got to be really careful as we step forward through all these hoops, through these tension points, that we do actually understand the world is not black and white, understand that it is grey and that all these things are interconnected because this is really important work that we're all doing here today to make sure that we get the right outcome.

Because the perverse outcomes that could come from this could be really catastrophic.

1655

Q. I think you can rest assured, the Court understands we need to consider a lot of things in making this decision and one of those things is that we have had quite strong evidence that 35% is achievable by most CVG growers.

A. Mhm.

Q. And that's an important figure that we have to work our way through. Mr Barber said that he is satisfied that 35% is achievable. Dr Jolly has said that 35% is achievable. What is your view as a man on the ground, do you think from your knowledge of other growers in the region that the majority of them will be able to achieve 35%?

A. I think comes down to two things, whether it's practical in terms of are you going to ask the growers to do an Overseer calc for every single year that is then 35% below, because in some years “yes”, in some years you may exceed that. In other years, if you get a high degree of rainfall or you get really poor yields or the market isn't there, then the potential is “no” and then what happens? So broadly, in a conceptual world where everything is static, yes, I do – and you’d do a one-off Overseer submission, you were through the gate, yes, I could see that being achievable. In the real world, I think there’s real risk that growers, on an individual year, growers will exceed that, well, fall short of the 35% – sorry, get the, the right way around – and then become non-compliant and therefore what happens? Did they cop a fine because it rained too much? I mean, they’re already struggling at that point with the fact that they probably haven't got a very good quality crop, the market demand for that crop has probably gone down because they’ve had too much rain, so then they double up because their yields are poor and then are copping a fine or are they being shut down?

Q. I think there are ways around that though, because you could do it as a five-year running median or something like that to overcome that particular concern.

1700

A. Well, in 2019 to 2022 for a three year period, the Horowhenua experienced close to 150% of its normal annual rainfall for three years in a row. Our fertiliser use correspondingly jumped up 20 or 30% as it should, like, I'm actually really happy with that, as perverse as it sounds in this context, because I want to be realistic because it means that we're testing our soils, we're seeing that we've got nitrogen left over and we're responding according to what our tests are telling us and what we see is that when we are dry, our fertiliser use reduces way down. When we're wet, it goes back up and we can have extended periods of that. If we look at a description of our likely environment under climate change, it is that it's going to be wetter for longer, dryer for longer so the risks of those sort of circumstances are increasing, they're not decreasing. I genuinely see the 35% reduction pathway to be problematic because it still relies on what I made in my sort of initial statements about Overseer that you're regulating off things that are outside of the growers' control. Now, will the suite of practices that are inside the growers' control that they can demonstrate, they can evidence result in substantial decreases to losses, yes, but by regulating on those, it allows for the flex and things that are outside of the growers' control that would drive losses. So if you're worried about laws of averages having less of an impact of water quality, then I would contest that the single best methodology to do that is through regulating practice and I understand that is a change in philosophy from how these things have been thought about in a pastoral context where it has been very output in effect space and in that context of a pastoral context, that makes a whole lot of sense because you've got X number of cows and you're going to go over your limit, so you don't fertilise that paddock and you buy and feed. That's a legit option. If you go and put a whole lot of bailage on a broccoli crop that's running short of nitrogen, it's not going to absorb your bailage. You can't do it. Fert's our only tool. The pastoral context, you could ship your cows off in winter and winter them on another property. We can't be half way through our broccoli crop and just pick those broccolis up and put them on another farm somewhere.

Q. I do understand these issues but put yourself in the Court's position.

A. Yes.

Q. We've been asked to come up with a regulatory framework.

A. Yes.

Q. And to have a regulatory framework, you've got to have something to measure it against and we've been told that 35% is the figure and you're saying it's not.

A. What I think the 35% could be relevant in is the Court could assure itself that across the industry, a figure like that would be achievable through the implementation of good and best management practices. Should it be used to regulate in individual farm and provide consent for an individual farm, I do not think so is my opinion.

Q. Okay. I think you've made your point by the Overseer and I think that was very clear, and the thing that concerns me is we're talking about an alternative tool that has never, ever been tried before in regulation.

A. Yes.

Q. We have no idea how it's going to perform except for some information from the Waikato that suggests it doesn't perform very well at all.

A. I could give – trying to weight my personal interests with the interests of the process. Look, I think we're on record anyway for saying things like our total, and I won't give you the exact number, our total overall fert use has dropped in the order of between, say, 20 to 40%.

Q. What has dropped by 20 to 40%?

A. Our total fertiliser use.

Q. Okay.

A. Through the implementation of good and best management practices. Now, what we've got to make sure is that those good and best management practices are actually implemented on farm consistently across the full grower network. Now, there is a very robust process to do that inside the Horticulture New Zealand EMS and I sit on the board of Vegetables New Zealand, for my sins, and sat there where we unanimously passed to work with New Zealand GAP, which I am not on the board of, to ask them to make the EMS compulsory to be able to trade our product. So, New Zealand GAP from a food safety perspective, if we

want to sell it, then we have to pass the food safety part of the New Zealand GAP order. As an industry, we are asking that the environmental management system part of that equation also be given the same degree of rigour. There is a process out there through agencies like Assure Quality where we can have independent people that are well-trained come in and assess whether those practices are actually happening on farm and it happened with a large degree of rigour and you will, whether you are in breach of your consent or not in breach of your consent will be the last of anyone's problems because they'll be put out of business before that because they won't be allowed to trade, so you won't be able to sell any of your product. So we have a mechanism as an industry to put in really robust practices that we know can limit the amount of input use and therefore limit the amount of environmental effect, that we can follow up with enforcement, that the industry is really supportive of. So we want that, we think that's a good thing, because the first movers in the process at the moment are really punished, so at the moment wholesale prices are in the gutter for, for vegetables and I've got to compete against growers who aren't taking on that percentage of cost burden. I don't produce as cost-effectively as growers who aren't doing these environmental management practices. So to have everybody on a level playing field is really important and Commissioner I know you've mentioned now that you were also in the Plan Change 1 process, it's why it's so important that the regions are aligned in their approach to this, because you'll put us out of business anyways. If –

1705

Q. That's not our desire.

A. If our compliance burden is higher than others in such a low – high-volume low-margin market, we'll be gone anyways, so whether it was anybody's intention or not, because you won't be able to compete. So this is not partial farming where you are mainly moving through a single sales desk or the kiwifruit market where you're moving through a sale – single sales desk. We're out competing against every single grower and we've got to match that price point on the day or it's we don't get the, we don't get the sale and our ability match that price point is

based off what our cost production is and our cost production is highly affected by the amount of environmental management mitigations we're putting in place. So we want a really consistent framework that means we have a diverse supply basis to provide food security across this country because we are one Cyclone Gabriel away from losing it all. Let's say Gisborne puts in the least amount of compliance, all your food gets grown in Gisborne, you'd get another East Coast cyclone, where's the rest of the food? So having these growing hubs spread across the country in the Waikato – you call it Pukekohe, Waikato area and I know they spread down into Matamata those boys, in Gisborne, here in the Horowhenua, in Nelson and in Canterbury is the bulk of this type of food production and it's really important that we keep those strategic hubs a live environment because we risk the nation's food security if we don't.

Q. Honestly, I think we've read the evidence, we've got the message. We have to come up with something that will work from the environment point of view and in terms of something that takes all these things into account. And it's a challenging task. And I'll be quite honest, I was quite attracted by the Nitrogen Risk Score as something to be explored, because I can see the merit of what you're talking about, in terms of improving management practice. We can't just go into it blindly and say – and I'm hoping that with the experts tomorrow we'll be able to explore this issue of what the Waikato information is actually telling us. Because it's no good us saying "yeah, it's great in achieving what you want" but it leaves the environment totally vulnerable. And that's what we have to work our way thru.

A. But I just – that's where I want to be as transparent as I possibly can be and if in a world we knew that this was all gonna play out and I wasn't going to be prosecuted at a later date for the horrendous crime of growing broccoli, then maybe I could be a bit more transparent, but I can give you my very honest assurance that if those practices are put in place and so we have good audit trail and we have good enforcement so that those practices are in place, it will 100% result in deceased nutrient use per hectare of crop grown mainly on the regard that you have a, take the Horowhenua, for example. You had 300 and something growers when

my father started growing vegetables in 1978. I think there's around 50 or so now between Ōtaki and Levin here. Out of the 50 or so that are here now, I know three operations that will probably still be running in the next 10 years, three. So you still have a lot of growers that are just doing things because that's how their dad did it, that's how their grandad did it, right. But if we give them the tools to change and we show them a pathway of how it can be done and you can use industry leaders like us, like the likes of LeaderBrand with their regenerative study in Gisborne, like the amazing work that Wilcox are doing across the country because they grow across the country, then it gives them something curtainable [*sic*] that they can transition to and there will be some growers that actually go: "No, I don't want to make that leap to good management, best management practice, I'm out," and you'll get what you want in terms of environmental outcomes by default because they won't grow the food anymore. And even in that circumstance, let's say we take over a lease of their land or something like that, well, automatically you're going to have 22% less effect because we will retire all the trams, we'll put in the vegetative buffers. In all likelihood, I don't know exactly what nitrogen use that they're growing with, but in all likelihood we're going to decrease that. So even through transition by the players that do want to stay in the market and take that up, that production up, you'll get a significant decrease in your environmental effect. So I think there is a very clear pathway to environmental improvement. It's just that we need to actually work with the industry with a degree of trust and respect as caretakers for that land and that food for a long period of time that they can deliver it. So I can put my hand on my heart, I just swore on *The Bible*, I have no doubt that you see a large degree of reduced environmental effect through the implementation of good and best management practice.

1710

Q. We understand it from the industry's point of view. We have to come at it from a regulatory point of view and we need to come up with something that if necessary you can be prosecuted. I hope it wouldn't come to that, but I'm not sure you're helping us by saying it will reduce. We've got to have something a little bit more than that.

A. Well –

Q. And I don't think you can help us anymore. You've covered it very well.

A. Commissioner, what I would point out is that you're going to go through an audit process, right, so if you aren't doing those things, so if we assume for a moment that if you do those things they lead to some degree of environmental improvement. If you aren't doing those things you will lose your inability to trade because you will fail your NZGAP audit and you would fail the terms of your consent because I'm imagining the consent would be granted on the fact that you are completing some sort of documentation and independent review, that you are doing the things that you said you were going to do. So I think there's a really clear enforcement mechanism there that the Court can satisfy itself would take place if growers weren't doing the things that they were obligated to do.

Q. Okay, thank you. Thank you very much.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Thank you. I think that's probably covered all of the matters that I was interested in but maybe only one just around your reference to the EMS audit process. Are you aware of whether that ever came up in discussions about an alternative to Overseer or a way of using that that as a regulatory tool?

A. I think the industry is being quite vocal that that's preferred methodology. When it comes to farm environment plans, we have been very vocal that the EMS should essentially be the farm environment plan for a vegetable grower. It does the same thing. It's just two things with two different names. I think when Plan Change 2 was being developed it was quite early on in this process. We were the first ever grower in New Zealand to become EMS certified in 2020, 2021. I forget the exact year now. It would be 2021 because we're coming up for review this year and so when this was being put together it wasn't really there and it definitely wasn't there in such a robust manner as it is now. I think the EMS will only continue to gain wider and more supportive acceptance throughout the growing community across the country as more growers are thrust into an environment where they accept they will be regulated because a lot of

growers, this is very new where we have been living in a world where we knew regulation was going to happen for the last 10 years.

1615

QUESTIONS ARISING – NIL

WITNESS EXCUSED

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING
(17:16:10)

COURT ADJOURNS: 5.26 PM

COURT RESUMES ON THURSDAY 8 FEBRUARY 2024 AT 10.04 AM

MS BUXEDA CALLS

ANDREW JOHN BARBER (AFFIRMED)

Q. Good morning, Mr Barber. Is your full name Andrew John Barber?

A. Correct.

Q. Did you prepare evidence-in-chief dated 13th of October and rebuttal evidence dated 13th November 2023?

A. Correct.

Q. Do you have the qualifications and experience set out in paragraphs 1 to 7 of your evidence-in-chief?

A. Correct.

Q. Do you have any corrections to your evidence?

A. No, I don't.

Q. Did you attend Farm System Expert Conferencing on the 25th of August 2022 and 7th of October 2022 and signed the joint statement?

A. Correct.

1005

Q. Did you attend Farm System Commercial Vegetable Growing Expert Conferencing on 10th of February 2023 and sign the joint statement?

A. Correct.

Q. Did you attend Commercial Vegetable Growing and Planning Expert Conferencing on 14th of March 2023 and sign the joint statement?

A. Correct.

Q. And do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. correct.

Q. Excellent, thank you very much. I just have a few questions for you before I hand you over to my learned friends and the Court of matters that have arisen in the first week of hearing and yesterday. There have been questions from the bench about the evidentiary basis and robustness of the nitrogen risk assessment tool contained in the council's version of

PC2, could you please speak to your experience in developing and testing this tool?

A. Very good. The nitrogen risk assessment tool has been driven and developed as part of this process with the experts and those various meetings that you referred to. In my opinion, it is possibly one of the most significant steps forward in terms of actually getting change on the ground. The nitrogen assessment tool is a way of driving growers to practice change. It's a system of signposting and the really, really powerful aspect of this tool is it ensures that the mitigations within that tool are proportionate to the level of risk so really high risk, you have more mitigation that you need to achieve, low risk, less mitigation but, honestly, it is possibly one of the best systems that we have.

Q. Okay, thank you. And there were questions from the bench to Dr Jolly in the first week of the hearing in which she mentioned that you had more of an understanding of the SVS tool and how it is tracking, can you please comment on this for the Judge and Commissioners?

A. So the SVS tool is an industry project. It's a four year industry project that I manage and deeply involved in. It is a decision support tool so underline the word "support", it's a decision support tool. It is again a significant step forward for the industry because what it does, we often refer to it, we make the invisible visible because as has been described previously, the flows of nitrogen through the vegetable system is extremely complicated. This tool has inputs and outputs, you know where your nitrogen is coming from, you know where it's going to and, again, I think a really powerful aspect of this tool is it's a learning tool, it's a knowledge tool so the conversations that the growers then have with their trusted advisors or their other decision-makers sitting round the table is really, really powerful and the other aspect of that is it integrates soil nitrogen testing. Soil nitrogen testing, again, is one of those other or the second most powerful aspect of improving the utilisation of nitrogen. So this tool integrates those two and I think it's, again, really, really powerful.

Q. Thank you very much. Now, just taking us to the hearing proceedings yesterday, Mr Clark produced your worked example of the NRAT for the

Court, are there any comments that you'd like to highlight in regards to your experience with that?

A. Again, so what we've done with the NRAT through this process, it's been kind of iteratively developed over the last two years and there's been growers both within this region and the Waikanae and Pukekohe who have tested and, you know, road-tested this tool and, again, it points towards the mitigations that have the most impact on reducing nitrogen leaching. So in the case of Woodhaven, they have an extremely low score in that work example because quite frankly they're at the cutting edge whereas a grower today without budgets and without soil testing will have a high score, but the really, really powerful aspect of this tool is that to get their score down, then they need to implement practices and it's practices that are auditable so a practice can be seen, a nitrogen budget can be seen, soil test can be seen and shown to an auditor and they're the practices that will result in better utilisation of nitrogen that will then result in less nitrogen leaching.

Q. Excellent, thank you and finally, the Court has asked for an example of a nutrient management plan in their minute of the 25th of January 2024, could you please talk to the farm environment plan that you provided and it's part of the common bundle but I have copies for the Court if that would make it easier.

1010

THE COURT: JUDGE SEMPLE TO MS BUXEDA – REFER WHERE IT IS (10:10:07)

EXAMINATION CONTINUES: MS BUXEDA

Q. Volume 3, tab 11, that is 302.0610. I can repeat that reference if you'd like. So that should take your Honour and the Commissioners to the NZGAP environment management system MS add-on. Could I ask you to talk to this for the Court?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Okay, so the NZGAP Environmental Management System Add-on is, is a farm environment plan and the way that the NZGAP system has been

set up is the grower works through a number of good and best, best management practices which is what you see in the template there. As the grower works through that template then they essentially answer "yes they do a practice", "no, they don't" or "they're partially doing it". And then what they need to show is evidence about why they've answered that. So if they have answered "yes" to a practice then they need to show "I'm doing a nitrogen test, here's the example of the nitrogen test" and that's what they'll show the auditor. Equally, the really powerful aspect about Farm Environment Plan is it's kind of it doesn't matter where you stand today, it's actually where you stand in a year's time, in two years' time, in three years' time, and so it comes down to a – comes down to the action plan and that's what's audited the next time is how far have you progressed on the actions and quite frankly that's what the environment sees, that's the really powerful aspect about a Farm Environment Plan is that it comes down to that action list and that's, that's what the environment sees. The environment sees that the grower has got a nitrogen management plan and they've got more knowledge, they've done more testing, they've got erosion sediment control measures in place.

Q. And just for clarification, how does that relate to the Nutrient Management Plan?

A. So a Nutrient Management Plan is, is a system that documents multiple, multiple aspects and within the Farm Environment Plan there's questions about what's the soil type, so clearly the soil type has a big impact on your, on your nitrogen use, so you document the soil type, you document what your crop rotation is. In the Farm Environment Plan you document that, you know, you're recording rainfall. And again, there's a question in there that says "are you applying fertiliser based on the crop uptake" so clearly that requires a nitrogen budget, so that's what shown to the auditor. And the SVS Project, the Sustainable Vegetable Systems Project creates that nitrogen budget, or the ability to create that nitrogen budget, so that's all contained within the Farm Environment Plan which is the aspect of the Nutrient Management Plan.

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning Mr Barber.

A. Morning.

Q. At – I'll be referring to paragraph 64 to 69 of your evidence so you may wish to go there, it's on bundle number 202.1241. Have you got a copy of your evidence there?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. I've got 1227.

Q. If you want to just refer to the paragraph numbers, it's paragraph 64 of your evidence-in-chief?

A. Yes.

Q. Right, so you say your expertise isn't in Overseer modelling.

A. Mhm.

Q. And that's why you haven't been involved in the expert conferencing on that?

A. Mhm, correct.

Q. And that – I'll return to these paragraphs, but your evidence is that the NRAT tool will drive an improvement in nitrogen leaching equivalent to what was anticipated in the PC2 decision.

A. Mhm.

Q. Which is a 35% reduction across the industry, is that right?

A. Mhm, yeah.

Q. The NRAT tool doesn't allow a comparison of leaching numbers between different farm sectors such as pastoral and CVP, does it?

A. The NRAT doesn't produce a leaching number.

Q. And you can't compare between sectors because there are different NRATs for those two sectors?

A. Correct.

1015

Q. So in your evidence, you say that the sustainable vegetable systems tool or SVS is a tool for nitrogen budgeting that's integrated with soil testing.

A. Yes.

Q. But you state that the SVS doesn't have sufficiently robust end leaching output for regulatory purposes.

A. Correct.

Q. And you explain that the relationship between the NRAT and the SVS, which was developed between industry and MPI, or perhaps I can just ask you to explain the relationship between the NRAT and the SVS.

A. Yes. So within the nitrogen risk assessment tool, there is a question that says do you do a nitrogen budget and what the SVS project has delivered is the ability to prepare that nitrogen budget.

Q. Right, thank you. I think at paragraph 45 you say that it makes the NRAT practical and achievable.

A. Yes.

Q. Is the industry, the horticultural industry, looking to roll out the NRAT or a scorecard similar to the Fonterra Risk Scorecard throughout New Zealand integrated with the SVS?

A. I believe so. Look, everything moves along, right, so the farm environment plans are absolutely based on a risk assessment and the idea about a farm environment plan is that the mitigations you do are proportionate to the level of risk. To understand the level of risk, you need to have done a risk assessment whether that's for soil or nitrogen so within the existing farm environment plan, there is already a risk assessment for nitrogen or nutrients. I think the NRAT as it sits now is a step further beyond what's there at the moment so I believe it will be – look, I can't say what NZGAP will do but I am quite closely involved with – I think this will be incorporated and into the national one, national programme because it is a significant step forward, keeping in mind, of course, that the current farm environment plan is developed in 2019 so we have moved on significantly since then.

Q. So you yourself aren't in the position really to say what the industry would be seeking if the NRAT gets accepted into this particular –

A. No, but if NRAT does get accepted within just a regional context, then what NZGAP has is the ability to create regional rules so it can state in its regional rules to its regional growers within this area that you must complete an NRAT. That's how they'd do it before rolling it out nationally but, again, I think nationally is what will happen.

Q. Thank you. Now, you don't have to go there but at paragraph 58, you say that: “Risk assessments are adopted in codes of practice for many industries,” and at paragraph 59 that: “This will meet the requirements of PC2,” is your view of the requirements of PC2 practice change to reduce N loss?

A. No. Correct.

Q. Is your view of the requirements of the One Plan practice change to reduce N loss to a particular level?

A. Like I – yes, while I haven't done the absolute modelling and so I rely upon at those expert conferences, others who have done the modelling, they are modelling good and best management practice and that’s what the NRAT delivers is good and best management practice and, again, that’s the only thing that the environment sees is what the grower is doing and that’s what’s delivered by the NRAT.

Q. Thank you and so that would take us well to paragraph 66 of your evidence where, again, you estimate how much the GMPs and the VMPs will achieve across the industry.

A. Mhm.

Q. Which is the 35% reduction in N loss. Now, there’s no mechanism, is there, with this tool to translate that into checking the extent of nitrogen reductions on farm and modelling that through to what you’re expecting to be seeing instream, is there?

1020

A. That’s, yeah, absolutely, it's absolutely practice-focused, it's not – there’s other tools to do, to do that, that modelling number.

Q. Overseer?

A. Yeah.

Q. Well, you better, you –

A. Sorry, well, yeah, there –

Q. – you should state, yes?

A. Like I said there’s a – I think we heard yesterday, there’s a number of tools, but it seemed that Overseer is clearly, is clearly one of them.

Q. Thank you. So in the exhibit that was produced yesterday, exhibit 5 which is the nitrogen risk assessment developed for the Woodhaven Gardens

as part of the grower testing process for the NRAT, do you have that there?

THE COURT: JUDGE SEMPLE ADDRESSES MS ONGLEY – EXHIBIT I (10:20:57)

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. Apologies, exhibit I, I must have misheard yesterday, thank you, exhibit I?

WITNESS REFERRED TO EXHIBIT I

A. Thank you, yes.

Q. And if we turn to page 6 which is the definitions in that exhibit.

A. Mhm, correct, yeah.

Q. We have the definition of "productive area", have you read the evidence of Alison Hughes?

A. Was that the one that was circulated last?

Q. No, it's her evidence-in-chief?

A. I'm not super familiar, I possibly have.

Q. Yes.

A. Yeah, fire, yeah, fire away.

Q. All right, well, with the pastoral NRAT, she raises a concern that the area should relate to the whole of farm area as can be modelled in Overseer, because if you confine it, as in here, to the vegetable growing area with the CVP example you're not getting points for doing things like retiring riparian margins or retiring other parts of the grower's farm. And the pastoral scorecard experts have worked on the pastoral scorecard to input that into the points system, but the CVP experts have not done that process, have they?

A. Yeah, yeah, that's correct.

Q. And why is that?

A. Again, it's focused on the productive area that the grower is managing for his operation. My understanding is those other aspects could be built into the – built into a consent, but our focus in this case was on what the grower can control within their, within their, you know, their growing operation. It is a – it could potentially, if you widen the definition, it could

potentially also produce some outcomes that aren't the best for the environment. If you divided your nitrogen – your total nitrogen input by a much bigger area then your nitrogen application is going to be – showed to be very low. I think from a, from a – from the perspective of what the grower can manage and, and driving change then the way that we have it defined in this is the, is the best approach.

Q. But it doesn't provide incentives for wider riparian margins, for example?

A. Ah, depends what, yeah, so riparian margins are contained within the Farm Environment Plan, so a Farm Environment Plan – don't forget, a Farm Environment Plan covers multiple aspects, not just, not just nutrients, so a Farm Environment Plan would incorporate those under those aspects. I don't think it's necessary to confuse the situation by including it within this and within this aspect of the nitrogen risk assessment.

Q. All right, thank you. Now if we go to paragraph 69 of your evidence, Mr Barber?

1025

A. Yes.

Q. And there you say: "At a high level there has been a 4% increase in GMPs and 5% increase in BMPs between 2020 and 2023," and you illustrate this through the table?

A. Yes.

Q. Does the distinction between GMPs and BMPs in the vegetable sector change over time?

A. Absolutely. Like everything, standards keep on increasing right. So what we consider to be a GMP, a BMP now, in the future will undoubtedly be a GMP, a good management. So what's considered best will in the future become, be considered good and to illustrate that point, good management practice right now is a soil nitrogen test every, every five years. BMP, best management practice, is a soil test every year. I can absolutely see the BMP will get bumped up to a GMP under the next iteration.

Q. Particularly with the SVS?

A. Oh, absolutely, yeah, yeah, yeah, yeah. To be fair, like that also does reflect that everything moves on, right. So soil testing now that more nitrogen focused is significantly more advanced now than it was back in 2019 when that good management practice was a level set. That's life, right. Hopefully we're getting better.

Q. Thank you very much, I like your optimism.

A. You've got to be an optimist.

CROSS-EXAMINATION: MS WRIGHT

Q. Good morning?

A. Good morning.

Q. I'm Ms Wright. I act for Mr Day who is a local farmer. I'm going to ask you some questions on three different topics and the first of those actually follows on quite nicely. It relates to GMP also. First is, were you here yesterday when Mr Clark spoke?

A. I was, correct.

Q. My understanding of one of the points Mr Clark made was that there's a lot of diversity between the operations in the area in terms of current uptake of GMP. Would you agree with that?

A. Yes, yeah. Yeah, absolutely.

Q. And so consequently is it correct that there's probably a lot of diversity in terms of N, nitrogen leaching, as between different operations?

A. Yep, absolutely.

Q. Sure. Now, could I just take you to your evidence, primary evidence please which I think you have with you there?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. And it's more just to orientate you with the question?

A. Yep.

Q. So I'm around paragraph 27 which is on 202.1234?

A. Yes.

Q. You talk about GMPs?

A. Yes.

Q. And farm environment plans?

A. Yes.

Q. Do you think it's fair to say that some soils are just so leaky in terms of nitrogen loss that they shouldn't be used for cropping and that would be a good management practice?

A. Again that's, the really powerful aspect about a farm environment plan is that it becomes paddock specific, right. So it can – if the risk assessment found that it was so leaky that it couldn't be cropped, then that's what would double up. I don't, I don't, I don't envisage that would be the case because there is management practices that occur to mitigate those risks. So it could well be that on a higher risk soil that the frequency of nitrogen testing is increased. Yeah, so again, the mitigations are proportionate to the level of risk. If they're high risk, then you do more mitigations to offset that level of risk.

Q. So, but it might be fair to say the level of proposition that if you are dealing with a catchment with significantly degraded water quality, a very leaky soil and a very high leaching crop that good management practice might be not to use that area?

A. Potentially. But don't also forget that's kind of taken into account when you do that soil nitrogen risk assessment because there's different, there's different target levels or different scores to attain and so the way those different scores are determined are based on essentially two of the key drivers for nitrogen, you know, leaching by physical being the plant available water which is what you're referring to, the leakiness, and rainfall. So if you want to a low plant available water soil with high rainfall then you've got a higher – a lower number you need to achieve and the lower number is achieved by doing more mitigations. So look, I don't think I could absolutely say that there are some soils would be absolutely ruled out, it's on a case-by-case basis, reflective of the location.

1030

Q. So there might be some situations where it would be inappropriate to use, or are you saying that there are no situations ever –

A. There's no situations that I've come –

Q. – where it might not be appropriate?

A. – there's no situations that across where you'd say you absolutely can't grow on this soil.

Q. The next group of questions I want to ask you about relate to discretionary activities and are you familiar with the discretionary activity category of consents, before I ask you at what –

A. Yeah, ah, fundamentally I think, I think I do. I'm not a planner but I think I, I think I understand enough.

Q. Sure and feel free to ask for clarification.

A. Yeah, I will.

Q. Do you have in front of you or with you over there the bundle of supplementary documents that was provided? I think you do. Liam would you possibly be able to help, Mr Registrar, the fresh bundle of supplementary evidence, I just know the witnesses had some problems finding it yesterday.

WITNESS REFERRED TO BUNDLE OF SUPPLEMENTARY EVIDENCE

A. This definitely has the weight of a planning document, so...

Q. If you refer to tab 16. So this is a version of the plan provisions that is the focus of this proceeding that has been put forward by the appellants. And I am looking at page 14-5 and those numbers are on the, if you're looking at it in a landscape format, the bottom right corner, just give you a moment.

A. Yeah. You said – oh, was it tab 16?

Q. Tab 16, so you should be looking at –

A. Yeah, 401.0419?

Q. Yes. And apologies, I don't have those numbers in front of me, I'm working off the number of the document itself as opposed to the volume, the number, page numbers.

A. Okay, sorry, yeah.

Q. So that's at policy 14.6.

A. Oh, yes.

Q. And the bottom page number is 14-5, just to make it very confusing.

A. Yes, yeah, yeah.

Q. And a slow process to get there.

A. Yeah.

Q. And to orientate you, this would be – this is a policy that a decision maker when looking at a discretionary activity consent would be looking at?

A. Mhm.

Q. Now to start, I'm correct that most CVG is on class LUC 1–3 land?

A. That is correct.

Q. So if we look down here at paragraph (ba) and then D, this is a policy consideration: "The decision maker must be consistent with having more intensive land uses on land units with higher productive capability and discourage land uses with on" – I think that's meant to be – "higher more intensive land uses on lower productive capability." That would support, that would be, provide policy support for an application for CVG in this region, wouldn't it?

OBJECTION: MS BUXEDA – TRENDING INTO PLANNING QUERY (10:34:32)

CROSS-EXAMINATION CONTINUES: MS WRIGHT

A. I might defer that to a – I'm sure there's others far more qualified than me to answer that.

Q. Sure.

THE COURT: JUDGE SEMPLE

Yes, Ms Wright, it probably – I suspect I know where you are going in terms of saying how does an applicant – how would an applicant and Mr Barber might be able to assist with that, but he's probably not able to determine what the planning implication of the provisions are.

MS WRIGHT:

No, your Honour, my intention was just to have his view in terms of understanding how CVG works in the region, whether he considers that, yes, it is mostly on highly productive land, therefore this speaks to that. But I think he's answered that.

1035

THE COURT: JUDGE SEMPLE

I think he has answered that, yes.

MS WRIGHT:

Thank you, your Honour.

CROSS-EXAMINATION CONTINUES: MS WRIGHT

Q. Mr Barber, are you familiar with table 14.2 in…

A. Yes, I can't quote to you verbatim, but I am, I have heard 14.2 mentioned quite a few times.

Q. And has the horticulture industry applied the limits of table 14.2 for new CVG?

A. I don't understand the question.

Q. Or considered new commercial vegetable growing enterprises as they might meet table 14.2 as far as you're aware?

A. Look, I haven't been involved in that. That's modelling. Like I say, I'm very focussed on the practices which achieve it not the modelling outcome.

Q. And before you said that one of the benefits of the risk assessment tool in your opinion is it acts as a signpost of expectation for growers.

A. Yes. Of mitigations it signposts growers to the mitigations that are proportionate to the level of risk, yes.

Q. But table 14.2 does that too, doesn't it, but putting up a post at the level of leaching that is expected, doesn't it?

A. Yes.

Q. Conceptually it does, doesn't?

A. Look, conceptually it does. I don't feel qualified enough to answer questions about the level of nitrogen leaching. I rely upon others to…

Q. That's fine. Your point was made at the level of proposition of signpost concept and you've answered my question so thank you.

A. Yes. You're welcome.

CROSS-EXAMINATION: MR WILLIAMS

Q. I won't take long, Mr Barber. I'm appearing for Forest and Bird.

A. Yes.

Q. I just have two questions for you really. The first is that you've talked about a number of different decision support making tools.

A. Yes.

Q. And I just wanted to be clear that those tools could be used in conjunction with Overseer.

A. When we talking about decision support tools, there's a multitude of decision support tools, that's absolute –

Q. But the ones that you've been talking about so we're talking about the farm and management plans –

A. Nitrogen risk, yes.

Q. – the nutrient management plans, the farm environment plan, also the NRAT and your SVS.

A. Yes, sustainable vegetable systems –

Q. Yes, so they could be used in conjunction with Overseer.

A. Without question but I think Overseer in my opinion doesn't drive on the ground change so you'd get a – you understand what the variability is –

Q. Mhm.

A. The advantage of the other decision support tools, they are, and underlining the word "support", they support the growers' decision-making on practices and that's where their power lies. The NRAT and the budget tool absolutely and soil nitrogen testing are absolutely decision support tools that will result in reduce nitrogen leaching.

Q. And in the proposed NRAT itself, there's two soil health factors, as I understand it, that are included.

A. Yes.

Q. So ensuring you've got covered crops, minimising the value periods and the catch crops, can you think of any farm practices that could improve soil health?

A. Look, there are definitely other farm practices but the experts in developing this NRAT started out with a very large toolbox and bought it down to these key ones and that's what the points reflect, the key practices that will result and reduce nitrogen leaching, that will result in improved optimisation of nitrogen are those ones in the NRAT and you'll see the two keys ones in nitrogen budget and soil testing and hence that's why they have the biggest points. As you go down, there's other

mitigations that include cover crops, reduce value period, all those things are part of it.

Q. From a farm systems perspective, do you see any risk that other possible good practices specifically talking in relation to soil health would not be considered by farmers because once the NRAT is there, they see these are the ones that score that's all we need to worry about?

1040

A. Actually not, because keeping in mind the NRAT is a risk assessment tool for nitrogen leaching, it sits within a Farm Environment Plan. A Farm Environment Plan has all those other aspects that they're talking about, biodiversity which we referred to earlier, erosion sediment controllers, there's pages upon pages about erosion sediment control which again is another mitigation, whether it's a buffer strip, a sediment retention pond, cover crops, they're all within the Farm Environment Plan, so don't forget the NRAT doesn't sit by itself, the NRAT – God, it's an awful acronym isn't it – the Nitrogen Risk Assessment Tool sits within a Farm Environment Plan, so don't look at it in isolation.

RE-EXAMINATION: MS BUXEDA – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning Mr Barber.

A. Good morning.

Q. We meet again.

A. We do. I've been more succinct this time than last time we met, so...

Q. From the Court's point of view, well, from my personal point of view, I understand the benefits of the Nitrogen Risk Assessment Tool –

A. Yeah.

Q. – in driving change. The issue for the Court is regulation.

A. Yes.

Q. And the issue we have got to look at is how can it – what's the best way of regulating to achieve the outcomes required by the One Plan, which is a fairly significant reduction in nitrogen.

A. Yes, yeah, yes.

Q. So that's where my questions are coming from, trying to understand that.

A. Yes.

Q. And in your reply evidence to PC2, you said: “My estimate of a 35% reduction in nitrogen leaching is informed by both the Bloomer Overseer modelling and your own experience of working in this field.”

A. Yes, yeah.

Q. So I take from that, that the 35% figure is based primarily or fairly heavily on Overseer inputs to –

A. Yes, yeah.

Q. Yes.

A. Certainly this is the only way you can work it out at the moment, that's correct.

Q. Yes, so if we’re relying on 35% being achieved, and it was derived initially by Overseer, should not Overseer continue to be the measure that’s used to determine the level of reduction that’s achieved over a certain period of time?

A. IN my opinion no. In my opinion, the Nitrogen Risk Assessment Tool uses the exact same good and best management practices that are then consequently modelled in Overseer. My criticism is that for the last 10 to 20 years we’ve debating this nitrogen leaching number and quite frankly how far have we got other than, other than having very, very long debates about it. It gets fixated on a number and I absolutely understand that we need to have a number sitting there, but what the environment sees is the practices that are done on the ground and that's what the NRAT does. So it uses that same – those same good and best practices that are then, that are consequently modelled in, or you know, subsequently modelled in Overseer, so that’s what gives me confidence that there will be that 35% reduction. But the 35% reduction will only happen, not by somebody sitting in an office modelling, modelling away and creating a number and giving it to a grower, that 35% reduction will happen when a grower does

their NRAT and then to get to the score they need to they have, they have to do a nitrogen budget, they have to do soil testing and that's what drives the change. My confidence in the fact of the 35% will achieve is because it's the same good and best practices that are modelled by somebody else, but the grower does the NRAT, the grower does the Farm Environment Plan, the grower does the change and that's what the environment sees. The other aspect about that is what – there's stuff that just absolutely cannot – and look, I'm not an Overseer modeller, but there is stuff within Overseer that cannot be modelled and that's the golden stuff, that's the knowledge. The knowledge is what, is what will make the change. It's increased knowledge. So the SVS tool, the Sustainable Vegetable Systems budget creates conversations about nitrogen flowing through the system which is incredibly complicated and incredibly difficult. You can't, you can't model improved knowledge within Overseer. So I know that the things you can model within Overseer have been shown to do a 35% reduction and on top of that, we know you're just going to get more greater knowledge. The industry, you know, the industry's knowledge improves. So I have complete confidence that that's what will be, that is what will be achieved. On the ground, that's where you have the NRAT. On the ground, that's where you have farm environment plans. On the ground, those farm environment plans have an action list, that's where the change will occur, so I think that's where it should sit.

1045

Q. One of the challenges I'm facing here is that we've had a lot very strong views from the industry that this will be achievable. We will be having some hot tubbing later on the results from the Waikato and that is something we will have to take into account. One of the issues we have to consider is that the risk scorecard may not be possible for scope reasons or for merit reasons. We haven't worked through those issues yet. So if that were the case and obviously it was the only option for measurement, would it not be the case that even though it's got limitations, they would be the same limitations for measuring at the start and measuring at the end, so you would be able to get some reasonable comparison based on Overseer and the follow on question from that is

would it be possible to use both so that you actually got some, a track record with using Overseer and the NRAT together to see if there is actually some merit in, you know, does it support your argument?

A. Look, I won't, I think it's outside of my capability to discuss how Overseer itself works and there is certainly others who will describe it to you. Overseer without question has its place. I don't believe its place is in driving practice change within the commercial vegetable industry. I think the practice change will be driven by farm environment plans and farm environment plans, NRATs are part of that farm environment plan and nitrogen budgets are part of those farm environment plans and I think that's where our change will be driven. It's not saying that Overseer can't be used, you know, to try and – I think Stuart Ford talked about understanding the trajectory of travel, right.

Q. That's what I'm talking about exactly?

A. Yeah and at a much higher level I think absolutely that's – you know, accepting all the variability I think the difficulty is if you then said: "Thou must show an Overseer budget, and Overseer model that is, that shows 35% reduction this year and it shows 35%, you know, every single year." That's just, that's, I don't think that's achievable.

Q. I'm not necessary thinking of that at all. I'm trying to get the concept right to start off with?

A. Yeah.

Q. Now, when I asked you a question in relation to PC1 about the reduction that could be achieved using the nitrogen risk scorecard, I think your answer was that it was not possible to predict how much reduction there would be, but in this case you're saying you're confident there will be a 35% reduction. Can you please explain the difference in your answers?

A. My confident has grown through this process with working the farm, with the farm system experts. So my confidence has grown because the things that they're modelling within Overseer are the same things that we have within the NRAT tool and so that gives me the confidence that those reductions are achievable.

Q. Well, that's fair enough, but you've made your commitment to the 35% reduction in PC2 before I asked you the question in PC1 and you were

not prepared to make that commitment then. I would like to understand why?

A. Yeah, I think, I think, I def, well, lisy, my confidence has grown through this process, so yeah, I'm confident that's what, that's what is achievable.

Q. I think that's probably as far as I want to take it for the moment, thank you. I said very early on in the piece that there may be a role for both tools and I still think that's worth exploring?

A. Yeah. Like I said, I think there's places, a place for all of them, right. But the on the ground change is definitely, is definitely the place for the NRAT and the farm environment plans so, yes.

1050

Q. Thank you.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just want to follow that up a little bit as well and tease that out a little bit more because in answer I think to some of those questions, you have talked about, and I think you've used the phrase in relation to Overseer and I understand you're talking about the numbers in table 14.2 but we need to have a number sitting there, Overseer has its place, and what I'm I guess struggling to understand is that for CVG, what would Overseer's place be because it seems that what is being proposed is that for CVG either, you know, that there would be a scorecard and effectively CVG would be using that because that's the point, that's the point number that goes into the revised table into the schedule and CVG would be looking effectively at that point number, so Overseer it would seem to me under what's being proposed here would not have a place and so I'm just trying to understand what you mean when you say that there is still a place for those numbers for those Overseer numbers in relation to CVG.

A. Yes, absolutely and possibly this question is better directed at those who are far more familiar than me with modelling in Overseer, but my understanding is if you take it a level up, right, if you go a level up and you model at a catchment level, then that's certainly where, you know – if your outcome is you've got to try and determine what's coming, what's flowing into the environment, NRAT doesn't do that. The NRAT's going

to drive the practices that will result in your lower number, but the NRAT doesn't produce it whereas that I think is the place. The next level up, I don't believe it's at that farm level, I believe it's the next level up.

Q. Right, so I understand you to be saying that for a commercial vegetable grower on an individual farm or an individual enterprise that from their perspective, Overseer is not a tool that they would be involved with or using, they would be sitting within a farm environment plan which would meet the definition of a freshwater plan.

A. Yes.

Q. They will be using the SVS and the NRAT to effectively inform that farm management plan.

A. Yes.

Q. That's what they would go off to a consent authority with and that would be what would be showing that they would meet the points limit, if you like, within the table.

A. Yes, absolutely. And so to your point, Overseer has its place but I don't believe it's –

Q. Yes, but it's not in the individual consenting of farms, is that what I understand your position to be.

A. 100%.

Q. All right, thank you.

FURTHER QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Your Honour, can I just follow up because that's something that's been exercising my mind a lot as well and as I said in PC1 on many occasions, I think it's important that people go into these plan changes with eyes wide open and the evidence in front of us here is that Overseer is the only model to my understanding that is available to do that catchment modelling in the future.

A. Yes, that's my understanding as well.

Q. Therefore it's important that the information needed to support that whenever it's done by the regional council is collected now rather than in five years' time, so this is why we're interested in the role of Overseer not

just in the farm consenting but in looking at the overall management to deliver the One Plan in the future.

A. Yes.

Q. So I think people need to just start thinking about this as to how you can help us to build these things in so that the plan will work as well as it's capable of doing within the shortest possible timeframe.

A. And that's the really powerful aspect of our farm environment plan. It collects this, array of information of which it can feed into things like Overseer, so historically you, you know, if we think about going forward, you'll see in my evidence we've got a dashboard which shows mitigation changes, right, it's proportion mitigation changes so how many growers have installed or are now doing nitrogen budgets, for example. You can put that into Overseer in the future and model that. Overseer hasn't, in my opinion, driven the use of that budget because that's been done through the NRAT and through the SVS but the farm environment plan, don't forget we're talking about, you know, the whole thing, will inform those that sit there and run those regional Overseer models or Overseer models that are elevated to a regional level.

Q. Well, you say it's been done by the NRAT but how many people are actually using the NRAT for that purpose right now?

1055

A. So the NRAT has been iteratively developed over the last I think two years now so within horizons, I can't remember the exact number off the top of my head, I'm going to say around 12, right, but it's also been tested in the Waikato and Pukekohe and, again, the really good thing about farm environment plans which, as you heard yesterday from J Clark, who is on the board of NZGAP, they are, sorry on the board of Vegetables New Zealand, they're thinking about making the EMS, so the farm environment plans compulsory so within the farm environment plans, there will be a requirement even if it's only at a regional level to do an NRAT so you will get 100% of the growers completing those NRATs.

Q. My point was you're talking about is it's in existence now universally but it's not and there's a lot of learning to be done. This is (inaudible 10:56:09).

A. Yes, look I think we've done a lot of learning with it over the last two years. If you compare the risk assessment tool within NZGAP now for nitrogen, the nutrients, this nitrogen risk assessment tool, this latest version is a step forward, right, we keep progressing but, yes, if it becomes a rule within the horizons, then it will be implemented within the regional rules within the farm environment plan so it will be taken up by all commercial vegetable growers.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

COURT ADJOURNS: 10.56 AM

COURT RESUMES: 11.04 AM

MS SCHARTING CALLS
GILLIAN MARGARET HOLMES (AFFIRMED)

CROSS-EXAMINATION: MR SINCLAIR

(FTR audio not restarted after break, no audio recording until 11:21:19)

CROSS-EXAMINATION: MS WRIGHT

Q. ... page 202.1320.

A. Yes, is it figure 3 of that memo?

Q. That's correct.

A. Yes.

Q. I'll just make sure the Court's at the right page, your Honour, 202.1320. And this figure here shows the Hoki 1A and 1B together?

A. Correct.

Q. Is the SVGA, with the majority being the Hoki 1A. And then if we look at that, at table 6, just to the page on the left, Horticulture is only about 7% of this entire area, so we might say, say 7% of this whole area, so it would be maybe 5% of the Hoki 1A area, but we can work on the seven?

A. Yeah, yeah, the seven, yeah, I can't comment on five, yeah.

Q. So it's 7% of that area. So when pairing the level of nitrogen loss, we have approximately 7% of the land contributing 25% of the nitrogen load?

A. Yes, but you need to remember from a – it's the total load to the downstream environment that is – that from a water quality perspective, that's the important point.

Q. But from a water quality perspective, managing that 25% is important for –

A. It is important, yes, but that it also not –

Q. – enhancing water quality?

A. – it, yes, but also in both of those catchments CVG is not the biggest contributor of load.

Q. But from a water quality perspective, whether that 25% is the biggest contribution or not, managing 25% –

A. Managing it, yes.

Q. – is still an important aspect of improving water quality?

A. Yes, I agree, yes, yes.

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning, Ms Holmes.

A. Morning.

Q. Just following up on some questions that Mr Sinclair asked you. By reference to the map in your evidence at 202.1321, which shows the Horowhenua FMU land use and the water management subzones.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Is that figure 4?

Q. In the *Jacobs Report*, 202.1321.

A. Yes, yeah.

1125

Q. So can you just clarify please the areas over which Horticulture New Zealand is intending that the cropping rotations could occur? My understanding is it's across water management subzones?

A. I have to – yeah, yeah, I was looking at the water management zones in my view.

Q. So what, over what expanse of or area is Horticulture New Zealand seeking that crop rotations occur, can you confirm that please?

A. You might have to confirm that with Ms Drury who is coming on next, our planner, just to confirm.

Q. All right, so you're not sure whether it is being sought –

A. I'm just, I'm just checking.

Q. – for example that somebody who has a growing area in Mana 13E could rotate their crop to –

A. I do apologise, it is, we did look at the FMS scale.

Q. FMS scale?

A. Apologies, yeah, sorry, just, I just re-read that notice, FMS.

Q. All right, thank you. And so were you involved in the council level hearing?

A. I was not.

Q. And so you'd be aware, wouldn't you, that there are more sensitive receiving environments in some subzones than others, and an example is lakes which act as nutrient sinks in that the water is not turned over as frequently as in rivers and streams?

A. Correct.

Q. And so I think you said to Mr Sinclair that that sort of risk would get assessed in the NRAT in the FMP?

A. Yes.

Q. And so who would get to look at that, would it be the council and the applicant?

A. Well, it would – you'd have to put that in as part of the consent application.

Q. In the Waikato Regional Plan Change 1 which you have been involved in.

A. Yes.

Q. You will be aware that Horticulture New Zealand agreed that the Whangamarino Wetland should be excluded from that sort of regime?

A. Correct, yes, and I agreed with that at the time, yes.

Q. So because that hasn't been notified to other parties such as the Department of Conversation who are interested in the coastal lakes in the plan change, there may be areas of the region which should be excluded from that regime?

A. That's something that I haven't, I haven't considered.

Q. But when the plan changes are made under the National Policy Statement for Freshwater which is called Oranga Wai.

A. Yes.

Q. There will be the ability to delineate FMUs, won't there?

A. Yes.

Q. And in that process, as in other processes around the country, there will be the ability to delineate specific areas of sensitive downstream environments that should be excluded from these sorts of regimes?

A. I can't say without knowing what the specific – what you are specifically talking about. I mean, the Whangamarino, obviously had knowledge of

and the reasons why, so I can't say yes or no without knowing more specific details about what those zones would be, I suppose, (inaudible 11:28:44).

Q. Well, that's potentially a planning question but the –

A. Yes, yeah.

Q. – I suppose the – you have confirmed and that this is – and you'll be aware that this is in policy 3.13 of the National Policy Statement for Freshwater that some receiving environments are more sensitive to nutrients than others?

A. Yes.

Q. Just in paragraph 22 of your evidence.

A. Yes.

Q. You discuss Table 14.2 of the One Plan and you say it gives no consideration to existing water quality sensitivity of downstream environment mitigations being undertaken on site or the contribution of the land use to the WNSC and the FMU load?

A. Yes.

Q. Have you read the evidence of Dr McKay?

A. I have read all them, I can't specifically remember that, apologies.

1130

Q. Are you aware that when the Table 14.2 was developed that the approach was made to instream targets using an average land to water transmissivity of 0.5?

A. I didn't, I don't recall that specifically.

Q. Thank you. So are you familiar with how Table 14.2 was originally developed?

A. It was really looking at it in terms of the meeting Table 14.2 as being an Overseer output. There's not, when you're coming up with your Overseer number, you're not considering those points.

Q. Sorry, I'm not quite sure what you mean?

A. So it's in terms of I suppose you can include the mitigation. The numbers in Table 14.2 just relate specifically to that property. It's not looking at what the water quality is downstream and, you know, the wider

environment. It's just a number of leaching at that property, that's kind of the point that I was making there.

Q. But you can't really say that can you without first understanding how Table 14.2 was originally developed in terms of back calculating from instream values to reach those targets in the first place?

A. Correct.

Q. Thank you.

A. Thank you.

RE-EXAMINATION: MS SCHARTING – NIL

QUESTIONS FROM THE COURT – NIL

WITNESS EXCUSED

MS BUXEDA CALLS

CHARLOTTE JOSEPHINE MARY DRURY (SWORN)

Q. Good morning Dr Drury?

A. Good morning.

Q. Can I please confirm that your full name is Dr Charlotte Josephine Mary Drury?

A. That's correct.

Q. Did you prepare evidence-in-chief dated the 30th of October 2023 and rebuttal evidence dated 13th November 2023?

A. That's correct.

Q. Do you have the qualification and experience set out in paragraphs 1 to 5 of your evidence-in-chief?

A. That's correct.

Q. Do you have any corrections to your evidence?

A. No, I don't.

Q. Thank you and do you confirm that your evidence is true and correct to the best of your knowledge and belief?

A. I do.

Q. Thank you. I just have a few questions to talk you through before I hand you over to my friends in court and based on things that have arisen in the hearing to date and as I mentioned you've been here for the majority of that hearing.

A. I have.

Q. I believe you might have been here for all of it. I understand that following the discussion between Mr Majurey and Ms Foster in the first week of hearing back in November regarding the exact extent of crop rotation you are seeking to support on behalf of Hort NZ you have created a diagram to assist the Court in showing them your understanding of crop rotation. With the permission of the Court I would like to hand it up and we have a copy for yourself as well so you have this in front of you?

WITNESS REFERRED TO CROP ROTATION DIAGRAM

Q. Thank you. So you have a copy of this in front of you and this could be exhibit J.

EXHIBIT J PRODUCED – CROP ROTATION DIAGRAM

1135

Q. And could you please talk the Court through the lines and diagonal colours on this diagram?

A. Sure. So it is obviously an incredibly simplistic depiction of how we are proposing that crop rotation would work but it is quite a confusing concept so essentially, and I think this goes to the matters that have just been discussed in terms of the scale at which we're seeking crop rotation, and as you'll see in the square at the bottom, that's at the targeted water management subzone level, it's not beyond that, and so essentially if for arguments sake we said each of the boxes was five hectares, as we'll say a paddock, in the first year in that 12, 13 which is the baseline year. You can see obviously there's three five hectare blocks so you've got a total of 15 hectares. In the next year, it's the purple lines and so you can see that obviously one of those is a same block but then two of the blocks move onto other blocks of land and then in the third year that's depicted here, again, one of the five hectare blocks is the same but two of those blocks move again and that just reflects the nature of commercial vegetable growing where there is that movement which Mr Clark spoke about yesterday in terms of leases coming up and going, but I think the key point really is it's we are very definitely only seeking crop rotation at the scale of the targeted water management subzone level not beyond that.

Q. Excellent, thank you and I think that ties in nicely with Mr Clark's evidence, and I'd just like to ask a follow up question on that and I'll ask you to briefly comment on another aspect of that discussion between Mr Majurey and Ms Foster in the first week of hearing regard the definition of crop rotation and the importance of retaining the words "changing land parcels" as sought in your evidence and I wonder if this is quite an aid to describe that, but if you could elaborate on the importance of retaining this wording from the perspective of Horticulture New Zealand please?

A. Yes. And I think it's also important to note that it's very clearly been Hort NZ's position the whole way through these proceedings, I understand that was in the evidence of Mr Hodgson, who appeared at the first instance hearing but it certainly is that it's just a practicality which is

admittedly slightly peculiar to commercial vegetable growing that a lot of the land is leased and so maintaining, making it explicitly clear that those land parcels may change, we felt was really important. As I say we believe that that's been our understanding the whole way through but like many things, we were seeking just to make it really clear so that once this plan has actually been implemented, that everybody understood that that's what we had envisaged the whole way through.

Q. Thank you, and just on that changing land parcels, does that anticipate expansion of area?

A. No. So changing land parcels, again, within the target water management subzones, so in terms of, again, it's the 15 hectares that's here, that area is fixed on the baseline growing area at 2012/'13. The 15 hectares may change but definitely not. If they added an extra two hectare block, then that would be new and go through that separate pathway not the existing pathway which is in rule 14.1 and 14.2(a) I think.

Q. And just to clarify, when you say the 15 hectares may change, do you mean the location of the 15 hectares may change?

A. Yes, the number, the area would not increase. It would be fixed at 15 but the actual land parcels on which it was located within that target water management subzone may change.

Q. Yes, thank you. And can I just ask you to discuss your understanding of the practicalities and, again, I'm just going back to this quite helpful diagram, of what would happen if the words "changing land parcels" were not included in the definition of crop rotation?

A. I don't think it would be a fatal flaw. I think it just makes the plan more user-friendly having the "changing land parcels" in there but if the ability to change land parcels within the target water management subzone was not enabled for commercial vegetable growing that would be catastrophic and ultimately like Mr Clark said yesterday, it would result in the area over which commercial vegetable growing occurs decreasing and that then obviously has the subsequent flow-on effects in terms of availability of vegetables, national food security, et cetera, so it is, as I say, we believe it's always been there. Having it explicitly stated helps in terms of land

useability and as I said earlier, that's what we have believed to be the case the entire way through?

1140

Q. Thank you for that. Yesterday there was discussion about the 35% reduction pathway. Could you please talk the Court through your planning understanding of how that works in the decision's version?

A. Yeah, sure. So essentially as I see it from a planning perspective, the 35% effectively acts as a gateway. So if you're an existing commercial vegetable grower you would go to apply for resource consent and you would look at the rule and say okay, right so I'm a commercial vegetable growing operation, I need to have achieved a 35% reduction in my nitrogen leaching within three years of applying for consent and so at that point you would look at your, and obviously there's been a huge discussion around models and those sorts of things, but it would be, as I understand it, generally would be an Overseer budget and you would need to look at that and be able to model, which is a predictive model that within those three years you would achieve that 35% reduction. At that point you would then go through the control activity pathway. Then obviously you have a consent granted, your consent conditions would be then embody the management practices which you're going to undertake on your property informed by your nutrient management plan. So that's the way that I see it working.

Q. Excellent. I think that's very clear, thank you. I just have two more follow up questions that arose from questioning earlier today. There were questions to Mr Barber about the uptake of the NRAT in the region. Could I ask for your understanding of grower uptake and coverage?

A. Yeah, so it's my understanding that within the two targeted water management zones that essentially about 90% of the growers have taken that up. That is, there is not a huge number of growers across the two surrounds, 12 growers, but my understanding is that the majority of those growers have done an NRAT, so yeah.

Q. Fantastic, thank you, and just finally there were some questions asked regarding rotation of cropping outside of the targeted water management subzone. Could you clarify from a planning perspective what the

restrictions would apply outside that targeted water management subzone popping up?

A. So if it's an existing, if that commercial vegetable growing exists, it will be at the baseline. If it existed at 2012, '13, then that's a permitted activity. But if that was to be, if it was above four hectares and was established after that, then that would be new and then go through the other 14.2 or whatever the – no, it's a further number, but go through the new rule rather than the existing rule.

CROSS-EXAMINATION: MR SINCLAIR

Q. Good morning Dr Drury?

A. Good morning.

Q. I hopefully won't take too much of your time. Could you grab volume 3 book 2 for me?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. And a copy of your evidence-in-chief as well if you don't have it. That's volume 2 book 2 and in volume 3 book 2, if you could go to tab 18 which is chapter 14 of the Operative Plan?

A. Yeah.

Q. And I'm looking at Policy 14.5 which is 302.0806. Just before we deal with that thought, two things that have arisen out of what you have discussed with my friend this morning, you referred to Mr Hodgson who appeared on behalf of Hort NZ at the council level hearing. His evidence isn't before this Court, is it?

A. Ah no, that's correct.

Q. And your view that you expressed in relation to what crop rotation means and what land parcels are covered, that's not Ms Foster's view, is it?

A. Ah, no. I believe we had alternative views on that, yes.

Q. Thank you. Did you hear Ms Holmes' evidence before?

A. Yes, I did.

Q. Now, she discussed that a new and I will put my understanding of it to you was that each time a vegetable grower were to rotate into a new parcel of land they would be completing a new nitrogen risk assessment

tool and that that would be considered at the consent stage, how is that contemplated by the provisions?

1145

A. So in terms of the way that, and this was set out in my evidence because it's obviously a really crucial point for commercial vegetable growing, that a resource consent would be granted and as part of that application, there would be a nutrient management plan submitted as part of that which identified the parcels of land on which the enterprise was growing at that time and then as a consent condition, there would be a requirement each year for an updated nutrient management plan to be submitted and that would need to identify the parcels of land on which the growing would occur confirming that (a) that the baseline growing area remained the same and (b) that the NRAT was done so that that risk assessment was undertaken so that as Ms Holmes was saying there could be confirmed that the risk resulting from growing on that new parcel of the land was no greater than it had been growing on the previous parcel of land.

Q. All right. Let's look at policy 14.5 then and I think you touched on it just at the end of your discussion with my friend, Ms Buxeda. Would you be able to read, I'm at policy 14.5 here, could you read policy 14.5(b) for me, the chapeau and then the two subsections?

A. "The intensive farming land uses identified and they must be regulated where they are existing intensive farming land uses in the targeted water management subzones identified in table 14.1. They are new established after the plan has legal effect intensive farming land uses in all water management subzones in the region."

Q. And that footnote in the parenthesis there.

A. "The plan has legal effect in the case of dairy farming from 24th of August 2010 and for commercial vegetable growing, cropping and intensive sheep and beef. It has legal effect from the 9th of May 2013."

Q. So this is where the One Plan sets out what is new and what is existing IFLU, is that correct?

A. Yes, that's my understanding.

Q. Now, could we move over t your evidence-in-chief, that's volume 2, book 2, tab 19 and I'm looking at your hypothetical at paragraph 23, which is at page 202.1213.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS – VOLUME 2

A. Yes.

Q. So taking into account that definition of new and existing IFLU that's set out in policy 14.5 of the operative plan, in your hypothetical here where we're talking about, or there are a couple of different scenarios that you set out here, but you suggest in the Lake Horowhenua subzone, the relevant date is July 2015, 1 July 2015, six hectares of additional commercial vegetables was established in that subzone in spring 2014, how will that be dealt with? Now, setting aside that in the next sentence you talk about it being established at an earlier date. If it really was that that had not been established as commercial vegetable growing area as part of an existing crop rotation at that time, that would be new IFLU, wouldn't it and it would stand to be regulated by the new IFLU provisions in the One Plan, wouldn't it?

A. Yes, because the operative date as we just read out is the 9th of May 2013.

Q. Precisely.

A. Yes.

Q. Now, so really there's not any ambiguity about that is there?

A. No, there's not and to be honest, through this process that's become clear to me but what also, and this I believe there's evidence before the Court on this, is that the actual area of commercial vegetable growing within the targeted water management subzones has remained relatively static so that, yes, the issue that I had initially thought existed I don't think it's really an issue.

Q. Okay. And so, in fact, any new areas converted to CVG if they hadn't previously been part of a particular commercial vegetable growing operation, any areas converted to commercial vegetable growing after 9 May 2013 would be new IFLU, wouldn't they?

1150

A. We are saying area, so if the area is, if you get a bigger area, so if you go up to your 16 hectares, then that one, additional one hectare is, is that's new, but within the – with the area remains at 15 then that's not, not new.

Q. But the One Plan doesn't regulate quite like that, does it, it regulates you at place, doesn't it?

A. No, we don't, we believe it regulates based on area, the baseline commercial growing area definition is area.

Q. Okay and just a couple of things arising. New IFLUs are outside the scope of Plan Change 2, aren't they? Plan Change 2 regulates, attempts to modify the scheme for existing IFLUs?

A. Yes.

Q. That's correct?

A. That's correct, we're not, we –

Q. And it doesn't deal with new IFLU?

A. Well –

Q. That's correct?

A. No, I believe it does, it requires consent under rule –

Q. Well, it doesn't disturb the existing scheme of the One Plan in relation to new IFLU, would it?

A. No, that's correct.

Q. Thank you. And at this stage, in the versions of all of the – in the versions of the provisions that are currently before us, setting aside what's discussed hypothetically in your evidence, there's no set of the provisions at the moment where a Nutrient Management Plan or a NRAT or a Farm Environment Plan would be required annually, is there? That's just something that's proposed in your evidence?

A. It was in the decisions version. I think the definition of Nutrient Management Plan had "annual" in it, but then the council has sought or proposed to delete that.

Q. Okay, thank you very much.

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning, Dr Drury. At paragraph 10 of your evidence, you say that Horticulture New Zealand remains strongly supportive of Plan Change 2

and its intention to provide a workable pathway for growers to apply for consent for existing IFLU that cannot achieve Table 14.2 CNLM. That pathway could be a discretionary pathway, couldn't it?

A. Yes, it could be.

Q. Thank you. If we go to this issue about the gateway which is terminology that we have used to refer to the difference between controlled and discretionary activity status, the Overseer experts have said that they don't consider you should use Overseer as an absolute number and that's also been subject to MFE advice, hasn't it?

A. Yes, as I understand it.

Q. Now, using an Overseer number to determine whether you fall into a controlled or discretionary activity status is not a use of Overseer as an absolute number, is it, because discretionary consents can be granted and you can assess them, they're not prohibited?

A. No, technically that is correct.

Q. Thank you. At paragraph 18 of your evidence, you say you support for inclusion definitions of both good and best management practice. Mr Barber has said that those change over time and I'm just interested in why you think there needs to be a distinction in the plan and what value that will have in the plan?

A. I think it goes to what Mr Barber was saying about the progressive advancement, I guess, in terms of that constant evolution over time and a recognition that as he said that what is best now will become good in time and so the recognition I guess that there is and, you know, using the NRAT tool and looking at a risk-based approach, in some cases growers may only need to put in place good management practice, but in other cases where additional mitigations are required then, then it may be those best management practices that are needed. So I think it's helpful to note that there is, I guess, a scale of responses in a way.

1155

Q. And that would be utilised in a discretionary assessment?

A. In terms of the actions that would need to be taken, is that, sorry?

Q. Well you just tell me where is that to be utilised in the policy framework?

A. It's referred to in a number of places as I recall it.

Q. Yes, so if you could just explain in a consenting example how it's useful?

A. Well I think it's helpful in terms of understanding the, how would you, kind of the stepped approach as it were. So I guess as a consent's officer, and I have years of experience as a regional council consent's officer, you would receive an application and you might look at it and then see what the, whatever the gateway as it were might be and then the effects of the activity and then you may look at it and say oh, well, you know, the leaching which is expected to occur as a result of this activity is, you know, compliant, therefore you might only expect the good management practices to be there whereas if you were going through the full discretionary pathways, then it might be those best management practices. But in reality, as a, well, speaking from my own experience, as a consent's officer you would be seeking expert input into that from someone such as Mr Barber, an expert in farm systems and assessing those practices and their appropriateness.

Q. Thank you. Because if I looked at the definitions, good management practices and I will read them refers to: "Practical measures and methods, including those established in industry-based standards and guidance documents tailored for use at a farm level to minimise the effects of discharges to land and water." And then: "Best management practices are measures additional to good management practices tailored for a farm or growing system to minimise nitrogen leaching lost from the land to the maximum practicable extent." So GMPs refers to minimising and BMPs refers to the maximum practicable extent and I'm wondering if there's a real difference if you look at those words?

A. Yeah, I think there is. In terms of minimising and maximising, I think there is quite a distinction there.

Q. All right, thank you. Just in relation to crop rotation, you and Ms Holmes talked about the assessment in the NRAT of the overall effects and making sure that there wasn't going to be an increase of effects on the basis of an overall effect assessment. In that overall effects assessment, is it intended that that assess contaminants other than nitrogen such as looking at E. coli sediment, phosphorous and nitrogen so that you could in effect do a bit of a trade off?

A. I think the assessment would, and it's set out in the policy, that it's certainly more than nitrogen that is looked at, so I guess from that perspective then it is a holistic look that the nutrient management plans aren't just about nitrogen. It's a view of the entire operation and all of its environmental effects.

Q. Thank you. You would be aware, wouldn't you, of, in your experience as a consent's planner, of the case law around the fact that you shouldn't level fundamental matters in a consent to management plans. The consent itself should set out the parameters of environmental effects. So the issue is, isn't it, whether in proposing this by Horticulture New Zealand you're leaving significant effects matters to management plans?

A. I don't think so because in my view the conditions of any resource consent that was granted would specify the key nitrogen, or what the key management practices which were going to be undertaken on the property. So that's not leaving it to a separate plan. That would – yeah, I don't believe that that would be an issue.

1200

Q. Well, just referring specifically to leaving the crop rotation to a management plan, which I understand is the proposal, isn't it?

A. In terms of the identification of the land parcels?

Q. Yes.

A. Yes, that's correct, yes. That's what I've set out in my evidence.

Q. All right. Are you – you're relying on the evidence of Ms Holmes but do you think that tangata whenua might have some issues with increasing cropping in particular areas such as effects on mohungakai or effects on spiritual practices and would that need to change and affects assessment?

A. We're not seeking to increase. We're seeking to hold the area within a target service water management zone at the baseline growing area.

Q. But you can move around though, can't you?

A. Yes, but the area is still the same and as I said earlier, in terms of any new parcels of land that affects, a risk assessment needs to be undertaken and ensure that the risk resulting from cropping on that area doesn't increase so I don't believe the scenario you've set would occur.

Q. But that rise assessment is not going to be open for a submission.

A. No, but in terms of the matters of the guidance in the rule, I don't believe it is for a controlled activity under any scenario. I believe it says that they will be processed on a (inaudible 12:01:43) basis.

Q. All right, okay, I'll leave that there then. At paragraph 29 of your evidence, you talk about the nutrient management plan issue and the definition, do you agree that sorting to the wording of this nutrient management plan is largely going to be consequential on the Court's decision on whether it accepts the risk tool versus the Overseer number approach?

A. I think either approach is going to require a nutrient management plan so I guess essentially it is really important that it gets sort out but in my view, I don't see it as being relevant to which gateway essentially is decided upon. A nutrient management plan is a critical component of any consenting approach so clarified in this definition it is critical, I do agree with that.

CROSS-EXAMINATION: MS WRIGHT

Q. I get to say good afternoon.

A. Good afternoon.

Q. I'm just going to ask you questions on two topics today and the first just relates to the makeup of table 14.2 specifically. It's common, isn't it, in planning to use a number to determine activity status, isn't it?

A. Yes, that's certainly something I've come across, yes.

Q. So it would be fair to say that to the extent table 14.2 does that, it's an orthodox planning approach?

A. Yes, but obviously we have all heard a huge amount of evidence in terms of the appropriateness in the use of Overseer for determining that number.

Q. Sure, but the consequence of table 14.2 isn't a prohibited activity, is it?

A. No, it's not.

Q. It's controlled or discretionary.

A. Correct.

Q. Dr Drury, are you familiar with the Environment Court's decision on the operative 1 plan?

A. Generally speaking, yes.

Q. And so are you familiar with and understand that the philosophy underpinning the One Plan's approach to nitrogen leaching of intensive farming land uses was one focussed on encouraging higher leaching activities to land of higher capability and discouraging those higher leaching activities to land of lower capability?

A. Yes.

1205

Q. Familiar with that. I just want to ask you a few questions on that relating to that underlying philosophy. That approach is equitable in the sense that it treats all resources in the same way, regardless of current use, isn't it?

A. Yes.

Q. And an approach which would allocate nitrogen through grandparenting or based on current use wouldn't align with that philosophy, would it?

A. No, I don't think it would.

Q. And it would be fair to say it's not efficient or effective to have a targeted plan change like this include something that would undermine or run contrary to the philosophy underpinning the plan that it is amending?

A. No, I'd agree. But in terms of commercial vegetable growing it is generally undertaken on Class 1 and 2 land anyway, so fundamentally you are – which is the most highly productive, highly productive land, so I think from the perspective of Horticulture New Zealand Plan Change 2 is consistent effectively with that approach.

Q. So a policy direction, if we're thinking about a discretionary activity scenario, a police direction which was telling a consent officer to put weight on whether an application puts high leaching on high quality soil, that would be supportive for CVG, wouldn't it?

A. Yes.

CROSS-EXAMINATION: MR WILLIAMS

Q. Good afternoon Dr Drury. I'm going to ask you some questions as well about your original statement of evidence which you probably have open.

You begin the statement by confirming that you have been provided with a copy of the *Code of Conduct for Expert Witnesses*?

A. That's correct.

Q. I just want to take you to three points in your statement. In paragraph 17, you talk about the fact that Hort NZ, or you say: "Hort NZ supports the proposed PC2 provisions issued by the council"?

A. Yes, that's correct.

Q. And then at paragraph 20, you say: "We generally support the provisions set out in the council's proposed versions"?

A. That's correct.

Q. And at 25, again: "Hort NZ supports the use of the Nitrogen Risk Assessment Tool?

A. That's correct.

Q. Would you agree that this language tends to suggest that you're advocating for Hort NZ in your evidence, rather than providing impartial expert evidence?

A. I think I make it pretty clear in my evidence that I'm appearing as a planning expert and the matters that I, that I cover in are well within my area of expertise.

Q. Can I take you now to paragraph 29 of your evidence and this has already been touched on in cross-examination, it's the Nutrient Management Plan definition and you're seeking or you're suggesting changes to this definition, to include an alternative of a recognised nutrient risk assessment method result. So rather than just on the current – council's current proposed version, copies of the input and output files per recognised nutrient management model, as an alternative you could provide a recognised nutrient risk assessment method result. So isn't what you're describing there more like a nutrient risk management plan?

A. Well, I think what that's referring to there was the result of an NRAT assessment.

Q. But your – rather than needing to provide input and output files, you can provide a sort of assessment of risk?

A. Yes, that's correct.

Q. And at what point did you come to the view that the definition of Nutrient Management Plan should be changed in this way?

A. When we, when we were supporting the use of an NRAT. Because it doesn't – I'm, I mean, this question would have been better directed at Mr Barber, but as I understand it, an NRAT doesn't have input and output files, that's not the way that it worked.

Q. So it is closely linked to the NRAT and you were asked that question earlier?

A. Yes.

1210

Q. Are you aware of any other party to the appeal raising this point about the Nutrient Management Plan definition in their submissions or on appeal?

A. Well I certainly know that we've had conversations with the council about it and I believe myself and Mr Foster, which was set out in updated provisions provided in the hearing at the end of last year that we had agreed these changes, if my memory serves me correctly.

Q. So on what basis do you consider then that there's scope for this change in terms of this appeal, changing the Nutrient Management Plan definition?

A. Well, it needs to line up. As I understand it, the purpose of Plan Change 2 is to get a workable consenting pathway. I mean the need to have clear definitions and a clear understanding of what is required within something I think is critical as part of that and I mean the matter of scope is a legal question.

Q. So okay, would you agree that the details of risk assessments and mitigations could be included without your proposed amendment as under this heading: "Relevant nutrient management practices and mitigations," under the existing definition?

A. Perhaps, but I, as a planner, prefer clarity, explicit clarity and I think the proposal, what's set out here provides that.

Q. Just one more set of questions. I think it would be brief. You're also seeking changes to the crop rotation definition at 30, paragraph 32?

A. No, we are not. Well, let me be clear. We suggested changes to it based on the evidence of Mr Barber to make it clear that crop rotation may

include a fallow period, but we, the, we could also live with the definition that was in the decision's version which explicitly stated changing land parcels which is the critical component which needs to remain in from a Hort New Zealand perspective.

Q. You didn't appeal the decision's version definition. Not you, I'm sorry, Hort NZ. That wasn't appealed was it?

A. Not the definition, no. We were comfortable with the definition in the decision's version.

RE-EXAMINATION: MS BUXEDA – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Good morning. I just have a few I want to be clear about if I could. If I could just start with understanding where things are at in terms of freshwater farm plans. I guess I'm very aware of what's happening in terms of the uncertainty around the MPS on freshwater and what might happen in terms of the legislation. But Part 9(a) of the RMA has got the freshwater farm plan provisions in it. Are there regulations under that, under the RMA related to the farm environment plans at the moment?

A. I'm not 100% sure. I believe they're in development, but I'm not sure if they have been finalised.

Q. Right, but as far as the order and council bringing in the freshwater farm plan concept into various locations by (inaudible 12:14:31) Council, you're not aware that that's been done anywhere or certainly not in the One Plan area, would that be right?

A. Not as I understand it.

Q. Not as you understand it. Ms Foster can probably help with that. So there's no regulatory basis at the moment as you understand it for farm environment plans in terms of the RMA?

1215

1215

A. No.

Q. No.

A. That's correct.

Q. No, okay, I just wanted to be clear about that. And the actual provisions in relation to the Nutrient Management Plan definition, they sort of foreshadow that this might be an option into the future when it's all triggered –

A. Yes.

Q. – in a regulatory sense?

A. Yes, that's correct.

Q. So my understanding on that is correct?

A. Yes.

Q. Right. So when, so when the last witnesses talked out these Farm Environment Plans, they were talking about the fact that there's a lot of conversation going along a lot of development, a lot of people I understand are rolled into the concept and so, so on it goes, that at the moment it has no regulatory basis?

A. Not in the RMA sense, certainly.

Q. No.

A. Yeah, as Mr Barber was saying, the New Zealand GAP scheme is very well established and there is, as I understand it, potentially contractual requirements for growers who want to, as Mr Clark was saying, to sell into markets to have those, but that's obviously a separate – that's under Food Safety Act as I understand it, not under the Resource Management Act.

Q. Okay, so thank you, so that's helpful. So I'd just like you to – to take you to the decision's version.

A. Mhm.

Q. And just want to ask you an open-ended question as to looking at the decisions version and parking the whole notion of going down the scorecard route, so just thinking about the decision's version and also putting to one side the fact that it wasn't appealed, but I guess I am just wanting – by Hort New Zealand – I'm just wanting to ask you what there might be in the decisions version, if you had to live with it, that you might see as needing to be improved in the planning sense and why that would be? Is that an easily answered question?

A. Can I just –

Q. (inaudible 12:17:31).

A. – where is, can I just – can you –

Q. Oh, where you would –

A. Yes, sorry.

Q. – to find the decision's version? Well, I've got a 101.0498 as to where you find that, someone might need to help me.

A. Volume 1.

Q. I was thinking you might have some notes ready to refer to.

A. I've managed to leave them in my chair, so excuse me, why – sorry, what –

THE COURT: JUDGE SEMPLE TO REGISTRAR – RETRIEVE WITNESS' NOTES (12:18:35)

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS

A. So I think in terms of the, in terms of the decisions version, generally speaking it was, from a planning perspective, I believe it was – putting aside the, as you say, the Table 14.2 matter – it was fairly clear. I think the matters of the way that it was structured with the extensive lists of in policy 14.6 where it provides the very clear guidance in terms of the when considering consent applications for exceptions, I think is really helpful, which is clearly an opposing view to Mr Carlyon. I think in particular from a commercial vegetable growing perspective, the requirement to consider the operational crop rotation requirements was really helpful and also the importance of maintaining food security –

1220

Q. Food security.

A. – yes, those were really critical.

Q. So that's X1 and X2?

A. Yes.

Q. 11 and 12.

A. Yes. I guess in terms of, and perhaps what the discussion around crop rotation has highlighted, is some clarity around exactly what crop rotation encompasses but, again, in a decisions version where the definition

includes the, exact wording is “across changing land parcels”, it needs an “l”, that’s a change that’s needed, that we believe provided for crop rotation and I guess in my evidence I was just seeking to outline how that would play out in practice. So, as I say, putting aside the question of I guess that gateway question generally speaking from a planning perspective, I believe the decisions version is pretty helpful particularly that direction around discretion because, again, as a consents officer, it is –you would be a very brave officer to go in and make a decision to grant a discretionary consent with the very limited matters of discretionary which were being proposed in the set of provisions which were provided to the Court just on Friday. This I think provides a lot more clarity around what needs to be considered. In that way also I guess provides a lot more clarity for consent applicants in terms of what they need to touch on in their application and I think that is really helpful in terms of actually getting people through applying for consents and then getting those decisions made on those consents.

Q. So anything else?

A. No.

Q. So in terms of the weighting of the long list of things, how would you envisage that working in terms of the horticultural sector? You might recall that I took Ms Foster through that in the last hearing if you were present at that.

A. Mhm.

Q. So what you've taken me to comes under the have particular regard to does it?

A. Mhm, yes, it does and so I guess in my mind that gives it greater weighting than some of the other consideration and as I believe it should.

Q. And so you don't accept the point that Mr Carlyon was advancing yesterday then that he thought that all of these matters were in some way encapsulated in the short list that was provided.

A. No, I certainly have an alternate view on that and find this far more helpful for any plan user. Because I think – and to be fair I believe Mr Carlyon did say this, you can get variation between consents officers, you can get variations between applicants and those sorts of things so in my view,

this greater level of direction provided within the plan reduces as far as we're all still humans, we all still exercise our own professional judgement in making recommendations but in having this greater clarity provided in the plan, in my view, you're going to have a more consistent approach to the way that the planning provisions are applied and I think that's helpful.

Q. So I'm just – in terms of the things that are in (e) that we've just been talking about and then there's a long list of things in (d), actually it's a short list of things, isn't it?

A. Yes, it is.

1225

Q. ... actually, it's a short list of things, isn't it?

A. Yes, it is.

Q. It is a short list of things. So do some of the, so some of the additional things, are they also informing the long list of matters in (e)?

A. Yeah, yes, yep.

Q. In that you've got a foundation document, for example, this Nutrient Management Plan and over the page are the different types of management practices and things like that, so, so that, so those, that (f), those matters are for two – presumably also very closely related to all the matters that come up in terms of (e)?

A. Yes. But as I read it, that – no, sorry, yeah, no, sorry, I was just checking something, so...

Q. So I'm not clear whether you are agreeing with me or not?

A. Yes, I am agreeing with you, sorry.

Q. Yes, yes, because they seem to be rather more about the four corners of what you are going to do that you establish in your application, don't they? So when you're looking at all those matters, that come up in (e), won't you also need to be referring back to the four corners of the application?

A. Yes.

Q. Yes?

A. Yes.

Q. Okay. So just coming back to that Nutrient Management Plan question and there were some questions that we put that Ms Foster has put some evidence in on, in terms of the there is a code of practice and the 2023

version and there have been several versions, I think she said, since the 23rd, a couple of more versions since the 2013 one here and there was an earlier one that was a reference too, I think, wasn't there?

A. Yes.

Q. Before 2013?

A. That's, yeah, that's my recollection.

Q. And then she, she suggested that there was no – the code of practice has all these links that click you through to various sector guidance and she suggested that there was really no need to be referencing that, that the basic skeleton that, if you like, would, would still be relevant, so have you had a look at the basic skeleton on that sort of basis?

A. Yes and I share that view, that to have – to link through to those other ones is not necessary, that that basic, that that reference as it is currently is appropriate.

Q. So I am aware of other planning documents where we – where you're having something like a Nutrient Management Plan, there is a bit more guidance actually in the, well, requirements in the plan document that tell you what it is you are actually doing?

A. Yeah.

Q. And then sometimes they refer you off to other things that might be helpful to inform the detail inside of the skeleton, so I suppose I was just wondering whether that might be a more sensible approach here?

A. I think I'm certainly – I'm based in Hawke's Bay and the plan change process which we are currently in the mediation stage on that is – takes that approach and has quite an explicit list of what a Nutrient Management Plan, it's a schedule which but very explicitly sets out what needs to be included in it. I think this approach is preferable because it enables plans like NZGAP plans and those sorts of things to be utilised and avoids that double up. There's been a huge amount of time and effort and conversation in Hawke's Bay about how these existing plans which many growers have and also obviously beef and lamb have done farm environment plans for a lot of their farmers and that sort of thing as well. Having that really explicit list then in my view creates the risk of needing to create another separate document which essentially does the same

thing but that's the one that needs to go to the regional council and this is the one that needs to go to NZGAP and so I think this, if we call it the more general definition, provides greater ability for the council to say, yes, we're happy to accept that NZGAP plan and I think that's a really useful thing for growers and farmers because it avoids that duplication of time because they're still going through the process, as Mr Barber clearly set out around thinking about their operations and how to reduce the risk of nutrient loss and those sorts of things but I think it's in practice that extra paperwork is seen as a bit of a barrier so I think this approach where, in my view, makes it easier for those existing plans or perhaps to be amended in a slight way but not have to be literally in the Hawke's Bay context. It has to be in a template that fits those requirements which is not particularly helpful in my view.

1230

Q. So the regional council currently has a template, I understand, that's what we were told so are you not in favour of the regional council providing a template?

A. I think a template's helpful but to specifically require people which I don't believe this definition does to use that template is I think they're two slightly separate things.

Q. So a template if it's helpful to people, that the regional council produces, you're in favour of that but you don't want to close off opportunities for using other potential documents that may do the job that's required, is that summarising it?

A. Yes, that's my thoughts.

Q. So also all of those different approaches that seem to be in different industries sector documents that are available to link through, there's the 2023 one, so Ms Foster doesn't think there's any harm in them, are you of a similar mind, is that just to close the loop?

A. Yes, that's correct.

Q. And so often with these codes of practices, there's a big range of guidance in them and so sometimes for people that's not, and for consent officers too, I imagine, it's not always helpful because you're wanting these for a particular regulatory purpose.

A. Yes.

Q. So how do you deal with that issue? I mean, people would be overwhelmed by look at this, and look at that, and look at the other thing.

A. Yes, and I appreciate that point and I know that in many cases, that the development of the template can help, you know, just in terms of how a council's reporting systems and stuff are set up and that it will come in and that information can then be fed through but I guess it's, it's really I guess where I'm coming from is not unnecessarily creating extra work where it's not needed but, yes, I can see the benefit to a council in having a standardised approach but I think at the end of the day, it's taking that step back and as long as the nutrient management plan is identifying, is undertaking that risk assessment and then identifying the mitigations which are going to be undertaken on farm to reduce the nutrient loss, that's the key. Exactly how that's delivered, I think should be made as easy as possible for the growers because, as Mr Barber, you know, said repeatedly it's about enabling and getting that action occurring on ground. That's the key to improving water quality.

1235

Q. Yes and that can be done under the decision's version –

A. Yes.

Q. – that you had, that we've just been talking about?

A. Yes.

Q. You're not suggesting otherwise?

A. No, no, that's correct.

Q. No, good. Okay, I just wanted to close the loop off on that point.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Dr Drury. Just a couple of questions please. Thinking back to your days as a consent officer, someone comes in and says: "These are the risks of my effects." How would you deal with that because the act is, as Ms Edmonds quite properly pointed out to me, the act is an effects based and all the officer would have is a likelihood of something occurring without knowing what the consequence of that was, how would a consent officer deal with that?

A. I guess in my experience and I must note that it is a few years now that since I was a consent's officer, you would look at the information around the existing water quality within that, in this case, the target water management subzone and there you was also call I guess on the assistance of a technical expert who would look at the Nutrient Management Plan and assess the appropriateness of the proposed mitigations in terms of addressing those effects would I guess fundamentally be how I would go about it.

Q. So there is a method of doing that. Even if it's phrased as risk, you would still have the background information to enable you to make a proper assessment, would that be correct?

A. Yes, I believe so.

Q. Okay, thank you. Now, I would just like to understand how you see a 35% specified reduction target. I think I understand you to say that you would start with an Overseer file, is that correct?

A. Yeah, that's my, because it's got to be related to the 2012/'13 baseline growing area that yes, my understanding is at the moment that Overseer is the tool that would be used for that.

Q. Okay, and then three years later you would do a check with Overseer again to ensure that you had achieved the 35%, is that correct, you would do a prediction, a forward prediction to start off with and then you would verify it with another Overseer file three years later, would that be right, is that how you would see it?

A. Not necessarily because the way that I read it is that I guess that's the gateway check, if you know what I mean and so you would get your baseline thing and then you predictively model. I mean you could require reassessment at three years, but as has been put in evidence to this Court, in terms of achieving that, or modelling that accurately at a farm level using Overseer is not appropriate for commercial vegetable growing.

Q. How do you know that the NRAT will actually achieve a 35% reduction, which is what we're really interested in is how much nitrogen is getting into the environment?

A. Yeah.

Q. So whichever way you go it's the devil and the deep blue sea type situation a little bit?

A. So that assessment would be done at the target water management subzone level because that is where it enables crop rotation and those sorts of things to be done and Overseer is used as the tool for that. But at the farm specific level, because if you're looking at it only on a one year basis, that doesn't accurately reflect the rotation, so the check needs to be at that higher level.

Q. Now personally I feel there is a lot of getting hung up on this one year business because it doesn't work on a one year basis. A lot of these things you need to have some kind of evening out over a period of time?

A. Yep.

Q. And I always come at these things from a practical point of view and if it was to be done on a longer period to get something that was reasonably representative, what do you think that period should be?

A. My understanding is that generally speaking a crop rotation, the greens crop rotation is about five years, but I think there's other best placed, better placed that understand the mechanics of Overseer better than I to answer that question.

1240

Q. So would you see the possibility of a five-year rolling average being better than an annual check or something like that?

A. Conceptually I think it would, but as I say, I'd defer to those that understand the mechanics of Overseer in greater detail than I.

Q. Okay, thank you, thanks, that's very helpful.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Crop rotation, I just think you may get around it, I'm sorry, but I feel like I've read through this a lot of times. Probably again the easiest one for me is the amendments, the decisions version, so that's the one that you had a 101.0498.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Yes.

Q. Sorry, we've put it away, but – and so on my reading it, so it comes in under that policy, wherever it is, 14.6(e)(xi). And I'm just trying to create the link in my own mind between the rule, the policy and your thoughts about how a consent condition might be phrased that would reference this. And also the questions that were asked in the clarification that you've given about the fact that it would be within the targeted water management zone and I just really wonder whether the way that these provisions are currently written, at least on this version, is tight enough to include all of that? Because it seems to me that when we – we've got that policy sitting there, which effectively directs the decision maker to, in making a decision as to whether the use should continue to have particular regard to the operation of crop rotation requirements, which not certain that that's what we mean in terms of is that a reason to have it continue, or are we talking about if in making a decision to have it continue the operational crop requirements will be taken into account in the Nutrient Management Plan or the consent conditions? It doesn't seem quite right to me the way that it's presented currently, the way that that provision works currently. It doesn't – I'm trying to get my head around whether it is, in fact, a matter that the consent authority, that the decision maker is taking into account in deciding whether to enable an existing IFLU to continue or whether it is a matter that is taken into account and how that continued IFLU might operate. Do see the distinction –

A. Yes.

Q. – that I'm making?

A. Yes, I do, yeah.

Q. And am I entirely off-base and I just can't get that to sit together in my brain?

A. Yep, yes, no, I see what you – I see the issue that you're having.

Q. Because I – and it's – it will be years as a, as a lawyer trying to consent things that will make me start with the rule and then work backwards to – so I go to the rule, I work out what I've got to provide, I look at the policy and then I think what do I need to show to be able to prove this so that a decision maker will make the decision that I want, which is the grant of a consent.

A. Yep.

Q. And what conditions will I offer up to assist in that, and I just – it just doesn't seem to me to work currently and even the changes that are made to the definitions, I am not sure help that problem. So any thoughts that you could provide me on that would be helpful?

A. Perhaps and I am obviously thinking out loud –

Q. Absolutely, yes.

A. – but perhaps it might be, if it was moved into – potentially to address the issue, I think it might need to go into the rules somewhere.

Q. That's what I have been contemplating and that's where I went looking for it.

A. Yeah.

Q. When I first, when I was looking at the definition of crop rotation, I expected to find that term in the rule.

A. Mhm.

Q. And didn't.

A. Mhm.

Q. I mean, we don't have to craft on the fly here.

A. Yeah.

Q. So that's, but I just am, I really wanted to know whether I was down a rabbit hole on something that didn't matter or –

A. Yes, no, I –

Q. – or whether there is, in fact, an issue with the way that that would work in practice?

1245

A. Yes, I think having it explicitly outlined in the rule would make it clearer. My initial thought it would need to be an activity description or as a condition. I'd need to look and think that through but –

THE COURT: COMMISSIONER EDMONDS

(inaudible 12:45:30).

THE COURT: JUDGE SEMPLE

Commissioner Edmonds thinks that you might be able to redraft it over the lunch.

THE COURT: COMMISSIONER EDMONDS

Well, that might be fairer. Someone else could give you lunch.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. Yes, I mean, I'm not necessarily looking for the answer. I think I'm just teasing out that it seems, and perhaps it might be something that's worth, you know, addressing all counsel on, and we've got a range of views about what the right answer to this is obviously. One of the things that we've probably grappled with a little bit and this is the fact that the decisions version, we feel in some respects we have less evidence on the decisions version than we have on the extremes, on the either end of the decision version, if you like, and that's a consequence of the council's position having shifted and so we've got evidence on the NRAT we don't have quite so much on the decisions version so there are aspects of the decisions version that we would like to explore more so and that's what – you see some of these questions are about trying to under how the decisions version would work let alone if we make a change to NRAT or if we go back to something that is simply table effectively changes to table 14 so that's where some of these questions are coming from and it's why I think we're probably putting some of these questions to any planner appears before us now to try and get some greater understanding of that but I have no doubt that Ms Foster is sitting in the back and listening to it as well and might well be able to assist us at some point with those questions too so there's a little bit of signalling I suppose going on too about just and, you know, Commissioner Edmonds particularly having sat with the Court in relation to other proceedings on the One Plan, you know, one of the issues that we would like to avoid is finding that we've amended provisions and they still don't work and we're back in the position that we have so we really want to dig in and explore these provisions and satisfy ourselves that whichever decision is made that there is a clear, that we've worked through all of those provisions in a way that means that they will

actually work to achieve what the people in this room think they achieve and that the people who come subsequently and read them and implement them will be left in no doubt as to how they're intended, how they were intended so that's really where I was going with that and it may well be that we issue some form of minute at some point that, you know, puts these matters – as I say, I'm not necessarily asking anyone to draft on the fly, just really to understand if there are areas that need further work or might need to be improved if that is the option that's ultimately determined by the Court. Ms Johnston looks like she wants to say something to that lengthy speech.

MS JOHNSTON:

Ma'am, it might not be the appropriate time but I can signal that obviously Ms Foster has been in court and has been reflecting and one of the issues obviously with the council provisions is requested that we file represented the NRAT was a consequent of joint witness statements but you'll recall my primary position is that if the Court doesn't find scope for the NRAT, that the decisions version remains live in her mind with the specified reduction pathway so we have been putting our mind together about how we might be able to present those provisions in terms of a council's reply in a way that delivers on those outcomes for you.

THE COURT: JUDGE SEMPLE

Yes, that would be helpful, thank you.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. Now, I just want to give you the opportunity if there's anything further that you've thought about because I diverted into talking with counsel, if there's anything further about that crop rotation matter that you wanted to talk to at this stage.

A. No, I agree that the point you've raised is something that ideally would be addressed, yes.

Q. All right, thank you. I think that was the only thing that I had made a note about in here. I suppose this definition of Nutrient Management Plan and

the – I took and I take your point that duplication of effort and resources or repackaging the same information in a variety of different ways for different purposes is not an efficient use of anyone's resources, however I had taken, I thought, from a combination of Mr Clark and Mr Barber's evidence that, that the freshwater, that the Farm Environment Plan which I think is what we would think of in here as a freshwater farm plan, that the – that some combination of, of the, of the NRAT or the SVS would form the nutrient management budget part of that plan. And the way this reads, it talks about the Nutrient Management Plan being a component of a freshwater farm plan prepared for the purposes of part 9 and so if part 9 goes then your definition might be become problematic. But is that your understanding that we – that the Nutrient Management Plan being referenced here is simply a part of – so the expectation would not be that you would present your full Farm Environment Plan to the consent authority?

1250

A. You could –

Q. I mean, you could, if you, I mean, of course you could, if you wanted to –

A. Yes, exactly, you could choose to.

Q. – you could give the consent authority whatever you want.

A. Yes.

Q. But that is not the – that the way the provisions are framed, you would not have to?

A. Yes, that –

Q. So your Farm Management Plan may not form part of your consent on that basis, if you are only required –

A. To -

Q. – to give your Nutrient Management Plan?

A. Yeah, that would be my understanding also.

Q. And does that create any sort of gap? Because there seems to be quite an emphasis on the Farm Management Plan holding a lot of information and I just wondered whether that simply drawing out the nutrient management budget part of that creates any gap in the, in the provisions?

A. Well, I think it would – you'd need to have the management, so there would be the, I guess, there's two components to it, there's the budget bit –

Q. Yes.

A. – whatever that ends up looking like and the management plan.

Q. Yes.

A. So in terms of the management activities, mitigations, et cetera.

Q. Yes.

A. And that sort of thing. So but then obviously as part of a consent application you need to have prepared an assessment of environmental effects as well, so in my mind there wouldn't be a gap there, that would, yeah, that would be your – and you might reference out to that in your AEE, the Nutrient Management Plan and that that sets out your mitigations, but no, I wouldn't necessarily see there being a gap there.

Q. Okay and your controls I think cover your management practices and the content of any Nutrient Management Plan in terms of the matters that control is reserved –

A. Yes.

Q. – is, yes, in terms of that. All right, that makes sense to me, thank you, I think that is all I had.

MS BUXEDA ADDRESSES THE COURT – DRAFTING PROVISIONS (12:53:42)

QUESTIONS ARISING – NIL

WITNESS EXCUSED

LEGAL DISCUSSION – HOUSEKEEPING (12:55:39)

HORTICULTURE NEW ZEALAND CASE CONCLUDES

LEGAL DISCUSSION – HOUSEKEEPING(12:56:02)

COURT ADJOURNS: 1.02 PM

COURT RESUMES: 2.22 PM

DAVID HORNE (SWORN)

PAUL LE MIERE (AFFIRMED)

JEAN-PAUL TAVERNET (AFFIRMED)

ALISON DEWES (AFFIRMED)

ELIZABETH PARLATO (AFFIRMED)

ANNE-MAREE JOLLY (AFFIRMED)

STUART FORD (AFFIRMED) (VIA LINK)

THE COURT: JUDGE SEMPLE

All right, everybody, excellent. All right, so we had a series of questions that arise from the joint witness statement. Thank you for that. The joint witness statement was very helpful in answering a number of questions that we had which is good, but there are questions arising from that which we would like to go through with you and also I think as we have indicated, some questions arising out of the information that's been provided in the Waikato in terms of looking at a comparison which we would like to understand. It's application or otherwise to the matter that is in front of us. So we are going to work through our questions. Commissioner is going to lead, I think Commissioner Hodges is going to lead that but Commissioner Edmonds and I will chip in as we need to. Some questions might be directed to a particular witness, others will be directed to all of you and simply you know raise your hand, decide who is going to lead off and we'll work our way along. The objective of this is to, it's for us to really gain an appreciation of matters that if we had to call you all individually and ask the same question, you know, there's some (a) there it is a resource hungry way to do things, but also some of these matters we understand them and particularly in terms of evolving science, every answer creates a new question and having you all in front of us at the same time allows us to try and tease that out rather than as you will have seen we've already been a little bit in the situation where we have asked a question, the question has – the answer to the question has raised more questions and then we've got into this consequential evidential thing. So we're trying to cut through some of that.

1430

And so no doubt all of your counsel and I know that you're all experienced witnesses so you know that your first and foremost obligation is to the Court and to helping us get to the bottom of making the best decision that we can. So with all of that there, and there may well be questions of clarification that come from counsel. I will just ask counsel to – I can't see you right in front of me like I normally can, so if you have to, you know, give me a wave or get me attention, please do so. All right, with all of that precursor, Commissioner Hodges, we are in your hands.

THE COURT: COMMISSIONER HODGES

Well I will defend myself before I start. I'm been told what I'm allowed to ask, so 75% of my questions have already been answered. It's not as bad as that, but we've tried to consolidate our questions in a way that addresses all of our concerns, but other members of the Court will chip in if they feel I have strayed from the party line so to speak. I'd like to start with the QCONZ from the Waikato region and I imagine you all have had the chance to look at that now, is that correct? Okay and this report compares NRS scores with nitrogen loss rates at 51 dairy farms in the Waikato region. The farms that were generally within the areas of similar rainfall and similar soil conditions. So we have a couple.

THE COURT: JUDGE SEMPLE

Sorry, Commissioner, I'm sorry, I'm going to stop you. I think people are having trouble hearing, so we will just check that mic is working properly.

THE COURT: COMMISSIONER HODGES TO DAVID HORNE, JEAN-PAUL TAVERNET, ALISON DEWES, ELIZABETH PARLATO, ANNE-MAREE JOLLY, STUART FORD

Q. Okay, the first preliminary question is has the scorecards proposed for use in both PC1 and PC2 are based on the same Fonterra risk scorecard for dairy, are there any reasons why the results from the Waikato PC1 study cannot be applied to PC2. Maybe Professor Horne, if I start with you?

A. [Professor Horne] Well, thank you very much, Commissioner. We're not actually proposing the same tool. You appreciate that what we have in our proposal is called the NRAT which starts with the nitrogen risk scorecard.

Q. Yes.

A. And then is modified to reflect the overriding key influence of biophysical factors POW and rainfall. In fact, this sort of data is the very reason that we moved on from the NRS and developed the NRAT. So if you, if I could take you to either of page 13 or 14 of the score you see the rainfall ranged from I'm not sure if that's 1,000 through to 1,700 millimetres, okay, and the soil types ranged from well drained to poorly drained. Now that, the influence of rainfall and soil type is not reflected in the NRS and that is a shortcoming, perhaps if I can put it in that way for the way we want to use it in the Horizons and so is why we, Dr Jolly and myself and Dr le Miere and Dr Parlato developed the NRAT. So I don't think you. If I can possibly encourage you to avoid confusion there.

Q. Can I just explain something?

A. Yeah.

Q. There's no confusion I can assure you, but in the start of the JWS you made it very clear that your starting point is the Fonterra risk scorecard. You have made that very clear?

A. Correct.

Q. And then the biophysical factors wrap around that?

A. Correct.

Q. So I'm very clear on that. There's no misunderstanding whatsoever, but my understanding is you used the same base starting point on the Fonterra risk scorecard. I'm going to go come onto the biophysical factors later. But are you saying that the Waikato information is not relevant to PC2?

1430

A. Yes, it's not relevant because you're not comparing apples with apples, okay. You can't compare the nitrogen risks scorecard with Overseer. It doesn't even really make sense as an exercise because you have one tool that takes into account biophysical factors which are of the most

significant or important variables in assessing risk or rate with another tool that doesn't that those into account, so what would be a much more legitimate exercise and one that I have conducted is to compare the NRAT with Overseer. Now, what would I think if I had been commissioning this report, I would've asked them to correlate management practices generated by the N risk scorecard, changes, improvements, adoption of BMPs with management practices, changes, adoption of BMPs generated by Overseer and I think there you would've got a much, much better correlation so really the relevance of this document is that it was in appreciation of the poor, relatively poor relationship between the NRS and Overseer that we went on and said, okay, we need to modify, develop, improve the NRS and hence we arrived at the NRAT which you so nicely summarised the process we went through, yes. So it's relevant to my way of thinking in that it was assumed knowledge, it demonstrates or illustrates the importance of biophysical characteristics, the need to adopt or adapt the NRS to include those and why the NRAT is, dare I say it or on behalf of my colleagues, we believe, you know, an improvement on the NRS.

Q. I have no doubt about that, absolutely no doubt at all. It's the extent to which we can rely on it to get, you know, for similar purposes. That's where our questions are coming from really.

A. Sure.

Q. But I think what you've said is the implications for PC1 may be quite significant.

A. No comment, yes. You did ask a question, sorry, if I might just elaborate and please stop me, about – maybe we'll get onto that later, sorry, that is a question further down.

Q. No, with these kind of processes, I think it's better if they're iterative and people are able to within reason provide comments that you think will help us. We're looking for the assistance of all of you to help us get the best understanding we can of the issues we have to address in our decision so please if you think –

A. So you asked later on a very I think poignant question is if you include the biophysical characteristics in the NRS, what would that have on the squared value, you recollect that question.

Q. Yes and I've seen your answer to that in your evidence as well. I've seen it in a couple of pieces of evidence now, yes.

A. Thank you. In one of my evidence statements, I did, in fact, conduct that exercise. It's relatively small in scale. I'm not arguing it's definitive or anything but you saw the R-squared went from a value of say around .4, .45, .5 in both the AbacusBio report and as reported for the upper Waikato and this study that we're currently looking at to round about .7 and I say I don't think of the experts disagreed that the R-squared value wouldn't go up. I'm just trying to be helpful to you and say maybe around about .7 so, yes.

Q. Okay, well, we can deal with that now. What I'd like to do is go along the line and ask individually whether you'd like to add anything more to what Professor Horne has said, so Dr Le Miere.

A. [Dr Le Miere] No, I think Professor Horne's covered it well. I think the issues for me with the report also is it's quite a small. As the Court acknowledges, it was a very small sample number it's looking at and it's obviously used very differently in PC1. I'd also just like to add the NRS was tweaked in Horizons so it has been changed to make it more applicable to Horizons so it's not the Fonterra NRS. That's been changed before then. I think all of it together leads you to a better outcome.

Q. Okay, thank you.

A. [Dr Tavernet] But for me for this report they don't compare to some things. Overseer, it's a tool to estimate of the N leaching and the scorecard is more how manage your farm so we can't compare these two tools.

Q. Okay, yes, I understand your point of view on that, thank you. Dr Dewes, we meet again in expert hot tubbing in relation to Overseer.

A. [Dr Dewes] We do, in real life this time.

1435

Q. That's true, yes.

A. I am of the opinion and view that again they are two separate tools. Overseer has its own purpose and that's for not only understanding where

farms sit in a – at a baseline, but also their progressive change over time that can be compared and it also involves what I would hope that a properly prepared Overseer would also involve a certified nutrient management advisor as well to make – to minimise input error as well, so clear, yeah, you know, making sure we've got clean data going in. And I see the NRAT or the Risk Scorecard as an alternative method for getting behaviour change but I see them as two separate tools.

Q. Okay, but in terms of the report from the Waikato, what do you see the relevance of that to PC2?

A. It was good to see 50 Overseer files that came from Miraka and Open Country Dairies I think they came from, yeah, almost vetted by the QCONZ professionals and they did note in there that the data that went into the RNS was difficult to interpret and that was probably because it's farmers' self-reporting data. The Overseer has the benefit of cross-checking what data is being fed in by Fonterra from the Fonterra dairy records, which are self-reporting and that cross-checking that is done by Overseer is very important to make sure that you're getting sensible data inputs. So I found it interesting – I wasn't surprised at the low correlation between the two, again because of different purposes, and the intervention of a professional trying to sense-check it in Overseer which helped, which I believe would have given a far more robust relative measure of risk.

Q. That could be achieved with an NRS as well, though, couldn't it, it could be an independent checking element of that? You could have independent experts participating in that process as well, checking it out, there's no reason why it can't be done in that context, would that be right?

A. That's possible, but being an independent, being a nutrient management advisor myself involved in probably trying to pull together, you know, appropriate Overseers for over a thousand files and my colleagues the same, we've been trained and we've given time and money to be trained and do this and have, you know, keep up-to-date with all the Overseer processes. My concern with having independent professionals doing this, we – are we going, my question is, are we going to have an NRAT in every different receiving environment? Are we going to have training

sessions for professionals in each region? Are we, you know, this NRAT that has been developed here, is it relevant to other regions? Are we – I just – I'm not sure that we are going to get the uptake of professionals being trained to do these things when at the moment, if we look at freshwater farm plan training, I think in Waikato they've only got three people qualified at the moment to even deliver that. That comes from a situation of a lot of us saying "well, we're just waiting to see what happens" and yeah .

Q. Okay, thank you. Dr Tavernet, I'd like to come back to you and ask you for your comments on the Waikato report and its relevance, do you have a view on that?

A. [Dr Tavernet] No, it's normal to have no correlation with not the same tool. So I guess we compare the Overseer. The evidence can be – we can use Overseer and again if you want to another look, another view, you can use another tool. But after, to compare them, apart from (inaudible 14:39:29) sorry – I'm French so maybe you're right, but it's not the same thing, so you can't compare these two things. One, it's more for the score, the scorecard is more (inaudible 14:39:41). Overseer it's a nutrient budget so it has the leaching but you have also many other information to, to have a cross-check of their input to be sure that all the information you have are correctly inside. So it's (inaudible 14:40:02) completely different or –

Q. Okay.

A. – so it –

Q. Thank you.

A. – you can't compare.

Q. Thank you.

A. You can't compare.

1440

Q. Dr Parlato, I don't know whether you want to comment on this?

A. [Dr Parlato] Yes, I agree with what has been said before in terms of they are two very different tools. I also note the fact that the Horizons' scorecard has been adjusted somewhat so the scoring wouldn't necessarily come out the same for the Horizons region as it would if the

other scorecard was to be used and I think I would also add that they note in this report that the farms were relatively homogenous and I think they really do refer to the type of soil in that particular sector, their rainfall range there and so given the small sample size of around 50 farms and they really look at quite a narrow range, most of the farms are well drained, it doesn't necessarily represent what we'd see over the farms in the Horizons' region either, so you might expect a different type of relationship because some of the outliers that they picked up with those really big differences between an Overseer estimate and a nitrogen risk scorecard estimate, a lot of that they explained by the fact that they were heavier soils. So the nitrogen in the scorecard was estimating quite a high risk whereas Overseer was estimating a much lower risk. So when you start to look at those slightly more divergent soil types I actually think you would also get a worse relationship potentially. You know, the analysis hasn't been done, but I just feel like if you start to look at a broader range of biophysical characteristics you probably would get a different relationship again to what they found in this report.

Q. Okay, thank you. Dr Jolly?

A. [Dr Jolly] I support the same views as Professor Horne and Dr le Miere. Just following up on Dr Dewes' comments around whether suitable professionals could sense check or independently review the scorecard, I guess I have a, or the NRAT, I have a different on her. As a certified nutrient manager advisor myself, I believe the fundamental skillset underlying the use of Overseer or NRAT are the same and the NRAT is, especially for CBG, it's a relatively simplistic tool and the training and all that actually emphases that has gone into Overseer I don't see a big arduous task to upskill consultants who wish to do so in this field and I think she's gone a bit too broad. Like we're just focusing on the NRAT and Horizons. We're not sitting here rolling it out across the country at this point. It's never really been our vision to do that. We're focusing, we've developed a tool for Horizons specific and I'm sure there's enough consultants within the Horizons' region who would be eager to upskill themselves in the NRAT and support farmers through that process, getting farmers consented again because that what we, as a consultant

who has worked in the Horizons' region myself previously, I think that's what we actually all want to achieve at this point.

Q. Okay, thank you. Mr Ford?

A. [Mr Ford] Okay, I was involved in PC1. I think you will have to remember Commissioner Hodges is the purpose of this exercise in PC1 which is to develop a tool which was both a gateway and which identified the top quartile who had to make immediate changes to their N leaching.

Q. Yes.

A. And I'm not surprised at the results because the two tools achieve entirely different results. Overseer develops the estimate of N leaching and the NRAT tool develops an estimate of the degree of risk from the farm and they're entirely different things. So I think the one thing you can take from the Waikato report is that they are not something reports the same thing.

Q. Yeah, that's a conclusion I came to when I looked at the different results, but okay, that's good, thank you. Our next question was relating to the r-square value, but I think you've addressed that already, so I won't need to go there.

MS ONGLEY:

Because I had a question on that line of questioning are we going to ask questions at the end or question by question?

THE COURT: JUDGE SEMPLE

Now.

COMMISSIONER HODGES:

Topic by topic.

1445

MS ONGLEY:

Q. This is more a question for Professor Horne actually and it relates to the R-squared value and the reassessment of the R-squared value based on the NRAT and so I see that this is addressed in question 9 of the joint risk witness statement and there you say, professor, that: "If the biophysical

characteristics were included in a manner that allowed calculation of the effect on the R-squared value, this value is likely to increase," and when you conducted this exercise similar to AbacusBio but with inclusion of the biophysical characteristics there was an indicative R-squared value of .7, so you did that earlier in a witness conferencing statement which you refer to here. Now, that was – how many Overseer files did you use for that because my understanding that it was only about five?

A. [Professor Horne] It was about, well, I could – I'm sorry I don't know the exact number. It was a few more than five. Six or so, I think had six original farms and then so the key thing was, I was trying to do two things in that exercise. Firstly, try and demonstrate the improvement in the NRAT as a consequence of including biophysical factors, so I was looking to regress the NRAT against Overseer, as I just told Commissioner Hodges, and so I had about six or seven farms, I will get that information for you, but arguably just as importantly, I was trying to identify that the two tools gave the same relative improvement when I incorporated GMPs and BMPs so in answer to your question, I think there are kind of seven farms, so to speak, but 14 because they are different farms and, you know, I've modified them, yes, and so that was the purpose of that particular exercise (a) to demonstrate that the NRAT and Overseer were quite, well, .7, reasonably well correlated, but I think more importantly, they gave the same assessment of improvements associated with the adoptions of GMPs, BMPs.

Q. So it was done really for a different primary purpose than working out the R-squared value for the correlation?

A. No, it served two purposes, if I can put it like that, yes.

Q. Okay, because in the JWS it says that you constrain the analysis to similar geophysical conditions so was it – can you extrapolate that .7 figure if you look at farms with different geophysical conditions?

A. I suspect so but that is an important qualifier. Just for simplicity, I was looking at a certain subsection, yes, just for farms. I didn't have time to look right across the whole range of possibilities so I was just pointing out that that is for a relatively narrow cross-section but, as I say, I have no

reason to believe that it wouldn't hold for other cells within the matrix, so to speak, yes.

Q. All right, thank you. Now, just in terms of process, I believe that Dr Parlato has a slightly different view on that, so does Dr le Miere, Dr Tavernet, Dr Dewes wish to comment on .7 R-squared value in question 9 or shall I ask Dr Parlato to go first. Dr Parlato, I'll ask you first and then I'll open it up to the rest of the witnesses.

1450

A. [Dr Parlato] Oh, okay.

Q. So no, I just, I had a look at the joint witness statement today after we had our conferencing because I also was under the impression that that was part of the exercise that you conducted and then I did just notice that it did seem to be me more for the purpose of that latter purpose that you mentioned which was essentially the concurrent reductions in your risk score. If you were to make certain changes you also saw a reduction in Overseer and I just picked up that you had, you hadn't actually modified the risk scores according to the biophysical characteristics for that particular analysis. I think you used the raw risk scores, just looking through how you explained your methods, and then another analysis you did the modifier, the multiplier in terms of when you were developing the alternative Table 14.2. But that particular analysis I don't think the risk was actually modified. That's was all?

A. [Professor Horne] I would have to have a look back.

Q. Yeah, apologies –

A. No, no sorry.

Q. – for laying that on you?

A. No, that's quite all right. I may be misremembering and I apologise for that. Yeah, but in other places I have compared the NRAT with Overseer so yeah, but I'm quite happy to provide that particular section.

Q. Thank you. Do any of the other witnesses wish to comment on this particular issue?

A. [Dr Dewes] I'd just like to make a comment, that is a very small sample size for a tool in development.

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – QUESTIONS AT THE END (14:52:08)

THE COURT: COMMISSIONER HODGES

Q. Just before I go any further we've been through the evidence and there's no evidence to suggest that anyone disagrees that use of the risk scorecard will bring about change in farming practices and the Court accepts that view, that it will be about change in farming practices for the better. Our interest is in solely, solely in the use of the risk scorecard in a regulatory framework and that is untried anywhere to the best of my knowledge and so we need to be very satisfied that we understand what it will achieve and what the risks are associated with the risk scorecard and so that's where we're trying to get to with our discussions today. You've been very clear in your joint witness statement that Overseer numbers should not be used as an absolute purpose. Does the same apply to a nitrogen risk score? Should that be used for an absolute purpose as a drafting gate for example? So we'll start the other way around this time, Mr Ford?

A. [Mr Ford] So can you tell me your question again?

Q. What I'm saying is that the joint witness statement that you produced said very clearly that all experts agreed that Overseer numbers should not be used as an absolute number?

A. Yes.

Q. And I would like to understand your views on whether a NRS score should also not be used as an absolute number, for example, for the purpose of setting a drafting gate?

A. Oh, yes, I'm of the opinion that it will be appropriate to use the NRS (inaudible 14:54:12).

Q. Would you like to expand on that or is it, yeah, if you could explain the reason why?

A. I think it's to do with the purpose of NRAT. It comes back to your earlier, the first introductory comments that the NRAT is to achieve behaviour change. So it's to achieve adoptions of the GMPs and BMPs amongst

the growers and farmers. So it's there for a different purpose. It's not there to determine which way you go in terms of a consenting framework.

Q. Okay, thank you very much. Dr Jolly?

1455

A. [Dr Jolly] I guess the NRAT has been designed for Horizons Plan Change 2 and although I can acknowledge there is margin of error within those numbers and all that, some of the issues that Overseer have, like continuous model updates, I don't envision it happening with the NRS and so if it was to be used as an absolute number, the NRS would continue, for its longevity for PC2 plan change, for its longevity, we won't be having some of the challenges that it has faced – that Overseer faced with updates and renewals and all that, and so the challenges are less and so the NRS – so your growers and farmers, when the plan, the plan became operative with a, with a risk matrix and as of today that wouldn't change over its lifetime, but in fairness to – if we're saying that Overseer can't, you probably – you can't really say that the NRS can have absolute numbers, but I do see that some of the challenges are, are less than what it - than Overseer has due to I don't see us continuously updating the scorecard in the lifetime of the plan. I see the Oranga Wai plan overtaking it and I don't even – that's, yeah, that's a whole new, that's the scorecard might, may or may not, feature in that so I think we can't get – we've developed the scorecard for PC2, not for Oranga Wai, so we can't envision or can't say what, what – where is its life after PC2 is at this point.

Q. Well, maybe I can sort of focus the question a little bit more. In the case of PC2, I understand you to have said that it would not be appropriate for us to use it as an absolute number for drafting gate purposes independent of whether it's better in terms of future changes or not, we're looking at a moment in time, really, or you know, within a year or a couple of years and so the question is, is it suitable for use as an absolute number within that period, that time period.

A. The scorecard?

Q. Scorecard, or the nitrogen score as a basis for deciding whether an activity is controlled or something else?

A. Yeah, in my opinion I think it can be used as an absolute, as a gateway tool.

Q. I thought you said before that you didn't think it could?

A. I think the risk is minimised and for such a short period of time I do think it can be used, but there are, yeah, there are still some of the same challenges that it has that Overseer has but because it's not going to be updated and all that, some of that risk is minimised and I think in the CVG sense so for CVG, because of the challenges of Overseer and all that, yeah, all that have been discussed in great lengths over the last day or two, I feel this, for the purpose of PC2, the Scorecard is the better tool to move forward with.

Q. Okay, thank you. Dr Parlato?

A. [Dr Parlato] So I refrained from commenting on this in the conferencing because I felt there is quite a lot of planning considerations around that aspect, but I do understand certainly the reservations around using Overseer as an absolute number, but the comment I made on Friday and I'll make again now is given those reservations around Overseer, which have largely stemmed out of quite intensive review processes and scrutiny, I believe that the risk assessment tool should essentially be given at least as much concern over being used as an absolute number as Overseer, just given the fact that our understanding of the limitations has come through a very intensive process with a lot of people contributing, whereas our risk assessment tool hasn't yet been peer reviewed. That's not to say if it went through a process it wouldn't come out and say, yeah, this is great, this can be used as an absolute number, but at this particular point in time I don't think we understand it's limitations well enough to have more confidence, at least, in it, than Overseer, as an instrument.

Q. Thanks, that's a very clear answer without getting into the planning side of it which I wasn't trying to lead you into.

A. No, no, no, not at all, I do, I just step back from that, but yeah, no, great, thank you.

Q. Okay, thank you. Dr Dewes?

1500

A. [Dr Dewes] Yes, I still stand by the fact they're two different tools. I still believe Overseer is the best tool for establishing baselines and relative risk over time. The NRAT is probably a useful tool to enhance behaviour change when coupled with Overseer but I don't believe it should be used alone.

Q. But coming back to the specific question.

A. As the gateway?

Q. Yes.

A. I don't believe it should.

Q. Okay, thank you. Dr Tavernet.

A. [Dr Tavernet] So question is can you use the model with an absolute value?

Q. Yes.

A. For the moment it's no because the scorecard, Overseer all systems are models, so if you want to use an absolute value you should know the answer to statistic one absolutely. This tool is a statistic and systematic uncertainty on the result. It's the best tool for the (inaudible 15:01:12) we have the systematic uncertainty so you cannot (inaudible 15:01:18).

Q. Sorry to interrupt but I do want to keep everyone on track. The question is about the NRS. It's not to do with Overseer.

A. Okay, sorry.

Q. I'm sorry to be hard but –

A. You can't because the answer systematic and statistical uncertainty are unknown so you can't use it as an absolute value.

Q. Dr le Miere?

A. [Dr le Miere] Yes, I have a different opinion, I think you can. I think it's more appropriate than an absolute number in Overseer for a drafting gate. I think it overcomes some of the limitations within Overseer just because of the nature of what Overseer is as a model, a very complex model that it's trying to work on so we don't, as Dr Jolly said, we won't have the version change issue and Overseer is going up considerably up and down with, as it gets improvements and gets changed, it makes it very complicated. I think you can have confidence that you'll get the direction of travel that you want. I don't think there's the –

Q. Sorry, can I just bring you back to the specific question?

A. Certainly.

Q. The specific question is, is it suitable, is the NRS suitable for a drafting gate?

A. Yes, it is because it overcomes – it has some advantages and it overcomes some limitations of Overseer and it is – I don't see any weaknesses with it that will preclude it from being used as a drafting gate.

Q. So it could be used as a an absolute number?

A. Yes, because it's an index so while it's absolute number, it's different to an Overseer absolute number because it's an index, it's not going to change and that's been worked through. It has been calibrated to a limited extent. The work that has gone on before within Horizon as well as the AbacusBio and other reports, so I'm confident what it's trying to achieve around, you know, giving that farmer's helpful information around the changes they'll make and what that will flow through to that it is appropriate to use in that way.

Q. Okay. Professor Horne?

A. [Professor Horne] Mhm, it's a good question, isn't it? It's almost an intractable problem, isn't it? You decide who you're going to consent and not so you set some criteria or bar or demand some standard. Some people get over and some don't, and some get quite close so I suppose one advantage of the NRS in the context of your question is that it's much clearer, it's more explicit what is being required as opposed to what to many users is a black box as far as Overseer is concerned. The other point I'd make is there's a reasonable amount of categorisation that's already gone on within the NRAT so it's not pretending at a degree of precision as such and so you might think, okay, it hasn't overreached itself and so if it is saying I am, you know, my number's not right then, yes, it hasn't fussed about precision. It has tried to kind of take a more flexible view is what I'm saying, yes.

Q. I guess one of the concerns I have is that each of the farms is different. They've all got different management proposals to reduce their nitrogen, so how can we be sure that they're comparable in terms of the way they come together to give you a number? I'm being open with you so that

you can hopefully help us understand better. So in a way, well, certainly there's the black box element of Overseer, I don't think anyone will argue with that, but equally we don't know about the NRS because it hasn't been used for this purpose before and so there is an element of unknown about it and that's something that we have to consider. Because people's lives are going to be affected by our decision and so we need to be certain that we're not going to make a situation that means that the problems of the One Plan in the past are just continued because we get the wrong decision here. So that's why this is so important and why I am coming back to this and, look, I don't think there needs to be a concern that it's necessarily a fatal flaw, we need to understand what it actually means. And so if anyone would like to add anything further, in view of that explanation, we'd be pleased to hear from you?

1505

A. (no audible answer 15:06:00)

Q. Okay.

THE COURT: JUDGE SEMPLE

Q. So Dr le Miere, for my benefit, can you just explain for me the difference, when you say it's an index number as opposed to an absolute number in Overseer, can you just explain that -

A. [Dr le Miere] Yeah, but yeah –

Q. – differential to me?

A. It, it, I mean that in a sense as trying to give that index a risk, it's, it's within the components within it as well, rather than trying to give you a number and saying "you are losing 28.4 kilos of nitrogen" which we know is sort of that illusion of accuracy around that. So I think there is and it, of course, it hasn't had the amount of investment that Overseer and others have had, doesn't mean Overseer is better, it has just had a lot more scrutiny, is there's a wealth of data behind it, the AbacusBio Report shows of scientific literature and others that came up with the relative scoring that they went for another sieve, if you want, within the mediations for – to make it applicable to Horizons and things were tweaked and changed. And that gives us, I think, some confidence around that, the relativity

between those scores and I think it's, as the Waikato Regional Council report points out, it's a particularly useful tool to show farmers what the risk of different practices are and then what they need to change to reduce that risk.

Q. All right, thank you.

THE COURT: COMMISSIONER EDMONDS

Q. I have a follow-up question to Professor Horne. I wasn't sure what you meant when you were talking about –

A. [Professor Horne] I cannot hear.

Q. – the more flexible view?

THE COURT: COMMISSIONER HODGES

Sorry, Katherine, someone can't hear.

THE COURT: COMMISSIONER EDMONDS

Q. Professor Horne. Hear me now? I wasn't sure what you meant when you talked about a more flexible view. Can you tease out a bit more clearly, explicitly, which is where you went on to make that point what you meant by that?

A. [Professor Horne] Mmm. I guess what – I suppose what I was striving to say is that to the end user, the farmer, whoever is conducting the NRs but probably in terms of engaging with the farmer who is going to make the management changes. It's a little bit more explicit and the – I was just noticing the QCONZ report that Commissioner Hodges was referring to, it's got a nice phrase, a key strength of the NRS is that it provides actionable insight. And so I think what I was suggesting there is rather than getting fussed about exact values or numbers, because there is already a degree of categorisation going on within a range of farm management factors that everyone understands and relates, I suppose I was just suggesting that that may take some of the heat out of whether or not you quite meet the number. So with Overseer, you know, you put in all these numbers, you're not quite sure what's happening in the black box, it spits out a value of 37 and you have to get to 35, whereas with the

NRAT, you know, you've put in all this – all these values that, you know, you clearly relate to, it's gone in within a whole group of categories and so when it comes out at the end you might think, okay, fair enough, you know, there was all that kind of – it's a flexibility, as I say, within the input parameters that there wasn't a high – no one is pretending you had a high degree of precision, if I could put it like that, and you understand the numbers and their influence, yeah. More I'm just being more explicit I think and easier to understand and providing these kind of actionable insights rather than just spitting out a number that you feel aggrieved at that's two kilograms of N per hectare away from meeting a table value.

1510

Q. So with these Overseer ex-advisors and advisors and all that sort of thing, I've always understood that there was a degree of interaction possible with that. So if you get a number that's not really where you want to be then you can sit down and work through the options for what it is that you might be able to do to make the numbers come back to where you wanted?

A. Right.

Q. And I would guess, I would assume that people, whether they were using one tool or the other, had the same skills and hopefully the same degree of communication that they could have with the particular farmer.

A. No, you're absolutely correct and those skills, as Dr Jolly is pointing out, are kind of interchangeable. I guess the problem is when after you've made all the changes that are practicable that you can see putting in place that you can afford, that you had the skills and you arrive at a number of 37 and you have to reach 35, that is kind of the issue, yeah, if you follow what I mean and that's the problem around using an exact number you know, and what –

Q. You have the same problem though with the scorecard in that. It's just a different way of coming at it, isn't it?

A. Well, I guess in a sense all I'm saying, yeah, and again it is an intractable problem isn't it. Once you set criteria, standard or bars, some people are going to not quite make it and perhaps feel a little aggrieved. I guess my point was just there that the risk scorecard, you know, is much more clear

as to what is going on. You can see more clearly where, that is the end user, how to get your score down and that type of thing. Now, you can do all that in Overseer, I'm the first to admit that and I kind of go back to the phrase, you know, to the end user, it does provide a lot of insight about actions needed to be taken, GMPs, BMPs to be adopted.

Q. Thank you.

A. [Dr Tavernet] Beginning to try to compare two different tools. Of Overseer you have many information. It's not only one number. All professional look not only at the top because there are many numbers behind and you have to use that I think for a consent to do what you want. After it's after it's you want to say, you want to reduce emission on your farm, I think Overseer is better. After if you want to change the way of managing your farm, effectively you have the scorecard and right to say, or to help the pressure down maybe you can do something here. But to come back to the question that's a big number. You use Overseer when there is a one, but I think you have to use many, much evidence instead of using one absolute value.

THE COURT: COMMISSIONER HODGES

Q. That's going to be my next question. I would just like to say that we need to keep in mind that we are looking at a regulatory tool and it needs to work from the point of view of the farmer and it needs to work from the point of view of the regulator and we are seeing a lot of evidence on what it means for the farmer, not a lot of evidence on what it means for the regulator and that's where the Court has got some difficult decisions to make, so I would ask you to keep in mind that we're talking about a regulatory process where people could get prosecuted possibly if they don't do the right thing and so somewhere you've got to have some way of measuring so that you can make a decision what you do. I'm sorry to be so blunt again but it's important that everyone realises what we're here for and we've had 12 years with things not going too well with the One Plan and we do not want that to continue in the future. So if you can keep that in mind and try and find a way of perhaps even modifying your thinking in a way that would help us to get to the best fit situation and with

that in mind you will all be familiar with my harping on about the possibility of using more than one tool and basically we are talking about combined use of Overseer and nitrogen risk scorecard. They're the tools in front of us. Are there any options that would get a better outcome and using one tool on their own and if so, how would it be done and, Professor Horne, I'm picking on you again, I'm sorry, just going in the reverse direction to the reverse direction I went in before, the ones –

1515

A. [Professor Horne] I think everyone will be sick of me soon. It will make me the most unpopular person here.

Q. The ones in the middle seemed to have got the good seats actually because they have time to think about things. I'm coming to you in a minute, Dr le Miere. Professor Horne?

A. [Professor Horne] Well, I think we all agreed as is borne out in the statement in front of us that there's real merit or advantages to combining the two tools and I don't know whether it's a – because they have different strengths and they are different so they can complement each other very, very nicely. You've got one that's going to generate I think in a more straightforward way or a way that's more easily understood or highlight these actionable insights, the management changes, practices that need to place and then that can be informed perhaps in not a more accurate but more specific way so one of the criticisms, and I think it's a fair enough one is that the NRAT is someone coarse whereas Overseer does a much more detailed analysis of the farm and so I think there's real scope to combine the two tools and to link together their mutual strengths and I don't know whether it's appropriate at this stage but building on some of the word that Dr Dewes has done, I've had a first attempt at trying to combine those two tools that I would be happy to make available to the Court if that was helpful. That is just one person in my view how I've done it. As I said, I picked up on a sort of an approach that Dr Dewes has been working on over a number of years and she's had nothing to do with my particular proposal but, you know, I think it's imminently doable and I think it will be a better tool and I think we can address many of the weaknesses of either approach that perhaps is vexing the Court.

Q. Mhm, yes, again I'll be completely honest with you, I see the desirability of using a risk scorecard to see whether it will perform as you expect, but to do that as a first off without some kind of certainty behind it is a bit of a big ask for me personally.

A. there's a lot of science in forming the risk scorecard, yes, I mean, I think, I don't think you – I don't mean to be impolite but I don't think you'll want to confuse, overstate its uncertainty, you know, I've been at pains at different times to point out the similarity and the architecture between the NRAT and Overseer that the endgame really is to see the adoption of GMPs and BMPs management change and although we're dealing with a really complex biological system here and ag intensive vegetable production, the list of GMPs and BMPs is quite short, is quite straightforward and so – look, I'm not trying to detract at all from your very serious question and the gravity of what is before us today but, yes, in terms of GMPs, BMPs, I don't think there's a huge amount of uncertainty in those. We just need to get those practices adopted on farms as quickly as possible.

Q. Yes, I don't disagree with that and I'd like to encourage you all to be as impolite as you feel you need to really to bring me into line so I actually understand what you're saying. I have got a reasonable thick skin. I'd rather you tell me to my face what the real issues are and I encourage you to do that. I think the endgame is protecting the water quality.

A. Absolutely.

Q. It's not the endgame is getting the GMPs and BMPs in place, that's the beginning. There will be more that comes later and we just need to keep that in mind and so I'm not dissing the science at all. I've great respect for science.

1520

A. No, I appreciate that. I suppose my point being that I think there are real advantages out of having a combined tool that we can link them together so we get the strength and merits of both approaches and –

Q. Okay, well, I will give you advance notice that as our last question I will come back and ask you how that might work, all of you, so you have all

got time to think about that. And so with that as a sort of precursor, I will now come to you, Dr le Miere, and see what your views?

A. [Dr le Miere] Thank you, Commissioner. In my opinion I think it's most appropriate to use the NRS as the drafting gate, but backed up with Overseer within some sort of condition of the consents that's used as – or used as sense check, I don't know if that's the right word, but and that might be initially if you're trying to get to particularly for farms that need to get to a certain NRAT number or outcome, maybe every year or two years, but then might go down to every five years, you know, do an Overseer report and go through the Overseer process. I think that gives us the advantage of a simple gateway, but then backed up with information from Overseer which will help longer-term things like catchment and accounting, because I do think there's a place, I have reservations with the accuracy of it on a farm-by-farm basis, as you know, but I think it has a place to help us understand the catchment contact along with the water quality over time. So I think that's, that's what I envisage a – using both tools, I haven't seen anything that Professor Horne has worked on, so I don't have the – I don't know how you'd combine them and do the stress testing on that at the moment.

Q. Okay, I guess you've only got two options. You either use the NRAT as the drafting gate or the Overseer and that's one of the debates that we have to go through.

A. Mhm.

Q. So is there any particular reason why you think the NRAT is better than the Overseer for that function?

A. Well, because I think you'd be using Overseer, as we've said, the JWS, as an absolute number which is not a – not appropriate, I don't, I think that's, that – within regulation, that's where it's – has the most issues. So it's more appropriate to use the NRAT but then using Overseer with the what it can bring to the table within that process as well, but not as a primary drafting gate.

Q. Okay, that's something we have obviously got to think a lot more about. Dr Tavernet?

A. [Dr Tavernet] I am sorry, use Overseer as a primary one, mainly because you have not only nitrogen but you have all sorts of nutrients and you have the phosphorus and also (inaudible 15:22:46) of freshwater I think, it's not only nitrogen I think. As you can't use the absolute number, I think maybe that approach is better, of course to have. After to deal with that you can add a completion with tool like the scorecard or you can use Overseer in another manner, it's a relative way also, it's possible, to continue Overseer as relatively. So the distribution of the farm and you say oh, you are the 20, you have this sum is very bad, so you have to do something to be better.

Q. Look, I –

A. So there are many manner of different things to use Overseer in a multi-tier approach.

Q. I think I can probably understand what each of you is going to say based on what you said before. So unless someone wants to make a particular comment now, I'll leave this right until the end and I would ask you to – I'll come back to you in a second – I would ask you to seriously consider what – put your – you're experts advising the court and I would like you to consider how can you help the Court to get something that will actually work? Because if you're just going to get into your trenches and say "I'm an Overseer person" or "I'm an NRS person" that isn't actually going to help us greatly. So I will come back to you at the end and ask for whether you come up with any brilliant ideas that mean we can all go home or down the pub and have a beer and we've sorted out the problem. So Dr Dewes, you wanted to add something?

A. [Dr Dewes] Oh, yes, I do want to just table my concern that the NRAT I see as quite inflexible and it's coming from a monocultural perspective for the land use. It's assuming that that land use is going to stay in dairy and the risks are associated with that, whereas in real life, in my experience, you get dairy farmers that want to make changes as they are making relative risk reductions in contaminant. I mean the benefits, again, I'm not trying to be in my trench of saying Overseer is better, but Overseer is far more flexible. You're able to explore land use change, retirement of vulnerable land parcels. It goes down to a very precise level of where

there are high risk activities on high risk biophysical areas of the farm. It allows you to compare between farm systems whereas I see the NRAT is only tweaking a singular farm system and it allows you to explore things such as, you know, going from some pastural land into forestry, exploring horticulture, exploring cropping, exploring dry stock use or even sheep milking so, in my experience in the Waikato and in the North Island working all around the country actually, we have a lot of people that are farming maybe in a dairy situation but wanting to explore diversification and that's the absolute benefit I see of Overseer. It allows you to explore all of those scenarios so I think that really helps our farmers and I think it can help the councils as well.

1525

Q. Thank you. Does anyone else want to make a comment at this stage or are you happy to leave it towards the end?

A. [Dr Parlato] Could I just make a comment which is a little bit different from what's been talked about because I guess at the moment what's being proposed is to have table 14.2 and the risk assessment tool as the alternative gateway and I think that the Waikato report sort of picked up a little bit about my thinking about this in that you have two quite different tools and so a farmer is going to choose the one that will work best for them, which makes absolute sense, and so they have raised the concern that if applicants are able to pick and choose between gateway tools that are weekly correlated and thereby select a more favourable activity stages, that would diminish the effectiveness of the rule framework, so I just had a bit of – I mean that was quite interesting to see them come through with this because I've been thinking about the differences in terms of nitrogen loss associated with the two different tools and I know it's difficult to think about the risk assessment tool in that context, but Professor Horne has done some work in the development of the tool and has sort of estimated what a average farm might be leaching using the risk assessment tool and his process for developing the risk assessment tool as, or our process I guess but he came up with the multipliers and things, essentially what you end up with is across the cells of the matrix, you get a relatively similar, well, in theory you'll get a relatively similar

nitrogen leaching across all the different land types and biophysical profiles because that's the way the targets have been set and then Dr le Miere did a slight adjustment to that, so that actually alters that slightly, but I guess my point is that the risk assessment tool framework essentially allows equivalent nitrogen loss, give or take obviously, across all different biophysical characteristics whereas table 14.2 is set up quite differently. They are both natural capital approaches but their underlining principles are quite different so with 14.2, you're, and there's been a lot of discussion about this today, you're targeting your more intensive farming towards your highly productive land and I really see the gains I guess in terms of water quality you're getting is more from the quite tight constraints I guess that are being placed on some of those poorer LUC classes. If you look, there's quite a difference obviously between you can leach 50 kilograms of nitrogen per hectare per year under a given Overseer version, say, in LUC1 and that's down to 20 for LUC6 and obviously that's going to have quite substantial implications for water quality in terms of those restrictions that you're getting through those poor quality land classes so I guess what I can see is that those restrictions are lifted by putting the tools alongside each other and getting to choose the two approaches because you won't get those same gains through the LUC5 and six restraints that you're getting, say, through 14.2 and that's not necessarily to say, I'm not saying that one is better than the other in this sense, I'm just saying that when they're an alternative – I mean table 14.2 can actually potentially undermine, be undermined by the risk assessment tool and in another sense in that it may actually, the LUC plus one land, the risk assessment tool target might actually be, get you lower, or allow lower leaching than you would be allowed under your LUC1 land as well so it just means that when they're sitting alongside each other, they are, yes, potentially not complimentary in that sense.

1530

Q. I wasn't necessarily thinking of allowing one or the other. That's something we have to consider, but it may well be that one or other is the lead tool, for example, and you use the other as a more efficient way of monitoring things over time.

A. Yes.

Q. I wasn't actually thinking of giving people a choice, although that is still an option.

A. That's sort of what is – that's what proposing.

Q. Mhm.

A. [Dr Parlato] I was just going to say, this is Dr Parlato speaking, I'm just conscious that the witnesses need to state their name for the –

REGISTRAR:

That's all right, I can do it.

THE COURT: JUDGE SEMPLE

Mr Registrar has sneaky little connection with the transcription service to let them know who's speaking.

THE COURT: JUDGE SEMPLE

Q. I'd quite like you to take me through that again more slowly because I don't have a science background but I'm interested in what you say that currently what is proposed is an alternative scenario so I can choose one path or another and as you say, one might assume that if I'm applying for a consent, I will choose the pathway that is going to be the easiest for me if the pathways are equivalent, as they are now, in terms of activity status duration of consent, so on and so forth. So can you just explain to me what you are meaning in terms of they might work not to compliment but almost to undermine each other.

A. [Dr Parlato] So I guess if we start with 14.2 and I guess you're familiar with the principles behind that.

Q. Yes.

A. And then we move to the risk assessment tool and how it was developed and essentially we had a low risk starting point for that which, and then the matrix was adjusted so each cell in the matrix depending on your underlying biophysical risks, you accordingly had a different allowable farm management risk, but that was essentially to even out overall what the nitrogen loss would be so it was on the basis and Professor Horne in

questioning confirmed this. Essentially, it was to give a similar nitrogen loss across all of the cells and so that's what the adjustment was and then, in essence, that means that all of these different biophysical profiles are going to be leaching in a similar ballpark as each other which is quite different to 14.2.

Q. Yes, which has quite specific differences between land use and categories.

A. Yes.

Q. Thank you.

THE COURT: COMMISSIONER HODGES

Q. That is actually very important so thanks for pointing that out.

A. [Dr Parlato] That's all good.

Q. So if there's no one else that wants to add anything for the moment, I'll go onto the next question.

A. [Professor Horne] Can I make a reply to these. While Dr Parlato is correct in what she's outlined there, I think that what really is at stake here are two issues: firstly is what do you, well, firstly, I trust the Court's not confused by the fact that although – sorry, let me go back. It's a risk tool, right, the NRAT so what, and I suppose although I was greatly assisted and it was a team effort, what I made the initial decision was we had the NRS, remember we were going to use that and modify it, and if you look at the structure of the NRS it falls into risk bands so a farm can after you've aggregated the scores across the six factors, you can be very high risk, high risk, medium risk, low risk or very low risk and so one of the things that has surprised me is that no one's really challenged me on this. I made the decision that we want improved water quality so all farms should pose a low risk. Perhaps very low risk was a bridge too far, but we wanted to push farms as far as we could. So it is true that all farms pose the same risk, and I'm sure you're not confused about this, in recognition of biophysical factors, farms will vary in the intensity that they're allowed to operate under and that's what I think a more purest view of natural capital is so what I am suggesting is we say to farms if you can accommodate this intensity of land use, you're allowed to do that.

Because of your biophysical characteristics, you'll pose a low risk to the environment. So what happens at the moment, and I think that is the most simple or straightforward story, so what is happening at the moment with table 14.2 is that there is a further sifting so what they say is soils that can accommodate more intensive land uses as reflected in Overseer simulations, leaching is certainly lower from then, but then they turn round and use land use class to reflect the productive capacity of a soil. Now, land use classification as a measure of productivity generated a lot of dispute at the time of the formulation of table 14.2. I don't believe that it's a good measure of how productive a land class is because we understand so much about how to improve management, how to improve the productive potential of a soil. In fact it could even have the perverse outcome of giving a soil as classified as class 4 because, you know, it's very sandy or something and back when they were first doing this in the 1950s/'60s or so giving these land use classes, it wasn't growing much grass but, of course, in the intervening period we've come along and we've irrigated it and it's now high producing farm and so that's one of the grievances about the table 14.2 is that, you know, I've got a farm, it's class 4, I've spent a lot of money developing it, it now produces as well as a class 2 but I don't get anything like the same allocation for leaching loss. My farm, I'm in the low rainfall area, is not having much impact and so I'm stymied by the fact I've got a high producing farm, I'm not having much impact and for all my troubles, I'm getting a lower leaching allocation. With the NRAT that's not an issue. Everyone's treated fairly. You just have to have a low impact and that situation, low rainfall, you can be a bit more intensive in recognition of the biophysical factors in your favour. It's not just, it's not linked to some system developed many years ago, you know, but now the LUC is magnificent for identifying land use classes and the need and how to manage them, but I think it's a little bit of an anachronism when you're talk about natural capital.

Q. Professor Horne, I'm very, very conscious of all of the issues you've spoken about.

THE COURT: COMMISSIONER EDMONDS

I recall from the first hearing…

THE COURT: COMMISSIONER HODGES

Q. It's something that I think a lot about, but PC1 is a very limited – PC2 is a very limited scope and I think what you're talking about there is a very wide issue. It's changed in the whole basis of the One Plan, I suspect. I haven't looked at how far we can go in that, but I think it's probably going a little bit further than what the scope would allow. You can rest assured that both of the two Commissioners are very familiar with those kind of issues because we've dealt with them a number of times before and we understand those issues but for us to be able to do that in PC2 would extend the length of this process for years, in my view, because there are so many questions that would have to be answered. That's for the next plan change in my view. So I think we need to bring our thinking back into what can actually be done as part of PC2. I'd like to move on to a different topic. Does any counsel have any issue they want to talk about on what we've just discussed so far?

UNIDENTIFIED FEMALE SPEAKER

Yes, but I'll wait till the end.

THE COURT: COMMISSIONER HODGES

Q. Sorry, okay, yes. Apologies. Now, just in terms of general Overseer uncertainty and use of Overseer as a catchment, contributing to a catchment management planning tool, is there agreement amongst experts that Overseer can be used in catchment management planning as a sub-catchment and catchment level and that in that context, the variability or the uncertainty factor is in the order of 20 to 30%, is that a correct understanding of what you're saying or is it something different? And, Dr le Miere, I'll start with you this time. You're looking glum.

1540

A. [Dr le Miere] I think – where shall I start – in terms of that uncertainty and the 20 to 30%, that's the level of uncertainty with Overseer for just the

inputs so particularly the soil and rainfall lookup tables that are used in Overseer. Obviously, within Overseer, there's the number of other uncertainties that we have. We have the uncertainties around, the assumptions are put in for the inputs when there's effectively not the right crops or animals. It's actually you have to make and that's why you need, as Dr Dewes said, you need trained (inaudible 15:40:50) but it's assumptions. There's assumptions around management practice so it presumes that we have GMP around fertiliser application and effluent and those sort of things and then we have the model assumptions and areas within the model because it's trying to produce a very, very, you know, more than a very complicated biological system. None of those are taken into account within that 20 or 30%, it's just the uncertainty of the input. So that's where I got to with that validation report and trying to get an error out which is very hard to do but that's the best information I think we have. When it comes to the catchment accounting, my opinion on that was looking at the fact we had a spread above and below the line if you want the one-to-one line, we did have a positive bias, it was a bit more overestimating that if you had enough farms giving the data in a catchment, a few hundred, you would have probably enough overs and unders that would cancel each other out that you'd have a better, it's not going to be 100% accurate but you'd have a better handle on what's happening. But I think the error, or the uncertainty, the lack of precision and accuracy on an individual farm is such that that's where it gets very hard to say what that plus or minus is. So what that uncertainty, when you've got a couple of hundred farms is, the catchment and everything is hard but I think it's going to be a lot less. You are going to have some more certainty around those, putting those results together. Does that make sense, Commissioner?

Q. Yes, well, it makes quite a lot of sense but it does leave a couple of other questions as well which I don't need to go into but basically you're saying that, well, let me put it more specifically. Is there any alternative to Overseer that can be used to assist in future catchment accounting and deciding who's going to reduce how much nitrogen where?

A. Not that I'm aware on the farm with knowing what the – yes, a coarse understanding of where the different contributing factors are to the water quality or measuring. There would be other models with Epsom and other ways –

Q. Yes, we know about them.

A. – they are obviously not done, they've got to be done by the farmers, they have to be done by professionals, they're much more complicated. Professor Horne knows this better than me, to be honest. There is other alternatives but I think there's an advantage getting, even on the five year lease cycle, getting that sort of data from farmers that can then be fed into to a model, how the understanding of what the contributors are.

Q. That's helpful, thank you. Dr Tavernet, I'll come to you next since you know a little bit about this topic.

A. [Dr Tavernet] I agree with most of if we increase the number of farms, if you have all the farms, the catchment, a better precision of all what's happened in the catchment.

Q. So basically it evens out to the larger number you have involved, is that correct?

A. Yes.

Q. Okay.

A. And if we can do that, if we can map all, map the whole of New Zealand it would be the perfect because you have so many inside in Overseer that you can understand what's happened particularly at each catchment and what's happened for each river, et cetera, et cetera. For the moment, for Overseer we have some farm everywhere. We don't have a global view of what's happened.

Q. Okay. I'll put you on the spot now and your independence as an expert to the Court, is there any other alternative model that you think could compete with Overseer to do that role?

A. After you can use some research tool like Epsom to model each –

Q. I was only joking actually.

A. – each small block would take years and years to do that.

Q. Okay, that's fine, thank you. I'm happy to go round each of you but it may be simpler if we just say does anyone disagree that Overseer is the

appropriate tool to use for catchment accounting and future setting of nitrogen reduction management plans, does anyone disagree with that?

1545

A. [Mr Ford] Not “the” – “an” appropriate tool.

Q. Sorry?

A. Not “the”, not “the appropriate tool” – “an appropriate tool”.

Q. “An appropriate tool”?

A. Yes.

Q. Okay. Are there other tools that you consider are appropriate?

A. Yes, yes, there are. But they’re a lot more complicated.

Q. Right.

A. And I think you’ve just got to be a bit careful that you don’t get into the, the trap of naming what's got to be used.

Q. That wasn’t –

A. Which then, which then gives the regional council the opportunity to develop a whole of appropriate tools if they’re okay for them to do catchment accounting. Catchment accounting, as I understand it, is a very good at determining the direction of change, the direction of travel. So, you know, you can compare results over periods of years. So yeah, I'm firmly of the opinion that Overseer is an appropriate tool for that purpose, if the sample is good enough, but there may be other tools which become available.

Q. And I totally accept that, Mr Ford, no question about that. My concern is that if Overseer is going to be used, we don’t want to wait for another five years to gather the data necessary to make informed decisions, so that’s the purpose of my question, but your comment is very fair, so thank you.

A. [Dr Dewes] Yeah, I’d just like to say that it is the best tool that we’ve got available at the moment to provide a repository of land use data across a catchment. Also, just like to say with caution though for nitrogen load accounting it doesn’t take into account surface nitrogen run off. So it has got to be used in combination with all the other data layers that we know you need to go in there with hydrology and slope and waterlines and all those other things, but at the moment, from a point of view of being able

to collate a good representative sample of what's going on, on land parcels, it is the best tool available.

Q. Thank you. Ladies, anything you'd like to add?

THE COURT: COMMISSIONER EDMONDS

No.

THE COURT: COMMISSIONER HODGES

Q. Okay, thank you. And you've answered one of my questions about input data, thank you very much, Dr Dewes. See, these are all the questions I had, but the Judge told me I had to take over. If the Court were to decide that Overseer remains an important part of PC2, are the resources available to develop 200 Overseer files within a year?

A. [Dr Dewes] As I understand it, there are 1,200 trained professionals in the advance course, so many of us work all around the country, I would have thought that if it had to be done with a year the resources would be there, 1,200 trained professionals in the advanced course.

Q. Okay and you may think this is a strange question but for me it is important, cost is important in these things, what is a typical cost for preparing an Overseer file for a typical dairy farm, for example?

A. Obviously you've got your licence which that at the moment stands at about $690 plus GST but if more farms come in then that cost will come down relatively across the country. And then it depends on the complexity of the system being analysed, so if it's a straight-forward just straight dairy farm, maybe two, three, four hours, but so you may be looking at about $800 to be done. Depends on how clean the data is that's provided from the farmer and how clean that is going and how much interpretation that takes. If it's a complex farm, for example, like a lot of the ones, yeah, a complex farm, it could take anything up to two days' work to collect all the data and have it all validated and cleaned and put through the model and checked. So there's a range. Simpler is cheaper and more complex is more expensive. It's something I've tried to get some clear answers on and there's obviously no one answer. It depends.

Q. Well, if you want to be specific, say a typical 100 hectare dairy farm with good data records and probably only costs about $400 to $600 of someone's time, but then there's a licence fee on top of that.

1550

Q. What about in a situation where people haven't been using Overseer and not familiar with it, they haven't got the data necessarily in a form that can be used, what would the typical cost then be?

A. Well, again, if we're talking about dairy farms, they should be used to filling in their farm data records. Any other of the milk companies are using Overseer so it comes down to how well those Fonterra dairy records are being kept historically and then, again, the complex or more complex farms will take a bit longer depending on – but with dry stock as well and pastoral systems, now many farms are getting fit for the future doing things like New Zealand, NZFAP Plus, Farm Assurance Plus, so a lot of them are actually getting quite fit for the future with looking after their data. I think it's improved a lot more than what it was, say, five years ago.

Q. Okay, thank you.

MS BUXEDA:

Q. Sorry, can I just as a follow up question if any of the experts are able to clarify or provide cost indications for CVG?

A. [Dr Jolly] I can. So we heard from Mr Carlyon yesterday and I think he gave some cost indications with his Overseer was $100,000 to $200,000. Speaking to him in the past when we were working at council level hearing, he quoted myself and my previous colleague, Mr McNelly, $75,000. Whatever number's right, they're very large numbers. Given the fact that he is probably the largest grower in the area, that's probably the extreme top costs but definitely it's not going to be coming down under to $100,000. The complexity of CVG, using the model itself has to be taken into consideration and the fact that the use of Overseer for CVG is going to be relatively new, I think, yes, even smaller growers probably won't have much loose change of $5,000 in my view and even for pasture, my view is that Dr Dewes may have underestimated the cost value for the average dairy farm. When I'm doing an Overseer file, I probably always

budget 10 hours and at my rate, there's no much change of three grand there so I guess their individual charge out rates depending who you work for and all that, I think, yes, less than $1,000 in my view is probably underestimating the average farm but, yes, as Dr Drury has highlighted, it is going to be quite a broad spectrum and CVG is going to be even more extreme because of the complexities of Overseer and the fact that the growers, extracting this information although I feel that growers will have a bit of extracting, it might be more challenging in getting them up to speed and all that, there's going to be more time taking them on that journey to get them Overseer file.

THE COURT: JUDGE SEMPLE

Q. Thank you. If I can just explore that a little bit further. Is that in part because there's more work to fit the data to the model when you're talking about CVG? We've heard the evidence that the model doesn't, necessarily the categories aren't quite, you know, they don't quite align and so there's a bit more manipulation required or work required.

A. [Dr Jolly] There's a lot more manipu – when you're setting up your crop blocks, you've got your crop rotations and I know there's some growers down here that have very simple crop rotations like six crops and they just rotate through a piece of land but as Mr Clark said yesterday, he's got over 24 crops and I missed the number of line rotations he had on one of his data but I think it was over 7,000 and so each crop rotation has got to be an individual line and then you've got to individually allocate each crop and the fertiliser and so it's a lot more complex than setting up a pastural system and, yes, and it's all new to them as well whether that's, yes, rightly or wrongly, CVG don't have Overseer files apart from Mr Clark and so, yes, it is going to be a bigger journey to take those growers through to get their Overseer file.

Q. So just to follow up on that, Mr Ford, you filed some supplementary evidence suggesting that in some respects, there would have to be some simplification almost of Overseer to accommodate CVG, you know, it would end up being a slightly different – that's what I took from your evidence and I wondered if that might ultimately mean that some of this

complexity might be resolved, do you have a comment to make about that?

1555

A. [Mr Ford] I'm not exactly sure which part of my evidence you are interpreting but I don't think I've ever said that a changed version of (inaudible 15:55:21) would be appropriate.

Q. I think what I had taken from your supplementary evidence in relation to this matter was that, in answer to the question of whether Overseer could be used, whether baseline data could be developed such that a specified reduction pathway could be used so I've perhaps combined two thoughts.

A. Okay. Well, my evidence was there was it possible to create the baseline, wouldn't it?

Q. Yes.

A. And I said it would be but it wouldn't be as accurate as maybe dairy farming evidence or something.

Q. All right, I can see that I've misapplied your thought.

A. [Dr Jolly] Can I just add, so the Bloomer report did go through a process of simplifying these farm systems so if you compared a crop rotation actual to the fertiliser in there as Mr Clark, the weekly or even daily fertiliser application times, that all has to be rounded up to monthly in Overseer so, yes, there's a simplification process but that process itself will take time for the consultant, the grower to work through so that even might add time depending on the scale of the property and how many crop rotations they have to work through.

Q. Thank you.

THE COURT ADDRESSES EXPERT WITNESSES – STILL UNDER OATH – COURT PROTOCOL REMINDER

COURT ADJOURNS: 3.57 PM

COURT RESUMES: 4.08 PM

THE COURT: COMMISSIONER HODGES

Q. I just have a couple more questions and the first of them relates to the fact that a number of changes have been proposed to the scorecard already. During the hearing there have been other changes that have been proposed and I think Professor Horne, you suggest they would improve things. Well, this makes it a totally new moving feast from the Court's point of view. We don't even have a fixed tool that we've been asked to consider. It's still under development. Would you like to comment on that Professor Horne?

A. [Professor Horne] The scorecard hasn't been changed a whole lot. I think there were some regulatory requirements already –

Q. Sorry, perhaps I had better explain it a little bit more?

A. Oh, sorry.

Q. It has been suggested that certain things can be added like provision for land change –

A. Oh, sorry.

Q. – and these kind of things. I understand you said yes, it could be changed to include those kind of things. So we don't even have a fixed tool that we're looking at at the moment which is a pretty major concern for a Court being required to make a decision, so do you have a comment you would like to make on that, please?

A. Well, well, I suppose wouldn't you be more comfortable with a flexible tool, a tool that can accommodate the changes? I mean we saw that as a screen that NRAT might be more flexible than Overseer in the sense that there are emerging technologies that could be incorporated in the NRAT more quickly than Overseer for very understandable reasons. So it was really in, as a response to good research, good data so that farmers could be adopting new technologies. You know, I talked about edge of field techniques that I think really are going to be very, very important going forward if farmers are to meet more stringent requirements and so I think, you know, the heart of that N risk tool is quite stable so to speak and was one of the reasons we put, that we did in developing the NRAT

is that, and I think at the time that was met with approval, that within the NRAT, the N risk scorecard maintains its own integrity. We haven't changed that other than to reflect regulatory requirements that are already in place in the Horizons' region. So I guess to take the counterview, I suppose I see that as an advantage that we can start to include a few things that will help farmers get over the line to improve water quality. Perhaps I'm misunderstanding your question.

1610

Q. Yeah, it's a bit of a two-edged sword though because Dr Jolly said one of the advantages of NRS is not going to be subject to the same changes as Overseer goes through?

A. No. This is in terms of additions, sorry, not – where no one is going to go in and change kind of the fundamental structure.

Q. Yeah, I know, but it's a bit of a moving feast and that concerns me.

A. [Dr le Miere] I think the difference is Overseer, due to having it being redeveloped, the farmer, without changing anything is going to get a different number out. It went up. You know when the drainage model went up, it went up 40, 50% a few years ago because the drainage model had to be put it in there.

Q. Yeah, I remember it well.

A. It then bounced around a bit. I think recently it's gone down 10% or so because it's been more developed, so that, that's quite hard for a farmer moving to get that change. I think as Professor Horne said, the core of the scorecard will stay the same. Whether it was – you would have to have a robust process, you're going to put another attribute in that can modify the score, but the rest of it will be the same. So if you suddenly found, you know, another alternative to plantain, for example, that you know and you got some scientific base, basis could be put in as a modifier to the score and the council accepted that, then that would be helpful and it can be done a lot quicker than Overseer. But you're not going to have the variability and that's no disrespect to Overseer because it's going, you know, you want it to improve the model. It is what it is, but we just don't know how it's going to bounce around over the years in the future, whereas the scorecard you can because you can control it effectively and

decide if you put something else in that's going to help the farmer get to where you get and that will give – you know, if you're going to get the outcome for lowering the risk et cetera.

THE COURT: COMMISSIONER EDMONDS

Q. So I could just be clear what you're referring to when you're talking about this because there's a set of plan provisions and if you want to change the plan provisions there's a process that has to be gone through like we're doing here, so it's not just a matter of the council being able to decide that it can go and unilaterally work with an applicant and change the scorecard approach and the requirements that are all here in what's proposed as the alternative approach under Plan Change 2. So are you talking about something that you might be able to do, it doesn't involve changing the plan but still help with workability or communication or practice changes? I'm just confused as to what you're referring to.

A. [Professor Horne] Me? Yeah, yeah, I mean you're outside my area of expertise here. I suppose when we were developing the NRAT one of the advantages we saw of the tool was that we could incorporate new and emerging techniques or technologies, mitigation options that aren't currently in Overseer but have been well tested. So if you're telling me once that's settled on then that's locked in place, that's fine, but then it's no longer a moving feast, is it?

Q. No.

A. So it kind of, yeah, yeah, you can level one criticism but not both at the same time.

Q. I'm seeking for clarification?

A. Yeah, I think maybe –

Q. I know that a lot of these planning concepts can be a bit difficult to comprehend.

A. Yeah, so it's either a moving feast or it's not, yeah.

THE COURT: COMMISSIONER HODGES

Q. Does anyone else have a view they would like to express on that please?

1615

Q. Does anyone else have a view they'd like to express on that please?

A. [Dr Jolly] For the CVG Scorecard it's my understanding that the version schedule Y in the provisions has not had any modifications or any suggested modifications through this process, so yeah, what you've got is the – my version, final version or what I perceive is the final version, yeah, I don't have any, yeah, I don't think there's been any suggested changes or any, yeah, so what you've got is your schedule Y in your – in the planning provisions is the CVG NRAT.

Q. Okay, thank you.

THE COURT: JUDGE SEMPLE

Q. So the numbers in the table are the numbers in the table and would remain the numbers in the table unless and until there was plan change to –

A. [Dr Jolly] The only thing I can see that potentially could be added and I think it's going to be discussed soon is if we combined into a NRAT with an Overseer component, that's the only – and I'm not signing up to that, I'm just saying that that could be the only – a potential change in this process, but there's nothing else lingering in the background.

THE COURT: COMMISSIONER HODGES

Okay, thank you, yeah.

THE COURT: JUDGE SEMPLE

Q. Yes?

A. [Dr Parlato] I just would like to add that I think there's a revised version in the provisions that has taken into account land retirement – is that right now (inaudible 16:16:16) – so just to note that I just have an additional couple of edits I believe need to be made just to strengthen those somewhat still, so I don't know whether the – what the appropriate process is for that to – but just to say that I'm not, I'm not convinced this should be the final-final version but that's for – yeah.

Q. Right, yes.

THE COURT: COMMISSIONER HODGES

Q. Mr Ford, anything you want to add at this stage?

A. [Mr Ford] No, I'll just back up Anne-Maree's statement that we developed the NRAT for CVG up to an appropriate level and I don't see any need for changes to it in the future, given its purpose.

Q. Thank you. I'm now going to hand over to her Honour to give you a change of voice and you can look at – away from my face for a while.

THE COURT: JUDGE SEMPLE

Most of them can't see actually entirely.

THE COURT: COMMISSIONER HODGES

And then we'll come back and give you the chance to look at how you might see a combined system working, so a system involving both tools. So, your Honour.

THE COURT: JUDGE SEMPLE

Q. Thank you. So my question just relates to one of the things that I think that I've heard through this process is almost a, in colloquial terms, sort of "all roads lead to Rome" so it doesn't matter kind of necessarily which of the pathways that you choose ultimately, as long as we get something in place that starts to regulate existing intensive farm land uses we will get an imprisonment in water quality and that's what we're endeavouring to achieve. And I think that what I have understood is that whether you go down an NRAT pathway, or whether you go down a Table 14 recalibrated pathway, or whether you go down a specified reduction pathway, you end up in about the same place and I just want to understand – I want to know whether I have understood that correctly and if I have understood that correctly, how and why you are so certain that is the case. So I throw that open and I am – I can start wherever anybody wants to answer that for me because, and I will just say one more thing, because the criticism that we have heard is that some pathways are easier than others and therefore the suggestion would be that you don't get the same improvement because they will choose an easy pathway

that doesn't deliver the same result and trying to tease out what you as a group of farm systems experts say about those propositions? Thank you.

A. [Dr Dewes] Yeah, I'm not sure I would be partial to agreeing that the NRAT is going to give you the same results, simply because it depends on where you start and your level of risk or nitrogen leaching, for example, and where you have got to go to. So a highly intensive farm that might need to, you know, if they are assigned to meeting the 14.2 targets, they might have to make significant system changes and it won't just be about tweaking a monocultural dairy farm system, it may be involving land use change and the NRAT doesn't give me the ability to be able to test those scenarios. Overseer is the only tool that will give the ability to work with the farmer and test scenarios to make significant nitrogen loss reductions.

1620

Q. Mr Ford?

A. [Mr Ford] I understand where you're coming from and I agree with your interpretation. I just wonder whether we're concentrating too much on the front end of this which is how do we determine which is the pathway you go down and not enough on how much change we're going to get at the other end, and I just wonder whether, and this is not in a planning term, this is in a farm assistance term, you may be better to not be so descriptive in terms of the gateways or the paths but the prescriptive in terms of the, the degree of change you want and the risk of N leaching and then I wonder whether it's appropriate for you to nominate a (inaudible 16:21:20), but save that using appropriate tools assess your position and make your changes and then have that be audited by the council consenting staff for all their auditors of the planning regime so you're trying the, policing of it over to other people rather than being prescriptive in their policing at the first stage.

Q. Thank you, I understand what you're saying.

A. And I wonder whether in a two year timeframe whether that isn't the appropriate way of getting there.

Q. Thank you. Dr Jolly I think, yes.

A. [Dr Jolly] If I heard you correctly and if interpreted what you said correctly, you said table 14.2 or the NRAT or the specified reduction pathway all

lead you to the same point. In my view, the specified reduction pathway or the NRAT for CVG irrespective of which pathway you take will lead you to the same point because you're adopting the same GMP. It's just the tool that is different but that is different from table 14.2. The reason why we have these two or the specific reduction pathway in the decisions version and now the NRAT pathway is because the CVG growers, although they can make great downward trajectory trends towards table 14.2, they actually can't meet and so they're actually – although they're both controlled activity consents, they're two different, they're therefore two different purposes and for CVG, we've got to remember that it's our understanding that there's only two growers of approximately 50 who can make table 14.2 so without another controlled activity pathway irrespective of whether you're using an NRAT or an Overseer approach, you don't actually, it's all down the discretionary pathway and it's someone else's job to see if that's fit for…

Q. Yes, so you're making a distinction that for pasture it might be a choice, but for CVG is less of a choice because CVG can't meet table 14 so you don't have a choice.

A. I think there's agreement that potatoes and onion rotation –

Q. Yes.

A. – for systems can so, yes, it's not the fact that no one can but, yes, CVG alternative pathway was specifically designed by the planners many years ago now because they couldn't, and the likely, yes – it's not a choice of just having to adopt more GMP and BMP. It's – and I think Mr Clark yesterday was talking about what choices they can make and they can make choices around GMP and BMP but some of those other choices or what could be perceived their choices is actually outside their control and so they really do need another pathway to get consented because, yes, and the GMP and BMP that feed into either are the same and so the outcome would be the same and when we developed the scorecard, what we did was we started off with the GMP and BMP that fed into Overseer, we took the tool away but we brought the same practices with us.

Q. All right, I understand what you're saying. Other experts, in terms of this we get to the same place bearing in mind what's been said about CVG specifically.

A. [Dr Parlato] so I've looked at it, or I guess I've reviewed the evidence around that more from the pastoral perspective and so Dr Snelder in his statement of reply evidence I think did put in there that he believes or the outcomes show that Table 14.2 is the best-case scenario and that the reductions under the decisions version are slightly less but not substantially less. And then he undertook an analysis as part of this, so that was done back in the decisions version, so he undertook an analysis as part of this process which he explained was far more simple than what he did back then and used Professor Horne's analysis on reductions under both the Risk Assessment Tool and the 20% or the 75th percentile and applied those, as far as I can understand, across all intensive farming land uses assuming a 2012 base line and it did come through very similar and that was unsurprising because Professor Horne's analysis of the reductions were very similar.

1625

Q. Yes, yes.

A. And so that all lined up. But I guess I think I have outlined in my evidence that I'm not quite sure that – because Dr Snelder outlined that the inherent uncertainties are the same, so you can make that comparison but I disagree to an extent in the sense that they were synthetic farms versus more real farm systems so the risk is – I don't need – know if I need to go into that detail, I can talk about that if I give evidence, but essentially each one iteratively is slightly less of a reduction, I guess, is my point.

Q. Yes.

A. And if you look at the quantities in Dr Snelder's – I think it's his supplementary evidence, then actual tonnages of nitrogen do differ quite a lot under the different scenario. The risk assessment tool hasn't been evaluated in that one.

Q. Yes.

A. But the actual quantities are quite substantial but in terms of the overall water quality, because it is so degraded, there's all this different input going in, that each one is slightly less.

Q. Yes.

A. In terms of how well it achieves the water quality and that kind of – I will not comment on that.

Q. Anyone else have a – anything they want to say on that? Dr le Miere?

A. [Dr le Miere] I suppose from my point of view, just looking at the – and I think, you know, I think I want to be quite clear that the NRAT, particularly the matrix, is pretty strict on the reductions are required, when you look at the percentiles, particularly for the high rainfall leakier soils, if you want, and I tweaked it, but originally it was from about – if you're in the more vulnerable soils, higher rainfalls, the leakier soils, you had to get down to the sort of 15th to 20th percentile, that sort, so it was drastic reductions, whereas if you were on the heavier soil, lower rainfall, you could – you had to be below about the 80th percentile, that got tweaked about the 25th and the 75th, but it still – and a lot of people sit in the more vulnerable soil side, so they're not evenly spread in that table, they actually sit in the sort of the two extremes, to only which I felt you talking about, but I'm pretty confident there's, looking at the work Professor Horne has done around the associated management practices you have to do to get to those and my own analysis, that there's a sense of vigour and strictness around those tables and a proportion of change that is appropriate.

Q. Okay. Yes?

A. [Professor Horne] Many farmers will use the Table 14.2 pathway, that's the most straight-forward way for them to get consent, but just as there are some CVG farmers or many who can't meet the table –

Q. So, no sorry, just tell me why it's the most straight-forward?

A. Well, I just, I mean, well, in a sense, you know –

Q. Because they have got to still run a model and show, sort of do the same thing?

A. Yeah.

Q. You can't just go "oh, look" –

A. No, no.

Q. – “I think I meet it, so I’ll pretend I’m permitted,” or something like that.

A. Yeah, yeah.

Q. It's not that straight-forward?

A. No, no, no, it's not.

Q. Yes.

A. So yeah, but I guess in terms of kind of fitting with the spirit of what the plan change is about, you can say “hey, I meet the table, I’m not looking for the specified reduction pathway, I’m kind of more in keeping with the initial thrust or intention of the plan change”. But so there are a good number of farmers who cannot meet their table value and so what I think both the NRAT and the specified reductions pathway provide is a practicable solution to that problem. You can't meet the table, how can you make the changes needed to improve water quality in the region? And so I like the way you couched it at the beginning about “all roads leading to Rome”, Rome is the adoption of, you know, good and best management practices and I’m sorry to try the Court’s patience by harping on about that. But remember the other thing is kind of the question is to what degree do we force changes on farmers if it’s going to be extremely difficult or unaffordable for them? And so, you know, as I began, in many ways I am an avid supporter of Table 14.2 and believe we should get farmers as close to that value as possible. But if they can’t and there is some point where imposing further change on them isn’t going to result in an improvement in water quality, what’s the net gain in doing that? And so I think although there’s a degree of uncertainty around monitoring the impact of, you know, N leaching from farms on water quality, Dr Snelder’s work, I mean it’s all we have, it’s the best we have and so what he was suggesting I think in that modelling is that, you know, if you go much beyond the specified reduction pathway, all you’re going to do is impose changes on farmers that is going to be difficult and costly and there will be no net gain in water quality and hence was why I think we developed that. Well, the specified pathway I think is workable and the NRAT achieves a very, very similar goal.

1630

Q. Yes, but I'm right, aren't I, in that if you could – the 20% reduction is always going to be below the Table 14 numbers because otherwise you would use Table 14?

A. Correct.

Q. That's human nature being what it is?

A. Yeah.

Q. Unless there's some other consenting imperative or incentive to head down the Table 14 route one would assume that you would, that, that if you could meet Table 14, you would do that?

A. That was my point exactly.

Q. It must be less than and the question is how much less than and that's what I'm –

A. Well, I don't think you want to confuse –

Q. – trying to understand is when there seems to be a resistance to it being called an easier pathway, but in some respects it must in and of itself be a lesser number?

A. It is a lesser number.

Q. Yes.

A. But it's not easy because remember you have these biophysical factors that you can do nothing about, or very little about, yeah. So it's not as though it's an even playing field where you're saying to this group: "Actually, here's a little bit of a pass for you, you know, you're struggling so you can't do it." This is in recognition of real, things farmers can literally not do anything about. You cannot make it stop raining and likewise, you can't change your soil type and so I think it's in recognition of the realities on the ground, what's falling out of the sky that we're saying if – you know, I would take a very different stance I think if you could demonstrate to me improvements, you know, in water quality by driving further impositions on farmers, further practice changes. So I'm kind of informed by both things. I mean trying to be practical so that we have sustainable dairying in the region but arguably more importantly, you know, the best water quality we can achieve. We're not going to get any better that that here. Well, yeah, very little improvement after the point.

Q. Right, thank you, that helps me to understand the position. Does anyone else want to talk about that? Yes, Dr Tavernet.

DR TAVERNET TO PROFESSOR HORNE:

Q. And rapid development are we aware of that? It's been a review, it's you have something on the table or you need to do some more development?

A. [Professor Horne] It's been developed. It's finished, it's finished and on the table.

Q. No, what I said Overseer is there developed. Of course all the (inaudible 16:34:00) are already in Overseer. For CVG, we are now, we are under the same model, we developed a model for SVG, so we practically the same model as BG and Overseer. (inaudible 16:34:18) their neighbour of course. Second point, if it takes time to develop mitigation because when you want to put in mitigation in Overseer you have to prove that it's really a decrease of something and after we check over all the nutrients doing that and after we can issue recommendations, peer review (inaudible 16:34:39) in Overseer and the rest I forget what I would like to say. But you have many things to use Overseer. After I think if you have over a limit or over (inaudible 16:34:55) you have to do something on the farm. I think under the tool it can say: "Oh, use this path to reduce your energy, your phosphorus or something else." I see more things like that.

1635

THE COURT: JUDGE SEMPLE

A. [Dr Parlato] Can I just add one more point, just I guess – oh sorry.

Q. Yes and then you, Dr Jolly.

A. [Dr Parlato] Just I guess another slight difference between the approaches is the temporal nature I guess in terms of overtime and I guess that stands out as being obvious but just I suppose in terms of water quality, the 14.2 has a sort of ongoing reduction required whereas the other two approaches are static more but that's probably very obvious.

Q. No, it's helpful to remember all of those distinctions, mhm.

A. [Professor Horne] Just on that point, I ran some numbers and that shows that the specified pathway reduction is, in fact, going to be more

beneficial. You're going to get more rapid improvement in water quality than meeting the table.

Q. Yes.

A. Because you lock, you front –

Q. Because you're on a three year, you're on a three year timeframe.

A. – that 20% reduction, yes, and you know, I could talk to some numbers that demonstrate that that over 10 years, the specified reduction pathway will give you an improved water quality if you just take some typical numbers, seven to eight of those years, it's only in the last two years that the table pathway will actually have improved water quality, so it's a sweet spot, your Honour, between frontloading a more reasonable decrease that farmers can meet and, you know, you have an improvement in water quality because you get those rapid gains early on.

Q. Yes and that has been something that has been occupying my thought process in terms of the wider policy environment about, you know, the best possible improvement in the most realistic or shortest timeframe, whatever that policy environment is, I can't recall, but that's the, you know, that's our aim, isn't it, is the greatest improvement in the shortest available time, shortest reasonable time.

A. I'll make those numbers available to you if that would be helpful demonstrating that, yes, but I mean it's a concept that's not hard to grasp, probably got enough paper to read.

Q. No, conceptually it's not hard to grasp but it might be useful for us to see the workings of that.

A. I'm happy to provide that.

Q. Thank you. Dr Jolly.

A. [Dr Jolly] So Dave has kind of stolen my thunder. But yes, I was going to pick up the consent, the timeframes within the consent duration and back to your point around easier for a grower –

Q. Not my word by the way, I read it in your evidence.

A. For a grower or a farmer, yes, the two or three years timeframes to adopt some of those GMPs, it's going to be quite onerous for some of those operations to go down that pathway so although they might not be meeting table 14.2, to get those GMP, BMP up on running on farms in

those timeframes is going to be quite onerous whereas, yes, meeting table 14.2 they'd actually have a longer duration to implement them and so the choices that they have to make is actually quite shallow in terms for some of them.

Q. Well, that's right so that will be – they'll take that into account no doubt in making an election. Yes, which is useful to consider. Thank you.

THE COURT: COMMISSIONER HODGES

Q. I'll just come back to my $64,000 question, and I would just like to say a couple of things I've said before that I think people really need to be going into this plan process with eyes wide open and you may well be right about the 20%, the maximum that can be achieved in PC2 but in reality if the water quality targets are going to be met, then looking in some areas that are 50% reduction as I understand it and it's important that people start thinking about that now when making their decisions for the future and so I'm afraid I disagree with your, Professor Horne, with your emphasis on 20% is the maximum achievable, affordable, achievable because if the goal ultimately is to achieve the water quality targets, which I think the council is obliged to do then you need to be, people need to be thinking beyond the immediate to what it means for their operation long-term and there's going to have to be some very hard decisions taken.

A. [Professor Horne] Look I couldn't agree more and that I think I pointed out to you last time that those emerging targets are going to be very, very difficult to meet and it's going to rely on new and emerging technologies most around the edge of field. I suppose my comments really are in the context of PC2 and as I say drawing on, and strictly in that context, yes, but, you know, I think we need to get farmers on this journey or trajectory of adopting GMPs and BMPs so that they can go – the base on which they can then go forward to meet certainly what as you –

1640

Q. I understand the logic of that, yes.

A. – vividly point out are real challenges coming in their direction, yeah.

Q. Okay, thank you. Now I would just like to provide people with the opportunity of something a little bit more innovative than we had before,

that Overseer is the way to start, NRS is the way to start and the other follows, does anyone have any perhaps more innovative approaches that fits within the plan framework, because we're still within a plan framework that is not basically challenged in terms of Table 14.2 and things like that, so does anyone have any thoughts on how the two could be used together? You may not, it's not an easy question? Well, this one of the rare questions when I have stumped a whole of experts.

A. [Professor Horne] The Court will be really, really sick of me. So I – Dr Dewes has very kindly sent me some of the sorts of risk tools she has been developing where – and she is kind of the expert in this space – is that where you can bring the sorts of values associated with the NRS alongside values that you have pulled from Overseer. And so I – and it's just on me, sorry – prepared a document that I'm happy to make, but no one else has seen it, I hasten to add, it is just my view, where you could have and I'm not saying this is the only way, the best way, but I think it demonstrates how you could bring both tools together. So one isn't playing the major role, one is not supporting the other, they're brought together and so you might have a score, well, for example, yeah, and the NRS – not the NRAT, that's important, so I'm suggesting we could potentially put the NRAT aside and that might allay some of the concerns raised by my colleagues here – so you would start with the NRS, the NRS score and that would contribute 150 points, now just bear with me, that seems a little odd, but there are five, five management factors and a low-risk is 30, but that's neither here, it could be any number, and Overseer would contribute – some component of Overseer would contribute an equal value. Now the question is, what value do you pull from Overseer? Now, I see lots of possibilities there. One I just thought of was that you could say "what's the difference between your Overseer value and your Table 14.2 CNLM"? And so that, this combined tool, would have the advantages of having that sort of narrative actionable insight component associated with the NRS and it would also have that precision or specificity associated with Overseer, brought together into one tool and it would link back to Table 14.2. So from the NRAT, some of the things I think – and I appreciate the concerns, the multipliers would

go, we would offload that task of considering biophysical factors back to Overseer, we would have more specificity, I haven't given it a lot of thought, but the nice points Dr Dewes raises about land use change we could probably build back into Overseer, so I think I can see a way to bringing both tools together and just...

THE COURT: JUDGE SEMPLE

Q. Sounds like a new version of Overseer?

A. [Professor Horne] Well, no, no, I mean, yeah. And the other thing you might, that I was suggesting at this stage that they would have equal weighting but maybe as confidence in Overseer increases you could increase it's weighting in the NR – the nitrogen risk score, it's weighting could decrease, you know, going forward as, I don't know, you know, but maybe you don't like it. I like flexibility, he doesn't.

THE COURT: COMMISSIONER HODGES

Q. I like simplicity.

A. [Professor Horne] Oh, that's good, yeah.

THE COURT: JUDGE SEMPLE

I like things being in scope.

THE COURT: COMMISSIONER HODGES

Q. Yes, look, we could play around with this for years and we'd still be no further forward in having got something actually on the ground.

A. [Professor Horne] No, yeah. But I mean my point being not so much that there's any particular merit to what I'm suggesting, is that it can be done, yeah, and I think there'd be a lot of advantages to doing it and we could link the strengths of both tools and mitigate some of the shortcomings, you know, perhaps.

THE COURT: COMMISSIONER EDMONDS

The next plan change.

THE COURT: COMMISSIONER HODGES

Q. Yes, yes, look, we have limited scope to do all these things and I think there's a few messages that I'm getting across here.

A. [Professor Horne] Well, sorry, I mean, you kind of asked me how it could be combined, I'm just suggesting that.

Q. Yes, that's fair enough, I apologise.

THE COURT: JUDGE SEMPLE

That's true, you did, you did start it, Commissioner, to be fair.

1645

THE COURT: COMMISSIONER HODGES

Q. Yes, yes, you're quite right, thank you. Dr Dewes, you obviously have been playing around with this for a little while. I did read your evidence on this, so could –

A. Yeah, thanks. I'm not, Dave's tried to give an explanation of how he would do it, but I suppose if I, it might be easier if I – I'm working in a catchment where we have to have a 70% reduction in nitrogen over time to achieve health in the receiving water bodies. So we have been working through a process of how we help farmers through that process over time. Number 1, it starts with really good mapping so that we have all got a clear understanding of what our risks are for the biophysical asset that we're farming on, so that slope, borderline soils, ephemeral flow paths, et cetera. Then obviously we're doing an Overseer as well because that gives us, you know, good understanding of the nitrogen loss risk, phosphorous loss risk, a gauge and greenhouse gas because that really important at the moment, so all farmers are conscious of that. We then look at what is the most appropriate land use for the land classes depending on slope. I mean we can't be carrying 600 kilo animals on 30 degree slopes anymore. Maybe it's, and it's not harvesting as much either, so maybe we are better to look at retiring that into forestry and getting an income from carbon. So we've also developed a pan sector financial tool that gives us a choice as to be able to look over a 10-year period what's the most appropriate land use for the land classes, or the

slope mainly is our proxy and we bring that together and sit down with the farmer and sort of say: "Hey, look, you know, this may not be the most appropriate if you're going to have to reduce by 50%." Tweaking your dairy system is not going to be enough. We are going to need to look at other land uses. But having a tool that can help the farmer understand what that farm system looks like with the economics as well, we don't actually have those. We've got farm maps which is a tool, but it only works for either dairy or dry stock. You can't bring in, you know, forestry options or horticultural options or sheep milking or whatever. So you asked us to be imaginative. I'm just telling you what we are doing in our catchment in the coastal Bay of Plenty. We've had to work to develop tools to deal with a big problem like potential 70% drop in nitrogen and a five times reduction in faecal pathogens getting into the estuary, so we will have to look at land use change and at the moment in our toolbox in New Zealand we're quite limited, so we do have to work hard to think about how because I'm sure our catchment in the coastal Bay of Plenty is not dissimilar to a lot of other catchments around New Zealand. So just keeping it to this binary choice of the NRAT and the Overseer, I'm finding quite difficult. I think we need to be thinking outside the square, but I understand that you – but it depends on the degree of drop that's got to occur from one farm loss rate to another, so I'm talking about where we've got quite significant drops applied.

Q. That's actually very helpful, but again I think that's something the council will be interested for the next plan change I'm sure.

A. Okay.

Q. And luckily I will not be here to have any involvement in that next plan change. Overseer has taken enough of my life already. But no, look, I have nothing against Overseer at all. I think it's a good tool. It's what's its appropriate use in different circumstances that we are trying to work our way through. It was a very difficult question and I thank you both for your suggestions. Does anyone else have anything that they would like to add at this stage?

A. [Dr Parlato] I guess I just, and I think I'm not convinced it's a particularly good suggestion but I will put it out there just for you to think about it. So

I suggested on Friday that potentially rather than either/or, you could use them together. So that would actually mean you would have to potentially meet both. So it doesn't resolve a lot of the issues that Professor Horne has raised with 14.2 and people not being able to meet it in CVG as well because that still would be a requirement of that. But I guess one of the benefits is it is sort of getting that, it would almost provide additional confidence that risk is low and loss is at a level where it's acceptable. I think one of the benefits of it being combined like that is what's been pointed out a number of times is that the scorecard aspect does give farmers a very clear indication of where their key risk areas are so I guess you're incorporating that into the process so you're still getting that benefit through having them both sitting alongside each other whereas Overseer obviously it can be a bit tricky to tease that out potentially, but I do also see the challenges obviously of having them alongside each other is also, I think I alluded to it before, is 14.2 is obviously trying to allow, you know, the greatest intensity of farming in, say, LUC1 land but with the risk assessment tool and the requirement to meet that as well that could actually constrain that slightly because I think that it probably does for some farms have a lower loss associated if you were to meet risk assessment tool and that, so it was just something that I've thought through as well.

1650

Q. Thank you, anyone else. Dr Jolly?

A. [Dr Jolly] This is just some initial thoughts and although I like the idea of feeding an Overseer value into the risk assessment tool and I think Dr Dewes shared some stuff last week, I'm not too sure how practical that could be for CVG because if you looked at our NRAT, you will see that there's no crops and that's intentional, like, we've driven it off practice change and so different crops and crop rotations just fundamentally because of what you're growing will have higher N loss and so as we know potatoes and onions will meet table 14.2, but the other cropping systems do have quite high N losses and so if you're factoring them into a risk assessment tool, you might accidentally perversely automatically make it impossible to get to low risk just the score categories that the crop

type that sits within Overseer, so those N loss numbers coming out of Overseer might be so high unless you change your cropping system and that's not what we're advocating for, we still want the broccoli farmers to grow broccolis, if you're changing your cropping system, you might automatically make it impossible for them to get down to a low score because of the vegetable system that you're growing, like, this hasn't been tested but it's just a concern that I have, like, we're trying to fix this table 14.2 pathway but we might create another controlled available pathway for some vegetable growers it is still just as challenging and so it's actually not fit – it's creating another problem for them and so they're still – well, just because of what they're growing, like, and where they are not, because of what they're growing, they can't go down table 14.2 but now they've created a pathway because of what you're growing, they can't go down this new controlled activity path so they default back to the discretionary pathway. It's just a, yes, a concern and we haven't tested it, we haven't but some of the crop rotations are really high leaching and there might, yes, so it will just wipe out the rest of the scorecard because of the values that it gives.

Q. Fair comment, thank you. Okay…

A. [Mr Ford] Can I add to that? I didn't see any advantage at all incorporating the Overseer results into the CVG in that pathway.

Q. Okay, well, I think we've taken that as far as we can go and certainly from my point of view, I don't have any other questions.

THE COURT ADDRESSES ALL PARTIES – TIMING (16:53:48)

1655

CROSS-EXAMINATION: MS JOHNSTON TO PROFESSOR HORNE

Q. Here for you Professor Horne potentially but I am just going to reflect on some – clarify a question that you had relating to the NRAT and in particular around soil and rainfall characteristics are picked up and I wanted to take you to a passage in the notes of evidence and in that passage at 184 in answer to a question of my friend's you refer to the fact

that if you had put at the top of your matrix LUC instead of PAW it would have solved a lot of problems for you in terms of that line of questioning.

A. Yeah.

Q. And I understood that there was some similar questions put to you today and I wanted you to explain to the Court what you meant by that?

A. So I – by that I meant that I might have better captured the influence or affect of soil not by referring to profile available water which was the more rigorous or direct or straight-forward linkage to the influence soil has but back to the concept or ideas or notions of the plan change around LUC, yeah.

Q. And is –

A. Because that, the LUC obviously is around about soil type, yeah, and so I would have configured the matrix slightly. It wouldn't have looked any difference, but we might not have had this round and round about, yeah, LUC versus the NRAT, yeah.

Q. But the point there is that it wouldn't have looked any different?

A. No, not – well, it would have had different labelling but the numbers and that would have been very, very similar.

Q. Thank you.

CROSS-EXAMINATION: MS WRIGHT TO DR LE MIERE

Q. Dr le Miere, I just had a question for you and that relates to the starting point, issue number 2 in the JWS, and in the agreed position column it states that graph 7, and I assume that's figure 7 in the Overseer report, might be worth clarifying that first?

A. Yeah, it's the validation report.

Q. Validation report, thank you.

A. Yeah.

Q. So graph 7, which in the report is a figure 7, is slightly better than graph 6 or figure 6, do you agree with that proposition?

A. Well, just in essence what it says there, there's very limited number of points from the Manawatū-Whanganui in the 6, then some of the Waikato stuff was taken out for graph 7, so there's still the same number of data points but there's as a percentage of the data points it goes up slightly.

Q. So do you agree with the statement here that graph 7 is slightly better at representing the Manawatū-Whanganui Region?

A. Yeah, potentially, depends, as a –

Q. I assume you do, because –

A. – as percentage, yes.

Q. – you haven't recorded that you disagree?

A. Well, as a percentage, yeah, I mean, I think that's in context as what we were talking about within there, but as a percentage of the data points, yes.

1700

Q. So then in your supplementary evidence that you provided to the Court on the 19th of January, para 8 through to para 10, you've focussed on figure 6 which is also draft 6. So that analysis there is not actually analysis of the draft that's most representative of this region, is it?

A. No, but I've looked at figure 7 as well and it was a very similar outcome.

Q. But you haven't commented on figure 7 in your supplementary evidence, have you?

A. No, I didn't within that, no, because we were talking within the, when I was on the stand about figure 6.

Q. Thank you.

CROSS-EXAMINATION: MS ONGLEY TO DR LE MIERE AND PROFESSOR HUNT

Q. I'm used to this because we did this in PC1 because of the transcribing service. So first of all, Dr le Miere, your recommending the gateway be the NRAT tool and then Overseer be used following passing through the gateway and then you've discussed, haven't you, that when the NRAT tool was developed, the numbers were tweaked by you following Professor Horne's numbers so that everybody would be treated fairly in the matrix. My question is that isn't this issue of what the gateway should be a policy question because you are effectively changing the allocation regime from LUC on natural capital to an allocation regime that you and Professor Horne have decided is fair amongst farmers.

A. [Dr le Miere] No, I don't there's an allocation regime here firstly. Secondly, it wasn't about what was fair. It was about when I looked at the initial count that Professor Horne had done, as I said before, round the percentiles of the 200-odd unconsented farms that we had, we had quite a compounded dataset that had available, the 86 that was in the high rainfall leakier soils was, as I say, around the, between the 15 and 20th percentile and when I did the limited number of looking at what sort of reductions that would be, it was significant for farmers and conversely at the other end of the, or the other corner of the matrix if you wanted the low rainfall heavier soils where you had from 220 I think from memory, that was above the 75th percentile so that seemed very, a lot easier to achieve effectively so I did a slight tweaking around the middle which I thought was more appropriate, the outcome would be the same of bringing it up to the sort of the 25th and the 75th percentile, those two extremes effectively so I didn't affect the outcome.

Q. No, but it is, it's a policy issue, isn't it, it's a fairness issue that requires a degree of policy judgement?

A. I don't know. It was around Professor Horne's first cut, from the procedure he looked at around whether it was achievable was effectively so from a farm assistance point of view is that achievable or not those numbers or we'll just not be able to achieve those numbers within the matrix within those sales effectively so there was a slight tweak from that.

Q. All right, well, I'll put the same question to Professor Horne because you have talked a lot, Professor Horne, about what is fair. It is a policy judgement, isn't it, massaging those numbers in the NRAT and comparing that to the LUC table.

A. [Professor Horne] I could be mistaken. I don't believe I've ever used the word "fair", no. What I was endeavouring to do was to drive the management, the relative management changes required on the different soil, rainfall regimes. Yeah, so it wasn't a question, I trust I'm correct in saying I've never used the word "fair". In a sense, I'm not being fair in as much as just as original intention of Table 14.2 was, I suppose, to allow more intensive land use on some climate rainfall regimes, I have done a

similar thing, so tried to drive change where it's needed most, yeah. So I never for a moment thought it was –

1705

Q. All right, if we –

A. Yeah.

Q. – if we leave aside that word “fair”.

A. Okay, mhm.

Q. Your view though, isn't it, that for those farms under Table 14.2 where it's going to be very difficult to achieve those numbers beyond GMPs and BMPs –

A. Yes.

Q. – that you believe another pathway should be provided for, for those farms?

A. I do, mhm. The specified reduction pathway.

Q. Yes, and that’s the 20% reduction?

A. Mhm, that was the council level hearing, yes, and then –

Q. Yes, and so we look at that, because it's been assessed that the SRP or specified reduction pathway and the NRAT will have similar outcomes, you must acknowledge though, wouldn't you, that the rest of the reduction in water – in N leaching for meeting the schedule E targets is going to have to come from somewhere else?

A. What is schedule E targets, sorry?

Q. That's the SIN target of .44 and other related targets related to periphyton?

A. Okay, but sorry, that’s not at issue here, is it, we’re talking about Table 14.2 and meeting that? I mean, yeah, I don’t think, I don’t think Table 14.2 was ever going to meet those targets.

Q. Well, I’m not talking about Table 14.2 at the moment, I’m talking about the SRP.

A. Yes.

Q. That’s never going to meet those targets?

A. No.

Q. Okay.

A. But neither was Table 14.2, yeah. I mean, that's in Mr – the council chap, we talked about his evidence last time, sorry, his name just eludes me.

Q. Mr – Dr McKay?

A. No, no, no.

Q. Ms Patterson covers that, as well?

A. But there was a short discussion document about table –

Q. Oh, Barry Gilliland?

A. That's the one, sorry, thank you very much.

Q. Yes.

A. Yeah, Mr Gilliland's paper, yeah, yeah, so Table 14.2 was never going to meet those targets, yeah.

Q. Thank you. I just have, I know I said only two questions Ma'am, but I just have a question around this issue about achieving the greatest improvement in the shortest reasonable timeframe and I wanted to ask Dr Dewes an issue that does relate to GMPs which I think has been discussed will achieve, say, 20% reduction?

THE COURT ADDRESSES MS ONGLEY – DR DEWES TO BE CALLED (17:07:55)

CROSS-EXAMINATION: MS ONGLEY TO DR TAVERNET

Q. Dr Tavernet, can you please comment on the use of Overseer to address relative change on a farm over time, one farm over time. I understand that's an acceptable use of Overseer agreed amongst the experts, but can you comment on whether Overseer can be used to compare two different farms in the same sector and the acceptability of using Overseer in that respect?

A. [Dr Tavernet] Yeah, it's – so you can use Overseer if you compare farm with a similar characteristic which also the dairy together or sheep together or cropping together and after you can compare these farms together with the evolution in time.

Q. Thank you.

MS ONGLEY ADDRESSES THE COURT – OPEN UP QUESTION (17:09:40)

DR DEWES:

Well, I don't have a different view, I would reinforce that, but you can, I mean, my experience is you can compare between – not only between those farm systems but also between different farm types because that's, when we have to get into larger reductions like 40 to 60% we have to be looking at land use change. We have to be comparing different farm, farming, you know, land, different land uses. Yeah, so Overseer is very good for that.

1710

DR TAVERNET

I think it is difficult if you have 14 cropping and 14 dairy to know exactly the system behind this number, it's complicated.

DR DEWES

But we do have to use common sense here that we, you know, we might have a contiguous land block of 300 hectares. There might be five different enterprises on there. So, and Overseer can cope with that, but moving forward, we will be seeing more diverse land uses in one contiguous land block.

CROSS-EXAMINATION CONTINUES: MS ONGLEY TO DR LE MIERE

Q. Thank you. Dr le Miere?

A. I will just answer, the review panel is quite clear that they have no confidence in absolute change or relative change, so I don't accept and obviously relative change is just between two absolute numbers. So I think the point might be less problems depending how it's constructed, but I think there's still a core the same issues around absolute numbers because the rate of change is just between two absolute numbers. So some of those issues might still arise depending how it's used.

Q. Are you talking about the most recent publication where the panel expressed more confidence in Overseer?

A. I haven't seen anything where there's more confidence in that sense.

Q. Well, that was the publication produced at PC1, in the middle of PC1 I believe it was June 2023?

A. Mmm, but that was how it was used, as I say, how it was used. There's a difference, or it's fine talk, from my point of view, fine for relative change but not for absolute numbers because obviously those changes are just between two absolute numbers.

Q. I may have got that date wrong. Just, I'm not quite sure of the date of that, but thank you.

CROSS-EXAMINATION: MR ANDERSON TO DR LE MIERE

Q. I have a question for Dr Tavernet. Dr le Miere can you just move your head back so I can see. Now, I've just looked at your will say statement and in your statement you say: "I have participated in improving the Overseer in collaboration with expert scientists," et cetera, et cetera. Now, some of the questions today were about CVG and how Overseer works in CVG. Did that work you had relate to CVG as well as other uses?

A. No, we use the same model, the same standards which (inaudible 17:13:09) to develop SVG.

Q. Can you just slow down speaking please?

A. So we have a new crop model developed by Hamish Brown. We developed also the SVG model. So we took practically, we use the same idea or the same end point except under SVG it's at a daily level and we use a monthly level. But behind the scene we use the same crop definition. We use the same crop development. Maybe the monthly is the difference and after we have Overseer, we use our leaching model, et cetera, et cetera. The development plans, the development of the crop the same.

Q. One of the questions that came out yesterday in court and also in the hot tub today was around the difference around CVG in terms of cost and also for things like dairy and some of the numbers that were explained yesterday in terms of how much it cost to do an Overseer evaluation of a commercial vegetable growing operation compared to a dairy, those numbers were astronomical. I saw the look on your face when those

numbers got. Can you explain why there will be such a drastic difference in the cost of doing an Overseer file for commercial vegetable growing as compared to dairy, for example?

A. The price of Overseer is the same. After people do that, effectively it will be fine, a crop, block instead of – you need to have more, it's more click because you have to define all your –

1715

Q. This is commercial vegetables?

A. Yeah. You have to define the whole block from CVG. So it's a two years block. You have to define what you do on this block during two years and you have to define your crop rotations and when you put fertiliser on it. After I think the difficulties is you don't have only one crop rotation but you have, I don't know, perhaps eight, 10 or 20 and we have some farms with 100 block define. So when you have to define 100 times two years of rotation, it takes time.

Q. And that's why there is the increase in cost because –

A. Yeah.

Q. – because of that?

A. It's not across, it's not a price of Overseer. The guys who are define all this stuff.

Q. And there's so much more to do and that bumps up the price because of the time?

A. Yeah, if you define an activity 200 block of two hectare, it takes time.

Q. Okay, thank you.

WITNESS EXCUSED

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING
(17:16:07)

COURT ADJOURNS: 5.24 PM

COURT RESUMES ON FRIDAY 9 FEBRUARY 2024 AT 10.05 AM

THE COURT ADDRESSES ALL PARTIES – HOUSEKEEPING

MS ONGLEY CALLS

HAYDEN TUROA (AFFIRMED)

Q. Mōrena, your full name is Hayden Turoa?

A. Yep.

Q. And you have prepared a brief of evidence in these proceedings dated the 6th of November 2023, do you have any corrections to make to your evidence? I know you're going to give a brief kōrero, but do you have any corrections to make?

A. I don't think so.

Q. And do you swear that your evidence is true and correct to the best of your knowledge and belief?

A. Yep, I do.

Q. Thank you, Mr Turoa. Now, I believe you wanted to say some words to the Court and people here before going to questioning.

A. Yeah, forgive me, I'm not really, um, you know, kind of used to this environment but in our custom, we do a little mihi, is that all good.

THE COURT: JUDGE SEMPLE

Yes, thank you. We'd appreciate it.

MIHI GIVEN

WITNESS:

Your Honour, I'd like to introduce my learned friends. I've got the taitoko of our hapū, chairperson from Te Mata Pūau Shane Royal, also the chairperson of Ngāti Kikopiri Marae. Our chairperson of Matau Marae, Neville Heihei, who also happens to be one of our ringaring waewae for Te Tumatakahuki, Councillor Pira-Hira Tukapua who also is the chairperson of Paranui Marae and the leader of Ngāti Tūranga who I represent today and Wayne Kiriona who is our pōpō for Ngāti Huia ki Matua who have all come in support. I also want to

acknowledge Elizabeth Parata who has come to taitoko us and as well as put forward the apologies of Justin Tamihana and Janelle Tamihana who both represent Ngāti Huia and Ngāti (Māori 10:10:25) who all come in support of this kaupapa so tēnā koutou.

1010

THE COURT: JUDGE SEMPLE

Welcome.

WITNESS:

I might – oh, that ain't the bit. I'm not even started.

EXAMINATION CONTINUES: MS ONGLEY

Q. I realise that, Mr Turoa, because I've seen your speaking notes. Yes, that's fine. Ngā mihi, would you like to proceed?

A. Yep. You don't want a translation to the mihi?

THE COURT: JUDGE SEMPLE

Q. Always if you would like to offer it.

A. Yeah, I will just before I start, Sir, if that's all right.

Q. I think we try our best to keep up but there will most certainly be parts that I've missed. I think there will probably be parts we've all missed.

A. If you tell me what you got off, I'll fill in the rest.

Q. We might be here for a while.

A. So, yeah, I guess we just wanted to formally acknowledge this house and it's pōpō, it's pillars, it's officers, it's judges and all of yous who have come here to uphold truth and justice, and I just want us to remind ourselves that we can't forget our ancient houses of Hui Tanganui and its pōpō, its pillars and i's officers and judges, specifically the hapū and our role to uphold Te Runanga timatanga within this kāinga and so I wanted to take some time to acknowledge the mana whenua of this rohe, specifically Ngāti Huia, Ngāti Hikitanga, Ngāti (Māori 10:12:02) and our whanaunga of Ngāti Muaūpoko. I really mourn the Horowhenua and, you know, just all the pārū that's flown into our lake and, you know, it's just mindboggling

to think once upon a time that was the Crown jewel of this region and now that Crown's fallen, you know, or close to disrepair and then I jump over to where we're from and our waters at home, the Manawatu, and we're just constantly flooded with the tūtai from the towns, all the pārū, that's just unbearable for us at home and that's really why we're here. This isn't the big battle. This is the. This is a kakiro or a little skirmish that's really trying to adjust regional council together with us onto the right track so we can do the right things for our waterways and specifically our mokopuna and so that's really what I said in the mihi, maybe a little bit more eloquently in te reo, yeah. But I do want to start off by just acknowledging the regional council, its leadership, and I want to stress we've got strong relationships with all the tiers, with all the councillors. I want to acknowledge specifically Te Kenehi Taylor, Sam Ferguson, who does a lot for us, as well the Chair Rachael. Jono Naylor like, a lot of that leadership tier, we deeply respect. We enjoy working with Michael and have close relationships, can call them, and up until quite recently, we've really enjoyed a strong relationship with Nic Peete and the role that he had. It's of our opinion that we probably could've resolved this issue. We've tried several times and happy to share those emails, but we think a lot of this could've been resolved out of this court proceeding and Michael's advice to us at the time was it's too much water's under the bridge, we kind of have to go through this and I don't necessarily agree with that. I think some of the issues could be worked out together with the principles so that we can achieve a common goal for our awa which is specifically why we're here. In saying that, I also want to acknowledge Elizibeth Daly and her role in leadership in this process and we feel that the leaving of Nic and the transition of Liz into this space probably kind of left Ngāti Tūranga's and Ngāti Raukawa's concerns in the dust a little bit and the focus became a bit more technocratic and that's a shame but I think we're positive that we can hopefully get a good decision from yourselves but also continue to work with the regional council moving forward. So in – I want to, I've got a little bit of talking to do, if that's all right, but we did go to Wellington for a whole week and didn't even get to the, to the bench, so if you bear with us.

1015

THE COURT: JUDGE SEMPLE

Yes, absolutely.

EXAMINATION CONTINUES: MS ONGLEY

A. Yeah, cool. In Elizibeth Daly's statement of reply, there's bullet 9 and she advises that Ngāti Tūranga are a hapū of Ngāti Raukawa ki te Tonga (Ngāti Raukawa). At the time of prenotification, consultation for Plan Change 2, the mandated iwi authority for Ngāti Raukawa was Te Rūnanga o Raukawa Incorporated. I'm fortunate from being brought up at a very young age and schooled in our whakapapa of Ngāti Tūranga and I do question respectfully Elizibeth Daly's expertise in this space. Elizibeth, Mike, Nic, Rachel, they've actually never even visited Paranui Marae. They've never stepped foot on our marae of Ngāti Tūranga and quite frankly I don't think they should be making statements like that. I just want to spend some time formally outlining our genealogy and only a small segment of it and I want to highlight the complexities that may not be apparent to the Horizons Regional Council who assume who and how our mandates are given, which isn't necessarily correct. So Tūranga, of which we get our name from, is a descendant of Raukawa and through Rereahu and Takihiku. The three children of Rereahu were Maniapoto, a famous iwi Ngāti Maniapoto, Ngāti Kinohaku and Te Rongorito of whom Tūranga descend from all three. We also descend from Tamatehura and Wairangi who were the two children of Takihiku. I will focus on the first line of Tamatehura but I want to indicate the importance of the Wairangi line as that is our connection through Tūwharetoa through our Ngāti Te Kohera whakapapa. There are a few important marriages between the descendants of Tamatehura and the three children of Rereahu's mokopuna. Tamatehura married his first cousin Te Rongorito, mentioned above. Their child Huitao had three children Kahuro, Hae-tapu-nui and Kapumanawawiri. Hae-tapu-nui is a famous Ngāti Raukawa ancestor who married Parekārewa. Parekārewa's great-great-grandfather was Maniapoto and mokopuna of Te Kawairirangi. Parekārewa and Hae-tapu-nui have Ngatokowaru who is another famed ancestor of Ngāti

Raukawa killed in a defined act by Te Putu of Maniapoto, or not by him but associated with him. Ngatokowaru married Te Ruwaioterangi who was the descendent of Kinohaku mentioned above. Te Ruwaioterangi is also a descendant of Uenukukopako through their child Kiritai. During the time of Ngatokowaru's eldest son Te Au-tui-roro, it was now time to strengthen our relationships with the descendants of Whatihua and Ruaputehanga. Te Au-tui-roro marries Ngākuratu from Ngāti Kauwhata and they're the parents of Turanga. Kauwhata was the great-great-grandson of Whatihua and Ruaputehanga. Kawhata had Wehiwehi of Ngāti Wehiwehi who has Maniaihu. Maniaihu is the name of the meeting house at Aorangi on the banks of the Oroua River. Maniaihu marries Kekerangi who is the direct descendant of Rakeihopukia the famed son of Tūwharetoa. Kekerangi and Maniaihu have Tamatewhero who married – who have a daughter named Ngākuratu. A marriage is arranged between Ngākuratu and Te Au-tuiroro bringing the two branches of Whatihua and Tūranga together. Te Au-tuiroro and Ngākuratu have Tūranga and Rakumia. It is important to state that Rakumia marries Korōuaputa and they have Parekowhata and Parewahawaha. The connection to Ngāti Kauwhata, Ngāti Wehiwehi are through Ngākuratu who marries Te Au-tui-roro. This is an integral relationship for Ngāti Tūranga's political and economic development when living alongside the Manawatū riverbanks. I will stop here but I want to stress that I can describe with the same level of detail Ngāti Tūranga's connections to Whanganui through Tupoho through the Central Plateau through Te Pikikōtuku, to Ngāti Tukorehe and through the uri tarewa of Ngāti Tūranga Tairawhiti to a very direct lineage to Tūwharetoa.

1020

I've only really stuck to our Tainui whakapapa and you can already start to see how complex these relationships are and that's already highlighted our relationship with Ngāti Wehiwehi, Ngāti Maniapoto, Ngāti Kauwhata and Ngāti Raukawa. I want to stress that we can also connect to Aotea, Te Aroha, Kurahaupo, Takitimu and many other waka and iwi who were here before those migrations. I highlight this because the geopolitical and relational connections of Ngāti Raukawa and Ngāti Tūranga are much

more expansive than Elizibeth Daly's assumptions on who the mandated iwi authorities are. I want to be clear that while Ngāti Tūranga are proud members of the Runanga o Raukawa, there has been no formal mandating process that I'm aware of completed at the same level of scrutiny as required of pre-settlement entities. The only mandated iwi authority that I'm aware of in our iwi is the Raukawa ki te Tonga Trust who Ngāti Tūranga are also proud members of. What I do want to say however is I understand Horizons Regional Council do have established working relationships with Ngāti Kauwhata, Ngāti Whakatere, Ngāti Tukorehe and the Runganga o Raukawa and in some questions when cross-examined by our legal counsel Elizibeth Daly did recommend, I did assert that she had these relationships and through this process was working directly with some hapū but not all hapū of Ngāti Ruakawa. I appreciate that Elizibeth Daly acknowledges and accepts that some points of the process could have been improved in para 6, but the following justification for their process is misinformed and brushes over a very complex iwi dynamic across the Manawatū and Horowhenua which does require a deeper level of expertise and understanding. I want to therefore emphasise that I continue to believe that I do not consider Horizons has failed, has met its statutory obligations in this regard. I have acted as the lead for Ngāti Tūranga in resource management for the past 20 years. Before that it was my father Moetatua Turoa who led the establishment of an entity called Te Taiao o Raukawa who have also had a previous relationship with Horizons Regional Council. Resource management initiatives for Ngāti Tūranga have also been carried by an entity called Ngā Hapū Himitanga which I am a trustee. I want to highlight Ngā Hapū Himitanga who co-signed the Manawatū River Accord with the Te Taiao o Raukawa some time ago alongside Horizons Regional Council. At no point in my recollection do I ever recall Horizons Regional Council seeking clarification as to who Ngāti Tūranga's iwi authorities are. Ngāti Tūranga and the wider Ngāti Raukawa are fiercely independent and interdependent as provided for our social, political and environmental ethos and ideology which we call kawa. Ngāti Tūranga are tangata whenua and reading clause 3, 3(b) and 4(a)

of the Schedule 1 of the RMA in the way Elizabeth Daly has stated is flawed. Kawa and tikanga allows a much more dynamic and relational political orientation and in recent Ngāti Tūranga have worked with all Raukawa hapū of the Horowhenua to form Te Tumatakahuki. Horizons Regional Council in many ways have been missing in terms of a meaningful relationship with the Te Tumatakahuki in this area. For my day job when in not in environmental courts I am the project director of a project called Te Pūwaha which is the Horizons, which partners with Horizons Regional Council. This is an award winning and exemplar for the region in terms of tangata whenua engagement or leadership. Horizons have been active members of this project and significant contributors to its success. I am also the Ngāti Raukawa representative on a project, on the steering group of a project called Ōtaki to North of Levin which Horizons recently participated in the proceedings towards a resource consent. Based off first hand, the success of this project in terms of upholding clause 3, 3(b) and 4(a) of the Schedule 1 of the RMA. This model was hapū led and places Ngāti Raukawa hapū at the centre of our framework as opposed to any iwi authority. Elizibeth Daly's reading of clause 3, 3(b) and 4(a) of Schedule 1 of the Resource Management Act is minimalistic in my opinion and the way that in which Ngāti Tūranga were notified for Plan Change 2 had been unsatisfactory and not met the statutory obligations. I have heard a lot of talk about management practices in these hearings. Both Te Pūwaha and O2NL now are examples of good management practices relating to Māori rights and interests. There is no policy provisions within the plan that can realise this at a more strategic level and especially to address the core issues of our awa. The implementation plan advanced by the council could go partway towards this, but it is clear that there is no commitment at this present time. Having it in the plan can create a stronger framework and hapū and iwi across the region hold the expertise to guide this process. Sadly, this expertise was overlooked in the formation of this plan. Recently Ngāti Raukawa, which includes Tūranga and Muaūpoko led out a recent court appeal proceeding in relation to the exemption proposed by the Minister for the Environment which would enable commercial

vegetable growing in the Horowhenua to exceed bottom lines. I take this to mean they could keep polluting in an already heavily polluted environment. The regional council sat passively throughout this entire project, process and the Crown resisted our efforts to settle from the get go. The outcome of the court appeal proceeding was a very clear vindication of the concerns held by our hapū. In particular, the Court found that if you are engaging with hapū, Māori iwi, then you need to do it in an open-minded and timely fashion with the view of modifying your stance as a consequent of their feedback. The Court was disparaging of the Crown's approach and directed them to go back to square one on this matter. Even though current government is considering torpedoing the entire framework that project, that protects freshwater, the essential elements of the Court of Appeal decision remain in my view that apply to this case. The regional council argue that they have given us sufficient time to respond and feed into the process and it is clear from the evidence that has been put forward that the formal proposal on which we could produce critical responses was provided to us was one week prior to the council's decision to notify Plan Change 2 and that the only opportunity to influence it was going to be an administration or editing level. The parallels to the court case that I just spoke about are obvious. It is unfortunate that we cannot get the regional council to respond to the concerns that we raised and they did not comply with the law in regard, and continue to take the view that Māori rights and interests as a consequence addressing ecological issues via the proposed tools that they are advancing. It is clear to me that the tools the council are advancing provide for the interests of farmers but do not provide for a connection or improvement to environmental outcomes which their impact taonga species, our customary practice, our relationship through whakapapa to our waterways and our kawa and tikanga which I understand is the focus of the One Plan. I would like to make it clear that I live on a dairy farm, that our family trust leases our land to dairy farmers, that we have a very close rural relationship with all of our neighbours and the majority of Ngati Tūranga land is used for agriculture. I also want to say that I've grown up actively involved in coastal conservation,

waterways, including our dune lakes. Our whānau trust have retired portions of our farm to establish wetlands and have incredibly strong working relationships with all of our neighbours. We are also involved in proceeding against compost farmers alongside the Horizons Regional Court and while I love full cream milk, I also believe that there is a strong planning mechanism required to support better decision making for our taiao. The missed opportunity here is the development of a process that can approximate kawa within western legal requirements that will strengthen a more pragmatic and less adversarial approach than that taken of Horizons Regional Council. The current model has been – the current model in place has meant that my neighbours come to me asking if I can do a cultural impact assessment for a bore. While that's already allocated across a lot of our rohe and what this does is it means that farmers are approaching hapū in an ad hoc way which has the possibility of creating a political tension at the bottom of the cliff. We're seeking a more strategic and thoughtful involvement.

1030

In spite of what Mike and Greg from the Catalyst Group and others are saying, it is my understanding that the proposed tools get us nowhere near meeting the values held by hapū in our community. This was the essence of our appeal and I am disappointed thTt regional council put this to aside for a short-term focus on providing for the interest of farmers. There's a real missed opportunity to enhance our decision-making process in line with kawa as celebrated in Te Pūwaha and the O2NL project. It appears that the conversation during this process, proceedings are focussed in the weeds. While this is a necessary step for planning provisions, it's my understanding that ultimately all of the work should lead to providing for the needs set out in the regional policy statement, Part 2 of the Act, the national statements in relation to Te Wai. The workshops that I've observed in the hot tubbing, I think you called them the other day, have been quite technocratic and they've entirely missed any conversation with depth and meaning about Māori rights and interests like I'm advocating for today. I just want to highlight ourselves with the statement of reply provided by the planning for the regional council,

Christine, in the report she says: “In my s 42A report to the plan change 2 hearing, I did not support the request of Ngāti Tūranga's to include additional lower Manawatu water management subzones in plan change 2. I understand Mr…” I've heard my name said Turoa, “… council and I agree subzones have degraded water quality which need addressing. My reason for opposing this request was not that I disagree with the reality. My concern was and remains an issue of process and fairness.” Given the public notified narrow scope of plan change 2 addressing only existing IFLU and the identified target water management subzones, I did not consider the inclusion of additional target water management subzones with the new rule not previously in place was appropriate. I just want to highlight the conundrum we find ourselves in when we have offered, being offered a process that is not fair and has presented a statement like that where they're recognising the issue but now they're thinking about fairness for somebody else. Where had we approached this in a proper and fair way, I believe this all could've been avoided. The statement amplifies my concerns around timing and process with regard to adequate contribution from hapū, iwi and the community. It’s intriguing that the concerns of farmers were paramount in their thinking. It’s equally concerning that the regional council can now sit with it on its hands until 2027, at the earliest, a period of nearly 10 years since the last very clear direction came from the Court and the regional council in 2017. To expand on my views around council being dominated by the farmers’ interests and preference to the Treaty partners, I have been really surprised to see Dr le Miere being taken on as the regional council as an independent witness when the entire process leading up to the hearing, he acted as the support for Federated Farmers. That’s understandable given he is their employee. At no time has the regional council ever approached us as hapū to provide expert contribution their behalf. I do not understand this. If the council had upheld it’s legislative obligation in regards to Māori rights and interests, surely there would be a hapū or iwi member in a similar role as Dr le Miere advocating for that process. By way of summary, I've sought to highlight the interdependent yet independent relationships between the Rūnanga o Raukawa and

Ngāti Tūranga. The emergence of Te Tumatakahuki which is a hapū central model which celebrates the rangatiratanga of hapū in place. I want to draw the Court's attention to what I consider an excusable approach from the council to provide for Māori rights and interests and the complete lack of flexibility and interest in providing for the Lower Manawatu as a sump for all of the intensive farming activities upstream. I view the vague commitment via Oranga Wai to provide for Māori rights and interests as highly uncertain. As I understand it, Oranga Wai has not even got close to addressing the critical conundrums of an overallocated pollution rights and the needs for farmers and others.

1035

It is disappointing that the regional council has put witnesses up to the hearing including social impact assessments that purport to speak to the views of iwi when there has been no strategic approach to determine whose these views are. It seems the regional council's witness speak a lot about uncertainty in relation to securing the rights for polluting for farmers. There's nothing about addressing the uncertainty for iwi and hapū and the pathway needed to restore our awa. I thought that this was one of the regional council's primary functions. It is the views of Ngāti Tūranga that there is complete failure of the regional council to focus on environmental outcomes either waterway, water quality or values held by hapū and iwi in a broader sense. It is no excuse to say that we are getting there and we will do it next year within Oranga Wai when the council is allocating rights to the farmers in the context where it is clear water quality is highly degraded and there is an obligation to make a material difference now. Finally, I do want to acknowledge that Liz Daly has approached us on Wednesday and expressed an interest in advancing further conversations with us. As mentioned, I would have welcomed this to have occurred previously and avoided the court hearing, but I do believe it's not too late to make a positive resolution moving forward. I would like to recommend to this Court that the additional policy provisions be considered and introduced if there are recommendations made. I feel that it has not been given the same level of hot tubbing or expert caucusing in relation to provisions to uphold the rights and interests of

hapū. So I am proposing the introduction of a clause into 5.8 of the Regional Plan at a policy level. This must create a hapū led framework that informs all decision making associated with the Manawatū River. The mechanism could be used as a starting point for further conversations for Oranga Wai. In relation to the Manawatū River, the rights and interests of Ngāti Raukawa need to be clearly acknowledged by the regional council. These interests are reinforced via a national policy statement for freshwater management. The regional council shall ensure that the hapū led framework are incorporated with the regional plans and within the regional plan, the regional council will adopt the kawa and tikanga framework developed by hapū of the Manawatū River for the purposes of engagement, decision making, informing consents and undertaking non-regulatory projects. The kawa and tikanga framework will be developed through a lens that reflects the pressures of the receiving environment of the Lower Manawatū river but seek to have the ability to be adopted and interpreted by all hapū at place. While the Court will note that this is a fragile attempt at resolving the issues in comparison to the approach set out in Te Awa Tupua, I draw your attention to this plan as it is a plan developed within the Horizons Regional Council and will provide certainty for hapū and communities within the Te Awa Tupua, or Whanganui catchment. This is a legislative obligation through the Te Awa Tupua Act where Horizons are receiving excellent results alongside hapū. This makes me wonder why its successes are not incorporated into the river management issues around Manawatū and the regional policy processes alongside hapū. This leads me to question are Horizons working in this way with hapū in the Whanganui catchment because they have to or because they want to. Tēnā koutou.

Q. The next part of the process Mr Turoa is for you to answer any questions.

CROSS-EXAMINATION: MS JOHNSTON

Q. Kia ora Mr Turoa. I'm Shannon Johnston from the regional council.

A. I met you.

Q. I just want to acknowledge your korero today and the people that are here supporting you from your whānau and hapū. I want to just also

acknowledge the indication around positive discussions and a basis within which they may go forward and I have no further questions for this witness at this time.

1040

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Well, I just wanted to be sure that I had understood what it was you were suggesting in terms of these additional policy provisions, so perhaps you could just elaborate a little for me on that. I don't think I have got a – none of that will have been recorded probably, but the main point is I just wanted to be clear about that, so –

A. I can send my speaking note to you, yeah, but yeah, I can expand on it as long you want.

Q. Well, if you could.

A. Yeah.

Q. I was just thinking that where would I look in terms of the One Plan in terms of what you were suggesting. Here I have the One Plan?

A. Yeah, I don't think, I don't think that there is any provisions at the moment that provide that level of certainty for hapū rights and interests and that's kind of what I'm advocating, so that same energy that we've gone into hot tubbing and expert caucusing around the Overseer and all these things that are not necessarily as high of a priority for our hapū, because we talk about improving the quality of our water and looking after our awa for a different set of values, an entirely different ideology which we call kawa, which was guaranteed to us through Te Tiriti o Waitangi and inside te kawa ora there's a whole system and institutions which exist in which we as hapū and iwi are obligated to and over the last 200 years I do not believe that we've been able to work in an appropriate way so that those institutions can effectively work alongside our democratic society and make a better New Zealand and so where we have seen regional council, for instance, talk about the Rūnanga being an authority through their western law, through our law that hasn't necessarily been the case. And so what we're looking for is a set of provisions that uphold the kawa and tikanga of all hapū at place, so that they can be stronger place-based

jurisdiction when it comes to dealing with the matters at hand. Where you could see that and which I was trying to draw your attention to was a document, a planning framework that Horizons have contributed to called Te Heke Ngahuru ki Te Awa Tupua and that's a really sophisticated document recently released last year which celebrate this type of way of working and while it may not have been achieved through the RMA, through the Te Awa Tupua Act it provides some certainty for hapū and certainty for our kawa to be approximated or annexed to western law so that we can actually carry out our customary law alongside our institutions. And that's the type of thinking I'm trying to advocate and it's unfortunate that there hasn't been an investment in any way by the regional council towards building this expert knowledge and applying it within the provisions. I have provided some wording which I think we could flesh out and I'm not – I literally done it yesterday, you know, but this is, this is some thinking which I think it would be great to see the Environment Court think about and have that implemented. In the recent Otewa Now project, we achieved something similar but within a project.

Q. Well, I –

A. You were there, eh?

Q. I was on that case as well.

A. Yeah, I saw you, yeah. Yeah, I remember that.

Q. Yes, we're busy writing the decision.

A. And you'll see, you know, we went away and had to make a really – go through a complex, a whole lot of complex issues which occur in that kawa space between us and our iwi, our neighbouring iwi, and that was a really complex matter to resolve in a week and I think we could have come a long way to resolve that today, or you know, over the last week if we'd given that same level of concentration. I just want to acknowledge our (Māori 10:44:13) of Ngāti Turanga who has come to tautoko us today as well.

THE COURT: JUDGE SEMPLE

Kia ora.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I was doing the same thing while you were talking, I was pulling up the One Plan and looking at provisions and trying to see that and also just pulling up the appeal document which is probably a little bit narrower in its scope in terms of what it was seeking, because I don't think it asked for any changes to the policies, but I was wondering about that question because we go back to it and I think you mentioned policy 5.8 which is, which is the one that sets out how this is to be regulated and on my reading you are right, there isn't anything in there that specifically talks about iwi values, cultural values, rights.

1045

A. Yeah, I think you're right about the scope being quite narrow and, like, actually, you know, this has been a learning curve for us because I've been sitting there probably frustrating our legal counsel because I just couldn't understand why everyone's talking about something but none of its Ngāti Tūranga and our concerns and so we've had to adapt within the process to go, okay, if this is where the attention's going, that's where we need a place what I describe as a trapdoor within those policies that can connect us back to our kawa and tikanga and make sure that we're supported inside decisions.

Q. And I think you will have probably heard too some of the discussion in the course of the time that you've been here and in the other parts of the process that you've been in, council hearings and mediations and expert conferencing and all of the discussions that get's you to this point that the intention of this plan change was to fix quite a narrow problem with the expectation that a much more fulsome review of the plan will follow. Now, we're not quite sure on the timeframe of that now because some things have changed in the legislation, but you might've heard Ms Johnston say that that work is still happening with an expectation that a more comprehensive plan review is likely to come about.

A. I'm in those, what is it, mediation.

Q. Yes.

A. That was all done in English. We couldn't even come and speak our own language to assert for our own rights and interests and, you know, like, so sitting there having to translate ourselves.

Q. Yes and –

A. And there was no provision and that so no doubt all of the scope and the things have come out because that's not really our space of expertise and that's what we're trying to do is rather than have to come into this space and advocate in this way for all these foreign things, perhaps you fellas could come to our marae, perhaps they could come to our marae for once and sit down and just listen with us and go through our processes that look for our yeah.

Q. I think much of what you say is things that the Environment Court is reflecting on, absolutely. I also would say thought that all of these processes, you are entitled to speak te reo Māori and to have that translated and for those resources to be made available so that is something that sometimes gets forgotten but is enshrined.

A. So I had that with the first time we went through and our cousin (inaudible 10:47:34) translated and that was when Nick was still on and Gerald Tumi so they provided for that but inside the actual mediation, there wasn't even a question, there wasn't even – yeah.

Q. It's definitely something that you're entitled to do. I'll say it now and there's lots of people here that need to hear it, it's absolutely something that you're entitled to do. We just simply have to organise it and sometimes we need a little bit more time than one would hope because we do have to find the people to do the translation, but it absolutely is something that you're entitled to do.

A. And not to mention we're going to Wellington and not even being heard that week 'cos we can't organise, you know, the hearing properly so how can we organise a translator who doesn't know when he's gonna come.

Q. Yes, they are some of the absolutely complexities that we're grappling with, absolutely. All right, thank you, I think – I'm sorry, Commissioner Hodges, I apologise.

THE COURT: COMMISSIONER HODGES

Q. Mōrena, Mr Turoa.

A. Mōrena.

Q. I'd also like to acknowledge your kōrero and your support team here. I think it's really great to see them here so thank you for that. I have to say I thought I had a big complex family until I heard about yours but I'll give you the winning role there. And I'd also like to say that I recently sat on a hearing at a marae and it was an amazing experience. I put on three kilograms in weight, food, the cream cakes at lunch and afternoon tea and morning tea were just wonderful.

A. It doesn't show.

Q. You will do. You have mentioned it's not the big battle, it's a little skirmish, and her Honour has mentioned that as well and so there are only small steps that we can take in this particular process and one of the things we're looking to do is try and make sure that progress is made in the short-term until things are dealt with at a bigger level. One of the suggestions is that in some of the policy, in policy 14.6, there is a provision that where resource consent is sought for existing intensive farming land use, consideration is given to the maintenance enhancement of mana whenua values including those identified in schedule B. Do you have a view on that? How do you see that, does that help you, does it cause problems?

1050

A. Yeah, first I'll go back to your first step comment, you know, small steps.

Q. Yes.

A. As long as we can see a visible small step in relation to this matter around Māori rights and interests, that's all we're looking for. So absolutely if you can show us the leadership in that space we would definitely support that. When it comes to, you know, all of the policies as they act out, like I've literally had my next-door-neighbour come to us and frustrated because they've had to, through the regional council's process, they've had to go and get support from – so imagine I, I don't know if it comes off strong, but I'm a pretty strong advocate for my iwi and rohe and imagine like knowing our house is here, the marae is literally here, this farmer lives here, had a relationship with us, looks after us, feeds us, brings cows to

our tangi, you know, this – that's the type of rural community we live in, COVID time we're all borrowing milk off each other and sharing vegetables, that's the environment and suddenly the neighbour is coming to me saying: "Oh, no, regional council has told me I have to go to this tribe or this tribe or – and, and alongside that it's going to cost X amount to get a CIA via these certain channels." And it's just complicated on the ground. And so I think the type of strategic thinking that we're looking for is the type of framework that actually validates hapū at place and looks after what I call "place-based jurisdiction" and can provide some real strength, so we're moving out of a space which is highly competitive, I would argue sometimes a space that utilises CIAs to fund a lack of capacity, and moving the conversation to a higher level that matters are resolved in a stronger way. And I don't think policy, whichever one you just read, captures that.

Q. You hit a chord in me when you said you'd been asked to prepared a cultural impact assessment for a bore. If you had to do that for every relatively minor issue around the region it would take up a lot of your time, and not – so, really, that kind of policy doesn't help you greatly, is it something you would prefer to see –

A. And it's not uniform, either. So that was one bore, one person whose planning advice told them to do this based off a letter they've got, but that's not all the bores. So we, what we did as a tribe was mapped out where's all the allocation and it is saturated across that whole lower catchment and so we've got no template to budget that, we have no understanding of what allocation is being provided and we, you know, we don't know how to look after our awa because it's just being maxed out and that, that's our point, is get the conversation to the proper space and then have a conversation with iwi, hapū and community in a way that actually, you know, we're working together rather than having to have an adversarial relationship in a courtroom. Because like I say, we are farmers. We, you know, we are rural people. We don't want a whole lot of other things, we're, you know, we're happy in our, in our lifestyles, yeah.

Q. I guess really, what I'm trying to understand is whether this policy helps you or is something you'd prefer not to see. Was this discussed with you?

A. I haven't had any discussion at depth about any of these policies and I haven't witnessed or seen any level of expert caucusing around the nature of conversation we're trying to have now and that's kind of the point I'm trying to make is that if we're afforded that level of concentration we could probably achieve something really, really strong. You know, back-tracking to if they'd upheld that legislative responsibility and we went in at the very start with a good thinking framework, then maybe that could have been the one. In saying that, it, you know, like I suggested on Wednesday, we're approached by Liz, and there could be this conversation could occur over while yous are making your decision, so as you go away and think about it, how it could happen, maybe we'll do the same and compare notes. Finally, I just want to acknowledge our rangatira Te Kenehi Taylor who has come in, he's a councillor for the Horowhenua Regional – Horizons and also our close whanaunga.

Q. Thank you very much indeed.

A. Ka pai.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

MS JOHNSTON ADDRESSES THE COURT – REQUESTS ADJOURNMENT
(10:55:02)

COURT ADJOURNS: 10.55 AM

COURT RESUMES: 11.15 AM

MS JOHNSTON CALLS

DAVID JOHN HORNE (SWORN)

Q. Good morning, Professor Horne.

A. Good morning, Ms Johnston.

Q. I'll get you to confirm for the Court please that your full name is David John Horne.

A. It is.

Q. And you've prepared statements of evidence in these proceedings.

A. I have.

Q. And since November 2023, you've prepared two further statements of evidence, haven't you?

A. Correct.

Q. You'll confirm that one of those statements is dated 17 January 2024?

A. Correct.

Q. It's titled your "Supplementary Statement of Evidence" and then there's a further supplementary statement dated 5 February 2024, is that correct?

A. Correct.

Q. Do you have any changes that you wish to make to those statements?

A. No. I think one of the points that is covered off in the erratum is that in the first statement, all those values I gave in about seven tables were percentage values not actual farm numbers so I apologise if there was any confusion around that which I was away on holiday but I understand there was so I think everyone's on the same page with that now.

Q. Thank you, professor, and you'll confirm that to the best of your knowledge, those statements we've just referred to are true and correct?

A. Yes.

Q. And just for the avoidance of doubt, you'll confirm that you also participated in the expert conferencing last Friday and signed a joint witness statement dated 2 February 2024?

A. I did.

MS ONGLEY:

Thank you, your Honour, I have the documents that I'm wishing to have Dr Dewes produce later and I have given them to Mr Registrar. I'm not sure if they're with the Court. And Professor Horne has a copy as well I understand.

WITNESS:

I do, thank you. Before we go on, can I clarify an answer to a question you raised yesterday please?

CROSS-EXAMINATION: MS ONGLEY

Q. Which was the question?

A. So it was just to thank yourself and Dr Parlato for pointing me out an error that I had made around the relationship including rainfall and soils might do to agreement between the N risk or NRAT and Overseer.

Q. In relation to the 0. – the .7 R-squared value?

A. Yes.

Q. Yes. Certainly.

A. Yes. So I wanted to thank yourself and Dr Parlato for pointing that out to me and just clarify with the Court that was at expert conferencing, a day after I'd returned from three and a half weeks on holiday where I'm ashamed to admit I hadn't given PC2 a second thought.

Q. And can I ask you, where did you go tramping?

THE COURT: JUDGE SEMPLE

The rest of us were lying on beaches hopefully thinking about PC2.

CROSS-EXAMINATION CONTINUES: MS ONGLEY

A. And so when I looked at that figure, I thought I had related the NRAT to Overseer but as you both pointed out to me, in fact, I hadn't done that and you tried to save me from myself by pointing out that the key objective of that exercise was to look at the similarity and outcome in terms of management practices.

Q. Right, yes.

A. And the answer to your question why so narrow focus. It was to kind of bracket or account for the influences of soil and rainfall so, thank you. I went and re-read my evidence last night and it's a lesson don't just by the figure you think's going to answer the question but, yes.

Q. All right, thank you but just to clarify that for me, Professor Horne, what does that mean for the .7 R-squared figure as a correlation between the NRAT and Overseer?

A. So that – I guess you might argue that that's kind of a – remember my main point and all the experts agreed by including rainfall and soil the R-squared value would improve from .45, I just thought by way of being helpful to the Court, it might go up to something like .7/.8. The particular figure I guess kind of maybe intimates that that might be the change but it wasn't the strict correlation that I've suggested it was, yes.

1120

Q. All right, okay, no thank you very much for that?

A. No, thank you.

Q. Apologies that you had to come back from what seemed like a nice lengthy holiday.

A. Beating back the accumulated leave, yeah.

Q. So first of all I wanted to first of all go to the James Hanley tables in the package and just clarify the middle table. It says there was, well, sorry, I should start with the top table. The top table was the recalibrated Table 14 in mid-2018 and the middle table is Table B presented in Dr Hanley's 2023 evidence and so Overseer has been updated in January 2024?

A. Correct.

Q. And so the table C is the update called version 6.5.4 and the recalibrated numbers for Table 14.2 with that update, that's your understanding?

A. That is my understanding.

Q. Okay, thank you, and then if we can move to the next document because these are on Overseer 6.5.4 basis, now –

A. Sorry, we've turned over the page?

Q. Yes.

A. Okay.

Q. You should have the All Farms tables et cetera, but first of all is my understanding correct that uses of Overseer FM can look at this national reporting when they go into Overseer?

A. Yes, you can. Yes, it's on the home page for the farm. It's a new feature just introduced this month. Yeah, so you can go on and kind of benchmark your farm according to its position and the distribution of a number of parameters including N leaching rate, which you provided here in this document, amongst other things, you know, drainage and so forth.

Q. Well Dr Dewes will explain this further, but the first stapled tables and perhaps I should give these names for the Court is Overseer FM National Reporting for All Farms and that's 866 farms with results, it says there?

A. Okay, mhm, mhm, yes. This is in the Horizons region, correct?

Q. Yes, in the Horizons region?

A. Yes, thank you.

Q. I'm not going to take you through this in detail.

A. No, no, that's fine.

Q. I'm just going to produce it through Dr Dewes later and then the next stapled document is the national reporting for 500 farms which is your understanding that that's the dairy farm component?

A. I was a little intrigued by that because I had a look at this tool last night and I guess this is for 2023, is it?

Q. That's my understanding, yes?

A. Yeah, and I, I got that it was for 628 dairy farms, which was a little interesting.

Q. All right, well I will have to pass that to Dr Dewes when I question her about it and perhaps you could make yourself available (inaudible 11:23:47).

A. Yeah, no, sure, sure, no, that was a little bit interesting, yeah, because, yep.

Q. All right well no doubt we will get this clarified.

A. Sure.

Q. And then the third document you may not have seen. The front page of that document is: "Available for council reporting section within Overseer." Do you have that?

MS JOHNSTON ADDRESSES THE COURT: DOCUMENTS RECEIVED LAST NIGHT (11:24:11)

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. No, no I meant whether he had seen it before yesterday. So do you have this document?

A. Have I seen any of this before yesterday, sorry, is the question?

Q. Yes.

A. No, no, I haven't. As I say, I only returned last week from holiday so this is a relatively new tool, but yeah, so this is what you're referring to now, yep.

Q. Yes.

A. But I had a good look at it last night.

THE COURT: JUDGE SEMPLE TO MS ONGLEY

Q. Sorry, I'm now, I'm losing completely the gist of it. So if we can just take a step back please Ms Ongley. So as I understand it, this is national reporting that is now available via the Overseer website. I assume you have to have a licence to get into the Overseer website, but if you have, this documentation is now available and has been since January, it's a new update?

1125

A. That's right, but I – except for this last page.

Q. Yes, I was just getting to that, so that's where those two reports come from?

A. That's right.

Q. This is a list which was the first document that is part of this bundle, is the – is Table 14?

A. Yes and that has been provided by Dr Hanley to Dr Dewes.

Q. Yes, yes.

A. To provide the Overseer version 6.5.4 update which came out in January of this year.

Q. January, yes.

A. And that's Table C in that.

Q. Yes. And then this third document that forms part – the final part of the bundle?

A. Yes, so –

Q. This is from the Horizons website?

A. So the third document I was going to clarify with this – with Professor Horne.

Q. Yes.

A. But he may not know, is not available to all Overseer FM users. It is available, the first page is available for council reporting which regional councils have.

Q. Right, so they assume – one assumes they have some different licence with different accessibility to reports?

A. Yes. And a heat map which is on the last page.

Q. Yes.

A. Is only available to Overseer FM admin users and I didn't –

Q. And Dr Dewes might be able to tell us what that means?

A. She is, but I did say to Ms Johnston that Dr Dewes was able to talk to Professor Horne overnight about these documents.

Q. Right, okay, all right.

A. So whether you want – I will wait for I suppose for Dr Dewes before giving this an exhibit number.

Q. Yes, well, we can give it an exhibit number in advance, because then at least we will all be able to talk to the same thing. So I think it's J, Mr Registrar, K? We will call it exhibit K. And I am just going to say and we might, because it seems to be four different documents, we might call this page of tables K1.

EXHIBIT K1 PRODUCED – PAGE OF TABLES

Q. The national reporting all farms, the 866 farms we will call K2.

EXHIBIT K2 PRODUCED – NATIONAL REPORT ALL FARMS (866 FARMS)

Q. Then the Overseer national reporting perhaps or perhaps not for dairy farms, the 500 farms, we will call that K3.

EXHIBIT K3 PRODUCED – OVERSEER NATIONAL REPORTING (500 FARMS)

Q. And the page that's entitled "all farms" K4.

EXHIBIT K4 PRODUCED – ALL FARMS

Q. Feels like climbing a mountain, so K2 and K4.

A. Thank you.

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. I'm not going to take you through this in a huge amount of detail, Professor Horne, but I just wanted to use the dairy farms K2, K3, to ask, if I can ask you please to go to page 2 of that.

WITNESS REFERRED TO EXHIBIT K3

A. So is that page 2? No, the next one is page 2, thank you, yeah.

Q. Which is shows the N loss graph, kilogram, N loss kilograms per hectare. So whether we have 500 or 600 or so, as you – when you utilise this tool.

A. Well, I just thought it was interesting that, sorry, that in 2019 there were 532 files and 2021 there was 600 and 2023 there was 628, which struck me as an odd trend given Overseer had fallen into disrepute over that period. I'm not making anything of it, it just struck me as interesting, yeah, that –

Q. Well, that there are more licence users over that period of time, does that mean?

A. Well, I suppose that –

Q. Yeah.

A. – that strikes me as unlikely, yeah, but yep. I guess it was just kind of exactly what these files are, where they have come from, it would be interesting to –

Q. Okay.

A. – no, but I think it's a, it's a great asset and a worthwhile addition to the Overseer tool.

Q. Mhm. Well, I just wanted to use the N loss graph to just very generally illustrate the point, a point, that you do have some quite high leaches in that graph. The median is 25 kilograms loss per hectare, the mean is 27.3 and I know that this doesn't drill down into LUC but, say, we have a high leacher, say, heading into the fifties of kilograms per hectare loss who are in LUC3, for example, who need to get down to 29.3 and this is just a hypothetical example.

1130

A. Sorry, what was that, 50 down to?

Q. 29.3. And that's if they're on LUC3. Now, using GMPs and Mr Parmenter's evidence sets out the GMPs that he used for the, his cluster farm analysis.

A. Mhm.

Q. Which come from his section 32 report and you set out GMPs in your – sorry, I'll just leave that there. And so they include things like expanding the effluent area or upgrading effluent area depending on herd size.

A. Mhm. Sorry, we're talking about my list or Mr Parmenter's list?

Q. Well, perhaps you can just let me know whether they're similar.

A. Mhm.

Q. Mr Parmenter's list is on bundle 401.0224 attached to Dr Dewes' supplementary evidence.

A. Which one, sorry, volume?

Q. Tab 8, volume 4.

A. Tab 4. So just while I'm turning to, Dr Parmenter wasn't part of the expert witness conferencing and the development of GMPs/BMPs so that was an agreed upon list starting with Dr Monagan's original list from 2012 whenever it was, yeah, and we kind of revisited that and made it contemporary or relevant to 2020, 2019.

Q. Okay.

A. So they may well be different now, sorry. Tab 4?

Q. Tab 4, page 401.0224.

A. I don't have those pages, sorry.

Q. Apologies, tab 8.

A. Tab 8, okay, sorry.

Q. Thank you, your Honour.

A. And what page in here, sorry.

Q. 401.0224. Have you found that?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS – VOLUME 4

A. I have, thank you, yes. Sorry, I was just looking…

Q. So the operational changes at one include, for example, remove nitrogen fertiliser applications from the effluent application area. Bullet 3 is reduce

annual nitrogen fertiliser applications to 70. If we go down to two, it talks about operational changes and system changes and bullet 1 is the effluent treatment field is increased to reduce effluent applications and this required a capital investment, so that is a GMP, isn't it, increasing the effluent field area?

A. Often it is, correct.

Q. So my question is for some of these high leaches getting down to the lower numbers in the table and I've given you example of that LUC3 land but they obviously reduce from LUC4 and above, you would need to do more than the GMPs in this table, wouldn't you? You would need to look at different scenarios as Dr Dewes has talked about in her evidence which may include retiring parts of land, converting parts of land to other land uses?

1135

A. Well, you may do, correct, yeah, but I mean I don't know, that's kind of a difficult question to answer without seeing the farm in particular. Just let me find those numbers again. Going from, I've lost my thing, what was it, it was 50 to 29. Sorry, that's right, I remember.

Q. 29.3.

A. Yeah, that's you're nearly halving your N leaching rate, correct, yeah, so that's a big, a big ask so to speak.

Q. And your evidence has said that you feel GMPs, and correct me if I'm wrong, whether this includes BMPs but can you get about 20%?

A. Yes. I don't make a distinction between GMPs and BMPs, yeah.

Q. You don't, that's right?

A. No.

Q. Thank you?

A. And, but that's correct. So to use your case, yeah, you're going to struggle to get your particular case, yeah. I mean you can get down, can't you. You know, you just keep imposing more and more stringent requirements on the farmer making more and more changes. But my argument was that going below 20% began, got progressively more difficult and I hate to keep harping on it and to no real net advantage in water quality.

Q. Well, if we just leave that second water quality –

A. Certainly yep.

Q. – aside because that's going to be subject of, well is subject of separate evidence. Assuming you do have to make these sorts of large changes to achieve water quality targets over time which in my – I referred you to Schedule E of the One Plan yesterday which are quite stringent, you would encourage farmers to do GMPs through either the NRAT or the SRPs will create stranded capital if they are doing things such as increasing effluent areas so that they can reduce N in that way when ultimately they're going to have to do much wider transformational changes on their farm?

A. I guess this goes to the point that I was making to Commissioner Hodges yesterday. Certainly they may have to make further reductions going forward, but I don't see how that negates the need to make these changes they can today to improve water quality today. You know, we need to get on with doing the basics, the fundamentals. They're called GMPs, BMPs for a reason. They need to be in place on farms today and I think you may well have a very valid point going forward, we may need to cut deep and make even more serious or great changes to farm system. I don't believe sitting on our hands today is the solution, what's going to improve water quality.

CROSS-EXAMINATION: MS WRIGHT

Q. Good morning Professor Horne?

A. Good morning.

Q. I've got some questions relating to the tables in your supplementary evidence dated 17 January of this year, 2024.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Yep, I've got it, thank you.

Q. And first, thank you for clarifying that they were all percentages. My first question relates to all the tables and as far as I can tell, although we have percentages, it's not clear to me from your statement what the underlying number those percentages relate to are. So, for example, at Table 2 we have year 1 60% can meet Table 14.2. Are you able to provide the

information either written or verbally as to what the number that those percentages all relate to is?

A. Certainly I can. Yeah, if you want to hear it now I will need to open my laptop.

MS JOHNSTON ADDRESSES THE COURT – NUMBERS ARE AVAILABLE
(11:39:36)

THE COURT: COMMISSIONER HODGES

Your Honour, could I just ask that when that information comes in we have for each of the four priority catchments we have the number of – total number of farms and the number of farms that have consents at the moment and the number that still need consents, because I'm very glad you asked that question, Ms Wright, because it's been bothering me, I don't understand what's going on there, so that would be very helpful, thank you.

1140

MS WRIGHT:

Yes, thank you, Commissioner. We just didn't have time to get that in writing this morning.

THE COURT: COMMISSIONER HODGES

No, that's fine.

MS WRIGHT:

But it's, I asked my friend Mr Sinclair to be putting together that statement today, thank you.

MS ONGLEY:

And your Honour, I can indicate I don't have questions on – around the numbers, I'd just like to the numbers so I can understand the percentages.

THE COURT: JUDGE SEMPLE

To know them, yes, and to know what the numbers are, yes, yes.

CROSS-EXAMINATION CONTINUES: MS WRIGHT

Q. You don't have specific numbers as far as I can see in this statement or your other statements for exact – the exact number of sheep and beef or cropping, that's correct, isn't it, I just haven't missed anything?

A. No, I don't. I think my original 42A, I do, yeah, back at the council level hearing, yes.

Q. So thank you, I've looked at that after, I think it's referred to in this statement, I've just got a few questions that you'll want to draw on your knowledge from that from. Ms Foster in her primary evidence says – suggests that there's approximately five existing sheep and beef that aren't consented. Based on your knowledge and your section 42A report, would it be fair to say that you would expect all five of those would meet Table 14.2?

A. Yes, that is correct and so at the time Jane Chrystal who works with Beef and Lamb was involved and I think I pointed out that she peer reviewed or – and agreed with that assessment, yeah.

Q. And then similarly Ms Foster in her primary evidence estimates that there would be – there are about 15 cropping enterprises that don't currently have consent and again, so based on your 42A report, would it be fair to say that say 14 out of 15 of those would be able to meet Table 14.2?

A. I'm not so sure about that exact number, but if your point is that the vast majority will, then that would be correct, mhm.

Q. Yeah.

A. Yeah.

Q. I guess I'm just trying to get a feel for a number to sort of try and get a feel for an overall number.

A. Right.

Q. But I understand if you're not comfortable.

A. Yeah, yeah, mhm, yeah, yeah.

Q. But would it be sort of fair to guess, or you know, it would be a fair statement to suggest 14? Or not?

A. Shall we go – split the difference and say 12 to 14 or something like that, yeah, like certainly the largest number of them, would, yeah, mhm.

CROSS-EXAMINATION: REMAINING COUNSEL – NIL

RE-EXAMINATION: MS JOHNSTON

Q. Professor Horne, I just want to start with the – I think my friend labelled these for me, but it was exhibit K1, 2, the graphs.

WITNESS REFERRED TO EXHIBIT K2

A. Yes, mhm.

Q. And you've had the N loss graph put to you today, but there's a number of graphs there and I just want you to reflect on this and your modelling exercise and can you tell me what this information tells you about the modelling exercise you have undertaken?

A. This, this particular information I think is not unexpected. It sits very nicely with the dataset that I was using and if I – I kind of, I made a few – looked at those numbers, tried to unpack those numbers a little – just find my notes – to confirm that, so every so often I read the Dairy New Zealand evidence from the council level hearing just to ground me where they take me to great task for suggesting that intensive – that dairy farming can make a 20% reduction. And so in there, part of the issue was that we have these high leaches and – or relatively high leaches and they have a small CNLM, a nice example of that being the case or scenario that Ms Ongley just put to me. So what I did was I wanted to – I wondered how representative of the current situation in the catchment this might be and how it related to the dataset I was using, so the 75th percentile value, just in very general terms, is 45 kilograms of N per hectare over those farms in the eastern sub-catchments, the most problematic ones, Mangatainoka and Upper Manawatu where high rainfall principally and soil type make get difficult for farmers to reach their CNLMs because they're in a bind. They have high leaching rates, 50, to use Ms Ongley's example and relatively low CNLMs maybe 25 to 30 and so the mismatch is hard to meet. So working on the assumption, well, the question being are those high leaches realised in this data here or has there been some downward shift in a distribution that my data doesn't, well, the data, not my data, the data that I was working with doesn't capture or reflect, ie, are farmers leaching much less today than they were, than my data

reflects and I'm quite confident that this data sits very nicely with the values that I was using. Ad just by way of illustration if we're trying to identify is this data reflecting the high leaches, back at the council legal hearing both Adam Duker of Dairy New Zealand and myself identified about 48 farmers in those priority catchments above the 75th percentile and that 75th percentile, as I said, was 45. Here, if you count the number of farmers above 45, then there are 56, okay, so I think that this dataset is capturing quite nicely, well, sorry, is agreeing nicely with what I had. Another check was drainage. Now, everyone's tired of me making the argument about the difficulties some of these farmers face and it's because of their biophysical characteristics so this data that Ms Ongley's provided allows you to look at your annual drainage rate and so I said, well, how many farmers are leaching more than 700 millimetres which is a very large amount of drains probably reflects rainfall of greater than 1,500 millimetres and, again, I was able to interrogate the data last night and saw 52 so I think, I couldn't actually use this data in the way I was able to, you know, carry out my analysis with the data because I don't have the CNLMs. I can't see the individual farms. I don't know where this data is coming from but as a dataset if I was able to do that, I'm quite confident that I'd get the same sorts of results, yes. In other words, there's been no major shift in the distribution. It looks like it's fairly stable over time and the high leaches are reflected here.

1145

Q. Thank you, professor. I now want to take you to exhibit K1 that you received some questions on from my friend and this is the tables including the recent recalibration that Dr Hanley did against the January Overseer change, you've got that in front of you?

A. I have, mhm.

Q. Are you able to speak to the implications of that change for the consenting pathways that you've looked at?

A. I've been away on holiday, I've mentioned that on a couple of occasions, and I only saw this information yesterday and I must admit it's a little worrying or troubling. One of the reasons is that Overseer predictions of any leaching rate have been quite stable since the model, major model

upgrade in 2018 and if I could just quickly illustrate that in part with the tables in front of us, so if you took LUC1, so I'll just use that for brevity, in version 5.2.6 LUC1 Overseer predicted a farm that base file was leaching 27 then, of course, they brought in the version of the drainage model and that increased to 50. It was a fundamentally a different model at that point in many ways. Since then, so 2018, Overseer has been relatively stable for version 6.2.3, 6.3.0, 6.3.3, 6.5.2, the values were respectively for LUC1 50, 51, 52, 50 so they were making small tweaks fixing bugs over that intervening period but that didn't have a major impact on N leaching rate. What is – and I don't want to be alarmist here, a little worrying here is that in this latest version, that LUC1 value has decreased from 50 to 44.8 or 45 and so the implications for that, of course, are if a farmer was to run Overseer today and compare the value for their farm with the decision version table, they may well meet the CNLM and not have made any changes not reduced leaving. So I think this raises a major question around the stability of Overseer. As I say today that has been quite stable and if anything, I think we were predicting that Overseer might trend up or if it did move and only slightly but this is quite a significant downward trend and I think it makes the table, the pathway of, you know, where you're – to receive consent, you have to conform to the table, it makes that problematic and arguably, really to manage some of the risk around Overseer then there may be many advantages with having the specified reduction or the NRAT so it kind of goes to the discussion we were having yesterday of where does the uncertainty really lie and which tool. Arguably, it’s more with the table than with, you know, strict meeting of CNLM rather than percentage reduction so a percentage reduction, you know, Overseer changes, you'll still have a percentage reduction rather than trying to match a shifting target and, of course, the NRAT is stable, yes.

Q. Thank you.

1150

THE COURT: COMMISSIONER HODGES

Q. I'm very glad you raised that question. It's a pretty obvious one which needs to be discussed. Is there something that could be dealt with through almost a reference file system for table 14.2 that in other words, table 14.2 has to be recalibrated each time there's a new version of Overseer so that any calculation done by a farmer would be done on the same basis as table 14.2.

A. So that is the – I should be a bit careful here. You seemed to be worried that I'm straying into planning space, but that's the current situation as I understand it if the table is increasing, sorry, the Overseer estimates rather, excuse me, if Overseer estimates are increasing, so today you rung your farm system, you get a value of 50, sorry, you get a value of 45, okay, and your CNLM is 45 for arguments sake but tomorrow because of a version change, you run Overseer and you get a value 50 so nothing on the farm has changed. They're just in Wellington. Dr Tavernet has changed the version of Overseer so it's now predicting a value of 50 and so you can't meet the table so there's a process whereby you can go and say I can't meet the table because, down the discretionary pathway, you go and say I can't meet the table because of the version change. Overseer's increased estimates of N leaching and so there's, you know, and so there's, you know, this is why I can't meet the table so you are kind of accounting for increases but the problem is when Overseer goes down, isn't it, so…

Q. I think it should be both ways, shouldn't it?

A. Well, why would it work both ways?

Q. If Overseer changes and the table's based on Overseer, shouldn't it be recalibrated each time there's a change in Overseer if you're going to have the farms on an equal footing?

A. But the table is, you know, you pointed it out, Commissioner Edmonds pointed it out to me, that's just part of the plan.

Q. Yes, I know but I'm just trying to –

A. And I don't need to – so I don't need to go down the discretionary pathway, I can now meet the table.

Q. Okay.

A. So to go back to my point before, today I run Overseer, I get 48, my CNLM is 45, I don't do anything to the farm. I got and run Overseer again and now I get a value of 40 because of the version change. I'm under my CNLM, I'll get consent and I haven't had to change anything on my farm. I'm not going to trigger, I'm not going to say I want to go down the discretionary pathway then, am I, I'll be…

1155

Q. No, I'm just thinking when you're using reference files there must be some mechanism, I would have thought, that may be able to address that. That's where my question is coming from, but we can't sort that –

A. Yeah, well, sorry, that would be a question to take up with the planners, yeah, I'm just saying that there is a challenge or difficulty around this that has arisen, I think in part because we've assumed that Overseer values would be relative – predictive values would be relatively stable or if anything trend up slightly, but the problem here is that they've come down quite an extent, you know, from 50 to 45, there's a major issue.

Q. So it would mean in reality that a significant number more farms would have to go through a discretionary pathway?

A. No, fewer will.

Q. Fewer, fewer, that's right, sorry.

A. That's right, yeah. And so they've made no change to their farm system and all of a sudden they, yeah.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON:

Q. Ms Johnston, you might be able to help us with this, because I'm not sure that that – my understanding of how the reference files worked has – feels like it's been confused by this exchange and –

A. I think that what Professor Horne when he – as I understand his explanation, we're talking again about updating the CNLM, the reference file approach could work both ways.

Q. Yes.

A. I think Professor Horne's point which he – which I can lead out of him if necessary, but it's on the record, is that what he's saying is that it goes down and his evidence has always been about what good management

practice and system change and they – a farmer wouldn't have to do anything on farm to meet the table anymore, they'd qualify under that controlled activity pathway and the GNP wouldn't have been needing to be implemented.

Q. So the table hasn't, the table hasn't led change, the version, the version changes have, have –

A. Yes and –

Q. – simply made something controlled that otherwise wouldn't have been?

A. That's right and it goes to the variability point that Professor Horne also just spoke to.

Q. Yes, yes.

PROFESSOR HORNE:

That's correct, isn't that what I said?

MS JOHNSTON:

Yes.

THE COURT: JUDGE SEMPLE

That's quite the planning conundrum, Ms Foster, mhm.

MS JOHNSTON:

Should I continue with –

THE COURT: COMMISSIONER HODGES

Sorry for interrupting.

MS JOHNSTON:

No, and I'm obviously happy to lead something from Ms Foster on this. I think we've made the point that Professor Horne in response to that question.

RE-EXAMINATION CONTINUES: MS JOHNSTON

Q. Unless there's anything you want to add to that, Professor Horne?

A. No, just I suppose that one way to manage this risk associated with Overseer is percentage reduction, because then one doesn't have to worry about being in step with the table, whether the table goes up or down.

THE COURT: JUDGE SEMPLE

Q. So if I might just ask about that. So does Table 14.2 under that scenario become redundant as a – or unmanageable as a regulatory tool?

A. Which scenario, sorry?

Q. Sell, you talked about – yes, we've got this what appears to be fluidity in the numbers in Table 14, we thought we had a way of dealing with that by recalibrating it and the recalibration would still drive change. There now seems to be some uncertainty if it was recalibrated a different way, which the new version would have you recalibrating down not up, then my question is what is the utility of Table 14.2?

A. You might have to get me police protection from Ms Johnston as to how I answer this.

Q. See, the great thing is that that code of conduct requires you to assist me and no one else. And Ms Johnston is very clear about that, too, I think she'll be fine.

A. She will be. Phew, gosh, I hate to say it but I – that's the conclusion I drew, yes, and in fact really push the percentage reduction won't work either because if it's going to shift around then the percentage reduction isn't stable either and I hate to say it, the only really – paradoxically, the only really stable option before us is the NRAT, yeah, or some similar tool.

1200

THE COURT: COMMISSIONER EDMONDS

Q. Can I ask a follow up question? It is just in relation to the Table 14.2(a) that's in the decisions versions. That's the 75th percentile leaching rates by targeted area. What are the implications for that in terms of that table, if any?

A. No, no, not hugely because they are kind of in step by definition. You've got the – you would adjust, well that's a good question. Yeah, mhm, mhm,

that table is going to change and so yeah, but you would be using the same version presumably, but yeah, that is the issue yes. If the decision version table is locked in place, yeah, you have problems, you have problems.

Q. At the moment you have a fixed number per year in this Table 14.2(a)?

A. Yes.

Q. So I suppose I'm just not sure how that relates to what we've just been talking about in terms of adjustment. I hesitate to ask this question because you might turn it back on me and say it's a planning question.

A. No, no, no, I understand your question. I'm sorry, having just thought about that, yeah, no, no, I wouldn't work, would it, if you're going to compare your current rate with the 75th percentile value generated, yeah.

Q. So you're confirming my instinct overall?

THE COURT: JUDGE SEMPLE

Q. And as these show, we've had two versions of Overseer within six or seven months?

A. Yeah.

RE-EXAMINATION CONTINUES: MS JOHNSTON

Q. I just have one question, Ma'am following up on a question just around the specified reduction pathway. I wanted to ask you Professor Horne, between, the difference between Table 14.2 and the specified reduction pathway and if you had a view as to whether one would be better than the other in terms of dealing with the variability we've just discussed?

A. Oh look, clearly the specified reduction pathway is much, much better. It is a way of managing it. Yeah, I'm just saying that potentially what could happen is that today Overseer predicts your value is 50, so you make a, put in place a plan to reduce by 20% 10 units. That's fine. You've identified your management practices you're going to put in place. A neighbour waits two months and runs it, the Overseer version now, I'm using numbers here exaggerating differences, but it now says that this very similar farm is leaching 48. Sorry, 40. That farmer now only needs

to decrease by eight. So it is a way of managing the risk. I'm just advising the judge that kind of it's not perfect either.

Q. And it's a question for Ms Foster, but as you understand it, in terms of the specified reduction pathway, once through the gateway and those management practices have been identified, is it your understanding that it will be those good management practices that are monitored and enforced –

A. Yes.

Q. – by the regional council?

A. Yep.

Q. Thank you.

A. No, I'm very clear on that and that's one of the great advantages of the specified pathway that they put in place almost, you know, within two to three years and so you get those benefits of improved management practice behaviour change and its influence on water quality almost immediately. The point the judge and I discussed yesterday, you know, it's frontloading all those advantages yeah.

MS ONGLEY:

Ma'am, I'm going to ask Dr Dewes to address this as well when I call her because it's obviously an issue.

THE COURT: JUDGE SEMPLE

Yes, yes, that would be useful. I was contemplating whether I might need to call counsel in, but I do want to hear from Dr Dewes in relation to it as well in case there is an alternative view about what it means. So I would like to hear that evidence, but it may be that we then need to have a discussion as to where we go from there. One of the things, and you will have heard us talk about it yesterday, you know, we are challenged by questions of scope and you know, whilst there might a range of tools available, you know, no one has asked for Tab 14 to go in its entirety. In fact, people have asked for it to stay in its entirety and be the, you know, the only pathway and, you know, there's some debate about whether anyone has specifically asked for an NRAT. So we are feeling concerned to be very clear that what we decide in this is operative and is not

going to immediately be challenged and for this region to have a further period of time with no plan in place.

1205

MS ONGLEY:

Understand.

THE COURT: JUDGE SEMPLE

So the challenge, some uncertainty now about Table 14 is not helping that process, but obviously this is Dr Horne's view about what it means. Other experts may have a different view about what that data means.

MS JOHNSTON:

I was just going to also add, Ma'am, that I am getting a little bit concerned that we're just beginning to deal with matters a bit on the fly.

THE COURT: JUDGE SEMPLE

Absolutely.

MS JOHNSTON:

A lot of information is coming in very last minute and to be fair to all witnesses in this process, people need time to be able to consider.

THE COURT: JUDGE SEMPLE

Absolutely.

MS JOHNSTON:

And bring the best responses.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. Absolutely and, you know, as does the Court need time to think through the application, so I absolutely agree with you. However, if there is a new version of Overseer, you know, then we obviously have to take into account.

A. Absolutely.

Q. And what the implications of that are.

A. Yes, and I acknowledge that and that's why we're addressing it and I'm grateful for Professor Horne's efforts overnight.

Q. Yes, but I agree with you, we have tried to, you know, get this through in as short as possible a timeframe, but as a result of that, it does feel like things are very constrained and as you say, developing on the fly and that's not great for matters that are as complicated as this.

A. It might be opportunity for me to confer with my learned friends about how we might proceed over the next few days.

Q. Yes.

A. Because obviously I can signal that is also new information. My friend signalled she wants to call Dr Dewes.

Q. Yes.

A. And have a position closed.

Q. That's right.

A. And then I need to cross-examine on that.

Q. You need to be able to cross-examine on that.

A. I need time to be able to reflect on that, so I will take that up with my friend Ms Ongley with the benefit of assisting the Court.

Q. Yes, I think that would be helpful. I can indicate that the Court looked to two dates. We had some concerns as to, and it's been, it was somewhat allayed by the expert conferencing, but it may have changed now, in terms of timing, we were concerned that we might not have enough days. We've looked out to see what might be coming up. It's not great in terms of the availability of the court to accommodate additional days or hearing or a gap, but that may be something that is necessary for everybody to take some time to then answer, you know, a list about questions. We may find that the court is required to, you know, put out a minute which effectively says these are the things that we still don't think we've nailed and then provide witnesses again and it's not my, it would not be my preferred way of doing things, but it's hard to see a way around that when we are continuing to receive information, up-to-date, great, and necessary, but also the ground is shifting –

A. Yes.

Q. – every day at the moment it would seem.

MS ONGLEY:

Ma'am, yes, can I just make a comment that Ms Wright and I became aware of this update to Overseer because Dr Dewes had asked Dr Hanley about it and felt that it needed to be put before the Court.

THE COURT: JUDGE SEMPLE

It absolutely does. I think no criticism of that. You know, for us to, for anyone to know that there is an Overseer update and for us not to be taking about would have been wrong. So I thank you for bringing it. I think it's just a matter of ensuring that the way that we deal with that information doesn't prejudice any party, provides every party with the opportunity to think about it, consider it, determine what the implications of it are for this plan change and then for us to have time to then be addressed in relation to that.

MS ONGLEY:

Yes, thank you.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

1210

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning again, Professor Horne.

A. Hi, Commissioner Hodges.

Q. Just coming back to your 20% reduction pathway, there would be – you would see that as a controlled activity if they could demonstrate 20% reduction in three years per se?

A. Well, develop a plan whereby they within a three-year period reduce by 20%, correct.

Q. Yes.

A. But that would be over, you know, the consent would be over a 10-year period, yeah.

Q. Okay.

A. Yeah, so sorry, the three years over the – two to three years, I think, the exact number escapes and you could take up with Ms Foster –

Q. I think it is three years.

A. – but it's put in place very, very quickly.

Q. Yes.

A. The farmer has – knows what's happening and kind of so that's somewhat independent or is a way of managing this risk associated with fluctuations in Overseer, yeah.

Q. Okay, I just want to explore this one, because –

A. Certainly.

Q. – you've said that it was probably the one that is the most likely to give you some results quicker, basically, is what you –

A. Yes, yes.

Q. Yes, so would you see that there would be a need for an Overseer file at the beginning and after three years to demonstrate that the 20% had been achieved or how would you see that working?

A. So you would, you would generate an Overseer file, okay. Hopefully, I was going to say, hopefully you meet Table 14.2 but maybe not, I haven't thought that through, but you, if you were going down the specified reduction pathway you would generate an Overseer file, you would say "this is how I'm going to effect or achieve my 20% reduction, I'm going to adopt these GMPs, this suite of BMPs, whatever" and you would put them in place immediately so there's no kind of staged downward trend and so that similar point is that you get those benefits of those improved GMPs, BMPs, almost straight away and so yeah, so that because it's linked to a 20% reduction movements in Overseer aren't quite as important.

Q. No, I understand that.

A. Yeah.

Q. But you would need to do a check after three years to make sure that your predictions were reasonably accurate?

A. No, I think what would be audited would be those GMPs, BMPs that had been put in place, mhm, so again that's kind of takes, takes some of the sting out of or some of the problems out of any fluctuations or changes in Overseer. So you'd run the one file, develop a plan for reducing by 20%

and then demonstrate how you'd put those GMPs, BMPs, in place on the farm.

Q. Well, wouldn't it be better to have some kind of verification that – to confirm that the BMPs actually achieved what people thought and could you do that by using the same version of Overseer?

A. Well, you don't have control of what version of Overseer you use, you –

Q. No, using a reference file system or some other way of making sure whatever Overseer file you used in the beginning you use the same one at the end, or some kind of adjustment, is that not possible?

A. Mmm, that – I, yeah, yes, you could, you could have a check. Might be quite convoluted or made complicated by the fact of changes in Overseer. Yeah, I think it was about, you know, as I have always argued, it's about getting these GMPs, BMPs in place as quickly as possible to get, you know, improvements in water quality as soon as is achievable and so that was the, the great utility or power of the specified reduction pathway and I think and I'm going to do some modelling for the Judge, think I can demonstrate that that's going – that would have a much better outcome for water quality than Table 14.2, because you get those changes very quickly.

Q. And what about the economics of a 20% reduction in three years for farms, has any work been done on that?

A. That's a good question. Not – I haven't done anything specifically, but you know, I think perhaps some of Mr Parmenter's and even the Dairy New Zealand submission at the council level hearing agreed, now, they didn't agree to 20% but, you know, the 10% could be put in place within a year or so, so we've given them a little bit more flexibility, but...

Q. Okay and then for farmers that couldn't meet the 20%, which would be the sort of higher leaching farms, the 45s and up, sort of thing, would that be fair comment?

A. No, I think the 20% I, I –

Q. No, I know.

A. – I think most farms should be able to do that, you know, with the technologies that are available now, you know, not every farm, some will use the discrepancy pathway. In my supplementary evidence of – again,

look, which I tried to be helpful to the Court suggesting that with a specified pathway available to farmers that those seeking to use the discretionary pathway would be sort of around that 10%, yeah. And they'd be perhaps the people, you know, leaching – through no real fault of their own, as I am often at pains to point out – say maybe 70 to 80 kilograms of N and so they've got to reduce, well, you know, 16 to 20 and so that might be a big ask, but yeah.

1215

Q. Okay.

A. I think they'd be relatively few, the discretionary pathway, you know, does provide a way forward.

Q. And that would be basically ensuring that there was effectively a 20% reduction across the catchment hopefully within three years.

A. Yes, and that's what I hope to demonstrate.

Q. Thank you.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. We are straying into planning questions here, I'm sorry. I mean, that interplay between the science and the plan provisions is where the crux of this is, isn't it, and so making sure that that's understood. So under the specified reduction pathway, you'd get a 20%, at the end of three years, you would say we're down 20% from where we were, that's the improvement that we will have seen in water quality or at least in the reduction of N loss, it would improve water quality, and the consent has seven years to run on a 10 year consent has seven years to run so the expectation would be it would be static?

A. That's right, mhm. And so you'd kind of gesture to it nicely, you're one stage down, yes, and one is –

Q. Quick reduction and then a – and that question of running of checking, what benefit of rerunning the model provide you?

A. I don't think you need –

Q. At some time during the consent because surely it's the same input –

A. No. Exactly.

Q. – from what you put in your consent application.

A. Exactly so it should be stable.

Q. So it should be the same, it would be the same.

A. Yeah.

Q. You're putting the same things in and the same – yes.

A. What I was alluding to Commissioner Hodges' questions that you could run a check. I don't see why you would, you know, if you didn't get the same number you'd start worrying about it as putting –

Q. Then that's just something wrong with, probably something wrong with the model or something changed in the model.

A. Exactly, yes, exactly. No, exactly you want those GMPs, BMPs.

Q. Yes, so in it, it would be as it was in a normal consent situation in that there will be a series of conditions that sets out the management practices or any nutrient management plan which has your management practices in it, that would be what council would look at and enforce if it was not being undertaken.

A. Exactly, that's what you're order, yes.

Q. All right, thank you.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. It's a sort of an oversimplification to refer to the 20%, isn't it, in light of table 14.2 in the 75th percentile?

A. Sorry, what do you mean by that, sorry?

Q. It's an oversimplification to be talking about a 20% reduction across the board given these special exemption in relation of the 75th percentile.

A. Right.

Q. Yes, I just want to be clear about that.

A. No, some farmers will have to reduce more than 20% and the most extreme leaches have to come down to the 75th percentile so if you're at 100 and the, well, say you're at 80, you've got to get down to 45, I was just arguing, you know, so, yes, but they're very, very small in number, those farmers but your points a good one, thank you. There are – yes, we do have to remember that there's that small group of farmers. And the –

Q. So can you –

A. – at the extreme end of the 75th percentile who have to do more than 20%, yes.

THE COURT: JUDGE SEMPLE

Q. So is it appropriate to say it would be at least a 20% improvement?

A. It would be, yes. It's not –

Q. But it may be somewhat more.

A. – it won't be much more because farmers in the 75th percentile by definition is 75% of them but most of them are just a little bit more than the 75th percentile and then you've got this really long tail, yes.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Just looking at recalibrated table 14.2, if you look at the requirement to reduce within five years, you go from LUC1 to LUC5 and you're getting, there's no requirement to reduce more than 20% in those situations so you're effectively achieving table 14.2 in terms of a percentage reduction and just as an example, in LUC4, the start point is 29 and then you've got to go down to 26, so that's less than 20%, so you're actually, the 20% does go someway to achieving Table 14.2 for a number of these files.

1220

THE COURT: JUDGE SEMPLE

Unless you're on a new version and the numbers change the other way.

THE COURT: COMMISSIONER HODGES

Yeah, but the expectation was that Table 14.2 would achieve a less than 20% reduction in certain LUC classes. So I think there's quite a lot of work to be done.

THE COURT: JUDGE SEMPLE

It's in a different timeframe as well, isn't it?

MS ONGLEY:

Yes, I'm wondering if I need to rethink my submission. No, no, not completely but if there's a lot of work to be done, I don't, I actually don't know if I will get on today anyway, but I will just –

MS JOHNSTON:

I did allude to that, Ma'am, that potentially, in my earlier comments about speaking to my friends about the best way forward over the next few days.

THE COURT: JUDGE SEMPLE

I understand exactly what you're saying.

MS JOHNSTON:

I am very happy to take that conversation up in lunch, but I appreciate Ms Ongley's position and I just wanted to give that indication that I'm available to have that discussion.

THE COURT: COMMISSIONER EDMONDS TO MS JOHNSTON

Q. So are you thinking an earlier and longer lunchbreak, is that what you're thinking?

A. Certainly maybe earlier but I don't know about longer.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. Who else are we hearing from today? We have got a number of your witnesses still?

A. We have got Dr Snelder who is online.

Q. Yes.

A. He filed a supplementary.

Q. Yes.

A. We've got Mr Clark who is here in the court.

Q. Yes.

A. We've got Ms Foster who probably is giving me the eye right about now about –

Q. She's still smiling.

A. Is she, okay.

Q. It's very surprising to me.

A. I have been too scared to look around and Ms Foster was going to speak to some of the matters that have been arising through this week in her supplementary.

Q. Yes.

A. But I will take stock of that over lunch as well.

Q. Yes.

A. Our job is to make this as easy as possible for you and I will see what we can do over the lunchbreak.

Q. Yes.

THE COURT: COMMISSIONER HODGES

Good luck on that one.

MS ONGLEY:

The other option is of course I would reserve being able to provide the supplementary submissions later on this particular issue. We'll confer.

THE COURT: JUDGE SEMPLE TO MS ONGLEY

Q. I think that would be useful. I mean I am wondering given this topic, I would quite like to hear from Dr Dewes in relation to this topic and I don't necessarily want to bring her forward out of your, you know, before you have opened, but –

A. She's here.

Q. Yes, I know.

MS WRIGHT:

Your Honour, if it helps your thinking, my client's request is that there is an opportunity to hear from and ask questions of Dr Dewes before there's an entire shift in gear in terms of how we're going to approach matters in particular because we've not yet had a chance to present this today.

THE COURT: JUDGE SEMPLE

And that's all right and look, it may not be that we need, it may not be that we need to hear from Dr Dewes, but I certainly think there perhaps needs to be some conversation about whether what we have just heard and what that seems to suggest, or what that might suggest for the efficacy of Table 14.2 and Table 14.2(a) whether it has created a fundamental shift in any way, or, you know, sort of a seismic shift or a little tremor and I don't have a real understanding of that yet, but I think it might be good for the parties to have a conversation about that. If you have different views about that, then great, we can hear from that. But if you are all saying actually we all need to take a step back and have another think about this or take some more time, then perhaps we're going to need to reconsider the way that we use the rest of our time, if that makes sense.

MS ONGLEY:

Thank you, yes. Dr Dewes is willing to address it after the lunch.

THE COURT: JUDGE SEMPLE

Yes, well I mean perhaps I will ask counsel to have that conversation over lunch to think about what might be the best way to address things and then via the registrar put those thoughts to us and then we will come back and see whether that equates with the conversation that we too will have over lunch.

MS ONGLEY:

Thank you, your Honour.

WITNESS EXCUSED

COURT ADJOURNS: 12.26 PM

COURT RESUMES: 2.03 PM

THE COURT: JUDGE SEMPLE

How have we got on? Ms Ongley is on her feet.

MS ONGLEY:

Yes, Ma'am, I'm sure Ms Johnston will want to comment as well, but the proposal is that not to call Dr Dewes now because we feel it might assist more if she was able to prepare a few bullet points in writing to speak to on Monday so that you have some material before you in black and white and so the parties at this table don't feel that this is a seismic shift more a minor tremor and I think we've also discussed that there's more a planning issue so there will be some discussions about the planning side of it, so we are, have committed to get bullet points done by first thing Monday morning and I'll let Ms Johnston address you.

1405

MS JOHNSTON:

Well, firstly I think we're in the Court's hands as to whether you've also got any views over lunch as to whether you want to hear from Dr Dewes or not even in an initial capacity but certainly, there was some discussion about the benefit of being able to understand Dr Dewes' position so that we could respond to it. The suggestion is that Professor Horne also put some shorts down at the same time. One of the issues that potentially raises in my mind is some efficiency around where there might be alternate views and we did discuss that as counsel and that's the point that my friend's just referred to is the planning framework and ultimately, I also agree that this is a planning issue in terms of activity status in many ways and how the shift down is addressed or not as opposed to the shift up which has been contemplated as a discretionary activity within the policy framework so in short, there will be farm system input into this issue but the planning framework needs to be able to respond and that's a task that Ms Foster needs to reflect on and over the short break, I've put that to her. Again, I preface that with very much also keen to hear the Court's views but from our perspective, there is an issue that needs to be responded to. It goes

to – it's not as simple, in my view, and I've said this to my friends over lunch, it's not as simple as potentially tweaking the consent activity status or not because there's also an underlying philosophy here from the council which is one of the reasons we looked at the effectiveness and efficiency of another consenting pathway was the problems with the variability in table 14.2. Now, I understand my friends take a different position as to that as the matter of their case, they can open on that, but I just want to highlight that that still remains an issue for the regional council and one of the things that this plan change was looking to overcome because the purpose of this plan change was to avoid issues where we were needing to have plan changes on a regular basis to update CNLM and where there was issues created by driving to an absolute issue within it.

THE COURT: JUDGE SEMPLE TO MS JOHNSTON

Q. Yes, and so just in relation to that, I haven't checked it but in terms of the recalibration of table 14.2 and with it that will have a flow-on effect, as notified, was there a reference to a specific version of Overseer with the new numbers, there was, wasn't there, and then so am I right in thinking that if the Court were to approve the plan change on the basis of the way that it was notified, that we would end up effectively making operative a previous version of Overseer or is the expectation that the table is updated to the most current version of Overseer?

A. Certainly the expectation was that there would be a way to be able to assess the changes in Overseer for an applicant through the application process but there needed to be the ability to ringfence somewhere an Overseer version in the plan because continuously updating a provision as –

Q. Absolutely, but the intention was to update table 14.2 to some new numbers and those numbers are numbers now that will be numbers from a previous version.

A. Yes and Dr Hanley addresses this in his evidence before you that at the time of the council level hearing, it was 6.2.3 from memory and that he provided an update in his evidence which indicated that there would be, there has been an update and he looked and he gave the most recent

and in the provisions as filed as the council provisions, there was a comment box which indicated that that version in the decisions version had changed and that that would be a matter of evidence. We've always been alive to the fact that there might need to be a different number put into the table as made operative at the time of your decision and that was signalled in Dr Hanley's evidence.

Q. Yes and that's what I just wanted to clarify is that the expectation was is that it would be updated to the most current version at the time of the decision.

A. That's Dr Hanley's recommendation and it was noted in the council provisions as filed.

Q. Yes and, of course, the matter that exercised us over lunch was the extent to which a recalibrated table 14 with the most current version meets the policy objective to get a nitrogen leaching reduction.

A. Yes and when Dr Hanley did this exercise in January at the request of Dr Dewes, he just does the recalibration and produces the number. It's Professor Horne that advised the council about the consequences of that and that's why this has emerged now because he's been on leave.

1410

Q. Yes and look, there's no criticism of anyone in relation to this at all. I'm – we are simply trying to understand what the implication of that is and the – at a high level, the concern is that if the table is recalibrated to – in such a way that there are farms that yesterday didn't meet it, today meet it, you know, it's the reverse of the concern that there is about the table currently. So and if no on farm change is made and there is no reduction in N loss, how does that meet the policy direction to reduce N loss?

A. Well, I guess the other option is, you know, there – when I refer to the planning response, and I have to indicate that I haven't tested this, you know, Ms Foster she is the planner, I am the lawyer.

Q. Absolutely, and she may or may not agree with you.

A. But ultimately we might determine, you know, what are the figures that stay in Table 14.2 but who, I guess, but then that doesn't really necessarily fairly represent the state of play at the time, so that's what needs to be grappled with.

Q. Yes, that's right.

A. Because I think and sorry, that's another quandary, isn't it.

Q. Yes, "quandary" is an excellent word.

A. And I'm not suggesting that that's the position, but I guess that that potentially is where your Honour's thought process was –

Q. That's the question, absolutely.

A. – going.

Q. That's exactly right, that's exactly right. And all of that, the robustness or otherwise of Table 14 as you rightly point out is the starting point for the determination of what if any other tools are required and if there are other tools required what should they be. So having a very clear understanding of the – of how Table 14 works and the extent to which is does or doesn't work is fundamental for us in our decision making.

A. Yes, which is why I make the submission, and it is a submission, that it is not as simple as saying this is a planning response, because fundamentally there were planning responses suggested through the decisions version to try and address some of these issues with Overseer –

Q. Yes.

A. – around Table 14.2 –

Q. Yes.

A. – and in my submission we shouldn't overlook at those – overlook those when we are contemplating the new issue that has emerged with 14.2.

Q. Yes.

A. It's just another issue, if you like.

Q. That's right.

A. And I'm not saying that 14.2 doesn't have a place necessarily.

Q. Yes.

A. But I'm saying that this is just an example of some of the uncertainty that the council has been grappling with.

Q. Yes.

A. And I take my friend's point that the council needs to consider this. I think, Ms Ongley, you show some leadership and I'm happy to.

Q. Yes.

A. We can put that, we can put a position in response to this.

Q. Yes.

A. I just need time.

Q. Yes, yes, I understand that.

A. So I am happy if, Ma'am, for –

Q. Sorry, Ms Johnston –

A. No, you go.

Q. I think the other matter that counsel will need to contemplate about this and I'm sure that everyone is, is the matter that I raised before lunch around, around where all this fits with scope. Because it's, it's clear that no party has sought that Table 14.2 be removed, but if the Court is placed in a position where the evidence suggests that recalibrating the model, recalibrating the table to the numbers in the most recent mode will in fact not lead to a reduction, not lead to the maximum reduction in the, you know, and meet the policy framework, we're in a, we're in a real pickle.

A. This is where the farm systems advice and the planning advice intertwine.

Q. Yes.

A. Because there's no dispute, as I understand it, between the experts that if the CNLM and the table remain the same as the Overseer output, in whatever version that is, if there is relativity between those two things then the practice change that we would anticipate to see on farm that brings about the N loss will occur because the –

Q. Yes.

A. – the relativity is the same and Overseer has just improved its estimate – estimation of what is occurring. Hopefully, Professor Horne has given me a tick for that explanation and but what the issue, as I understand where the issue bites is that if the table doesn't change and there's the downward trend, you are a controlled activity and the council, you are estimating a lower N loss but you're able to leach to the CNLM that is fixed, there is a practice change that won't occur and there's a difference there and that is the planning quandary about activity status and matters of control.

1415

Q. Absolutely, mhm.

A. So that's my understanding and my friends might want to address that so I think I just want to be clear that there is an intersection here and that's the point that Ms Ongley made quite rightly that it's a planning framework matter.

Q. Yes, absolutely. I mean, it's a plan change. Ultimately, the output of this is not the technical evidence, it's what we do with the technical evidence and put in the plan so, absolutely. In fact, we were just discussing that very thing.

THE COURT: COMMISSIONER EDMONDS

At lunch time we were.

THE COURT: JUDGE SEMPLE

And the importance of planners you'll be pleased to know.

MS JOHNSTON:

So this afternoon if you didn't want to, if you agreed that Dr Dewes wouldn't be called, then it's my intention to call Dr Snelder and Mr Kluff and then I will still call Ms Foster and to address the matters that we feel we can at this stage and then we would, I'm entirely in my friend's hands as to whether she wishes to if there's time open, I have indicated that I'm very flexible as to her decision on that and obviously in the Court's hands as well.

THE COURT: COMMISSIONER EDMONDS

We don't actually have all that much time because didn't we commit finishing at four at the latest.

THE COURT: JUDGE SEMPLE

At four, we did so we don't have a lot of time and I suspect we're unlikely to get through and I wonder if in the circumstances depending on how long it takes, I might be inclined to say that you might be better to hold off on Ms Foster because as you say this issue is an issue of the intersection between the technical knowledge and how that is used in a plan provision in order to get the outcome that we seek and that the plan seeks.

MS JOHNSTON:

Yes, I would certainly not be leading any evidence for Ms Foster today on the plan framework or the fundamental building blocks.

THE COURT: JUDGE SEMPLE

No.

MS JOHNSTON:

What I was intending to address as I indicated earlier the questions around –

THE COURT: COMMISSIONER EDMONDS

Duration.

MS JOHNSTON:

– duration and some of that. Equally, I very much can address that next week and so maybe we see how we go as the afternoon progresses.

THE COURT: JUDGE SEMPLE

All right, thank you. Ms Ongley or any other counsel have any other thoughts in relation to any of that?

MS WRIGHT:

No, your Honour, just reflecting on counsel for the council's I guess summary before of where counsel landed on the issue. I can indicate that we're on the same page in terms of the relativity questions so if you've got the table of using the same version of Overseer as you've got your farmers, you're going to move like this, if you don't, you're facing the issue we can't really have here and what we need to turn our minds to as a result of seeing these updates is, as counsel has said, that planning question about how to deal if your leaching is down.

THE COURT: JUDGE SEMPLE TO MS WRIGHT

Q. That's right because if it becomes a regulatory tool you can't use then well, it's, you know, unhelpful but it's not the end of the world. If it becomes a regulatory tool that's suddenly quite easy to get through, then

you've got a question about whether it's working appropriately to meet your policy guidance.

A. But I do think we left the room thinking we were a lot further apart on things than we actually are in terms of understanding what the issue is that we're dealing with so we're in a much better position to try and talk through what the solution might be. In terms of it influences how the Court would like to manage hearing from Ms Foster, Mr Scott has, he's aware of the issue that's come up. He's also been listening to the planners in particular present and is reflecting on some aspects of the provisions that were put forward jointly by himself and Mr Carlyon, the duration question you put, that was put to him by yourself and Commissioner Edmonds is one of those matters and he is looking at making a few adjustments which my friend does know is in the pipeline, you know, it might be more helpful for yourselves and Ms Foster as well if we look to provide those by, say, Sunday evening and it may be that actually there is a bit more alignment between Ms Foster and Mr Scott on some of those points than if you have the conversation now.

1420

Q. Yes. And I mean I am also acutely aware and I appreciate counsel and the witnesses' assistance in providing things, but I also, you know, we all need to sleep as well from time to time and have time to reflect on these. You know, I worry that we get ourselves into a situation where haste becomes or try to, you know, fit all of this into the time we've got available becomes our driver and we don't have time to actually sit and think through the implications of what we are hearing and how that plays out and I think particularly for the planning witnesses it is important that they are given that time and they have that time to actually think about what this means.

A. I should caveat that I'm not sure Mr Scott will be in a position to address this particular thorny issue –

Q. Yes.

A. – in those updated provisions.

Q. Yes.

A. But in terms of some of the other issues that have come up and been discussed –

Q. Yes.

A. – you know, he has had these few days to reflect on those since –

Q. Start to ponder them, yes.

A. – Mr Carlyon has been on the stand.

Q. Yes.

A. And so that is – would be done at a much less on the fly type of a basis from Mr Scott's point of view, than coming up in answer to this particular question.

Q. All right.

THE COURT: JUDGE SEMPLE

Mr Anderson, shaking your head?

MR ANDERSON:

No, but I don't have anything to add to what my friend's have said.

THE COURT: JUDGE SEMPLE

Yes.

MR ANDERSON:

I think they have been captured this position well.

THE COURT: JUDGE SEMPLE

Thank you. Ms Ongley?

MS ONGLEY:

Before you go to Horticulture New Zealand and Federated Farmers, the Court has probably recognised this but I just wanted to flag, in case the Court hadn't, that it's method 5.13 covers the issue to some extent, it's method 5.13, so.

THE COURT: JUDGE SEMPLE

Just take – I might as well have a look at it while we're talking.

THE COURT: COMMISSIONER EDMONDS

In which version? The decisions version are you referring to or the circulated?

MS ONGLEY:

Well, it has, it has morphed.

THE COURT: COMMISSIONER EDMONDS

Oh, okay.

MS ONGLEY:

I am looking at the council's version. It probably doesn't matter which version you look at. I am just making a broad comment that method 5.13 talked about the Table 14.2 being updated over time and it talked about the reference file system. So I didn't propose to go into it any further at this point, other than –

THE COURT: COMMISSIONER EDMONDS

5.13? I've got the one that Ms Foster was cross-examined on.

MS ONGLEY:

Does that look like this, Commissioner? There – yes, that's the same version. So that is page 7 of that version and that's just FYI at this stage. It might provide a little bit of scope to, if there's another planning solution, that it was flagged in here. Thank you.

THE COURT: JUDGE SEMPLE

All right, thank you. Ms Buxeda, do you have anything to add to that?

MS BUXEDA:

Nothing that my friends haven't covered, we're happy with the suggestions and obviously in the Court's hands and make ourselves available.

THE COURT: JUDGE SEMPLE

Right, and Ms Edwards, same?

MS EDWARDS:

No, thank you, your Honour.

THE COURT: JUDGE SEMPLE

All right, thank you. Commissioner is there any other thoughts, questions?

THE COURT: COMMISSIONER EDMONDS

Well, I did think it would be more helpful if Mr Scott and Ms Foster were more aligned in terms of some of those questions, if there is a bit of an issue, rather than leading it out of Ms Foster now and finding a whole problem. We've got sort of enough things on our plate, I feel.

THE COURT: COMMISSIONER HODGES

Yes, thank you, your Honour. The point you just raised about relativity is what I was trying to get at this morning and if you adjust the table to be on the same version of Overseer each time, that solves that problem. If that's not possible, I'd like to know what the implications are because we've had a lot of figures thrown at us based on one version of Overseer, are they the same implications if you use a different version of Overseer and I suspect they are not, so I think the fundamental question is can Table 14.2 be amended with each version of Overseer? That seems to be the fundamental question to me.

MS JOHNSTON:

Yes Sir and if I may, Commissioner, that is the method that my friend Ms Ongley just referred you to.

THE COURT: COMMISSIONER HODGES

Yes, yes, exactly, and that's what I was referring to this morning, but using the reference file system, but –

MS JOHNSTON:

Yes, I think that we can address you on this, but the issue as I understand it is that the reference file, how we account for that process in a controlled activity pathway –

THE COURT: JUDGE SEMPLE

Correct.

THE COURT: COMMISSIONER HODGES

Yes, I was thinking of something along the same lines somehow, but it may not be possible.

1425

MS JOHNSTON:

Yes, I think that we can address you on this, but the issue as I understand it is that the reference file, how we account for that process in a controlled activity pathway.

THE COURT: COMMISSIONER HODGES TO MS JOHNSTON

Q. Yeah, I was thinking of something along the same line somehow, but it may not be possible.

A. Yes, so I think it's always contemplated that the plan needs to be able to, or not the plan, an application needs to be able to respond to Overseer changes.

Q. Yes.

A. And that's the method Ms Ongley has just referred to. But that was always in a pathway where there was discretion to be able to have regard to that update and that change.

Q. Yeah.

A. If there's a change down and the table stays fixed, then the application is controlled and it's how the council gets the ability to have oversight of what's happening at that point.

Q. I do understand the position, but the bottom line is that the table and the consent application need to be aligned in terms of the Overseer version that they're talking about.

A. Yes, thank you.

Q. If that is not possible through a planning framework, we need to understand the implications of that for the numbers we've been given.

A. Thank you. Professor Horne undertook over lunch to do that analysis for the Court, so I haven't had the opportunity to talk to my friends about that. He wanted to reflect on it, but I can indicate that that was top of mind for him as well.

Q. Yeah, the other thing that concerns me is the issue of timing that her Honour has mentioned. We've been asked to make a lot of decisions on the hoof really as new information comes in and that is not good process and so like we can hear from Dr Dewes now. We can have information on Monday. We won't have had any time to really think about a lot of that and that really concerns me because this is an important case and we need to get it right.

A. Well I can certainly signal from the regional council's perspective, you know, I can only speak from my client's perspective, this is important and they have invested, as have all parties at this table, a lot of time and effort into it.

Q. Of course you have.

A. Given the due process and time that is required, it is something I am very mindful of and I need to continue to reflect on that absolutely.

Q. Yeah.

THE COURT: JUDGE SEMPLE

Just one last point and then we might take, or we might just take five minutes just to talk amongst ourselves I think just in terms of some process questions. If we are able to get through some of these witnesses today and we've still got two sets of openings I think, or one, yeah, two sets of openings to go and two sets of witnesses.

MR ANDERSON:

We were also planning on some submissions as well.

THE COURT: JUDGE SEMPLE

Oh yes, three. I don't know why, you don't seem to be on the list here.

MR ANDERSON:

I know. I did notice that we didn't make the table.

THE COURT: JUDGE SEMPLE

What has happened to you? You don't seem to be identified any longer. I guess I'm currently wondering about whether the next, whether we're going to get through in the short amount of time we have left and two more days which is all that we have got scheduled. I suspect not at this stage and in part because I think it's going to take use a bit of time to work through this and we may well find ourselves in a position of needing to recall other planning witnesses and so I'm – what I'm thinking about and what I want to talk with my Commissioners about is the extent to which not sitting on Monday and allowing that to be some time for people to actually come to grips with the information that is now in front of them and produce perhaps some more considered work rather than requiring people to work across the weekend, have things filed by Sunday night and then appear in court at 10 o'clock on Monday morning ready to talk about them and so I'm interested in the, you know, if we're not going to finish anyway, we're going to need to find some extra days, then I'm interested in trying to understand whether that is a better option for us. I might take a short adjournment, you can think about that. I will talk with the court about that and we'll come back in 10 minutes.

COURT ADJOURNS: 2.29 PM

COURT RESUMES: 2.51 PM

THE COURT: JUDGE SEMPLE

All right, our thinking is that we are unlikely to get through what we need to in the two and a bit days we have reserved and in light of that, we are inclined to say we think it would be better for the parties to take the time that was to be set aside for hearing in Monday and Tuesday of next week to actually produce the materials that various parties have committed to producing and have them circulated such that all parties will have an appropriate opportunity to review those and understand the implications of those before we reconvene and that we reconvene and set down for a further week. It's not ideal and I apologise for all of those witnesses who have travelled to be here this week and who many of you have also sat through a week of hearing where you didn't get on in Wellington, so we apologise for that, but it does seem to us that there are issues at play here that people have not had the opportunity to fully consider and as I indicated either yesterday or the day before, this plan is a plan that has had some difficulties by virtue of the fact that we are here now trying to fix a difficulty with it and the last thing that we want to do is to find ourselves rushing to fix something and end up with a plan that still doesn't operate in the way in which it was intended to operate. So that's our current thinking. I am happy for counsel to address me on that. If there are witnesses that we think we could get through who are not central to some of the issues that we are grappling with, it might be, you know, have the potential to be a bit changeable, or witnesses who have specific availability issues we may be able to do something about that, or get through one of them this afternoon before we break. So I'm happy to hear from you in relation to that. The Court is able to make time available the last week in April or probably the first week in May or some combination of those, but we will work if there are other dates the registrar will work with you to try and work that out. Members of the Court have indicated that they will try and move existing commitments to try and accommodate things, so we're trying the best we can to get the matter resolved as quickly as possible.

THE COURT: COMMISSIONER HODGES

Your Honour, I do have a difficulty with the first week in May because I have got a two week hearing starting.

THE COURT: JUDGE SEMPLE

Yes.

THE COURT: COMMISSIONER HODGES

Yes, so that would present me with some difficulties. I could possibly do it but it's no ideal.

THE COURT: JUDGE SEMPLE

Yes and unfortunately none of the dates seem to be ideal.

THE COURT: COMMISSIONER EDMONDS

No, none of it is ideal.

THE COURT: JUDGE SEMPLE

None of it is ideal at the moment. So but you know, if you think that we're wrong and we can carve this out in the two days that we've got and everyone is happy to work through the weekend and circulate things and we think that we can deal with that responsibly and witnesses can appropriately discharge their obligations at that speed, I am very happy to hear from you in relation to that, but you will see that I have indicated some concern about that.

1455

MS WRIGHT:

Your Honour, I just have one question, first a clarification. When you say the last week of April, do you mean the week starting 22 April or the following week?

THE COURT: JUDGE SEMPLE TO MS WRIGHT

Q. No, 29.

A. 29?

Q. Yes. But, you know, the roster comes out at sort of like this level on the screen so we've all been trying to look at it on our phones. It's entirely possible that we haven't quite got that. So there may be more flex in the system than what we have immediately been able to try and look at.

A. No, that's helpful. I think Mr Anderson and I are in the Supreme Court the week of 22 April, so that we would not be available.

Q. Yes.

A. And I'm not sure if your Honour you've turned your mind to a timetable, but we were talking about putting something together for having a talk about what documents we need.

Q. Yes.

A. The timing that would fit now with that. We could look to have that to the Court, you know, early next week also.

Q. I think that would be very useful. I think, you know, particularly through the hot tubbing and through some of the questions that have been asked of witnesses, various witnesses have undertaken to produce various things and it would be useful for us to have a full list of those and some thought given to an order of those that would allow people to sensibly build off the information and respond to the information. I think probably Professor Horne's analysis is at the start of that in terms of the matters that he undertook to provide the Court with and then we appreciate that there may well be a need for reply evidence in relation to those matters. We expect that there will be. It might also be worthwhile in that considering whether there is some perhaps informal planning conferencing that could occur. There's obviously various iterations of the plans. We talked about that at the beginning of this resumed hearing, being able to present the Court with a single document that becomes the document that we are all working from. I think we're now working from sort of four or five versions and that's probably not helping us to refine our thinking either.

MS ONGLEY:

Yes, Ma'am, I understand the directions and Fish and Game and Ngāti Tūranga are comfortable with that.

THE COURT: JUDGE SEMPLE

Thank you.

MS ONGLEY:

I just wanted to say one thing that in terms of the process that we will work with counsel about, but I was a little bit surprised with Ms Johnston's submission that part of the case is that Table 14.2 doesn't work because I think as we all know, Table 14.2 has always been part of the plan and was, nobody sought it to be removed.

THE COURT: JUDGE SEMPLE

Yes.

MS ONGLEY:

So Fish and Game is of course willing to be involved in assisting the regional council in this way, but I will be in the break before we work out this memorandum, asking that counsel take the lead on that just because counsel has to admit us to the plan and is responsible for the administration of the plan et cetera. So I just thought I would flag that. It doesn't require any response.

THE COURT: JUDGE SEMPLE

No, I understand what you're saying.

MS ONGLEY:

Thank you.

MS JOHNSTON:

Sorry, Ma'am, I just want to reply to that. I don't think my submission is that Table 14.2 didn't work. I said that there was uncertainty created through CNLM and Overseer and that was certainly part of the position of the council before the Court.

THE COURT: JUDGE SEMPLE

Yes. I understood the submission to be that there was, and I don't think it's disputed, that as it stands at the moment there is a problem with Table 14.2 that needs to be fixed. I think everyone is agreed that the recalibration would fix that and that there is dispute about whether you need anything else and if you do need anything else to sit alongside Table 14.2, what is it? Our question of course is, you know, does this current change, the new change in Overseer create a different issue with the use of Table 14.2 in the way that it currently sits within the plan and to what extent might that colour our decision making. That's really what we are concerned to understand and to understand that really clearly and I think the issue that we're most troubled about is providing people with the time to test their thinking and what I think this has been, you know, a sort of a quick process and, you know, that's been useful because we were trying to get to a decision quickly but it has meant I think that we have been going fast to try and keep up and I think we need a pause for people to collect themselves in their thoughts and consider what's been heard and then start again. I don't mean to start again from scratch. I'm not suggesting that the plan change is withdrawn but that we have an opportunity to just recalibrate ourselves.

1500

MS JOHNSTON:

Thank you, Ma'am, I can also indicate that I'm available that week of the last week of April.

THE COURT: JUDGE SEMPLE

Yes, thank you.

THE COURT: COMMISSIONER EDMONDS

So there's also the issues relating to the specified reduction pathway that Professor Horne was going to look at as well so we shouldn't forget that. Not just about table 14.2.

THE COURT: JUDGE SEMPLE

Yes, that's right. Professor Horne undertaken to do a number of the things in the course of the hot tubbing and it would be quite useful for us just to have a list of that but part of it, I think, was looking at that specified departure, specified reduction pathway and the implications of that as well.

MS JOHNSTON:

Yes, that was certainly a part of the list and potentially we could, if it would be useful, we filed a memorandum include the matters that Professor Horne is going to cover and the Court could advise us we've hit the mark.

THE COURT: JUDGE SEMPLE

That would be useful, yes.

MS JOHNSTON:

The only other procedural matter, Ma'am, is that I do have Dr Snelder and Mr Clough here.

THE COURT: JUDGE SEMPLE

Yes, I wondered if one or other or both of those might be able to be, we might be able to proceed with them.

MS JOHNSTON:

Well, I'm happy to proceed with both. I guess I pause over Dr Snelder. I don't think there's any implications. I haven't really thought about that.

THE COURT: JUDGE SEMPLE

Yes, we had the same discussion. We thought that probably things were potentially interlinked there but we did wonder if Mr Clough might be – yes.

MS JOHNSTON:

That's right. So Dr Snelder is online. I am inclined to potentially let him go today and take stock of that.

THE COURT: JUDGE SEMPLE

Yes, understood.

MS JOHNSTON:

But Mr Clough is here and available if that would be use of this afternoon.

THE COURT: JUDGE SEMPLE

Yes, we've got an hour. We should use the time if that works. Before we call him, is there anything else from counsel?

MR ANDERSON:

Just I guess I'd respond as well and say that the main concern was just coming up for Tuesday so if we just have it for one day seemed a bit of a – so I'm happy to – I don't think we'll get through it on Monday and Tuesday. I'm happy for it to be pushed off until May or something, I'm in agreement with that approach.

THE COURT: JUDGE SEMPLE

Yes, thank you. Yes, that's what we thought if we only ended up with one day, yes, we're certainly not going to get through it. Everyone else? All right, we'll call Mr Clough then.

MS JOHNSTON CALLS

PETER WILLIAM JOHN CLOUGH (SWORN)

Q. Thank you for your patience today, Mr Clough. You'll confirm that your full name is Peter William John Clough?

A. I do.

Q. And you prepared a statement of evidence in these proceedings dated 17 January 2024?

A. That's correct.

Q. Your qualifications are as described in paragraph 2 of that statement of evidence?

A. Yes.

Q. Do you have any corrections that you wish to make to that evidence today?

A. No.

Q. I'll get you to confirm that that evidence to the best of your knowledge is true and correct?

A. I do.

CROSS-EXAMINATION: MS ONGLEY

Q. Hello, Mr Clough.

A. Good afternoon.

Q. My name’s Ms Ongley and I'm representing Wellington Fish and Game Council and Ngāti Tūranga a hapū. I just have a few questions, so your macroeconomic modelling was on the basis of a 10% reduction in milk solids output from a recalibrated Table 14.2, is that correct?

1505

A. Yes.

Q. And Dr Dewes raised some issues about the forecasting of that 10% which I just want to ask you some questions about. So that was based on is it Mr or Dr Parmenter’s work with –

A. Dr Parmenter.

Q. – Dr Parmenter with the cluster farm analysis and Dr Parmenter has also filed a rebuttal statement to Dr Dewes saying that his analysis which was the cluster farm analysis was based on assuming that there was no

change in farmer capability between the current situation within the catchment and year 20?

A. Yeah.

Q. And so he didn't take into account any further optimisation of farming systems used and he explained it as effectively all things being equal, is that your understanding?

A. Yes, he was trying to look, as I understand it, the change in one particular thing which was a reaction to the plan change itself.

Q. Yes.

A. And trying to hold all other external influences the same.

Q. And so can you just explain to the Court if as Dr Dewes' evidence has pointed out you do have – take into account systems changes and farmer capability increasing over time, how that would feed into your macroeconomic analysis, because presumably you would get a different figure than the 10%, wouldn't you?

A. Well, you could do but it's quite a common practice in science and economics to actually look at the change for one particular change and hold everything else constant. Otherwise, you end up with a situation where you can't tell how much of the change you're observing in the result is actually determined by the change in the policy you're trying to examine and how much by some other assumption you've made about how other factors are having an effect.

Q. All right, so you could, you could see some change in that 10% and but you've set out the reason why you didn't take into account those other things that could change over time in the 20 years?

A. That's right, yeah.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Mr Clough. I'm Ms Wright and I act for Mr Day.

A. Good afternoon.

Q. Have I correctly understood your evidence that the further partial compliance scenario you are talking about is a scenario that has Table 14.2 specified reductions pathway and discretionary activity?

A. Yes.

Q. And your conclusion was that there was no difference in cost as between that pathway and just the partial compliance scenario which was Table 14.2 and discretionary activity, is that correct?

A. Ah, so what do you mean by “no difference in cost”?

Q. Well, your, your evidence is that changing from a partial compliance which is defined as Table 14.2 in discretionary.

A. Yeah.

Q. To further partial compliance Table 14.2 specified reductions pathway and Table 14.2, will not affect the results described in the 2020 report, does that mean that there is the same cost associated with each of those partial compliance scenarios?

A. Ah, the situation I was asked to comment on was if you’re looking at the – an alternative test to the original partial compliance pathway and if it has the same impacts on the input side which I understood from Dr Horne was probably the case, similar, then you wouldn’t expect to see any change in the modelling outputs of our model because effectively you’re looking at the same input change feeding through in the same process into outputs.

1510

Q. So that means the costs associated with both would be around 19 million on your analysis?

A. Yeah, yes.

CROSS-EXAMINATION: REMAINING COUNSEL – NIL

RE-EXAMINATION: MS JOHNSTON – NIL

QUESTIONS FROM THE COURT – NIL

WITNESS EXCUSED

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – HOUSEKEEPING
(15:12:22)

ADJOURNED PART-HEARD

COURT RESUMES ON WEDNESDAY 5 JUNE 2024 AT 10.05 AM IN WELLINGTON COURTROOM 5.01

LEGAL DISCUSSION – PRELIMINARY MATTERS (10:05:32)

MS JOHNSTON RECALLS

ANTONIUS HUGH SNELDER (RE-AFFIRMED) (RE-CALLED)

Q. Good morning, Dr Snelder. I'll have you state your full name for the record please?

A. Antonius Hugh Snelder.

Q. And you've prepared four briefs of evidence in these proceedings before the Court?

A. Yes.

Q. And for the record those are dated 6 October, 13 November 2023 and 18 January and 18 March 2024, is that correct?

A. Yes, that's correct.

Q. And do you have any corrections to those briefs of evidence?

A. I do. In my supplementary statement of evidence dated 18th of January 2024, I refer to questions from Ms Wright during cross-examination in relation to table 6 of my evidence. Of 6th of October 2023, table 6 there is an error. All the currences of table 6 in my 18 January 2024 evidence should be replaced by table 5.

Q. Having made that correction, can you confirm that your evidence in these proceedings is true and correct to the best of your knowledge and belief?

A. Yes, it is.

Q. Thank you, Dr Snelder, if you could just stay and answer questions from my friend and the Court.

A. Thank you.

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning, Dr Snelder.

A. Good morning.

Q. I wanted to ask you some questions about a statement that Professor Horne has made in his May 2024 evidence in which is repeated from

earlier evidence that Professor Horne has given and it's at paragraph 32 and I'll state the common bundle reference for the record, but I don't think you need to go there, 501.0272 and it's regarding –

MS JOHNSTON ADDRESSES THE COURT – WITNESS HAS BUNDLE (10:15:11)

LEGAL DISCUSSION

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. It's the 6th statement of evidence, sorry 5th statement of evidence of Professor Horne, sorry the 6th statement of evidence and it's tab 10, page CV501.0272. And so first of all I'm saying that changes in water quality and receiving rivers were not audited by Dr Snelder and Dr Cox. This modelling suggested that DV-PC2 would result in modest improvement in water quality which was also their conclusion for strict enforcement of Table 14.2. The modelling revealed that there would be no further significant improvement in water quality if IFLUs reduced leaching losses beyond the 20% decrease. In other words, you could demand that IFLUs reduce leaching losses by more than 20% or meet their 20 CNLMs but this would not result in any significant further benefits to receiving rivers. And you would recall that in these proceedings the issue of the 20% reduction has been referred to as a sweet spot, in that it meets or doesn't result in any greater water quality gains than a greater percentage of reduction, yet Professor Horne's opinion is that it's achievable through GMPs.

A. Yes.

Q. Yes. So in your evidence you're saying that the range of median contributions of IFLU nitrogen in each catchment ranges from 0 to 92%?

A. Correct.

Q. And that's a large variation of IFLU contribution in each water management subzone?

A. Yes.

Q. And it varies depending on the catchment. So there are varying amounts of IFLU upstream of each assessment point?

A. Yes.

Q. And therefore the differences and the potential for reductions to actually reduce total loads downstream is different in each catchment?

A. Yes, that's correct.

Q. And there are 36 model assessment points?

A. Yes, correct, downstream of the target catchments.

Q. Thank you. Now, if I can, if you can recall back to your evidence-in-chief, you looked at the mean relative difference. Is my understanding correct that the mean – that's the mean percentage amount by which the predicted concentration at the assessment points deviates from the target?

A. Yes, it exceeds the target, that's correct.

Q. And is that assessed across all assessment points?

A. Yes, it's the mean across all 36 assessment points.

Q. And in your January evidence you break that down so that we can see that across sub-catchments?

A. Correct.

Q. Now do you have your evidence-in-chief with you?

A. I do.

Q. I believe that's at volume 2.

1020

A. I'll take it from the…

Q. Volume 2, tab 12.

A. Thanks very much.

Q. And I'm wanting to take you to the very last page of your evidence Dr Snelder, which is 202.0801.

A. Yes.

Q. Thank you. And if we can look at proposed pathway B there, proposed pathway B is implementation of PC2 –

UNKNOWN SPEAKER ADDRESSES THE COURT – DISCUSSION: CLARIFICATION OF REFERENCE PAGES

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. So Dr Snelder, proposed pathway B, was that intended to reflect the specified reduction pathway with a 20 per cent reduction?

A. Yes.

Q. And it's a reduction of 12 KG per hectare per year of nitrogen, which was intended to reflect a 20 per cent reduction?

A. Yes.

Q. In your analysis you also look at reductions of 15 kilograms per hectare per year; 18 kilograms per hectare per year, so there are 3 kg steps between each specified reduction you looked at?

A. Correct.

Q. And in your analysis you only assumed that the known unconsented IFLU would reduce their leaching rates by these amounts.

A. Yes that's correct.

Q. Was that 70 unconsented dairy farms as described in the Dairy New Zealand database, and I can take you to the relevant page of that?

A. Yes, that's correct. The 70 unconsented farms.

Q. Yes. So the reductions were only applied to the 70 unconsented IFLU.

A. Where they couldn't meet the table.

Q. Where they couldn't meet the table, so it could have been even less than 70, that these 12 kg reduction, 15 kg reduction, 18 kg –

A. Yes it could have been less than the 70 that were unable to comply with the table.

Q. Thank you. So my question is you wouldn't expect to see a significant difference between a 3 kg per hectare per year step on the basis of less than 70 unconsented dairy farms in a cross-sub-catchment analysis, and given the contribution of IFLU to catchment nitrogen across those sub-catchments, would you?

A. No, we're talking about marginal differences which is reflected in the mean relative difference changing by very little between those options.

Q. So to you was it unsurprising that the 3 kg per hectare per year step reductions did not have any significance at an ecological level?

A. It made sense subsequent to the analysis yes; it's not surprising given the mass balance of nitrogen and how much we were reducing that under those different options.

Q. And indeed would you have been surprised if it had made a difference to the mean relative scores, across –

A. – yes, given –

Q. – yes.

A. – given as you said the contribution IFLU to the nitrogen load we would not be expecting to make large changes with those relatively small reductions.

Q. Thank you very much.

CROSS-EXAMINATION: MS WRIGHT

Q. Hello Dr Snelder.

A. Good morning.

Q. I've only got a few questions that actually follow neatly on from the conversation you have just been having with my friend about pathway B. And just to reorientate, you've just confirmed that for pathway B it was only around 70 farms that were put at that 12 kg or that 20 per cent reduction for that pathway, that's correct?

A. It was whatever proportion of those farms were unable to meet the table.

Q. Sure. And so all what you've called unknown unconsented farms, they were set to meet recalibrated Table 14.2, that's correct?

A. Correct.

Q. And that's approximately, based on Ms Foster's evidence, 167 farms, isn't it?

A. I can't answer how many farms that is. My evidence in January however provides details of the areas of IFLU that… sorry, I forget exactly what you were talking about, IFLU that was below the …?

Q. The unknown unconsented farms.

A. Right, so yes. My evidence, my January evidence provides some information about that.

Q. And the, those areas that are captured are the targeted catchments, I guess rudimentally speaking, to the east and the south, and it's only the west that where the 70-ish or just under?

A. Sorry, can you…?

Q. I'll give the Court the reference for that figure and it's easier to orientate for. That's 202.0741. And the reference for the 167 farms that was set at recalibrated Table 13.2 or thereabouts is Ms Foster's primary evidence at Table 1. If we take the 167 farms in the, being set at recalibrated Table 13.2, and then we'll go with 70 for the at that 12 kg or 20 per cent, that means for this pathway B we had approximately one-third at a 20 per cent reduction and two-thirds at a recalibrated Table 13.2, is that correct?

A. Yes that makes sense.

Q. And so, that's mostly assessing compliance with Table 14.2 isn't it? Two-thirds with Table 14.2, and only one-third is at 20 per cent.

A. A majority, do you mean?

Q. Yes.

A. Yes.

Q. So if you adjusted that fraction and you had say two-thirds of the farms reducing by 12 kgs or 20 per cent, and only one-third meeting Table 14.2, there would be an increase in the difference between the mean relative differences.

A. Yes.

Q. As compared to say the proposed consented pathway, wouldn't there?

A. There would, yes.

Q. And that difference would become even bigger, wouldn't it, if say all the farms were set at a 20 per cent reduction?

A. Yes, that's correct.

Q. No further questions, thank you.

1030

CROSS-EXAMINATION: MR WILLIAMS

Q. Good morning, Mr Snelder.

A. Good morning.

Q. I just wanted to ask you just a few quick questions about your most recent statement where you were asked as I understand it to look at the sort of the outcomes of the original Table 14.2?

A. That's correct, the operative.

Q. The operative Table 14.2, before the recalibration.

A. Correct.

Q. Based on the change in the Overseer model and you found that for the, I'll call it the original table or the operative Table 14.2, the mean relative difference was at 24%?

A. Correct.

Q. Which compares to 40 to 41% under the recalibrated version?

A. That's right.

Q. So suppose my first question is would you describe that as a modest difference?

A. It's still fairly modest in water quality terms because what it's saying is that even under the operative plan Table 14.2, we're still on average 24% above the target.

Q. Yes.

A. As opposed to as you say something like 40%.

Q. So you're still not achieving the targets in the One Plan?

A. That's correct, on average.

Q. But I would suggest quite a significant improvement towards –

A. It's definitely better than 40 obviously, yes.

Q. So the recalibration of Overseer in itself is you could say it would be responsible for like an increase in the mean relative difference from 24 to 40 to 41% that recalibration exercise has – means that we're already operating once we've recalibrated the table above the levels, also well above, substantially above the levels that were originally sort of considered appropriate when those CNLMs were set?

A. No, I can't agree with you there because the recalibration of – the new – the more up to date version of the Overseer to change our understanding of the contribution of IFLU to the total catchment load from that version of Overseer, which was used to define the operative table in the plan. So, first of all it's important to acknowledge that the farms themselves haven't

changed their nitrogen leaching, it's obviously our appreciation of how much nitrogen they're leaching. So in relative terms that's a complicated thing for me to explain.

Q. If we –

A. Sorry, I'll approach it another way. If we had calibrated our model according to the Overseer estimates for IFLU with the same version of Overseer that was used to define the operative brand, we would almost certainly have found a mean relative difference very similar to the mean relative difference we found in our study, ie we would have had difference of around 40%.

Q. Right, because the targets are real numbers if you like, aren't they? I mean they're actual tonnage of nitrogen –

A. Yes.

Q. – that we're looking for ultimately?

A. Yep, the targets are concentrations in the river.

Q. Right. And with the previous version of Overseer, I'll put it to simplify it, it was understood that less nitrogen essentially was being leached and then a later version of Overseer realised in fact we've modelled, but in fact the farms were omitting higher levels.

A. High levels, yes.

Q. Making those targets harder to reach and so then the balancing exercise when you're setting the CNLMs would have taken that into account, is that what you're saying?

1035

A. Sorry, can you repose the first question that you asked me?

Q. Yep, the first question that I asked you, essentially it's whether we are now due to the recalibration because of the new version of Overseer, we are now going to be operating at levels above what was originally envisaged at the time when the CNLMs were set?

A. Yeah, so the part about that that I think we need to be careful about is that, sorry, I'm not finding this really difficult to –

Q. It is possible that I'm framing it in a way that's not familiar to you.

A. Yeah, it's, obviously if we, if we just simply use the numbers and drove the IFLU to their operative table, we achieve a larger reduction, but a way

of thinking about this is that we – the operative table was based on current losses from IFLU underestimated relative to a more recent Overseer version, underestimated the losses from IFLU. So for example, if we made the same, if we set up our model according to the operative version of Overseer versus the new version of Overseer and required the same percentage reduction in both bases, we would achieve – we would end up achieving the same mean relative difference because the, yeah –

Q. The mean relative difference is the difference between the target?

A. Yes.

Q. So and the target hasn't changed?

A. No, the target hasn't changed, but the our understanding of the contribution of IFLU to that target has changed.

Q. And that means that it's more difficult essentially to meet those targets?

A. Well, it's certainly more difficult based on the new version of Overseer obviously it's more difficult, it's further away – they're further away from that leaching rate.

Q. And so by recalibrating we're essentially raising the levels to a point where they are achievable?

A. No, we're adjusting our understanding of the contribution of IFLU to the total loss from the catchment.

Q. And, okay, I'll move on from that now. You've also compared the specific reduction pathway and the recalibrated Table 14.2, and you have found that the mean relative difference there is equivalent essentially 40 to 41%?

A. Yes.

Q. So this maybe a simplistic understanding, but doesn't that indicate that the nitrogen loss from IFLU under both of those pathways if you like, regulatory pathways is equivalent? So the specified reduction pathways are achieving an equivalent reduction in nitrogen loss from IFLU to the recalibrated Table 14.2 and that explains why the mean relative difference is essentially the same?

1040

A. No, sorry, I don't, I don't understand that question.

Q. What, I'll put it a different way, why, why do you think that the mean relative difference is essentially the same when you compare the specified reduction pathway and the recalibrated Table 14.2?

A. So by recalibrated Table 14.2, do you mean the consented scenario where everyone achieves the table?

Q. Yes, this is where you've said that the mean relative difference is 40 to 41% –

A. Yes.

Q. – and you said it's essentially the same whether you choose – my understanding was it's the recalibrated Table 14.2, as you say, the – yeah, I suppose on the assumption that everyone meets that and then the other assumption being that everyone follows the specified reduction pathway and reduces by 20% or 35%?

A. Right, so I think what, yeah, I think in response to that, so first of all only a proportion of farms followed the discretionary pathway and so therefore because that's a relative –

Q. So when you say "discretionary pathway" what are you referring to?

A. Ah, the 20% reduction.

Q. The specified – which I'm calling the specified reduction pathway?

A. Right.

Q. The intention is it's a controlled activity, but yeah.

A. Right, right, so because that's a relatively, we're talking about a relatively small change, we're talking about a relatively small number of farms from large catchments. It produces a relatively small overall reduction and therefore the mean difference, the mean relative difference only, only decreases by a small amount when some farms have a discretionary pathway or are controlled activities make a 20% reduction.

Q. Because, so the nitrogen, the nitrogen loss is reducing by a just, you say, a small amount and that explains why both the 40 to 41%?

A. A small amount relative to the total load from the catchment, so that, yeah.

Q. Could you explain to me why it is 40 to 41%, is that just a mathematical thing that that's where it comes out when you have a small reduction?

A. No, that's the mean relative difference in across the 36 – so we've got 36 assessment points and at those points we are predicting the

concentration under different scenarios and at each of those points the relative difference is the difference between the target at that location and the concentration that we estimate. So what we're saying is by a mean relative difference of 40% means that on average the concentrations are 40% higher than the target.

Q. So to me as a layperson, I suppose, that indicates that the amount of nitrogen that is being emitted is essentially the same, or because and that's why, why you have that number being the same?

A. Yeah, there's only a small change, so if two –

Q. But the same small change, I mean?

A. Yes, it – sorry, I'm thinking about comparing scenarios, so originally you were comparing two scenarios and you were saying they were the same, so I'm saying they are equivalent, they are very, they are very close, they're not exactly the same as, as is evidenced by my numbers and the reason for that is because those two scenarios don't add up to a lot of change in the overall N loss across the target catchments.

Q. I'll leave it there, thank you.

RE-EXAMINATION: MS JOHNSTON

Q. I just have one question, Ma'am. Dr Snelder, my friends have taken you to the differences between different scenarios. I just want to reflect on your paragraph 8 in your 18 March statement and its volume 5 tab 3. Number is 501.0034.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Paragraph 8.

1045

Q. Yes, you say there that you've looked at the modelled scenarios which my friends have taken you to and you note there that the simulations do not account for any leading or adjustment time in the regulatory settings or any lags in the delivery of nitrogen to rivers. Can you explain to the Court what that means when you're considering the difference between scenarios?

A. Yeah, so the model represents what will happen once the catchment adjusts to the new discharges from land and that includes both the

adjustment process for the IFLU itself as they adjust through time to meet to meet the new requirements and it also refers to the lag times that the catchment may have with responding to the change in nitrogen loss, so as you probably know the nitrogen takes some time to move through the system, can be a number of years, and so our modelling results represent what we call a steady state. So that's the water quality outcome once the catchment has come to equilibrium with those changes.

Q. So when you're comparing the scenarios, is it fair to say that you do not account for how quickly the change occurs?

A. No, the model does not have any information about the change process itself.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning, Dr Snelder.

A. Good morning.

Q. You must be feeling quite at home in the witness box by now. The table that you were referred to before, that I couldn't find, I was actually referring to in your latest evidence, so basically the same table I think –

A. Right.

Q. – in terms of the percentage mean relative differences. And I just like to make sure I understand this because I think even though this is a relatively confined plan change, it's important that we make our decision with the proper understanding of the context in which it is made and so I'd just like to make sure I understand what the mean relative differences mean and so if we could start with the 44.6% one, the first one, prior to 2012. Does that mean there was a 90% exceedance of the per cent target at that stage?

A. The mean, the mean relative difference is the average amount by which the 36 assessment points exceed the target.

Q. Yeah, I understand that.

A. Right.

Q. But I like to understand it in real numbers and it is, I am sure it is going to be quite hard for you to do this, but I just did a very simple question to say that if the concentration was X and you take away the SIN target which

they've taken as .44, over X, that should give you your 46% would that be correct?

A. Yes, well, so for, for each individual site we do that and then we take the mean of those values.

Q. Okay, well, I just tried. To be quite honest, there is so many numbers, so many sites, so many things –

A. Yes.

Q. – it's very difficult to get your head around everything.

A. Yes.

Q. So I'm trying to just get a high level of understanding to start off with and but based on that very simple question which I think is your – from your equation –

A. Yes.

Q. – X minus the SIN target over X is equal to a certain percentage, 46%. When I did that, it came to 90, 90% over allocate – there's too much nitrogen by 90% in the – in certain receiving environments, does that sound about right?

A. I'd have to think about that, 90%, I'd have to think about that, I'm – yeah.

Q. Just based on your evidence overall, my understanding is that some catchments are alloc – over – the nitrogen in the receiving environments now is close to twice the SIN target in some areas?

A. Yes, that – yes, that does sound correct to me.

Q. Because one of the things I found, there's so much information and trying to get any commonality between any of it is really difficult.

A. Yes.

Q. And so this is actually quite important to provide context for what it means. I won't pursue that any further because it needs to – I'll need to work through it with my calculator and I just tried doing a little bit on my phone but didn't get too far. But the bottom line, as I understand it from what you are saying, is the differences between the options we're considering which is the Table 14.2 recalibrated and the, let's say the specified reduction pathway, it's so small that they're well within the bounds of estimating accuracy, is that correct?

1050

A. Yes. Probably. I'll hasten to add that we don't, we have not formally quantified the uncertainty of the model, that's a very difficult thing to do, but that's probably correct, but what's more important really is that they are so small as to be from an environmental ecological perspective insignificant, but you wouldn't, and what I mean by that is that it's highly unlikely you would notice a difference in the biota living in the stream and what the stream looked like as a consequence of those differences, they, it would be unlikely to be noticeable either to an observer casually or scientifically by making measurements.

Q. I understand that and that's the key thing at the end of the day. But I really do like to understand uncertainty as best I can, and when we look at it, there's uncertainty with the modelling, there's uncertainty with the baseline data, there's uncertainty with the Overseer, and there are several other uncertainties as well. And we've had various versions of things, so trying to be precise is very difficult.

A. Yes.

Q. Would you agree with that?

A. I totally agree, yes.

Q. Okay. Now if we took a, the best assessment of say that the Table 14.2 will reduce the concentration of Sin in the receiving environment by 17 per cent, that's what I understand the section 32 report said, so it fully calibrated, fully complied with Table 13.2 reduces the amount of nitrogen by 17 per cent. The amount that has to be reduced overall is substantially higher than 17 per cent, isn't it?

A. Yes, as we agreed before, it's probably needs to be halved.

Q. Yeah. So 17 per cent is not a long way towards 50 per cent.

A. No, and I. I'm sure you're on top of this but just for clarification, it obviously varies across the 36 assessment points.

Q. Of course it does.

A. Yes, and you have that data in my January evidence for each assessment point.

Q. Yes. I've been through that and I understand that, thank you. Okay, I think that's… let me just check if there's anything else. No, that's all, thank you very much.

QUESTIONS FROM THE COURT JUDGE SEMPLE – NIL

WITNESS EXCUSED

MS JOHNSTON ADDRESSES THE COURT – NEXT WITNESS WILL SPEAK TO UPDATED GUIDANCE DOCUMENT (10:53:42)

EXHIBIT L PRODUCED BY CONSENT – UPDATED GUIDANCE DOCUMENT

MS JOHNSTON RECALLS

DAVE JOHN HORNE (RE-CALLED AND RE-SWORN)

Q. Good morning Professor Horne, I will have you state your full name for the record please.

A. David john Horne.

Q. You have prepared briefs of evidence in these proceedings I believe dated 6 October 2023, 13 November 2023, 17 January 2024, 5 February 2024, 18 March 2024, and 17 May 2024. Six in total? Is that correct?

A. Correct. It is.

Q. And do you have any corrections you wish to make to those briefs of evidence?

A. No.

Q. And to the best of your knowledge and belief you'll confirm that those briefs are correct?

A. Yes, they are correct.

Q. I'll have you answer any questions from my learned friends and the Court. Thank you, Professor. Actually…

THE COURT JUDGE SEMPLE ADDRESSES MS JOHNSTON – DOCUMENT TO BE PRODUCED? (10:56:29)

EXAMINATION CONTINUES: MS JOHNSTON

Q. Professor Horne, as part of your evidence dated 17 May 2024, did you provide cumulative nitrogen leaching maximums for Table 14.2 to Mrs Foster?

A. I did.

Q. And can you confirm that you provided those CNLM as decimal, with decimal values?

A. Yes, mea cupla, that was my fault. I just wasn't thinking and the spreadsheet had the decimal points in and I just copied and pasted and sent them on.

Q. Since then, have you completed the task of rounding those values for the purposes of Table 14.2?

A. Yes, I have. Yep. As you will see, the decimal points in Table 14.2, make no sense when reporting Overseer results either, so, and it was just a spreadsheet and me not thinking.

Q. And are able to explain to the Court what that rounding up involves?

A. Yeah. Just go up to the nearest value, yep.

Q. And could you please confirm that the rounded values are contained within this document to Mr Registrar?

A. Yes they are.

Q. I seek to produce that as Exhibit M.

EXHIBIT M PRODUCED – TABLE WITH ROUNDED VALUES (DECIMAL POINTS CORRECTED)

CROSS-EXAMINATION: MS ONGLEY

Q. Good morning Professor Horne.

A. Good morning.

Q. I am mainly going to wish to refer you to your sixth statement of evidence dated the 17th of May 2024.

A. Mhm.

Q. And I, at the commencement of these questions I'll also be wishing to refer you to Exhibit L, the April 2024 responding to the Overseer review model redevelopment review report. Do you have a copy of that?

A. I don't have that. No, sorry, I have my evidence, but I don't…

THE COURT JUDGE SEMPLE ADDRESSES MS ONGLEY – COPY PROVIDED FROM THE BENCH (10:59:28)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

A. Oh, this?

Q. Yes.

A. Sorry, I do. Okay, yep.

Q. Thank you. Now, at paragraph 42 of your May evidence which for the record is CV501.0274, when you say, "Statements of the importance of dual approaches in management and regulation of the N-leaching and movement away from approaches that rely on single tools are numerous," are you referring to Ministry for the Environment Guidance there?

1100

A. Yes, I am and also there's lots of documentation from expert conferencing where all the experts agreed on that particular point, so kind of rather than referencing every single time that this has appeared or been noted across multiple documents, yeah, perhaps I should have been more careful, but certainly I had MFE, I had an expert conferencing most in mind perhaps. Also, the general mood in the country as well, different plan changes, yeah.

Q. Well, if I can refer you to the MFE guidance at least and we have the April 2024 guidance here, page 6 states: "Previous Ministry guidance remains valid. First, when using Overseer FM output numbers should not be used as absolute numbers. Second, regulators should continue to use a range of tools and evidence sources when assessing nutrient loss across farms and catchments. Referred to as a multi-evidence approach." So it's not really a dual-evidence approach, is it? It's a multi-evidence approach that the Ministry is recommending?

A. You're suggesting that they use tools together to kind of confirm or provide confirmation, you know, well, I guess, well, I suppose that's one valid interpretation. Another one might be that you know there are different ways to arrive at an assessment, so you know multi-evidence, yeah.

Q. Well, you said, it's just that you said dual-evidence and it's, I didn't know where that phrase came from.

A. Sorry, yeah, dual-evidence and perhaps I'm just meaning for general terms having available to farmers or to regulators a range of tools that you could use, play to their – you know different strengths of those tools, yeah.

Q. And is my understanding correct that the range of tools that the council and yourself are suggesting are specific reduction pathways, the NRAT and Table 14.2?

A. Correct.

Q. That's not a multi-evidence approach though, is it? Because when the Ministry for the Environment talks about this approach, it talks about using a range of tools and evidence sources to assess nutrient loss across farms and catchments and the NRAT and SRPs do not assess nutrient loss.

A. Well, specified reduction pathway does because that uses Overseer –

Q. It uses Overseer, all right, okay.

A. The NRAT does, what the NRAT has built-in as I explained last time has built-in behind it kind of the effect of these management practices on end leaching rates. So it's not as though, it does, it does in – in a way assess nutrient loss, yeah.

Q. In a very coarse fashion, doesn't it? And it's not it's purpose. I can take you back to the AbacusBio Report, et cetera.

A. Right.

Q. Which assessed against Overseer, so it assumed that Overseer was the tool to assess end loss in the AbacusBio Report, didn't it?

A. Well, it was the only tool that could compare it again, yeah.

Q. Yes, all right. So the purpose of the NRAT is not to assess end loss, it is to promote good management practices?

A. Well, they're not exactly different, are they? I mean you don't –

Q. Well, I put it to you they are, they are different.

A. Well, how are they different? I mean they have, they obviously one produces a number 36 kg of N per hectare, but that number is very much linked to what happens on the farm and the NRAT is so and remember the inputs you put into both tools are very, very similar, the architecture is very, very similar and the way you know that the NRAT has the biophysical factors built-in very much replicates the way Overseer goes through those very same – that very same process. So, I take your point that the NRAT doesn't produce a number, but it's linking back to the same good management practices and so therefore there'll be a high or close

correlation between what the NRAT tells you and what Overseer tells you and that was something that I was at great pains to kind of test and evaluate, yeah.

1105

Q. Thank you. Can I take you to paragraph 14 of this document?

A. Sure.

Q. Sorry, page 14 and under the heading there "Assessing the Effects on the Environment", it talks about the multi-evidence approach in the first sentence again and it says: "Such information may include the input data and information typically used for Overseer FM assessments or other farm management practices known to influence nitrogen loss." So the suggestion there isn't it, is that you use Overseer FM but you use it along with other information, such as the input data and there may be some farm management practices known to influence nitrogen loss which Overseer doesn't recognise, so you would look at that as well. Is that the sort of multiple evidence approach that the Ministry is suggesting?

A. Yeah, I suppose I'm not entirely sure exactly what they mean. Multi-evidence, I come back to the point that there are a number of different ways to provide the evidence and you're just presenting different options here, but you don't necessarily need to use, you don't need to duplicate effort if I could put it like that. I don't think they're suggesting that from here on every farmer has to provide both a tool and a support analysis. I suspect they're saying, you know, there's different ways to come at it, you provide the evidence and there are multiple ways to do that. I mean the implication of what I think you might be suggesting, sorry if I'm misrepresenting you, is that from here on in every farm is going to have to provide more than one analysis. So you're going to have to provide Overseer and something else.

Q. No, no, I'm not suggesting that to you, in some cases Overseer may be fine. What I'm suggesting to you is that the NRAT is one controlled pathway.

A. Right.

Q. The SRPs is one controlled pathway and the Table 14.2 is one controlled pathway.

A. Right.

Q. There's not a multi-evidence approach, it's a different policy approach where farmers can essentially select what is suitable for them which may be what's most lenient for them, rather than what the Ministry is talking about which is we set a policy approach and say we've got Table 14.2 and then we might use multiple lines of evidence if we don't think that the Overseer is quite right under that approach. And so I'm putting to you that the Ministry's advice does not support the three controlled activity pathways suggested by the council.

A. Sorry, I misunderstood you. I thought you're suggesting that we needed to provide – any one person needed to provide multiple strands of evidence or forms of evidence that – about their leaching rate. You know, look, I suggest that that's probably something you'd be better taking up with Ms Foster, yeah, that's more a planning thing, but, you know I'm happy to answer any questions about the three different pathways and how we've arrived at them, but to the extent they agree or disagree with Ministry for the Environment advice possibly I'm not the best person to advise the Court, yeah.

Q. All right, thank you. In paragraph 46 of your May evidence.

A. My May evidence.

1110

Q. You say that the ability to seek consent under Table 14.2 remains with the benefit of the reference file approach described by Mrs Foster and at your paragraph 68 you support the Overseer reference file approach. Should the Court decide that Table 14.2 remain the only controlled activity pathway and I know that's not what your evidence is suggesting but it is open to the Court.

A. Sure.

Q. Could that be administered by the council with the reference file approach?

A. Yes.

Q. Thank you. Now in your May evidence again you have talked about this issue regarding policy 58 which recommends that CNLMs be set so that the majority of farms can achieve those with GMPs?

A. Mhm.

Q. And a large part of your evidence discusses this issue. And so the basis on which your majority analysis is made is based on 2012 data and some may have already achieved or made significant improvements since 2012 – you might just need to say?

A. Oh, sorry, yes, yes, yes.

Q. Now, some may be able to achieve more than a 20% improvement because your – the majority analysis that you and Dr Parlato have undertaken is based on this GMPs creating a 20% improvement, isn't it?

A. Correct.

Q. And some farms may be able to achieve a 20%, more than a 20% improvement as you recognise at paragraph 52 of your evidence?

A. Yes.

Q. And have – you are familiar with Dr Jolly's evidence of May which has an example where a 24% reduction is made in her appendix A, intensive land use consent application example –

A. Mhm.

Q. – you're familiar with that?

A. I don't have it in front of me, but I did read it, the evidence, yeah.

Q. That's CB 501.0253 but you – so you're famil – you're, so, assuming that more than a 20% reduction could occur for some farms, your majority analysis could be improved somewhat couldn't it?

A. There, there will be farms, you know, farm will make a range of reductions and so I looked at a range, so some farmers are – only need to make 15, some farmers 20, some 25, some 30, some farmers need to make a 60% reduction to get down to their CNLM. The reduction you can make is very unique to that particular farm, as I have pointed out, you know, some farms will struggle financially and because of the farm system they're running, by physical factors that we've gone over and over, some farmers will really struggle to make an 18% reduction. Some farmers, different sets of skills, different farm systems, different resources, different financial situations, will be able to make a 28% reduction, yeah, and but – yeah, so my 20%, as I say, I had to settle on "a" value in developing the

specified reduction pathway, you know, and so what I did is I looked at a, a range of values, you know, 20, 30% changes, reductions –

Q. Yes, yes –

A. Sorry.

Q. That's right and we –

A. Okay.

Q. – asked Dr Snelder some questions about that, but isn't it the case that, and I think I've said in submissions filed, that we can't do a forensic analysis of whether the majority of farms can meet Table 14.2 CNLMs with GMPs because of the variations that you're talking about, there's going to be a little bit of uncertainty with any analysis that you do and you and Dr Parlato have based upon a 20% reduction figure, but we can't really do a fine-grained forensic analysis of that, can we?

1115

A. Not on every single farm, but what I did was I looked at a whole host or range of farms and I, I pushed or stretched those farms as much, you know, within reason using the agreed GMP list and so I didn't look at every single farm, I looked at a wide range, and that's why – how I arrived at that 20% value, yeah, in addition to, you know, look, taking into account other factors. So even though – I, I take your point, I haven't looked at every farm and so there is a degree of uncertainty, but I think, you know, you can look at – I looked at Mr Taylor's 18 farms as well and, you know, of the nine farms there that are relatively high leaching, you know, that – those, all of those farms would struggle very much to make more than a 20% reduction, ah –

Q. Could you just please note for the record which G – which list of GMPs you used? Because you said you used a list of GMPs?

A. Yes, that's in my evidence, I think my very first report, yeah.

Q. Your first evidence-in-chief?

A. Yes, I mean, I can get that –

Q. No, that's all right.

A. Sorry, yeah.

Q. Thank you.

A. So it was an agreed list from expert conferencing, yeah, so we started with Dr Monaghan's list developed in 2012 and kind of updated but, yeah, no, that's, that, that –

Q. Thank you.

A. – our first lot of expert conferencing, there was a lot of back and forth about what GMPs would be included.

Q. At the council level hearing is this expert at the council –

A. Yes, yes, correct.

Q. – council level?

A. Just prior to '20, yeah.

Q. And there was a lot of disagreement about what was GMPs and what wasn't GMPs?

A. No, no, there was a lot of disagreement about, well, yes and no, there was this – a – it was an element of disagreement about whether there was any utility in having GMPs vs BMPs and I think we reached the consensus that, you know, there's a range of practices and they're probably more usefully called GMPs and you're not allowed to become more onerous, more costly, more difficult to implement as you kind of go down the scale. So you know, a simple GMP is just to change the time you put nitrogen fertiliser on, a much more challenging and costly GMP might be to adopt a wintering system on a farm.

Q. Thank you. Do you have your 17 January evidence there?

A. I do. I do, I do.

Q. So that's volume 4 supplementary evidence tab 5 and if I can take you to 401.0038.

A. Sorry, what number is that?

Q. Page 401.0038

A. No, oh, sorry, I just have mine, from my paragraph –

Q. Oh, the last page, page 8 and paragraph 32?

A. 32, thank you.

Q. So there it appears that you used a different analysis to assess what percentage of farmers might be seeking to available themselves of the discretionary pathway. And so you say: "If we apply the same criteria which is a reduction of more than 12 kg as the likely trigger for farmers to

apply for discretionary consent, to the situation where only Table 14.2 is available, ie, meet the recalibrated table, then approximately 20% of farmers might be seeking a discretionary pathway." So that appear to be a different analysis that you've undertaken in your May evidence and correct me if I'm wrong but it appears to be saying that 80% could meet Table 14.2 and 20% couldn't?

A. No, sorry.

Q. Am I misinterpreting that?

A. Well, you may not be, sorry, but I'm not quite sure I follow you. You're comparing that with something I said in May?

1120

Q. Yes. In your May evidence.

A. Right.

Q. At Table 1, you assess the percentage of applicants that could meet Table 14.2 year 20 at between 41 and 49%

A. No, that's, my Table 1 is across all IFLUs. Yeah, and so what I am saying, what we are saying there is, and I followed the very useful procedure developed by Dr Parlato that if you have rather than year 10 in mind which she did her analysis on; if you have year 20, what I was demonstrating there is that less than half all IFLUs, i.e. somewhere between 41 and 49% would meet their CNLM, so in that analysis I have cropping, irrigated pasture, and I have all the dairy farms across them, yep.

Q. Oh, I see, so in your earlier evidence you were only talking about dairy?

A. Yes. Yes.

Q. Oh, and that's when approximate – exactly and hence the 12, your analysis is approximately it would be 80 per cent dairy could meet Table 14.2 under your earlier analysis?

A. No. No, no. No, what I was saying there is that with the discretionary pathway that 12 kgs… okay, I do kind of see your point there that… I'm not entirely sure what I did do there. Okay. Took the 12 kilograms, so that must have been the certain number of farmers, yeah so that's just 12 kilograms, that doesn't – greater than 12 kilograms; doesn't mean the others would necessarily have met the table value, yeah. I just applied that same number, sorry, the 12 from above.

Q. I'll leave that there because I believe that Ms Wright might ask you some questions about that.

A. Right, thank you.

Q. There appear to be many ways of skinning the cat.

A. There are.

Q. All right. Now, my final question Professor Horne is regarding the NRAT and it's been updated through this hearing process, including for example to include retired, recognition of retired wetlands as an example?

A. Mhm.

Q. It will also require updating, i.e. new versions as we learn more and new technologies come along? Yes?

A. Correct. Yes.

Q. Thank you very much.

CROSS-EXAMINATION: MS WRIGHT

Q. Hello Professor Horne.

A. Good morning.

Q. I'm just going to start with a couple of questions that may seem a little repetitive, but it's just to reorientate ourselves back into the tables that yourself and Dr Parlato prepared.

A. Sure.

Q. So to start, I'm correct that to provide an estimate for the number of dairy farms that would meet the CLMs using good management practices Dr Parlato took those farms that could meet Table 14.2 with a 20% reduction?

A. Correct.

Q. And she used that to look at whether those farms could meet the year 10 CLMs?

A. Correct.

Q. And you have taken that same 20% and applied that to the year 20 CNLMs?

A. Yes.

Q. So neither Dr Parlato's analysis nor your analysis accounts for farms that would push past that 20% to meet Table 14.2 do they?

A. No.

Q. And you've said in your evidence that there would likely be some farms that would do that to get the benefit of controlled activity status?

A. Correct.

Q. And Dr Parlato's conclusion is that over 50%, whether we're on the conversative or the less conservative of, but either way over 50% of farms would be able to meet the year 10 CNLMs.

A. Correct. I mean, taking into account though the yeah, assumptions, the variability, the, yep.

Q. Yes. Thank you.

A. Certainly, she'd calculated numbers as 51 to 61 I think, correct.

Q. Now if we just have a look at the table that, the updated table of Table 14.2 which has just been produced through you. Do you have that?

A. I do. I've just got a copy, thank you.

Q. So if we look at the year 10 figures and just orientate ourselves with those for a moment, don't you think it's a reasonable proposition – well apologies, I'll take a step back – if we look here, we've got only a two per cent jump as the maximum additional reduction required as between year 10 and year 20 and that's for example seen in LUC1 land. Is that correct? Thirty-nine down to 37?

A. Two kilograms difference?

Q. Yes.

A. Yes.

Q. And for LUC2 and 3 and 4, we only have a one-kilogram difference?

A. Yes.

Q. And for 6, 7 and 8, we have no difference.

A. Well, we haven't had any difference since Year 5.

Q. So it's a reasonable proposition isn't it that given a passage of 10 years and we're only looking at a zero to two per cent kilogram of nitrogen per hectare, that a, at least some farms would be able to find the way using good management practice in the ten years to meet those year 20 maximums?

A. Yes. I'm glad you asked this question because it affords me the opportunity to go to the discussion before with Dr Snelder about the 3

kilograms. That is a large change in on-farm practice, so I was looking at the table while that discussion was going on, you know, so there was a lot of back and forwards, well how come such a small change didn't affect more and, you know, improvement in river quality. So as you can see in context, there's a huge difference between 12, 15 and 18, sorry, which is isn't -

Q. Sure. I mean my question is –

A. – so to your question –

Q. – that, at the level of proposition.

A. Yes.

Q. It is reasonable to assume that there will be some farms who irrespective of your year 20, 20 per cent, would be able to find a way using good management practice to go from a 10 to the 20 yearly to only achieve a reduction of for some none, between one and two kilograms of nitrogen per year?

A. Yes. I agree with that to a point but remember it's those last two kilograms that are really hard ones to get. So...

Q. Yes, I appreciate that you consider it to be difficult.

A. No, I know yeah. So we're all –

Q. But at the level of proposition it is reasonable to expect that isn't it?

A. Yeah, that some will, correct, and that's –

Q. Thank you. No further questions.

THE COURT ADDRESSES COUNSEL – MORNING BREAK CAUTIONS WITNESS NOT TO DISCUSS (11:29:01)

COURT ADJOURNS: 11.29 AM

COURT RESUMES: 11.51 AM

CROSS-EXAMINATION: MR WILLIAMS

Q. Good morning.

A. Good morning.

Q. Can you, in Dr Snelder's evidence, proposed pathway B for a 12 kilogram per hectare per year reduction is said to approximate a 20% reduction, is that right?

A. Correct.

Q. Could you explain on what basis that was – is said to be the case, how would that (inaudible 11:51:46)?

A. So that's the way I had to translate the 20% reduction across a range of farms into an input parameter into his model. So on the – I looked at the – what a 20% reduction, what that, what the 20% reduction as an aggregate across the farms cashed out as in terms of a kilogram loss per hectare. So he can't put "20% reduction" into his model, he needs to have kilograms of N per hectare, yeah, so that was for – I was giving them – him the input he wanted, yeah, and so what I did was I ran a range of scenarios looking at reducing leaching losses from farms, always, as I have been at great pains to impress upon the Court multiple times, trying to drive farmer behaviour towards the table value, yeah, and so 12, 15, 18, I think there was a nine in their mix, and they kind of translated to the 10% reduction that Dairy New Zealand and Federated Farmers were arguing for 20% and then 30 and 40%, yeah, so yeah, again I reiterate the point that those – three kilograms is a small number, three is a small number but let's not get confused, three as a percentage of 12 is 25% so you're out looking for a, you know, a 25% over and above 20, so they were always going to be numbers of that order, you know, one or two, three kilograms, I wasn't going to say 12 and then 24 and then 36, it would have just blown apart, it didn't make sense, so that was the rationale, the – I was looking at changes in leaching rates using Overseer from farms, Dr Snelder's model needs a different sort of parameter and so I aggregate across and give him that value. Then I said, try 12, try 15, try 18, yeah.

Q. Thank you, that's helpful. Just one, one more question actually, on the use of Overseer so you say in your most recent evidence that the PC2DV alternative pathway is sound as it uses Overseer in a more appropriate manner as a percentage reduction. That's the – what we're also referring to the specified reduction pathway?

A. Correct, yeah. So that's one of the advantages of that pathway.

Q. That pathway would be set within a policy framework which also includes the Table 14.2 CNLM pathway, wouldn't it ,as an option?

A. It's an option, correct, mhm.

Q. And you've actually talked about encouraging farmers to choose that option and they're incentivised by the longer consent process?

A. Longer consent period and longer time to put their mitigations in place that are required.

1155

Q. So I suppose my question is why you see that as being better in terms of addressing problems with Overseer, in terms of addressing problems with Overseer –

A. Right,

Q. – as opposed to say Table 14.2 in a discretionary pathway?

A. Because this is an important point that and kind of goes to perhaps what MFE are suggesting as well, so it's using Overseer so how can it be better? So, you know, most models that you develop you don't necessarily, well, you have – don't perhaps have a lot of confidence in the value but there's a lot of internal coherence or consistency within the model, so a change in the value, you do have a lot more confidence in and this was something that Dr Taverner was at pains to impress upon the Court, so and that's the same with field equipment as well, you know, you, for example, you go out there and you want to measure soil and moisture content, you've got a probe, you stick it in, it says it's 56. Now, it might or might not be 56. You might not have a lot of confidence in that, but if you have a rainfall event and it goes to 63, then you do have a lot more confidence in that difference, if you follow what I mean, yeah, a little bit like the speedo on your car, perhaps, you know, might not be exactly giving you the right speed limit but, you know, can tell you if you're going

faster and slower. And so here what we're saying is we're using Overseer in a slightly improved way in that we're saying we want a 20% reduction with kind of so that's all contained within Overseer, rather than aiming for a number, so...

Q. I suppose in any case you're going to have to start with running Overseer and getting a baseline number?

A. Correct, yeah.

Q. And then if you're aiming for the table, I mean, you could express that as a percentage reduction?

A. Well, yes, you could do, yeah.

Q. But I suppose my point is really that in either of those two scenarios you do still have Overseer operating, sort of as it is in the operative plan, so and then you have an alternative?

A. Correct.

Q. And so why I – what I suppose I'm asking is why do you see this framework which includes the specified reduction pathway as better than one which has a discretionary pathway as an alternative in terms of the problems with Overseer? So there may be other reasons in terms of costs or, you know, use of processing and applications but what's the benefit in terms of the problem – addressing the problems with Overseer?

A. Well, I suppose I do come back to that point that, you know, and Dr Taverner did make this point that, you know, that you have more confidence in the 20% reduction than aiming for a number. I do take your point that you can express that as percentage reduction, but it's, you know, 20% reduction versus, well, I s – well, okay, here's a – here's how my reply, that you – it's a slightly better tool to have a blanket 20% reduction rather than what you are suggesting is that for every farm you've got to have a percentage reduction. So that's how probably I would respond to that. It is, in fact, look it's, it's not a –

Q. But no, my question –

A. – huge difference but –

Q. – I didn't make that point, but my question was really that you still have Overseer operating in that way in either version, like so introducing the

specified reduction pathway doesn't remove Overseer from operating as it does in the operative plan, it's still doing there?

A. Yes.

Q. So how does it address the problems with Overseer?

A. No, I'm not entirely sure I understand you, sorry, what –

Q. Well, how is it better, rather, than having just a discretionary pathway?

A. The 20% reduction?

Q. Yes, in terms of the problems with Overseer, I'll just ask it one more time because I don't think I quite got an answer to the question that I'm, I'm getting at?

A. So what, yeah, what I'm suggesting is that in terms of the problems with Overseer, they, they say you shouldn't use it as a specific number, right, and what we're saying here is that we're not using Overseer to aim for a table value in the discrepancy pathway. What we're using it to do is – and or that involves, what we're using it here, is to – so, you know, you've got kind of the uncertainties in your base file, you've got the uncertainties with the new version that you – sorry, the modifications you have put into Overseer, okay, and both of them are around set values, okay, so and I trust I'm answering your question here 'cos that what the specified pathway does and I – you are still using Overseer, with all it's merits and strengths, but what, you know, you – as I say, you kind of, you are looking for it to make a 20% improvement. So you've got the internal consistencies. So rather than aiming for a mark, which you might hit or miss and you don't have a lot of confidence about whether you are hitting or missing it, what you do say is to the point, "Hey, we do have a little bit more confidence in the 20% change." Is that?

1200

Q. Sort of, I suppose, but Overseer could be used in that way in a discretionary pathway aiming towards CNLM, so it doesn't have to be a 20% reduction, it could be used in a sort of a to achieve a percentage reduction as part of a discretionary pathway?

A. Well, of course it could, but that's not your question. You're asking me something different. Of course, it can be used to help a farmer get to their

CNLM, but then that has the weaknesses that everyone is worried about using Overseer. You know, you're aiming for a target value.

Q. But if it's a discretionary pathway, then perhaps you know you don't necessarily have to reach that target, do you?

A. Yep, no, that's fine, if it's in the discretionary pathway but you know all I was saying was that one of the merits or advantages of the specified reduction is that you are using Overseer in a slightly more appropriate manner.

Q. Thank you.

A. You're welcome.

RE-EXAMINATION: MS JOHNSTON

Q. Just have a couple of questions, Mr Horne. My friend took you to the updated Ministry guidance, if you could go to that please?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

Q. And I'm going to take you to page 8 of that. You'll recall my friend questioned you around the meaning of a multi-evidence approach in light of this guidance.

A. Uh huh.

Q. So if you could please read from the bottom of page 8 across the page?

A. How starting paragraph?

Q. Starting at "However", and then there's two bullet points that read on. If you could read those, please?

A. "However, the Ministry still –

Q. You could read it out loud or to yourself.

A. Oh okay. I'm with you, sorry.

Q. My friend put to you a meaning of multi-evidence and I just ask you to reflect on the second bullet point that you've just read. Is that bullet point confined to sources of evidence or does it talk about something else when you're thinking about multi-evidence?

A. Yeah, it talks about a range of tools, doesn't it? And sources of evidence when assessing nutrient management, yes.

Q. And is that consistent with your understanding of multi-evidence approach?

A. Yes and I guess that was what I was trying to suggest to Ms Ongley that, yeah, multiple tools, yep and options, yep.

Q. You were also taken to a line of questioning around good management practice. Do you recall that?

A. I recall that.

Q. And there was some questions put to you about the types of good management practices that you have modelled and what list contains and for the Court's reference, you referred to a joint witness statement. If I could take you to volume 2, book 4 behind you. And it's tab 38.

A. Sorry, I've got two options here. So it's 2 of 4?

Q. Volume 2, book 4

A. Tab 38, it will be the other one.

Q. Yes, bundle reference.

A. Yep.

Q. And the page reference is 204.2281. Now I'll just get you to confirm perhaps that the beginning of tab 38 that this is a joint witness statement of farm system and planning experts dated 28 June 2022?

1205

A. Yes

Q. And you participated in this conferencing session, Professor Horne?

A. I'll just check. I did.

Q. And if I take you on to page 204.2281, there's a topic 3 mitigations down the bottom, 204.2281, take your time.

A. Yes.

Q. And under the statements there's a long list of selection of mitigations and it states: "And mitigations are not limited to the list provided." Do you recall that list?

A. I do.

Q. Does that list encompass the types of good management practices that you have modelled when driving farmers to make change through your modelling, Professor Horne?

A. Yes, yes, that definitely would have been where I started and, yep, absolutely, I'm just kind of reading through it sorry. I suppose my

modelling was using Overseer and so there are some here, edge of field technologies that I didn't consider in this particular exercise.

Q. Yes.

A. Yes, but pretty much no.

Q. And in the statement and as part of your work, have you considered the types of good management practices that were modelled at the time the One Plan came into being at the time that Mr Taylor and others were preparing the One Plan?

A. I have.

Q. And would you say that the list that you have agreed to and modelled in this statement is more extensive than the list of good management practices that might have been adopted by Mr Taylor in his study?

A. Probably they're more similar than different, possibly our understanding of how that intimated in their effects would be the greatest difference and I would have to go back, but there may be one or two practices but they're more similar than different, yep.

Q. And would you say that this represents current technology? This list of practices in terms of what you are asking farmers to do?

A. I guess the, I'm trying to think of since 2020 what additional GMPs have been included in Overseer that weren't there, possibly the only one that springs to mind would be plantain. You can now model the effect of that in Overseer and so that wasn't available to me in Overseer. So my modelling was remember using Overseer, so it had to, had to appear in Overseer and some of these here you can't, well, budgeting is, well, I suppose you can put that in to Overseer to a degree in irrigation management but my eye falls down a bit, yep, to the extent that I could employ them in Overseer I did so.

Q. Yes, thank you.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Good afternoon, Professor Horne.

A. Good afternoon.

Q. So, I just want to take you back to the decisions version and so we should probably start with 101.0513, presumably that's volume 1.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. I don't have a volume 1, sorry.

Q. Is it volume 1 or is it?

A. What were the numbers again?

Q. 101.0513. Unfortunately, I have mine loose so I can't check the volume. There was certainly handled separately at some point but (inaudible 12:10:09). Well, that's what it looks like. Well, I'm partway through, of course, the start is, yeah, 101.498.

1210

MS JOHNSTON ADDRESSES THE COURT – PROVIDES WITNESS WITH COUNSEL'S COPY (12:10:48)

QUESTIONS FROM THE COURT COMISSIONER EDMONDS CONTINUES:

Q. And just before you look at that, I guess what I am now trying to understand is that and we've had quite a lot of hearings that were basically looking at the different version of the specified reduction pathway, and the one now in front of me has stripped out what was in the decision's version and I think if versions of which that was replicated in front of us before today, which is stripped out, looking at that 0513, so it's the controlled activity status.

A. Yes, yes. I think… yes, yes.

Q. So 110513, so if we come down to (v) so the first one we've got Table 14.2 and then we're onto all and we have a (2) with an (a) and a (b) which talks about "not exceeding a rate that is the lesser of". I might just read it out given that other people are in the room. "Eighty per cent of the nitrogen leaching baseline of the land which must be achieved by a certain date and the nitrogen leaching loss specified for the relevant surface water management subzone in Table 14.2A." And I did ask you some questions I think in past hearings about Table 14.2A. So as I now understand it, this approach that was here for this specified reduction pathway has now been, I don't know what you want to call it, simplified and streamlined perhaps, or I might ask you about that as a follow-up question, and the other thing that is no longer with us is Table 14.2A.

A. Mhm.

Q. So I guess I want to understand what the losses and the gains are on this approach that we now have in front of us which I would call a modified specified reduction pathway perhaps; it would be the… we're meant to put an X on the end of it or something, but perhaps just a modified specified reduction pathway. So perhaps we could start with what's been lost before we move on to what's been gained in terms of basically walking away from the approach that came out of the decision's version and which I've had in front of me at the previous hearing.

A. Right.

Q. So if you could explain to me what the intention was in terms of the decision's version, which I imagine you might have a bit of an understanding of given I think you were involved in the first set of proceedings, and then move on from there in terms of what you think has been lost with moving away from this D2 approach in Table 14.2A?

A. Okay. So as part of the council-level hearing that you refer to, it was, I think recognised that there were a large group of farmers that could not meet their year 10 or would struggle to meet their year 10. Sorry, let me… there was a large group of IFLUs that would struggle to meet their year 10 CNLM and that I think goes to Dr Parlato's table, and an even larger group, i.e. less than half IFLUs that could meet their year 10 IFLU. So there was a problem. And what… I apologise that I will use the term "I", I'll slip into that but because it was more than just me, and I obviously worked closely with my colleague Dr Jolley for CVG, and so –

Q. Oh, perhaps – I'm not asking you about CVG, I'm asking you about D2.

A. And what I set out to do was to develop an alternative pathway that was workable, so part of the issue was that when they developed Table 14.2 back in 2012 they knew the year 20 targets were going to be very difficult to meet, and year 1 relatively straightforward, and year 20 were very difficult to meet. And so at that time, and you can read this in the evidence in the evidence of Peter Taylor and the council planner at the time, Ms Mare, a lot of store was put on emerging technologies. So what they said is approximately 78% or 80% of farmers can meet their year 1 target and farmers were going to struggle to meet year 20 but, you know, there

would be technologies and things would develop and so the year 20 target would be achievable when the time came. So ten years later at the council-level hearing, we had this problem of now, we were half, you know, well into the life of the plan and many IFLUs could not meet their table value and none of these new technologies or were seemingly available, and, as I just answered Ms Johnston's question, and so what I set out to do was find an alternative pathway that would provide a workable component to the plan so that less, you know, rather than 41 to 49 per cent of farmers, sorry IFLUs being able to meet their CNLM or secure a consent through meeting their CNLM, that there would be an alternative pathway, and so in that, and I apologise for going over old ground here, but I –

Q. No, don't apologise for that. It may be quite helpful to understand the intention here.

A. Yeah. So I had, you know, I was, you know, 'cos people were talking about the sweet spot, I was trying to adjudicate, balance three essentially different strands; we have Table 14.2 so all my analysis I was always had Table 14.2 in mind and I was trying to drive farmer behaviour towards Table 14.2 and those limits, I had the range of GMPs that I hoped that that would achieve. So the point people have said that perhaps I misunderstood the intent of the plan because of my emphasis on GMPs, that was never my intention. I was just looking at time to find an alternative pathway that would have the same net effect as Table 14.2. So I had the list of GMPs that we've just been over that was available, noting that we were into the plan and there were no silver bullets, they hadn't emerged. And thirdly, I had the water quality in mind as well, because I didn't want to make an alternative pathway that was going to be easy that farmers could achieve readily and therefore we were not going to get that improvement in water quality, and so I, yeah, I did a range, looked at Overseer over a whole range of farms, kind of likeness to Taylor, concentrating a little more on those more difficult situations, I found, you know, the 10, 20, 30, 40% change and so I looked at given those changes, percentage changes, how many farms would I drive to the table and I balanced that against the difficulty of putting those changes

– reducing leaching losses, using the mitigation practices, those GMPs that were available and then I was looking at the effect on water quality via Mr Snelder – Dr Snelder's, excuse me, modelling and so, yeah, I set out to address what I think was a major problem and developed the alternative pathway. Not to undermine the table in the least, or the use of Overseer obviously, I just, I thought that, you know, these are the GMPs that farmers, we can reasonably expect farmers to put in place, perhaps there aren't the options that we had hoped for in 2012, they hadn't emerged, as I just said to Ms Johnston, we're making a much better job of putting GMPs in place, we understand their role, their effect, Overseer had improved in the time better able to predict them, but there was still, as I say, more than half IFLUs were going to struggle to meet the 20 value.

1220

Q. So coming back then to the D2 and the A and the B, what is it that informed the metrics that you had there?

A. The 20% reduction?

Q. I'm looking at A, I want to know about B as well and the notion of the lesser in the table, 2A with the – 14.2A with the 75th percentiles for various water management subzones?

A. So –

Q. So it's those elements I will understand what the intention was in devising what you have in A, B and Table 14.2?

A. Okay, so if I – have I made clear why we needed the alternative pathway, is that?

Q. Well, was there something else you wanted to say –

A. No, sorry, was that –

Q. – that you feel I was cutting you off over?

A. No, no, no, no, no, absolutely not, no.

Q. So what I'm –

A. So I just wanted to establish that why I explored and again, look, I apologise for saying "I", you know, it was not just me, but why, let me a little bit more careful with my words here, why the alternative pathway was explored, because there was a real problem with the table. It – sorry,

there was a, there was a problem with delivering, it wasn't so much the problem with the table, there was a problem with farmers realising or meeting the intention of the table.

Q. Okay, so moving on from there then.

A. So the 20, so then we developed the 20% reduction and as I said, that was kind of the "sweet spot" between what we could drive farmers to and, as I say, I was trying to push them as hard as I could because I wanted them, as many as possible, to meet Table 14.2 and I saw and Dr Snelder's modelling as I've stated says there seems to be lots of pain for going – well, sorry, my analysis, lots of pain for going beyond 20% reduction and not much gain in terms of water quality improvement. The 75th percentile value, that was in recognition of there were some farms that, you know, that were leaching an enormous amount and that they would have to make more than a 20% reduction and they would have to come down to the 75th percentile value. So we were there addressing the 25%, you know, above the 75th percentile value, okay. So they had to make the greater of – down to the, greater reduction, whichever it was, down to the 75th percentile value or the 20% reduction.

Q. And then how did you set the Table 14.2A?

A. Sorry, that was just Table 14.2, yeah, that.

Q. Yes, no –

A. I had nothing to do with setting Table 14.2. As I say, I –

Q. No, no, I'm talking about Table 14.2A, the new one that got added with the water management subzones?

1225

A. I don't know what that is, sorry?

Q. Well, it's on 101.0512, the 75th percentile leaching rates by targeted water management subzone.

A. Oh.

Q. Yes?

A. Oh, okay, sorry, that's the 75th percentile value.

Q. Yes, yes.

A. Yes, okay, yeah, yeah.

Q. And I'm not talking about Table 14.2.

A. No, no, okay.

Q. Table 14.2 still is there, it's the 14.2A –

A. Right, right, okay.

Q. – that's no longer to be there, so I'm just wanting to –

A. The 14.2A confused me, okay, so remember we said you have to make a 20%, so you can meet your table value, make a 20% reduction or if you were above the 25th – the 75th percentile value, you had the 25% highest leaching rates, you may have to reduce down to the 75th percentile value.

Q. Right.

A. Okay and so this table describes that value you had to reach. So if for example we take, ah, well, let's go Upper Manawatū, so if you were, what, these are the Upper – yeah, the upper 75th percentile value, so if you were leaching, if you were in the upper 75th, above the 75th percentile value and you were leaching 100 k – just humour me, 100 kgs, you didn't have the option of going down to 80, you couldn't go down 20%, you had to come down to 45, yeah.

Q. So and so this was calibrated according to each targeted water management subzone?

A. Right, remember, we had all those –

Q. So was that a –

A. – fairly large datasets for leaching rates across – Dairy New Zealand held a large number, as did Horizons, so –

Q. So did you do the calculations?

A. Not, I – no, I, I checked them.

Q. Or the briefing for somebody to do them?

A. I checked them, but these were actually in – I think initially supplied by Dairy New Zealand, yeah, I think, yeah, but I did check them, yeah.

Q. So what's been lost by going away from this?

A. So –

Q. To a, to a – the 20%?

A. Good question, so the, so the 20% carries across. What has disappeared is this requirement around the 75th percentile value, okay. Now, the very simple reason for that is that because of changes in the Overseer version,

because we no longer hold a large database, we can no longer identify that 75th percentile value.

Q. Okay, I did read that, in the evidence along the way.

A. Yeah, so if we had all those files, I –

Q. Yes?

A. – I suspect we would still have that there, it's a difficulty, so I mean, we did talk about alternative ways to include that, but it's probably just simply not – yeah.

Q. So the question then is, well, what's been lost as a consequence of taking this out?

A. Not an awful lot because I just gave you that extreme value of –

Q. Of 100?

A. – of a farmer having – the 75th percentile value being 45 and a farmer having 100.

Q. Yes.

A. So now, that farmer will not have to go down to 45, he or she will have to go to 80. So there is some consequence. So then the question is, are most farmers in that 25% population in the 75th to 100%, whether they fall – and the bulk of them are sort of closer to 45 than 100, if I can put it like that, so probably the simplest way to put it, there's a long tale, if you follow what I mean, you know, so a population of farmers, IFLUs greater than 45, might look something like this, 47, 48, 49, you know, 50, 55, in which case they would have been making the 20% reduction, because that was greater than going – so if you're 50, you have to reduce by 10 kilograms to get the 20% of if you're 50 to get to the 75th percentile you'd have to go from 50 to 45, you'd have to only reduce by five, so you had to take the greater of those two which would have been 10, yeah, so it's only those – the only farmers that this impact are the ones that the really high, high value leachers and there are relatively few of those. So in answer, probably the simplest way, is that only a few IFLUs will be impacted by the deletion of the 75th percentile, yeah, so it won't have a major effect. I mean, if it was helpful to you, I could work that number out or I –

Q. Well, I was interested in –

A. Okay.

1230

Q. I was interested in it what that number was, yes.

A. Okay, right, yep.

Q. Is it easily worked out?

A. It is easily worked, correct, yep, so, yep.

Q. So we just turned to the flip side then, so what are the gains from getting rid of this approach, aside from the complications as to how you might have reset it or the lack of ability to reset and set it in terms of Overseer numbers?

A. Yeah, I don't think there are any gains as such, it was just the problem of implementing it given that we could no longer really identify the 75th percentile value. We just don't have the database to do it as we did, well, they did in 2012.

Q. And so none of this is factored into the analysis that's been done of the options and the water quality effects?

A. Not in Dr Snelder's modelling, no.

Q. No. And in terms of –

A. Sorry, if I can just add, I do go back to my point, I think it would be fairly minor, yep.

Q. Sorry?

A. It would be fairly minor, you know, that my 12 was based on that admittedly, but if I took it out, then it would still be 12, you know, it would still be increments of 12, 15, 18, that type of change, yeah, so yep.

Q. Sorry, I'm just checking that I didn't have anything else. Oh, I just did have one last question and so in terms of the questions that I've been asking, in terms of the evidence you've given us previously, do you want to change any of that or speak to things that it might impact on in terms of the comparison between sticking with the decisions version and what we now have in front of us with the 20%? And no differentiating over but no differentiation over the various subzones?

A. Thank you for that question. My view and I hasten to add as everyone appreciates is my view, is that I think that this has been a very helpful or fruitful journey that we've been on together and that we've arrived at a good place where I think although I was always a major supporter of the

decision version, you know, because of the points I just, it's linkage to Table 14.2 that it was going to drive significant behaviour change and that it was going to provide a pathway for farmers to secure a consent on the basis of making those significant changes. Now, I always was very clear that not every farmer would get a consent, the decision version that many would still need to undergo discretionary scrutiny and then, of course, there has all the uncertainty around the Overseer review and you know multi-evidence approach that we've been canvassing here together and so then we proposed the NRAT and I think, although again you know extensive testing, you know, sorry I think we developed a very good tool there. You know, I was cognisant that people thought it was new and perhaps there was an element or a degree of risk, I hoped to mitigate that, but I think with this latest proposal I think we've got two tools and we're playing to the strength of those, you know the NRAT I don't think, the NRAT, I don't think anyone would seriously question its ability to identify low-risk farms.

Q. So, I think that you're straying away from my question.

A. Right.

Q. The question was is there anything related to the evidence that you've given us that might need to, you might suggest to (inaudible 12:35:00) may be different because of the change of approach on the specified reduction pathway for, not for vegetables, but for the pastoral side.

1235

A. No, well, I'm sorry, I'm sorry, that was what I was trying to outline to you that no, I'm very happy with, with where we've arrived at, yeah, so there's no thing that I'd change.

Q. Sure, no.

A. As a result of these hearings that we've now perhaps reached a kind of win-win situation where we're using the tools, so sorry I didn't mean to stray from your question so much as say that I think, you know, it's been very fruitful process and that, yeah, in light of I think there's a certain coherence for what I have been arguing that I'm happy, thank you.

Q. Okay, that's fine. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning, Professor Horne.

A. Good morning, afternoon.

Q. Just going back to the Overseer discussions you've had, you mentioned that obviously it gives you a specific number. Is that in your view the same as an absolute number that the regional – that the MFE is talking about?

A. Yes.

Q. And that's as a practitioner who spits out the number basically?

A. Correct, that's what I take them to mean, sorry, yes, an absolute number.

Q. Just going back to the 75, the 75th percentile issue, if the Court saw merit in including that and we certainly haven't had that discussion, could a reference file system help you with that?

A. Yes, that, Commissioner Hodges, is one of the options we talked about is trying to replicate what that 75th percentile farm would have looked like.

Q. Yes.

A. And including that as a reference file.

Q. So that would be an option that you would –

A. It would be an option, correct.

Q. – it would work?

A. Yep. So you know, we could identify the kind of soils, landscape, climate and farm management practices. Just as was done for the original farms, yeah.

Q. Now I'd like to go onto this thorny topic of good management practices with –

A. Excellent.

Q. – just the name of it gives a number of us on the Court a bit of a concern because it's so indefinable, there are so many different interpretations. Now I haven't seen the Taylor evidence, 'cos that's not before us, but I did read the (inaudible 12:37:25) report which was attached to Dr McKay's evidence.

A. Sorry, you haven't seen what evidence?

Q. The Taylor evidence.

A. The Taylor.

Q. On what was intended at the time and having gone through the 297 pages of Dr McKay's evidence at considerable pain to myself, I did find a number of things that were quite interesting, one of which was there appeared to be an expectation that GMPs would be able to reduce nitrogen losses by 35% or thereabouts. Are you familiar with that?

A. No, no. Sorry, they were expected to reduce nitrogen loss to 35%, what year was that targeted at, do you know?

Q. Well, that was just a general statement.

A. A general statement.

Q. GMPs could reduce nitrogen loss by 35 or a third was the figure that they used and it's repeated several times in I think it's the (inaudible 12:38:18) report in Dr McKay's evidence.

A. Right, no, I'm not, I haven't kind of, yeah.

Q. Okay.

A. I'm immediately aware or familiar with that particular value.

Q. I like context, as I've said before, and my understanding is that that could have been used as the basis for assuming the Table 14.2 could be achieved if it is possible to achieve 35% reduction using GMPs. Now if we're only able to get 20% reduction, how does that affect ability to comply with Table 14.2 simply relying on GMPs? What's your view on that?

A. So, that was as I was at pains to point to Commissioner Edmonds was always important to me that farmers went as close to meeting Table 14.2 as possible.

Q. Yes.

A. And so as I say I supported Table 14.2, I saw the merit in it, it was just that it was hard to see how –

Q. Sorry, I may not have made my question clear, sorry to interrupt.

A. No, no.

Q. But basically I'm saying is if the assumption was you could meet 14.2 based on 35% reduction in GMPs and using GMPs, if you can only get 20%, which is your figure, would that mean that it's less likely that you're going to meet table 14.2?

A. Slightly less likely, yes, yeah, well, yes, it does. If, you know, you're gonna get 20% reduction, you're not going to get as many farmers meeting table 14.2, no.

1240

Q. And I don't want to get into too much detail but there are some aspects of the GMPs that concern me. One of them is the use of constructed wetlands and to me, I'm not quite sure how that's gonna work with diffuse sources of nitrogen. It's fine for a point source discharge because you can pick it up and put it into the wetland, but you can't do that with diffuse discharges.

A. Oh, well, you can, well, sorry in that case the wetland is good for sediment and phosphorus. So you're distinguishing between –

Q. We're talking about nitrogen.

A. Nitrogen, there's not a – I mean most of the nitrogen will be where you can use a wetland will be as point source, ie, it's coming from a drainage system, yep.

Q. Yeah, but we're talking about farmers and diffuse sources, so I don't see how that can help us greatly.

A. Where currently there's a wetland on every farm, no admitted, but not every GMP is unusually applicable. All I'm suggesting, wetlands are known to be very, very effective where you can use them.

Q. I'm aware of that.

A. Right.

Q. But it's been promoted as a GMP and I'm looking at it from a nitrogen point of view. So you're just saying it's not intended to look after nitrogen?

A. No, it's definitely intended to look after nitrogen. It's very effective at looking after nitrogen, it's just you can't use it everywhere but that doesn't mean it's not on some farms it's probably a go-to GMP and on other farms it's not. I mean it's just like, you know, on some farms increasing the effluent area is a good GMP, on some farms that's, it's already at its optimum size, you know, there's no one GMP that you can apply to every farm in every situation, that is, you know, they use the term toolbox –

Q. I do understand that.

A. – routinely, so you pick out the GMPs that are most suitable or applicable to you, the ones that suit your farm systems, the one you're most comfortable, the ones that are going to give you the greatest reduction.

Q. Okay, I think we've probably taken that far enough.

A. In some situations wetlands can be very, very effective.

Q. Yes, thank you. One that's come up a couple of times is winter pads for stock. Is that a GMP or is that something different, because I've seen it used by different people as a GMP and not as a GMP.

A. It's a standing cows off paddocks is a very, very effective way to reduce nitrogen leaching. The extent to which you do that can vary quite significantly. Some if you're standing them off for relatively short periods, a few days maybe, just to protect soils in wet periods, then you can get away with minimal infrastructure. If you're trying to stand them off for longer periods, then obviously that's going to be more expensive. You know, you've got to supply appropriate or suitable conditions for the cows and you know places for them to lie if they're there for prolonged periods. If they're there for a long period, you've got to feed them and so the cost of stand-off in that sense or you know becomes like a housing operation is much greater than perhaps you've just got a relatively simply pad area, saw dust, wood chips, whatever you stand them for short periods, but it certainly cows off, ie reducing the number of urine patches going into paddocks is a very effective way to reduce leaching losses.

Q. And I can understand that, it's just whether it comes into the practicable or affordable for –

A. Well, that's a good question, yeah, so that's, yeah.

Q. – that's where I'm coming from.

A. If your question is perhaps was that in my list of GMPs, on some occasions I looked at a more cheaper, affordable form of stand-off, you know, housing was not. I didn't consider that a GMP that I could routinely apply to farm. Now many farms do have housing facilities but yeah, they're very expensive and only suit a certain sort of manager.

Q. Okay. Just one last question, my reading of the evidence in various supporting documents is that at the time the Court decision was made, it looked as though they were thinking of about 10 to 20% of farms might

not be able to meet Table 14.2, that's my recollection, it's some time ago since I read it. In your view is there any way that with the recalibrated Table 14.2 that the number of farms that will not be able to meet Table 14.2 will be in the 10 to 20% range or will it be higher? From what you've said I think it will be quite a lot higher, is that right? Or with the recalibrated Table 14.2.

A. So the recalibration of the table is irrelevant, it just maintains the status quo in light of changes in Overseer.

Q. Yes.

1245

A. Mr Taylor's evidence and which Dr Dewes usually quotes says that at the time 61% of farmers would meet their year 20 target.

Q. Right.

A. And that was with high to medium cost mitigations and so as I pointed out in my May evidence, there is good agreement here which is maybe surprising giving the time lapse between his analysis and mine that you know 50 to 50, 53 to 61, my number is slightly lower, closer to half, is but they're within the same ballpark are going to be able to meet their year 20 target in a practicable affordable manner. So that's leaving a large group of farms that cannot meet their year 20 target and as I say really all I've added to Mr Taylor's very careful and useful analysis is that here we are in 2024 and that situation hasn't changed. We do not have good management practices that are going to get us up to the 80%-odd, I think they envisaged when they said most would, that was the year target value. So, Mr Taylor got 78 and interestingly I got exactly the same number, so 78% of farmers can meet their year 1 target, a much, much smaller proportion can meet their year 20 and its what I'm suggesting is going to be very, very difficult for them to do that.

Q. Okay.

A. Now, I have done by best to identify an alternative year that will provide a workable plan, yet meet the laudable intensions of Table 14.2.

Q. Okay. If we look at the fact that a number of existing concerns will probably need to be reconsented under PC2, there are maybe 200 existing farms that haven't got their consent and maybe another 50 or 100

that will be reconsented and if half of those can't reach Table 14.2, there'll be a lot of farms that will have to go through the discretionary pathway. Would that be a fair comment?

A. Well, yes, if we don't provide an alternative, yeah and that's hence why I'm suggesting that the specified reduction pathway will be very useful and it will achieve the desired outcome.

Q. Okay, thank you. And just one last point actually, it relates to the incentive to use Table 14.2 and I would have thought farmers would be strongly encouraged to at the maximum LUC value that they can get because under a new plan change there's going to have to be significant further reductions. Isn't that a very big incentive?

A. Absolutely, and that's why I think that we will drive many farmers to the table value with this latest proposal because they would have made the stretch to 20, the 20% and then they'll think, and not all farmers will, but as I've been at pains to go over and over, sometimes can't meet the 20%, they will go into discretionary pathway. That's a given. Other farmers will make the 20% reduction and then there's a group of them, I did some rough analysis so maybe 16-odd, 15, 16, 15 to 20% who will only be a couple of units above the Table 14.2 issue Ms Wright and I went over earlier and so when they think "gosh for a longer consent period and longer to put these changes in place, you know, I will make those extra changes." I appreciate the tension in my arguing saying I've already stretched them to get them the 20% and now I'm suggesting they can go that little bit further, but that will be the carrot, won't it? It will be the longer consent period and it will be the longer time period to put it in place. There will be a group of farmers and it may in all honesty not be that large, but I think they will make that additional change and you know, so I said that kind of the three groups of farmers that you might look at, the ones that can meet Table 14.2 with the 20% reduction or less, you've got the farmers that will make the 20% reduction and then you've got the discretionary pathway and they might roughly fall into camps of say 50 to 60, around 30 and then 15 to 20 respectively. And so in that group of around 30% farmers that already have consent because they've made the 20% reduction, I'm suggesting maybe half of those will only be you

know a few kgs above their CNLM and there will be the incentive for them to you know push just that little bit further to reap the gains from the longer consent and the longer period to put it on and if you take half of that sort of 30%-odd, 15 added to the 50 to 60, then you're up around that 70% value of farmers meeting their CNLM and their table value.

1250

Q. Okay, that's helpful, thank you your Honour.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Thank you. That's one I just – I wanted to hone in a little bit on that because he had talked about it a bit in that – in your sixth statement of evidence. So as I understand it and I think it's important that we, that we say at the outset that we're trying to predict human behaviour to a certain amount.

A. We are.

Q. And think what people might do given a particular set of parameters and I understand that that's what, that's what you're suggesting. So as I understand it, you say in your evidence that you think when the policy was set, that we needed to set limits, there to be limits set –

A. Mhm.

Q. – and those limits are set at a level that most farms can meet by adopting GMP and BMP and you say you think "most" is more than sort of 51% and so I think you established in that discussion that you think it's maybe around 75th – 75 or 80, that's kind of what your, your understanding is?

A. Yes. Remember the 51% relates to year 10 –

Q. Yes, yes, I understand that, 49 –

A. – and so the year 20 is definitely – yes, exactly –

Q. – in year 20, I – and –

A. – be the first point. So –

Q. – and as I understand it, you don't have any, you don't, you don't think that Dr Parlato's table is – you accept what's in Dr Parlato's table that it's in terms of year 10 numbers?

A. Oh, absolutely, it's a nice procedure.

Q. Yes, yes.

A. I just replicated, abs –

Q. And you replicated that for –

A. – absolutely, no, she made a –

Q. – year 20, so –

A. – she made a nice job.

Q. – it drops, it drops down because as you went through in those questions of cross-examination there are some jumps in the nitrogen, kilos of nitrogen per hectare per year?

A. Right, correct.

Q. Between year, year 10 and year 20?

A. Exactly, mhm.

Q. So I understand why it drops down and you've explained, I think, quite well that and there hasn't been a perhaps that commensurate increase –

A. Yeh.

Q. – in technologies that might have accounted for that?

A. Right.

Q. So I understand that and, and so from that your process to develop an alternative limit, and I'm going to call it an "alternative limit" and not an "alternative consenting pathway" because I think the plan is talking about how we establish limits. And so as I understand it, you've looked at that Table 14.2 and said: "That is not going to be achieved by most farms using GMP/BMP, so it doesn't meet the policy"?

A. Right, correct, mhm.

Q. And so we need to set another type of limit and so that's your specified reduction pathway which is the new limit and in that previously there were effectively two limits, there was the 75th percentile limit and a reduction limit but whatever that was, that would enable another group of people, another – so building on your initial percentage of people that could get through the gate and achieve that, that would enable another group of people to meet that limit, albeit with a different set of parameters, a shorter timeframe?

A. Correct.

Q. So you – and then so, so we get – I'm working there, tell me how the NRAT is a new limit?

A. Because there are –

Q. In the way that is currently being, so, so you say “we’re now adopting it in a new way” –

A. Yes.

Q. – and I appreciate that, to identify low emitters effectively and, and provide them, so how does it operate as a limit, is the bit that I’m now –

A. Because there are values, there are values in the –

Q. Right.

A. – within the matrix that you have to meet. You can't just say “here’s the suite of GMPs I’m going to provide”.

Q. Yes.

A. Not nebulous like that, there are –

Q. Yes.

A. – actually values and remember those values, I, I have used Overseer to identify those values and I –

Q. Sorry, you haven’t?

A. I have.

Q. You have?

A. I have used Overseer.

Q. Yes, yes.

A. To identify those values and I – and the NRAT and there was a group of us, Dr Parlato she helped us, and we – and that is made specifically for the region. So it's taking into account the biophysical factors in the region. So you will still have a target value to aim for.

Q. Yes.

A. Yeah.

1255

Q. So, so effectively we’ve got three types of limits, or four if the 75th percentile came back into play using the reference file as Commissioner Hodges has considered. There are three different types of limits, each with slightly different parameters and ways of achieving them and it's your evidence, as I understand it, that if you have all of those limits in the plan you get to a point where – and I’m not quite sure of what that number is and I don’t know if you know what that number is – but you

get somewhere near the 75 to 85% of people, of farms that can achieve one or other of those – one of those limits, they're not going to achieve more than one –

A. Yeah.

Q. – one of those limits using GMP and BMP and is – and am I right about that, you think you get up to about that 75, 85%?

A. That value is – those will be farmers meeting the, to use your terminology, the table limit.

Q. All right. No, okay, I'm going to need to go back through that again –

A. So they could have used other limit – sorry, they could have used other limits, so they tried the 20% limit, maybe they – and/or the NRAT and they saw, what I was suggesting, is you're quite right, they, they may just stop off there, the number I just gave you of 70% is that remember in addition to the limits we have the drivers, ie, of the time or duration to –

Q. Yes.

A. – of the consenting to put that place –

Q. Yes, yes, and –

A. – and so with that number I gave you is I was suggesting that that – you might ask me "how many people would end up in the table limit", then I'm suggesting it might be 70%.

Q. Well, okay, what I'm really trying to understand is if the – if part of the driver or significant driver for this, because we could stop at Table 14.2, we could simply recalibrate Table 14.2 and stop there and say –

A. It has been recalibrated, right.

Q. Absolutely, recalibrated.

A. Yes.

Q. But you stop there and say "and on these numbers something like 51% of people could meet their year 10 and 49% of people could meet their year 20 and everyone will go down a discretionary pathway". And my understanding is that you are saying that wouldn't meet the policy which is that "most" farms can meet the limit because the limits are set too high?

A. The year 20 limit, yeah, is –

Q. The year 20 limit, or even in – and –

A. Well, no, year, year one is fine.

Q. Okay, well, we've kind of gone, gone past there.

A. Exactly, no, exactly.

Q. Yes.

A. And so year one, Mr Taylor's analysis said that –

Q. Sixty –

A. Seventy-eight.

Q. – 78% of people could meet that?

A. And I got exactly the same number.

Q. Yes.

A. Exactly the same number, 78, so the problem is not w –

Q. Yes, and so fundamentally there is a structural problem here, isn't there, and as you said –

A. Yes, yeah.

Q. – because the, because the technologies didn't keep up with what everyone thought was going to happen, or something?

A. The technologies are good, the GMPs are good.

Q. Yes.

A. And as I say, they will get lots of farmers – or what I'm suggesting, the tech – I don't want to overplay the technology thing because there's been lots of good science, Overseer is developed and improved, lots of farmers are really engaged with GMPs, but all I'm suggesting is that the silver bullet hasn't emerged.

Q. Yes.

A. Now at one point, we thought nitrification inhibitors –

Q. Nitrification inhibitors.

A. – were going to do it –

Q. Yes.

A. – and there were a lot of excitement about that.

Q. Yes.

A. So there's just no one thing, so you know, I don't want to kind of set up this thing that "oh, my gosh, you know, we're shocked and surprised to find it" but and I think in a way, you know, that adage, kind of "kicking the can down the road" –

Q. Yes.

A. – there was an element of that and I'm not being critical –

Q. Right, yes.

A. – it was very reasonable I think at the time to assume "hey, that in the next 20 years" given the rate of progress we'd maybe made between 2000 and 2010, it wasn't unreasonable to think "hey, that maybe the next 20 years".

Q. And make the same level of progress.

A. Yeah, and so –

Q. And that – so and that hasn't happened, so we are where we are, what I'm –

A. Well, the other thing, of course, is, you know, as a business dairying farming, well, speak to pastoralists, getting more and more difficult and so, I mean, if farmers were making lots of money then we'd be in a very different situation today, that you would say "look, you know, you can go and build herd homes", you know, you know, "businesses are so profitable", so you know, there are a number of factors or features here that really do –

Q. Yes.

A. – form part of the 20%.

Q. So but of course you will appreciate that the Court's concern is to, is to say, the question that's being asked of this Court is "do we need these alternative pathways, do we need to set additional other limits in the plan"? And there are parties here saying "no, you don't, the limits that you have got in 14.2 are enough and you don't need to put in any other additional other limits in the plan and there are parties here saying "No, you don't, the limits that you've got in 14.2 are enough and you don't need to put in any other additional limits into the plan." And so what I'm trying to get really to the bottom of is to say on your assessment because what you've said is in your evidence is that you think the current package in recognising that it has shifted from the decisions version to the council's amended version to a subsequently amended version which we've now got before us. Your evidence says that is the win-win, this is the right combination and I think it answers –

1300

A. Yes.

Q. – the questions that you had with Commissioner Edmonds, you said this is the combination now and so I'm trying to understand with those three different limits effectively set now, Table 14.2, the limit that comes in via a specified reduction pathway which might or might not also have a 75th percentile limit.

A. Correct.

Q. And a limit that comes in via an NRAT, what is your assessment of where that gets you to in terms of most going through those being able to meet those limits with the recognising that as you say there's a body of farmers that will still need to go through a discretionary. Where does that – where is that balance getting you to?

A. So I trust I'm going to answer your question here, that as we currently are most cannot, most IFLUs cannot get –

Q. I understand that, yes.

A. – meet their year 20 target and so I'm not a planner, I'm suggesting that that's an unworkable plan.

Q. Yes, I understand that, and you've added some new and different limits –

A. And so what I have attempted to do is find an alternative pathway and so what, is this helpful. What I've tried endeavoured to do is corrale these alternatives to so that they are genuine alternatives but very similar –

Q. Absolutely.

A. – and achieve –

Q. I absolutely understand that.

A. – the desired outcome –

Q. Yes.

A. – and so I'm not, I'm not proposing anything that's really unusual or –

Q. No, I understand that, I'm saying out of 100 farmers, looking at my options in front of me and I'm saying how many of those if we go the left, which is all of the different limits I can meet. So I can be a controlled activity effectively.

A. Right.

Q. I can meet a limit and I'm definitely going to get a consent, it will have conditions on it but I can meet a limit and I know I can meet a limit so I've

got certainty and I understand that that's an important part of what is being put forward. How many of those 100 farmers are going to the left having met a limit and now many of them are going to the right with a discretionary consent? That's what I'm trying to get to.

A. So I don't think that if you're looking for those two proportions, I don't think –

Q. We don't have it.

A. – that's changed in the least, that it will be –

Q. Changed from what?

A. The whole, there are a group of farmers that will not meet a limit and they will have to –

Q. Yes.

A. – go down the discretionary path.

Q. But one assumes that it's, I mean –

A. Also none of the limits that we're proposing they will have to go with –

Q. – what, yes, but what you're saying to me, as I understand it, is that, is that as far as Table 14.2 goes something like 51% of, if that was all I had in my arsenal over here as a limit, 51% of people would be going down the discretionary, because only 49% of people are going to meet my limit at year 20. So that's my, so it's, that's a –

A. That's what my Table 1 suggests.

Q. – 50/50 sort of drafting date on that basis.

A. Yes, that's what Table 1 suggests.

Q. Now, as I understand it you're suggesting more people should be able to go through on the left here in the controlled activity and that is the point of setting an NRAT limit and setting a specified reduction limit. So we set more limits on this side to allow more people to go through on the left to get us to the most. I'm trying to understand how many people we're moving from the right to the left.

A. So I think we're going to move, that's my point before sorry, about 30%.

Q. About 30% so we'll get up to about 80.

A. Yeah, 70 to 80, maybe closer to 70, maybe we're going to move 20%.

Q. Move 20%?

A. Yep, of that order.

1305

Q. Okay.

A. But I do make the point, I would like to make the point is that if I could just nuance your telling, which I don't have a major problem with, is I am not looking to let people across just for the sake of it.

Q. I'm not suggesting that, no.

A. You know, just to make an easy pathway, I've still got that same end goal in mind. What I'm saying is here is a workable, genuine alternative that will achieve the same outcome and yet will have, we will have a plan that most can achieve and you know I come back to the point that, you know, that I think that was always the intention that, that kind of 70 to 80% of farmers making high to medium cost changes significant of adoption and implementation of GMPs would meet their CNL.

Q. Yes.

A. At the moment, you know, I don't believe that is, IFLUs, most IFLUs will not meet the year 20 target.

Q. And do you other than differences in methodology and applicability and the issues around CVG, if you didn't have the NRAT, so if I was to ask you to sequentially add those, if you didn't have the NRAT, what would it drop to?

A. I don't know about that, sorry, I think, well, so no, the NRAT, the NRAT won't change it, no, sorry there is a good answer, I don't need to think about it for a moment, I apologise. The NRAT, if you drop the NRAT all that's going to do is force farmers to engage with Table 14.2, but that won't be onerous to them because if they get by by the NRAT –

Q. They're low anyway.

A. Exactly, remember and so we're not using the NRAT as we, as I was kind of defending it –

Q. Yep.

A. – previously.

Q. Yes.

A. So no, you could drop the NRAT, but I do come back to the point that it's part of this multi-evidence thing, it's a tool that farmers would engage with, but no, I don't think that those proportions would change. The NRAT is

certainly not going to give anyone an easier path, I can assure you of that, yep.

Q. All right, thank you.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER HODGES

Q. Professor Horne, we've talked about the roughly 50% will be able to if we go Table 14.2 and you said 20 to 30% if we went the 20% reduction pathway, so that gets you up to 70 to 80, I think you said 70. What if there's the alternative of NRAT on top of that? Would that be more than about the 70 to 80% or would it stay at that number?

A. It would be very similar, sorry, 'cos you know as I say most people that could avail themselves of the NRAT they're low risk. So they're gonna think "Why don't I go with my table value 'cos I'll get a longer period and then I'll have those advantages."

Q. Yep.

A. Now there may be some people who think I'm not going to pay for Overseer, I don't want to do this, don't want to do that, I'll just stick with the NRAT, thank you, but…

Q. So your best assessment is with all three of them we're going to get up to 70 to 80% who –

A. Possibly closer to 70, but yeah, it will be of that order and so that I think was what the spirit of most was at the conception of the table, yeah.

Q. Thank you.

A. And as I say the table is a good tool, yeah, I have no qualms or problems whatsoever with the table and Overseers and it's use and you know in terms of the Judges values, the more people we can, sorry Judges limits excuse me, the more people we can drive to meet that particular limit.

Q. Thank you, thanks your Honour.

A. The better the outcome.

QUESTIONS FROM THE COURT CONTINUES: JUDGE SEMPLE

Q. I am conscious of the time, but I did, I did just want to explore a little bit further this idea that it is a multi-evidence approach because isn't it a, aren't they effectively different limits set? I mean, I'm struggling to see

how it's a multi-evidence approach, when really it's just a way of setting three different types of limits, two using those, I mean for example, if you're going down the NRAT low emitter, low user, you're not in any way intercepting with Overseer. There's no additional evidence Overseer isn't being used to check your NRAT score, your low use score, it's not, there's no cross-over there as I understand it.

1310

A. Well, yes and no. Remember Overseer is embedded –

Q. Sitting in behind?

A. Yeah.

Q. Yes.

A. So it has informed the NRAT. So they're not dis –

Q. Right. They're not entirely different?

A. – disconnected in one sense, yeah.

Q. But it's not a, it's not a kind of "I get my answer through NRAT and then I double-check against another tool over here", it's you get your answer in NRAT and that's your answer, right?

A. Yeah, exactly, mhm, yeah.

Q. You take that to council, you say "I meet the number" and the council go "yes, you meet the number" and you go through the process?

A. Yeah.

Q. So there's not a kind of cross-check if you like, is there?

A. No, no, I don't envisage a cross-check, no.

Q. Right and similarly if you meet the limit in Table 14.2 –

A. You're not cross-check there and –

Q. – you go to the council with your Overseer and say – and it's not cross-checked with NRAT?

A. It's not cross-checked with NRAT, no.

Q. Yes, okay, all right, thank you.

A. Sorry, it's just that, I mean, I do kind of take you to Ms Johnston's point, the point she was making, as –

Q. Yes, the different tools.

A. – to what, yes, what they define as multi-evidence, yeah.

Q. I just, I think it was just that you –

A. Yeah.

Q. – had used the term a kind of multi-evidence approach and I just wasn't –

A. Yeah.

Q. – sure. You said: "Despite the advantage of each of the alternative pathways they rely on a single approach and tool, a dual approach affords PC2 the opportunity to bring all tools with their relative strengths together." I just wasn't sure –

A. Yeah.

Q. – what you meant by that when really you are going down pathways?

A. Yeah.

Q. Single pathways, aren't you?

A. Yeah.

Q. So there's no real crossover between the tools?

A. There is no crossover and –

Q. Yes, yes.

A. – I take the point. I was asked before –

Q. Yes.

A. – that I confused people, I apologise, that in fact I didn't envisage them being used together as such.

Q. Yes.

A. That were a genuine alternative.

Q. Yes, all right, yes, thank you. That's useful.

RE-EXAMINATION: MS JOHNSTON

Q. Professor Horne, I do have one question and it just relates to that last exchange around the NRAT and Overseer and the ability for there to be a cross-check. If I could take you to your part 50 of your 17 May evidence and it's at 501.0275. Do you have that?

A. I do, sorry, I just didn't know there were so many paragraphs, 70, it's a large one.

Q. 50?

A. 50, sorry.

Q. And certainly why, in terms of how the NRAT is proposed to be used now in assessing those farms that are low at the date of application, when you

compared the NRAT and it's use in that form with compliance with Table 14.2 in terms of your own internal check, if you like, are you able to remind the Court what that conclusion was?

A. Oh, yes, thank you, that's a good point. So I was worried that – always been worried that the NRAT would inadvertently provided an easier path and so I compared the number of farmers that could potentially use the NRAT so that might be their first limit that they explore and that is around, you know, that's kind of 50-55% and which agrees very well with the farms that could meet their Table 14.2 CNLM after those high-to-medium costs things, yeah, and again I kind of reiterate point but similarity and analysis, the original analysis done by Mr Taylor and myself, yeah, based on.

THE COURT: JUDGE SEMPLE

Q. So if I can, sorry, so if I can just pick up on that, so really what you're saying is that rather than a different limit, it's a different technique to get to the limit in some respects, am I right in understanding that?

1315

A. No, there's still a limit.

Q. Still a limit –

A. But –

Q. – but –

A. – what I'm suggesting is that –

Q. – but the difference is –

A. – yeah, that –

Q. – it doesn't, it doesn't raise the number of people getting through, I think, is what you told me, because the limit's not –

A. Absolutely not. I don't, I don't think many people –

Q. Yes.

A. – as I say, it will be, you'll make the call to use NRAT because, you know, you're philosophically opposed –

Q. Because of the methodology.

A. Yeah.

Q. Yes.

A. You just like that whole tool.

Q. Yes.

A. And maybe you've set your farm management practices around the NRAT –

Q. Yes.

A. – and that's always been kind of foremost in your mind –

Q. Yes.

A. – and you don't want to get a consultant in to do Overseer for you and all that.

Q. Yes, yes.

A. And so you think "Oh, look, it's just so much more simpler".

Q. Yes.

A. I don't know why you'd do that, because as I say, you forego then the advantages of meeting your CNLM. But there may be a group of farmers that do decide to do that.

Q. I understand.

A. But yeah, I'm very confident that that won't translate into, you know, an easier pathway.

Q. More people on the left.

MS JOHNSTON ADDRESSES THE COURT – ONE QUESTION FOLLOWING ON (13:15:53)

RE-EXAMINATION CONTINUES: MS JOHNSTON

Q. So when you talk about the difference in use of the NRAT versus the table, Professor Horne, the NRAT doesn't use Overseer in the same way that the Table 14.2 does, does it?

A. No, it does not.

Q. Doesn't produce an absolute value, does it?

A. No.

WITNESS EXCUSED

COURT ADJOURNS: 1.16 PM

COURT RESUMES: 2.20 PM

MS JOHNSTON CALLS

ANN-MAREE JANE JOLLY (RE-CALLED) (RE-AFFIRMED)

Q. Thank you, Dr Jolly. I'll just get you to state your full name for the record?

A. Ann-Maree Jane Jolly.

Q. And you have proffered evidence in these proceedings dating 6 October 2023, 13 November 2023, 17 January 2024, 5 February 2024 and 17 May 2024?

A. Yes.

Q. Do you have any corrections to any of those briefs of evidence?

A. No.

Q. And you will confirm that that evidence is true and correct to the best of your knowledge and belief?

A. Yes.

Q. Thank you. If you could remain and answer any questions.

THE COURT ADDRESSES MS JOHNSTON – ORDER OF QUESTIONING (14:21:38)

CROSS-EXAMINATION: OTHER COUNSEL – NIL

QUESTIONS FROM THE COURT COMMISSIONER HODGES:

Q. Good afternoon Dr Jolly, just a couple of really simple questions I guess. When you prepared your nutrient management plan, your nutrient management plan, did you actually talk to the owner of the property and was that a joint preparation with them or was it something that you did yourself.

A. So that one that I draw–, prepared is a currently consented farm within the Horizons region.

Q. Yes.

A. But I happen to be the author of the 2016 consent, So yes, I spent time with the farmer.

Q. Quite often we find that people don't, and so we just, it actually makes a difference to the credibility of the document, that's why I (inaudible 14:22:29)

A. I would have visited them on two visits, probably the first one would have been a day and the second one would have been like a two-hour follow-up.

Q. Okay, well that's helpful to know that.

A. And it would have included a farm walk.

Q. Okay, good thanks. And with the NZGAP procedures that they go through, can that be brought in in any other way than just attaching the NZGAP document to the back of that nutrient management plan?

A. So there's no rules in place saying that they have to use the Horizons template so if they felt like they could prepare their, the front part of their own nutrient management plan they are a grower 'cos NZGAP doesn't apply to the pastoral sector, a grower could submit their own independent application using suitable resources and consultants that relied probably more heavily on the NZGAP template than what the template that I have put together does.

Q. Okay.

A. But yes, as long as it meets the definition of a nutrient management plan within the One Plan and covers off all the requirements, a grower is not, doesn't have to use the proposed template, they can put together whatever they see fit.

Q. Okay. The reason for asking that question is we hear a lot from growers and farmers but they don't want to have to do two or three plans, they just want to use a single one, so.

A. Yes.

Q. So okay. Yes. I got the impression from your evidence that in preparing an NRAT nutrient management plan, they'd have to have an expert advisor as well as the farmer themselves, is that correct?

A. My view is that you would never, these consents are not, yeah, my view is that I think there is a provision in the plan that you have to have a someone who has completed the Massey University Advanced Nutrient Management course.

Q. Right.

A. And so I think that was in stipulation to Overseer, but my view was that that would still be in stipulation to the NRAT ‘cos we are talking about some complex processes and to me the advice from a consultant who has those suitable qualifications is invaluable to a farmer or grower to make the process for them as streamlined and as smooth as possible. See, I’d always envisioned a farmer getting support by someone through the consenting process to help them that.

Q. Okay. Thank you. Just bear with me, I made quite a few notes, I just want to make sure I haven’t got any other questions. In terms of the use of Overseer for CVG, is that something you think is practical from a regulatory point of view, because we’ve had a lot of evidence that people certainly the growers themselves are quite anti, anti the use of Overseer aren’t they?

A. Yes, and there’s lots of challenges with the use of Overseer. In my view, if it was the only tool on the table there are suitable workarounds and a user guide and standards, we could make it work if we had to, but at this time that since the development of the NRAT I see that’s a more suitable tool for the CVG sector to use at this time.

Q. Okay.

A. NRAT wasn’t around, yeah, it’s a new tool. Yeah, so but yes, if the Overseer was the only tool we could use that and make lots of assumptions and workarounds to make it work, but we’ve got the NRAT now that I feel is more suitable.

Q. Thank you. That was all, thank you.

QUESTIONS FROM THE COURT COMMISSIONER EDMONDS:

Q. I just had one question and it’s this sort of vexed issue slightly in terms of, well, what are good management practices, what are best management practices, what are additional measures and at the end of the day does it really matter. I’m just looking through some of your material in relation to the nutrient management plan, for example, and the NRAT, and see quite a focus on that.

A. We probably do get hung up on terminology quite a bit with good management, best management. Back when I worked for a different firm and going through this process with farmers they were called mitigations. And so at the end of the day, you're right, it prob–, as long as you're getting a reduction in N loss from a practice, it actually doesn't matter what it's called. Professor Horne earlier today indicated that a best management practice probably is more onerous on a farmer or a grower. It costs more and that might be a differing point. Good management practices are not seen to be highly costly and high up-front costs or long-term running costs and so there is some difference but someone, a farmer might want to just adopt tow or three best management practices to get their required reductions that are required whereas another farmer might want to do a whole lot of little things and get the same outcome. And as long as they were reducing nitrogen, the terminology probably isn't that important.

Q. I suppose my question is that the terminology might get in the way of a good outcome here and a lot of energy going, go into the, is it this and this category or that or the other thing.

A. My introduction to PC2 was some expert caucusing four years ago and we spent a long period of time coming up with lists of good management and best management practices for both pastoral and the CVG sector and so there were some agreement on what they were. I know the CVG sector list has been attached in my evidence in some form, so if we wanted to get really prescriptive that exercise has been done, but at the same time, the list would always be changing because then the next question is when does it become standard practice?

Q. Yes.

A. Yeah.

Q. Yes. So it is likely that people keep wheeling out iterations of what were particular practices and particular categories over time with those changing, then there'd be arguments about what was what and how it might fit in with policy but also may speak to some of these practices?

A. Any list would always have to be a live document in that way, and some would drop off and become standard practices and then the new ones

would come and so what may be a best practice today in five years' time could be good practice, and it's just the nature of the beast, they're just going to change all the time and as new technologies come on board. Yeah, Professor Horne talked about plantain earlier today; when he did some initial modelling that wasn't in Overseer and now it is in Overseer, so they're just challenges that the sector has to face when it comes to these wider challenges in reducing N loss on a farm.

Q. Okay. Thank you.

1430

QUESTIONS FROM THE COURT JUDGE SEMPLE:

Q. I'm just following on from that just again just getting my head around the nutrient management plan and how it works. In your paragraph 15 you say: "Although all sections are important for completion with an NMP, it is my opinion that the most important section is the environmental action plan. This is because it is within this plan that a farmer or grower make time bound actions for change on farm. These actions are the GMP and other mitigations that will become conditions of a grower or farmers' consent." And it might be that I need explore this a little bit with Mrs Foster was well in terms of how that's translated into the plan provisions, but can you just sort of set out to me how you would expect it to work in terms of that? Are you using this, because when I look at, for example, the draft environmental action plan that's attached to your NMP, which is at 501.0255, I'm not, some of them seem that they would lend themselves to being consent conditions, others perhaps no so much and I'm just trying to get my head around how a consent might actually look, you know would it require compliance with the whole NMP? Or would it require only compliance with or would what's in the EAP be extracted out and become part of a suite of conditions that's attached to the consent? Do you have any sort of views on how you see that working based on what you've said in your evidence?

A. So at the moment when a consent is granted, you get a number and in reality as long as you're achieving that number, you could be changing practices on the system –

Q. Doing it any which way.

A. As we move away from a number and we're looking at percentage reductions, there will still be challenges with it, because it locks a grower or a farmer into those practices, yeah, I always envisioned especially for the nitrogen ones you would have a list of nitrogen practices within your consent that you had committed yourself to.

Q. Right. So if we use that environmental action plan in your template NMP, so as I say some of them seem quite straight forward and time bound and could translate into conditions, but something like make more supplements on farm is not the kind of thing that you would imagine that you could necessarily put into a consent condition.

A. No, I guess that maybe could be refined because the key differences is they're stopping to, they're not going to be purchasing an importing fee from outside the farm operation anymore.

Q. Yes.

A. And they're just moving feed around within their system and so I am sure a consent planner could wordsmith that to make it more suitable to be a consent condition while not changing its meaning.

Q. Right.

A. Because it also these not one-off changes –

Q. No, they're ongoing.

A. – they're the ongoing changes as well.

Q. That's right, well, I guess some of them might, might be in terms of young stock removed from hillsides, that might be a start and then –

A. Yes, some of them, are yeah, but –

Q. – and then assume that you never put young stock back on hillsides every again.

A. Yep.

Q. Whereas others are an ongoing and it looks like some of them are also, you know, you've got time for example the riparian planting in this example that's over, I take it over a seven year period.

A. Yeah.

Q. In order to get to a point where all of your riparian margins are planted out.

A. Yeah, with the riparian margin one that probably would have to be fleshed out a little bit more in the sense of saying like 20, over a 5 year period, you're doing 20% each year or something like that, just to give a bit more detail.

Q. Right. And would your expectation be that because that's obviously going to go to cost and so that, I don't know the answer to this, but I imagine that a farmer isn't necessarily going to want to put this in an MB at the mercy of the council as to how that's done. You're going to want to put that forward as your proposition in an application, aren't you?

A. Yes and I guess, so this one individual has spread it out of five years – seven years forth to factor in the cost and the time and that, so when this consent was pulled together, they, the farmer had already put thought into what they can achieve within a certain timeframe. They're only really planting in the off-season, and in the winter when they stock are dry, so how much can be achieved in one year and then they've worked out how much they wanted to cover off or how much riparian fencing has to be done and then they'll taken it out to a seven year timeframe –

Q. Right.

1435

A. – and different (inaudible 14:35:07), so this farming operation was just a couple and so if you had extra workers or family members, whatever they, it's all factored into the considerations when you're putting those time limits around what is achievable.

Q. Right.

QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS

Q. I'm just interested in this heading priority and so there's all these high priority things that are listed here. I just wondered about whether there were sort of contingency things or a whole bunch of medium priority things that but also inform this.

A. I guess this one was just this individual case. I know I've done them in the past and they definitely haven't all fallen out to be high priority. In my view if you've got time, I know the CBG NRAT pathway, you've got two

years to implement it and so if you need to reduce your risk score, they're all going to be high priority, if you've got to achieve it within a couple of years, a nitrogen mitigation is going to be higher priority than a phosphorus or sediment mitigation in that sense and so I think it's going to be individualised on what type of consent you've agreed to and how much nitrogen reduction you get from that and the cost. Some if they want to go for a more costly mitigation, to them it might be immediate – it's still going to be an action but because the costs they need a few years to save and plan, it might be given medium priority over some of the more simpler GMPs that can be achieved, like fertiliser usage and things like that. There also might be a knowledge factor especially in the CVG sense some of the tools that need to be introduced are really just coming on to the market now, SVS is now live but growers need to upskill in that so although it is an important tool; to use it might be given a slightly lower priority than another GMP because that, the other GMP can be adopted now and things like that, so there's a lot of factors that have to be taken into consideration when the priority is given but it all has to fit within the timeframe of the consent.

Q. So from your experience, would it, I guess there's a, there are two options, one is to make the whole nutrient management plan a condition and adherence to it a condition, and the other is to simply make those actions in the EAP the conditions. From your experience, what do you say is the most appropriate?

A. To me, the sections before section 9 all four – like but actually a lot of this comes out of… so section 9 is more the summary of section 8.

Q. Right.

A. So but all information before this informs these actions, and so you need to do all the pre-work to give the farmer the understanding of where the risk is, whether it's a biophysical risk or they're called natural resources in here, to a farm practice risk, so you need all that information to inform where's the best action's at.

Q. Right

A. I probably don't have a preference.

Q. Okay.

A. For simplicity, as I said, a farmer actually, this, the action list is what they are going to put on the shed wall or –

Q. They do.

A. – in their washroom, that's what they have to do so that's the important thing for them.

Q. Right.

A. If they had to laminate one page, it's a lot easier laminating one or two pages depending how long it is than having a plan, and then if there's new staff coming on they just, one page, if so yeah for simplicity the action plan is the important things that they have to do.

Q. Right, thank you.

RE-EXAMINATION: MS JOHNSTON – NIL

WITNESS EXCUSED

MS JOHNSTON ADDRESSES THE COURT – WITNESS ORDER (14:39:57)

MS BUXEDA – NEXT WITNESS VIA AVL (14:40:23)

COURT ADJOURNS: 2.43 PM

COURT RESUMES: 2.46 PM

MS BUXEDA RECALLS

STUART JOHN FORD (RE-AFFIRMED) (RE-CALLED)

Q. Thank you very much, Mr Ford. Can I please confirm that your full name is Stuart John Ford?

A. That's correct.

Q. And I'm going to run you through the briefs of evidence that you've prepared for this hearing. Can I confirm that you prepared evidence dated 13 October 2023 and rebuttal evidence dated 13th of November 2023?

A. That's correct.

Q. And can I also please confirm that you produced evidence dated the 2nd of February 2024 and the 28th of March 2024?

A. That's correct.

Q. Thank you. And do you have the qualifications and experience set out in your paragraphs 1 to 7 of your evidence-in-chief?

A. Yes, I do.

Q. Thank you. And I'm just going to run though the expert conference that you've attended as well, can you please confirm that you attended and signed the joint witness statement for expert conferencing on the 28th of June 2022, the 7th of October 2022, on the 10th of February 2023 and the 14th of March 2023 and the 2nd of February 2024?

A. I did.

Q. Thank you very much. Do you have any corrections to make to any of your evidence?

A. No, I don't.

Q. Thank you and can you please confirm that your evidence is true and correct to the best of your knowledge and belief?

A. I can.

Q. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Mr Ford. I just have one question. At 16 of your latest evidence, you say none of the proposed solutions suggested by the council address the concerns of the CVG sector. Are you saying that neither a specified reduction pathway nor an NRAT would be appropriate?

A. No, I'm referring to the, what do they call it, the, the use of reference files.

Q. Oh, so that comes back to the use of Overseer?

A. Yes.

Q. But really I read your statement as replying to nothing that the council is proposing is any good to the CVG sector. What exactly are you saying?

A. No, perhaps I would be best to correct that and say that none of the proposed solutions suggested by the council on their own address the concerns of the CVG sector.

1450

Q. I'm not sure that clarifies it for me, but can I put it another way? Are you happy that either the NRAT or a specified reduction pathway could work for the CVG sector?

A. Yes, I am.

Q. Okay, that's what I wanted to check, thank you.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Can I just pick up on that as well, because that was confusing me in your evidence? So and I, are you saying that the specified reduction pathway or the NRAT would work?

A. I think what I'm saying is that the specified reduction pathway will work for some of the sector.

Q. Yes.

A. Not all and the NRAT works for the part of the sector which the specified pathway doesn't.

Q. Right and do I take it from your evidence that when you say part of the sector that the specified reduction pathway would work for, that's the, that's predominantly the potato growing sector?

A. That's correct, yes, yes.

Q. And that also requires the use of reference files?

A. Yes.

Q. Yes.

A. Well, as proposed by the council.

Q. Yes. So you see that working for that part of the sector for the balance of CVG, it's your position that really only the NRAT is an appropriate tool, is that correct?

A. Yes.

Q. And so I'm not sure if you heard Dr Jolly's evidence just before in answer to questions, but also in her written evidence she talks about the opportunity for there to be work arounds and for CVG in Overseer and I appreciate that she's says they're not perfect and they're convoluted, but that they could be made to work. What is your position on that?

A. I'm not sure exactly what she's referring to in terms of whether they're appropriate to come up with a specific number or whether they're appropriate to track the direction of travel. It's my experience that they're not appropriate to come up with a specific number, but there may be CVG growers who wish to use them to test their direction of travel.

Q. Right. Yes, all right, I think that's all that I need from you in relation to that, thank you.

A. Thank you.

WITNESS EXCUSED

MS BUXEDA RE-CALLS

CHARLOTTE JOSEPHINE MARY DRURY (RE-SWORN) (RE-CALLED)

Q. I'm just going to run you through the preliminaries. Is your full name Dr Charlotte Josephine Mary Drury?

A. That's correct.

Q. And did you prepare evidence-in-chief dated 13th of October 2023, rebuttal evidence dated 13th of November 2023 and further evidence dated 3rd of April 2024?

A. That's correct, yes.

1455

Q. Thank you and do you have the qualifications and experience set out in paragraphs 1 to 4 of your evidence-in-chief?

A. I do.

Q. Thank you and did you attend expert planning conference on the 1st of May 2024 and the 27th of May 2024 and signed the joined statements?

A. Yes, I did.

Q. Thank you, and do you have any corrections to make to any of your evidence?

A. No, I don't.

Q. And can you confirm your evidence is true and correct to the best of your knowledge and belief?

A. Yes, I can.

Q. Thank you very much.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES – NIL

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I am just still trying to get my head around crop rotations as you'll appreciate and so just if we go to the planning expert conferencing, the joint witness statement.

A. Uh huh.

Q. So my understanding is that you and Mrs Foster have a difference of opinion still around how the provisions as drafted work, am I correct about that? Is that I'm taking from this or have we moved beyond that?

A. We now agree the definition of crop rotation.

Q. Yes.

A. So that is fine. I think we have alternative views about the, I guess the trigger –

Q. Yes.

A. – around what is new and what is existing. I think that would be accurate to say that we are not consistent on our view on that.

Q. Yes. And so I understand that from your perspective, and I'm probably going to put this in a very inelegant way but that if you've sort of 20 hectares as long as it continues to be 20 hectares, then you shouldn't need to apply for a new consent, even if some of that 20 hectares has not been used as part of the productive growing area in the past. Is that an inarticulate way of putting your position?

A. Yes, that's the way that I see it and I think the key I guess definition in that is the baseline growing area definition which talks about an area rather than specific parcels of land.

Q. Yes. You would appreciate that if I can have two planners in front of me reading the same set of provisions and telling me that they mean two different things before we've even got the thing operative, that's probably not going to bode well in future in terms of our ability to interpret the plan. So do you think that there are, if the Court agrees with you that the, that that is how it should work, there are amendments that you think need to be made to make that clearer. I mean I appreciate that you're saying on your interpretation of it as it stands it's clear enough.

A. Yep.

Q. But you'll appreciate that obviously it can, you know, Mrs Fosters' reading it a different way.

A. Yes.

Q. In her evidence she's suggesting that she's discussed that with planners from Horizons and they're also reading it a different way, so if we were to try and get something that doesn't have a degree of ambiguity –

A. Yep.

Q. – what would we need to change?

A. Well, I think that I guess probably the point of difference between us is that I guess what is –

Q. Baseline growing area?

A. – exist, I think the definition of baseline growing area is okay, it might perhaps be providing clarity around what is, this might sound a bit out of double Dutch, without offending, trying to offend anybody, but what is existing and it's relating to that area and that land hasn't necessarily had to have been used for CVG historically and it may well be that quite a lot of it has been, but it's that it's the 20 hectares, it's not what's happened on that specific parcel of land in history. It's that it is the baseline growing area which is 22, 23 I think, in that particular –, yes this operation had 20 hectares, and it is that, so I think adding a definition perhaps it might actually be an amendment to what I think the baseline growing area makes that quite clear, so I am not 100% clear where the additional clarity could be.

1500

Q. Right.

A. I think it's the… I think it's around the definition, I think the difference is around what we consider to be existing. And I think without wanting to put words into her mouth, Mrs Foster believes that that is existing, as in, land that has historically been used for CVG, whereas my position is it's the definition of baseline growing area, talks about area, and so that's: if it's 20 hectares it remains as 20 hectares.

Q. All right. Okay, well I might traverses that a little bit more with Mrs Foster as well then to try and get to the bottom of that more, so.

A. I don't think from memory there is a definition of what is a new growing area, so whether perhaps that might be a means of providing clarity if that was defined.

Q. Right.

A. Possibly.

Q. Okay.

A. I'm sure I checked that and there wasn't a specific definition of "new".

Q. Right. All right, thank you.

QUESTIONS FROM THE COURT COMISSIONER HODGES:

Q. Good afternoon, Dr Drury, I'm just intrigued that if it hasn't been used for CVG operations in the past, how is it part of the baseline condition? Sure it must have been used.

A. Well, the definition of baseline growing area talks about an area, it doesn't talk about particular parcels of land. And so that, that, if it's 20 hectares, because the water quality evidence that Ms Holmes has put before the Court is that at the sub water mana–, targeted water management subzone level in terms of the effects on water quality, they remain the same, in terms of whether or not it's this particular block of land within a zone, whether it's 20 hectares that are all right next to each other or whether they are slightly more spread out in different ones, as long as the risk is the same and that's an important, that's a requirement for that assessment to happen, whether it's shifted around slightly that doesn't make any material difference to the impact on water quality.

Q. So really what you are saying is that the calculation of losses from the land were based on the 20 hectares rather than some of it in that are not being used; the calculation is done on the assumption that the whole of the 20 hectares would be emitting nitrogen, is that correct, is that what you're saying?

A. Yeah. Yeah. That it's, basically that it's similar, in that, it's the risk of using those 20 hectares is the same because that's a check that needs to happen, if a new block is used, if you pick up the lease of a new block then that needs to be the risk of nitrogen loss from that block needs to be the same but that it's not because the effects are not so site-specific, it's at the higher zonal level that the effects would, well they don't change, that's the evidence of Ms Holmes.

Q. Okay, just so that I make sure I properly understand it. If the water quality investigations were done on the basis of so much nitrogen loss per hectare and there was 20 hectares in the area, it would be 20 times the unit of loss per single hectare, is that what you're saying?

A. Yes.

Q. Okay. Now I understand. Okay, that does make sense to me actually, yes.

QUESTIONS FROM THE COURT COMMISSIONER EDMONDS:

Q. So this question of the water, surface water management subzone, how does that come into the provisions that we currently have in front of us? Do you talk about that as being key in terms of the 20-hectare block or whatever area?

A. Oh yes.

Q. And you mentioned the water management subzone. So where is that in the current set of provisions that we have in front of us?

A. We are -

Q. That element?

A. Sorry, just let me… I think it's in the rule… sorry, I'm only working off one screen here. I think it's in the definition or the rule that it limits it within a targeted water management subzone. Anything – because… sorry, just bear with me.

Q. Well it was in the decision's version; it was in Rule 14.1D

A. Yes.

Q. In terms of the nutrient management plan, and so I 've just skated over into the next column which is what the Regional Council's batting for now.

A. Yep.

Q. And I'm just looking for where that subzone point comes in, but I'm struggling to find it. Is it somewhere else?

A. I'm looking at it in the activity description for Rule 14.1 and I'm in Christine, Ms Foster's evidence on page 21 in the middle column.

Q. Oh, 21. I was on page 22, so I need to go back to page 21. Aha, under the description.

A. Yes.

Q. Thank you. That clarifies that for me.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

That was the only question that I had was just around that difference of opinion as between you. Just let me check that that was the only thing that I had in

here. Yes, that was the only thing that I had identified that I wanted to check with you, so thank you for that.

RE-EXAMINATION: MS BUXEDA

Q. I just have one brief bit of re-examination, Dr Drury. The Court asked whether there was any wording which you could suggest which would clarify your belief as I understand it that a baseline commercial growing area is an area of land in hectares not in location of area. Would, in your opinion would an inclusion of a unit, for example hectares, in that baseline condition of commercial growing area clarify the application to an amount of land rather than a location of land?

A. Yes, perhaps it would help, yes. Yep.

Q. Thank you and I will leave that there and if the Court wishes to seek further drafting I suspect that Dr Drury will be happy to provide that.

WITNESS EXCUSED

MS JOHNSTON CALLS

CHRISTINE FOSTER (RE-CALLED) (RE-AFFIRMED)

Q. Good afternoon Mrs Foster.

A. Good afternoon.

Q. I'll have you record your full name for the record please?

A. Christine Ann Foster.

Q. You've prepared six briefs of evidence for these proceedings, and for the record again I will take you through them, they're dated 7 October 2023, 13 November 2023, 17 January 2024, 5 February 2024, 18 March 2024, and 17 May 2024. Is that your recollection?

1510

A. Yes.

Q. Do you have any corrections you wish to make to any of those briefs?

A. I have one relatively minor one but it pertains to discussion I had with Professor Horne this morning and I've just, I don't have the court's reference system, but in my 18th – 17th May latest sixth statement of evidence, on my page 24.

Q. I have the number 501.0305.

A. Thank you, yes, in paragraph 74 there is a sentence that states: "The nitrogen leaching risk limits in Table 14.2A have been set to low risk for each given combination of soil and rainfall. I note Professor Horne's finding that will do the same percentage of existing dairy IFLU falls in the low risk band as meeting the Table 14.2 year CNLM", that should say "and year 20 CNLM".

Q. Thank you.

A. And the correct reference to Professor Horne's sixth statement, May statement of evidence is his paragraph 54, 5-4.

Q. Thank you. Mrs Foster, you also attached appendix A to your 17 January supplementary evidence.

A. Yes, I did.

Q. And that appendix provides a table that sets out data provided to you by Horizons council officers, is that right?

A. Yes.

Q. I understand that you have some corrections to that table and I have a corrected table to hand up, your Honour. And I understand, Mrs Foster, that you are wishing to correct some date references in there that have been explained to you by officers?

A. Yes. There are four corrections to three consents listed here. I won't run through them in the table, if that's all right, but as I understand it the Horizons' system is not an electronic digitised system. It is based on a written record, manual records and the good folk at Horizons did this in January, came back early and some of the dates were not transposed correctly into the summarised spreadsheet and these corrections address that.

Q. Thank you. Can I read them into the record and do you wish to read them into the record?

A. I'm happy to do that.

Q. Thank you.

A. They are three consents with reference number 2017 201279, consent was granted on the 22nd of May 2017, not 2019. The second one is 2018 2001, consent was granted on the 9th of October 2015, not 2018. The third consent has two errors, it's 2018 201954, it was granted on the 30th of May 2018, not the 31st of May 2018 and its expiry date is 1st July 2041, not 2047, so if you could make those corrections, I'd be obliged, thank you.

Q. With those corrections made to your evidence, Mrs Foster, can you otherwise confirm that your evidence is true and correct to your best knowledge?

A. Yes, to the best of my knowledge, yes.

CROSS-EXAMINATION: MS ONGLEY

Q. Good afternoon, Mrs Foster.

A. Good afternoon.

Q. I would like to start by asking you some questions about the consents that have been granted for IFLU in the region and in your 17 January 2024 evidence you cover this at CB401.0023.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

1515

A. Just bear with me while I get to the same place as you?

Q. Yes.

A. Which folder?

Q. I don't have folders, 4.

A. Four and the page reference again?

Q. Pages 401.0023.

A. I've gone too far, 0023, yes, I'm on that page.

Q. So I'm going to refer you to paragraphs to 12 to 14 and there you record that Horizons records 237 consents have been issued for existing and new IFLUs since the One Plan became operative and Horizons estimates there are approximately 235 unconsent IFLU operating in the region and at paragraph 14 you say: "60 IFLU consents granted were controlled activities which complied with Table 14.2. Of these, 25 were for new IFLU compliant with Table 14.2 and 35 were for existing IFLU."

A. Yes.

Q. So I have assumed then that 177 of the current IFLU consents do not comply with Table 14.2 and that's based on the 237 less the 60?

A. I think that maths is right, yes.

Q. And is your understanding that the majority of the consents that don't comply with Table 14.2 were issued in the decision – in the period sorry, between the One Plan becoming operative and the declaration decision of March 2017?

A. No, I haven't analysed that particular date period or pattern, no.

Q. Okay.

A. I don't understand that off the top of my head.

Q. And I requested and Horizons has provided in the electronic bundle 8 consents that are listed in your spreadsheet, which has just been handed out to the Court and they are in volume 5, tabs 14 to 21, sorry it's only electronic, it's not, there are no hard copies of those. So I'm going to ask you about one which Mr Registrar has very kindly copied for me, but before I do that, can I ask you to produce the 8 consents in the electronic bundle which I understand you've seen and have been released under the Local Government Official Information and Meetings Act?

A. Which folder?

Q. Have you seen the electronic bundle? Do you have a copy of the electronic bundle?

A. Not the most recent one, no.

MS JOHNSTON ADDRESSES THE COURT (15:18:43)

1520

LEGAL DISCUSSION – CONSENT GIVEN OR WITHHELD TO ALL EIGHT DECISIONS BEING PUT TO WITNESS (15:20:38)

OBJECTION: MS JOHNSTON – POSITION RESERVED AS TO RELEVANCE (15:21:08)

THE COURT ADDRESSES WITNESS – ENSURE WITNESS HAS COPY OF APP/2017/2012-4400 FOR NEXT LINE OF QUESTIONING (15:21:14)

CROSS-EXAMINATION CONTINUES: MS ONGLEY

Q. Thank you. So, if I can take you to page 2 of the consent document that you have in front of you at CB 501.0639, the consent is for a farm located within the coastal Rangitikei water management subzone, you can see in the middle of the second paragraph there?

A. That's what I see.

Q. Yes. And toward the bottom of that page you will see that the applicant is proposing a farm trajectory in the third row of baseline 22, year 1 22, year 5 19, year 10 18, and year 20 17, which complies with the LUC N loss maximum under the One Plan?

A. Yes, that's what it shows.

Q. And in fact it appears in the middle column, sorry the middle row there that the farm trajectory could in fact be lower than that, but the applicant is applying for the CNL limits in the One Plan?

A. That's right. It's the difference between the heading to 12 but applying for 17, yes.

Q. Thank you. And then if we go to page 6, we have the same trajectory noted again and there's a list of measures to reduce nitrogen on the farm proposed and you will see that the first of those measures include construction of a covered barn, the use of a covered barn and the nature of its bases being taken into account when calculating N leaching levels and increased effluent discharge area as well.

A. I can only confirm what it says.

Q. Yes. And then there is a list of further mitigation measures. And then if we go to the next page, page 7, the paragraph 2 under the heading *Number of intensive land use consents issues in nitrogen reductions*, paragraph 2 states "The application proposes a farming system that's able to comply with the cumulative nitrogen leaching maximum set out in Table 14.2 and demonstrates a 48% reduction in N loss from the current farming system."

A. I see that.

Q. Which is a significant reduction in N loss. Now my question is for a farm like that that has undertaken relatively expensive mitigations, because you would have heard Professor Horne say that housing facilities which I understand a barn falls into is an expensive mitigation measure?

A. That's been my understanding, yes.

Q. So for a farm like this that has arranged their affairs on the basis of Table 14.2 CNLMs, it is not equitable is it to now introduce another pathway for other farmers who have not obtained consents yet on the basis of either specified reductions or the NRAT which will allow those other farms to have a more lenient option. How is that equitable for a farm like this one?

A. I think there's a question in there. The question of equity I think has to be levelled at a comparison of what the requirements of the plan are, rather than how the farmer has responded to it because I can't speak to what those circumstance are, that falls into the big kete of decision-making and circumstances that Professor Horne talked about, but I see that the… according to the first table which gives you the baseline, so the farm sits, it's an existing operation, this is all I can only look at the estimates of nitrogen leaching.

Q. And which page are you referring to?

A. I'm back page 2.

Q. Yes.

A. Where its baseline is 22. And the requirement of the year 20 is to come down by 5. Five over 22 is approximately a quarter, twenty-something per cent. And so, that requirement is probably similar as Professor Horne was explaining that if this person were driven to do, to make a reduction of about 20%, that's where they would be required to come down to. And on that level I see them as comparable, broadly comparable requirements, subject to doing some maths on a calculator, but I think that's probably the more relevant question about equity rather than how far an individual farmer with its own circumstances is prepared to go.

Q. Well, it's not how far they were prepared to go, it's what the One Plan indicated farms were required to go to when it came out in 2012, wasn't it?

A. That's right, which is indicated by the 17 in the first row, the maximum.

Q. Yes. So this is just one of a number of consents, although there aren't a huge amount, as your evidence has, have said, of existing IFLU that has been consented under Table 14.2. But there are 35. Now, so for those 35 consents, and there will be varying baselines for those consents, how is it fair that they have proceeded under Table 14.2 cumulative nitrogen maximums and suddenly before the Oranga Wai MPSFN process there is then introduced another avenue for other farms who haven't acted early to go through a more permissive avenue?

A. Well, the, if these were 35 farms who, and they could be on a spectrum from being able to comply with Table 14.2 without doing very much at all; for example, perhaps in the coastal Rangitikei where circumstances are a bit easier on them, so those who might apply the moderate cost interventions Professor Horne described and gets down to compliance with Table 14.2. But if they don't, there was always the option of applying, and that option of applying for to exceed that, and that still exists under the operative provisions, it's not workable at the moment I think that's accepted but the intention was that there would be an avenue for exceeding, to apply to exceed; it's never been a prohibited activity. And

that, that is the same under the counsel's provision, there is an avenue for exceeding that, just the key difference is you know what you need to do to secure that consent.

1530

Q. I think you've and a number of people have said though that that avenue for exceeding, which is currently a discretionary avenue under the Operative One Plan it's a restricted discretionary avenue.

A. Yes.

Q. Is a difficult avenue and an expensive avenue, particularly after the declaration decision in 2017 which required a cumulative effects assessment for that avenue against schedule B values. So the 35 farmers that have been consented as controlled, yes, they would have realised that other farms may be consented as discretionary, but under quite a rigorous assessment process, yes?

A. I'm not sure that the evidence from the spreadsheet particularly supports that, but it hasn't really been tested since that time, that's right.

Q. That's because there were, because a lot of the legal, well I call them the legal decisions, but decisions that were contrary to the Environment Court's declarations in 2017 have been made, haven't they?

A. I'm not sure that the finding was contrary to at that level of detail, but there were certainly criticisms levelled, but the, the system for applying and being considered on one's merits as a discretionary activity for exceedance since that time, there have not been very many, but there are certainly concerns afoot on submissions to the council level hearing that were considered about the cost, but primarily the uncertainty of what would result from that process for farmers, so business uncertainty but also on the other side of the interests by environmental groups and the Department of Conservation concerned that there was no certainty about what that decision-making process would deliver by way of forced reductions and water quality improvements. So that, but we don't really have a body of experience that's tested, tested that, but there's certainly concerns about cost, uncertainty and actual outcome.

Q. All right, so the Table 14.2, if they were limits, they provide a lot of certainty for those who know that they can meet those limits, so those people are provided with certainty.

A. Yes.

Q. The people that aren't provided with certainty are the ones who have to apply as a discretionary activity, because there's no percentage reductions stated in the discretionary activity pathway, you're proposing they be controlled.

A. Yes, I don't think there's any, there's certainly no limit proposed in the policy framework for them and there's no, there's not a lot of policy guidance framing how that would be limited, yep.

Q. And at the moment in the Operative One Plan, the policy guidance is or includes the extent to which you diverge from the CNLMs, doesn't it? In the RDA pathway and the operative.

A. Yes, that's a concern, one of the restrictive matters, that's right, the extent to which you fail to comply, yeah.

Q. And so the uncertainty arises, doesn't it, because following the declarations in 2017 a cumulative effects assessment would have to made against I've mentioned schedule B which is the values and schedule E, which were the targets and that is a difficult assessment to make without catchment accounting, isn't it?

A. Yes and that was a comment made I think in the decision on those declarations that that's and some people have characterised it as being almost impossible for an individual farmer to provide that cause and effect assessment, so and that's what drove Horizons really to look at how could you assess what the cumulative impact might be of granting exceedances and I won't repeat Professor Horne's exercise of looking cumulatively, what if those were limited in this way or this way or to this extent and that's translated into a modelled estimation of the outcome in the water, so that gives the decision-making framework, a cumulative basis for understanding what the result would be from approaching the exceedances in a particular way. So that's why that was done.

1535

Q. And Dr Daly, I don't know if you remember her evidence, but she said that counsel was still working on its catchment accounting, yes, so it remains difficult for a discretionary applicant to put together an application with a cumulative effects assessment.

A. Yes I think, and it cuts both ways. I have read decisions granted a while ago, before declaration, which is of a fairly scant kind of assessment of what the effects are on a water body because it's so difficult to prove it so that's kind of unhelpful. So in a context where we have a small, relatively small body of existing intensive farming land uses in these catchments, and together they make such a relatively modest impact on water quality, a single IFLU has so much greater difficulty demonstrating the linkages between its discharges and impacts in the water, so it's very difficult to prove or disprove those effects.

Q. And yes, and so your solution has been in addition to the NRAT to introduce the specified reduction pathways within a controlled activity pathway and do you consider that that undermines the limits in Table 14.2?

A. No I don't, for the reasons that Professor Horne explained that these represent driving very hard towards those same limits, and I agree with you that the specified reduction it is a limit and it was intentionally trying to corral the exceedances to make sure that there was a consistent basis for making demands of existing IFLU requiring them to make meaningful reductions. Professor Horne has described it as a, probably a stretch for some, for some farming situations. So I don't think it undermines it. It gets the percentages that Professor Horne has talked about much closer to Table 14.2 and not at the cost of environmental outcomes. Dr Snelder's evidence is no inp–, no difference for the ecology in the receiving environment of any importance, I think were his words, yes.

Q. Have you considered the difference between the specified reduction pathways and Table 14.2 though in terms of the Environment Court's decision on the equity issue in 2012, when it allocated nitrogen on the basis of a natural capital approach and the difference with SRPs where

very high leachers will need to make a 20% reduction yes, but may not achieve anywhere near the values in Table 14.2 by doing so?

A. And I think that highlights the issue that for those high leachers that don't have a show of reaching Table 14.2 perhaps that it is very likely that they will need to follow a discretionary activity pathway, but at the present time there is no, no specific guidance about how much of a cut they need to make. And, and I think one can make one's own observations about the historical practices but in the absence of some very clear guidance that could be all over the show.

Q. Well, it may be that these high leachers in the absence of guidance such as to say that they need to reduce by 20%, it may be that they need to reduce by a very significant percentage if they are considered under the existing RDA pathway, for example under the One Plan, such that they may decide to either transition to a different land use or they will not get a consent. That could be an option.

A. It could. I don't read anything in the publicly notified policy framework for Plan Change 2 that particularly drives that outcome.

Q. The publicly notified… I'm sorry, you'll have to repeat. I'm not…

A. Plan Change 2.

Q. Yes.

A. Which changed the activity status from restricted discretionary to discretionary activity.

Q. Yes.

A. And made adjustments to the police framework. There isn't really anything that guarantees that outcome in my opinion.

1540

Q. Because the discretionary pathway in the notified version of Plan Change 2 referred to "good management practices et cetera".

A. Yes, it's just an absence of clear direction of how much reduction is required of people.

Q. All right. Thank you.

A. I think it's fair to say that's absent from the operative plan as well?

Q. Do you consider that even if you put a specific reduction such as 20% within the discretionary pathway – I know you are proposing is as a

control, but if you put it in the discretionary pathway you are effectively creating a second-tier limit, the first being the CNLMs and then the second tier being your 20%?

A. Yes, it's a secondary, a secondary limit, and it's a good question because I started from the point of how does one create more certainty about what the result would be for discretionary activity exceedances and explored the notion of framing that up in some way by limiting it, exactly, exactly right. And then I've taken my own direction in terms of efficiency and effectiveness, if you're, if you're going to take that length you're effectively prescribing a standard or a limit, so that's why I've arrived where I have, but yeah I certainly looked at that and I see it as a limit, yes.

Q. Do you see a problem with that limit in that it provides for a general goal of enhancement or improvement of water quality, but it doesn't provide enhancing to a Schedule E target and we've talked about soluble inorganic nitrogen, it doesn't get you to that target in the One Plan, does it?

A. No and I think the evidence is that that, that is not a reasonable expectation of this small body of existing intensive farming land uses. They alone cannot do that. It's…

Q. Has Horizons considered how that 20% specified reduction if it's transferred across other farming activities beyond IFLU, if it's transported across to other extensive farming activities whether that would achieve the scheduling target?

A. I don't think that question has been analysed, no.

Q. All right. Thank you.

A. I certainly haven't been involved or instructed in any examination of that.

Q. Thank you. Just on the word "most" in policy 58A(1)(d), in the council reply provisions, the wording is nitrogen leaching maximums must be established in the Regional Plan which inter alia are achieved on most farms using good management practices and best management practices." If you want to go to the council reply provisions.

A. I'll just go to the version that I've got in my statement, so that's…

Q. I have a Word version so if you have the CB number, that would be better. Which page is it Ms Foster in your…?

A. I'm on the first page of Christine Foster's appendix 1 to my May supplementary statement.

Q. Thank you. So…

A. And the passage you are referring to is in policy 58 it's in the second row A(i)(D).

Q. Yes.

A. "…achieved on most farms using good management practices and best management practices," yes.

Q. Yes, so just to clarify something, this is the direction for nitrogen leaching maximums.

A. Yes, for the setting of them, that's right.

Q. Yes, and so are you, is your evidence that specified reduction of 20% for pastoral and 35% for CVG are nitrogen leaching maximums?

A. No. They're exceptions from it.

Q. Have you read the submissions on scope that have been filed for Fish and Game?

A. Yes I have.

Q. So in those submission there's a submission that if the nitrogen leaching maximums don't meet this criteria the answer would be to alter Table 14.2 substantively, not just recalibration, because this direction is regarding setting of nitrogen leaching maximums.

A. Mhm.

Q. And do you agree with that?

A. It's the first time I've read that suggestion. It hasn't come out of any submissions on the plan change originally, so it was a surprise to me. A different approach, but not one that Plan Change 2 has taken.

Q. It's fair to say though isn't it that this issue about whether a recalibrated table 14.2 would achieve the most criteria has developed during this Environment Court hearing?

A. Can you put the question again, so I understand it better please?

Q. Yes. This focus on whether the CNLM meet the most criteria in policy 58 has been a query that the Court has had through this hearing process, and there has been a recent focus on it through the evidence of Dr Parlato and Professor Horne's most recent statement of evidence.

A. Mmm.

Q. Yes.

A. That's fair. Yes.

Q. All right. And so just to round off on that, if the Table 4.2 as recalibrated doesn't meet this, the answer isn't to put exceptions in, it's to change the Table 14.2.

A. Well that's a view, but the framework of the One Plan always provided for exceptions and what may have emerged is that the need for exceptions which might have been seen as I think Ms Mare put it, she was quoted in the decision on the One Plan as describing the need for exceptions from the policy 58 Table 14.2 CNLMs as being for a very small minority of properties. My understanding today, you heard Professor Horne again, is that it's actually not a small minority; the exceptions are needed for a larger number and that has shaped the need to confine those exceptions I think in a more structured way, hence the specified reduction avenues.

Q. But isn't that your ideas and understanding? It's not actually what policy 58 says.

A. Not, it, it's the ambition in policy 58 is what it says. It's not being achieved. That's right.

Q. Thank you. Just finally, I'd like to take you to the latest Ministry for the Environment guidance, which I did ask Professor Horne some questions about and he wished to defer to you, and do you have that handy?

A. I have, I did read it in preparing my statement. I think that's it, yes, April 2014.

Q. If I can refer you to page 12 please under the heading *Plan development*.

A. Mhm.

Q. Now I haven't done a line-by-line assessment of this April 2024 version against the previous versions, but I notice here that it says that the NPSFM clause 3.13 requires councils to "set nutrient concentrations and exceedance criteria and translate these into limits on resource use, including property scale limits".

A. Yes

Q. And then it refers to "Other guidance" and then the second paragraph under plan development says, "Overseer FM can still be used to help

estimate catchment loads or limits subject to qualifications". So I think we've established, haven't we, but correct me if I'm wrong, that Table 14.2 forms limits?

A. Yes.

Q. On resource use.

A. It does.

Q. And so are you objecting to the Table 14.2 limits on the basis of their use of Overseer FM?

A. No not at all, no I'm not objecting to the use of, to the presence of Table 4.2 or the use of it, and the issue as I see it is not about Table 14.2, it's about exceedances of Table 14.2 are managed.

Q. All right. Thank you. And just finally, in pages 17 to 18, your latest May statement of evidence talks a little bit about consent conditions and this provides some guidance on conditions that include property scale Overseer FM limits. Have you managed to consider this guidance? I see that there was some discussion of the issue of placing conditions of consent in the latest joint witness statement Planning.

A. Yes, and the view that was reached is that conditions of consent that specify an Overseer limit based on an application could be expressed in a way that allows the reference file system to play out so that compliance and monitoring can be done on a like-for-like basis, yes. And I think that's one of the issues that should be addressed through the implementation phase that we've talked about, for example, standardising some conditions of that type in applying Table 14.2. Yes.

Q. And you see that as achievable? I see here it talks about having a mix of input-based standards as well as an Overseer absolute number, but you see that as achiev- looking at this as achievable within an implementation phase?

A. I'm sure anything is achievable in an implementation approach.

Q. Thank you. The only concern with that was that in your May evidence you appeared to be saying that enforcement would be against a nitrogen management plan which could be changed from time to time, which was exactly what the Environment Court in 2017 said would not appropriately confine an activity. So you are not suggesting that now?

A. No. I think it's a different approach that I've, I read the passage of that decision which was critical of the practice of leaving the specification of what had to be done to some future management plan. It's a practice I don't particularly find attractive either and not so much the practice of requiring, the practice of specifying in a consent the things that had to be done, or in a very precise way. That's quite a different thing.

Q. Yes, thank you very much.

THE COURT ADDRESSES ALL PARTIES – SHORT ADJOURNMENT (15:54:01)

COURT ADJOURNS: 3.54 PM

COURT RESUMES: 4.09 PM

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Ms Foster.

A. Good afternoon.

Q. I'm going to start with some questions on the provisions that you have attached to your main statement. So those provisions introduced three new controlled activity pathways to sit beside Table 14.2, don't they? 20% reduction, 35% reduction and NRAT?

A. That's correct.

Q. Three pathways?

A. Yes.

Q. And those pathways require less reductions in nitrogen leaching than Table 14.2, don't they?

A. Not necessarily, for the reasons Professor Horne has explained some of the 20% reductions might get you to or beyond Table 14.2.

Q. But for the most part the evidence is that they would require less reductions, otherwise why would they be included?

A. They will for some require lesser reductions, I think that's correct, but not all.

Q. So it would be fair to say that for some farmers who saw and obtained a controlled activity consent by meeting Table 14.2, that they might find it unfair that colleagues who did not make that effort get a controlled activity consent for lesser reductions? It's a fair statement?

A. I can't comment, you're asking me to put myself in their shoes and I'm not, I can't say that with any certainty. I haven't canvassed the question.

Q. Do you think that's even more so given that they being presented with the inability to reapply under your proposed provisions for consent under those additional controlled activity pathways?

A. I've made a change under these provisions that removes that prohibition on them applying for consent.

Q. Okay, I may have not seen that in there, but if that's intended to be removed, that's helpful to know.

A. Yes, in the policy – at the policy level but also in the condition for rule 14-A, 14.1, I beg your pardon, it was condition A.

Q. And the specified reduction pathways that you've provided for, they provide a controlled activity opportunity for farms based off their historic leaching, don't they? A reduction down from historic leaching?

A. That's correct.

Q. And this type of approach is colloquially referred to as grandparenting, isn't it?

A. It's not strictly grandparenting in the sense of being able to enjoy exactly the same leaching rates that you have historically. I think I elsewhere described it as a hybrid. So it's based on but it is not, it's not the strict definition of grandparenting.

Q. Thank you, the Environment Court in 2012 considered that an approach which provided for a step down reduction from historic baseline was grandparenting, didn't it?

A. I, the passage I read talked about grandparenting, that was criticised I think. The regime like the percentage reduction wasn't considered.

Q. And it would be a fair statement that grandparenting of high leaching operations at 20% of their historic leaching could be seen as inequitable by some operators with the same type of business who have been

operating by choice, perhaps for strategic reasons at a lower intensity, couldn't it?

A. Yes, on Professor Horne's evidence though the very high leaching operations as he explains it or has explained it to me, it will be not farm necessarily operational management reasons that contribute to their high leaching, they might be matters beyond the control and they're likely to be the candidates, but it will not qualify for the 20% in any event.

Q. But if they did qualify for a 20%, it's a fair statement that operates with the same business type who have been working to meet the Table and have made a choice perhaps for strategic reasons have a lower intensity, they may find that in equitable at a level of proposition. Is that a fair statement?

A. If those two comparable situations exist, but it may be that they don't because they're just so high that they have not been able to achieve the reductions necessary to comply with Table 14.2.

Q. You appreciate that it's Mr Day's opinion that some farmers may find that in equitable?

A. I accept that's his opinion.

1615

Q. It might also be seen by some farmers as unfair, enabling others to have a 20% reduction because it would prevent them from realising the inherent capacity of their land because they're essentially carrying the leaching of those higher leachers?

A. I don't see them as individually carrying it when you look at the full picture of their contribution collectively to the pie of contamination, the load in the rivers and I mean there are other elements to the 20% reduction that are not as favourable as trying to achieve compliance with Table 14.2 and particularly the duration of consent and the speed with which one has to make these reductions. So they're not completely comparable, their decisions or choices that would have to be made by farmers who may be able to get as Professor Horne described close to and maybe with a bit more stretch if it was worth it to them to enjoy a longer consent than one limited under the specified reduction pathway, that would be a difference in circumstances, not necessarily an unfairness.

Q. Turning to the policy framework, there's quite a lot of subjectivity in the question of maximum extent reasonably practicable in the shortest reasonable timeframe, isn't there? It's a subjective test?

A. There is the practicability is something that I think can be assessed on the circumstances of an individual application by reference to what is considered to be good and best management practice for that particular sector, that particular farming type.

Q. At the level of proposition, what I think is practical, what you think is practical, what the Judge thinks is practical, they might be different things, mighten they?

A. But they would be made subject to enquiry and evidence on the application, so I think that it's capable of being relatively consistently applied.

Q. And what you think is reasonable and what I think is reasonable may be different also at the level of proposition.

A. At the level of proposition, it could be.

Q. And so some farmers might find it unfair if other farmers were granted consent on their proffered maximum extent practical reductions in the shortest feasible timeframe which was much less than their own.

A. That's –

Q. It's a propositional question for you.

A. Yes, I think that it provides, let me put it this way, I think that at a propositional level it provides more guidance than the current framework provides for exactly those questions.

Q. I'm now going to ask some questions about achieving the objectives of PC2. So PC2 was notified to me two external factors and the first was updates to Overseer to ensure the CNLMs met the most recent version of Overseer, that's correct?

A. That's correct.

Q. And the second was to respond to concerns created through recent case law that essentially created what people and what the Judge has referred to as a policy loop, the policy framework still required you to meet Table 14.2, even though you were applying for a restricted discretionary consent?

A. Yes, I've called it a policy roadblock, yes.

Q. And the changes proposed in the notified version were three-fold. The first was to update Table 14.2?

A. Yes.

Q. The second was a discretionary activity opportunity for farms that did not meet Table 14.2?

A. That's right, it was a change in activity status from restricted to discretionary.

Q. And the third was, adjustments to the policy framework to make that policy framework broader than it is under the operative version.

A. To provide for exceptions, yes.

Q. And this was considered to provide a viable pathway through those two external factors, wasn't it?

A. It was considered at the time to provide a what was described as a workable pathway.

1620

Q. And Table 14.2 is one of the controlled activity pathways that represents what the High Court has called a resource-based regime for managing nitrogen leaching, doesn't it?

A. Yes.

Q. And that regime is based on using the LUC classes and provides for higher leaching for better LUC, we'll just perverse the 1, 2 and 3 and less leaching on the poorer quality soils.

A. That's as I understand it, yes.

Q. And it wasn't the objective of PC2 to change that nitrogen management regime, was it?

A. No.

Q. So grandparenting is a fundamentally different regime based on historic leaching, isn't it?

A. Grandparenting in the surest sense, yes, it is.

Q. And the specified reduction pathways are grandparenting, a form of grandparenting, aren't they?

A. They're not strict grandparenting in the sense that expression has been used in the context of the One plan historically, no.

Q. But the specified reduction pathways are not a pathway based on the underlying land resource, are they? They're based on historic leaching?

A. That's, Professor Horne thinks that that is slightly more nuanced than that, that the in the way that he has developed the originally it was arranged 10 to 20% of reduction. It was based on analysis of what the leaching product would be from different land use classes within a water management subzone, so it has some basis in the different abilities, different land use classes to generate differently. So higher generating ones will be required to make greater reductions. So it's not completely divorced.

Q. So it's Professor Horne's evidence that the 20% reduction was determined based on his view on what's achievable with good management practice.

A. It was based on what would be the result for farms and for water quality of applying certain packages of demands expressed in kilograms of nitrogen per hectare per year reduction, yep.

Q. Introducing a pathway that is based on a grandparenting approach, based on historic leaching, that introduces a fundamentally different pathway into the One plan than that currently exists, doesn't it? The specified reduction pathways are a fundamentally different type of regime than Table 14.2, aren't they?

A. Well, they're a way of managing the exceedances of Table 14.2, so they're not an alternative to it in that respect. So at the moment there is, there is no clear framework for managing those exceedances, so it introduces a framework for doing so.

Q. But it introduces that exceedance level at a controlled activity opportunity which guarantees resource consent?

A. Yes, it does, subject to conditions, yes.

Q. So their introduction fundamentally changes the controlled activity regime of the Operative One Plan, doesn't it?

A. It doesn't change the fact that that exceedances of Table 14.2 are contemplated. It introduces a particular way of regulating those, some of those, not all of those.

Q. Have you got volume 3 of the bundle there? I'm just at the section 32 report.

A. There are two volume 3s.

Q. I would guess that it's book 1. The first page is 301.0043 and this is the front page of a section 32 report that we're looking at there.

A. That's what I have, yes.

Q. And we see here the proposed plan change too up the top, consent pathway and the first box is intensive land use consent application.

1625

A. Yes.

Q. And there is an arrow going down and that says "Do you meet recalibrate Table 14.2?" and the answer is either no and you had a discretionary activity, is that correct?

A. That's right.

Q. And if it's yes, you're asked if you meet the other controlled activity standards?

A. That's right.

Q. And if it's not, you're restricted to discretionary?

A. That's right.

Q. And if it's a yes, you're a controlled activity?

A. That's right.

Q. There's no provision there for another controlled activity pathway, is there?

A. No, there's not. It is publicly notified, then changed to dealt with all exceptions from Table 14.2 as discretionary activities.

Q. So the objective of the – of Plan Change 2 as represented by this diagram was not to introduce another controlled activity pathway?

A. Well, the objective Plan Change 2 –

Q. As presented by this diagram, Ms Foster.

A. Well, this diagram is not –

Q. Well, my question's just on this diagram, thank you, Ms Foster.

A. This diagram doesn't represent the objective of Plan Change 2, which is expressed at a couple of places in the section 32 report, but broadly in the same terms and that was to restore a workable consenting pathway I

think was the way it's described in one part. It doesn't, and it proposed to do that by way of a discretionary activity. It changed the activity status from restricted to full discretionary.

Q. If we could go to 301.0058.

A. The last number again?

Q. 58.

A. Apologies, thank you.

Q. Apologies, Ms Foster, I've given you the wrong reference, 51.

A. That's an introduction, page 9?

Q. Yes, that's correct. And then the second line of this: "The underlying approach to management of these activities remains the same." So that underlying approach is Table 14.2 and a resource-based regime for managing nitrogen, isn't it?

A. Yes.

Q. Thank you. I'd now like to have a look at policy 58 and I wonder if the most straight forward way to do that is to have a look at the table in your most recent statement of evidence. I'm not sure if you have the numbered version in front of you.

A. I don't, I've just got my own, but I'm open at the first page of the appendix.

Q. Yes, that's correct, first page of appendix 1, if the Court is using the number, it's 501.0339 and I'm looking at policy 58 and the chapeau we have an order to give effect to listed policies, water quality must be managed in the following manner. And then we come into subparagraph (a) with (i) stating that nitrogen leaching maximums must be established in the regional plan which achieve a list of things.

A. Yes.

Q. And one of those things which has remained consistent across the different versions and is in the operative version, is (c) and that's recognised the productive capability of land in the water management subzones.

A. Yes.

Q. And the specified reduction pathways don't do this, do they? Because they recognise historic leaching, not productive potential?

1630

A. I think for the reasons I've referred to in Professor Horne's answers, the specified reductions drive towards Table 14.2. So in that sense they are striving for, if not achieving –

Q. But they themselves –

A. – the LUC-based limits.

Q. They themselves are based on historic leaching, based on historic leaching.

A. They are based on historic leaching.

Q. Not on the productive capacity of the land, on the activity that is occurring on them, is that correct?

A. The combination of those two things.

Q. They are based on a baseline leaching level.

A. That's right.

Q. Thank you. Now I just have some questions about water quality and the national policy statement for freshwater management. So the objective of the national policy statement is to prioritise, is to ensure that natural and physical resources are managed in a way that prioritises first the health and wellbeing of water bodies in freshwater eco systems?

A. Yes.

Q. And I appreciate it's a while back, but on the stand Dr Snelder explained that the best option for water quality in his words are best case scenario, was where everybody meets Table 14.2, that's correct?

A. That's right, that's a modelled scenario, that's the best of a range of scenarios when modelled are not that different from each other.

Q. And the second-best option Dr Snelder confirmed in cross-examination is one where everybody who can meets Table 14.2 and everybody else is driven as close as possible to Table 14.2 as they can, is that correct?

A. If that's what he said, I accept that.

Q. And that's what a discretionary activity opportunity provides for, doesn't it?

A. Well, I don't read the alternative provisions before us as necessarily driving that outcome, no.

Q. At the level of proposition a discretionary activity opportunity provides the ability to drive applicants as close to Table 14.2 as you can, doesn't it?

A. It could do if it was framed in a way that drove that outcome.

Q. And also in cross-examination Dr Snelder explained that you can get reasonable, localised water quality eco system benefits if you push people past the 20 or 30 to say 40%?

A. Again if that was his opinion, I accept that.

Q. And your proposed regime puts in place a limit of 20 or 35% that if met, people are able to receive a consent?

A. Yes.

Q. And that's despite those pathways actually achieving lesser reductions for the most part in Table 14.2?

A. They achieve them, Dr Snelder answered a question this morning about his model being steady state, so it doesn't acknowledge the timing of when benefits land if you like, so there are some differences in the specified reduction pathways requiring benefits to land more quickly than the full compliance with Table 14.2 would at year 20.

Q. I don't think Dr Snelder's given evidence on that point. I think he's just explained that there's a steady state model, but going back to my question, 20 and 35% are in place as limits despite for the most part they require lesser leaching reductions, irrespective of the timeframe in which they're achieved, that's correct, isn't it?

A. They require, they may for some require lesser reductions than Table 14.2, as I've said for others they may get people to Table 14.2 but I understand his evidence to be that that, the differences between them in his area of concern is no importance in ecological terms in the receding environments.

1635

Q. And so, it puts 20 and 35% in as limits, a guaranteed consent, despite the fact that localised water quality gains can be achieved if you push past those percentages, doesn't it?

A. It doesn't enquire into those, that's correct.

Q. So, your regime therefore prioritises providing for economic use over freshwater outcomes, doesn't it?

A. I don't think that can be said from the evidence of Dr Snelder that the alternative pathways, as they have been described, deliver broadly the same benefits for water bodies. No significant difference.

Q. The evidence of Dr Snelder is that the second-best scenario is if you can meet date Table 14.2 and drive other farms as close to Table 14.2 as you can, isn't it?

A. His evidence has never been framed, I don't think, in terms of best. He has compared the relative differences, and some score better than others, but his underlying point is that the differences between them are not, are ecologically important, I think his words are, in the receding environments.

Q. You have relied on the model pathway of pathway B being reflective of the specified reductions, Table 14.2 decisions version model, haven't you?

A. I think that's accurate. That represents the 20% pastoral.

Q. And pathway B, recalling back to the conversation with Dr Snelder today, sets consented farms at their consented levels?

A. Yes, it does, that's right.

Q. It sets 70, or possibly just under 70 farms at the specified reduction pathway, at the proxy of 20% of 12 kilograms per hectare, is that correct?

A. That's what I heard him say.

Q. And it sets the rest of the farms, which is over 100 farms on your evidence, at Table 14.2, doesn't it?

A. I can't recall the detail of that, and I wasn't sure from his answer what his answer was to that.

Q. So, that pathway does not model a situation where most farms are following the specified reduction pathway, does it?

A. I'm not confident about giving an answer because I didn't understand his answer this morning.

Q. Ms Foster, if we go to, it's in Dr Snelder's primary evidence, and that's in the 202, I'm not sure if you have two books or one book, apologies.

A. 202…

Q. And the page I'm looking at is 202.0747.

A. Yes, that's in the Land Water People…

Q. And this is the appendix to –

A. Modelling results, yes.

1640

Q. And if we look here at figure 4, and the map on the right – the map on the left, sorry, to orientate, the blue areas they show us the target water management subzones, is that correct?

A. Yes.

Q. And the map on the right, the blue area shows the small component of that, that the 70 farms set at the specified reduction equivalent were located in.

A. Yes.

Q. So if we look at the balance of the area that is not captured by that, all of the unconsented farms in those areas were set at Table 14.2.

A. I don't take that from this information. That was part of the answer that I heard him to say this morning that he would have to think about that but I wasn't sure if he gave an answer.

Q. Well, the 70 known unconsented farms that were set at 12 kilograms for pathway B.

A. Mhm.

Q. They are reflected in that blue area in the right-hand map. The balance which he refers to as the unknown unconsented farms come within all other blue areas shown on the left-hand map, that's correct?

A. Yes. Yes. But I'm not sure that tells me what the assumption was in the modelling for their nitrogen leaching outputs.

Q. The assumption was that they would meet Table 14.2.

A. Okay. If that is the case, I would need to check that I think.

Q. So specified reduction pathway B does not actually show us a situation where the majority of farms are reducing by 20 per cent. It's only 70 farms in a small area of the region.

A. I'll have to be guided by Dr Snelder on that.

Q. Thank you, we can move on. I'll ask some more, just a couple more questions on Table 14.2. Table 14.2 was intended to encourage intensive farming towards high quality soils, wasn't it?

A. Yes, I think that's part of the theory.

Q. And this was intended to meet the dual requirements of continued economic growth and flexibility of land use on one hand and meeting water quality targets on the other?

A. The big four issues for the One Plan, none of them relates to economic wellbeing, they all relate to environmental issues, and it was the water quality that this tool was serving, if you like.

Q. Well, that was the intent behind Table 14.2 as described by the Environment Court in 2012, wasn't it?

A. I can't recall.

Q. And a resource-based approach to manging nitrogen is more efficient than a grandparenting approach like the specified reduction pathways because it maximises the inherent potential of land, isn't it?

A. It does, so the, and what that speaks to is the appropriateness or otherwise of Table 14.2. What it doesn't speak to is the appropriateness or otherwise of the frameworks for managing exceedances from Table 14.2.

Q. So pulling in a grandparenting approach alongside Table 14.2 as another controlled activity pathway, it undermines the ability for Table 14.2 to achieve that efficiency doesn't it?

A. Well, I don't think that that undermines the ability for Table 14.2 to achieve that. Where the framework already provides for exceedances, it's the exceedances that undermine the power of Table 14.2.

Q. The exceedances in the operative plan are very, very narrow, aren't they?

A. Well, they're the three categories really of exceedance. There was a clearly provided for restricted discretionary activity unbounded exception; one could apply to exceed, and some of those were given a leg-up through some particular policies in policy 14.6 but otherwise there was no restraint on them.

Q. By putting in a controlled activity pathway that uses grandparenting as opposed to a resource-based approach means that it will have some impact on the ability for that resource approach to achieve that efficient use of land because some people will be achieving their reductions based on historical leaching, not on the inherent capacity of the land.

A. Well, that holds if the framework is demanding that all IFLU must comply with Table 14.2 and in the One Plan isn't proposing that, Mr Scott's provisions aren't proposing that. They are all proposing exceptions to exceedances of Table 14.2.

Q. Mr Scott's provisions include a policy direction for decision-makers to turn their mind to alignment with directing higher leaching activities to higher capacity land.

A. Yes.

Q. And away from lower capacity land, don't they?

A. That's right. And I've commented on that in my statement of evidence, you might recall, and I genuinely don't know how a decision-maker is to, what a decision-maker is to make of that for an individual application for consent. I understand it in the motivation behind for example Table 14.2 and at a catchment-wide scale, but I don't understand how it can be applied to an individual farm.

Q. Would not one look at the LUC class and the level of leaching?

A. Yes, but I'm not sure what the question one is determining under the policy, whether it's that, it isn't a policy that's worded in a way that says you must turn something down if it results in this particular outcome compared with LUC, so I think I understand why he wanted to include that but I don't understand what the policy itself actually does, placed where it is as a consideration for decision-making on individual exceedances.

Q. Can I now take you to page 53 of your May evidence?

A. Evidence in chief?

Q. No, apologies. Your May evidence, your most recent statement, and the page number for the Court is 501.0334.

A. Yes.

Q. And we have a traffic light summary here?

A. Yes.

Q. And you've given yourself a lot of A's haven't you?

A. I haven't given myself any A's. I've evaluated the options.

Q. Council reply provisions are your recommended provisions?

A. They are, that's right.

Q. Thank you. I have a few questions in a similar order to the detailed questions I've just put. If you scroll down to equity, we see you've got an A on the council reply provisions. Do you think you want to revisit that in light of the potential inequities that we've discussed in cross-examination today?

A. No, because I hold the view that a framework that manages exceedances by clearly stating what applicants for exceedances are required to, the effort they're required to make in reducing, I consider that is equitable. And I consider a framework that is loose and does not provide clear guidance in that respect opens up the possibility of quite variable outcomes dependent on who is making the decision and when, and that that is quite inequitable.

Q. Do you accept that there are other people with and potentially farmers with different views on managing exceedance through guaranteeing a consent in a different method than is provided for under Table 14.2?

A. Oh I'm sure, I'm sure there will be a variety of use.

Q. Your Honour, I think I'm going to leave it there. Thank you.

CROSS-EXAMINATION: MR ANDERSON

Q. Good afternoon.

A. Good afternoon.

1650

Q. I'd like to start on a document which is CB 301.0051, which is the section 32 report.

A. The second number again?

Q. 0051. Did you draft this report?

A. I beg your pardon?

Q. Did you draft this report?

A. No, I did not.

Q. But, on the bottom paragraph of that, there's a paragraph that starts: "The plan changed to only seeks to address…", have you got that?

A. Yes.

Q. Now, that gives that the, that says that the plan change only relates to existing intensive farming land use provisions?

A. Yes.

Q. And the underlying approach management stays the same?

A. That's right.

Q. What's really being sought to be done is to update Table 14.2 in light of changes to Overseer and update on the relevant policies in the light of changes in RMA case law.

A. That's right.

Q. You'd agree with me that's quite a narrow scope of a plan change?

A. Yes, it's always been thought to be a narrow plan change, particularly in respect of only affecting existing or intending to affect existing intensive farming land use uses.

Q. You wouldn't read that plan, that description as providing for alternative ranges of, alternative methods of addressing the management in existing intensive farming land use provision standards in the existing plan?

A. Well, it talks about, seeks to address the policies and methods including rules, so.

Q. But it also says at the bottom, it explains that it's about only updating 14.2 and updating the relevant policies in light of changes in RMA case law.

A. Well, it might have been what it said, but plan change 2, as publicly notified, actually changed the activity status of exceedances of table 14.2. So, had a fiddle with rules.

Q. Now, if we go to the, if I take you to page 95 of that same document, top of the page, is that appendix A, proposed plan to be changed?

A. Yes, so it's 301.0095.

Q. Yes. Now, can I take you to 2A? That's, I'll start at the start, that's policy 5.8(ii)(a), so in existing land use?

A. Yes.

Q. Now, that policy there speaks only to the use of the CNLMs, doesn't it?

A. They, it speaks to the activities that don't comply with the CNLMs, because those are what are set, compliances required under 2, yes.

Q. And so, in that, in capital A there, you have to have regard to "feasible practicality and cost of achieving nitrogen leaching maximums specified in 1"?

A. So it says.

Q. That doesn't anticipate the use of the SRPs?

A. It, 2A says that they must be regulated. It doesn't say how they must be regulated.

Q. But it says, it says here that, when you don't comply with the leaching maximums, you have to put additional measures to minimise the degree of non-compliance, and you do that with respect to the nitrogen leaching maximums specified in 1. You don't do that with respect to a specified percentage reduction.

A. This was, this is setting the frame for the plan, not necessarily the decision-making on an individual application.

Q. But what, this framework for the plan doesn't anticipate SRPs or the nitrogen risk assessment, or does it?

A. It doesn't speak about them explicitly, no. It doesn't talk about –

Q. Sorry. In an approach where you have, where you're obliged to consider the nitrogen leaching maximums, it will be inconsistent to use a different method when you've got that clear direction at the policy level?

A. Well, at the policy level, for the reasons Professor Horne has explained, those have been considerations in settling on the specified reduction avenue.

Q. Now, can I take you next to the Commission's decision?

A. Mhm.

Q. That is 101.0328.

A. 0328, I have it.

Q. Have you got it, yes, there's a paragraph titled or numbered "3.231". Have you got that? It starts: "As the counsel…"

A. Yes.

Q. Now, the Commissioner said: "As the counsel observed in its closing legal submissions, parties to the plan change are generally accepted that plan change 2 does not provide the basis for re-litigating the building blocks of LUC and natural capital that form the basis of the CNLMs. Now, would you agree with me that the specified reduction pathways are not a natural capital-based approach?

A. No, they're not, not in the same way that that, the CNLMs in table 14.2 are, that's correct.

Q. And the panel instantly goes on to talk about not wanting to pre-empt future ways in which they might manage this through the current consideration of plan change 2. That's what they do in the balance of that paragraph. For example, the last sentence is: "We do not want to pre-empt any decisions on possible future N leaching allocation models either."

A. That's right.

Q. So, they're saying: "We want to maintain the existing LUC natural capital approach, and we want to leave future decisions about different allocations to a different (inaudible 16:57:20) plan change." Would you agree with me?

A. Yes, that's right.

Q. Now –

THE COURT: JUDGE SEMPLE ADDRESSES MR ANDERSON – SPEAK SLOWLY (16:57:28)

CROSS-EXAMINATION CONTINUES: MR ANDERSON

Q. Now, can I take you to your provisions. I can't give you a number because there doesn't seem to be a number on the bottom of the version that I've got, but it's at the very, it's the first page of the appendix at the end of your 17 May evidence, and in there you've helpfully set out three columns, which have the decisions version, your version and the, what you've called the "(inaudible 16:58:08) v3" provisions.

A. Yes.

Q. Have you got those?

A. I've got that page 1.

Q. Now, I really want to focus again on (ii)(a), because 1 and 2 are just about setting the parameters, but (ii)(a), again, talks about dealing with the situation where you can't meet the CNLMs, correct?

A. That's right.

Q. And now –

A. Exceedances of Table 14.2, yes.

Q. Correct, thank you. Now, this sets out the parameters for doing so, and the first, and I'm wary of repeating what my friend, Ms Wright, questioned you about, but it talks about, in A(i), it first talks about "the maximum extent reasonably picked or in the shortest feasible timeframe.", and so, that isn't, the SRPs don't do that at a farm level, do they?

A. Well, they do to the extent that they require the reductions they require within a timeframe, less than Table 14.2 potentially would, within two years.

Q. But they don't do it to the ma – you can't say 20% is the maximal extent reasonably practicable for each farm without understanding what the dynamics of that particular farm are, can you?

A. No, I think Professor Horne's approach has been to look, to test what the maximum reasonably practical is, based on the data set that he looked at.

Q. And when, the outcome of the SRPs is that, at a region- or a PC2-wide level, rather than a farm-wide level?

1700

A. That's right.

Q. And so if we go to A, it says the contribution of the nitrogen leaching loss from the land (inaudible 17:00:14) nitrogen leaching loss within the water management subzone. Now the SRPs don't seek to do that.

A. In developing them, Professor Horne has looked at that, the contribution of them with a water management subzone, yes.

Q. But only at a PC2-wide level, it's not based at the particular farm level.

A. No, and this is a regional policy statement policy so that seems to be appropriate.

Q. And then 2 is the actual and potential effects of the nitrogen leaching from the land on downstream ground water and surface to water quality, the SRPs don't do that in any meaningful way, do they?

A. They, no, I think that's probably a fair criticism. They don't require that.

Q. To the extent of non-compliance of the nitrogen leaching maximums specified –

A. I think it goes to the issue again it's a cumulative assessment of what would be the result in terms of effects of nitrogen leaching on downstream

surface water anyway, as one can read that from the land water people, Dr Snelder's, Dr Cox's modelling and it would be for the reasons we talked about earlier, very difficult to establish that anyway at an individual level, but at a cumulative level the modelling gives you a sense of what that effect would be.

Q. And so, yes, the extent of non-compliance for nitrogen leaching maximums specified in A(1) and the time for planned reductions in nitrogen leaching from the land. Now that, that's all about meeting the nitrogen leaching maximums, isn't it? It's not about SRPs aren't consistent with that?

A. Well, Professor Horne's explained how he was driving towards seeking to minimise non-compliance or the distance from the Table and aspects of and looked at aspects of timing of those reductions, when they would occur, so I think there has – that's been considered.

Q. These provisions that you've put up now, came, I'll ask the next question and in order for D is the feasibility practical cost of implementing measures to achieve a nitrogen leaching maximum specified in A(1) having regard to the land use capability of the land. Now again that's not, that doesn't, that speaks to the original Plan Change 2 approach of natural capital, not a specified reductions pathway approach.

A. Well, I just point to Professor Horne's answers that he did consider those questions of practicability for the range of farms in his data set.

Q. Hasn't what's happened here is that we've had a plan change that has been – a plan change that has been notified with which seeks an approached which is based on LUC and natural capital and what we've got, what we've got in here is an attempt to tack on different approaches to the, to the original architecture of the plan and it doesn't really fit very well?

A. Well, the, what Plan Change 2 was attempting to do when publicly notified was to fire to establish a regulatory regime for managing those exceedances. I had some observations about its ability to achieve that. There were submissions that took issue with the particular activity status and the concerns about certainty of outcome and administrative

uncertainty in the process, so these were – amendments were made responding to those issues within this framework.

Q. And some of those that are now sought go outside the natural capital approach that was anticipated by Plan Change 2.

1705

A. Well, Plan Change 2 as I say it's not, it's not, the question is not does the regime maintain the Table 14.2 approach, it's how do we manage the large number now of existing intensive farming land uses that do not, are unable to comply with that limit. So it's how to regulate the exceedances, not about whether we retain Table 14.2 or the pure – the so called purity of Table 14.2 or not.

Q. Can I, I just want to move on briefly onto a final topic. In your, I think I'm pretty sure it's your 17 May evidence, but let me check, paragraph 30, now I've got to go back, I think it was 32 or 37 of your 17 May evidence. And this is the slightly vexed questions of most list. Paragraph 37 of your 17 May evidence starts: "The intention of RPS policy 5.8", you've got that?

A. Yes, I have.

Q. What, correct me if I'm wrong, what you're saying here is that, is that the, the, we've reached the point now where we can't meet 5.8, the requirements of most farmers meet the, the CNLMs now because of time passing.

A. Well, I don't know if the reason is time passing, but the evidence is that whereas the expectation may have been that most, as most people would understand that, would achieve it, the evidence is that they are unable to.

Q. What unable to now or unable to then? Sorry, so the evidence is that, is that when the plan – when the CNLMs were set, the expectation was that most would be able to meet them, but now because half the time, the 20 year timeframe has passed or thereabouts, the difficult – there's difficulty in meeting those CNLMs.

A. It's not that the passage of time has affected it, it's that the, I'm trying to recall the words Professor Horne gave in answer to a question about that, it's really that there might have been a perhaps an inflated expectation about what those GMTs would achieve at that time, which hasn't played out.

Q. So, I mean what your, your paragraph here refers to with, it says: “With the passage of time, the year 20 CNLM have now become more relevant from IFLU consents granted in the foreseeable future under PC2.” Now I took the passage of time to mean we’ve got 20 – we’ve got year 20 CNLMs and, and we’ve now got half the length of time to meet those CNLMs. That’s what I took from your reference to the passage of time.

A. Oh, no, it was really that when we first started looking at this for me in 2019, year 10 was perhaps the driving determinative limit in Table 14.2, but now in 2024, year 20 is a lot closer and it’s the driving more influential limit.

Q. Okay, I think I’ll leave it there, thank you.

THE COURT: JUDGE SEMPLE ADDRESSES COUNSEL – TIMING (17:09:02)

COURT ADJOURNS: 5.11 PM

COURT RESUMES ON THURSDAY 6 JUNE 2024 AT 10.08 AM

THE COURT: JUDGE SEMPLE ADDRESSES ALL COUNSEL – HOUSEKEEPING AND TIMETABLING DISCUSSION (10:08:20)

MS ONGLEY ADDRESSES THE COURT – EXAMPLES OF CONSENT TO BE PRODUCED (10:09:08)

EXHIBIT N1 PRODUCED – IFLU CONSENT GRANTED ON 22 MARCH 2017

EXHIBIT N2 PRODUCED – IFLU CONSENT SIMILARLY GRANTED ON 22 MARCH 2017

EXHIBIT N3 PRODUCED – IFLU CONSENT GRANTED 15 JUNE 2017

THE COURT: JUDGE SEMPLE ADDRESSES MS ONGLEY – HARD COPIES (10:10:00)

CHRISTINE FOSTER (ON FORMER AFFIRMATION)

RE-EXAMINATION: MS JOHNSTON

Q. Ms Foster, you had some questions put to you yesterday around the question of "most" and that relates to RPS Policy 58. One of those questions indicated that the question of "most" and this was put to you was new to this appeal proceeding and was new to this hearing. Do you recall that question?

A. Yes.

Q. You have been involved in these proceedings since when, Mrs Foster?

A. Early 2019.

Q. And over the time that you have been involved with these proceedings have you reviewed a large amount of material associated with Plan Change 2. Has the question of "most" in the RPS policy 58 been at issue in those documents and material?

A. Yes, yes it has been, from the, right from the outset in some submissions.

Q. I just want to go now to the section 32 that you were taken to yesterday and in the course of your involvement in these proceedings you'd appreciate that the section 32 was notified and informed by a range of material, would that be fair?

A. Yes there were quite a few processes that preceded it.

Q. And if I could take you to the section 32, and my common bundle reference is 301.0043, that is volume 3 Tab 2.

A. That's the fifth page of the section 32?

Q. Yes, that's right. And I want to take you to section 1.2 and that's at page 8 of that document, the common bundle reference 301.0050.

A. I have it.

Q. So you were taken to different parts of section 32 yesterday. Section 1.2 presents an overview of Plan Change 2 doesn't it?

A. Yes it does.

Q. And if you could just read that first paragraph and I just retaining, referring back to the line of questioning here about policy 58, if you could read that just to yourself that first paragraph.

A. Read it.

Q. Does that refer to policy 58?

A. Yes it does.

Q. And does that reference to policy 58 and how it's described there, and I'm happy for you to read that in if you wish, does that represent your understanding of the problem presented by policy 58?

A. Yes it does. And I summarised it using different words yesterday but that's the understanding of whether adoption of GMP would achieve Table 14.2 on most farms is not being achieved currently and that's my words for expressing the same problem expressed here.

Q. And then moving on you've also got questions yesterday about what Plan Change 2 proposed to do. Do you recall those questions?

A. Yes;.

Q. And if you follow the paragraph down to three bullet points there. reflecting on those bullet points is that your understanding of what Plan Change 2 proposed to address in terms of the issues presented by the Plan Change?

A. Yes, it's expressed slightly differently in different parts but that's, those are the three core elements of what Plan Change 2 proposed.

Q. And so it updated the CNLM maximums in Table 14.2, it reinforced good management practices as part of intensive farming land use activities, provided a workable pathways for landowners to apply for consent for existing IFLU that cannot achieve Table 14.2 CNLM.

A. Yes.

Q. I want to now take you to section 7 of the 32, and that's at page 301.0074 of the bundle.

A. I have it.

Q. And you had it put to you yesterday that there were types of options that may have been considered in Plan Change 2. Do you recall that question?

A. Yes.

Q. Does that section here titled Reasonably practical options set out the different alternatives that were considered as part of Plan Change 2 in the 32 process?

A. Bearing in mind I wasn't part of the authorship of the section 32 or developing those options, I believe it does. Yes.

Q. It says there after considering the scope of the plan change, the options identified and considered in preparing Plan Change 2 are and it sets out (a) to (g) is that correct?

A. It does.

Q. And then if you turn over to section 8, 301.0080, is that your understanding of from the section 32's perspective an evaluation of preferred options, is that what that's headed up?

A. Yes. that's section 8.

Q. And could you just read that, and this goes to the questions around that options that were put to you. There's a reference there to a bundle of options. Once you've read that could you give me an explanation of what you understand the bundle of options to mean?

A. It I think it refers to, it refers back to these options (c), (d), (f) and (g), but they involved changes to policies and methods including rules, so there were different combinations of those.

Q. Thank you. My friend took you yesterday to the notified provisions in Appendix A and that's at 301.0095, and in particular you were taken to (ii)A.

A. Mhm.

Q. And I don't believe you'd finished one of your responses to some questioning that was put to you but you referred to this being a RPS policy that set up a framework and I don't think you got to complete your answer about what you meant by a framework in that respect. Do you have anything further you wish to tell the court in that regards?

A. The framework is all the ingredients of the provisions that manage existing intensive farming land uses, so from the RPS policies, the plan policies and the rules and definitions.

Q. And how does (ii)A fit into that?

A. It sets the expectation of what those, that mixture of provisions has to do, that is to regulate them to reduce excess nitrogen, that being excess in relation to Table 14.2 by implementing good management practice and additional measures to having regard to these matters, so these were the matters to be considered in setting up the combination of policies and rules.

Q. Thank you. And finally, then I'll just take you to the council reply provisions and this is in the most recent bundle.

A. I might just look at my version.

Q. Yes, well it's volume 5 Tab 11. And it's CB 501.0339. And again my friend took you here yesterday but I just wanted you to have the opportunity to confirm that (ii)A remains as part of the council reply – provision, doesn't it?

A. Yes it does. It was a provision introduced in the publicly notified Plan Change 2 and I have retained it unchanged.

1020

Q. And I'm looking at the middle column, (ii)(a) is retained, and if I just turn over the page, it continues to ask, in setting the framework, for matters to be had regard to?

A. Yes.

Q. And those are listed there?

A. That's right.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. Good morning, Ms Foster. So, I just wanted to follow up on some of the questions that I asked Professor Horne yesterday in relation to the stripping out of the 75th percentile provision and the implications of that. So, what is your rationale for removing that, other than the complications to do with the Overseer file existence?

A. Yes, I was thinking about that when you were asking those questions yesterday, and I think there was a suite of what were referred to as dairy sector alternatives considered in the SIN modelling, in the scenarios, and those are described in the appendix to Dr Snelder's report, and I think the answer to, or part of the answer, perhaps, to the question you had is at the table on the very last page of that report, which places the result for the dairy sector A and B pathways, which, I think, reflect the, **(inaudible 10:22:50)** the 75th percentile approach, alongside the other scenarios, and it had a very similar mean relative difference. Slightly different, but not a great deal of difference. So, that's part of the answer there, so I think –

Q. Well, you will need to take me to that, because it does not really mean too much in the abstract.

A. Yes, I think I will need some navigation assistance, so it's, Dr Snelder's evidence-in-chief, I think.

MS JOHNSTON:

Yes, if I could assist with that assistance. The common bundle reference is 202.0801 and that will be tab 13, volume 2.

THE COURT: COMMISSIONER EDMONDS

Sorry, whereabouts?

MS JOHNSTON:

It's tab 13, volume 2, the very last page of 12, forgive me. So, it's tab 12, volume 2. It's attachment B…

THE COURT: COMMISSIONER EDMONDS

It is fine, I have found it. Fortunately, I put it back there.

QUESTIONS FROM THE COURT CONTINUES: COMMISIONER EDMONDS

Q. So, Ms Foster, guide me to this now, please.

A. Yeah, thank you, and I didn't have an opportunity, since yesterday, to just go back and look at the detail of what those dairy sector pathways specifically represent, but my recollection is that it is the, represents the 75th percentile approach.

Q. Sorry, which pathway are you talking about?

A. The very last two rows, dairy sector pathway A and dairy sector pathway B.

Q. Oh, right.

A. And they achieve a mean relative difference of 40.9 and 41.3, the extent which they don't achieve the targets, and you can see the comparison there yourself with the others, and we, the 20% reduction, specified reduction pathways represented by proposed pathway B. So, the 75th percentile on the face of the marginally, achieves a marginally worse result in terms of mean relative difference, bearing in mind Dr Snelder's conclusion about what that actually represents in the receding environment.

Q. So, just thinking about how this specified reduction pathway and the 20% might get applied in terms of a discretionary activity application, and thinking about the controlled status of it, is it likely that you are going to get a, sort of, permitted baseline argument that should be starting at the 20% reduction point?

A. Oh, I think –

Q. Rather than focusing on the Table 14.2?

A. Yeah, I think that's fair. I think it presents as a secondary limit, so, and that's referred to in the policy framework as well. So, it's, creates an expectation, yes, I think that's fair.

Q. And so, the expectation would have been much reduced with the 75th percentile in there?

A. I think we'd have to look at specific examples and, again, I didn't have quite an opportunity to do it, but I think it, if we go to the counsel reply provisions, what I had wanted to do was look at what some of the rates in that, Table 14.2(a).

Q. Sorry, where are you trying to take me? To the crossed-out version?

A. Say again, please?

Q. Table 14.2(a), to the crossed-out version?

A. Yes, it's the crossed-out part, that's right. What would have been the table supporting or defining what the 75th percentile was, that's right.

Q. Yes, I realised that, but you're taking me to the crossed-out version.

A. Yes, and I think you're right. For example, if we, one of the examples in the consents being handed up is in the order of, say, if there's an IF value leaching at 60, a 20% reduction would be, would require a 12-kilogram reduction, bringing down to 48, and that would be, perhaps, more than the 75th percentile, or higher than the 75th percentile, and the 75th percentile would've dragged it down further. Yeah, so that's the sum of those, yeah.

Q. Sure, and Professor Horne gave me an example of that, I think, too, yesterday. I think he used 100 rather than the figure you used.

A. Yes, yeah.

Q. Yes, so you would have a different starting point in terms of the expectation, you are agreeing with me about that?

A. Yes, you would, I'd agree with it.

Q. Okay. So, I'd just like to put a hypothetical to you. The hypothetical is trying to help me get a handle on exactly what is happening in terms of these discretionary activities. So, if we take out the question of the specified reduction alternative, and we take out their suggestion of the NRAT alternative, and we go back to Table 14.1, which, of course, was one of the arguments in front of us. So, if you are thinking about that in the hypothetical sense, what would you do in terms of having another look at the discretionary activity and making sure that there's adequate direction in there?

1030

A. That's probably where I started, with looking at the issues in submissions and, precisely, that questionable concern that there just wasn't enough, there wasn't any guidance at all, and it is still a challenge that the planners in conferencing haven't really managed to come up with an answer for, which is finding words and policy that give you very specific guidance that's able to be applied on a consistent basis, or words in a policy that would give you a, the point at which you decline consent, for example, that's quite a difficult, we just haven't managed to craft that. So, I think it could be done, and it would need to be, I think specified in some dealing with proportions and in the policy framework that I've put forward supporting this, we talk about distance from Table 14.2, just what is the size of the exceedance, the size of the contribution, you know, absolute terms in the water management subzone, and requiring proportionality in high leaches being expected to reduce by proportionately large amounts. But even then, there's quite a lot of a squish in those, those concepts, so, without some numeric guidance, it remains quite difficult, I think.

Q. So, the things that you have just mentioned, I don't recall that, the policy that talks about proportionality goes to that degree. Am I right about that?

A. Yes, it's – no. Well, it's buried in the long list in 14.6, so I'll find it in my submissions here.

Q. Perhaps you could start with an actual page reference from the bottom of the page?

A. Yes. Yes, so it's page 13 of the counsel reply provisions.

Q. Page 13, thank you.

A. Consideration H, so: "When determining whether to enable an existing land use to continue, the second consideration is the extent of the activities exceedance of the parameters specified and the contribution which, in your scenario, would be Table 14.2, and the contribution of the nitrogen leaching loss from the land to the cumulative within the water management subzone.", and 4: "Proportionality in ensuring that the existing intensive farming land uses that have high nitrogen leaching loss, relative to, are required to make appropriate lead proportionate reductions in leaching loss."

Q. So, the minute you put the word “appropriately” in there, it is not just a straight, formulaic exercise, then? Is this “appropriately”, so what sorts of things were you thinking that “appropriately” might cover?

A. No. Yes, big matching big, proportionately to the size. I, there may be more elegant ways or more confining ways of describing that, but…

Q. Are you going back to suggest it might be on a numeric basis, then?

A. Yes, I think the way to achieve more precision would be on a numeric basis, yes, and I haven’t particularly explored that yet, looking at, as you go through, it’s sort of a bell curve of nitrogen leaching rates and distance from Table 14.2, what that might be, we just, we didn’t look, take that path.

Q. Just going back a step then, how might you deal with the problem we identified earlier, in terms of the expectation that might be mounted for a, sort of, permitted base? I know I asked you to strip everything out, but we are here at this point, so how might you deal with that issue?

A. Well, I think the extent of non-compliance is an important consideration. I think that we’ve reached the point where high leaching rates need to be reduced, not by marginal amounts, and that was what this statement for proportionality was trying to achieve, was that they would be required to make meaningful reductions, so.

Q. And then, was there anything else that you were going to suggest, in terms of stripping things back to a clearer message about exactly what would be informing consideration of this discretionary activity?

A. Well, I think if we had the opportunity to have a look at it afresh, we would probably examine some of those numbers from the data that’s available and look at the pattern of what’s achieved by reducing those, you know, how many of them there are, where they’re located, what the actual, what difference it actually makes to mean relative difference in the order management subzone. I haven’t looked at that in particular. Would be an interesting exercise.

Q. So, are you suggesting using Dr Snelder’s methodology, then, for that?

A. I think you could put some questions into that to see what the result would be, but I mentioned it yesterday, but one of the particular concerns that I could see, and it was echoed in submissions, was how does an individual IFLU make an assessment of its impact on the order management

subzone because of the absence. It's not really so much the absence or presence of catchment-wide information, because the catchment-wide monitoring network is a main stem network, and lot of these effects are experienced in tributaries, so it's just a very challenging, if not impossible, exercise. So, I think, from a, the result for the region, for the targeted order management subzones is, in my opinion, is best addressed in that cumulative sense, looking at what, for the body remaining in consented intensive farming land uses, following the exercise that Professor Horne did, what is the result if this order of reductions is achieved.

Q. So, just thinking about that equity question a little bit more, in terms of people doing their bit, might there be an element of that here, rather than just relying on modelling at the water management subzone?

A. Yeah, there may be. The question of equity, it's, yeah, I think it's right that high leaches ought to be required to make proportionately large reductions, yes, I'm just struggling to find a more precise way of, or a numeric way, today, of expressing that. I think it probably could be done.

Q. So, just going down the list, let us just look at (v).

A. (v)?

Q. Yes.

1040

A. So you have suggested some changes to that, have you from the –

A. I've dragged it up from –

Q. Decisions version?

A. – lower in the list and combined a couple of considerations, which in the decisions version ended up being effectively least practicable option kind of considerations, you know, what could be done and what would the cost and implications of that be and I have reworded those. There were a couple of clauses that addressed that matter and five attempts to, or gives an opportunity to examine whether a particular IFLU is doing as well as it can for the circumstances given current technology. So that's what it's attempting to do.

Q. And does it do that? Just looking at the second part of it?

A. It includes a consideration of reasonableness and practicabilities and financial considerations, yes. I struggled to see how you could not consider those and looking at alternatives.

Q. I guess they're very general terms, they can have a wide set of parameters that fall underneath them.

A. I accept that.

Q. So have you given any thought to that and how you might wait or consider some of those?

A. No, other than making the extended exceedance proportionality and the availability of other perhaps better alternative approaches part of they have particular regard to the first list if you like, but within that no, I haven't. I haven't expressed there the weighting to be given to those. I don't think they are considerations that can be practically ignored.

Q. Well, it's understanding the four corners of them is –

A. Yes.

Q. Yes and I guess that goes for quite a lot of the provisions that use phrases like practicable and reasonably practicable, I'm always looking for what are the four corners of what I should be considering here and what is the weighting of those things and I guess I'm struggling with the different formulations throughout these provisions that some of these things.

A. I accept that.

Q. You think that's a fair point?

A. Yes and so I've made an attempt also bearing in mind some of the issues and concerns that were raised, you know, through the hearing process in submissions in trying not to overlook some things, but there is a bit of a food processor result that can sometimes result in not making it clear which matters are to be preferred. I'm sure it could be improved in that respect, but I don't think that the mis-attention between the practicability questions and what's technically out there, what's available and because they can't be overlooked but I don't, I've always thought that the, I've resisted the requests that we had to put those more central, give them more importance and they've been for example secondary in this list, rather than in some suggestions previously because they were at the forefront and I tried to de-emphasise them by placing them second in this

list, but it doesn't give the clarity that you were looking for and I accept that.

1045

Q. So I was just coming back to this issue of the GMPs, the BMPs, and the additional measures. I have had some difficulty trying to reconcile exactly how that all works in chapter 5, for example, relative to what's in chapter 14 and are we talking about BMPs here or are we talking about additional measures and things when you're reading some of the policies and I'd have to say I'm not particularly assisted by the definitions that GMPs and BMPs. So GMPs now refer to practicable measures and methods and BMPs means measures additional to good management practices to the maximum practicable extent and I'm just wondering in terms of how I'm interpreting and applying some of these policy provisions, how these things actually, these definitions actually work.

A. Okay.

Q. I mean what is the maximum practicable extent?

A. I think it's by reference to what suitably qualified experts consider is available for that, for the farming type, that's part it. The definitions that are in here reflect the I felt emerging nature of understanding about what good management practices, best management practices and in circumstances additional measures would be required and there was a surprising level of disagreement between experts and sectors about what they mean and they mean different things in say a horticulture context and an agricultural one and Horizons spend a lot of resource and energy trying to achieve some alignment between experts on what was a standard kind of good management practice, what was pushing and what was an additional measure, a highly, a much more intrusive intervention if you like and that is why there are three sort of concepts, good management, best management and additional measures. And part of the framework that I had proposed to the hearing panel was that the menu of what was understood to be good and best management be included in the plan and that was, that was resisted so this was the hearing panel's response to trying to capture the concept without looking at examples, but and the way the framework applies it is that is that in qualifying for the

alternative pathways to exceed Table 14.2 or in considering discretionary activities, all of the measures are expected to be thrown at the farming activity to achieve the qualifying score or whatever it is, or to reduce to the maximum extent practicable. So the language I accept is clumsy, that's the reason that it comes about, but the intention is that it's the whole spectrum of matters.

Q. So in practice, is trying to figure out which category particular things might come into going to actually get in the way of sensible, achieving sensible outcomes?

A. Yes, and I don't think it will be determinative particularly because people will be required to use whatever measures are necessary to achieve that, yeah, wherever the sit on those spectrums, yep.

1050

Q. Yes, I was wondering a little about that yesterday in terms of the emphasis that was put on something that was put in front of us in terms of the good management practices, rather than looking beyond that.

A. Yes, yeah.

Q. So I'm not…

A. Yeah, one of the other observations that certainly I made when I first looked at the publicly notified Plan Change 2 was its focus on good management practices, and the information that we were getting from prehearing conferencing about exactly what that meant, the criticisms that those don't go far enough and Professor Horne's work on measures additional to those are available and can be better, so… and the focus in the publicly notified Plan Change 2 had been on GMPs only. And my view was that that's not enough.

Q. Well, there was that definition in the notified version wasn't there?

A. Yes, that's right.

Q. And then that got modified.

A. Yes, yes that's right.

Q. And then the decisions were version added a definition of –

A. – added, yes.

Q. – best…

A. So I think if I had the luxury of looking at it afresh, my focus might not have solely been on GMPs, it would be on whatever the measures are, however one defines that and that might be from that full spectrum of measures to be applied.

Q. So going back to my first question. You've been working through the things that you might look at harder in terms of the discretionary category activity and making that work.

A. Yes. Yes. Every time we turned around effectively through the course of the hearing, I will share it with you, and try to define or change references to GMP, some party thought we got it wrong, so that's why we've covered al the bases there. It's not elegant and it…

Q. Well, I think the other things about that is it may not be elegant but it may not be consistently applied in terms of the framework when you go through it. Would that be fair?

A. Yes, well I know. I had a, I tried to improve that in this latest version but the references yes they are somewhat variable, that the expression "and additional measures" the times that that is referred to. But my intention certainly was that the expectation should be that you look at whatever is practicable from that whole spectrum to achieve what's necessary to reduce to the greatest extent practicable.

Q. So was there anything else you wanted to suggest in terms of more, greater direction in terms of the discretionary activity? You'd suggested there's some things that could be explored, but is there anything else?

A. Well, the position we reached at expert conferencing which was an opportunity where we could have perhaps thrashed out some refinements or improvements in that respect, and the relative differences in underlying positions of the parties kind of got in the way of that a little bit but we did all agree that if we were pushed in the right direction we could probably come up with wording that was more directive and helpful. Yeah.

Q. It's always a bit tricky sending people off to –

A. Yes.

Q. – without an idea of where you want them to end up.

A. Exactly, yes that's where we landed.

Q. Yes, in terms of clear direction.

A. That's where we landed. Not an unwillingness to do it, just that the field was very wide when we met.

Q. I just wanted to be clear 'cos this was a question I asked at the last hearing on the situation in relation to duration, potentially.

A. Yes.

Q. So if we could start with the controlled activity and the Table 14.2, so what is the maximum period of time that people might expect or would be able to apply for a consent for in terms of this framework?

A. Theoretically 35 years.

Q. Theoretically.

A. Moderated by the common catchment expiry approach of the One Plan in chapter 12 which is –

Q. So I did have a look at that this morning.

A. Yes.

Q. And it was some of the dates, I thought I can't work through this in my mind, so what does it mean for these targeted subzones then?

A. What it means is that the common catchment expiry date for the particular water management subzone, if that's close the practice seems to be to pick, say it's 2017, generally, so July 2017, July 2016, and then to look at periods in 10 years, 10-year chunks beyond that, and so they would be twenty-something years rather than, so the common catchment expiry date some time before the 35 year theoretical expiry date, so and sometimes it's one, one notch, one 10-year period before, and just depending on the size and the significance of the other policy considerations in chapter 12.

Q. Like policy 12.5, that's right? I'm looking at.

A. Yes.

Q. "Consent durations".

A. Yes. So that is intended to moderate back from the 35 years in some situations.

Q. Okay so there's nothing in here that actually says that it could only be for 20 years?

A. No. No.

Q. No. Right.

A. It's circumstance specific. That's right.

Q. I just wanted to be clear about that one, and so the same thing obviously would apply in terms of the discretionary activity?

A. Yes.

Q. Okay. And then for the specified reduction pathway –

A. – yes.

Q. – and the NRAT, that was ten years.

A. Ten, yes maximum of 10.

Q. Specified in here.

A. Specified in policy 14.6 in the must-do part of 14.6. Yes.

Q. I just wanted to be clear about that. So thank you.

QUESTIONS FROM THE COURT: COMISSIONER HODGES

Q. Good morning, Mrs Foster.

A. Good morning.

Q. Just in terms of the 75th percentile I'd like to come back to that, because you've said that high leachers should make proportionately more reduction.

A. Mmm.

Q. You've said there should be numeric numbers. The only numeric number I've seen is the 75th percentile and you're trying to get rid of it.

A. Mmm

Q. And you've placing a huge reliance on Dr Snelder's modelling and suggesting that that's going to solve a lot of problems. Well, if with no disrespect to Dr Snelder, there are many uncertainties involved and when we're looking at the percentages of half a percent or something like that we can have no certainty which is higher and which is lower, to be quite honest, in my view which is based on my experiences, and so you've gone from something specific to generic and in terms of relying on the generic modelling to say that you don't need to go for the specific. I can't see the validity of that approach so I'd like to give you a chance to expand more on why the 75th percentile should be got rid of.

A. I had simply read his evidence as telling me that that doing so would not create a worse outcome overall.

Q. That's one aspect of it. There's also the message that high polluters need to do more, and so removing the 75th percentile removes that message to a certain extent. Do you agree or not?

A. Yeah, it could do. Yes.

Q. Thank you. Just coming back to the consent term issue, I've been giving quite a lot of thought to that because if you've got an activity on LUC1 land they could get potentially somewhere between a 26– and a 35-year term based on the 10-year figure. So an average of 30 years possibly if we just say for argument's sake.

A. Mmm

Q. So if someone was granted a consent under Table 14.2 for 30 years at 37 kilograms of nitrogen per hectare per year, that would be a lot of nitrogen for a long time.

A. Mmm.

Q. And we're, the evidence is very clear that substantially more reductions are going to be required in the relatively short term. So that does cause me some anxiety that that's, in terms of a long-term integrated management approach has some challenges. You're nodding your head, so you're obviously –

A. Well, only because –

Q. – understanding the issue.

1100

A. Well only because I in developing the council's reply provisions did propose applying the same duration limit to Table 14.2, but I tripped myself up, I've, I realised that that would open a hornet's nest including you know questions of scope, no one has asked for that particularly or given me a mandate for it, but I don't disagree with you on that point.

Q. Well, it makes me feel a little bit better anyway, thank you.

A. It is not the end of the road.

Q. And just one last thing, there's been a lot of debate about CVG and the challenges that it faces in terms of the One Plan and my sort of understanding of it is that if they went for a 35% reduction, as most of it is on LUC1 and 2 land, that would be a substantially greater reduction in compliance with Table 14.2 because 14.2 the reductions required for

LUC1 are 18% and LUC2 are 22.5%, so a 35% reduction it would seem to give you some wins.

A. It would be –

Q. Perhaps I can give you a couple of numbers.

A. Yes.

Q. LUC1, you've got to go from 45 kilograms to 37 kilograms over the 20 year period.

A. That's, yes, my understanding is that the challenge for commercial vegetable growing is that their starting numbers are much higher than this, that's the issue, yeah.

Q. Yeah, all right, no, I can accept that.

A. And remarkably higher than for example the baseline figures that you'll see in the dairy examples, there's only one I think CVG been consented but there are many times more than that, yep.

Q. Yep, okay, no, that's fair comment. Yes, I realised once you had stated that there was an issue of that, thank you. Would you see any challenge from a plan perspective of perhaps having be NRAT for CVG and specified reduction pathway?

A. I only laugh because I did that too.

Q. Sorry.

A. I only laughed because I tried that too and we're just, I think, fearful of consistency or inconsistency accusations. So I have tried to apply a similar approach to both, why would you not apply a similar approach to both, so it certainly has an easier home perhaps with CVG, I'd agree with that.

Q. Okay, thank you.

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. Right, I think I'm getting through, I've only got a few more questions for you, thank you, Mrs Foster. First of all, I want to explore this question of what constitutes a limit and what constitutes an exception and I'm looking at the way that the plan – that the architecture of the plan and I'm trying to understand what it is, if I didn't know the history to this, hadn't been involved in the plan change or the or even the development originally of

the One Plan, I simply picked up the plan and read it as it stands, I'm not seeing a distinction, particularly in the reply provisions between Table 14.2 other than consent duration and the specified reduction pathway and the NRAT pathway. So I just want, I'd like you to take me through that. If you see that there's a distinction in the way that it's structured that pushes me towards saying Table 14.2 is the starting position and then if you can't meet it, you look at these others, because that's not the way that I'm reading the way the plan is now presented and I'd just like to explore that with you. I'm looking at the, the set of provisions in your table, so if you want to take me through those provisions.

1105

A. Yes.

Q. Then I'm happy to follow through with you so I can understand that, where that idea that there is a table and then an exception to the table actually does it still exist in the architecture of the plan as it's now developed.

A. Okay, it's the rationale for the solution, but does the solution actually still redact that, yep –

Q. That's right, that's right, it might be that you know there's a sense that there was a table and that and then there was an opportunity for an exceedance that was in a discretionary activity or a restricted discretionary in the beginning.

A. Yep.

Q. But we're now talking about three controlled activities, not a single controlled activity and an exceedance that pops into a discretionary activity.

A. Yes.

Q. We're talking about three controlled activities.

A. Yes, in a stepwise sense and I had attempted to just for my own thinking it through –

Q. Yes.

A. – to draw something.

Q. Yes, well, I'm a great lover of a flow chart.

A. Yes.

Q. So if I have, I have my own flow charts drawn in relation to this –

A. That's right.

Q. – to work my way through it.

A. Yes, so, so, conceptually it isn't a step but you're right, the result now is not step-wise –

Q. Yes.

A. – you're not required to first demonstrate failure.

Q. Yes, which is normally what you'd be required –

A. That's right.

Q. – if you were talking about a true exception.

A. That's right.

Q. Yes.

A. And the one has more than one possible point of entry.

Q. That's right.

A. And they are Table 14.2 and the NRAT.

Q. Yes.

A. And failing that, there's a no path that takes you to specified reduction.

Q. Well, just take me through that, because I'm not sure I'm even seeing it quite that way. I'm seeing a I can choose – when I read the rule –

A. Yes, I think, I think theoretically that's right.

Q. I can choose between –

A. But the practical reality is probably that's a specified reduction is, is suited to the ones who can't make the NRAT or Table 14.2 still.

Q. Yes, that might be the, that might be the way that it works in practice, but from a planning architecture point of view –

A. You're not forced there.

Q. – is there a – you're not forced.

A. You're not forced.

Q. To go, so you're not forced to start the Table 14.2 and then determine if you exceed it, you go down a –

A. No, that's right.

Q. – I mean you might make a, you might consider it an irrational decision to choose the specified reduction pathway over Table 14.2 –

A. But there may be, but there may be reasons –

Q. – but the plans –

A. – that you can.

Q. – the plan entitles you –

A. That's right.

Q. – to read it and to make a choice?

A. That's right.

Q. So you will have heard my discussion yesterday with Professor Horne then around my sort of left side – right side.

A. Yes.

Q. So is it fair to say given that that the specified reduction pathway is not an exception to Table 14.2, it's an alternative? It's an alternative limit that that you can, if you meet that limit, if you can demonstrate compliance, you don't even have to look at Table 14.2.

A. That's fair.

Q. I don't even have to look at Table 14.2 to make an application for a controlled activity.

A. That's correct.

Q. So I go, so there's some new limit that would allow me to be a controlled activity which must be the 20% reduction calculation?

A. Yep, that's right.

Q. And so will you, would you then classify that? I'm trying to understand as my simplistic we're going left to a, to one of these limits or we're going right to being outside of the limit.

A. Yeah.

Q. Is too simplistic or and also I'm not yet satisfied that it definitely makes a difference in terms of how you, how you consider this, but I just want to understand from you whether you – because you were quite careful to say you saw it as an exception not a limit –

A. Yes.

Q. – and I'm, I just want to tease that out.

A. But I think that it is still, it's, it is, it's a framework that is dealing with those, those that cannot met Table 14.2 and we've used the language alternative pathways.

Q. Yes.

A. From the outset of their –

Q. Yes.

A. – conception. I think that it remains an exception from the expectation that was in policy 58.

Q. Yes.

A. Yes.

Q. But again if you, if you come to this plan –

A. Yes.

Q. – fresh –

A. If you start at the back end.

Q. If you start, if you just pick the plan up –

A. Yes.

Q. – and you don't know the background to this plan, I can't find anything in the plan provisions that would, that would direct me to saying "start with Table 14.2."

1110

A. No, no. We could do, but it may not be meaningful, no, that's right.

Q. I am not suggesting that. I am really trying to understand whether there's a distinction between a limit and an exception in the way that those are put together, and whether that makes a difference in terms of the policy framework. So, for example, if you are setting a limit in the specified reduction pathway, has that limit been set in accordance with the policies that talk about how you set limits. That's what I'm trying to understand.

A. Yes. My view is that it has, and that those considerations were, they were drivers for the technique, for the methodology applied in the modelling, in the, you know, the bringing together of the what's practicable, what happens in the water. So, I was always satisfied that those were front and centre in that.

Q. Right. So, whether you call it a limit or an exception, you say that they've been developed?

A. In accordance with 5.8, yeah.

Q. With policy 5.8 and other policies that sit within that?

A. Yes, absolutely, yeah.

Q. Can I just ask you about the changes that have been made to your rule 14.1(a)?

A. Oh, this is the trying to prevent leaching up.

Q. This is on, yes. So, I'm on 501.0360 in the bundle. Does that capture an existing unconsented, which is what?

A. No, I don't think so. It shouldn't. It's intended to capture existing consented.

Q. Yes. Only existing consented?

A. Do you think I've missed the mark?

Q. No, I am just making sure I am reading it the way it is intended to be read. So, an existing unconsented?

A. That's right.

Q. An existing unconsented IFLU is new?

A. No.

Q. No?

A. No. It falls for consideration –

Q. So, how does the rule, then, yes.

A. It falls for consideration under this rule.

Q. Yes, but that start of the rule suggests that I am only renewing, varying, or? I do not have an existing consent.

A. The prescription for what's captured by the rule is in the first part of it.

Q. In the description?

A. It's the description, yes.

Q. Yes, but doesn't rule 14.1(a) set you up?

A. It's not a precursor.

Q. No, it is not a precursor, all right. So, rule 14.1 –

A. I could have put it at the end, for example, and yeah, just to…

Q. Maybe, yes. I am just reading it through to make sure that I have got my head around it. So, that use of land that is existing at the date, whether it is consented or not, is a controlled activity according to the rule, and then I would, if I am an existing unconsented activity, I jump straight to (b)?

A. That's right.

Q. Yes?

A. Yes.

Q. And prepare my nutrient management plan, or I would, yes, I would look at a nutrient management plan that gets me to (d).

A. The qualifying something.

Q. To qualifying under (d), under one of the, I will use my word, “limits”. So then, I just wanted to talk with you about the specified reduction pathway in 4, D4, and I just want to look at this definition of nitrogen baseline.

A. Mhm.

Q. So, there was some questions asked yesterday about, effectively, a 20%, what that is doing is a 20% reduction from actual or from current. But that’s not quite right, is it?

A. No, it’s not the current. It’s from that baseline, yes.

Q. Yes, so can I just make sure that I understand? So, in terms of the definition of nitrogen baseline, so, the intention is that you effectively take your unconsented existing operation, say, let us talk about the unconsented ones. So, you take your existing unconsented operation and you run it through Overseer. That is correct?

A. Mhm, it’s 2012-13 baseline.

Q. 2012 baseline?

A. That’s right.

Q. So, with your activity, you run it through. So, that takes into account your land use classification, doesn’t it?

A. Absolutely, yes, when you do that, yes it does. The nitrogen baseline definition was actually included to support the 75th percentile. It was associated with that, but it’s important to have it also for the 20% reduction.

Q. For the 20% reduction?

A. That’s right, yes. So, that’s why the –

Q. That is right, because otherwise, what is the 20% from? That is right.

A. Yes, that’s right, based on, that’s right. So, it served to tools there, and that’s why.

Q. Purposes? But you couldn’t, you can’t delete it simply because you have deleted the 75th percentile or the rule wouldn’t work.

A. No, no, no, absolutely not.

Q. Yes.

A. But there were some words in there, interestingly, that we had included to deal with –

Q. To deal with changes to Overseer for the 75th percentile?

A. – the changes in nitr – yes, for the dairy sector pathways, it was like the 75th percentile, because it was particularly raised as an issue for that.

Q. Yes.

A. But we dealt with that separately now, which is why I took it out of there, but it's a, just for information.

Q. Yes.

A. But that defines the baseline. There's been some talk about: "What if you don't have the (inaudible 11:16:36) might have the information, it's longer than seven years ago", all that sort of thing. Well, my answer to that, I'm sorry, is try harder.

Q. Yes. Well, if you want to use the pathway, if that is what you are trying to do, then that is the requirement for it, isn't it? Otherwise, you are going into a discretionary activity, one assumes.

A. That's right, the alternative is available. Yeah, that's right, that's right, yes, that's right, and I think it's possible for the consent team to verify the, yeah, the veracity, you know, the truth of it.

Q. Yes. Now, you say in your evidence that you think that the revised use of the NRAT is, effectively, a low emitter threshold?

A. Filter.

Q. A filter, perhaps. I mean, in my mind, it still operates as a limit because if there is a past fail, effectively, you are either, if you reach the number, then you are a controlled activity, so you are down that. If you fail, you are into that. So, it still operates as a limit. Given the concerns that were expressed in that have been identified in your evidence about the fact that it is a relatively new tool and so on, can you just explain to me why you are satisfied that it can be used as a limit there but couldn't, perhaps, in a different way, or in the way that it was previously proposed?

A. Well, I think there's two sides to the answer that Professor Horne gave to the: "Oh, why have it? What does it do?", and that is it is dealing with a low-risk part of the bell curve, and we can be satisfied that what it would let through might equally have been captured, approximates Table 14.2.

Q. But that requires some confidence in the model, doesn't it?

A. It does require that basic level of confidence in the model, that's right, but if you accept that, then it does provide a pathway for those who aren't going to use, who don't have Overseer, and it allows it to be tested as well, yeah, in a low-risk sense.

Q. Yes, unless the model's wildly off?

A. Unless the model's wildly off.

Q. In which case, people are being identified as low risk that aren't.

A. Well, that's right. I am guided by the evidence on that. That is a risk, I accept that.

Q. I am just trying to understand from a planning point of view, really, why the risk is lessened in the way that it is being used now as opposed to the way that it was previously.

A. I think it's just the risk profile. If you accept the risk profile as low, as low as practicable, I think Professor Horne went as that far in his evidence, I think that's, allows it to be seen as parallel with the risk profile of Table 14.2. That's why, that's how I can rationalise it, yeah. I think the other, the difference is, Professor Horne's evidence is a quite a focus on the dairy but, of course, the CVG, we tend to forget about that, often, and I think that that's important for that sector.

1120

Q. Yes, so, for low-risk CVG, though? It won't help CVG that cannot fit into the low-risk category, can it?

A. Absolutely. No, no, that's right.

Q. So, higher-emitting CVG will still be required to use Overseer?

A. At least – that's right, that's right, to avail itself of the specified reduction. Yes, they'd have to do that.

Q. Yes, either which way.

A. I think the other element to the evidence that I have heard, and the response in the counsel reply provisions tries to give effect to, is that the sectors will engage better with a risk tool, particularly in CVG, so I think that's, well, I've tried to consider that.

Q. Yes. I think that is all from me, just let me check that through my margin notes and hope that we do not have to recall her or ask her for a seventh piece of…

A. Well, I thought it was the end of the line for me today, but I am happy to return if needed.

Q. Let me just check. You will have heard my discussion with Dr Drury yesterday around crop rotation and existing and new and, I mean, my understanding is that you were quite clear in your evidence about how you think the rule works, or the combination of rules work and the definitions work, such that, if you have land that has not previously used for commercial vegetable growing, then that does not constitute an existing part of an IFLU from your perspective. Am I clear understanding about that?

A. Yes, and it's not able to use rule 14.1, is the issue, yes.

Q. Yes, and so, as I understand it, your position is if you have an activity, a farm, farming activity that has some existing land that has been used for cropping and can be shown to have been used for cropping and fits the definition of existing, and some land that might be still within your, say, 20 hectares but has not shown to have been used previously for cropping activities, then you would apply. Now, I am not sure I understood this, you could apply in one consent for the new and the existing, and to have them progressed at the same time?

A. Yes, you could. Yes, yes, and the existing, that's right. That's right, and that's quite common, that's quite common for the consents that have been transacted to date, that there will be aspects. For example, there's some oddballs, but the rest of the activity might have been existing, but they've added a truck wash or some of the feature of it that brings in additional land, for example. One of the most common reasons for varying IFLU consents is because land has been added or subdivided away, but yes, so, and I, I could have been, I could have simply said I agree with Dr Drury about the definition, but I confronted the reality of this issue. It is an issue that needs to be addressed. I think we need to do a little bit more work on how much of a problem, exactly, it is in how the mosaic, I see the,

particularly around the Horowhenua growing area, it's a mosaic that shifts, and my expectation is there that will be history, yes.

Q. Yes, so, recognising that Dr Drury has read the provisions and interprets them differently, and, no doubt, will, if required, would present evidence in a consent hearing to say that they mean something different than what you say they mean. Are they alterations, are there amendments that might be made to clarify that, have you considered that?

1125

A. Yeah, I, I, I haven't, not in detail, but I think, that's why I say, the answer doesn't lie in the definitions of crop rotation. It lies in how the plan organises activity status for these two things and the existing and the new, because if one changes that too radically, you could pull the rug away from the intention of the One Plan, which was to capture new, explicitly. So, I think it lies there, somehow, and it, there was a solution that needs to be at the water management subzone kind of scale.

Q. Right.

A. Yeah, I think there is scope for doing that, but it's just, we're not there. We're not there yet, yeah.

Q. All right.

A. And I thin – just the other thing is that the consents that we just ran through, that description, is for activities that are land uses and associated discharges. So, they run with the land, and the council is obliged to understand where they are in the landscape. So, it's unavoidable to me that you come back to this geographically specific notion. It's not what I am advocating, necessarily. It's what I see in the rules, you can't avoid it.

Q. Yes, all right, thank you, that is a helpful explanation for me. Just in your paragraph 57 of your sixth statement, which is at 501.0300, you say there that, you refer to the issues with Overseer and absolute numbers, and you say this creates difficulties where Overseer-derived limits are used as a drafting gate in plan rules. I mean, isn't that exactly what it is being done here, still? I mean, I am not suggesting that there are necessarily great alternatives, but Overseer is being used to inform a Table 14.1 limit, Overseer is being used to inform a specified reduction pathway limit, and

they are absolute in the sense that, as I said before, it is either a pass or a fail. You are either a controlled activity and you are going to the left, or you do not meet it and you are off to a discretionary activity on the right. I mean, that is still the reality of the situation, isn't it?

A. Yes. It is, at the drafting gate stage. At the, "What do you include in your terms of consent?" is, I think, the key difference, and for compliance –

Q. Monitoring and…

A. – for compliance with a specified number, you have to specify the number.

Q. Yes.

A. And that's been the practice, and Horizons adopted that practice, because the criticism that they hadn't been. So, they've done that and, under my regime, you would be specifying, and it was interesting, there are questioning of Dr Jolly about it yesterday, what you would put in the, as a condition.

Q. Yes, I am going to get to that, probably, now that I am, worked my way to that point, yes.

A. Yes, so, that you would specify the commitments made to achieve the drafting gate, not specifying the percentage reduction, necessarily. That's, I think it's problematic.

Q. Yes, but I suppose my thinking about a drafting gate is which pathway are you going down, which, and so, it is being used as a drafting gate.

A. Yes, that's right. Yeah, you're relying on Overseer to do that, yes.

Q. But, from there, you are saying that the manner in which compliance is regulated, controlled, is on the basis of your nutrient management plan, not on the basis of achievement of an absolute number?

A. Yes, that's right. Of that number, that's right, and the evidence, I think it was agreed evidence of the farm experts is that Overseer, used in that on-farm, specific farm, relative change from One, it's more, it's better suited. It deals better with the uncertainty, yes.

Q. All right, that does, then, lead me. I suspect that counsel will have questions of re-examination as a result of this, and I do just have some more questions around that, the nutrient management plan and how that is used as a condition of consent. So, I'm wondering if we might just take

a morning tea adjournment, and then I'll finish with those further questions and then re-examination. All right, thank you.

COURT ADJOURNS: 11.30 AM

COURT RESUMES: 11.53 AM

QUESTIONS FROM THE COURT CONTINUES:

Q. All right, Mrs Foster, just the last thing that I wanted to go through was just the way in which conditions might work, and that discussion we had about the difference between conditioning to an absolute number in terms of the threshold, or conditioning to a set of requirements that has been accepted as getting you to the number. So I just wanted to work my way through the provisions in respect of that, and also to understand if there is any distinction between the way that a consent issued under Table 14, a consent issued under the SRP, or a consent issued under the NRAC would be conditioned differently, as the plan suggests they would be conditioned differently, so if you could just take me through that, that would be really useful. And perhaps bearing in mind that question about the nutrient management plan, or the environmental action plan, or the whole thing, like how that would work.

A. I think, perhaps I'll deal with that first.

Q. Yes.

A. I have, I perhaps have a slightly different answer from Dr Jolly on that point. And that is, as I said before, one of the common reasons why variations are applied for is, land comes in or goes out, and that descriptor is included in the front part of and, I think it goes to – a consent authority, I expect would prefer a condition that said, "In general accordance with the" –

Q. Nutrient management plan?

A. – "nutrient management plan." It embraces the wider and gives them more options for compliance. But, your point about: "What would you laminate and tell a farm manager to go and achieve?" That's valid.

Q. Right. But would you envisage simply a condition that says, “in general accordance with the nutrient management plan”, or would you envisage particular matters from the nutrient management plan being pulled out and replicated as conditions?

A. I don’t know that it changes the strength of that condition, to be honest with you. The “in general accordance” is, you will be aware, something consent authorities like to have – not in “strict accordance”, but in “general accordance”. And I think that allows for a consent authority to make decisions it has to make about whether something is straying from where it was supposed to me. And have a measure of perspective about something that’s actually contrary to what was proposed. So, that’s important, in my view. And that allows for, I think, minor, minor changes in practices. But the fundamental things that are on, for example, the list of things we’re going to change. And that might be maximum numbers, full stop. Where that’s prescribed, that should be, yeah, that gives them, gives the consent authority the ability to enforce against the things that the core things that go to discharges.

Q. Right.

A. And I don’t think there is a need to – you could do? And that would go to probably the issue of the implementation plan, and how you design cond – a template for application, which I think is helpful, to be honest. Given – it’s not a huge number, we’re not talking thousands. But we’re talking hundreds, and it would be efficient to have something standardised, I think. And you could regularlise that aspect as Dr Jolly has proposed and required people specify exactly. So that, I think creates the commitment. Doesn’t matter where it sits then.

Q. All right. And any, a distinction in terms of the (inaudible 11:57:46) at all?

A. No, I think the distinction really has been in the practice that the consents for, issued under Table 14.2 specify the consents specify the target.

Q. Yes

A. And that is translated into the, what I’ve seen of the decisions.

Q. Yes.

A. The decisions are that you will achieve this target, that’s right. The rules don’t say you have to do that.

Q. No.

A. They don't, no. So that's a practice issue, and I think you could resolve the issues that I've talked about by taking the same nutrient management approach specification of the measures to the Table 14.2 as well, in fairness.

Q. Yes. Do you think given some of the issues that seme to have best this plan and the issues that have brought us, you know, to here, I suppose, in terms of interpretation and in terms of finding ourselves in a situation with that, you know, planning block and loop, if you like, do you think it might be better if we didn't leave some of those matters to practice but set them out in the plan itself? In terms of you know, how things might be. I'm just trying to work my way through whether there is merit in that. There may not be.

A. We could do, you would do that yes. I particularly turn my mind to prescribing exactly what they would be. Because I've had confidence that the examples I've seen, when you break through all the fluff around the edges they do have fairly consistent prescriptions of what's required. And as you observed some of those are actions, to be done once.

Q. Yes.

A. Fence a stream, do something else, put in a culvert. And others are ongoing, perpetual management.

QUESTIONS FROM THE COURT: COMISSIONER HODGES CONTINUES

Q. Ms Foster, I'm just trying to understand what role Overseer will have under Table 14, under the Table 14 pathway through the life of the consent. Can you just – I'm sure it's there but I'd just like it in your words how that's intended to be used.

A. I think it has been used to date by specifying the target nutrient leaching estimate, and if there has been compliance it's been against that, so it's how it has been used. I don't know how the issue of updates has been resolved through that process. I genuinely don't know, but you could do that through, with using the reference files that I've got.

Q. Yes.

A. But that's, that would be if that's the drafting gate, then in a way you're kind of left with having to demonstrate ongoing compliance against that.

Q. So you have a periodic review, periodic rerun of the Overseer model to demonstrate compliance.

A. Yes, that's right, and at the m–, in the pre-Plan Change 2 conditions it was a requirement to submit an annual nutrient management plan which is essentially an Overseer budget.

Q. Yes.

A. Yes, and my criticism of that was that you know you could put the same information out and you will get the same response regardless of what's happening on the land.

Q. Yes. So what do the provisions require now?

A. Require that the consent detail the contents and review of the management plan, so.

Q. So there is not requirement to rerun Overseer at all?

A. No. no.

Q. Ooh, that doesn't seem to me to be…

A. Unless specified, well the requirement would be you have to be able to demonstrate your compliance at any point.

Q. I've never seen it done that way before. Okay, no that's fine.

A. I think that's where one is left if you have said, "I propose that this is what I'm going to farm to and I'm going to comply with that". That's the natural consequence of that, mmm.

Q. Yes but there are so many uncertainties there. And –

A. Well.

Q. Annual mon-, annual rerun of the Overseer model I think is probably too much but I feel uneasy about having no checks at all through a 30 year life of a plan that they're actually complying with what they said they would comply with.

A. Well, yes.

Q. I'd put it on the table as something I would want to see looked at.

A. No, there's an expectation that there would be reviews of nutrient management plans but just that that would be specified, not an–, the criticism of it through submission was the annual nature of it.

Q. Oh I can understand that.

A. And so that's why that was taken out so that the consent conditions would still as a platform from which to prescribe occasions for review and often those are any significant changes in practices or additional land brought in sorts of thing.

Q. I guess my concern is that we've had so many different views of what can be achieved with what different actions, that there is absolutely no way we can have confidence that there was some kind of check. And the figures that I'm seeing used, well in my mind a five yearly review is probably not unreasonable.

A. Mmm.

Q. Because it's not too onerous. But I just feel that we're taking a huge punt in something that we've had a lot of difficulty amongst the experts as to what can be achieved with individual GMPs, so I just put that out there for your consideration.

A. Yes, I think why, my view of that is moderated by if the application says if I do all of these things, run it through Overseer, this is the result I'll get. Now, if those are implemented and at five years you run those same actual mitigations through Overseer, whatever version of Overseer, you will get a comparable, the same result. So, so –

Q. I see what you're saying, yes.

A. Yes. So I think that the, the value of Overseer is in monitoring relative change where those practices have changed in some material way.

Q. Okay, yes.

A. That's why I think it is useful for there to be the ability to tailor that to a better, to write that into the consent rather than say –

Q. I'd missed the point that you're going to run Overseer to look at specific activities defined in the plan.

A. Yeah.

Q. Okay, no right. Okay.

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. I mean, none of it gets it around the fact that we still, we haven't found a way to monitor actual nitrogen leaching. That's our real issue, isn't it?

A. No. Yes, no it's...

Q. So if you put the numbers in the model, and the model says you are on track to reach your target, then there's a lot of confidence placed in that.

A. Within these bounds.

Q. That's right, if you do these things, and as you say you can run the model as many times as you like but if you're putting the same actions into the same model then it's going to give you the same answer. It's not going to tell you whether you're meeting it, it's simply going to tell you whether the model believes you're meeting it.

A. That's right.

QUESTIONS FROM THE COURT: COMISSIONER HODGES CONTINUES

Q. Yes, I can certainly accept that and I hadn't fully appreciated the full process, so thank you.

A. Mmm.

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. And I really was just trying to understand whether there was any distinction in the way… so for the, if you were to go down that NRAT path what is the, what's the conditionality on that consent?

A. I think it's the same, it's the prescription of measures that you are going to put in place to achieve that low risk.

Q. Yes. So is the trigger for rerunning the model whichever, or putting your numbers back through, is it, it must be a change?

A. A significant change.

Q. A significant change in the –

A. – that's right. Hard to define but –

Q. – in the nutrient management plan?

A. – that's what it should be.

Q. Yes.

A. Yeah, that's right.

QUESTIONS FROM THE COURT: COMISSIONER HODGES CONTINUES

Q. So how does that play with the general accordance idea? Because general accordance in my experience can, has a lot of wriggle room, if I can put it that way.

A. Yes it does, that's right.

Q. So if somebody's exercising a lot of wriggle room you might want to have the Overseer run again with what the wriggle room's now doing.

A. The, the thing that, something that contrast between say a pastoral dairy system and commercial vegetable – dairy is a very, relatively stable farming system and that is why there are variations in the people are expected to apply for variations. I don't think it should all be captured by this general accordance. If you are varying your risk profile then I think that should be captured by a variation which is interesting, because change of conditions

Q. So how would – that's right.

A. It's a discretionary activity but that's…

Q. So how would you put some limits around that then in terms of how far this general accordance point can go before you need to go into a variation situation?

A. That… I'm sure you could prescribe it. that is a fraught, that is fraught generally, but I think yes there needs to be some… if that –

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. Well, perhaps it depends on the way that you draft your nutrient management plan as well.

A. Yes.

Q. If you've built in some variation within your nutrient management plan you might not need the general accordance with; you might then be able to have strict accordance with.

A. That's right. Strict accordance with. And –

Q. That means if you then want to change your nutrient management plan, then you need to go through a variation process.

A. That's right. And it's something I often say to applicants or is, be careful what you wish for in how you frame your application.

Q. Yes.

A. You get the flexibility that you ask for.

Q. Yes.

A. So that's, that's –

Q. What's –

A. And in stable systems I think you can you can prescribe those ranges, you can anticipate what they are, and I think that there is work to be done with the sectors around how that is framed to try and not create that difficulty.

QUESTIONS FROM THE COURT: COMISSIONER HODGES CONTINUES

Q. Your Honour, there is an interesting issue here is does Overseer predict the outcomes from all of the GMPs that'll be used and I don't think it will but I don't know how you can sort of get over that.

A. I think according to Professor Horne, not all of them at the moment, no. That's interesting.

Q. Yes. Nothing about this is relatively straightforward, is it?

A. Wetlands and et cetera, I just – no, every time we turn around that presents additional challenges.

Q. Yes.

A. We can meet them.

1210

QUESTIONS FROM THE COURT: JUDGE SEMPLE CONTINUES

Q. All right, thank you. That's just helpful and sometimes it's a ra – you need to go down into the detail of what a consent might look like, in order to go back up and think about what planned provisions should look like, so that's helpful context for me, at least. Is there any other questions from the bench?

COMMISSIONER HODGES:

No thank you.

JUDGE SEMPLE:

No?

COMMISSIONER EDMONDS:

No, no.

RE-EXAMINATION: MS JOHNSTON

Q. Three follow-up questions, Mrs Foster, and you'll be free to go. I just want to start with discussion around good management practice, since you've referred to Professor Horne's explanation of the range of good management, best management, other options. Have you ever heard Professor Horne describe that as "a toolbox"?

A. Yes, and others have described it in the same terms, yes.

Q. Yes, and if I could take you to Professor Horne's evidence, volume 2, tab 6?

A. Number? 2-0-?

Q. 201, 0419 is the common bundle page number. The tab number is 201-0140.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Perhaps, yes. Page 8 of his statement?

Q. Yes, paragraph 39. And that's page 8. Does that paragraph refer to "a toolbox of options available to farmers?"

A. Yes, that's Professor Horne's explanation of the spectrum of farm management practices, yes.

Q. And does he give any reference there in terms of his view as to how they may be described?

A. He describes it as a "toolbox", and the need for flexibility to allow them to choose from those, that's how I read that paragraph.

Q. And is it your understanding that Professor Horne's approach was, regardless of how these were defined, there is an expectation that there is an understand – that practices will be adopted for N-leeching deductions?

A. Yes. From that whole spectrum in that toolbox, in my understanding.

Q. I just wanted to take you to a question you had around term, now, and I think this is a point of clarification, I wish to take you to your evidence, paragraph 148, this is your most recent evidence filed in May, common bundle number 501-0328.

A. I'll look at my version. 148…

Q. Paragraph 148. Page 47.

A. Yes.

Q. You had a question from the bench regarding when the limited duration would apply, and when it wouldn't. And you have confirmed your understanding that the usual framework for term would be applicable for table 14.2?

A. Yes.

Q. And you went on in response to a question to also say that was the case for discretionary activities. I'm just going to ask you to reflect on paragraph 148 and provide any additional comment.

A. Ah. Yeah, I was wrong about that.

Q. Well, I wasn't going to say that, Mrs Foster, but –

A. I'm harsh. I'm harsh. No, I have included, it is right, it is correct to say, I have included the maximum 10 year duration in policy 14-6, which applies to all exceptions. So that includes the discretionary activity. So apologies, I was wrong about that. And just to place that in the council reply provisions, there is a whole lot of considerations when you are thinking about whether to grant or decline, but on page 11 of the council reply provisions, if I go to that, in the bottom row, item C applies to applications generally, clause D applies to applications for exceptions that are to transition out. But C is for general ones, and limits the duration to a period not exceeding 10 year. Apologies.

1215

Q. I have one final question, and I wish to take you to your appendix 1 of your evidence, while you're there. It's 501.0339, and this relates to the discussion around the RPS, and you and I have traversed in questions around the framework that you've discussed. Can you just confirm your understanding that policy 5.8 is an overarching regional policy statement, that's, provision, that's how that works, is that how you see that?

A. Yes, it's in the RPS part of the One Plan.

Q. So, do you agree that it sets up a way that you regulate the activities in later parts of the plan?

A. Yes, that's its expressed purpose.

Q. And, if I take you to (ii), that says that "existing IFLU must be regulated to achieve the nitrogen leaching maximums, except where later provisions apply"?

A. That's right.

Q. And that refers to the regulatory framework that you and I have discussed?

A. Yes.

Q. And would you agree that later policies 14.5 and 14.6 set out how that framework works together?

A. Yes, it does. How you manage those exceptions, specified exceptions, yes.

Q. And so where existing IFLU aren't being managed in a way to meet CNLM, aren't being managed to regulate, I'll use those words, to meet the CNLM, PC 2 puts in other pathways for that to occur?

A. Yes.

Q. Thank you.

A. It did that, the publicly notified version of PC 2 included those exceptions, and policy 2 and 2(a), yes.

WITNESS EXCUSED

MS ONGLEY:

Ma'am, I file submissions on scope, and I realise that, together, these submissions seem long. I realise that you've also, probably, pre-read the scope submissions.

THE COURT:

Yes.

MS ONGLEY:

So, what I propose to do is go through these submissions that I have just handed up now, and then touch on a few issues with the scope submissions a bit more briefly.

THE COURT TO MS ONGLEY:

Q. That is fine, thank you.

A. So, I have a correction, firstly, to make, in that the list of acronyms I have. The provisions filed for Fish and Game, Ngāti Turanga and Mr Day on 2 February 2024 have, of course, been updated in the supplementary evidence of Mr Scott, and they form the Day v3 provisions. So, that should be corrected there, and Mr Scott's evidence is at CB 501.0061.

Q. So, your references, though, are to that updated version?

A. That's right.

Q. Yes, thank you.

MS ONGLEY READS OPENING SUBMISSIONS

Introduction

2. Ngāti Turanga is a hapū based at Paranui pa. Ngāti Turanga's rohe includes the lower reaches of the Manawatū and the estuary. Ngāti Turanga are members of te Rūnanga o Raukawa but as Mr Turoa set out, Ngāti Turanga are pan-tribal (they have other affiliations through whakapapa). Ngāti Turanga, and Ngāti Raukawa, are both independent and interdependent. In recent years Ngāti Turanga has worked with all Raukawa hapū of the Horowhenua to form a hapū entity Te Tūmatakahuki.

3. The Wellington Fish and Game Council (Fish & Game) is funded through income generated by licences sold to freshwater anglers and game bird hunters. In these proceedings, Fish & Game represents persons who live in or travel to the Manawatū-Whanganui to fish (or to hunt gamebirds).

4. Fish & Game has been involved with development of the One Plan for approximately 20 years in the exercise of its role to advocate for habitat quality. I set out there the participation of Fish & Game in the Environment and High Court proceedings, and I will be referring to the declaration decision as the Environment Court's decision in 2017, where Fish and Game was an applicant together with EDS for declarations from the Environment Court.

Position

5. The failure to implement the One Plan following the High Court's decision in 2013, the Declaration Decision of 2017, and the Beca/Ellis Gould opinion in 2018 illustrates one of the most significant enforcement hiatuses in Aotearoa/New Zealand.

6. Consenting ceased for applicants that could not meet Table 14.2 following the Declaration Decision in 2017. Following the Science Advisory Panel's Report and Government Response, consenting ceased even for those applicants that could meet Table 14.2. Mr Passey confirmed that to his knowledge, Council was not processing such consents now. That's on the transcript, and apologies, I haven't got the reference there, but I can follow that up. Ministry for the Environment advice said consent processing should continue - no legislative changes were made to the contrary.

7. Ngāti Turanga oppose any further degradation of their waterways and water bodies within their rohe. Ngāti Turanga's Notice of Appeal sought as primary relief that PC2 be refused except for a recalibration of this, I may have some of the letters confused, the

CMLN in Table 14.2, and that the transitional pathway to deintensification remain in in PC2-DV Policy 14.6(d)(ii).

8. Ngāti Turanga's appeal also sought that all subzones of the Coastal Manawatū surface water management zone (Mana_13) be added to One Plan Table 14.1 (WMSZ). Ngāti Turanga now accepts that relief is outside the scope of PC2 but refers to the treatment of the lower Manawatu as "the sump for all the intensive farming activities upstream".

9. Ngāti Turanga's appeal says that Plan Change 2 effectively sought to return to the status quo, in the sense of a regulatory environment that has led to degradation of Te Mana o Te Wai in the Manawatū River catchment. Ngāti Turanga says that PC2-DV puts the economic needs of the community above the health and well-being of freshwater ecosystems, contrary to Te Mana o Te Wai, the NPSFM 2020 and section 8. The appeal expresses concern that the Council Officers' section 32 analysis assessed the One Plan's "remaining unconsented IFLU adhering to Table 14.2", as unenforceable or impractical. We have moved on since then.

10. Fish & Game's Notice of Appeal sought rejection of the entirety of PC 2 except changes to Table 14.2 "Cumulative nitrogen leaching maximum by Land Use Capability Class" and expressed concerns over the use of the word "practicable" in the proposed discretionary pathway.

1225

11. These concerns remain, however Ngāti Turanga and Fish & Game now do not oppose the discretionary pathway as a default for those IFLU that cannot meet Table 14.2 beyond the criteria set out in Policy 14-6(b). And as you'll recall, they were of a very specific criteria, they say the Policy framework must provide clear guidance on the

circumstances in which consents should be granted, based primarily on the divergence from Table 14.2.

Now, when I say: the provisions they support are generally Day V3, Mr Scott is producing another version, and I believe Ms Wright is going to address you at the end of the day on the timing of producing that version, and it will take into account some of the comments that have been made, by or questions from the Court. And Mr Carlyon is inputting into that version in particular some provisions for Ngāti Turanga which will be highlighted in that version, relating to the colour and tikanga. And further, I just wanted to say in relation to that, diverging from the submissions, that Mr Scott's evidence at paragraph 3.18 says that a particular phrase had been removed from Policy 14-6 that stated: "That, for the exceptions, a trajectory towards meeting the CNLM within a reasonable timeframe needed to be demonstrated." Now, that had been removed because he was aware that may create the situation of a de-facto prohibited activity status for those that couldn't meet the CNLMs, even after a long period of time. And he said: "In removing the wording, my expectation is that the remaining provisions are sufficiently directive, that decision makers understand that consent would be very unlikely to be granted where projected leeching rates remain well above the CNLMs."

Obviously, the wording that would require an applicant to ultimately meet CNLMs, even within a longer period of time, would be the most certain wording to put forward in the provisions, and further to the Court's questioning this morning, in a footnote – just referring back to footnote 7 of the submissions, the Beca and Ellis Gould opinion recommended that the pathway for exceptions to CNLMs should talk about appropriate timeframes for achieving where there would be large changes to management practices and/or high levels of investment for activities, in order to achieve the CNLM. So, in terms of providing discretionary pathway criteria, that would be one option for the Court, and that has got that bullet point two of footnote 7, that was the original opinion that the Minister Parker, that kicked off the whole of this planned change two process.

12. Given the forthcoming Oranga Wai plan change, consents that exceed the Table 14-2 limits should be short-term.

13. And Ngāti Turanga and Fish & Game oppose the alternative controlled activity pathways.

14. While ostensibly grappling with issues around Overseer, the evidence for the Council and supporting parties raises issues of fairness with the One Plan's natural capital approach. Technical issues of implementability due to the use of the Overseer model, must be kept separate from various opinions on the validity of the natural capital approach, because in my submission, relitigating CNLMs is not an issue within the scope of PC 2. So that's tied back to the scope provisions. But it is within the remit of the Court to look at the technical ability to administer Table 14.2.

1230

15. On the merits, and I'll, this sets out what I'll remain to discuss in these submissions, Fish and Game and Ngāti Tūranga say controlled activities status, the SRPs and the NRAT would:
    a. first, fail to make high-level policy; and
    b. secondly, create unfairness for those that have organised their affairs on the basis of CNLMs (Table 14.2) and sent confusing signals to farmers and growers in advance of Oranga Wai (LUC/natural capital approach versus hybrid grandparenting).

Changes since the decision in *Day*

16. It is relevant to consider changes since the decision in *Day* in 2012-2013. Matters that have changed since the Environment and High Court's decision includes factoral matters, government policy settings, including the National Policy Statement for Freshwater Management 2020, and Environment Court jurisprudence (including caselaw RJ Davidson, King Salmon, East-West link and cases the subject of Counsel for the Council's Memorandum filed 31 May 2024). I've noted here, of course, that it is still moving, because we

have, in addition to *RJ Davidson* and *King Salmon,* now the *East-West link* case, and the cases that Ms Johnston has alerted the Court to, I should note that leave has, apparently, been granted for both of those cases to appeal to the Court of Appeal.

17. Factual matters include the issuing of a number of restricted discretionary activity (RDA) consents outside the One Plan's policy (refer below) and that the 10- and 20-year targets are now more pressing.

18. The 'Issue' has not changed – it remains the case that the reductions in soluble inorganic nitrogen (SIN) required to achieve One Plan targets are substantial in the targeted catchments. Now, I can leave the Court to read the summary of the evidence I've provided there in paragraphs (a) and (b).
    a. The evidence of Dr Snelder, along with Dr Cox, is that the majority of sites in the WMSZ fail to meet the SIN target in Schedule E.
    b. Dr Snelder shows predicted nitrogen load reductions required to achieve the One Plans soluble inorganic nitrogen (SIN) target for the 36 model assessment points. Although this is calculated from a (predicted) pre-regulation scenario (of 2012) it estimates reductions required to meet the SIN target range from 0% to 93% reductions. Required reduction for SIN is greater than 50% for the majority of sites. Pictorial representation, Exhibit D ('Have your say' page on Council Website) shows red zones covering a large part of the map.

19. Other than Policy 5.8, higher level policy in the One Plan is not proposed to be changed by PC2, and no party has challenged the validity of that policy.

Higher level policy

20. Both the NPSFM 2020 and the RPS policy in the One Plan, recognise that cumulative effects management requires managing

to limits. The regime based on Table 14-2 limits better gives effect to the higher-level policy in the One Plan and the NPSFM 2020. The CNLM are limits.

21. Dr Mackay will outline that the CNLM's were back-calculated from the Schedule E targets. The Operative One Plan limits for nitrogen leaching from IFLU in Table 14.2 gradually reduce over time. When deciding that Table 14.2 CNLMs met the requirements of the RPS, the Environment Court (upheld by the High Court) took a longer-term view and found the approach within Table 14.2 provided a credible journey that went beyond the duration of one planning cycle.

22. The Environment Court never accepted Table 14.2 as the preferred approach on the basis of water quality modelling alone. Other factors were relevant - the 'hallmarks' of the regime (which could also be referred to as 'fitness for purpose' factors), were outlined by the then Regional Council as:

    a. transferability – the ability to apply the regime to other water management zones where trends for non-point source contributions justified regulatory intervention;
    b. scalability – the ability to apply the regime over a wider range of land uses contributing to poor water quality as required;
    c. flexibility – allowing landowners to make decisions on resource use rather than being tied to existing patterns of activity;
    d. output-based – focused on the effect and contaminant output of concern with individual farmers deciding how to achieve that at an operational level;
    e. efficient – recognise the differences in finite soil resources and their relative productive efficiencies; and
    f. measurable – the mechanism had to be measurable through the application of current technology such as Overseer and enable calculation of the consequential outcomes of the regime for surface water quality.

23. Table 14.2 of the One Plan provided for steps of 1, 5, 10 and 20 years on a journey – with no firm timeframe for achieving the Schedule E water quality targets but an expectation the natural capital or LUC approach could be rolled out to other catchments and land uses as a credible way to achieve the targets in the future. It was intended the approach could extend beyond a 20-year horizon, beyond IFLU, and beyond the targeted catchments. The longer period of time to make change under the trajectory in Table 14.2, which was 20 years, was seen as advantageous for farmers, and in the footnote there, footnote 31, it refers to investment decisions that farmers would need to make over a longer timeframe.

24. It was on this basis that the modelling of water quality outcomes was not the only consideration, although modelling did still support the approach.

1235

25. In summary the One Plan approach provided signals to farmers and growers - a credible proposal that could be rolled out to more than just IFLU and include further reductions in the future (after the 10 year planning cycle of a regional plan/RPS) and the Environment and High Courts held that the Table 14-2 approach would meet the higher-level policy of the One Plan (unaltered by PC 233). Apologies for the length of footnotes, your Honour.

26. The One Plan's higher level policy does not provide for general improvement but contains a specific target for that improvement (in other words, the enhancement direction in the One Plan is not 'open-ended'):

    a. Issue 5-135 and Objective 5-1 (the Values in Schedule B of the One Plan are to be recognised and provided for).

    b Objective 5-2 includes "(a)(ii) water quality is enhanced in those rivers and lakes where the existing water quality is not at a level sufficient to support the Values in Schedule B".

c. Setting of the level of enhancement required:

i. Schedule E - targets relating to the Schedule B Values, which are set for each WMSZ.

ii. Policy 5-2 “the water quality targets in Schedule E must be used to inform the management of surface water quality in the manner set out in Policies 5-3, 5-4 and 5-5”.

iii. Policy 5-4 - enhancement where water quality targets (Schedule E) are not met:

“in order to meet:

a. the water quality target for the Water Management Zone in Schedule E, and/or

b. the relevant Schedule B Values and management objectives that the water quality target is designed to safeguard.

27. Neither the SRPs nor the NRAT approaches would give effect to this higher level policy.

28. SRPs: Dr’s Cox and Snelder provide a cumulative effects assessment of SRPs, for those farms unconsented, to the 20 year horizon. SRP’s would fail to achieve Schedule E targets/Schedule B values in the longer term – because we know more than 20% (or 35% reductions for CVP) reductions are going to be needed in most WMSZ. The SRPs, a ‘single figure’ approach, raise the question, 'then what'?

29. The Council’s response is that management of IFLU’s even under Table 14-2 is not going to “achieve” the Schedule E targets either. That is true but ignores the reasoning of the Environment and High Courts set out (that the CNLM’s provide a trajectory and signal an approach for the future).

30. Even if transportability and scaleability criteria were applied to GMPs (i.e. to apply GMPs across more catchments or land uses), the

Regional Council's evidence does not show GMPs/BMP's can ever achieve the required reductions for nitrogen. Dr Daly could not set out how GMP's would achieve the objectives in the longer term, or what the longer-term plan was under Council' approach. And I did question Professor Horne about that, I'm not sure if entirely agreed with me, but that's the subject of evidence.

31. NRAT: The NRAT is a tool that does not purport to estimate N loss, and which therefore represents a significant change in approach. The NRAT is not capable of certain measurement toward a target.

32. The following statement does not reflect higher-level policy:
"… significant reduction in the quantities of N leached from the root zone of dairy farms in the target catchments, while at the same time allowing farmers to run profitable businesses."

33. Even under this 'general improvement' goal, there is insufficient evidence SRP's or the NRAT would even improve water quality from the current time within the targeted WMSZ.

34. As stated by Dr Parlato "the estimated reduction in nitrogen loss and water quality improvements are unlikely to be a realistic reflection of changes in nitrogen loss from the current situation, should the risk assessment tool be implemented", because the baseline for the analysis is 2012 - so the evidence does not inform the Court whether improvements have already occurred and Dr Snelder acknowledges that improvements estimated using a 2012 baseline could be different if a present day baseline was used.

35. Dr le Miere's analysis considered a Fonterra dataset based on a 2021/22 season and the DairyNZ dataset for 2017, but contained flaws and indicated that for some catchments very little practice change will be required (on the basis of the NRAT). His analysis does not acknowledge that with dual pathways, some farms may

prefer to be consented under Table 14-1 (may have more permissive requirements e.g. LUC 1 and 2). That is, Dr le Miere fails to acknowledge the SRP's placed alongside Table 14-2, would provide the 'worst of both worlds' (for water quality). Unconsented farmers/growers would be allowed to leach up to Table 14-2 - as always intended by the One Plan but those in the higher LUC classes would be able to rely on the SRPs. Therefore the greater allowable N-loss for lower LUC classes would not be balanced by the expected reductions in the higher LUC classes.

1240

36. Professor Horne, whose opinion Ms Foster relied on, was influenced by the 'sweet spot' in Dr Snelder's Table. That had shown no real difference in water quality benefits above a 20% SRP. This is unsurprising that a 3kg per hectare per year reduction between each of Proposed Pathways had a similar number of points at which the SIN targets are achieved at 20 years. And I've set out why that result wasn't unexpected, and that summarises essentially the questions put to Dr Snelder yesterday.

37. The 20% SRP proposed for pastoral farms is not justified by any 'sweet spot'. The crux of Professor Horne's evidence was that he did not support the allocation of resources regime in Table 14.2 because he considered if unfair, as it would render farms unprofitable.

38. It is also argued that the 20% rather than 10% requested by submitters, brings farmers closer to Table 14.2. If that is the justification, why not use Table 14.2?

And if I can diverge again from the submissions and say that the real reason that there are alternative options to 14.2 is not to bring people closer to 14.2; it's because 14.2 isn't seen as sufficiently permissive for some farms. Which is a fairness issue and witnesses can comment on a fairness issue certainly if it's within their area of expertise, and Ms Foster also provided some comment on

equity. But this is a huge issue for the region and so it raises the question: whose sense of fairness should we be looking at? Should we be looking at Ms Foster and Professor Horne's sense of fairness, or should this be going out to the community again to consider whether Table 14.2 is unfair?

MS ONGLEY CONTINUES READING OPENING SUBMISSIONS

40. In addition to being consistent with higher level policy, the Operative One Plan's limits-based approach also has advantages to farmers and growers. And Dr Dewes characterises the risk of a 'single figure' approach (the SRP or the NRAT) as:

> "Farmers will be encouraged to take the simple, but coarse, option to continue business as usual in the face of more rapid change and potential future threats to their business."

41. If more transformative measures are going to be required to provide for life-supporting capacity in the longer term, the SRPs and the NRAT do have the risk of creating stranded capital.

Policy 5-8.

42. Council relies heavily on the most farms reference in Policy 5-8(1)(a) to support alternative approaches to CNLMs, or wider exceptions to CNLMs. As Dr Dewes outlines, Policy 5-8 does not invite the forensic analysis, because what GMPs are involves subjectivity. Professor Horne himself said "… there is no nationally consistent definition of GMP et cetera." What constitutes a GMP and BMP occupied a lot of discussion at the first instance hearing.

In the next paragraph I'm submitting that the percentages are in any event 'within ballpark' of "most and as both Dr Parlato and Professor Horne's evidence sets out, if you include the CVG statistics that brings the percentages down. I understand that if the only dairy is included the percentage that can achieve the CNLs is 65%, but Dr Parlato will speak to that. And in the original One Plan decision CVG was not taken into account in some of the evidence

that was relied on at – and this is adding to the submission here – at paragraphs 5-167 to 5-174 of the interim decision discuss this issue.

MS ONGLEY CONTINUES READING OPENING SUBMISSIONS

44. So as in earlier submissions, and this is referring the scope submission, if the Court finds the CNLMs do not achieve Policy 5-8(1)(a), the response would be to substantively alter the CNLM's, in my submission, not completely alter the methodology, because that's the function of Policy 5-8 of the One Plan, as notified in PC 2.

Equity.

45. Council estimates that there are approximately 235 IFLU activities currently operating in the Region, yet to be consented

46. And Ms Foster provided a list of consents granted for IFLU. The data records 237 consents have been issued for existing and new IFLU since the One Plan became operative. Only 60 of these consents granted were controlled activities compliant with Table 14-2, so it must be assumed then that 177 current consents don't comply with Table 14-2. Now I've said in the next sentence that the majority of consents that do not meet Table 14-2 were issued in the period between the One Plan becoming operative and the Declarations, but Ms Foster said she hadn't done that analysis, so I will delete that sentence please. It's probably still a safe assumption, but…

47. So, as stated by Mr Carlyon, a full review of the existing consents granted on an improper basis should be undertaken by Council, so that all IFLU's be considered on an equal footing, but the Council has provided no indication it intends to do this. And so this does raises complexity around the Court's consideration of fairness here.

The footnote 64 in this submission I discuss that the C granted two applications on the 22nd of March 2017, one day after the Environment Court's 2017 Declaration that did not comply with the Declarations. And so those have been

given exhibit numbers N2 and N3. Now they do provide a good example of in my submission of consents granted according to a process that the council undertook prior to the Declaration decision which was found to be illegal under the Declarations.

Ms Johnston has advised me that the reasons these consents were granted after the date of the Declaration decision was because the Council had not received the Declarations due to a firewall issue or some such, with, so I think it is still useful to have those consent examples before the Court and they show that provided a consent applicant was providing some trajectory and in the first example it was a 1% reduction they were provided with consents, and Table 14.2 was said to be no longer applicable, and of course was the subject of the Declarations. So those were examples there. 47. As stated by Mr" – oh, I've done that one sorry.

1250

MS ONGLEY CONTINUES OPENING SUBMISSIONS

48. Ngāti Turanga and Fish & Game say it would be perverse for inequities caused by illegal consenting to be a reason to return to a regime based upon reasonably practicable farming practices because that would be to condone administrative failure.

49. The consent holders that should be front of mind are those that have complied with Table 14.2, in some cases no doubt at considerable expense. Ngāti Turanga and Fish & Game's position provides a consistent approach for these consent holders yet provides a workable pathway for other applicants.

50. Now, Ms Foster's proposed subclause (a) in Rule 14-1, which your Honour has been questioning about to prevent farmers or growers from leaching up to the N-loss entitlement in Table 14.2, those consent holders were never advised they would be capped at their consented levels, but Ms Foster has now indicated that was not her

intention and that's in the recent planning JWS, because that's, of course, a other fairness issue here.

Implementability – Overseer

51. Fish & Game participated in a process designed to look at alternatives to Overseer, *without prejudice* to its primary position (and without Fish & Game/Ngāti Turanga's expert involved at initial sessions). The direction to the farms system/NRAT experts for conferencing was to *assume* another tool needs to be developed alternative to Overseer. Following the mediation on 15 March 2023, Fish & Game outlined to Council a number of questions that it still had on the NRAT. Fish & Game was aware that MfE was preparing to roll out a Risk Index Tool (**RIT**), for use in the NPSFM-compliant plan changes. The Ministry for Primary Industries Overseer Redevelopment Programme Report Technical Paper No: 2023/1272 was then released, providing more confidence in the use of Overseer. In any event, the MfE advice is not to 'throw out the baby with the bathwater'. And in the footnote there I've referred to excerpts from the April 2024 update to that advice.

52. In *Day,* the Environment Court recognised that there was some uncertainty with Overseer modelling and therefore rejected permitted activity status in favour of controlled activity status for those farms that met Table 14-2.

53. Fish & Game and Ngāti Turanga say the distinction between controlled and discretionary activity status is not the use of Overseer as an "absolute number". No modelled number can ever be verified as "absolute" and of course, that's the famous quote all models are wrong and some are less wrong. Yet modelled numbers are used in plan provisions, acknowledging there are trade-offs between certainty and ability to manage an ecosystem or resource and Dr Tavernat in his will say statement talked about that trade off. I've been trying to think of other areas of planning where modelled

numbers are used, even though it's understood that they can't be absolutely verified and this perhaps one of the most difficult areas in planning where that this issue arises. But it does arise in other areas, for example with point source discharges to water and air where an applicant must model whether they are going to achieve threshold conditions for contaminants including for example concentration conditions. As your Honour mentioned earlier though with those sorts of applications, you can monitor later to see whether it's complied with, so it's acknowledged that this is one of the more difficult areas where (inaudible 12:54:30). The planning provisions in Day V3 enable the number to be verified against other tools under a multiple evidence approach and that's the proposed insert in 14.6, it's 14.6(b)(3) to use other models. The planning provisions in the 'multiple evidence' approach recommended by the Ministry has been misinterpreted by the council. A multi-evidence approach does not mean a raft of different tools with different purposes, that an applicant can choose from depending on what is most suitable or lenient for their enterprise. And in some cases diverging again the applicant may not be able to use the SRPs because they don't have records, so that may be another reason that an applicant may choose one or other of the three avenues suggested by council.

1255

54. The NRAT is primarily promoted by Council to bring farmers and growers on board, foster community buy-in and get things back on track with implementation and enforcement of the One Plan. The expert that actually having expertise in this field, Ms Collins, provided limited assistance and that's because she couldn't answer the question whether farmers required certainty of outcome or certainty of the ability to apply for a consent.

55. The NRAT tools are not peer reviewed. Dr Dewes sets out the advantages of Overseer over the NRAT. In addition to it being an N-loss measuring tool and providing incentives for edge-of-field mitigations, Overseer provides for robust data entry and this is highly

uncertain for the NRAT because the data input portal and audit processes are not before the Court. And there are also other drivers at play including in relation to NZ's trading partners (Dewes).

56. The NRAT tool could be used to support analysis in a Nutrient Management Plan or, Farm Environment Plans i.e. another decision support tool to help formulate the basis for FEP and conditions in a discretionary activity application. There is nothing to prevent 'scenario testing' tools being used by an applicant alongside Overseer, in a discretionary consent application. And the planners have now largely agreed on a framework where Overseer updates can be addressed.

Implementability – Catchment Accounting

58. Absolute certainty within a fully discretionary pathway is not possible because section 104 requires an assessment of actual and potential effects on the environment. This involves assessment against Schedule B values. So without catchment accounting in place, uncertainty and cost inevitably arise - assessment of cumulative adverse effects is difficult. Now members of the Court, the discussion yesterday with Ms Foster appeared to be along the lines of Table 14.2 was already undermined by PC2 as notified because the discretionary pathway was so loose. So I'm not sure if my friend is going to make a submission along these lines, but if the argument is that when PC2 was notified the discretionary pathway was so loose anyway, in my submission and although Fish & Game made a submission that it was loose, it's entirely different from controlled because under discretionary an applicant would have to consider cumulative effects under section 104 of the Act. So that provides a significant difference and it's not easy. So I'm not sure if Ms Johnston's going to argue that, but I'm just making that submission in case so to speak.

59. The lack of catchment accounting noted by the Court in the Declaration Decision in 2017 and the Beca Ellis Gould opinion continues. Mr Holdaway and others' concerns about the cost of discretionary consenting therefore has some validity. The Resource Management (Freshwater Farm Plans) Regulations 2023 do provide assistance - these Regulations provide for information to be made publicly available by regional councils.

60. Implications of a lack of catchment accounting should be mitigated through Council completing that work, not by a guarantee of consents for certain percentage reductions. That is, Council should continue its work on robust catchment accounting, to assist those that seek to exceed the CNLM limits to make a cumulative effects assessment.

1300

Workable Pathway Framing

61. Fish & Game and Ngāti Turanga's position is that the so called 'workable pathway' should be a (full or restricted) discretionary pathway and in fact that may be a full or a restricted discretionary, it's a full discretionary pathway in PC2.

62. In the Day case, for the RDA rule for consents that did not meet CNLMs the Environment Court preferred as the matters over which discretion is reserved "compliance with nitrogen leaching maximums specified in Table 13-2" (now 14-2) over the Council's proposed version that only had reservation over the preparation of a nutrient management plan and the implementation of reasonably practicable farm management practices. Basing the RDA criteria on exceedance of Table 14.2 limits better reflects the limits-based approach to managing cumulative adverse effects, and it reduced uncertainty and it is submitted that that remains the case.

63. The 'workable pathway' should not mean all unconsented IFLU in the targeted WNSZ obtain consent. The fact that some farms would

find it difficult to obtain consent is an outcome anticipated by Policy 5-8 of the One Plan. If water quality targets are to be achieved in the future it is inevitable that there will be some losers.

64. Ms Foster seeks to frame exceptions to CNLM limits with certainty but the only way to frame exceptions to limits with any certainty, is to create a second-tier limit. This has the danger of undermining the first-tier limit (CNLMs). It also risks creating expectations that are inconsistent with ecosystem health requirements (i.e. by codifying expected reductions in discretionary Policy 14-6, on the basis of a 'single figure'). Now having said that, the Davey 3 provisions do provide in the policy framework a criteria where you have regard to whether the CVG applicants have made a 35% reduction. So the planners have taken into account the evidence from Horticulture New Zealand on the difficulties with CVG and they have placed that single figure approach, if I can call it that, in the discretionary policy framework for the exceptions to the CNLMs.

MS ONGLEY ADDRESSES THE COURT – LUNCH BREAK (13:03:01)

COURT ADJOURNS: 1.03 PM

COURT RESUMES: 2.18 PM

THE COURT: JUDGE SEMPLE

Thank you Ms Ongley, I think we were up to paragraph 65?

MS ONGLEY:

Thank you Ma'am. Now, we may have moved on somewhat in the discussion about the consent conditions. The concern is expressed at paragraph 66, where there is a concern about using an NMP rather than an Overseer number in contemp conditions, because on face value, this approach appears similar to the one that the Court declared was improper in the 2017 Declaration Decision, where an Advice Note had been included. And so I won't read that paragraph, but obviously we are now grappling with the issue, because we can't have a condition that says "Comply with the Nutrient Management Plan" that may change from time to time, because we have that, and it was declared not to be proper.

So, I do wish to say that in the planning witness conferencing – and this is in the bundle at 204-2452 for the record – that Mr Carlyon raised the issue of what he called "implementation", and I'll read from that, he said he agrees that Councils are required to do what the law requires them, however his opinions implement either clear benefits associated with a concluded implementation plan. And so this issue that the Court has raised is a very important one, and Fish & Game, at least, would be interested working to include provisions in the plan that make this clear. So, encouraging those matters to be set out in the plan. It is noted – and this isn't in the submissions either, but – this issue did come up in the *Foxton* decision, which was a discharge of sewage to land for the purpose of the (inaudible 14:20:40) operation, so the IFLU conditions came in, and in that decision – I don't know if Commissioner Hodges remembers it, but you wrote it – the consent commissions in that decision did include a stock equivalent standard, so it was very much facing conditions on consent that had the input controls, because by that time, it was recognised it was a bit tricky to base Overseer numbers on the consent. There is case for this in the *Balfield* case about how you can use reference files, yes, and I recall Commissioner

Edmonds alerted us to this in 2017 or ’16 when we had the declaration case, and so that is still authoritative about how you can use reference files to update your Overseer number and consent commissions. I haven’t covered all of this in submissions.

And then, the other part of the picture is the NMP guidance which, although it says that you should use a hybrid approach, which I first thought meant input controls plus an Overseer number. Then it goes on to say that you don’t use the Overseer number, “You should not write absolute “Overseer” FM output numbers into consent conditions.” So, that guidance is slightly ambiguous. But implementation is a very important part of this package, and I mean, arguably it is not directly before the Court, but the Court will be wanting to go and ensure that any decision it makes is actually implemented, and implementable.

THE COURT: JUDGE SEMPLE

Implementable, I think, is the – yes, yes.

MS ONGLEY CONTINUES READING OPENING SUBMISSIONS

So, that’s the section on consent conditions.

Horticulture NZ

68. Horticulture NZ says Overseer is not fit for purpose but did not appeal the decisions version. Other than criteria for Policy 14-6 now agreed by the planners, Horticulture NZ seeks to use PC 2 to advance matters appropriately dealt with under Oranga Wai, where the importance of vegetables for the health needs of people will be considered. So even if the Court agrees that it is critical that PC 2 enables crop rotation to be practiced, the definitions of existing and new IFLU, in my submission, are outside the scope of PC 2, and especially going with Ngāti Turanga support Council.

Now, I had a look again at the *Day* decision because this was raised in 2012, although I wasn’t representing the Minister of Conservation in that part of the case, this issue is dealt within paragraphs 5-80 to 5-83 of the *Day* interim

decision. And those paragraphs would support Ms Foster's interpretation that citations can't occur on new land parcels without consent for that, as a new IFLU.

THE COURT: JUDGE SEMPLE

Thank you.

MS ONGLEY CONTINUES READING OPENING SUBMISSIONS

Term of Consents

70. Ten year consent terms don't resolve the issues raised with the SRPs and the NRAT controlled consenting pathways. T
    a. The so-called 'interim fix' will have longer term implications, even with 10-year consent terms. The 'interim fix' argument may have some validity if PC 2 were to operate in a vacuum, or as a greenfields proposal. It sits within an operative plan that has, as its *raison d'etre*, signals to farmers and growers for a credible long-term allocative approach. Therefore PC 2 has long-term implications.
    b. Other than proposing limited terms of 10 years, there are no provisions in Council's reply provisions that would signal further reductions (e.g. beyond 20% for pastoral farms) into the future. Under the Act, the value of existing investment remains a relevant factor when determining consent "renewals".

71. The 10-year maximum consent term is sought by Ngāti Turanga and Fish & Game for the exceptions to the CNLMs (under the robust discretionary pathway that they agree to). Now, I realise that the provisions for that pathway are to still to be finalised and put before the Court.

Ngāti Turanga

72. Mr Turoa's evidence spoke of the influence of vested interests in the policy process and "regulatory capture":
    a. noting the Court's decisions in 2012 and then in 2017;
    b. his surprise to see Dr Le Miere, a previous witness for Federated Farmers, called by the Council (rather than hapu or iwi witnesses); and
    c. he said: "It seems like the Regional Council witnesses speak a lot about uncertainty, in relation to securing the right to pollute for farmers, there is nothing about addressing the uncertainty for iwi/hapū and the path needed to restore our awa".

73. Ngāti Turanga continue to say that the pre-notification process undertaken by Council failed to recognise Ngāti Turanga as Treaty partners. As Mr Turoa stated: "… it is clear from the evidence that the formal proposal on which we could produce critical responses was provided to us one week prior to the Council decision to notify plan change 2 and the only opportunity to influence it was going to be at an administrative editing level only".

74. Dr Daly's response included that a workshop occurred on 15 May 2019 with 32 iwi/hapū participants and observers. This consultation occurred with Ngāti Raukawa – Mr Turoa's evidence was that consultation with Ngāti Raukawa did not address consultation with Ngāti Turanga. Dr Daly now accepts this as a learning. At the workshop, Ngāti Raukawa expressed discomfort with the draft provisions. Dr Daly could not say how this feedback was responded to, and to be fair to her, she wasn't involved at that time. But her evidence does shows that by 18 June 2019, wording for Table 14.2 exceptions had loosened further, referring simply to what was "feasible" and "practicable" and with more emphasis on good management practices. So, that did not respond to concerns expressed in consultation.

75. The importance of adequate consultation generally has been emphasised in the Court of Appeal's recent decision on the specified vegetable exemptions in the NPSFM 2020 (in which Ngāti Turanga were involved alongside Ngāti Raukawa). There has been no in-depth discussions with, or work alongside, Ngāti Turanga, and I should say, recent discussions have occurred between Mr Turoa and Dr Daly that hold promise for Oranga Wai.

This issue relates, also, to the issue on scope, which I will turn to shortly, but just in relation to the hapu and iwi consultation, you would have seen that these submissions on scope, which Ngāti Turanga adopt, because they were made for Wellington Fish and Game, iwi and hapu were told that PC2 was technical and discreet, that's at paragraph 8, and at no time was the word "allocation" mentioned in consultation on PC2 in terms of what the PC2 proposed and, in my submissions on scope, I am saying, paragraph 29, "allocation of similar to capacity for existing farms and new entrants is a matter of upmost interest to Māori". So, in my submission, that's quite a fundamental matter that goes to the scope point. So, I'll return to paragraph 76.

76. Ngāti Turanga and Fish & Game are not "[p]ausing PC2 to await the emergence of the perfect tool". These parties are taking a pragmatic approach and agree to a wider discretionary pathway (beyond the specified exceptions beyond, currently set out in Policy 14.6(b)).

77. Overseer can be used, unless and until the Council formulates another approach through proper process.

78. For completeness, Fish & Game and Ngāti Turanga would oppose a section 293 process for the purposes of the SRP's or the NRAT because Oranga Wai consultation is occurring and a section 293

process would undermine that. They adopt the submissions of the Royal Forest and Bird Protection Society, who are going to address you on the appropriate use of section 293 of the Act.

So, I'll attempt to be brief with the second set of submissions, which are the submissions on scope. Now, the first section repeats. The scope submissions are really, that were undertaken on the first day of the hearing, relating to the NRAT. The position remains that parties consider that's outside scope. Paragraph 7, it's acknowledged PC2 is not a "surgical plan change", and this phrase was used initially when the plan change was just going to be to recalibrate Table 14.2. So, it's acknowledged it does more than that, but it still seeks to change the status quo in a very limited way.

Now, at paragraph 11, I submit, this is quite an important part of the section 32 report, because it sets out what PC2 was aimed at doing, and it's got three items, then: one, updating the CNLM; two, reinforcing GMPs; and three, providing a workable pathway. Now, I go on in these submissions to say that the effect of including SRPs as a controlled pathway would be for item 2 in the list, the GMPs, to completely subsume – and this is actually a correction at, sorry, paragraph 15 – but it would to completely subsume item 1. Sorry, paragraph 15 should say "subsume item 1."

So, effectively, the GMPs' part of it has morphed to such an extent that the Table 14.2 is recalibrated but becomes ineffectual, and I can elaborate on that slightly by turning to, and I know I'm jumping around, paragraph 21. This is quote from the *Day* decision which sets out how the Environment Court considered Table 14.2 formed a limits-based regime, and it says, when we refer to limits, the word here is used as **"**indicating threshold limits for a controlled activity. Given the restrictive discretionary default category allows consideration of greater leaching maxima, and we recognise the threshold limits are the desired lower levels, with that more favourable consent status set to encourage their adoption."

So, in my submission, you could call it an “incentive space regime”, because they were soft limits. You could exceed the limits, and if you conceptualise the limits as an incentive space regime, if you put SRPs, or the NRAT, alongside those limits, there is no incentive to comply with those limits, apart from the term issue. So, my submission is that that undermines the regime to such an extent that Table 14.2 becomes ineffectual.

1435

And I also submit that placing an exception alongside the main event in the controlled activity pathway means that it’s not an exception, it’s an alternative which I, we’ve discussed this morning. The Court discussed that with Ms Foster this morning.

Now, one of the issues that I’ve outlined in these submissions is also that the council planning witnesses acknowledged that PC 2 does not allow change to the fundamental approach but there seemed to be a real misunderstanding by council witnesses as to what the fundamental approach of the One Plan actually was, and that’s illustrated in Professor Horne’s evidence when he talks about the One Plan approach being based around GMPs. I’ve set out an appendix to the submission that the One Plan decision explicitly rejected the Council-level decision which would have promoted GMPs and a reasonably practical approach. So the One Plan’s decision, the One Plan interim decision in 2012 was rejecting the use of GMPs to manage high IFLU, so that’s been a fundamental misunderstanding in my submission by the Council witnesses of what the One Plan’s approach was.

And finally, the submissions of Forest and Bird go through the issue of whether changes to PC 2 since it was notified meet Policy 5-8 as notified, because there were some changes to Policy 5-8 as notified, and I will defer to and adopt the submissions of Forest and Bird on this and reiterate that that will be an important matter for the Court under the relevant caselaw to see whether the changes were flagged by changes to Policy 5-8 as notified. Thank you Ma’am.

THE COURT JUDGE SEMPLE TO MS ONGLEY:

Q. A few questions from me and then I'll hand it over to the Commissioners as well. There's a lot of, there's obviously a strong history to this plan and to where we are. And there's a lot of referring back to decisions that have already been made by the Environment Court and Higher Courts in relation to this matter, but is there, you're not suggesting I take it that it's not open to the Council to change its plan?

A. No. I'm not. So I did consider the issue about whether the Court was bond by the High Court decision in 2013.

Q. Mmm.

A. And I don't believe it is because as I've said out in these submissions, there have been changes, various different changes of that have occurred since 2013.

Q. Yes, quite significant changes in many respects.

A. Yes. Yes.

Q. Mmm.

A. But the purpose of going through the background is more related to the scope submission in terms of yes, Council have the ability to change its plan through Plan Change 2, but when it notified that, what was it intending to change?

Q. Yes.

A. And my friend referred to the fact that the issue of the word "most" was flagged in the s 32 report, and she took you to a place in the 32 report which said practically speaking it is no longer the case that the N leaching maximums are able to meet Policy 5-8.

Q. Yes.

A. And that is at 301.0050. If you read the whole of the section 32 report, that is talking about the fact that because the numbers in Table 2 were out of date in terms of Overseer versions, it was no longer the case that farmers and growers could meet them. If you read the whole report, it's not saying that there are other reasons that table needed to be changed, so although the Council could have done that, it didn't.

Q. Now, I'll probably ask Mr Anderson more questions in relation to this scope issue, but is it possible that where you pointed out at your, in your

scope submissions you pointed out that in paragraph 11 of your submissions that there were three tranches, if you like, or three changes that the s 32 report identified updating the CNLMs reinforcing GMPs, and the third one, providing a workable pathway for landowners. Now I haven't read anything in submissions yet, so I'm not reaching any position on this, but providing a workable pathway for landowners to apply for resource consent; now as notified, a workable pathway was as a discretionary activity, and I assume you would agree that it was open to any submitter to say that as opposed to a discretionary pathway that should be some other form of pathway, for example, a controlled activity pathway?

A. No. My submission is that, that would it was not on the Plan Change.

Q. All right, so –

A. – I do say –

Q. Sorry, keep going.

A. Okay. I say in these submissions that in the usual course of things a submitter could say –

Q. Could say that.

A. Yes, usually.

Q. But not in this instance.

A. Usually, but…

Q. Yes.

A. In this instance it's stated number 1 Update CNLM maximums in Table 14.2 together with the fact that the controlled pathway for those formed the reason that they became limits. Because they were limits because of the differentiation between controlled and discretionary.

Q. So you are putting some – well, okay.

A. So as soon as you put –

Q. – so you're saying as, I understand your incentive argument.

A. Yes.

Q. So you are saying that the architecture of this plan incentivised that by activity status, effectively.

A. Yes.

Q. And that by using that same activity status for an alternative pathway that is undermined?

A. Yes.

Q. I understand that in substantive terms but does that mean it's not open. I understand a decision maker might not be entitled, might not choose to make that decision because it undermines the architecture but was it a, are you seriously suggesting that a submission to that effect would not be on the Plan Change?

A. Um, well yes I am, Ma'am, because if you read the section 32 report which stated that the fundamental approach et cetera would not be changed, that would all be considered in Oranga Wai.

Q. Right.

A. The effect of introducing, and at that time it wasn't a 20% or an NRAT it was just good management practices.

Q. Yes.

A. Well the effect of introducing something like that as a controlled activity completely undermined that fundamental approach.

Q. Right. And so would it be the same if a submitter had sought that the discretionary pathway is notified was a restricted discretionary pathway as opposed to a fully discretionary pathway?

A. No. I'm acknowledging that that would have been open to the council to do because that wouldn't have annihilated the limit. There would have still been a distinction there, and in fact of course that was what the One Plan decision was, it was an RDA pathway.

Q. Mmm.

A. And I'm unsure why it was changed to discretionary.

Q. Okay thank you.

1445

A. So that's the submission of paragraph 16, it was submissions of DairyNZ, Federated Farmers, and Horticulture NZ, were not on the plan change.

Q. Yes, I understand the submission. And I now understand I have – when I first read these, I had not understood quite exactly what you meant by the distinction between control and discretionary status having particular significance, but I understand the thrust of the submission now, thank you.

All right, I think I – I certainly understand the submissions that you've made in relation to that scope issue, so thank you for that. Just in terms of the more general submissions, I take from your submissions that you're sitting somewhere between, that sort of limit, or is it an exception, and I think you phrased it as a "second-tier" limit, if the SRP and the NRAT become a second-tier limit – is that, am I understanding those submissions correctly?

A. Yes, that's if you have the SRP or the NRAT without a discretionary pathway, because you would have the first-tier limit in the control pathway with the CNLMs, and then you would have the exceptions in the discretionary pathway. So there is an option, of course, with putting the SRP's 75th percentile, all the NRAT numbers in there. That's open to the Court, but that's what I would call a second-tier limit. And then there becomes an issue about whether that second-tier limit makes a higher level policy, because of the high level policy indicating that you should achieve the schedule E and schedule B targets, or move towards achieving those.

Q. Yes, well the maximum reduction in the least possible time policies as well, perhaps. So if – what is your position then, if they, if the SRP and the NRAT are controlled activities, are they exceptions to Table 14? Or are they new limits?

A. They're new limits, Ma'am, there's no question about it. And this relates to, there's no – there would be no remaining incentive for an applicant. For example, an applicant in higher LFC categories. So, have a quite stringent Table 14.2, but there would be no incentive to go down Table 14.2. If you could do a 20% reduction from, say, 60, and go to 40, so I'm not understanding the reference to Professor Horne's evidence to say that they are exceptions, or just say that they bring people closer to the table. In my submission, they don't – they're just another alternative.

Q. Yes, well, the – the differential is, as you said, duration, becomes duration. So the activity status isn't, potentially no longer the incentive to choose one over the other, duration might be the, how quickly you had to do it, and how long you get by way of consent seems to be the remaining differential between the options.

A. That's right, and the submission remains that the, it's outside the scope to put them in the control, but –

Q. Yes, yes, I understand, yes. That's right, I understand that that remains the position. You can just engage in my flight of fancy that if there were scope, I appreciate, then where would we land?

A. I think the other, in terms of the merits issue, just putting aside the scope issue for one moment. I think that the Court would also need to think about whether this such elemental change should be made in the context these issues are going to be discussed in Oranga Wai, because they do change the allocation framework.

1450

Q. In relation to this plan. But it doesn't necessarily set a precedent for any new plan.

A. No it doesn't but the, whether it's been implemented or not is another question but since 2012 the natural capital approach has been the One Plan, so if a hybrid grandparenting approach is placed in the One Plan now, that although it technically doesn't set a precedent for Oranga Wai it does change the entire framework while the Council is consulting on Oranga Wai with its wider consultation.

Q. Mmm. The issue with equity is challenging, obviously, in light of the history of this because the One Plan that hasn't particularly been mentioned through the evidence that we've heard to date is the issue of those farms that have been able to operate without consent at all, so we have a wide range of people in varying sets of circumstances over a more than 10 year period now. It seems to me it's almost impossible for this Court to find a solution to that that puts everybody on the same playing field in relation to those past inequities. Is that a fair assessment in your view?

A. Well first of all, I think there's some evidence that Ms Foster gave about the consents that have been granted for quite high leaching rates and when those terms expire, and I think those go into the mid- twenty-thirties.

Q. Twenty-thirties, yes.

A. But of course the plan changes under the NPSFM will provide for that ability of the council to review all consents.

Q. To review. But they may some time away now.

A. Well I think they said of… well who knows, but the current estimation from the council is end of 2026.

Q. Yes.

A. Beginning of 2027.

Q. That's right.

A. And so the submission, well, obviously the submission that I've made is should a Council be able to rely on sitting on its hands to justify the route it wishes to take now, and the submission is that no it shouldn't.

Q. Yes, and I appreciate that submission. I think I was just reflecting on your submissions around the question of equity and the questions that were asked in cross-examination yesterday around fairness and equity to those entities that had gained consents under Table 14.2 in terms of meeting the target, then we have those who have gained the consents to go outside of those targets through a at the time restricted discretionary pathway, and then we have those who have continued to operate with no consent.

A. Mmm.

Q. And trying to find a way that would in any way deal with those, that past inequity, seems impossible to me.

A. Yes, well of course in 2016, 17 the applicants for the declarations could have gone to the High Court for judicial review.

Q. Yes.

A. And that would have been the only way to remedy that situation where those consents have been granted, but on the record that shows that they didn't, they decided not to do that. So unfortunately we are in that predicament, and I don't know if I have an answer for you there except to say that continue to say that those who have relied on Table 14.2 should be at front of mind.

Q. Yes. And of course it is the, it is a reality of changes in planning documents that some people are advantaged by change and some, and others are disadvantaged by change, and that is for those folks who might be in an inner-city suburb they might have found changes to what they can build when the MPSUD came in for example. I mean there are

changes in plans that mean that at any point in time the situation can change, and some people will be advantaged by that change and some people will likely be disadvantaged by that change.

A. Yes, that's true. And I think this goes back to the scope argument as well, Ma'am, because this change has come in through a side wind. It was not a change that was notified in PC 2 and whether those existing consent holders had realised that the Table 14.2 was going to be undermined in this way is unknown. They wouldn't in my submissions have been notified through the notification of PC 2.

Q. Right, I understand your position. Thank you. I think I only had one question, which was, one further question which was just around the proposition of the 10-year duration being proposed for the discretionary pathway. And you have indicated that you oppose that in relation, well it doesn't fix the issues that you identify with the SRPs or the NRAT, but… and that it's inconsistent with the long-term proposition of one of the One Plan that it is a much longer… just explain to me the position then in relation to the discretionary pathway that a 10 year consent is appropriate in that instance.

A. Oh, I think I may have…

Q. Well I think that's what I understood here.

A. Yes I think I may have written that wrongly in the submissions Ma'am. No, sorry I need to make a correction to paragraph 71.

Q. All right.

A. Thank you for picking that up. That's the, oh yes, no, no this is right. So the –

Q. On the discretion–, if you gain a discretionary consent, you say 10 years is an appropriate term.

A. Yes.

Q. Yes.

A. The longer term would be available for those who make the Table 14.2 CNLMs and the reason for seeking the 10-year term for all the exceptions to the CNLMs is because Oranga Wai is going to be hopefully notified and so there's a concern amongst the planners of having exceptions undermine what may occur in that process.

Q. Thank you. Those are my questions.

COMMISSIONER EDMONDS ADDRESSES THE COURT – QUESTIONS HAD PRIOR HAVE NOW BEEN ANSWERED (14:58:42)

THE COURT COMMISSIONER HODGES TO MS ONGLEY:

Q. Just first of all, good afternoon, Ms Ongley.

A. Good afternoon.

Q. I am always interested in workability and how it's going to work in practice and understand the basic principles, and one of the issues I see here is that Table 14.2 set a bar that people have to met in terms of moving towards the SIN targets in the One Plan, because, as I understand it, it was never intended to go the whole way but it's possibly around halfway, for one to have an argument's sake. So in the future, possibly as part of Oranga Wai, they're going to have to go another step towards meeting the SIN targets. Now as I understand the alternative pathways being put forward, they will set a lower bar than the Table 14.2 bar. Is that your, is that one of your concerns?

A. Yes that is one of the concerns

Q. Yes.

1500

A. It's not your only concern.

Q. Oh, no, no, I was just trying to get that one clear in my mind. So really, what it's, what it's doing is enabling them more time before they have to start making them, the move that ultimately will be needed to meet the same target space?

A. Yes, yes that's right. And if – not only is it giving them more time, it is also failing to indicate that there is going to have to be more change required in the future.

Q. Yes, yeah, and you might remember from PC 1 there was an issue of concern of mine, that it's quite important for people to understand these changes are coming. But what one of the things that does concern me is that if activities consented under the present plan, for 35 years, and if their values see one or two classes of land, it can have some very high

leeching rates that could be cast in stone for a very long period of time. And that's almost getting into a "grandparents" situation.

A. Well, it's natural capital, not grandparenting, but –

Q. But the matter of fact is the same?

A. Yes.

Q. Because, as I understand it, land use capability looks after the interest of the land, it doesn't' automatically look after the interests of the water. Looking after the interests of the water would need to go more than land use capabilities, as I understand it. It can't be done purely on the issue of land use capability. Because that would allow them to go to 30 kilograms, whereas the water may need them to go to 20 kilograms. So we're building in a constraint against achieving the long-term objectives of the One Plan, that's where my concern comes from.

A. Yes, but my understanding and Dr MacKay can talk to this, is that the trajectory after 20 years was intended to go further, so to 30, 40 years, and after that One Plan, in the next planning period. And of course now, under the NPSFM, councils are required to say when they are going to make the target, and in the Waikato, it's 80 years. So, at the time the One Plan was developed, there was no requirement to say when that would occur. So the 20 years was the first trajectory. But I understand your concern, I see on the latest NMP guidance, there is discussion about consenting terms and especially when NPSFM that compliant plan changes coming up. And Ms White is going to address you on this, because Mr Scott's evidence contains some discussion about chapter 12 of the One Plan, and the common catchment expiry dates, together with indications around what terms should be on consents. So although there's a maximum 35 year term of consent, my understanding is that it's not a carte blanche that you'll get the 35 years.

Q. That's my concern, I'm just trying to – we probably can't do anything about it in this plan change, but it certainly is a concern to me that we could be constraining the long-term ability to achieve the outcomes as quickly as possible.

A. Yes. And you'll recall in the NDA – which has now been repealed – but there was a 10-year consent term for water consents in the area for this

sort of reason. It was quite a convoluted set of provisions, but it's now academic.

Q. I chose not to read that bill. I'm very pleased that I didn't do that. Okay, that sounds helpful, thank you. Now, in terms of the Overseer limit and consents, what's your – I didn't quite get what your submission is on that. Are you saying it should be included in the consent limit to be achieved, or not?

A. Well, I couldn't actually make final decision on that, I see that I thought further work needed to be done on it, but if pressed, I would say that they should both be in there, the Overseer limit and the input, the basic input controls, and the idea that if you have a material change to your input controls, you would have to rerun Overseer. Now, I believe there are previous guidance documents around this sort of thing, not just this guidance document.

1505

Q. Mhm.

A. So if we can provide any further assistance to the Court on that.

Q. Yes, it is quite a tricky one and I understood Mrs Foster's reasons for wanting to not have to redo the Overseer files all the time and there seemed to be, you know, there seemed to be quite a reasonable argument if you're not changing anything, the Overseer numbers are going to stay the same. But do you have any comments on that?

A. I think legally if an applicant wanted to bind themselves to input standards, then they would be entitled to do that, but that would provide very little flexibility for them to operate their farm operations so it's not great for the applicants.

Q. Okay, thank you.

THE COURT ADDRESSES MS ONGLEY (15:06:10)

MS ONGLEY CALLS

ALEC DONALD MACKAY (AFFIRMED)

Q. Your name?

A. Alec Donald MacKay.

Q. Your name is Alec Donald MacKay and you are a post – you, sorry your current position is principal scientist in the land use function and evaluation team digital agriculture in the Grasslands campus at Palmerston North?

A. Of Ag Research, yes.

Q. Thank you and you have a Doctor of Philosophy degree in soil science?

A. Yes, I do.

Q. And the remainder of your qualifications and experience are set out in your evidence?

A. It is.

Q. And you've filed one piece of evidence which is dated 6 November 2023. Do you confirm that that evidence is true and correct?

A. Yes, yes, I do.

Q. Do you have any corrections to make to your evidence?

A. No, I don't.

Q. Thank you. Now in the exhibits there is an exhibit that has been put into the bundle by Wellington Fish & Game, exhibit 3, which is the Andrew Manderson Farms Test Farms Project report dated February 2008.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS

A. Yes.

Q. Are you familiar with that document and if so, can you produce it for the Court?

A. Yes, I can (inaudible 15:08:51).

Q. Thank you.

A. Is this the correct one? No, that's not the one. It's one of these. That's the one, excellent. Thanks.

THE COURT ADDRESSES MS ONGLEY – ORIENT ELECTRONIC BUNDLE

(15:09:19)

MS JOHNSTON:

I think it's volume 3, tab 3, CB301.0121. I might be missing a volume.

1510

EXAMINATION CONTINUES: MS ONGLEY

Q. So by reference to the exhibit 3, the Manderson Farms Test Farms Project, can you briefly explain what analysis of rural farms occurred when evaluating if farms could meet Table 14.2 for the purposes of the One Plan decision in 2012?

A. Yes, yes, I can and the reason for including it just a note to my evidence was the fact that these were the first, these were the first farm tested or assessed as to whether they could actually meet the Table 14.2 and again a couple of reasons without going into the detail here, I just want to bring attention that in doing that we developed some detailed farm nutrient management plans. Really conscious that it was a nutrient (inaudible 15:11:03) and nutrient plan but within the concept of business recognising that "gosh, here's another plan, here's something else we're going to have to do", so we try and embrace it within a farm plan and using the principles of farm planning as part of that process and these first five farms provided a template, provided the basis for following 18 farms that were done that Peter Taylor reported on in 2017 and there's a comment in my evidence and I reference back to Peter Taylor's evidence as well. Just a couple of points, I think the template for these nutrient management plans within these farm plans, I think they're still a gold standard. I mean these are still exceptional in terms of the work that Andrew did in the space and just a whole range of mitigation options and it wasn't just for nitrogen, it was also talking about phosphorus sediment and also E-coli as part of that because also looking at those interactions. In doing that we also looked at a wide range of mitigation options and you've heard a lot about those already and most of those are listed and some of those I haven't changed but we attempted for those to also not only put a number in terms of the nitrogen reduction, but also some dollar values alongside of it. And again I think it's Peter Taylor's evidence that three of those farms could make it in terms of compliance with Table 14.2. These farms were picked not randomly, but tried to pick farms where there were some challenges, whether it the soils or the rainfall or their particular location and I make, I think Peter makes the same point for those elevating farms, it's trying to get farms that we viewed at that point where the challenges

would be, either (inaudible 15:13:08) with low natural capital or those high rainfall zones. So it all sounded really complicated to make and –

Q. Thank you.

A. – I'm quite happy if there's further questions –

Q. Thank you.

A. – we can come back to.

Q. Yes, thank you, very much. The second question I have for you, Dr MacKay, is can you explain how the numerics in Table 14.2 were derived from what was required instream in general terms?

A. Yes. So working, when we started, gosh this is back in 2006/2007, was in the upper Manawatū, which was one of the priority catchments and we were able to link using Overseer losses from sheep and beef and dairy to the load in the river and that load in the river for the upper Manawatū at the Hopelands Road site at Woodville. If we're using a transmission co-efficient or attenuation factor of .5, that is that half the nitrogen calculated using Overseer at the bottom of the root zone, half of that reached the stream, half of it was either held up or lost by other pathways and it's interesting if we use that transmission co-efficient attenuation factor, if you considered all the land and that up in Manawatū catchment was all the same, it would be used in the same way. If you do a back calculation from the load in the river at that point at Hopelands, I'm gonna get this wrong, 760 tonnes I think the value was back then. If you put that back across 130,000 hectares that made up that catchment, then you could leach 13 kilos from each hectare and half of it, just be half of it ending up in the river. So it's on the basis that not all the land is the same and it's quite different and that really drove us to that sort of development of a natural capital based approach, recognising that in New Zealand, you know, our land's a finite resource, like water, and particularly high class land is a very, very small percentage of our land area. Class 1, 2 and 3 is less than 15% of our total area, so it's really precious. But that led to that natural capital-based approach. We use as a proxy of that the attainable potential livestock carrying capacity, and that's found in the work sheets of the LUC, sorry in the extended legends of the LUC workbooks. We converted those attainable potential carrying capacities

of LUC1 through to 7 to pasture production, put them through Overseer to generate a nitrogen leaching value, essentially a rating, and then those are the values you'll see in Table 3 in my section 42 report. And then we looked at, if you were running at 90% of potential or 75% of potential, what did that look like in the river and those values are in that Table 3 in the section 42. We handed that information or that information was provided to the planners, but really important alongside that information we also pointed out that as you move from Class 1, where you've got really no limitations to use, you've got an enormous amount of flexibility as to how you might use that whenua; as you move to those higher LUC units where you've got less and less natural capital, your toolbox gets smaller and the effectiveness of that toolbox gets smaller. So we make it clear to the planners that if you aren't having to bring those numbers down, and the view was that over time if you were trying to work back from what was in the river back to those numbers, back towards a more and more acceptable, that where would you pull the levers, where would you make that balance, recognising the impacts you could have, socially and obviously in terms of economics.

Q. Thank you, Dr MacKay. And so, is my understanding correct that the planners if I can say, massaged the limits somewhat, taking into account some of those social and economic factors.

A. Yeah, and I wouldn't use the massage but I think that's a, it's a real challenge for planners to make that balance and it's a challenging job to do, and I take my hat off to them to try and crunch all that information recognising the trading.

Q. Thank you. Just finally, with regards to the biophysical factors that have been inputted to the Fonterra Nitrogen risk scorecard to create a matrix that's now known as the NRAT.

A. Yes.

Q. Can you provide a comment on the difference between PAW, as in P.A.W. as a proxy for natural capital versus LUC?

A. Thank you. Look I must admit, adding an environmental component to the Fonterra natural – sorry, nitrogen risk score, is a huge add-on, that was a huge positive step 'cos the environment is just as important as the

enterprise in terms of then risk, so the interaction is important. I think it is a bit of a stretch to say that using one soil attribute, and it is one soil attribute, profile-available water, as a way of describing a soil in all its characteristics is very narrow, and to carry it over into sort of proxy value C when soil type is only one of five factors considered in creating an LUC unit, I think is actually a further stretch. So it's certainly an addition but I think it falls a long way short, and it is probably giving a sort of equal status on that basis.

Q. Thank you, Dr MacKay. Can you remain where you are and answer any questions.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon Dr MacKay.

A. Good afternoon.

Q. I'd like to take you to an image before I put my question to you, and this is in the attachment to Mr Day's primary evidence so that's in volume 2 Tab 36 which is probably book 2.

A. Volume 1 and 2, and it's?

Q. Tab 36, the starting point is 204.2132. Book 2. Volume 2, book 4, sorry.

A. I'll get there sorry. Yes.

Q. So I'll just check you're in the same document as me. The front page will be Mr Day's evidence.

A. Yes, correct.

Q. And I'm going to take you through to page 204.2191.

A. Yes.

Q. And this image may look familiar. This is actually a page from your section 42A report for the original One Plan which was happened to Mr Day's evidence and I'm just looking at figure 6.

A. Yes.

Q. I'll give you a moment to remind yourself of Figure 6.

A. Yes.

Q. And could you please explain for me what this shows and how this influenced the design of Table 14.2?

A. Yes, thank you. Okay. I think, and if you look at sort of the, if you look at low versus high in natural capital from our production point of view. So for let' say Class 1 land, legume-based pasture system, its capacity to produce will be a lot higher than a soil with a low natural capital. And that's given you a comparison. A salt loam under 1200 mls might be able to grow 13 to 15 tonnes of dry matter of legumes-based pasture system where all the nitrogen is supplied by the legume, that's before you add nitrogen fertiliser before you add anything else. If you go out into the sand country were you're probably looking at a class, bio class 6, a legume-based pasture, there is probably going to struggle to produce probably five or six tonnes, and for that low, if I put water onto it for irrigation, I could lift that up enormously. If I then put some nitrogen there I could then lift it up further. So this idea that from productive, to go from LUC 1 down to LUC 6, you'll be growing less for a legume-based pasture system but we've been very very effective over the last 34 years at developing technologies for that lack of natural capital, in fact we've a battle of technologies and it's a celebration of the industry that we've been able to deal with that and to some degree we've forgotten those underlying characteristics. I think on the other side of the ledger is that those soils with little natural capital have got also a less capacity to filter and obtain for instance in this case nutrients if we're talking about nitrogen and so in an undeveloped state they represent little risk to the environment, but once you take, for instance, (inaudible 15:23:53) start irrigating and putting some nitrogen on it, there's very limited capacity to retain nutrient and so the impact on the wider environments will be greater. So we've become very effective at sort of addressing the lack of natural capital by some technologies. We've been slow in developing the equivalent technologies to then limit the impacts of those to receiving environments.

Q. Thank you Dr MacKay. My next question, Ill take you to your own evidence statement and that's at volume 2 also. Just check if that one of Tab 31's in there and, if not, we're going back one book to book 3. So have you got Tab 31 there?

A. No, it starts at 33 again sorry.

Q. So I think we'll be in volume 2, book 3. Tab 31. And can you just confirm for me that you're in your evidence there?

1525

A. Yes, it is, yes.

Q. And I'm just going to take you to 203.1551. This is section 5 of your evidence. And we're looking at paragraph 5.2. So, 203.1551.

A. Yes.

Q. And there at 5.2, you set out the options, a bullet-point list of the options that were considered for managing nitrogen where the One Plan was developed, is that correct?

A. Yes.

Q. And at 5.4, you explain the four options you explored in greater detail?

A. Yes.

Q. Of those options in paragraph 5.2, which option does a regime, which determines the amount of nitrogen that can be leeched by a set reduction based on historic leeching – so, grandparenting, or hybrid grandparenting as my colleagues keep calling it – which of those options is that sort of regime fall within? In your opinion?

A. Option 1, yes, yeah.

Q. So is that capping and managing down?

A. Yeah, and –

Q. And which of those options does a, the land use capability resource-based regime that's in Table 14.2 come within?

A. That's option 4.

Q. So is that the nutrient use efficiency option?

A. No, sorry, it's that N-allocation based on natural capital.

Q. Yes.

A. Yep, sorry. I'm going down to 5.4, but…

Q. And so in your opinion, are those two types of regimes, those two different options, fundamentally different?

A. Yeah, they are, but they have quite different – well, they are fundamentally different, but they were also discussed as part of the way I could package that, to prevent any further deterioration, you could go to a situation, where, you know, the Overseer's development to hold the line,

and then over time transition to one where it was more reflective of the inherent (inaudible 15:27:24) of the landscape. And so that was, that was talked about and beyond the One Plan, it's been talked about as well, quite a bit.

Q. Thank you, Dr MacKay. I have one more set of questions for you, and these relate to one of the exhibits, exhibit J. Mr Registrar, is there an exhibit folder over there? Dr MacKay, you might be able to show me.

WITNESS REFERRED TO EXHIBIT FOLDER

A. Yes, okay.

Q. You'll want to look at that horizontally.

A. Yes, I was going to say, that was –

Q. And Dr MacKay, I'll just talk you through how this graphic works, or my understanding based on Dr Drury's explanation, and then I'll ask you a question as a result, as I don't think you were in court when this image was introduced.

A. Okay.

Q. So the large box is intended to represent a targeted water management subzone? And then each of the small boxes, putting to the side their colour for one moment, is intended to be, say, a 5 hectare area, by way of example, within that targeted water management subzone. So they all add up.

A. Yeah.

Q. Starting with the yellow box, the yellow boxes show the five hectare areas that were used in 2012 and 2013 for growing vegetables. And then if you look at the purple box, those were the five hectare areas used in 2013 and 2014. Is that clear?

A. Yes.

Q. And so, on this image we see that one area stayed, remained un-being used across those two time periods, and for two, there was a shift in area.

A. Yes.

Q. Can you please comment on the extent to which that shift in area, so the moving from the yellow box to the purple box, comment in terms of your expertise on any effects on the environment that might have?

A. So, just for clarity, the two empty boxes, what was – was there, they would have been under some other use or some other activity?

Q. That, they're, as I understand from Dr Drury, the blank squares represent areas that have been set aside within the operation.

A. And I suppose this was also discussed at length, I think back in the One Plan process as well, that if you've got, ultimately it depends on what the emissions are from these individual blocks under those activities, and what they add up to collectively in terms of the impact for that sub-catchment, or that water body. And again, if they are contained within one operation, then there's a potential to mitigate, maybe, the impact of one of those activities by either being able to, an area that's alongside that is being used less intensively for that same period of time.

Q. And so is that a, a sort of a "dilution of the pollution" type of a mitigation tactic?

A. Yeah, well, I think, if it's contained within the property, and within the catchment, then the net effect is – so you're looking at the net effect and, I think of an equivalent within, say a dairy operation where you might have the support look alongside the milking platform, if it sits within the same catchment, then it would be something to include. And obviously, if the animals leave the catchment for a period of time, then it's a way of reducing it. But again, it was discussed if there are some areas in that vegetable area where there are high losses, is there an area alongside that could be used to sort of balance out or mitigate that impact, so that the net effect, or the net loss from that catchment is being managed?

COURT ADJOURNS: 3.31 PM

COURT RESUMES: 3.53 PM

CROSS-EXAMINATION: MS JOHNSTON

Q. I seem to be missing the order quite often in terms of speaking rights, but good afternoon, Dr MacKay. How are you?

A. I'm good, thank you very much.

Q. Thank you for your patience. I know that it's taken us a while to get to you over this last week for these proceedings indeed. But I want to thank you for your evidence and you're going to have to be patient with me as we step through a few things.

A. Okay.

Q. But I'm going to start with paragraph 5.1 of your evidence, which essentially is some scene setting.

A. Yes.

Q. About what it covers. So I don't think the Court needs to go there necessarily, but it is 203.1550, it's Dr MacKay's paragraph 5.1.

A. Yep.

Q. Your evidence covers the background to the development of Table 14.2?

A. Yes.

Q. And the part GMPs and BMPs played in that?

A. Yes.

Q. Both in terms of setting up the table and water quality outcomes, is that right?

A. Yes, yes.

Q. And as I understand your evidence your role throughout the One Plan process originally really did focus in on the development of financial capital-based approach to the table and the use of land use capabilities as a proxy financial capital, that would be fair?

A. That's correct.

Q. And I understand that your work essentially informed the creation of Table 14.2, that's right?

A. That's correct.

Q. And you understand that as part of the plan framework for plan change 2, Table 14.2 remains in the plan, that's your understanding, isn't it?

A. Yes, yes.

Q. So I just want to reflect on the role of land use capability and I'm not going to spend very much time here, I think you've actually given the Court a good summary of it earlier.

A. Yes.

Q. But you explained that you use it as a proxy in evidence, that's right? And that's because there wasn't any direct method of calculating natural capital at the time, that was your evidence?

A. Correct.

Q. And you best explain it in paragraph 5.6 of your evidence and if I could take you there, it's 203.1552 for the Court. "In the absence of a method for calculating the soil's natural capital, information from the extended legend of the LUC worksheet attainable potential livestock carrying capacity was used as a proxy for the soil's natural capital."

A. Yep.

Q. That's what that paragraph says, isn't it?

A. Yes, it does.

Q. And this is where you're going to have to be patient with me, but I'm just gonna step back through this just so that I get to a point that I want to make, but essentially as I understand it you've considered the ability of soil to sustain a legume-based pasture under a typical sheep and beef system.

A. Yes, under grazing, yes.

Q. And you've looked at the extent of legend of the LUC workshop – worksheet, attain potential livestock carrying capacity?

A. Yep.

Q. And you've used that to calculate essentially the stocking rates, which you transform to a pasture production?

A. Those are stocking rates and you use that calculate how much you would have had to have grown to carry that stocking rate, yep.

Q. Yes, so it transforms to a pasture production?

A. Yes.

Q. And then you use it in an Overseer nutrient budget model to calculate any leaching losses?

A. Yes.

Q. I told you that you put it more eloquently to the Court, but that's my understanding, just so that we're clear about that.

A. Yes.

Q. And the LUC worksheet hadn't been used previously in this manner, had it?

A. It had not.

Q. But as I understand your evidence, you had confidence in it because the approach inherent in the worksheet had been understood, well used and was accessible through New Zealand. That was your evidence?

A. Yes, certainly, yeah the LUC has been available throughout the country, yes.

Q. And so despite it being used in a way that you were using it for the purpose of Table 14.2, you still knew that it would do what it needed to do essentially for your purposes?

A. Yes.

Q. So we've talked about the end leaching losses that were calculated, that was under a pastural use, wasn't it?

A. Yes, it was, yes.

Q. And those leaching losses essentially created values in the table which are measured as Overseer modelled root zone leaching values?

A. Yes, they are, yep.

Q. And that's what we've come to know as accumulative nitrogen leaching maximum?

A. Yes.

Q. At the time that the Overseer leaching value was calculated, that's the point that Overseer accounts for rainfall, isn't it?

A. Yes, it does, yeah.

Q. And that's because LUC is a proxy for natural capital for allocation, but it's not directly representative of rainfall, that's fair?

A. The LUC system does take account of a little, I suppose inherently it looks at it, no, you're right, correct, carry on, yes.

Q. And that's quite important, isn't it, because land use capability doesn't directly correlate to nitrogen leaching, does it?

A. Not at all.

Q. So I just want to return to the setting of the CNLM, the nitrogen limits. As I understand your evidence written and today is that your work resulted in the year 1 values for Table 14.2, is that right?

1600

A. Yeah, I think the science was used to create, yeah, that Table 14.2, yeah.

Q. It's fair to say that those year 1 values were adjusted though to account for a range of factors, weren't they?

A. Yes, they were.

Q. Are you aware of those factors?

A. Yes, we, well. In terms of, they were a mixture of the, a percentage of the productive potential, and then a recognition of the fact that the mitigation options, as you move to those higher classes, become, your toolbox gets smaller. So that was taken into consideration by the planners, in developing that table.

Q. So we're just talking year 1 at the moment – as I understand it, that there was some adjustments made to reflect the productivity, or the maximum productivity, of the land at that stage, was 0.9 for the better class land, and 0.75 for the lower class land, you're aware of those adjustments?

A. Yes, I'm aware of that, the information that the planners used, yes.

Q. So that was year 1, and then years 5, 10, and 20 were set differently, weren't they?

A. Yes, they were.

Q. And you didn't have any direct input into those values, did you?

A. There were conversations, but yes, I didn't, yeah. I wasn't asked to sign them off or to agree to them, yeah.

Q. And is it your recollection of the evidence that was given to the council-level hearing in the Environment Court, that years 5, 10, and 20 were selected by council officers based on what was considered to be "achievable with current technology", "aligned with industry targets and expectations", and "provide reasonable time for the changes required." Is that your recollection?

A. I think you're getting beyond something I can comment on.

Q. Okay. And that's fair. That's when your involvement stopped, really, with year 1 at that point?

A. Yes it did. And it – in saying that, it was tr– by creating that, I mean between the LUC and the instream outcomes. It was that starting point, the year that to meet the goals in terms of water quality improvements,

then those numbers were going to have to come down over time, five, ten, twenty, and beyond that as well if you're actually ultimately going to achieve those were the quality outcomes we're after.

Q. Yes, and just to be clear though, your evidence is that you didn't have any direct input into those values?

A. No, but certainly that science around, you know, looking at the production potential, and the options around mitigation are pretty critical pieces in that determination.

Q. And that's because there was reliance, and there was a large body of work around what was achievable using currently available technology, there was the test farms, which we'll come onto and which you've alluded to already, which tested whether or not the limits that were being set through the table were able to be achieved by farms throughout the probed catchments, that's right?

A. Yes, yes.

Q. And your own evidence at the time talked about good management practice, and provided an indication of what those practices would be?

A. Definitely.

Q. And so did Dr Monaghan?

A. Yes he did.

Q. And Mr Taylor?

A. Yes.

Q. All of you, together?

A. Yes.

Q. Thank you. And those good management practices were relied on by council officers in making decisions about what was considered to be practically achievable at that time, through farm practice support, weren't they?

A. You'd have to ask them that question.

Q. But the cumulative nitrogen leeching maximums were set having regard to what could be achieved on a farm?

A. Again, you'd have to ask them that question, but just as a comment, in looking at the role of best management practice, and good management practice, and looking at mitigation options, it's very clear that with, dealing

with the issues of sediment and phosphorous, then probably those will get us a long way along the pathway, but with nitrogen, you really do need to have a target, or you do need to have a number to work towards. Just simply implementing good practice, or best practice, but you soon change that number. So you need to actually kind of target, needs a number associated with it. And I think that's a really important point and part of the development of those limits was to actually provide a target so that when you complete those practices, I can actually see what we're actually delivering on that goal.

1605

Q. Yes and you'd accept that targets can take many forms, can't they?

A. Yes.

Q. Thank you. I just want to go now to attachment 6 to your evidence.

A. Okay.

Q. I'll just find the number for the Court, so attachment 6 starts at 203.1829. And this is an attachment for Mr Peter Taylors –

A. Is it Peter Taylor's, is it? Okay.

Q. Yes. This is rebuttal evidence of Mr Taylor dated 20 January 2017. I'm just curious, what was your involvement in the preparation of that evidence?

A. It goes back to those farm strategy of the test farms and also, I'm stretching my memory, but that was the original five within the farms test farms and then there was another 18 that were done through a range of providers.

Q. Yes.

A. And so that's and Peter summarised that information up.

Q. Yes.

A. And it was a good summary of the information without being –

Q. And to be fair to you, you refer to his paragraphs 20 –

A. Yep.

Q. – through 22, don't you?

A. Yes.

Q. And those were at pages 7 and 8.

A. Yes.

Q. And they do focus on the overview of the farm strategy test farms?

A. Yes.

Q. Am I right there? Yes.

A. Yes, yes, it does, yep.

Q. And you would have read Mr Taylor's section 42(a) report that is summarised here, no doubt?

A. Yes.

Q. At least back in the day?

A. Well, back in the day and yes, a lot of the documents since, yes.

Q. Yes. So you're familiar with the farm test farms?

A. Yeah, to the extent, yes, roughly where they were located across the region with a view of trying to probably scared in terms of their distribution to those, again those environments with source I guess natural capital and some of those rainfall regimes and from memory where there was one or two, I think there was irrigation or not.

Q. Yes.

A. Yes.

Q. To help the Court, you've confirmed that they were case study farms?

A. Yeah, I suppose they were real farms, yeah, yes.

Q. And Mr Taylor's evidence refers to 18 dairy farms, but there were more farms considered within the farm strategy test farms, weren't there?

A. Yeah, there was a few more than that, yes.

Q. And at least in terms of what he's reported on, there were 20 in total that between himself, you and Mr Manderson that were looked at? Would that be fair across 2008 and 2009?

A. Yes.

Q. And the Suri report that you handed up this morning or produced the Manderson and MacKay 2008 Farm study, that refers to the five farms that you've talked to?

A. Yes.

Q. They were part of that 20, weren't they?

A. Yes, they were, yes.

Q. And as I understand it that comprised two dairy farms, two farms with dairy and dry stock cropping, max and one standard sheep and beef?

A. Yes.

Q. Is that your recollection?

A. Yes, and I think there was one conversion there too, yep.

Q. And they were placed across three catchments in the region?

A. Yes, they were, yep.

Q. And it's fair to say that those five farmers were volunteers, they were willing to participate, weren't they?

A. Yes.

Q. And then in 2009 is it your recollection that Mr Taylor identified 15 more farms to be considered against the proposed CNLM in the table?

A. Yes, yes.

Q. And 13 of those were selected to represent high rainfall, high LUC and stocking rates, weren't they?

A. Yes, those are those 18, those are those 18 farms that, yep, we've talked about, yes.

Q. Two of those 15 farms were something else, they weren't dairy? There was an irrigated beef and a cropping farm, wasn't there?

A. Yes, there was. I was trying to get at those who weren't intensive sort of livestock systems and I think irrigated dry stock or sheep and beef was included in that description, yes, yep.

1610

Q. There was no commercial vegetable growing operation looked at within those farms, was there?

A. Yeah, sorry, I'm not aware of one.

Q. And on the basis of that analysis, Mr Taylor has set out here in the evidence that you've quoted some conclusions around the number of farms that could meet the CNLM?

A. Yes, yep.

Q. And that included 28% of 18 case study farms able to meet the limits that aren't doing anything further?

A. Yep.

Q. And 22% of those farms would be able to meet the year 20?

A. Yep.

Q. And then with high to medium cost-effective end loss mitigation practice, is 78% of the 18 farms would meet year 1?

A. Yes.

Q. And 61% year 20?

A. 20, yep.

Q. That's your recollection?

A. Yes.

Q. I just want to at this point before we move on just pop back to the document that you produced this morning or this afternoon I should say, that's your 2008 study?

A. Yes.

Q. I'm at page 301.0128.

A. Yes.

Q. It's page 8 of that document.

A. And sorry what?

Q. Page 8.

A. Page 8 of the actual document?

Q. Yes.

A. Yep.

Q. It contains your summary conclusions.

A. Okay.

Q. If you just want to take a moment and just review that part, that paragraph that starts in summary?

A. The summary, yep.

Q. You right?

A. Yes.

Q. So you've concluded there that farming within N limits would definitely be achievable for all of the cases examined and it is expected that this finding will be transferrable to most of the region's intensive pastural farms. That's your conclusion there.

A. Yes.

Q. You do say that exceptions should be closely scrutinised as they potentially represent high risk farms.

A. Yes.

Q. But then you go on to note also that similarly major farming changes such as reduced stocking rates would not be envisaged for most farms. That was your conclusion at that time?

A. Yes.

Q. And further that the cost of farming within N limits is most likely to be a minor consideration. That was also your conclusion?

A. Yep.

Q. And I'll just get you to confirm that this work went onto inform the additional work that Mr Taylor picked up and collectively this was evidence that went in support of Table 14.2 to the council-level hearing, isn't it?

A. Yes, it did in terms of what, yeah, how much – what sort of challenge it would be, you know to try and achieve those numbers in Table 14.2, yes.

Q. Thank you. So we've discussed the 20 farms.

A. Yep.

Q. And I want to and I gave you the opportunity to review this earlier.

A. Yes.

Q. But I'd like to put to you a map and I have some copies here, Mr Registrar.

WITNESS REFERRED TO MAP

Q. This is from Mr Taylor's 42(a) report that you've relied on. So it's double-sided and on the front side is figure 1, there's a map. I'll wait for the Court actually. So on the front there is a map with numbers and if we turn the page there's a legend and those identified are legend numbers for the farm test farms that we've just been discussing.

1615

A. Yep.

Q. And to be fair, there are more than 20 here, because while you and Mr Taylor reviewed some farms, there were also some additional farms, as I understand it, that consultants or other external parties also reviewed, is that right?

A. That's correct, yes.

Q. So this demonstrates the location of the farms that were tested, if you like, throughout the priority catchments, doesn't it?

A. Yes.

Q. And, are you able to just indicate to me the number that are in Mangatainoka?

A. 2, and that catchment, is that right? 24 and 25?

Q. Yes, thank you. And what about in eastern catchments, how many were, yeah? Because when I look at the eastern catchments, that's the upper Manawatū?

A. Five or six – sorry, didn't count. Eight? Is that right, eight?

Q. Yes. Do you put those along with everything else – you'd accept that this is a fair representation of all the priority catchments, wouldn't you?

A. It would have been great to have done a lot more, but this, I suppose, with the time and constraints. Was it an attempt to just cover the regions and biofuel in the same country? Because I saw that as a real challenge.

Q. Was there a good spread of rainfall and soils amongst those farms?

A. Yeah, and probably in hindsight, probably some more of the kind of rainfall ones would have been nice and could have been a bit more helpful, yeah. Yep.

Q. I just wanted to now move to paragraph 26 of Mr Taylor's evidence, if I may? So that's at the bottom of page 8.

A. Oh, sorry, that's his –

Q. Sorry, yes, apologies, I meant attachment 6. That's his evidence, his rebuttal evidence that's attached to your evidence.

A. Oh, so he's –

Q. Yes.

A. Okay, I don't, sorry, I don't have a hard copy of the –

Q. I'll assist with the bundle reference. It's volume – you're at book 3, book 4? Volume 3? Volume 2, book 3. So this is your evidence?

A. Yes. And so, what page am I looking for, sorry?

Q. 203.1837.

A. 203.187. Was it 29, or?

Q. 26. It's at the bottom of page 8.

A. Yeah.

Q. I'll just get you to read that. And to be fair to you and I, neither of us were involved, so we can't speak to the words necessary referred to in here, but there is a purpose for my question, so I'll let you read that. Mr Taylor's

referring there to the absence of any – to his knowledge – quantified or robust analysis undertaken as to the extent of the impact and Overseers six in generating an increased output as compared with five?

A. Yeah.

Q. And so, influencing the number of farms that could comply with the numbers in Table 14.2, as compared to evidence he presented to the environment court. There is some reference to further modelling work, but that was not given to him.

A. Yes. I'm certainly moving from Overseer 5 to Overseer 6, they put like, a drainage model in, and so that was, and that came out I think, concerns the canopy that was driving that. But at the same token, that area's where actually numbers went down, I think the paddocks source actually went, it went from 5 to 6, they went down. But it was, I mean it was always back then, those high range full areas were, yeah, just still learning at that point, but again I think if we talk now, it's about as you adjusting. If you're moving Overseer version then you again have to also at the same time update Table 14.2 as well.

1620

Q. Yes.

A. So I think those, you know, those things, you know in hindsight you can look awfully wise, but yeah, they should've been looked at in parallel.

Q. Yes, well, you and I are in complete agreement about that Dr MacKay.

A. Yes.

Q. The reason why I was asking you about that was just to simply point out that since 2017 Professor Horne has looked at the level of compliance with Table 14.2 across a large database of farms, hasn't he?

A. Yes, I understand he has, yes.

Q. And you've reviewed his evidence to the Court?

A. I've looked at his evidence, yes, I have, yes.

Q. And Professor Horne in reviewing the level of compliance adopted an extensive list of GMP when he was undertaking that task, didn't he?

A. Yeah, he listed, yeah, conventional practices, yep.

Q. And that's similar to the task that you and Mr Taylor and others did at the time the One Plan was being introduced?

A. Yes.

Q. Took the limits and assessed whether or not GMP would get you there or not?

A. Yes.

Q. That's in essence what you did?

A. Yes.

Q. And that's what Professor Horne's done as well?

A. Yep and towards it, yep, to achieving those numbers in Table 14.2, yes.

Q. Yes, thank you. And you'd accept that on the back of Professor Horne's evidence that he's considered a much larger data set than 20 farms, wouldn't you?

A. Yeah, agreed, yes.

Q. And he's had access to a data place across a population of farms throughout the region, hasn't he?

A. Yes.

Q. And that's enabled him to assess at today's date or on the basis of the technologies available today, the ability to meet year 10 and year 20 limits in the table.

A. Yes.

Q. That's fair, isn't it?

A. Yes.

Q. And you'd also accept that that work has then gone on to inform the plan change to that we're here discussing today, wouldn't you?

A. Yes.

Q. I'm just going to check that I've covered everything, Dr MacKay, thank you. I just want to take you actually to one other point and it's about the water quality targets in your earlier work. If I could take you to we're in your evidence and we're at 203.1642.

A. Okay. So, my evidence again, sorry, I've put that away.

Q. That is your evidence, Dr MacKay, that book, oh, you've put it away, sorry.

A. That's all right, I put it away, my apologies, you'll have to say it again, sorry.

Q. That's fine, we're nearly there, so, 203, oh right, goodness, volume 2, book 3.

A. Yes.

Q. 203.1642.

A. Yep. So 203.1?

Q. 642.

A. 1642.

Q. And I'm at your section 2.1, just take your time, I'll wait.

A. 1642, yep.

Q. Yes, and there's a section 2.1, the upper Manawatū water management zone, a case study.

A. Yes.

Q. And your last sentence in that paragraph: "On linking observations of nutrient loadings in the river to Overseer calculations of loss at the farm, we will have a tool to link farm practices to water quality by which we will be able to suggest BMPs that enable water quality targets to be met." That was your premise of that case study, wasn't it?

A. Where you can and again in mitigation options I think you have to sort of – we shift between a GMP or good management practice.

Q. Yes.

A. And through to mitigations, so some might call it a good management practice and at what point is it a mitigation? So –

1625

Q. I think you and Professor Horne share the same bearing, it's a toolbox –

A. It's a toolbox.

Q. – and it's a, so it's referring to, I think the point you're making there, it refers to BNPs, but you're talking about on-farm management practices that reduce nitrogen loss.

A. Yes, that would be a nice way of describing it.

Q. And so the idea there is that you would be able to drive on-farm practice change in a way that would be linked to meeting water quality targets, that was the point that you were making there?

A. Yes, yes.

Q. Do you appreciate that Plan Change 2 involves existing intensifying land use activities?

A. Yes.

Q. And the ability for those existing intensive farmland use activities to adopt good management practice, mitigations, BNPs, and enable water quality targets to be met? It's not possible, is it?

A. Without going to individual properties and looking at them, you know, I wouldn't make the generalisation you couldn't. It's, the question is how far can you go from farm to farm, individual farms and their particular configurations, their particular characteristics and then their ability for the farm business to actually then implement a suite of mitigations to deliver on their – a reduced nitrate leaching.

Q. And you would accept that the table and other One Plan methods were needed to drive towards water quality targets, but that one method was never going to be the complete answer to catchment water quality?

A. Well, I think the perception that just good management practice was going to get us there, I think – and again, we have to, you'd have to agree upon what a definition is, and no one will define that, and so then it means that if you're moving beyond one, that an individual operator says "No, I don't accept that is a good practice", for whatever reason, "It's too costly", or "It's too difficult". And then so, if that's, that gain, at what point do you put a boundary or limit on, what would you have in that toolbox or that mitigation mix?

Q. Yes, okay. And I just want to reflect on one last thing, but you mentioned that no one would want to put a definition on good management practice, are you aware of the extensive expert conferencing that's been undertaken as part of this process?

A. Yes, I've read the notes.

Q. And in particular, there was a joint witness, or a joint conferencing process in June 2022, are you aware of that?

A. Yes, I'm aware of that, yes.

Q. And if I could just take you there, it's – so we're going to have to go to volume 2, tab 38?

A. Volume 2, I've got lots of them.

Q. Book 4, thank you.

A. And I'm sorry, what?

Q. We're at tab 38.

A. Tab 38, yep.

Q. So, if you go to paragraph 5, which is at page 2, it lists there a range of participants, and there's farm system experts and planning experts.

A. Yep.

Q. 13 or 14 in total, and you'd agree with me that they represent a number of sectors, including Dr Clothier there, from Plant and Food. Horticulture, Federated Farmers, Forest and Bird, yes?

A. Yes.

Q. And if we could follow over to page 204.2281?

1630

A. 22, sorry what was the number? 2?

Q. 204.2281.

A. Thank you. Indications, yep.

Q. And to be fair to the planners involved, they resiled from answering this particular topic, topics 1 and 3 because they weren't farm systems experts, so the farm system experts agreed on a list of on-farm practices or mitigations can be used to reduce end leaching in different intensive farming land use systems. And there's a long list there?

A. Yep, yes.

Q. And you'd accept off the back of the signatories to that, that it was agreed between those farm system experts across those range of sectors?

A. For that, for those mitigation workings?

Q. Yes.

A. Yeah, but just when you looked at for instance wintering off pasture, I mean that or wintering off far, those things –

Q. Yes.

A. – there's quite a stretch to those, any one of those in terms of using stand off for housing to the extent that animal spend would in controlling the number of urine patches and effectively deliver the outcome you're after.

Q. Yes.

A. Yes.

Q. Yes, no, I accept that and these are the high to medium type GMPs that Professor Horne modelled in Overseer to the extent Overseer let him.

A. Yes, yes.

Q. You'd accept that? Thank you. And I just want to note that there is in this list culling or reducing stocking rates, isn't there?

A. Yes, that's, yes, that would be one of the options, yep.

Q. And I just want to confirm our earlier discussion that at least with the five farms that you reviewed, your conclusion that major farming changes such as reduced stocking rates would not be envisaged for most farms, that was your conclusion at that time, wasn't it?

A. Yes, it was, yep.

Q. Yes. I have no further questions.

A. Sorry, can I just add one comment? And again thinking about this in isolation just nitrogen, in terms of management, the idea of having animals off pastures, the TSA for wet soils or soils that are fragile or on high rainfall zones, where you're also having to think about sediment and phosphorus, so you've got other contaminants which are issues, plus also those soils need to be protected against animal damage, so the concepts are pads or even going to more substantive structures, there might be reasons for doing that and so whereas looking at it from the nitrogen perspective only may be seen as a very high or high cost to one that might be out of scope and would there not be seen as good management practice. If you then consider that alongside sediment, phosphorus alongside also protecting the productive capacity of those soils, then all of a sudden it becomes something that would be picked up and used in that situation, so I think just seeing these in isolation from the other components of the system maybe it might potentially narrow the group that you might consider that you know good management practice if you just consider them in relation to nitrogen only. So I suppose I think that was the point I was trying to make to think about and in a broader sense there might be other drivers that either defer the cost or make it more attractive.

Q. Thank you, thank you, doctor.

THE COURT ADDRESSES MS EDWARDS (16:33:58)

CROSS-EXAMINATION: MS EDWARDS – NIL

MS ONGLEY ADDRESSES THE COURT – PRODUCE EXHIBIT (16:34:23)

RE-EXAMINATION: MS ONGLEY

Q. Dr MacKay, Ms Johnston asked you some questions about your involvement formulating Table 14.2 of the One Plan.

A. Yes.

Q. And you said that you were involved the year 1 cumulative nitrogen leaching maximum?

A. Yes.

Q. And you said that you weren't involved in the year 5, 10 and 20, are those related to the year 1?

A. Yes, they are certainly related to year 1 and certainly was part of the conversations about how they might be, yeah, how they might be worked out, but without signing off on the actual numbers.

1635

Q. Right, thank you. And secondly, Ms Johnston did ask you some questions about how Professor Horne's evidence at this hearing had analysed how many farms would meet Table 14.2 to using GMPs and the witness for Fish & Game dealing with that as you know is Dr Parlato –

A. Yes.

Q. – because her supplementary evidence deals with that.

A. Yes.

Q. Are you familiar with how Professor Horne carried out that analysis and how, if any, it might have differed from the analysis that you and others undertook in 2000 and – before 2012?

A. I certainly haven't sat down and paired up the for instance the toolbox and the mitigation options that were looked at and so it would be interesting to do a comparative study between the two to see whether what was considered in the good management in the toolbox that was used by Professor Horne compared to the – those back in, back in 2008.

Q. 2008?

A. 2008, yes, which was quite some time ago and it would be interesting to reflect on if you rang those farms again today, it would be really interesting to reflect on where they would sit.

Q. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Dr MacKay.

A. Good afternoon.

Q. I think I could spend many happy hours listening to you talking about some of these things, but I guess I don't have that luxury today. Just on the question that Ms Ongley just raised with you about the LUC, my understanding is that the foundation for all of this work is the year 1 figures and that's the one that was scientifically based?

A. Yes, sorry, yes.

Q. Everything else has been a value judgement by planners and others as to how quickly you can get down to the levels required to meet the One Plan targets, would that be correct?

A. Yes, that's a good summation.

Q. Okay. And I think the other point that Ms Ongley was making is that all of this work is LUC based, which I accept Ms Ongley, that's very clear from this work here. In terms of the differences from LUC 1 through 8, how did you – could you just explain how that was done? Is that a value judgement or was it based on that approach going back to the pasture growing capacity for each of those soils, is that right?

A. Yes, it was. So it was a back calculation from in the extended ledger there is an estimate of the obtainable potential livestock carrying capacity, so that's in terms of stock units.

Q. So, it's all science based basically?

A. Yes, it is and it's a back calculation to pasture production, which is, if you think across the industry that's the one which we now calculate sort of pasture grown across the industries by livestock numbers and their performance.

Q. Okay, no, that sounds good.

A. So, it's pretty standard practice.

Q. Yeah, I think that answers my questions there. Now, reading your section 87(f) report I think it was from the earlier hearing, you were talking about

there being able to achieve a third reduction in nitrogen losses using I think what is called GMPs or GEPs at that stage. Do you recall that?

A. I think I did find that somewhere in that order up to was it about 20 to 35% I think was the range put in there.

Q. There was mention several times in the (inaudible 16:39:16) report about this.

A. Yes, yes.

Q. With many qualifiers if it's possible to achieve them using these management practices, so there was a lot of doubt at that stage. The evidence in front of this court is that the reduction that can be achieved by management practices as defined today is 20% not a third. Would that influence the extent to which Table 14.2 can be achieved by most farms?

A. Well, back in the working (inaudible 16:39:50), that range is I think 20 to 35 and that was really looking at what was in the toolbox to what extent could you reduce it, with less, probably, emphasis around what were the financial implications of it. And again, I think using one number, 20% for some farms, that will be a challenge. Others could potentially go further. So it would be interesting to see what the distribution was around that, if using 20%. Again, I, the comment I made previously, if looked in isolation, just with looking at N, if you'd then start considering some of the other factors, then you might have some more scope.

1640

Q. Yeah, I was really getting at the point that there was an assumption made that it could be possible to get a third reduction? Now it's only 60% of that, at 20%, that they're going to actually get. So the assumption was that Table 14 – or the LUC limits would be able to be matched using GMPs on those farms?

A. Can I defer that question? I know that Dr Dewes and, are going to –

Q. Okay, that's fine, I wasn't quite sure how far you got into the GMP issue, but as was covered in your s 87F report, I thought you knew more than perhaps you did, so that's absolutely fine, thank you. And also, you – one of the things in the summary that Ms Johnston got you to read out, you were quite confident that it would be possible to achieve the targets on most farms, and I don't know what you had in mind by "most farms", but

what we're finding is that a very large number of farms can't even apply for consents to get close to 14.2. Part of that is the Overseer issue, but we're still seeing significant numbers that may not be able to meet 14.2. So do you have any comment on that?

A. Yeah, I would certainly like to, what I suppose the question is, just where are those farms now compared to where they were, as the –

Q. Same place, I imagine.

A. – in terms of, yeah, in terms of sort of production levels, have they…?

Q. Oh, I see what you mean, yeah.

A. So, you know, have the goalposts been moved? So the question is if they have continued to, have they continued to lift performance?

Q. A lot of it is still based on the 2012 baseline for information, yeah.

A. That's right, so where are those farms actually today, compared to, in terms of production? So, if they have lifted production, they're probably no more challenging position.

Q. Okay.

A. So that's why I'm a little bit hesitant about, without having read an indication of what the production was back in there, and now, so if they have actually increased performance production, well then, yeah. That's an extra challenge.

Q. Yeah, lot of unknowns. Okay. Just one last question then. From my understanding of the evidence, there was no consideration given to commercial vegetable growing in the development of table 14.2. Is that correct?

A. There was an attempt to, regardless of how the land was being used, it was to try and provide a link, that limit to the land, and the link between land to water, regardless of how that land was used. So that, regardless of whether it's vegetables, or dairy, or sheep or beef, or regardless of the enterprise, then that was still, that would be the threshold. Above that, then it's going to impact negatively in stream. So there's essentially an upper limit, regardless of what activity.

Q. So from a science based point of view, CVG has got to meet the same requirements as a dairy farm, in terms of nitrogen leeching.

A. Yes, well, if – in terms of, if you want to achieve the in-stream outcome.

QUESTIONS ARISING: ALL COUNSEL – NIL

WITNESS EXCUSED

LEGAL DISCUSSION – HOUSEKEEPING (16:44:49)

COURT ADJOURNS: 4.51 PM

5

COURT RESUMES ON FRIDAY 7 JUNE 2024 AT 10.04 AM

THE COURT ADDRESSES COUNSEL – DISCUSSION (10:04:28)

1005

MS ONGLEY CALLS

ALISON MARY DEWES (SWORN)

Q. Your full name is Alison Mary Dewes?

A. That's right.

Q. And you're a director of your own company named Tipu Whenua?

A. Yes.

Q. And you have filed three statements of evidence in these proceedings, one 6 November 2023, a second 29 January 2024, and the third 28 March 2024. You have some qualifications and experience set out in your evidence?

A. I do.

Q. And do you have any corrections to make to your evidence?

A. Yes, I do and it's in the supplementary evidence.

Q. The second supplementary statement?

A. Yes, that's right.

Q. And that is found in volume 5, tab 4, Dr Dewes, and the page is 5 – it starts at page 501.0040, but you let me know which page you want to make a correction to.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0040

A. It's point 2.5.

Q. 2.5, so that would be page 5 –

A. 0042.

Q. Thank you.

A. And there's two slight corrections in there. So where I read, as it reads: "Part of the package of evidence provided to the Environment Court making its 2012 decision real farms" and if you could delete "in the Mangatainoka catchment" and instead put "in the region".

Q. Thank you.

A. And there's a further correction in that paragraph as well. So reading on, it goes: "Based on (inaudible 10:07:46) Table 13.2 proposed limits and reductions required for 18 dairy farms" and if you could just delete "in the Mangatainoka catchment".

Q. Thank you, Dr Dewes. I should also say you've participated in a number of joint witness documents in these proceedings. Subject to that one correction that you've made, is your evidence in your three statements and the opinions that you've given in conferencing true and correct to the best of your knowledge?

A. They are.

Q. Thank you.

MS ONGLEY ADDRESSES THE COURT – SUPPLEMENTARY QUESTIONS (10:08:30)

EXAMINATION CONTINUES: MS ONGLEY

Q. So there's been some discussion about the evidence that was before the Court in 2012 regarding how many farms could meet at that time Table 13.2 CNLMs with mitigations and your second supplementary statement, 28 March 2024, which you have just made some corrections to, refer to a farm study that was the subject of Peter Taylor's evidence to the Court on 2012, is that correct?

A. That's right, the 18 farms.

Q. And Professor Horne has referred to Ross Monaghan's evidence before the Environment Court proceedings in 2012, is that correct?

A. (no audible answer 10:09:26)

Q. And did you also provide evidence in those proceedings?

A. I did.

Q. So do you recall the nature of your evidence and opinions you gave to the Court in those proceedings?

1010

A. I do in general. It was, and bearing in mind that I have done a lot of farm system modelling across the country, I did cite the examples around the country as well as referring to the farm study where they dive deeply into

about 18 farms, did farm system modelling, took into account the economics of change at the time that were available at the time, and it demonstrated that I think around 61% of those farms could meet the year 20 reductions and 78% could meet the required productions but at a moderate sort of cost, but bearing in mind the GMPs or the mitigations that were available then had changed significantly in 12 years. There are more available to us and farmers are better at applying them.

Q. Thank you. So just before getting into what GMPs might be available now, do you recall if you gave any evidence about the extent of reductions that could occur in the 2012 proceedings?

A. Yeah, the extent of reductions cannot be averaged. It depends on where people start from and depends on their biophysical characteristics that they are farming on, the rainfall, and also their own ability to make changes and their values about how much they want to change. So if we take a baseline at that point, we've talked about the 20% reduction or so or thereabouts that was required by the table at the time, but apart from that, we also cited people that could go further depending on their starting point, so 30 to 40% in some cases, and I'd also refer to the Parmeter reports as well.

Q. Well, we'll get onto that in a moment.

A. Okay.

Q. Sorry, I was just –

A. So it depends on the starting point. We can't talk about a general average. Every farmer is individual, and some can go further than others and some can go further than 20% and some might find 20% will cost them a little bit.

Q. And that was the sort of evidence you gave to the Court in the 2012 proceedings?

A. Correct.

Q. Thank you. Do you recall whether there is a significant reliance on nitrogen inhibitors in order to meet the table, at that time 13.2, targets?

A. I don't think it was significant. When I did confer with Dr Mackay about that, because he was associated with that modelling, he said it was only very marginal so only a small amount.

Q. Thank you. Now, so looking at this issue about where the most farms could meet the now Table 14.2 CNLMs today with mitigations, you have touched on that, but Professor Horne has given evidence on this in his 17 January statement regarding a 20% figure and Dr Parlato commented on that and her 28 March statement and then Professor Horne has provided further evidence in his 17 May statement. Now, I'd like to take you to the evidence of Professor Horne on 17 January, which is volume 4, tab 5.

A. What page?

Q. So if you could turn pleased to page 401.0036. Do you have that there?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 401.0036

A. Yes.

Q. So here Professor says that: "The Court has asked how many farms could meet the specified reduction of 20% and the analysis I've undertaken did not result in an overall number of farms that would be able to make the 20% reduction. My analysis did not interrogate every Overseer file" and it goes on to say instead he reviewed a large representative number of (inaudible 10:14:22) with a particular focus on higher nitrogen leaching farms with more challenging biophysical conditions and then Professor Horne says in doing so, he was able to conclude to his satisfaction that a 20% reduction was achievable by farmers of adopting a range of extensive GMPs and BMPs and is your understanding that that analysis was based on a dataset of 2012 Overseer files?

A. Yes, if that's what he said it was.

1015

Q. And do you know what GMP and BMPs were used?

A. As far as I'm aware, there has not been a report written giving the level of detail that probably I would like to see. So I am only talking in general terms in terms of what he actually did. I did confer with him about this and ask a question. He said he only did Overseer modelling. That didn't include what would be best practice, which is FARMAX modelling taking into account energetics and also the cost of change using a farm system model. He acknowledged he didn't do that and also just to point out that those with the highest risk farms with the highest risk biophysical

characteristics. So it would be expected that it's going to cost, there is going to have to be some capital investment to possibly reach the 20 or 30% reduction.

Q. Thank you. Do you wish to comment further on applying a 20% figure across the board to, and we're dealing with pastoral farms here, aren't we, not CBG, if necessary, by referring to other lines of evidence before the Court or other parts of evidence before the Court?

A. So I mean, I read in-depth all the Parmeter reports and it appears that again there were clusters of farms that were grouped according to their farm systems and regions and three of those clusters actually I was interested with the farm system modelling they showed to be more profitable by reducing their nitrogen footprint. There were the clusters 4 and 5 in the Parmeter reports used a limited amount of GMPs or mitigations and some of those showed to be less profitable but I wasn't, as a expert in this area, I wasn't comfortable with the mitigations that they used because they dropped the pasture harvest on those farms by 60% and that wouldn't normally be done by a sound modelling professional. So of course, if you're going to reduce, cut in half with the way you're doing your modelling, a pasture harvester and 12 and a half tonne to six and a half tonne then of course you're going to have significant reductions in profitability. So, yeah, I just – I do want to refer to the Parmeter reports that three of the clusters actually showed to be more profitable when they reduce their nitrogen footprint. So there's evidence –

Q. To what?

A. To meet the year 20 requirements.

Q. Yes. Well, thank you and of course that report was done for a different purpose, which was macroeconomic modelling. So and that's dealt with in your 29 January 2024 evidence, isn't it?

A. Yes.

CROSS-EXAMINATION: MS WRIGHT

Q. Good morning, Dr Dewes.

A. Good morning.

Q. I will just check that you can hear me all right?

A. Yep, yes.

Q. Thank you. My first question for you, Dr Dewes, is can you just advise how many Overseer farm assessments that you have done if that's possible?

A. Since arriving back in New Zealand in 2010, probably over a thousand or more.

Q. Thank you. I'm now going to ask you a couple of questions about how Table 14.2 works, and I'll just sort of step through the process to explain so I can then get to the question I want to put to you. So the One Plan uses on-farm nitrogen leaching estimates to determine if a farm can apply for a controlled activity consent would need to apply for a discretionary activity consent, so if your estimate is at or below that specified level, you're controlled, and if it's above, your discretionary. Is that clear?

A. (no audible answer 10:19:29)

Q. So based on your experience with Overseer, is that a legitimate use of an Overseer leaching estimate in your opinion?

A. Well, it's providing a gateway, isn't it, for farms that are either deemed as high risk or low risk. So I suppose it is a threshold for determining a farm's relative risk to the receiving environment.

Q. And do you see that that risk gateway, do you see that as being a legitimate use of an Overseer estimate?

1020

A. When you say legitimate, that is the way it is being used in other regions around New Zealand so yes.

Q. And there was some discussion yesterday about how to include conditions of consent which would require adherence to a specified leaching level. Do you have any views on how that can practically be done in your experience to ensure, for example, that that level can stay current with overt Overseer updates?

A. My practical experience is in a range of other regions around New Zealand and generally, once you've done that Overseer file, which should be updated in the current version at any time, in Rotorua, if I can cite that, you have to do one every five years because remember it is a long-term average file of how the farm is performing and how it is stepping

down according to what the consent was provided on. So I think this was discussed about yesterday, but I think every year is too onerous and I think three to five year reviews are both appropriate and also fitting because in a three to five-year-period, you might get new GMPs, you might get new updates and Overseer that give you better mitigations, so I think we just need to keep our finger on the pulse of how things are moving over the period of the consent.

Q. Thank you. I now just want to ask a question relating to policy 5.8 in the regional policy statement, so I will take you there. You're looking for volume 5 of the bundle which will possibly be behind you and then you're going to tab 11 and you'll want to be looking at page 501.033.

A. 033. There should be another number?

Q. 0339. Apologies, Dr Dewes, and the heading should say "Appendix 1"?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0339

A. Yes.

Q. And if we look – for my eyes, I can find it easier looking in the central column and this paragraph is analogous as between the three columns. So if you look at the middle column, we have got a direction in (c) to recognise the productive capability of land. See that there?

A. Yes.

Q. In your opinion, from a farm systems perspective, does an approach which allocates nitrogen based off historic leaching, does that recognise the productive capability of land?

A. No.

Q. Thank you, Dr Dewes. My final question just relates to cost and time for preparing assessments and can you please provide your view on the cost and time for preparing an NRAT assessment versus an Overseer assessment based on your understanding of the NRAT tool?

1025

A. Yes. I spent a bit of time because I see Anne-Maree Jolly went through this in her supplementary statement and when I consider – if the NRAT is to be legitimate and auditable for the purposes which it's being proposed – oh, and Anne-Maree Jolly did say it would need an expert probably with similar qualifications with ourselves with advance nutrient management

experience who are used to collecting robust data that can be verified and validated and also audited by the council. If I was to go through an NRAT and go through that process, I figured it would take me about 10 to 12 hours and that's simply because number one, I mean, I'm qualified to do dairy effluent storage calculators, so I would have to do that, that would involve a visit to the farm. I'd have to do an effluent application depth. I'd have to work out the area of impermeable surfaces on the dairy that collect the water that goes into the dairy effluent storage calculator. Not many people are fully qualified to do that and that was one of the requirements in the risk assessment, so let's say if someone was going to do that with a visit, that would cost $1,000 alone. Without a visit, and doing it via Google Maps, you could probably do it for 650. So putting that aside, the other things that are in there are things like stocking rate calculations. You'd have to collect all the data on the different stock classes, the times that they are on and off the farm, when cows go away grazing, if there are calves on the farm, all those sort of things and also make – we've found it quite – at times, it's difficult to get really accurate title areas about what the effective areas are, so that takes time with farmers as well, and then moving through things like they have got the dry matter harvested, you have got to take – you have got to collect a whole raft of material to get that accurate, what feed is on hand at the 1st of July, what feed is going at – what feed, what time is a feeder on hand, going out of the season, what was eaten by what animals, where it was fed, like the list could go on and then there is milk production data, there is nitrogen used per hectare, you would have to go to the balance records and procure all of that because often farmers can't quite remember what they have put we are, so again, for that to be legitimate, that would take significant delving into to get that correct. The nitrogen imported feeds I have often found that quite difficult to get because the DairyNZ suite doesn't always have all the mixtures that are available for the feed suppliers. So just calculating the dry matter eaten alone, which was one of the risk assessments, probably would take about two to three hours. You would have to collect all of the data that you would have to collect for an Overseer file. So I am looking at this going that is probably going to

cost around $2,000 of time or effort or all the things that you have got to do and to have it in a form that is legitimate and auditable, so my question is why wouldn't you do an Overseer file because it actually automatically collect – connect – calculates a whole raft of the questions in the NRAT.

Q. Thank you, Dr Dewes.

A. So from an economic point of view, I don't think there's much saving at all.

Q. I do thank you for that. I have as I have been sitting here and thinking I would like to ask you one follow up question on a previous question I asked you when I took you to policy 5.8 and I said does an approach to allocating nitrogen which is based off historic baseline leaching recognise the productive capability of land and your response was no. Would you please be able to explain why your answer is no?

A. Sure. We have intensified a lot of land in the last 20 or 30 years that was inappropriate for intensification and it has really been driven by permissive lending regimes and permissive resource allocation regimes whereby that hasn't recognised the intensification of monocultures on unsuitable leaky or vulnerable land and in the case of Bay of Plenty where I am working now, we are facing in the next 15 years a 0.3 of a metre sea level rise by 2040 and a significant proportion of the coast. There's probably about 200 dairy farms that are going to be affected there. We won't even be able to apply effluent in those regions because we will have a high frequency of saturated soils and even the dairy effluent storage calculator won't cope with what's coming. So I would say that looking forward, any attempts to try and enhance the most suitable land use for the land type will be not only helping farmers but will be helping New Zealand. We need to be doing farming that's fit for the land and in the past, we haven't done it that way.

Q. Thank you, Dr Dewes.

CROSS-EXAMINATION: MR ANDERSON

Q. Good morning.

A. Good morning.

Q. I have just got a quick question, a couple of questions for you about good management practice and about how comparing good management practice over time and the ability in which we can do that. So we have got GMPs from 2008, 2012, can we compare GMPs now with those in those period with any kind of confidence?

A. That's probably work that would be handy to do actually to assess what was assumed in 2012 and what is available now. So, you know, we might not have DCD on the table as an option, but we do have things like Ecotain or plantain which has been included in Overseer which will give up to a 20% reduction in nitrogen leaching alone and I note the Tararua farmers have just been given some award for their ability to significantly reduce nitrogen leaching through the use of plantain on their properties but there are other things there as well. Farmers have learnt to feed fewer cows better significantly. We've got precision agriculture available to us in terms of remote sensing on cows, so you might notice cows running around paddocks with halters on these days. That tells you how many ruminations they're doing, are they walking more, are they sitting more, are they lame, are they ill. So we've now got remote technologies that farmers are embracing at a rapid rate to allow us to feed fewer cows better, reduce wastage, and that gets to the heart of the stocking rate question which has always been a point of resistance when we've talked about that as a GMP whereas now I think farmers are learning to farm with 15 to 20% fewer cows and get 20 to 30% more production. The other thing that's available is low nitrogen feeds are far more available than they were along with those other foragers, and we've got – and the Overseer is including these sort of things over time. Another thing that wasn't in the 2012 Overseer that is now is the precision irrigation options which allows about a 20 and 30% reduction in nitrogen leaching as well through being able to apply those mitigations.

Q. And so, but that information isn't really available now, we'd have to do some more work to go and get that?

A. To compare it to 2012?

Q. Yes.

A. I don't know if anyone has actually gone and done that because it is a changing landscape.

Q. And the follow up question from that is kind of looking forward now, can we estimate or compare what GMPs are likely to be in the future with what they are now and then what they were previously?

A. Yes, I think we are getting better at things that we do all the time and so – I don't know if I quite understand your question.

Q. Can we predict what GMPs are going to be in the future and then the follow up question from that is if we were, would we be able to compare that back to now, do you follow that question?

A. Yes. I mean, well, technology is moving very fast. It's having to because farmers are having to respond to a whole suite of requests to them at the moment coming from the market especially with the science based targets, the need for greenhouse gas reporting and reduction targets, so we're getting a lot better and I see it won't be long before we're actually methane, you know, things like that. So that – there's a lot of money going into precision monitoring and technologies to allow us to not only look after welfare better but also get far higher efficiencies out of our animals and reduce wastage. So I would say in five years we'll have a significant, significantly expanded suite of options available to us as compared with 2012.

Q. And the final question is how much of that equation the stocking rates form and when you're working that out, are stocking rates an important part of that or not?

A. Yes, I think they are. I mean, if we look back at the average production in New Zealand from a dairy cow in about 2012, it was around 300 kilos a cow from a 470 kilo cow and now it's up to 390 and that's just a total reflection on people having fewer cows, feeding them better, managing them better, reducing the wastage, reducing the number of replacements in the herd et cetera. So our farmers are getting better. They've got better tools available to them and they're feeling more confident. Just like the dry stock industry or the sheep and beef industry have shown massive efficiency gains in the last 20 years, the dairy farmers are starting to do that now as well.

CROSS-EXAMINATION: MS EDWARDS

Q. Good morning, Dr Dewes. I assume you can hear me all right as well?

A. Good morning, yes, I can.

Q. I just have a couple of follow up questions to your responses just then with Mr Anderson about plantain and it's now recognised in Overseer. You referred to plantain being used to achieve a 20% reduction in nitrogen, do you have personal experience with any of those farms that have adopted plantain and achieved a 20% reduction?

1035

A. When you say "those farms", are you talking about the Tararua farms or farms that I had – I've worked with?

Q. So – well, yes, well let's start with the Tararua farms, have you had any involvement with those Tararua farms in that plantain trial?

A. Well I when I read the article it didn't name all the farms. I have had association with some Tararua farms but I don't know, I can't say conclusively it – yeah.

Q. And then have you modelled a farm that has incorporated plantain to achieve a 20% reduction that's actually achieved that on-farm rather than just modelling, the farm has actually been able to get enough plantain into the cows' diet to implement that 20% reduction?

A. It's a cumulative effect, so yes, I have done that modelling and I have seen it in practice, but – sorry, my answer was a little bit quick in that it said 20% just from plantain, that's how it might have been interpreted, I'll correct that in that it would involve a range of things being done. So basically you'd be dropping out or either going 100% plantain on say 20 or 30 per cent of the area over the summer but that would also include improved feeding for the animals over summer, you might have slightly fewer cows over the summer, so there's a – and also taking out something that would've been historically there like (inaudible 10:36:47) or turnips or a summer crop and you're changing it to plantain, and it might be spreading effluent over a wider area as well and not reduce – not putting on nitrogen applications over the summer because you'll get probably up to 20 tonnes of growth from that feed between October and May, and that also reduces the need for not only extra nitrogen but also other brought-in

feeds. So, sorry, my answer might've sound like it all came from the plantain, but it comes from a cumulative systems approach and shift on that farm which is how farmers think, they think in systems, they don't think in singular, silo mitigations. So I hope that clears it up for you.

Q. Yes, no, thank you. And then the other technology, some of the other technologies you mentioned such as precision irrigation and low nitrogen feeds, things like that aren't currently recognised by Overseer, are they?

A. Yeah, low nitrogen feeds are because –

Q. (inaudible 10:37:49) –

A. So, yes, and precision irrigation. If I could look back to 2012 it basically just said "do you irrigate" and we didn't have much choices about were you using tensiometers, are you using soil moisture deficit monitoring, what depth are you applying it, in what month. We didn't have any of those choices in 2012. Now, I mean my experience as Head of Environment for Pamu, we went through and got very accurate data on all our farms and down to the point of view we're metering the water that's going on, but Overseer does cope with us to be able to put that in fine detail now, and actually if we use the old broad brush approach of what type of irrigation were you using, pivot, a flood, or – I can't, K-Line or something were the old choices, now it asks us far more detailed questions and we can put those precise answers into Overseer, and as a result, if you're an irrigated farm it will give you far more benefits for that detailed input data giving you up to about a 15 to 20% reduction in nitrogen leaching if in fact you are using precision irrigation techniques. So it's more data in, but it's better data out.

Q. Yes, that's understood. And the other point of clarification I just had, when you were talking around – in response to Ms Ongley you said some comments about how often you might do an Overseer budget and you referenced Rotorua and in that catchment, don't they, they have five-yearly manage reduction targets that they need to meet on their way to get to their 2032 NDA?

A. Yeah, I don't know –

Q. Yes?

A. I don't know if they're all five-year step-downs but there are – yeah, yes, step-downs.

Q. There are step-downs, and the nutrient management plan and the Overseer budget coincide with those step-downs, don't they?

A. Yes, they do, although I would – there's another 2032 step-down. Things have changed a little bit over time in Rotorua. I've been there for the last 10 years but they are trying to adapt things so things aren't so onerous for the farmers, and it was that we all had to provide an Overseer every year but that became too onerous and quite hefty for the council to manage, so they have now altered things so it's just five-yearly reviews on most farms I think, but, yeah, it's different horses for different courses because there are farmers that haven't engaged to this point as well, so I don't like to give a broad brush answer.

1040

Q. Well – and that, so my question to you was going to be could this perhaps be a matter for control through the consent, the frequency of the Overseer budget to match say when you're doing your step-down or to require it if you're going to be doing a farm system change or if something unusual happens, rather than just a broad brush or a broad blanket approach to adopt the same minimum frequency for Overseer for every farm?

A. I'm not a planner so I can't say if it's going to be controlled or not, but what I can say is my experience in Rotorua is that the council is trying to work far more collegially with farmers now, which is helping, and when – there's 22 dairy farms in that catchment, for example, I mean I know it's probably got one of the more rigorous requirements in the country at the moment, they do try and work very closely with farmers and if they're making changes, for example, if a farmer decides to go and lease five contiguous land blocks and grazes young stock there and it's in the catchment, then he will just ring up the council, he will say, "look, I'm doing this different, it's different from my original consent. Could you please just work with me to make sure that I'm staying under my nitrogen leaching maximum". So it's about a partnership and I think that's something that, you know, we all have to start working towards to make things easier to cope with in this dynamic landscape that we're now in.

THE COURT ADDRESSES COUNSEL – ORDER OF QUESTIONING (10:42:30)

CROSS-EXAMINATION: MS JOHNSTON

Q. Good morning, Dr Dewes.

A. Good morning.

Q. And thank you for your evidence. I have a few questions for you but I just want to touch on – my friend has taken you to your primary brief and two supplementary briefs, that's right? Yes?

A. For this hearing? Yeah.

Q. For this evidence, yes, for this evidence in this hearing, and you were a signatory to the joint witness statement of the Overseer experts?

A. Yes.

Q. Thank you.

A. Well just one of them – oh, two – one or two, not all of them, so you'd have to be specific I think.

Q. Sorry, there was – yes, I was referring to the one in February with the Overseer experts? It was the –

A. Yes.

Q. Yes, that was the signatory that you provided at that point. And your evidence, as I understand it, is predominantly related to pastoral farming systems?

A. Yes.

Q. And it reflects a general theme, as I understand it, that you need a mix of the best available tools to help farmers adapt to change?

A. Yes.

Q. And you'd accept that that's a multidisciplinary approach?

A. Yes, it's getting more so.

Q. And you'd also accept that your evidence is quite focussed on looking at things in a holistic way across a range of land holdings and a range of enterprises, is that fair?

A. Yes.

Q. And in order to achieve that, particularly the catchment level, you'd need a range of regulatory tools, you'd accept that?

A. I'm not a planner.

Q. Well let's put it in the context of the different types of tools you might use to measure N reduction on the farm, you might look at a range of tools to help an assessment of on-farm management practices?

A. Yes. It depends on what you're calling a tool.

Q. Thank you, and you'd accept at a broad level that risk tools could form part of that toolbox, wouldn't you?

1045

A. Well, if I was doing an Overseer, and a FARMAX and an economic assessment and getting a sort of forestry assessment on a property, I suppose you would call a bit from everything and say does it meet the catchment requirements if we reconfigure this farm with these alternative land uses. I mean, that could be possibly seen as a risk tool approach.

Q. Right. Well, just so we're clear, you have designed risk tools yourself before a previously, haven't you?

A. Basically that bring together a range of data from different farm system models like Overseer or FARMAX or some water monitoring et cetera and, yes, we'd collate that data and correlate it with the overall catchment required reduction targets that are provided by the Council. So I suppose it is pulling multi-lines of evidence into a scorecard that assesses a farm's relative risk to the receiving environment based on the catchment net reductions required.

Q. Thank you and so part of that is, part of that practice that you have just described to me is identifying high and low risk land use practices and characteristics, isn't it?

A. Relative to catchment requirements.

Q. And if you were looking at that sort of approach, you would agree that the addition of biophysical characteristics would be helpful, wouldn't you?

A. They're essential and you need a range of them and very good mapping.

Q. Are you aware of how the NRAT is proposed to be used within the plan framework presently?

A. I am not a planner, but yes so some of it appears a little bit confusing given my background and that is not my area of expertise.

Q. No, that's fair. I'll just put to you that the NRAT is now being used to identify low risk farming practices. So it is no longer being used to drive practice change. You would revert to an Overseer approach. It is identifying those farms that are already low risk. Do you accept that that is how it is being used presently, do you have that understanding?

A. My understanding it is a course tool to assess risk and, as I noted before, that if you are going to spend $2,000 getting an expert to help you do that, why wouldn't you just do an Overseer.

Q. You would accept that that is your judgement and opinion though, not others?

A. That's right.

Q. Thank you and I just refer to the fact that where practice change is required now, the Council provisions relying on specified reduction pathway, the assessment of relative change through Overseer, that is your understanding?

A. Yes, from their 2012, from their 2012, '13, farm system.

Q. Yes, from that baseline. That's right. Thank you and you would support the use of Overseer to assess relative change on farm, wouldn't you?

A. From their baseline, yes.

Q. I want to take you to this topic of good management practice now and filing your second supplementary. So we could go there if you like. It is paragraph 2.7, and it is 501.0043, volume 5.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0043

A. Oh, volume 5.

Q. I think is the only volume I know. This is the last one.

A. Sorry, what was the page number again?

Q. 501.0043. It's the last page of that brief, Dr Dewes.

THE COURT:

Q. It is in tab 4 if that helps.

A. Thank you. Yes, I have that.

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. Thank you and this is something that you discussed with my learned friend earlier, but it's about the idea that appropriate GMP is a matter of definition and that that will be important for this purpose, that's right?

A. Yes.

Q. And I think it's your view that that would be informed by expert opinion, is that correct?

1050

A. You mean the suite of GMPs available at any one time?

Q. Yes, that GMPs, that there will be experts that will be able to advise you as to the suite of GMPs that might be available?

A. At any one time that can be modelled?

Q. Yes?

A. Yes.

Q. And it's your evidence that from that group of profound practices, I think we've referred to it as a toolbox through – not through your evidence but through other evidence of Dr Mackay and Professor Horne that there's not one size that fits all, is there? That there will be different –

A. No. I referred to that before, it depends on where you're starting and where you're going to.

Q. Thank you. And there will be a range of reductions that will follow depending on the GMP and how it is being defined, is that right?

A. Oh, I'm not quite sure I understand your question or your statement there. Maybe you could elaborate a bit more?

Q. So that you would accept that there are a range of management practices that are available to a farmer?

A. Mmm.

Q. And that depending on the extent that they apply those practices, there will be a range of deductions available to them?

A. Yes.

Q. And this isn't new, is it, because that was the approach that was taken when the One Plan was introduced, isn't it?

A. Yes, but the range of mitigations then are different to the range of mitigations that can be modelled now, so there are a lot more mitigations that are able to be monitored now – modelled now and assessed.

Q. Yes, but I just want to just reflect on – well no, actually, let's go there. And Professor Horne has done that, hasn't he, he's –

A. I haven't seen what Professor Horne has done in detail. I am a detailed person and I do, I do find it unsettling that that – well actually what he did is not available, like the – I did ask him what he did, he said he did Overseer models on the highest-risk farms in the region but he did not do energetics, he did not do farm system modelling, and as far as I understand it, there was not that level of detail of the economics assessed either.

Q. So you've read the six briefs filed by Professor Horne in this proceeding, Dr Dewes?

A. I have, yes.

Q. Could I take you to his original brief – I'm going to need some assistance, Mr Sinclair, with the bundle reference. I'm at page 9, paragraph 42.

MR SINCLAIR ADDRESSES MS JOHNSTON – VOLUME 2, BOOK 1, TAB 6
(10:53:03)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

A. And the page number?

Q. Page 9, common bundle –

WITNESS REFERRED TO BRIEF OF EVIDENCE OF DAVID HORNE

A. 9? Yes, I have that.

Q. And at paragraph 42 and the next one down is paragraph 43, and it sets out his analysis for the council-level hearing of interrogating outputs from the Overseer version 6.31, he relied on 259 dairy farmers in the four target catchments, so the Upper Manawatū, the Mangatainoka, the Horowhenua, and the Rangitīkei, he established an Overseer file for a case study, irrigated sheep and beef farm in the Rangitīkei, an Overseer file for a case study arable farm in the Rangitīkei, and he did so and with his reliance on his experience of Overseer and farming in the region.

Then if you go to 44 it says: "The analysis confirmed that there was a clear and direct link between the practices that many farmers would've needed to adopt in 2009 identified in Dr Monaghan's expansive list to comply with the original, and those practices that many farmers will need to employ to meet the CNLM under the recalibrated table 14.2," and I'm going to put to you that that is a comparison, a comparative exercise that Professor Horne undertook, modelling those farms using Dr Monaghan's list, that could be done through Overseer but with the benefit of his experience in Overseer and the most up to date version of it. Is that how you read those paragraphs?

1055

A. Yes.

Q. Thank you.

A. However, they are still quite general.

Q. Yes.

A. So Monaghan's list didn't include quite a few of the mitigations that are available now.

Q. Yes, and if we think about the list that were before the Court in, or the council level hearing in 2008, 2012, Dr Mackay talked to us yesterday that it was himself and Mr Taylor and Dr Monaghan that together really tested these farms against a list of practices. That's your recollection of his evidence?

A. Yes.

Q. And he said that he himself had a list, you'll recall that?

A. Yes.

Q. Or that he himself adopted a range of good management practices?

A. Yes, but I don't know what was in the list.

Q. Well, if I could just take you, because it is actually recorded in the water hearing decision, and this is actually part of his evidence to this Court as well is in his evidence and I do have a copy here.

A. Thank you.

Q. And I'm at page 8–47 of that.

A. Sorry, page 8?

Q. Dash 47.

A. Yes?

Q. And at the fourth paragraph, the last sentence before it drops into a list –

MS ONGLEY ADDRESSES THE COURT – CLARIFY WHAT IT IS (10:57:14)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. So Dr Dewes, this is the One Plan council level decision and there were a number of parts from that decision and this is the water hearing section and it's very lengthy. So we have copied the section that relates to the table and the LUC approach. I'm happy to make available the full water plan hearing and I actually had this yesterday, but Dr Mackay was content to accept that there was a list of practices that he relied on and that was before the proceedings and so they're set out there and those sorts of practices were put forward by Dr Mackay as the – he referred to it as GMP yesterday but that they were available at the time and those were the sorts of things that were considered. The only reason I raise that with you is because since the One Plan, there has always been an understanding of what was available at the time to drive farmers to meet table limits, wasn't there?

A. Yes.

Q. And since that time, you would have heard the evidence of Professor Horne, and I took Dr Mackay to this yesterday, of the expert conferencing that has occurred since the One Plan and Dr Monaghan's list and Professor – or Dr Mackay's list and Professor Horne as there was an expert witness conferencing on 28 June. Do you recall I took Dr Mackay to that yesterday?

A. That was 2022. I wasn't involved in that.

Q. Yes, but do you recall that I took him to a list in that?

A. Yes.

Q. And that that was an agreed list between experts as to the type of mitigations that would be available at that date and you have been here this week listening to the evidence, haven't you?

A. Yes.

Q. And when I traversed that list with Professor Horne, he said that having compared that, or in terms of what he looked at previously, that this list aligned well with the practices that were also available in 2008 and 2009. Do you recall that?

1100

A. I do, but we're talking in very general terms here which, having been a farm systems and Overseer modeller myself, like it's very tricky to try and talk in general terms, so I am finding this quite challenging when we're talking in general terms about very detailed material.

Q. Yes, and you would've heard Professor Horne also go on to say that to the extent he could model this list of practices in Overseer, he had when he looked at how he could reduce the farms down to their CNLM, do you recall that evidence?

A. I recall he said that, but we've not seen exactly how he did that. None of that material has been made transparent to us to interrogate. So I really – I really have a problem with talking in these general terms about very detailed matters and also for farms which he selected which were high risk both from a management and biophysical point of view, and he made some general assumptions, but without details on those farms and what he did and how he did it, I'd probably need you to ask me more detailed questions.

Q. I'm just going to ask you whether or not you've been involved in any of the expert conferencing processes and discussions since 2019 when this, his work has been interrogated, have you been involved in any of those discussions?

A. Two, the last two.

Q. Thank you. And I do just want to point out again, paragraph 43 that I took you to and the 259 dairy farmers, this was in Professor Horne's evidence, we discussed it earlier?

A. Yes.

Q. I'm just going to get you to confirm that they were situated over four catchments in the region. We read them out, the Upper Manawatū –

A. Yes, you did.

Q. – the Mangatainoka, the Horowhenua, and the Rangitīkei?

A. Yes.

Q. Thank you. I just want to turn now to your evidence to the Environment Court that you spoke of earlier with my friends originally and you've said that you have presented some evidence in that proceeding relating to the case study farms and the ability to see reductions, is that right?

A. The work, I mentioned the work of Parmeter which was done in 2017 and '18. My evidence to the Environment Court was in 2013.

Q. Yes.

A. So this is, as you can understand, this has been going on for quite a while and things aren't always in step with one another.

Q. I'm not going to get into the detail of that analysis, Dr Dewes, that wouldn't be fair to you or to me, but I do just want to reflect on the idea that there was a group of farmers, a small group of farmers as I understand described at the day that: "We're accepted to not be able to meet the CNLM because of high rainfall," do you understand – do you recall that?

A. In Peter Taylor's evidence, yes.

Q. Yes.

A. There were two out of the 18 farms that would have to make more significant investments to be able to meet the year 20 requirement.

Q. And as for those farms, as I understood your views in the Environment Court, you accepted that they should have an alternative policy gateway, that's right?

A. I don't think that was even an option – oh, yes it was actually, but it was around maybe at that stage a discussion, the discussion was that they could take more time I think. Look, it's quite rusty on exactly – I remember there was an alternative gateway being discussed for that but it was around those farms possibly having to put into a herd home or significant investment, and – because that's the only way they probably could meet the year 20 requirements.

Q. And for that reason you supported some alternative policy support for them, didn't you?

A. I wasn't there as a planner, I was there as a farm systems expert, but recognised that for two out of the 18 it might be challenging.

1105

Q. So I am just going to ask you to just think about that and recall whether at the time, and maybe you can't recall, I am going to put you one more time did you support an alternative policy gateway for those farms that would need to take those sorts of steps to meet the CNLM?

A. I'd have to go back to my evidence and read exactly what I said, I think. I know I did about 56 pages of evidence and maybe you'd like to take me to the point where it infers that I did.

Q. I do have a copy, but I only have one.

A. Well, it should be somewhere in this bundle.

Q. It's not an evidence, Dr Dewes, so we might just leave it there unless you want me to take you to it?

A. Well, I am entirely in your hands.

MS JOHNSTON ADDRESSES THE COURT – LEAVE IT THERE (11:06:10)

LEGAL DISCUSSION

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. I just want to talk to you briefly about your position with Dr Parmeter and you offered some to critique of his modelling through evidence, didn't you?

A. I offered some critique of the modelling. He didn't do it because he did clear that up when he appeared or gave some evidence, but it was the modelling that was done by some subcontractors on cluster 4 and cluster 5.

Q. I just wanted to confirm with you – will move on and I will come back to that. I have just lost my bit of paper around it, but I will just take you to my second to last topic then and there is about this use of N-inhibitors. You'd accept that N-inhibitors were part of the expected practices at the time that the good management practices that were able to be relied on to assess compliance, you'd accept that that was part of the list at the time, wouldn't you?

A. Yes.

Q. Thank you. I just want to clarify with you in terms of Dr Parmeter's work that your critique of his evidence was responded to him by reply evidence on 5 February 2024. Do you recall that?

A. Yes.

Q. And he didn't accept the critique of his work, did he?

A. Yeah, I think that he made some comments as to the difficulties associated with it and I totally understand those difficulties because the Overseer table changed in the course of the time that that modelling was being done which added a bit of complexity to the whole process.

THE COURT ADDRESSES COUNSEL – DISCUSSION (11:09:44)

MS ONGLEY TO WITNESS:

Q. You have exhibits numbered K2 to K4 with you that are national and regional reporting now available on the Overseer FM website and can you produce those for the Court?

A. Yes. I raised them in the earlier hearings, and it's exhibit K1, K2, K3, K4. The reason I did want to just table those is simply because it was an update in Overseer in January 2024 and it does provide a really good visual comparison of where a farm sits relative to all the other dairy farms in the region or any enterprise for that matter. You've got a choice of comparing a dairy farm with all the other enterprises or just dairy farms in the region for a particular year and it will basically graph that farm's performance against the spread or demographic profile of other farms in the region and also provides a timeline of that dairy farm. For example, it's progress over consecutive years as well but from a farm advisor or even a council's point of view, it offers a really good comparison of where a farm sits in a region in terms of their performance. I don't think I need to go into much more detail.

Q. Thanks.

EXHIBITS K1–K4 PRODUCED – NATIONAL REGIONAL REPORTING

THE COURT ADDRESSES COURTROOM – TAKE BREAK (11:13:42)

COURT ADJOURNS: 11.14 AM

COURT RESUMES: 11.38 AM

THE COURT ADDRESSES MS JOHNSTON – NO FURTHER QUESTIONS (11:38:10)

MS BUXEDA ADDRESSES THE COURT – WEARING MASK (11:38:30)

CROSS-EXAMINATION: MS BUXEDA

Q. Good morning, Dr Dewes.

A. Good morning.

Q. My name is Nicole Buxeda. I represent Horticulture New Zealand and I heard my learned friend's queries in her cross-examination regarding your expertise being restricted to pastoral farming. I just want to look at these exhibits and check whether these results include CVG or whether they are pastoral farming results only.

A. They will be pastoral farming results but that doesn't exclude the chance that there might be some cropping in there and vegetable growing in there.

Q. So there might be vegetable growing included in these results?

A. I mean I can't, I can't –

Q. But it's unable – you're unable to –

A. Or just from those exhibits I can't tell and I can't see inside everyone's files. I only have access to files that are shared with me, but in saying that, those exhibits show the range of results from the region but doesn't allow you to interrogate the detail in those files, so I can't answer that.

Q. Thank you. I think you appreciate my point that we've sort of struggled with CVG being lumped in together here where it's a very different system, and I'd just like you to confirm that there's no way to extract or identify the CVG results in these documents?

A. I mean, I think that's a question you should probably take up with Overseer.

1140

RE-EXAMINATION: MS ONGLEY – NIL

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good morning, Dr Dewes.

A. Good morning.

Q. You've obviously got some experience with reference files into the Rotorua area, is that correct?

A. Yes.

Q. Are there any things you think we should be aware of in terms of "dos and don'ts" with the reference files?

A. That's quite a hard question. The way they're being used in Rotorua is probably open for some examination.

Q. Okay.

A. They've designed synthetic farms that probably don't relate totally equitably across the farms that they then expand it to.

Q. That was always an issue, I remember that.

A. Yeah, and I mean there's a lot of issues as you will be well aware in Rotorua.

Q. Mmm.

A. And they're using things to an absolute number there and obviously they haven't been able to buy out the nitrogen that they want so they're still going to have to keep scalping nitrogen from unassuming landowners moving forward, so – based on also Overseer updates. But while the reference file approach, the way they've been using it there has been I suppose a temporary fix, I think it could be improved moving forward.

Q. Okay. No, that's good, thank you, because that's another decision I had quite a large involvement in writing, so. In terms of the review period for Overseer and like at the time of Rotorua one year was a fairly typical review period everywhere –

A. Yes.

Q. – I'm pleased to see that it's been relaxed somewhat. Do you have a feel for what the rest of the country is doing in terms of review periods for Overseer files?

A. I can't comment on what Waikato is doing because we don't yet know. From my understanding, it's either three years or five years depending on how critical the catchment needs are.

Q. Right.

A. So – yeah. If you're talking about in reference specifically to how councils are managing them, but then of course there's milk companies that are doing them every year now. So that's, oh, Synlait, Open Country Dairies, Miraka, and large corporate entities like Pamu are doing it every year because, simply because people are required to do greenhouse gas reporting as well, so as you'll be aware, that's one of the outputs for Overseer, so.

Q. Now in terms of GMPs, they're elements of every proposal before the Court at the moment, whichever way the Court decides to go, GMPs will be in there. In terms of Overseer modelling and its limitations, is there some kind of method where you could say that based on Overseer we get these results and there are these extra ones that are not covered by Overseer and you'd expect them to produce this kind of additional reduction, is that somewhere you could address that issue?

A. Yes, they'd be additional descriptions or descriptors in application, just as I expect the multi-evidence approach is asking for as well. So things like even critical source areas, management of steep slopes, different stock classes on different, you know, sloped hills because Overseer doesn't take into account slope very well, all those sort of things would be mitigations that would constrain the loss of sediment in phosphorous and E.coli which are obviously important in a lot of our sensitive catchments so I would imagine that descriptors around what is being done for mitigations on those other vulnerable areas that aren't assessed by Overseer would be additional and beneficial, and even in Rotorua they're adding in things that we have to be talking about that aren't necessarily covered by the nitrogen loss number, but are providing multi lines of evidence.

Q. Now just talking briefly about the risk tool, you did some work and I understand that Fonterra might've built on some of the work that you did in terms of developing their risk tool, is that correct?

1145

A. So I developed a risk assessment tool for the upper Waikato when I did my masters there across 100 farms and even at that point Overseer was

going through quite a few changes so – and I also figured that there was no way that we had to provide alternative data to complement what we were getting from Overseer, so I designed a risks, I suppose it was a, it was a – it is a scorecard that is populated by data from other sources. So we might have done ranking water testing or shallow bore testing on the farm so we would have put in the nitrate levels in the bore and stuff like that. So it was – then Richard Allen met with me in 2018 and said Fonterra would like to use my risk scorecard but I said: "But you have still got to keep the Overseer numbers in there because we are adding to the Overseer numbers" but they took the Overseer numbers out. So the nitrogen risk scorecard that they are now using doesn't rely on Overseer and it is just focused on nitrogen, not a range of multiple evidence sources.

Q. Yes, okay know that is helpful thank you. In terms of the relative costs for providing Overseer files and an NRT file, for a want of a better word, we hear all sorts of estimates of how much it costs for an Overseer file, anything ranged from about 2000 to 20,000. In relative terms, if they are both done to get you an equivalent result, what sort of annual – what sort of cost per file would you see is reasonable?

A. You mean per Overseer file?

Q. Yes.

A. Again, it depends on the complexity of the farm, which you know about. So let's say a straightforward dairy farm with three blocks, may be an effluent block, and non-effluent block, and a support block, so there's not a lot of different blocks to collect a lot of information on, and if you're dealing with a farm that is used to having good data recorded, and they are all getting a lot better because of what Fonterra is requiring them to do, it is a matter of, as an expert, checking that against their management accounts or their Xero records or their my balance because we get audited in Rotorua for keeping that information. Dealing with a farmer that is used to that and has been doing that for a few years, anything from two hours to four hours, if it is a slightly more complex farm, maybe six hours. If it is a sheep and beef enterprise, that is different. There are a lot of different blocks of stock classes, as you understand, but 690 is the

Overseer annual fee and then and on two to four to six hours may be another $1,000. You don't have to visit the farm if you have done it once to ground truth it. We have got good Google mapping available to us, so maybe –

Q. a couple of thousand is what you are talking about?

A. Yes.

Q. Okay. Thank you. There is one perplexing matter for me in this case is that we hear about the improvements in GMPs over the years and yet we're still getting a situation where people can't read Table 14.2. Do you have any magical answer for that, the reasons behind that?

A. I haven't seen any up to date good professional modelling to be able to answer that. We have had a lot of comments that have been general and high level, we have not seen any recent since 2018. In a way, my recommendation would be that we go back to those 18 farms and we find 12 farms or even 10 farms now and then do them with using a professional approach with FARMAX, Overseer, and reviewing that farm system modelling again with the current knowledge and tools that we have available because when I look back to what was done, the 2008 to 2012 reports that were done were done very well. I haven't had that same transparency on anything since then.

Q. Okay. Thank you. Thank you, that is very helpful. Thank you.

QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS – NIL

QUESTIONS FROM THE COURT: JUDGE SEMPLE

Q. I just have one matter that really it is just around helping me with my understanding really. So as a farm systems expert, if I pick up the plan, well my first question might be whether a farmer is likely to come to you with a plan or a planner is likely to come to you with a plan and say I need a nutrient management plan that meets these criteria. How does that normally work in terms of people engaging a farm systems expert? Is it normally direct or is it normally via a planner?

1150

A. Again, my experience in Rotorua and in other catchments is that the councils will accredit farm systems experts to be the third party to deal with the farmers. So in Rotorua, for example, there's a suite of us that are accredited to prepare the material on behalf of the farmer for the councils. So we're an intermediary which takes away I suppose that threatening, the threat of farmers having to share absolutely all their information, but then recently Rotorua has started auditing us as professionals to make sure that we've collect – that we have collated and kept all the evidence that we use to build the Overseer file and all the assumptions that we did as well. So and some of them as you know are going back 10 years.

Q. All right.

A. So it does put quite an onus on us as professionals.

Q. Yes, and really what I'm trying to understand is if the specified reduction pathway is included as part of the plan, I'm looking at the council's what they call reply provisions. So the way that it is set out now, is that – if I have an unconsented farm, for example, in this area, so I don't have any, I don't have a consent to start from, and I'm looking at that specified reduction pathway, I'm trying to understand what will go into Overseer to provide the evidential basis to show that you've met the criteria. So when I look at how that works, so it talks about needing a farm, a nutrient management plan that shows, that demonstrates a minimum reduction in cumulative N leaching loss of 20% relative to nitrogen baseline and that that's demonstrated within two years, and that nitrogen baseline has a defined, is defined in the plan and is the 2012/2013 modelled using Overseer. So can you just explain to me practically how you go about meeting that?

A. If you have been the farm owner since that time that's not so difficult, but in a lot of cases we do have changes in ownership and in management –

Q. All right, we'll go down that pathway first. Say I have had the farm for that period of time, what is involved?

A. You will have your milk production records that will be easy to procure, you'll probably have reasonable fertiliser records for that time or you'll – some farmers are better at keeping this than others, to be fair, so it

depends on what point on the demographic profile we're talking about. We've got exactly this case in Rotorua as well and data is your best friend, records are your best friend, and if you have kept good records that you can pull together to demonstrate your farm system I would suggest you would be better off than if you can't procure that information, because what I've seen in councils where you can't procure that information, they will just give you a number and that number will likely to be – well might not go in your favour because there's only two choices there, right?

Q. Yes, well that's –

A. Either you present the data or you don't and you stand the risk of what's happening in Rotorua where they'll just say oh, no, well 17 is your number when in fact it might've been 45.

Q. Right, so there's a – so there might be a – just help me to understand this. So you either find yourself in a situation where you as the modeller say "I simply don't have enough information to model it", or are you trying to put in place some assumptions about what might have been? What's the –

A. You mean me as a professional?

1155

Q. Yes, because it's – the plan is going to require, I can't just sort of do it myself and go into the council with my application, it's going to require that it's done through an appropriate system, so what – I'm trying to understand really how much objectivity there might be, whether if people don't have the data that's going to be the end of it, they just won't get any further, I'm just trying to understand how that works.

A. Yeah, we've had quite a few situations like that, and if people – as a professional you're always trying to help the farmer do the best that they can. So – but then in saying that, you've got to be totally evidence-based so you're never going to put yourself in that situation where you're not. Generally dairy farms aren't that hard because you will have the milk production data, you'll have records of cow sales and cow numbers and things like that and you can pull most of that together with reasonable evidence, and also we've got now retro-view files, so the council will use that and if they really have to they will go and count cow numbers and shade areas and all that sort of business. They do threaten that, of

course. So you can piece together data and as a professional working for a farmer you will try to get the best outcome for them if you can, and in the situation of Rotorua where we've got, you know, maybe 20% of the smaller landowners still that haven't engaged, they're facing having just a scalped nitrogen level given to them, so again as a professional working with those farmers I'm trying to encourage them to pull together as much defendable information as they can to generate in Overseer. It definitely is a challenge now that we've got out to 12 and 14 years beyond those times, so I would've thought where you can't procure that data the council is just going to have to give them a number or say basically this is the baseline. I don't know –

Q. Well I think this pathway might not be available to you if you can't do that analysis, I suspect might be the answer in this case, but I'm just trying to understand exactly what the processes would be to try and get to to being able to access this pathway, if it exists?

A. But for those pathways you still had to demonstrate what you were doing in '12 and '13 though, didn't you?

Q. In terms of any pathway?

A. Yes, so you still had to do that historical justification of where you were, so that's still a problem.

Q. Mmm, for everyone?

A. Yes.

QUESTIONS ARISING – NIL

WITNESS EXCUSED

MS ONGLEY ADDRESSES THE COURT – TRANSCRIPT REFERENCE PAGE 318 (11:57:39)

MS ONGLEY CALLS

ELIZABETH HELEN PARLATO (AFFIRMED)

Q. Good – well I would say good afternoon as I think it's just hitting noon, so good afternoon, Dr Parlato. Your full name is Elizabeth Helen Parlato?

A. It is.

Q. And you are currently employed as a senior ecologist at The Catalyst Group?

A. I am.

1200

Q. And you have provided two statements of evidence in these proceedings, your evidence in chief of 6 November 2023 and a supplementary statement of 28 March. Do you have any corrections to make your evidence?

A. No, I don't.

Q. You have the qualifications and experience set out in your evidence?

A. I do.

Q. And you have also been involved in joint witness conferencing. Can you confirm that the opinions in your evidence and at conferencing is true and correct to the best of your knowledge?

A. Yes.

Q. And can you please answer questions?

A. Yes.

CROSS-EXAMINATION: MS WRIGHT

Q. Good afternoon, Dr Parlato.

A. Good afternoon.

Q. I would like to start with some questions in relation to your March 2024 evidence. So I will just take you there. We are looking at volume 5 and that is –

A. I have got a copy here in the court, yeah, yep.

Q. Thank you. Yes, volume 5, tab 5 for the Court and that I'm taking you through to page 501.0050 and I'm just going to ask you a few questions to orientate you and the Court and then ask some more general questions to follow up. So you'll have heard the conversation yesterday, were you in the courtroom, Dr Parlato, (inaudible 12:02:02) Professor Horne?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0050

A. I was. Yes.

Q. So am I correct that your table and also Professor Horne's table, which undertakes a similar analysis for the year 20 CNLMs, is undertaken using a 20% reduction essentially as a proxy for meeting Table 14.2 with GMP, am I correct in that?

A. For dairy, yes.

Q. Yes, for dairy. Thank you and I'd now just like to take you to, if you, I'd recommend keeping this table close to hand because I will take you back there, but I'd like, just like to take you to the joint witness statement that Ms Johnston took one of the witnesses to yesterday and that is the joint witness statement of farming experts in June 2022 and so that is in volume 2, book 4, and that's at tab 38 and the reference I am going to is on page 204.2281 and .2282 and this is the list of mitigations that this group of farm experts, which I understand include you, agreed to with one struck off as being agreed to being struck off. Are you at that page, Dr Parlato?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGES 204.2281 AND 204.2282

A. I am.

Q. Can you please comment on your understanding of the extent to which these mitigations were used to land on that 20% figure. Were some in and some out, for example?

A. So Professor Horne in his evidence, he explained that he used quite an extensive range of GMPs and BMPs to achieve the 20% reduction on the farms that he analysed but I did hear him say under questioning on Wednesday that he didn't include things such as stock housing and he did look at stand-off but for quite short periods. So, yeah, so may – perhaps some of the more – he explained that some of those required

quite a large amount of infrastructure and so he didn't incorporate those and I think, I think I heard him say, but I'm not sure, I think I heard him say that he didn't include plantain either, which is included here, but yeah, I haven't seen the transcript to double check that so far, yep.

1205

Q. Thank you, Dr Parlato. If we now go back to your table in your evidence, it's Table 1, and to reorientate the Court and the parties, that's at 501.0050. Can you please explain to me what your analysis in Table 1 doesn't capture?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0050

A. So it doesn't capture whether if those dairy farms were able to reduce further than the 20% cut off, which has been used here, how many of those would then be able to meet Table 14.2 at year 10 and I think we did hear Professor Horne say that there would be a group of farms that potentially would look to stretch a little bit further to meet Table 14.2 if they were close to their limit with a 20% reduction.

Q. Yes, and was that – in my notes, I think that was approximately 15 to 20% of farms that didn't meet Table 14.2 with a 20% reduction were close to meeting it. Was that your understanding also?

A. Yes, I – from memory, it was something in that realm of things that I – I think he thought they'd sort of be within a couple of kgs of nitrogen per hectare per year off it. So they could be incentivised to just stretch that little bit further to make the limit, yeah.

Q. And what would the implications, you know, are you able to comment on the implications of that additional 15 to 20% for the figures in your table, the percentages in your table?

A. I couldn't say exactly because I don't know how many – I could work out what 15 to 20% of the farms that don't meet would be and then calculate that but, and I could certainly do that for the Court if that was helpful, but at this point I could say it would be more than currently presented in the table.

Q. And would it be fair to say also that logically that would mean there'd be a similar implication for Professor Horne's table which shows the 20 year estimate, farms being able to meet the 20 year maxims?

A. That's correct, yeah, and I guess on that note just looking at our two tables, so mine shows with a 20% reduction and no more for dairy the expected number of farms that would meet Table 14.2 year 10 and I would just note with the updated Table 14.2, I think the maximum difference between the year 10 and the year 20 limit is two kilograms of nitrogen per hectare per year. So that would potentially indicate that these farms in meeting year 10 will be within two kilograms of nitrogen per hectare per year from the year 20 limit and it was that cohort of farms that Professor Horne thought could potentially stretch a bit more.

Q. Thank you. I'd now like to ask you some questions about a slightly different analysis that yourself and Professor Horne have sort of undertaken different but complementary parts of and to do that, I'd like to take you to Professor Horne's January 2024 evidence. So bear with me and I'll find you the reference for that. That is in volume 4 and at tab 5 and the page reference is 401.0034?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 401.0034

A. Yes.

1210

Q. And I'm looking at table 3 which is at the bottom end of that page and runs onto the next page at 401.0035?

A. Yes, yeah.

Q. Just so that we can orientate my following questions, can you please explain to me your understanding of what this table shows?

A. So this table shows – rather than the number of farms, Professor Horne clarified that these tables actually show the percentage of farm, so it's the percentage of farms who would've met the recalibrated table 14.2 CNLM in 2019, so essentially he used the range of farms that he's outlined in his analysis. This was a smaller group of farms. I think he explains in his evidence that he didn't have Overseer data from 2019 for the full suite of farms that he had for his 2012-based analysis, but he nevertheless ran this analysis on the farms that he did have the 2019 data for and estimated the number of those farms based on the 2019 data who would meet their table 14 CNLMs in year 1, 10, and 20 at that time.

Q. And I think in your subsequent evidence you've put forward a number of 63% that relates back to this table, can you please explain to me how that 63% number relates to this table?

A. Yes, I took the numbers that Professor Horne provided in a later piece of evidence that explained how many farms he used from these different catchments for his analysis, and so I worked out what 81% of the Horowhenua farms were and so on through the catchments and worked out overall based on the figures he presented what the overall percentage that would meet across those catchments, acknowledging that that doesn't include upper Manawatū so it's not representative of all of the catchments, but of those three that he analysed.

Q. Sorry, and did you say that – which year did you say that was for? I missed that, apoloogies.

A. I did that for year 10 because – I did that for year 10 because that was the focus of my evidence.

Q. Do you have any view on what a similar – or can you get a feel for what a similar collective calculation would mean for that year 20 figure based on that 2019 data?

A. Yes, I did that calculation as well but I didn't present it in my analysis because obviously, yeah, I was focussed on year 10, but by my estimation it's around 56% of the farms that he's included would meet year 20 in 2019 at their current practice at that time.

Q. Thank you. Dr Parlato, I'm now going to ask you some questions about the nitrogen risk assessment tool.

A. Mhm.

Q. And before I start I think I'll get the moving around done. So if – I'm going to take you to the council's most recent version of their provisions, so that's the council (inaudible 12:13:57) provisions, so if we go to volume 5 and you'll be going to tab 11 and we want to go down to 501.0377, and I'm looking here at the part B, pastoral farming litigations. Are we at the same point?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 501.0377

A. We are, yes.

Q. In your primary evidence you expressed some concerns about the values that had been assigned in the NRAT schedule to the wetland and plantain mitigations, that's correct?

A. Yes.

Q. Have those concerns been addressed by these updated provisions?

1215

A. Yes, so, when I think I explained in my evidence when I was reviewing it I noticed in the provisions that had been put forward that the values in this particular part B hadn't recognised some subsequent work that had gone in to establish what those values could be, they'd been earlier values that had been put in. So just relooking at this, yes, it looks as though the plantain values now reflect what had been agreed. I wasn't involved in that conferencing but what had been agreed by the experts during that and the constructed wetlands values now match but it needs to be recognised that they're per cent reductions not absolute value reductions. I see there's still not a percentage included there in the column and I also think it's probably more accurate to not have reduction in overall risk score as the heading there because as now included, because that was another thing that was missing, that percentage reduction is adjusted on a pro-rata basis as to the amount of the catchment area as a proportion of the total farm area. So again those values are not going to be a reduction in the overall risk or unless the catchment area is the total farm area, in which case they would be but those values need to be adjusted accordingly.

Q. Awesome, thank you. Yesterday, Dr Parlato, the Court asked Ms Foster a question about whether there was a risk that with the nitrogen risk assessment tool that high leaches might go through as low leaches. Do you have and she agreed as I understood it that was a potential risk, do you have any view on that issue?

A. Yes. I believe there could be a risk of that and the reason for that is because I think we've heard on a number of occasions that there are some very high leaching farms which have high risk biophysical profiles and I think the wording sometimes used is "through no fault of their own" they can't reduce their risk sufficiently to meet Table 14.2 and I think

Professor Horne mentions in his evidence-in-chief that a number of these farms are quite low intensity farms and so the options available to them are quite limited and to me that indicates that these farms in terms of their management risk, which is assessed by the scorecard, could potentially come through as low-risk and so yes, so I think he's used suggestions you know of 100 to 80 kilograms of nitrogen per hectare per year and they're quite – can be limited in what they can do because they already have those low-risk practices in place or they're trying to manage – have good management practices in place there. So I do see that there's the potential for that to occur with the risk assessment tool, yep.

Q. You used the phrase just before of "through no fault of their own", which has come up a number of times in this proceeding, can you understand – can you explain your understanding of what is meant by "through no fault of their own"? For example, is that because the capability of their land is not up to the nature of the operation for example?

A. I believe, I mean I don't want to put words into people's mouths, but I believe it means that they've got those good management practices in place, they're doing the best they can on the land, but yeah, I don't feel comfortable, yeah.

Q. No, that's fine. I've now just got one further and final set of questions and these relate to some of the comments about the water quality data analysis from data analysis perspective in your primary evidence. And you expressed some concerns about the conclusion in Dr Snelder's evidence that modest improvements in water quality would be achieved with the NRAT limits, do you have any concerns about whether those outcomes would be achieved under the specified reductions pathway option from a looking at the data analysis perspective, I appreciate your area of expertise as opposed to pure water quality?

A. Yes, so I guess I have similar concerns for the specified reduction pathway analysis, that was done in Dr Snelder's evidence-in-chief for these proceedings because again the reduction was assessed relative to a 2012 baseline and it was across consented and unconsented farms, which is quite different to the situation that we're at today where we have changes in practice, I guess as evidenced in Professor Horne's evidence

the differences between 2012 and 2019. They're in a different space and I understand that this is currently focused on unconsented farms but obviously some consented farms may come into this depending on their expiry dates. So yeah, so basically it's the kind of the baseline. So we want to understand what these tools or pathways are going to achieve now if they were to be or in the foreseeable future if they were to be implemented and so I guess it's using the 2012 baseline to assess the magnitude of the changes where my concerns lay and Dr Snelder did agree that the magnitude estimated would be different if you used a different baseline. I understand the purpose of his analysis was to look at the relative difference between the two approaches, in which case the baseline becomes less relevant and going back to Professor Snelder's analysis that he did previously, which has been referred to quite a lot, the proposed pathway B I think has been identified as the equivalent of the specified reduction pathway and certainly the analysis carried out back there was a lot more nuanced than in-depth and yeah and a lot of work obviously went into that and I guess the main issue I have with that analysis in terms of understanding and like that's a much more realistic analysis in the sense that it actually sets consented farms at consented rates and then it looks at the unconsented farms and what would be happening on farm for them. But as I understand it the way he set out the methods that he used, he had 70 unconsented farms where the 2012 baseline rates were known and then there were a number, probably quite a substantial number given the number of unconsented farms where their 2012 baseline rates weren't known and so he applied the 12 kilograms nitrogen per hectare per year reduction to those 70 farms if that reduction brought them above their Table 14.2 limits and if the Table 14.2 limit was higher than what that 12 kg reduction would achieve then they were set to the Table 14.2 limit. And then for the remaining unknown unconsented farms, they were set to Table 14.2 limits. So to me that really just represents quite a small proportion of unconsented farms that are following the 12 kg, which I just will note probably, I mean that's on average as Professor Horne mentioned it's not actually a 20 per cent reduction for those farms because that requires an individual level

analysis of what that would be. So it doesn't really capture what would happen if unconsented or the full range of unconsented farms were to follow that production pathway.

Q. Would it be fair to say it's kind of a, it can be more appropriately described as a Table 14.2 variation analysis?

A. Yeah, so it does seem to be –

Q. In your opinion?

A. – more strong, yes, well, I think more farms are set to meet Table 14.2 than they are to the specified reduction pathway under what's been presented as having been done there.

1225

CROSS-EXAMINATION: MS BUXEDA

Q. Good afternoon, Dr Parlato.

A. Good afternoon.

Q. I represent HortNZ and I'd just like to start off with clarifying your evidences in relation to pastoral farming.

A. Yes, primarily it does briefly touch on CVG in this most recent supplementary evidence but it just drew on the work of others to incorporate that, yep

Q. And as you anticipate this, that's why I'm on my feet at the moment because you haven't heard a CVG figure at your Table 1, would you like me to take you exactly where I am?

A. I can re-find that.

Q. So I'm looking at the supplementary bundle.

A. Yes.

Q. Fully in tabs 35 for the Court and I'm looking at common bundle reference, sorry volume 5, tab 5, what am I saying, volume 5, tab 5, and I'm looking at 501.0050 and I see you have that in front of you. You state that the purpose of your evidence is to provide the Court with an analysis of whether the recalibration at Table 14.2 CNLMs are achievable on most farms.

A. Yes.

Q. And that on doing this you focus on the year 10 CNLMs? Thank you. And in answering this question specifically in Table 1, you include CVG with all other intensive farming land uses?

A. Yes.

Q. Thank you. However, this is not the approach taken by Dr Jolly and Professor Horne, is it?

A. Well, Professor Horne did that in his year 20 analysis that on this.

Q. And I believe that Professor Horne's year 20 analysis took this table –

A. Yes.

Q. – from your evidence and then built upon it but prior to you producing this.

A. Yes, they had done separate analyses for CVG and pastoral respectively, yep.

Q. I mean in your evidence you note that Professor Horne provided results and an analysis that he undertook to estimate the percentage of dairy farms. Did you note that he submits that 44 per cent dairy farms would have met the year 10 and that more were able to meet their limit in 2019?

A. Yes. Just, can you just repeat that?

Q. My apologies, the purpose of this is to highlight that Professor Horne focused on the dairy farm, the dairy farm factor in that.

A. Yes, he absolutely did that, yep.

Q. Thank you. Now you include the 2 CVG farms which you estimate will be able to meet the year 10 CNLMs, are you aware that these two farms are a potato and onion system only?

A. I am.

Q. And I just want to clarify with you, that you're aware that none of them have greens in the area are able to meet the Table 14.2 year 10 CNLMs?

A. So that is my understanding that's what the evidence says. I guess you will notice that I made an additional comment based on reading the evidence that there is evidence in front of the Court that indicates that some quite substantial reductions could be achieved through the risk assessment tool and Dr Jolly, as you will be aware, she did a table too I think in her evidence that indicated a 70 – of rotations 70 per cent reduction could potentially be achieved with that. So –

Q. Through the risk assessment tool?

A. Implementation of that, yes.

Q. Implementation of the assessment tool.

A. So this analysis is looking at if you, as Professor Horne did, what's achievable and where they're on that basis 14.2 limits would be able to be met.

Q. Thank you, but I just want to clarify your comment there, you say that significant reductions are evidence is before the Court that significant reductions are possible through the risk assessment tool?

A. Yes.

Q. But your assessment here is solely in relation to Table 14.2?

A. Yes, but the purpose of the assessment was to understand whether through implementation of GMPs and BMPs as set out in the risk assessment tool as well whether reductions and so that's what Professor Horne undertook. He looked at if you were to introduce a range of GMPs and BMPs, what, whether, not whether farms can current meet, but whether they will be able to with the implementation of that. So I understand that the evidence is saying that currently potatoes and onions but I guess there's also evidence to suggest that potentially with the implementation of GMPs and BMPs that additional reductions could be made.

1230

Q. And implementations of those GMPs and BMPs is associated with the risk assessment tool?

A. That's what the evidence has focused on. I, my understanding of it, yes.

Q. Now, I understand that you're here representing Ngāti Te Rūnanga and Wellington Fish & Game Council who are seeking that the risk assessment tool not be part of the plan provisions?

A. That is my understanding.

Q. Going back to Table 1, 4% of CVG based on these figures can meet the year 10 CNLM. Now because this is lumped in with all other farmland uses, in your evidence you say to the Court that most, if most is considered greater than 50%, most are achievable on the farms, sorry most of the – most farms can achieve Table 14.2 year 10 CNLMs using GMPs and BMPs. Would you not agree that only 4% of CVG and that's

not representative of leafy greens, only 4% of all CVG would be likely to meet this does not accurately or clearly represent CVG in the area?

A. Yes, that was the I guess the purpose of this analysis was to look across all IFLUs and do that. So the table sets out what's going on within that to provide a bit of additional detail, but yes, the purpose was across the full suite. So it doesn't capture what's happening within each one very accurately.

Q. And just, and I know that your expertise is not in CVG, but are you aware of HortNZ's evidence that green vegetables are vital for human health?

A. I am.

Q. And are you aware of the evidence that 20% of the green vegetables in New Zealand are grown under the One Plan in the targeted water management subzones?

A. I don't recall those exact figures, but I can take your word for it, yep.

Q. I can take you to this but I am happy that there is evidence before the Court that 20% of the green vegetables are grown in the One Plan under the targeted water management subzone and remembering the fact that no green vegetable operations are capable of meeting Table 14.2 year 10 as per your table, you are still confident in your assessment to the Court that most IFLU can meet the year 10 CNLMs?

A. So, there is other, I mean I also included that in my evidence, looking at I think it was an appendix to, where are we? I just need to find where I sighted that. That was an appendix of Ms Holmes' evidence that outlined the nitrogen loss rates for from memory for potatoes and onions intensive vegetable rotations and brassicas separately.

Q. Yes.

A. And it actually gave the I assume average leaching rates because they're a fixed value there and it did identified as far as I could tell that the Bloomer modelling indicated that for intensive vegetable rotations the estimated loss was 44 kilograms of nitrogen per hectare per year and I also noted that this is quite close to the year 10 CNLM value for class 1 land, which I understand is where a lot of these vegetables are grown. So and unfortunately again the Overseer issue meant that the versions don't quite match up, but it did indicate that they would be potentially

within (inaudible 12:34:31) and I understand that the basic rotations were well outside that and that there will be operations that have both of those going on so it goes out, but I just also noted that, yep, that as well.

Q. You noted that it's close but no cigar?

A. You'd have to get the exact Overseer version to work that out.

Q. No further questions, thank you very much.

1235

CROSS-EXAMINATION: MS EDWARDS

Q. Good afternoon, Dr Parlato.

A. Good afternoon.

Q. And I'm going to be very brief, I only have a couple of questions and I think you've been clear in your March evidence that you've relied on the work of others and you haven't assessed any individual farms, have you, or their ability to meet Table 14.2?

A. No, that's right.

Q. And you'd agree that the actual numbers of farmers that can meet Table 14.2 will depend on the actual farms when they come to be assessed and things like the mitigations available to them and what the current farm system is and other factors like that wouldn't you agree?

A. Yes, I would, yes.

Q. I just have a question about the intensive sheep and beef farms, in your March evidence you refer to Professor Horne and say that and rely on his evidence that there was no data on intensive sheep and beef, but it would be relatively easy for those farms to meet their CNLMs?

A. Yes.

Q. And on that basis you assume that all seven existing intensive sheep and beef farms can meet their year 10 CNLMs?

A. Yes, correct.

Q. So and two of them have consents, so there's five unconsented sheep and beef farms. Mrs Foster attaches to her February the spreadsheet of all farms that have been granted consent to date, are you aware of that?

A. Yes, I am, yes.

Q. And you've looked at that?

A. I have.

Q. And it's only in the electronic bundle and I don't think you need to go there, but when I looked at it consents had been granted in that spreadsheet for seven intensive sheep and beef farms, two of them existing and five of them were new sheep and beef farms. Of those five new sheep and beef farms that have consents, two of them have been consented for N losses significantly above the year 10 and the year 20 CNLMs. So one of them has a consent for 56 kgs but had a year 20 CNLM of 14 kgs and another one of those intensive sheep and beef farms had a consent for 31 kgs compared with a year 20 CNLM of 19 kgs. So my question for you is you would accept that it is possible when it comes to looking at those five unconsented farms that your Table 1 has assumed can meet their CNLMs, it might be that they are above their CNLMs and they're not able to meet them?

A. Yes, I would agree with that. I guess again the ability to be able to meet them comes down to the individual farms and whether that requirement is made. So I mean, I don't know those farm systems that are well-above, but, and I also wouldn't know if there are additional improvements that they could make. So, yes, it does sound like certainly sheep and beef can well-exceed their Table 14.2 limits but, yep, as you mentioned, it would come down to the – yeah, and as I said, my analysis was on the basis of the information provided by other witnesses at that time and it was focused on the existing, so I – yeah, (inaudible 12:38:47).

Q. And I think – what I hear you're saying, and this is correct, it would depend on the individual farm assessment when you come to look at these individual farms, where they're at right now, what system they're operating, what mitigations are available at the time, and a range of other factors. You're just making some high level assumptions at the moment in arriving (inaudible 12:39:08)?

A. Yes, drawing on what the others have indicated in their evidence, that's right, yes.

CROSS-EXAMINATION: MS JOHNSTON

Q. Okay, Dr Parlato. Thank you for your evidence and I just want to acknowledge that out of all the witnesses, you have been the most patient and been here the longest waiting for this time.

A. That's fine.

Q. So I won't – I'll try not to keep you much longer, but I just want to start with your supplementary evidence and that seems appropriate given where questions have left off. So if we could go there, so that's your 28 March evidence?

WITNESS REFERRED TO SUPPLEMENTARY EVIDENCE

A. Yes.

Q. And I was just going to start you at paragraph 3.1 please and you've referred there – are you there?

1240

A. Yes, I am, yes.

Q. You've referred there to the Environment Court decision and your understanding that that decision on the proposed One Plan appeal is accepted, that the economic costs of achieving Table 14.2 was manageable for a majority of farms. That's right?

A. Yes.

Q. And you've got a footnote there to the decision of the Environment Court and a particular paragraph and I just want to take you there if you don't mind.

A. Sure.

Q. I've got some copies unstapled.

WITNESS REFERRED TO ENVIRONMENT COURT DECISION

A. That's okay.

Q. So that's at paragraph 5174 and this decision was referred to by my friend in submissions yesterday and I understand that we are going to be collating a casebook for the Court but I do just want to reflect at 5174 the paragraph you've referenced. Have you got that with you?

A. Yes, yep.

Q. I just wanted to note and confirm with you, that's a qualified conclusion, isn't it?

A. It is, yes.

Q. Yes, so it's on the basis of the figures and provisions that were before the Court at the time?

A. That's correct.

Q. And it refers to those figures and provisions so –

A. The ones –

Q. – presumably the ones before?

A. Yes.

Q. And if I could just get you to go back a page to 5170, that includes Mr Taylor's work?

A. Yes.

Q. And at the paragraph before and you'll see reference there to Dr Dewes and her evidence that many farms are already within the proposed year one and year 20 LUC base limits. She goes on to talk about what she's talked about here in her evidence that what she considers to be possible reductions?

A. Yes.

Q. At 5168, there's a discussion around a small number of farmers that will find the financial costs of compliance difficult?

A. Yes.

Q. If we go to the page before that to 5162, there's a discussion there between expert witnesses that all parties agree that the costs are hugely variable and farm specific and depend on the magnitude of N loss required?

A. Yes.

Q. If we go to the page before that, 5160, there's the council experts there that prepared a report on economic impacts and you'll see in that paragraph it refers to the case studies supplied to them, the farm test farms?

A. Yes, I can see that, yep.

Q. And then at 5519, the opening of the council's position where at the top of 55 –

A. What was, sorry, what was that number you just had?

Q. 5159.

A. Yep.

Q. Council's opening submissions and if I turn the page to the top of 557, the rate of change expected of farmers significantly beyond the cumulative nitrogen leaching values must be reasonable and a consenting pathway must exist through a restricted discretionary classification for those intensive food productions in about the 90th percentile that cannot meet the targets. No farm should be rendered uneconomic because the available array of mitigation measures will be insufficient over the life of the plan to achieve the specified nitrogen targets. That's your reading of part of the evidence that was before and submissions that were before the Court?

A. That, yes, that is in there, yep, absolutely.

Q. Thank you. So I just now want to reflect on the economic evidence before this proceeding and you'll be aware that the good management practices and best management practices relied on by Professor Horne and Dr Jolly were costed and assessed by WSP, aren't you?

A. Yes. I can't remember who did that analysis now.

Q. Well, if I could take you to the evidence of Kerry Mayes, and that's volume 2, 2020826.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 202.0826

A. Which book was it?

1245

Q. Yes, book 2. Book 2, tab 15. And if we could just turn to paragraph 7 at 202.0829?

A. 202.0829?

Q. Yes.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 202.0829

A. Yes.

Q. So this refers to the initial economic modelling for PC2 carried out in 2020 by Mr McNally and it draws on the skills of experts in soil nutrition, farm budgeting economics of which Mr Mayes was a part: "Mr McNally developed a farm scale financial model methodology for determining the impact of GMPs and BMPs on the economics of intensive farming land use activities, including CVG and pastoral farming. I provided economic

input for that modelling." You'd accept that? And that report is attached to this evidence of Mr Mayes of which he was a co-author at attachment A. Have you reviewed that?

A. No, I haven't.

Q. I just want to, because there has been some discussion about the GMPs relied on by Professor Horne and the economics associated with those. If I could take you to paragraph 20 and this is at 202.0831, at the bottom of this paragraph which describes the farm financial modelling it refers to: "Professor Horne provided the GMPs for modelling purposes and conducted the reduction in nitrogen leaching modelling." Is that what you read there?

A. Yes.

Q. And again in paragraph 21 it talks of the GMPs for each cluster farm that Mr McNally modelled were provided by Professor Horne," is that fair? The last sentence of paragraph 21?

A. The GMP – yes, yes.

Q. And then it goes on, doesn't it, this – well actually to be fair to you, have you read Mr Mayes' evidence?

A. I don't think so. I was given advice on evidence to read and I, I mean I've dipped in and out of evidence –

Q. That's fine.

A. It's possible I've read parts of it, yeah, of this particular –

Q. I think we can leave that there.

A. Okay.

Q. Thank you. So moving on then from the economic evidence at council level hearing and before this Court, I'm just going to turn to your review of the modelling outputs and Professor Horne's work.

A. Yes.

Q. So I'll start with the fact that, as I understand your evidence, you have pulled bits of information from various briefs?

A. Yes.

Q. And you've predominantly relied on the modelling work that Professor Horne undertook?

A. That's right.

Q. And that's his modelling work that occurred in 2019 for the council level hearing and subsequent, isn't it?

A. I understand that. So I think he's done some quite recent modelling specifically to address this, the analysis that's presented (inaudible 12:48:28) January evidence.

Q. Yes, but you will have appreciated the evidence of Professor Horne and I took Dr Dewes to this this morning of the 257 farms across those four catchments, you've heard that evidence?

A. Yes, yes.

Q. And that's the modelling that he undertook for the purposes of the council level hearing?

A. Mhm, and that's –

Q. And then he's subsequently built on that. That's your understanding?

A. That is, yes, that's where the 20% (inaudible 12:49:00) – yes, he's explained that, yes.

Q. And you've referred to his analysis of the amount of farms that could reach table 14.2 by undertaking the 20% reduction, that's right?

A. That's right.

Q. And I guess you've in answers to questions talked about the 2012 data set and then the 2019 data set, and I just feel that out of fairness to Dr Horne we should just return to his evidence on the difference between those data sets?

A. Yes.

Q. So I'd like to take you to his supplementary statement of January and that's volume 4, 401.0035, and that's at tab 5.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 401.0035

A. Can you just repeat the page number again?

1250

Q. Paragraph 9, page 2 and Professor Horne here says, remembering that he was responding to some very specific questions from the Court, you would have no doubt seen the same minute, and in an attempt to answer the Court's questions, I have interrogated the output values from a large number of Overseer files for dairy farms in the targeted water management subzones. This is the same 2012 base file data I have

previously described and is the most to complete data set he has available and you will recall from his evidence that at the time that he did the initial modelling, he had an extensive Overseer file database?

A. Yes.

Q. He goes on to record that the horizons database contains some information relating to later years but is vast vaster reflecting a reduction in consenting beyond 2017 and that – but in fairness, Professor Horne recognises that the 2019 data set he was working with wasn't nearly as extensive, was it?

A. Absolutely, yes, I mentioned before, yes.

Q. And then if we go over to page 4, he records, doesn't he, that he hasn't included all in the 2019 analysis, he hasn't included all of the priority catchments given the absence of the upper Manawatū data, that's right?

A. That's right, yes.

Q. And in his opinion, that wouldn't provide an accurate representation of catchments, so he was not prepared to put that in, is that correct?

A. Yes.

Q. So I just now want to move on to your analysis and, at the outset, I should confirm that Professor Horne has replicated your analysis in his most recent supplementary, that's right?

A. Yes, that's my understanding. He has used the same methods.

Q. Yes. Could you bear with me while I set out what I understand that to be?

A. Sure.

Q. So I understand that you took 65% of the farms that Professor Horne said could meet Table 14.2, that if they'd adopted a 20% reduction, that's right, that your starting point?

A. Yes, that's my starting point, yes.

Q. And that was a 20% reduction that Professor Horne has explained in evidence involved high to medium good management practices, extensive practices?

A. Yes, extensive range, I think.

Q. Yes. However, he wasn't able to say that they would all make that 2 % reduction, was he?

A. No, he said it would be very onerous for some farms is my recollection, yes.

Q. Yes, and I just wanted to pause there because it does set out the reduction, if you like, that you have made and if we go to his same evidence that we have just been in.

A. Sorry, I put it away.

Q. Sorry, we will wait for you. You are not –

A. Which tab again, which tab are we on, sorry?

Q. This is a test at me now, Dr Parlato, but it is volume 4, tab 5.

A. 5. Okay, yes.

Q. And it's his paragraph 31.

A. Yes.

Q. And it's his last sentence in that because I think it is an important sentence when we're reflecting on how many could actually make that 20% reduction when pushed to adopt this level of GMP, and Professor Horne states here, doesn't he, that: "As noted above, this assumes that such farms will be in such a position to make a 12 kg nitrogen hectare a year and if not, then there will be a greater number falling as discretionary activities." That was his position recorded there, wasn't it?

A. That's right.

Q. Thank you and you conservatively in your words then allowed a 10% reduction to go from 65 to 55%, isn't that right?

A. That's right and is saying that I assumed that that full 10% would be ones that otherwise would meet their Table 14.2, whereas that may not be the case. It might actually be the 10% of the farms that otherwise wouldn't meet that whole 10% may, that can't make the 20% reduction, don't necessarily full within that group of farmers. That's why I also considered it conservative. I've just basically said that full 10% would be those farms that otherwise would be meeting 14.2 and not necessarily those high leaches that if they make a 20% reduction they are still well over, that doesn't – that basically ignores those ones. So yes, I took the full 10% and put it into that cohort that would otherwise be meeting.

1255

Q. Yes, and I just want to reflect on that because essentially you've referred to the high leaches but when Professor Horne has made this statement he's referring to those farmers just generally that find 20% difficult, he's not drawing a distinction there, is he, between high leaches –

A. No, he does. On that paragraph he says: "If we consider the farms with the greater leaching losses," so he is quite focussed on that in that paragraph.

Q. In that example?

A. Yeah.

Q. But then he generally has always said that discretionary activities would be a product of this plan system, there will always be farmers that will not be able to meet their 20%?

A. Yes.

Q. And his evidence yesterday, and you reflected on this, was that the 2 kgs or the 3 kgs that my friend Ms Wright was putting to him was actually very hard to achieve when you are at a year 20, between year 10 and year 20, that was his evidence, wasn't it?

A. He said for some farms that additional push will be hard, but he did also say that in his opinion, this is my understanding of it, that if – and I think it's also in his evidence but he didn't put a number around it, but essentially if you are, in making that reduction if you're very close to your 14.2 limits and I think he said within one or two from memory, again I haven't seen the transcript to confirm that because it's just on Wednesday, but they would be likely to push that little bit extra in his view, was my understanding.

Q. His evidence has been consistent though, hasn't it, that it will become progressively harder to make N loss reductions the further you get through the table 14.2. So the difference between year 1 and 5, year 5 year 10, year 10 and 20, they might seem like smaller reductions but they're actually very hard to achieve, that's his evidence isn't it?

A. For some parts, yes, yeah. That's my understanding again, yeah.

Q. And so on the basis of your analysis you have a range of 51 to 59%, that's right?

A. Across all (inaudible 12:57:20), yes.

Q. Across (inaudible 12:57:21), that's right. And your view is most is greater than 50%?

A. I didn't say that, I said I feel then that's getting – I'm not one to define what "most" is, but just –

Q. That's helpful, thank you.

A. Yeah.

Q. Because Professor Horne takes a different view, doesn't he?

A. Yes, he does, yes.

Q. I want to turn now to the NRAT –

A. Shall I leave his evidence? I'll just – I'll put it away, yeah, okay.

Q. Yes. And at the outset I'll just get you to confirm that you are the pastoral expert participating in the later part of the conferencing process alongside Dr le Miere and Professor Horne, that's right?

A. Yes, I jointed the expert conferencing in February 2023, from memory.

Q. And you observed some CVG conferencing as well, didn't you?

A. I did, yes.

Q. And Dr Jolly also observed some of the pastoral conferencing, didn't she?

A. She did.

Q. And that's because of the cross-pollination if you like in terms of setting up the framework, that the building blocks are essentially the same between pastoral and CVG, so those – there was a sharing of information, if you like?

A. Yeah, to get them I guess in terms of the matrix and as you can see they are using the same types of (inaudible 12:58:51) water categories and rainfall categories, and so it's got a similar – the scorecard is obviously very different but a similar structure, yes.

Q. And you'd accept that by the time that you joined there had been a number of other expert conferences that occurred prior?

A. Absolutely, yes, yeah.

Q. And you would've heard and indeed you were taken to it this morning by Ms Wright that there – between those experts and some others earlier on there had been an agreement reached around the breadth of GMP that was available at that time?

A. Yes, yes, that was all done before my time, that's right.

Q. Thank you. Your first joint witness conferencing, if I recall, was 3 February 2023?

A. That sounds right.

Q. Could I just take you to that in the bundle?

A. Yes.

Q. It's tab 41, casebook volume 2, book 4, CB 204.2335?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 204.2335

A. Sorry, what tab again? I'm getting a bit lost with –

Q. Sorry, no, no, that's – take your time please, 41.

1300

A. 41. Right, yes so – and what the page was it again sorry that you wanted to –

Q. 2044335.

A. Oh, yes.

Q. And I just quickly address the bench, Dr Parlato.

MS JOHNSTON ADDRESSES THE COURT – TIMING (13:00:23)

CROSS-EXAMINATION CONTINUES: MS JOHNSTON

Q. So we are at 2042335 and so if we just turn over, there's a – do you recall that there was a list of agreed questions that were considered at this conferencing?

A. I do, yes.

Q. So if we turn over to paragraph 8 and these largely came out of a previous discussions and conferences, but if you go down to production required, there is questions there around the reductions required in N leaching generally, not just N leaching and risk, isn't there, there was some comparison and some discussion about whether adopting the work that Professor Horne has done to reduce N leaching, how that marries up with a risk reduction. There was some discussion around those sorts of things?

A. Yes. Again, I wasn't involved in those earlier discussions but my kind of understanding was it was in a bit of a transition period with the move away from the specified reduction pathway and more towards the risk

assessment approach, so there was I think probably a level of crossover between the two trying to understand how they marry up and – yeah,

Q. And you'll recall as part of those discussions that there was discussion around the types of practices that would drive N loss reductions on-farm?

A. Yes.

Q. And how they might translate into the risk matrix, you recall those discussions?

A. Yes.

Q. And those discussions focussed on the management practices that this group of experts had previously agreed between them, didn't they?

A. That's right.

Q. Thank you. If I could just go to paragraph 5.2 of your original evidence, so we're jumping back a little bit now, we're in your 6 November evidence. So I'm at 204.2113, volume 2, book 4.

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 204.2113

A. Can you just repeat the paragraph again, sorry?

Q. 5.2. And I start here because I have – when at various times through these proceedings gone back to this paragraph because I think it's a very good summary of the NRAT, so you obviously understand the design and architecture of the NRAT quite well?

A. I believe so, yeah.

Q. And you've referred there to it allocating points according to the risk of nitrogen loss associated with farm management practices, and those are those farm management practices that are reflected in the scorecard, that's right?

A. That's right.

Q. And you'll recall that those farm practices were added to if you like to represent to the Horizons Region?

A. Yes.

Q. There were some additions, weren't there?

A. I remember that was recorded, yes.

Q. And then the target nitrogen risk scores and the risk assessment tool vary depending on farm rainfall and soil type as these are important influencers on the overall risk of nitrogen loss?

A. That's right.

Q. And that’s how Professor Horne has incorporated the biophysical into the good management practice scorecard, isn’t it?

A. No, it’s how he’s incorporated the target scores set in the risk matrix, so they’re not incorporated into the scorecard, but separately it’s –

1305

Q. No, it sits in a matrix, it’s a true matrix.

A. That's right.

Q. It’s like nestled in there, isn’t it, yes, in a broader context?

A. Yes, so that’s essentially how he determined what those target scores should be, as on the basis of the biophysical aspect.

Q. And to arrive at those scores he used Overseer?

A. Yeah – so in terms of the multiplier that he used to allocate the scores across the cells, yes, he did use Overseer.

Q. And farms, so back in your 5.2, farms with greater biophysical leaching risk are required to have lower risk scores, whereas farms with lower biophysical leaching risk – oh, sorry, farms with greater biophysical leaching risk are required to have lower risk scores, whereas farms with lower biophysical leaching risk can have higher risk scores, that’s what that says and that summarises how the waiting occurs between the quadrants, doesn’t it?

A. That's right.

Q. And there’s a decrease in target values from left to right in the NRAT?

A. From left to right, decrease in – yes, because you are getting to the riskier soil profiles, yes, that's right.

Q. And it reflects that change, if you like?

A. Yes.

Q. Thank you. And that’s where you get to in that last sentence: “Takes the form of a matrix with 12 cells representing 12 biophysical profiles with a target risk score assigned to each cell,” so that, I just want to reflect on that, that target risk score, the expectation is that an individual farmer would have to meet that score, that's right isn’t it?

A. That is my understanding, that they would need to meet the score to access the controlled activity pathway as it was set up, yes.

Q. And then I just want to take you to two questions that you've raised in evidence around the NRAT, you'll recall these?

A. Yes.

Q. These are – as I understand your evidence, having signed the joint witness statements, you did say on the basis of some understandings and in evidence you've raised some questions to – with regard to that understanding at the time, is that a fair way of summarising it?

A. I would say that was fair, yeah.

Q. And so they related to the ability of the risk matrix to produce the water quality outcomes that you anticipated?

A. That I had explained to me at the time when I said I felt comfortable with the numbers, that's correct, yeah.

Q. And also the N loss reductions that you would expect from some of the quadrants, and that related to Dr le Miere's work, is that right?

A. That's correct, yeah, which was subsequently revised from what was in front of me at the time, yeah.

Q. So I just want to start with Dr Snelder's work, now he prepared reply evidence to your statement of evidence, didn't he?

A. He did, yes.

Q. And he addressed the concerns you raised, didn't he?

A. I don't – I actually thought – I don't believe that I did feel my concerns were add – I think he agreed with me in the sense that there are a lot of uncertainties, he did also acknowledge that the magnitude of change would be different if a different baseline was used which was one of my main concerns. He also noted that the level of uncertainty, I can't remember his exact wording but essentially given the inherent uncertainties in the model the comparison between the two approaches that he undertook meant that they became – they became less important because you're using those uncertainties equally between the two, but I don't know that I necessarily agreed with that because I'm not sure that the extent to which he understood the analysis that Professor Horne carried out which fed into his analysis, and again that was where some of my concerns lay in the sense that Professor Horne for the decisions version looked across his farms that he had available to analyse and

applied a 20% reduction or 75th percentile, depending on which was the greater reduction, or table 14.2 to those farms which was available, he essentially put himself in the farmer's shoes and –

Q. I think that Dr Snelder's point though was that didn't he get to the point where the best estimate of the difference in the water quality outcomes between the two sets of potential regulations are unaffected by the uncertainty that you were talking about?

1310

A. Yes, but I was just trying to explain to you that the difference is in how those values that fed into his models came in. So Professor Horne did that for his specified reduction pathway but for the risk assessment tool pathway he didn't offer farmers the 14.2 option in the same way that he did for the other pathway, and also, as I covered in my evidence, due – out of necessity in a sense given the timeframes and things I imagine he essentially developed farming systems that would meet their risk assessment tool and then ran them through Overseer for the different, several farms in each cell of the matrix to then estimate those reductions, so it was quite a different process that was undertaken for those two alternatives and that baseline, because I mean those values were the ones that fed into the modelling that led to Dr Snelder's conclusion, and so essentially they were done in a different kind of way and Professor Horne himself said he had – it's a very approximate nature of the comparison and he had the least confidence in that analysis that he undertook, he said under questioning. So yeah, that was what I was trying to get at there.

Q. Thank you for that, yes. I mean Dr Snelder did consider your evidence though, didn't he?

A. He did, yes.

Q. And he has responded to it in reply evidence, yes?

A. He has, yes.

Q. And I just expressed what his water quality scientist expert opinion was, didn't I?

A. Yes, on the basis of his understanding of what went in, yes.

Q. I'm just going to now go quickly to Dr le Miere. So you refer to the assessment of Dr le Miere at your 5.3, so 204.2117?

WITNESS REFERRED TO BUNDLE OF DOCUMENTS PAGE 204.2117

A. Yes.

Q. And Dr le Miere reviewed Professor Horne's original target scores –

A. Yes.

Q. – against 194 unconsented farms, didn't he?

A. Yes, that's my understanding, yes.

Q. And those farms were located in the Manawatū/Whanganui region?

A. Yes.

Q. And having concluded his assessment, he returned it to Professor Horne, didn't he, he sent back an updated NRAT with some suggestions as to those scores, that's right?

A. Yes, some adjusted values, that's right.

Q. And Professor Horne reviewed Dr le Miere's workings, didn't he?

A. Yes.

Q. And Professor Horne reached his own views on Dr le Miere's work and his review, didn't he?

A. He did.

Q. And then following that, Professor Horne reviewed the NRAT against the Fonterra database, didn't he?

A. Yes, he did. That's my understanding, yeah.

Q. And he describes it in his evidence as doing further work to consider the NRAT and to road test it in his words against that extensive database, that's correct?

A. That's my understanding, yeah.

Q. Thank you for that. I'm just going to make sure that I have covered everything. No, that's great.

RE-EXAMINATION: MS ONGLEY

Q. Dr Parlato, Ms Johnston referred you to the NRAT and the checking that Professor Horne did using the Fonterra she called extensive database following Dr le Miere adjusting some of the numbers in the matrix. Is that

database – what is – can you comment on the availability of that database?

A. From my understanding there was some discussion about the – I haven't been able to see the database, if that's what your question is, it hasn't been provided to me to be able to interrogate it or look at the values that are within that. I understand it's confidentiality and things like that that mean that that wasn't possible.

Q. Thank you. And just a second question, you were asked by Ms Edwards regarding the seven intensive sheep and beef farms that are unconsented?

A. In my analysis?

Q. Yes.

A. Yeah.

1315

Q. Do you recall Ms Wright asking Professor Horne what number of those seven intensive sheep and beef farmers could meet Table 14.2?

A. My recollection is that he thought that they all would. It again, would have to double check the transcript, but that's my recollection.

QUESTIONS FROM THE COURT: COMMISSIONER HODGES

Q. Good afternoon, Dr Parlato.

A. Good afternoon.

Q. Just a couple of questions please. You obviously weren't in a position to do your own assessment of the data because you couldn't get the database?

A. That's right.

Q. Okay, that's fine. So other than the work done by Dr le Miere on the NRAT, was there any sort of peer-review of the investigations and work done by the professor?

A. Not that I know of. Yeah, that – I have not heard of any peer review that's been undertaken on the work that's gone on on the risk assessment tool.

Q. Okay, thank you. What about on the specified reduction pathway work?

A. Well, not since my time, but that was a lot – a lot went on at the council level hearing around that pathway, so it's certainly possible. I couldn't tell you about that side of things, whether that was peer reviewed at the time.

Q. And just a point of clarification, can you help me on how constructive wetlands affect the nitrogen loss rates from diffuse sources? I understand they have value in terms of sediment and phosphorus and possibly bacteria, but I – they've been mentioned several times now as possible means of mitigation, but I don't understand how they work. Can you help me on that? I know they work, but how are they going to catch the leachate to remove the nitrogen? That's my interest.

A. Yes, well I understand, just looking at what was – because the wetland aspect was discussed in conferencing prior to my time and actually it was Dr le Miere who looked into that and investigated that further because it was put forward as a potential mitigation, and my understanding is that NIWA has done quite a lot of work in that space and there are some documents that they have put out that identify those rates which are now being included in the risk assessment tool, and so they have done – it varies depending on the climate and – but essentially they've done I would imagine some very complex analyses to look at what those expected reductions would be on the basis of the size of the catchment and the proportion of the wetland in the catchment, yeah.

QUESTIONS FROM THE COURT: JUDGE SEMPLE – NIL

QUESTIONS ARISING – NIL

WITNESS EXCUSED

THE COURT ADDRESSES COUNSEL – HOUSEKEEPING (13:18:34)

COURT ADJOURNS: 1.24 PM

MINISTRY OF JUSTICE
Tāhū o te Ture

Notes of Evidence Legend

National Transcription Service

Indicator	Explanation
Long dash –	Indicates interruption: Q. I think you were – (*Interrupted by A.*) A. I was – (*Interrupted by Q.*) Q. – just saying that – (*First dash indicates continuation of counsel's question.*) A. – about to say (*First dash indicates continuation of witness' answer.*) This format could also indicate talking over by one or both parties.
Long dash (within text)	Long dash within text indicates a change of direction, either in Q or A: Q. Did you use the same tools – well first, did you see him in the car? A. I saw him through – I went over to the window and noticed him.
Long dash (part spoken word)	Long dash can indicate a part spoken word by witness: A. Yes I definitely saw a blu – red car go past.
Ellipses … (in evidence)	Indicates speaker has trailed off: A. I suppose I was just… *(Generally witness has trailed off during the sentence and does not finish.)* Q. Okay well let's go back to the 11th.
Ellipses … (in reading of briefs)	Indicates the witness has been asked to pause in the reading of the brief: A. "…went back home." The resumption of reading is noted by the next three words, with the ellipses repeated to signify reading continues until the end of the brief when the last three words are noted. A. "At the time…called me over."
Bold text (in evidence)	If an interpreter is present and answering for a witness, text in bold refers on all occasions to the interpreter speaking, with the *first* instance only of the interpreter speaking headed up with the word "Interpreter": Q. How many were in the car? A. **Interpreter: There were six.** Q. So six altogether? A. **Yes six** – no only five – **sorry, only five.** *(**Interpreter speaking** – witness speaking – **interpreter speaking**.)*
Bold text in square brackets (in evidence)	If an interpreter is present and answering for a witness, to distinguish between the interpreter's translation and the interpreter's "aside" comments, bold text is contained within square brackets: Q. So you say you were having an argument? A. Not argue, I think it is negotiation, ah, re – sorry. **Negotiation, bartering. [I think that's what he meant]** Yeah not argue.