SOCIAL IMPACT ASSESSMENT
PROPOSED PLAN CHANGE 2

2018

Heather Collins Consulting
engaging in agriculture

Prepared for:
Horizons Regional Council
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Executive Summary

This Social Impact Assessment (SIA) identifies and assess social impacts and identifies strategies that may mitigate any potential effects associated with Proposed Plan Change 2 (PPC2). PPC2 will recalibrate One Plan Table 14.2 with OVERSEER Version 6.3.0 and focuses on the controlled activity pathway for managing nutrients. PPC2 will impact on the farms and intensive vegetable growing businesses that are located within targeted WMZ and do not have an Intensive Farming Land Use Consent.

This assessment was prepared by: establishing a community profile; reviewing relevant qualitative and quantitative data and statutory documents; participating in the community engagement process; data from interviews; identifying and assessing the potential social effects of PPC2 against an established framework; and identifying potential mitigation and monitoring strategies. An International Association of Impact Assessment framework was adapted for this SIA. The criteria used to assess the social impacts of PPC2 include: wellbeing or hauora; way of life and personal and property rights.

Impacts on individuals, their families/whanau and staff, community and industry, and the environment were identified. At an individual and family level, the impacts of PPC2 (recalibrating One Plan Table 14.2) were mainly positive. The farmers and vegetable growers who are able to obtain an Intensive Farming Consent under PPC2 will have certainty of operation, and certainty will reduce some of the stress these unconsented farmers face. Consented businesses will be able to implement investment and expansion plans, with associated flow on effects to their local communities (e.g. increased employment and investment in goods and services). Intergenerational businesses can plan for continued family ownership. It is possible that banks may perceive the consented dairy farms to be of less risk, therefore, reducing downwards pressure on farm value and business equity. Certainty of operation is also anticipated to have a beneficial flow-on impact on the environment.

The impacts of PPC2 were mainly positive on the community and industry, and related to consented farmers and growers being able to continue farming and growing. Flow-on positive impacts on employment, the retention of community services, rural goods and service providers, town businesses and rural professionals were identified. Increased confidence among businesses in local towns such as Pahiatua, Dannevirke, Marton and Levin is anticipated. The impact of PPC2 on the dairy industry's perceived risk of supply could not be determined at this stage.

Uncertainty and stress will remain for the farmers and growers unable to meet recalibrated One Plan Table 14.2, with a potential flow-on impact on their families/whanau and staff. The commercial vegetable growers, in particular, are aware that without an Intensive Farming Land Use Consent they remain vulnerable to enforcement of One Plan rules and a perceived forced exit from the industry. Business uncertainty, and the perceived negative economic impact of unconsented vegetable growing businesses on Levin will remain. PPC2 will also not address broader concerns about the potential

impact of a loss of vegetable growing businesses on New Zealand's food security and New Zealander's expectations of fresh healthy locally grown produce.

The community engagement process was a key mitigation strategy, by raising awareness about PPC2, encouraging discussion about what PPC2 could mean for individual businesses, families and the community, and building relationships between stakeholders. Clear, concise and accurate communication between Horizons and those potentially affected by PPC2, is a key component of ongoing community engagement. Local individuals and established networks may in some cases be an effective conduit of information between Horizons and rural communities. Horizons were encouraged to work collaboratively with stakeholders and build relationships with some environmental groups in an attempt to minimise potential litigation and challenge of PPC2. It was anticipated that litigation will increase uncertainty of operation and increase negative social impacts on individuals and communities. Other mitigation strategies involve continued one-on-one interactions with farmers and growers to determine their ability to obtain an Intensive Farming Land Use Consent and continued support and involvement in industry projects.

Overall, PPC2 has benefits to individuals and the community in terms of wellbeing, way of life, and personal and property rights. This SIA acknowledges that some of the negative social impacts lie outside the scope of PPC2 and that further plan changes (PPC3) and community processes (Our Freshwater Future) will be required.

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Introduction and purpose

Horizons Regional Council commissioned several pieces of evidence to inform their Section 32 Evaluation Report for Proposed Plan Change 2. Proposed Plan Change 2 (PPC2) will recalibrate One Plan Table 14.2 with OVERSEER Version 6.3.0 and focuses on the controlled activity pathway for managing nutrients. This Social Impact Assessment is part of a suite of reports informing the Section 32 Evaluation Report for PPC2, and while these Section 32 reports overlap, this SIA examines PPC2 from a social perspective.

The purpose of this Social Impact Assessment (SIA) is to identify and assess social impacts, and to identify strategies to mitigate any potential effects associated with the proposed plan change provisions to:

1. Maintain the status quo (no change to One Plan Table 14.2); and
2. Recalibrate One Plan Table 14.2 cumulative nitrogen leaching maximum (CNLM) with OVERSEER 6.3.0.

In carrying out a Section 32 evaluation, an analysis is required of how the proposed plan change achieves the purpose and principles contained in Part 2 of the RMA. The purpose of the RMA (Section 5) is to promote the sustainable management of natural and physical resources. Sustainable management means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while:

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

This SIA will consider how each of the proposed plan change provisions achieves the sustainable management of nitrogen losses to land and water whilst enabling 'people and communities to provide for their social, economic and cultural wellbeing'.

Intervention summary

The Manawatu-Wanganui Regional Council One Plan (thereafter termed the One Plan) is a consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region (Horizons Regional Council, 2014). The Proposed One Plan was notified in 2007 and the One Plan became operative on 19 December 2014.

The One Plan adopted a new and targeted approach to managing surface water quality. Based on a framework of geographic units termed Water Management Zones (WMZ) and Water Management Sub-zones (WMSZ) (McArthur, Roygard, Aussiel, & Clark, 2007), the One Plan divides the eleven parent catchments into 44 WMZ which are further divided into 117 WMSZ. Based on the state and trends of regional water quality, Horizons identified and targeted the WMZ and WMSZ where they believe the management of existing intensive farming land use activities[1] must be specifically controlled (targeted WMZ and WMSZ). Targeted WMZ (and WMSZ) are defined in the One Plan as 'those zones (and sub-zones) where collectively, land use activities are significant contributors to elevated contaminant levels in groundwater or surface water' (Horizons Regional Council, 2014, p.5-13). Intensive farming land use activities in the targeted WMSZ are actively managed through regulatory (rules in the regional plan) and non-regulatory methods (e.g. fencing subsidies, education and advice), to reduce the nutrient, sediment and faecal contamination of surface waters. Figure One illustrates all WMZ and the targeted WMZ in the Manawatu-Wanganui Region.

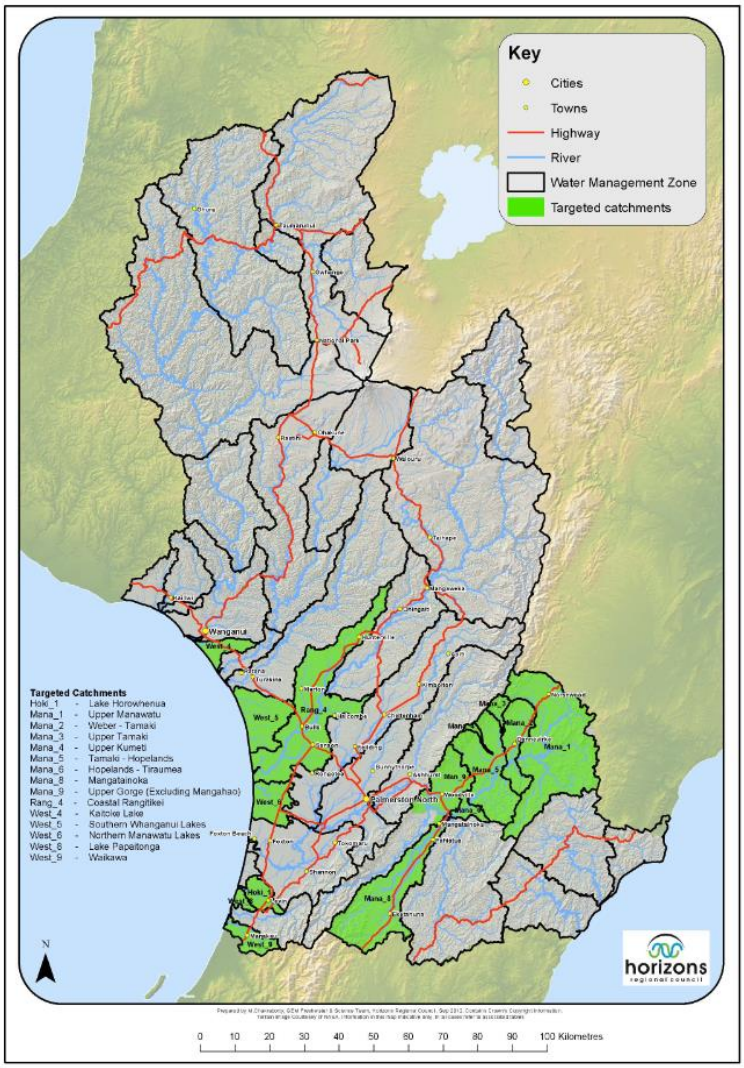

Figure 1: Map of One Plan Targeted Catchments (Water Management Zones) in the Manawatu-Wanganui Region.

[1] Intensive farming land use activities are 'activities that (either individually or collectively) make a significant contribution to elevated contaminant levels in the targeted Water Management Sub-zones' (Horizons Regional Council, 2014, p.5-13).

The regional plan component of the One Plan sets out the regional rules which prescribe how activities controlled by Horizons Regional Council are regulated. The nitrogen management provisions of the Regional Plan are based on the natural capital approach, which uses Land Use Capability (LUC) as a proxy for the natural capital of soils (Gilliland, 2017). One Plan Table 14.2 was developed as a tool to allocate cumulative nitrogen leaching loads among intensive farming land users. One Plan Table 14.2 specifies the Year 1, 5, 10 and 20 cumulative nitrogen leaching maximums (CNLM) (kgN/ha/yr) for each Land Use Capability Class (LUC I -LUC VIII). Overseer 5.2.6 was used to develop the CNLM for each LUC in Table 14.2.

Chapter 14 of the One Plan specifies the main rules for agricultural activities applying to farmers in this region. These rules include:

1. Existing intensive farming land use within targeted WMZ, and conversions to intensive farming land use anywhere in the region, will require an Intensive Farming Land Use Consent.
2. Farmers requiring an Intensive Farming Land Use Consent must prepare a nutrient management plan which shows whether they can meet nitrogen leaching targets (kg N/ha/yr) described in Table 14.2 or not.

In June 2013, Horizons passed resolutions on implementation of the One Plan. These resolutions provided guidance on how the policies and rules concerning discharges to land from intensive agriculture would be implemented. These resolutions covered the two consent pathways established in the One Plan: controlled activity (can meet the CNLM set in Table 14.2), and restricted discretionary (cannot meet the CNLM in Table 14.2) (Horizons Regional Council, 2015). The length of the consent issued depended on the farm's ability to reduce nitrogen losses: farms that meet the controlled activity status would receive a longer-term consent than farms with a restricted discretionary consent.

The Nutrient Management Provisions of the One Plan are implemented through the Intensive Farming Land Use Consent application process. Farm production data from the 2012/13 season is collected from each farm in regards to nutrient management (termed a baseline), and Overseer is used to generate a nutrient budget to determine the baseline nutrient losses (DairyNZ & Horizons Regional Council, 2014). Using the modelled N loss for each property, a nutrient management plan must be prepared by a nutrient management consultant in consultation with their farmer client(s) and the plan submitted to Horizons. To obtain a controlled activity consent, a nutrient management plan must: demonstrate that the farm's modelled nitrogen loss will not exceed the CNLM specified in Table 14.2 for Years 1, 5, 10 and 20; and describe the mitigation measures the farmer has agreed to implement to reduce nitrogen leaching to waterways.

In 2016, Fish & Game and the Environmental Defence Society (EDS) initiated legal action in the Environment Court against Manawatu-Wanganui Regional Council (Horizons) over implementation of the One Plan. In particular, the Applicants sought declarations under Section 310 of the Resource Management Act (RMA) that:

'The provisions relating to restricted discretionary activities under Rules 14.2 and 14.4 of Chapter 14 of the One Plan have not been properly applied for existing and new intensive farming activities, and that various provisions of the National Policy Statement for Freshwater Management (NPSFM) and the RMA have not been properly considered in respect of applications for restricted discretionary consents.' ("Wellington Fish And Game Council and Environmental Defence Society Inc vs Manawatu-Wanganui Regional Council," 2017)

The Environment Court decision in 2017 found in favour of Fish & Game and EDS on several matters. In a press release, Horizons Chief Executive Michael McCartney commented: '*Evaluation of the One Plan and the Court processes have revealed a number of weaknesses in the current Plan which Council will need to address'* (Horizons Regional Council, 2017). This same press release noted that Council has sought planning advice about whether consents can be granted above One Plan Table 14.2 (allow leaching in excess of Table 14.2 targets), or in other words, whether restricted discretionary consents can be issued for intensive farming land uses that cannot meet the cumulative nitrogen leaching maximums in Table 14.2.

Further evaluation of the Regional Plan policy found difficulties with the nutrient management framework of the One Plan (Bowen & Peet, 2018). These difficulties centre on Table 14.2 (CNLM) and Rule 14-2 (restricted discretionary consents for existing farms). In terms of Table 14.2, Overseer has been upgraded about 8 times to improve its accuracy since One Plan Table 14.2 was developed in 2007, and the CNLM in table 14.2 have not been updated following these Overseer version changes. Proposed Plan Change 2 (PPC2) will recalibrate One Plan Table 14.2 with Overseer version 6.3.0 and will contain the CNLM that would have been in the Table had Overseer 6.3.0 been available in 2007. The proposed option to change Table 14.2 will enable a larger proportion of farms to meet the Table as a controlled activity. Horizons' staff anticipate that PPC2 should return the Plan to its predicted impact: water quality improvements by most farmers using good management practices. PPC2 changes the Table numbers and this change will not have an environmental impact or change the intended water quality outcomes of the One Plan. Table One illustrates the proposed change to Table 14.2.

Table 1: Revised Table 14.2 Under Proposed Plan Change 2.

Proposed Plan Change 2 - Tracked Changes Version

Cross reference Operative One Plan, Chapter 14, Table 14.2, page 14-8.

[Additions in **blue underline** and deletions in ~~**red strikethrough**~~.]

Table 14.2 Cumulative nitrogen leaching maximum* *by* Land Use Capability Class*

Period (from the year that the rule has legal effect[1])	*LUC** I	*LUC** II	*LUC** III	*LUC** IV	*LUC** V	*LUC** VI	*LUC** VII	*LUC** VIII
Year 1	51 ~~30~~	45 ~~27~~	40 ~~24~~	29 ~~18~~	25 ~~16~~	24 ~~15~~	11 ~~8~~	3 ~~2~~
Year 5	46 ~~27~~	42 ~~25~~	35 ~~21~~	26 ~~16~~	20 ~~13~~	16 ~~10~~	8 ~~6~~	3 ~~2~~
Year 10	44 ~~26~~	37 ~~22~~	32 ~~19~~	23 ~~14~~	20 ~~13~~	16 ~~10~~	8 ~~6~~	3 ~~2~~
Year 20	43 ~~25~~	35 ~~21~~	30 ~~18~~	21 ~~13~~	19 ~~12~~	16 ~~10~~	8 ~~6~~	3 ~~2~~

In addition to updating One Plan Table 14.2, Council recognises another plan change process will be required to propose ways to resolve other implementation issues around Rule 14-2 (restricted discretionary consents for existing farms). In August 2018, Horizons' Strategy and Policy Committee resolved to undertake a three-stage process to address the immediate difficulties in implementing the intensive farming land use rules, while also carrying out a wider process to develop catchment strategies for water quality management that will inevitably revisit nitrogen leaching. This three-stage process will include (Bowen & Peet, 2018):

- Stage One – Plan Change 2 (PC2): update Table 14.2 through either a standard or streamlined plan-change process, notified (/lodged) by the end of 2018;
- Stage Two – Plan Change 3 (PC3): make broader changes to the One Plan to ensure a workable consenting pathway exists through Rule 14-2, likely notified toward the middle of 2019;
- Stage Three – Our Freshwater Future: review our approach to achieving better freshwater outcomes (including regulation of land use) through collaborative catchment processes, starting in the Manawatū by the end of 2018, to be completed across catchments by 2025.

As described in a report to Horizons' Strategy and Policy Committee, the three-stage process will allow Horizons 'to narrow the gap (environmentally, and in the number of affected farms), then resolve workability issues (with Rule 14-2), while a more thorough review of water quality interventions is completed' (Bowen & Peet, 2018). In terms of Rule 14-2, PPC3 would address whether consents can be issued that allow leaching in excess of the Table 14.2 targets. The purpose of PPC3 is to establish a pathway for applicants to commit to a trajectory towards the required environmental performance within a reasonable timeframe.

Methodology

SIA theoretical framework

Social Impact Assessment (SIA) is defined by the International Association for Impact Assessment (IAIA) as:

'*The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (e.g. policies, programmes, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment*' (Vanclay, Exteves, Aucamp, & Franks, 2015, p.6).

SIA is a social research and analysis process that involves affected people and other stakeholders in the analysis, management and mitigation of social impacts of a planned intervention. The methodology adopted for this SIA is based on a philosophy about 'the rights of people in the community to be involved in decision making about matters that will affect their lives' (Vanclay et al., 2015, p.20). The methodology in this SIA was developed to identify and predict the social impacts of proposed Plan

Change 2 (PPC2) from the perspective of the people potentially affected. Horizons adopted the position that SIA is a management process, and as such, Horizons' staff and the SIA researcher followed a process to ensure that impacts are identified and mitigated from the perspective of the farmers, commercial vegetable growers, goods and service providers and communities who are potentially affected by PPC2.

Ethical considerations

SIA is a social research process involving human participants. O'Leary (2014) emphasises the importance of research integrity and ethical responsibility in social research; a point echoed by Vanclay et al. (2015). Integrity involves reaching conclusions that are not affected by bias or error, acting within the law, recognising and balancing any subjectivities or personal influences that a researcher may have, and ensuring the rights and well-being of participants are protected at all times (O'Leary, 2014). Ethics is about protecting the participants, or in O'Leary's (2014) opinion, maintaining the mental and physical dignity and welfare of those being researched. This SIA follows the Code of Ethical Conduct for Research Involving Human Participants (Massey University, 2015) and the ethical principles for SIA Practitioners (Vanclay et al., 2015). The ethical issues considered for this SIA include: respect for individuals; minimisation of harm; informed[2] and voluntary consent; permission required for audio or video recording; respect for privacy and confidentiality; avoidance of deception; avoidance of conflict of interest; avoidance of undue intrusion; social and cultural sensitivity; enabling participation; and social justice[3].

In addition, this SIA respects and pays specific attention to the cultural diversity of indigenous people[4] who live and work in the Manawatu-Wanganui Region. Indigenous people may self-identify as a member of a specific cultural grouping; have a strong cultural attachment to the land and natural resources; and have a distinct culture (including values, beliefs and language) (Vanclay et al., 2015). Engagement processes that enable participation and respect cultural diversity include: acknowledging indigenous people's existence and recognising their rights; treating indigenous people as partners rather than stakeholders and involving in processes that may affect their rights and interests; respecting the land rights of indigenous people; including traditional knowledge alongside western science in impact assessments and other reports; engaging with indigenous people in a way that is appropriate for their culture; and availability of interpreters.

[2] The participant has the right to decide whether or not to participate.

[3] Social justice refers to fairness and equity across a society. It is a philosophy about respect for human rights, the notion that everyone should have the chance to improve themselves, and that they should have the opportunity to participate in decisions affecting their own lives (Vanclay et al., 2015, p.96).

[4] Broadly defined as a distinct cultural and social group (Vanclay et al., 2015, p.85).

Methodology design

This section outlines the social science methods used to: collect, analyse and present data; the community engagement activities; and the methods used to identify and evaluate impacts and mitigation strategies. The SIA for PPC2 involved six stages:

Stage One	Scope and context	Proposed Plan Change 2 The study area
Stage Two	Data gathering and review	Technical reports and research
Stage Three	Community engagement	Stakeholder analysis Farmer, grower, community and stakeholder engagement
Stage Four	Identification of impacts and assessment of effects	Likely socio-cultural and socio-economic impacts Extent and distribution of impacts
Stage Five	Mitigation design	Develop mitigation strategies
Stage Six	Management and monitoring	Implementation

Stage One: Scope and context

An initial briefing and ongoing discussions were held with Horizons' planning staff to understand the rationale behind PPC2 and the streamlined planning process proposed for PPC2. This SIA will be a component of the Section 32 prepared by Horizons for PPC2. Ongoing discussions with Horizons' planning and rural advice staff assisted in identifying the targeted WMZ that PPC2 will apply to, and to understand the size of the population of consented and unconsented farmers and growers potentially affected by PPC2.

Stage Two: Data gathering and review

Multiple sources of data were used to prepare this SIA. Web-based and hard copy documents, email conversations, discussions during the community engagement process and semi-structured interviews were the main data sources. Multiple data sources enabled a deeper and richer exploration of the socio-cultural and political context and potential social impacts of PPC2. The data used in this SIA included:

- Dairy farm consent data was obtained from Horizons' Intensive Farming Land Use Consent records and Dairy Effluent Discharge Consent database. Dairy industry data was obtained from DairyNZ and the Dairy Industry Statistics 2016-2017 season (Livestock Investment Corporation). Commercial vegetable growing data was obtained from a vegetable grower, Horticulture NZ and the Horowhenua District Council.

- Reports and other sources included:
    - Horizons' planning documents and research reports (prepared by Horizons' staff), research reports prepared for Horizons by external providers
    - Economic impact report and Manawatu Growth Study (NZIER)
    - Commercial vegetable industry reports from Horticulture NZ and Horowhenua District Council
    - Lake Horowhenua Accord Action Plan
    - Media reports
    - PhD research among dairy farmers in the Tararua District
    - A history of Chinese market gardening in New Zealand
    - Dairy farmer and vegetable growers' narratives
    - Email communications

Stage Three - Community engagement

The process and outcomes of community and stakeholder engagement are key inputs to a SIA. Community engagement is a term that describes 'the way people can interact with and be involved in decision-making processes' (Vanclay et al., 2015, p.76). Community engagement emphasises a deeper level of interaction and involvement in decision making, and in the management of social issues. As Vanclay et al. (2015) suggest, community engagement can result in an improved understanding of local values and knowledge, and can help the community understand the planned intervention and implications, resolve conflicts and encourage community support for the project. Following the principle that underpins this SIA, 'from the perspective of the people potentially affected', the community engagement process utilised:

- Local knowledge to develop understanding of the issues;
- Local contacts and networks to organise community engagement meetings; and
- Local networks to organise follow-up and further discussions with farmers, growers and stakeholders.

Social area of influence and stakeholder analysis

A social area of influence includes 'the people potentially impacted by a planned intervention' Vanclay et al. (2015, p.35). The people potentially impacted by PPC2 include:

- Consented and unconsented farmers, commercial vegetable growers and their families/whanau, their staff and their families;
- Farmers and growers who want to convert from an existing to an intensive farming land use;
- Iwi;
- Local suppliers, local service providers, local businesses and companies;
- Local communities;
- Local and regional government; and
- Consumers of dairy and fresh vegetables (urban and rural).

Stakeholders were identified through local contacts and networks and from recommendations from other individuals and stakeholders. During the design stage of the community engagement process, attention was paid to stakeholders' diverse interests, values, beliefs and different ways of knowing (Vanclay et al., 2015). As such, the engagement process embraced this diversity and ensured all stakeholders had an opportunity to participate. The stakeholder analysis identified:

- Dairy farmers (Rangitikei, Manawatū) and commercial vegetable growers (Horowhenua)
- Iwi
- Industry good practice organisations (e.g. Horticulture NZ, DairyNZ)
- Farmer and grower representative organisations (e.g. Federated Farmers, Tararua Growers Association)
- Industry (e.g. Fonterra)
- Environmental groups (e.g. Fish & Game, Environmental Defence Society, Forest and Bird)
- Local community groups (e.g. Tararua Community Economic Impact Society - TCEIS)
- Other organisations/trusts (e.g. Landcare Trust, Rural Support Trust)
- Local government (e.g. Tararua District Council, Horowhenua District Council)
- Rural professionals (e.g. rural real estate agents, company representatives, farm consultants)

Table Two summarises the community engagement process around PPC2. The report's author was present at some community and stakeholder meetings, and when not present, Horizons' staff provided a summary to the author.

Table 2: Community Engagement around Proposed Plan Change 2.

Community engagement	**Location and date**
Community engagement meetings including: dairy farmers, sheep & beef farmers, Horizons' staff and councillors, Tararua District Council, Fonterra, DairyNZ, Federated Farmers, Landcare Trust, Tararua Community Economic Impact Society, Rural Support Trust, farm consultants, fertiliser company representatives and rural real estate staff. Report's author was present.	One each in Marton, Pahiatua and Dannevirke. 25 September – 1 October 2018
Tararua Growers Association organised social gathering between vegetable growers and the report's author.	Levin 27 September 2018
Meeting between Horowhenua District Council staff, Horizons' staff and the report's author.	Levin 25 September
Semi-structured interviews (details below)	Various locations 19 September – 10 October 2018

A number of hui were held with Iwi who have mana whenua in the targeted WMZ. Some hui were initiated by Horizons (more than one iwi present), and other hui were initiated by Iwi (one Iwi present) and attended by Horizons' staff.	Various August - October 2018
Involvement and presentation by Horizons' staff at commercial vegetable grower meetings and field days.	Various April and July 2018
Meeting between DairyNZ staff and rural real estate staff.	Pahiatua September 2018
Horizons' ongoing communication and community engagement, including: • Media releases • Project updates • Letters to stakeholders, including environmental (e.g. Fish & Game, EDS, Forst and Bird) and community groups (e.g. TCEIS) and Environment Network Manawatu (represents 50 member groups). The letter outlined PPC2 and invited questions and feedback. • Circulation of a Q&A fact sheet (PPC2 and N leaching in the river). • Tailored newsletter to arable farmers (via FAR - Foundation for Arable Research).	August 2018 - ongoing (until PPC2 is notified).
Farmer 'drop-in days' organised by Dairy NZ. DairyNZ, Horizons Rural Advice, and Federated Farmers in attendance. Farmers from targeted WMZ discuss with staff how PPC2 will affect their farm businesses.	Dannevirke, Woodville, Pahiatua and Bulls. 13, 14, 15 and 21 November

Community meetings in Marton, Pahiatua and Dannevirke

An initial presentation of the proposed plan change by Horizons' staff was followed by an interactive question and answer discussion between staff and participants. The report's author recorded the questions and answers (indicator of participants' concerns), talked with farmers and others during the social time at the end of the meetings, and contacted some farmers after the meeting (at their request). The author talked with:

1. Dairy farmers with a Controlled Activity (CA) Consent.
2. Dairy farmers with a Restricted Discretionary Activity (RDA) Consent.
3. Unconsented dairy farmers who will or could meet the revised Table 14.2 (either with no change or some farm systems change).
4. Unconsented dairy farmers who believe they will not meet revised Table 14.2.
5. Sheep/beef farmers who do not require an Intensive Farming Land Use Consent but want to know how PPC2 may affect them in the future.

The questions and answers recorded at each community meeting were discussed at the meeting debriefs with Horizons' planning staff. This enabled staff to tailor their presentations at successive meetings to address the community's concerns, and assisted in the development of mitigation strategies.

Interviews

The community engagement process was supplemented by ten semi-structured interviews conducted between 19 September – 10 October 2018. Interviews were held with representatives from: environmental groups, community groups, industry and local government; and with rural professionals. Four interviews were by phone and six face-to face in a range of locations: one was held at a participant's workplace, one at Massey University and four were held in cafes. Two of the phone interviews were follow-ups from previous discussions between the author and a participant at a community meeting. A semi-structured interview schedule was used to provide consistency across interviews yet flexible enough to allow deviation from the plan to follow the natural flow of conversation and to explore other ideas (O'Leary, 2005). The interview schedule was a series of headings and prompts that formed a checklist of information to collect.

Stage Four - Identification and evaluation of social impacts, assessment of effects

Vanclay et al. (2015, p.95) defined a social impact as:

'*Something that is experienced or felt, in a perceptual or corporeal [physical] sense, at the level of an individual, social unit (family/household/collectivity) or community/society*'.

Social impacts can be direct (i.e. as the result of the intervention) or indirect (i.e. as the result of another change caused by a planned intervention). As such, the IAIA internationally accepted framework described by Vanclay et al. (2015) provided the framework used in this SIA to assess the potential social impacts of PPC2:

- **Health and wellbeing** – changes to physical, mental, social and spiritual wellbeing;
- **People's way of life** – impacts on how people live, work, play and interact with others;
- **Personal and property rights** – whether they are economically affected or experience personal disadvantages;
- **Community** – impacts on its cohesion, stability, character, services and facilities; and
- **Environment** – impacts on the physical environment.

Cultural impacts are a component of the IAIA framework and were considered to a limited extent in this report. Cultural impacts were considered by Horizons to be outside the scope of this SIA.

Establishing significance is a process of prioritising social impacts (Vanclay et al., 2015), or, making judgements about what is important and the degrees of importance. Following the principle that underpins this SIA ('from the perspective of the people potentially affected'), importance was determined from the frequency of mention of impacts. For example, uncertainty was assessed to be a significant impact because it was mentioned by almost all farmers, growers and others during the discussions.

Stage Five - Mitigation strategies

Following the principle that underpins this SIA (from the perspective of the people potentially affected), the mitigation strategies were identified by those likely to be affected by PPC2 and those managing the impacts of PPC2. Mitigations were identified during: the question and answer session at community meetings; discussions with participants at the community meetings; semi-structured interviews; ongoing email communication; and ongoing discussions with Horizons' staff. The report's author used two main methods to identify mitigation strategies: directly asking those interviewed (e.g. What information do you need from Horizons?) and asking those interviewed about a strategy identified by another person or organisation.

Stage Six - Management and monitoring

As with Stage Five, impact monitoring was discussed with those likely to be affected by PPC2 and those managing the impacts of PPC2. The community engagement enabled networks and connections to be built between groups; local contacts to identify the individuals within a community who would be able to assist in management and monitoring; and enabled discussions about current and planned industry initiatives or projects and how the progress of these projects could be monitored.

Limitations of the methodology and scope

No limitations of the methodology were identified. The purpose of this SIA was to assess the impacts of PPC2 on the unconsented farmers and growers in targeted WMZ. However, the farmers, growers and individuals interviewed wanted to discuss the social impacts past the scope of this report, or past a recalibration of PPC2. In light of these identified social impacts, and in recognition of future planning processes (i.e. PPC3 and Our Freshwater Future), this SIA assesses social impacts past the initial scope of this report.

Community profile

Understanding the local socio-cultural context of a community is crucial for an SIA and for the success of a planned intervention (Vanclay et al., 2015). This section explores the people, their businesses and the communities that are potentially affected by PPC2. The dairy farmers and commercial vegetable growers potentially affected by PPC2 are initially described. This initial introduction is followed by a description of vegetable growing, dairy farming and the contribution of these businesses to their local communities. Lake Horowhenua, a taonga of local Iwi, is used as an example of the cultural significance of a waterbody to local community. The section concludes with a discussion of the socio-political context, and in particular, legacy issues associated with past planning processes: the One Plan and the more recent Environment Court declarations.

Farmers and commercial vegetable growers potentially affected by PPC2

This section describes the numbers and location of the dairy farm and commercial vegetable growing businesses in targeted WMZ that are potentially affected by PPC2. PPC2 also has the potential to impact on farmers and growers who are:

- undertaking an intensive farming land use activity within a targeted WMZ; and/or
- any new intensive farming land use activities anywhere in the region.

This SIA focusses on existing intensive farming land users because Horizons' staff believe these land users face more uncertainty and potential business risk from the current One Plan provisions compared with other land users. Horizons' staff also acknowledged that neither of the proposed provisions within PPC2 provide any particular benefit to commercial vegetable growers, however this SIA will document the various social effects of the proposed provisions on affected parties.

Dairy farm businesses located in targeted WMZ

After the Environment Court released their decision in 2017, Horizons commenced a review of the nutrient management consenting process. This action resulted in Intensive Farming Land Use Consent applications being returned, and those farms remaining unconsented. Both consented and unconsented dairy farms in targeted WMZ are likely to be affected by PPC2. Unconsented farms would be affected because the revised Table 14.2 CNLM will increase, thereby enabling a greater proportion of farms to obtain an Intensive Farming Land Use Consent as a controlled activity. Some unconsented dairy farms may not meet the revised Table 14.2 CNLM and would remain unconsented. The consented farms could be affected because a farm owner may choose to apply for a variation to their existing Intensive Farming Land Use Consent under revised One Plan Table 14.2, whereby the operation would qualify as a controlled rather than a restricted discretionary activity. A Horizons' staff member commented a farmer may perceive the conditions of their current consent as a constraint on the farm's potential production and profitability when compared with the revised Table 14.2 CNLM.

As illustrated in Table Three, the unconsented dairy farms are located in the Tararua District (Upper Manawatū and Mangatainoka WMZ) and the Rangitikei WMZ. All dairy farms in the Lake Horowhenua WMZ are consented.

Table 3: The number of consented and unconsented dairy farms in targeted WMZ.

Targeted Catchments	Water Management Zone	Consented	Unconsented
Rangitikei	Rang_4	76	20
Mangatainoka	Mana_8	82	11
Upper Manawatu above Hopelands	Mana_1 – Mana_5	33	70
Manawatu above Gorge	Mana_6 and Mana_9	15	17
Horowhenua	Hoki_1	19	0
Total	10	225	118

Source: Horizons' Intensive Farming Land Use Consent and Dairy Effluent Discharge Consent records.

As described earlier, baseline[5] farm production data for the 2012/2013 season was collected from dairy farms located in targeted WMZ, during the Intensive Farming Land Use Consent application process. Horizons used this baseline data for 70 unconsented farms in the Upper Manawatū WMZ (Mana_1-5) to model and estimate the total number of unconsented dairy farms that could obtain an Intensive Farming Land Use Consent under the current and revised Table 14.2. Horizons estimate that of these 70 unconsented farms in the Upper Manawatū WMZ:

- Under the current Table 14.2: one basefile will meet the Table, five would partly meet the Table (i.e. up until year 9) and 64 (91%) would not meet the Table.
- Under a revised Table 14.2: 17 basefiles could meet the table, 19 could partly meet the Table, and 34 (49%) would not meet the Table.

Vegetable growing businesses

A Horticulture New Zealand (HortNZ) staff member estimated there are approximately 60 vegetable growers in the Horowhenua, and approximately 80% of these 60 growers would be operating on land holdings greater than 4ha in area[6] (D. Farrelly, pers.comms). There are two intensive vegetable growing businesses in the Horowhenua with an Intensive Farming Land Use Consent (Restricted Discretionary Activity).

[5] The baseline is a reference position of a farm's nutrient management status.
[6] Properties for commercial vegetable production that use an area of land greater than 4 ha for producing vegetable crops for human consumption in a targeted WMZ are required to obtain an Intensive Farming Land Use Consent.

Based on an economic modelling study of the impact of the One Plan's intensive land use provisions (The Agribusiness Group, 2017), Anderson (2018) estimated the likelihood that horticultural properties could meet the current and revised CNLM in Table 14.2. Anderson (2018) concluded that intensive vegetable growing properties in the Horowhenua will not meet either the current or revised Table 14.2 and obtain a controlled activity Intensive Farming Land Use Consent. She also concluded it is possible for some mixed cropping and pasture operations to meet the revised Table. Some industry personnel believe a few potato and onion growers will also meet revised Table 14.2 (D.Bloomer, pers.comms).

The contribution of commercial vegetable growing and dairy farming to local communities

Commercial vegetable production in the Manawatu-Wanganui region

There are a range of commercial vegetable growing activities in the Horowhenua, Palmerston North, Opiki, Rangitikei, Wanganui and Ohakune areas of the Manawatu-Wanganui region (Barber & Wharf, 2010). This range includes: fresh vegetable greens (e.g. brassicas, leafy vegetables, salad greens, asparagus) in the Horowhenua, Palmerston North and Wanganui; asparagus in Mangaweka; and potatoes/carrots/onions in the Opiki, Ohakune and Rangitikei districts.

For the purposes of this SIA (social impacts of PPC2), the following section will focus on commercial vegetable production in Horowhenua. The Lake Horowhenua targeted WMSZ contains significant areas of LUC I and II soils and the majority of commercial vegetable growing operations are on these soils (Anderson, 2018). Under the One Plan rules and regulations, all existing commercial vegetable growing activities on land greater than 4 ha in area within targeted WMZ, are required to obtain an Intensive Farming Land Use Consent. Any new commercial vegetable growing activities established since May 2013, on land greater than 4 ha in any catchment, also requires an Intensive Farming Land Use Consent (Horizons Regional Council, 2014). In a recent email letter to the Minister of Agriculture (October 2018), a commercial vegetable grower summarised what he believes are the two main issues with the current One Plan rules and growers' abilities to meet the CNLM in Table 14.2:

- The majority of vegetable growing in the Horowhenua occurs inside targeted WMZ; and
- Growers cannot take pressure off the sensitive catchments defined in the Plan by moving production to areas outside of WMZ where possible, because rules 14.3 and 14.4 require any new area of land greater than 4ha that is brought into commercial vegetable growing production to meet the same nitrogen leaching rates set in Table 14.2.

Fresh vegetable production in Horowhenua – socio-economic contribution

A profile of the Food and Beverage Sector in Horowhenua[7] (Horowhenua District Council, 2018) describes the district as 'the food basket of the lower North Island'. This report emphasised the important role of the food and beverage sector in Horowhenua's economic and social wellbeing, and explained 'businesses are often family-run operations that have existed for generations, providing jobs, community leadership and nourishment to the District's residents'. Table Four summarises the key indicators used for the food and beverage sector in Horowhenua.

Table 4: Summary indicators for the food and beverage sector in Horowhenua

	2012	2017	% change
Gross domestic product (GDP)	$109M	$135M	4.3
Employment	1,609	1,853	2.9
Business units	531	477	-2.1

Source: Horowhenua District Council (2018).

If the food and beverage sector no longer existed, Horowhenua would lose:

- 16% of its economy from the sector alone, but knock-on implications would make this number higher.
- Over 1800 jobs, most of which are filled by the district's labour force (estimated at around 10,600 as at June 2017). This would have a significant effect on the livelihoods of thousands of people throughout the district, and result in a slowdown in economic activity.
- Almost 500 businesses in the sector, and place the local businesses who provide goods and services to the sector at risk. (Horowhenua District Council, 2018)

Vegetable growing is one sub-industry of the food and beverage sector in the Horowhenua. Vegetable growing can be further differentiated as outdoors or under cover[8]. Table Five details the contribution of vegetable growing to the Horowhenua. Outdoors vegetable production was a key contributor to the District's economic wellbeing, and as an employer of a large number of local workers, outdoors vegetable production generates a further economic contribution from the consumption of local goods and local services employed.

[7] Information in this report was sourced from the 2017 Infometrics Annual Economic Profile for the Horowhenua District and information provided by local businesses in the food and beverage sector.

[8] Mainly engaged in growing vegetable crops under cover, including hydroponic systems, where 'under cover' is generally defined as greenhouses, cold frames, cloth houses and lath houses.

Table 5: Contribution of outdoors and under cover vegetable growing to the Horowhenua.

	Vegetable growing (outdoors)	Vegetable growing (under cover)
Gross domestic product (GDP)	$18.8m	$0.95m
Employment	381	17
Business units	54	N/A

Source: Horowhenua District Council (2018)

Almost all of the fresh vegetables grown in Horowhenua are for domestic consumption, including greens (e.g. salad greens, asparagus), brassicas and potatoes and onions for processing (Eaqub & Ballingall, 2015). Woodhaven Gardens and Kapiti Green are the largest vegetable growing businesses in the Horowhenua. Tendertips operate one of New Zealand's largest asparagus growing operations in Horowhenua (500t/yr), and have begun cultivating strawberries for the 2018/2019 season thereby creating year-round employment (Horowhenua District Council, 2018). Using Woodhaven Gardens as an example, Box One illustrates the socio-cultural diversity and socio-economic contribution of vegetable growing to the local community.

Woodhaven GARDENS

People are our most important asset; it is their skill, passion and dedication that allows us to produce a top quality product 365 days a year. We treasure the cultural diversity of our employees with 13 different nationalities currently represented.

Woodhaven Gardens is a family run commercial growing operation in Horowhenua with production of around 1600 acres. Woodhaven employs 200-250 FTE's with over 200 full time positions. Over 80% of their staff are New Zealand residents/citizens. A Woodhavens owner commented: '*Our wage bill is between $10-11 million a year, and about 96 to 98 per cent of that would be spent in Horowhenua*'. The owner added: '*We spend over $10 million a year with local suppliers and contractors, which means our economic contribution to the Horowhenua would be greater than $20 million alone*'. Among other staff and community support, Woodhaven support local sports clubs, primary schools and charitable enterprises by providing free product for fundraising, sponsorship and donations. Free product is also provided to staff and to local Iwi for special occasions.

Woodhaven employs Regional Seasonal Employment Scheme (RSE) workers from Tonga and Kiribati. These RSE workers send money home to their families, which in turn supports communities in Tonga and Kiribati. Woodhaven purchased a small fleet of fishing boats in Kiribati to ensure income can be generated by RSE workers when not working for Woodhaven Gardens.

Market gardening

The Kapiti and Horowhenua Districts have a long and rich cultural market gardening history. Maori were the first gardeners in the area, growing potatoes, corn and other crops for their own use and for sale to settlers (Lee & Lam, 2012) Chinese men began moving north from the goldfields in Otago in the early 1900s initially to the Hutt Valley, then as land increased in price, north to Otaki and Levin and further north over time to Ohakune and Pukekohe. A grower added: '*Market gardening was an occupation they could easily get into without having English*'.

Maori were closely associated with the Chinese growers, through lease of land, marriages between Maori women and Chinese men, and working in the Chinese gardens (Lee & Lam, 2012). The poll tax on Chinese immigrants introduced by the New Zealand Government in 1881 was abolished in 1944 (www.nzhistory.govt.nz). Removal of the poll tax enabled the immigration of Chinese women and children, family units expanded and family businesses established (Lee & Lam, 2012). As sons grew and other family arrived from China in the late 1940s-1950s, these family businesses thrived and expanded. The growers of Chinese ancestry in the Horowhenua today are second, third and fourth generation New Zealanders. A market gardener, with intergenerational ties to the community, added '*the clan strength keeps us here, we're among friends'.*

Water bodies with cultural and regional significance

Lake Horowhenua, located 2km west of Levin, is an example of a local waterbody with cultural and regional significance. Lake Horowhenua was described as '*a taonga of the local iwi, an important recreational asset for the district and a significant habitat for birds, native fish and wetland plants*' (www.mfe.govt.nz). Muaūpoko Iwi have a special cultural and spiritual connection with Lake Horowhenua (Lake Horowhena Trust, Horowhenua District Council, Horizons Regional Council, Department of Conservation, & Horowhenau Lake Domain Board, 2014). In the past, the Lake was a clean water supply and valued fishery for the Muaūpoko iwi who lived in the coastal forest that surrounded the lake (Lake Horowhena Trust et al., 2014).

Clearance of coastal forest, draining of swamps, intensification of land use, urban expansion and the disposal of treated effluent up until 1987 have degraded the lake's water quality. In 2010 Lake Horowhenua was ranked 107 out of 114 lakes for its water quality in the National Institute of Water and Atmosphere Lake Water Quality Report (www.mfe.govt.nz). In 2013, a small group of owners set up The Lake Horowhenua Trust (for administration), and formed the lake Horowhenua Trust Accord with community interests and statutory bodies. The Accord parties 'agreed to work together to provide leadership; halt the degradation and put in place remedial measures on Lake Horowhenua and Hokio Stream that will ensure these taonga hold pride of place in the Horowhenua community' (Lake Horowhena Trust et al., 2014, p.1).

After presenting commercial vegetable growing in the Horowhenua, the contribution of these businesses to their local communities and a cultural context, the next section explores the socio-economic contribution dairying to national and regional communities.

Dairy farming in the Manawatu-Wanganui Region

Dairy farming similarly has a long history in the Manawatu-Wanganui region. Farmland was cleared and settled from the mid-1800s, with milk production originally for domestic consumption (www.te ara.govt.nz). Milk production for domestic consumption slowly gave way to factory production, and the first dairy factories opened in the region from the late 1880s (www.teara.govt.nz).

Based on the latest dairy industry statistics, a total of 836 dairy herds are located in the Manawatu-Wanganui region[9] (LIC, 2017). Of the seven dairying districts in the region, the Tararua is currently the largest (294 herds) followed by the Manawatu (249), the Horowhenua (117) and the Rangitikei (88). For the purposes of this SIA (PPC2), the Rangitikei and the Tararua districts are of interest because these districts contain most of the dairy farms currently operating without an Intensive Farming Land Use Consent. In terms of business structure, the majority of farms in the Tararua and Rangitikei are owner/operators (Tararua 74%, Rangitikei 88%) with a smaller number of sharemilking businesses (Tararua 26%, Rangitikei 12%).

Dairying - socio-economic contribution

Using modelled data, a recent NZEIR report emphasised the 'significant contribution' of dairying to the New Zealand economy (Ballingall & Pambudi, 2017). Dairying's socio-economic contribution to the national economy sets the scene, and of particular relevance to this SIA, dairying:

- Contributes to household incomes - both dairy farming and processing/wholesaling wages. At a national scale, dairy employment has grown more than twice as fast as total employment since 2000;
- Supports regional economic development. Dairy is an important contributor to the regional GDP of smaller regions such as Manawatu-Wanganui;
- Supports other regional industries and suppliers (e.g. fertilisers, agricultural machinery, accounting and tax services). As noted in this NZEIR report: '*when dairy farmers are smiling, the whole region smiles*' (p.14); and
- Encourages development of new processing equipment and technology (e.g. new dairy plants).

[9] The published dairy industry data (LIC Dairy Industry Statistics) for the Manawatu Region was re-worked to reflect the regional council boundaries and to include the Tararua District (under Wairarapa in the LIC statistics).

Based on dairy industry statistics for the 2016-2017 season (LIC, 2017), DairyNZ calculated the socio-economic contribution of dairying to the Manawatu Region (DairyNZ, 2017). This DairyNZ report calculated:

- $474M - value of milk production to the Manawatu regional economy
- Dairy jobs contributed 2.2% of the total regional employment in the Manawatu
- 2,965 people were employed in the dairy industry (on-farm + processing and wholesaling)
- 1,991 people were employed on-farm

It must be noted, however, these figures do not include the Tararua District, and Tararua's contribution to dairying could not be separated from the other districts in the Wellington-Wairarapa region. It is expected that dairying's contribution to the Manawatu-Wanganui region is higher than these figures suggest.

Dairying contributes to local communities in other ways, as found by (Collins, 2018) in case-study research of 10 dairy farms in the Tararua District. Of particular relevance to this SIA:

- A number of the farms are intergenerational, thereby providing some stability of ownership;
- Almost all farms employ staff from local communities;
- All farmers farm with family members (i.e. a spouse, children, parents, an uncle, in-laws);
- All are involved in and volunteer in their local community (e.g. on school board of trustees, coach school sport, manage community facilities, raise calves and donate to IHC);
- Some farmers are involved with and support other groups, e.g. church, sports clubs;
- Some farmers are involved with farmer organisations, e.g. elected positions with Federated Farmers, judges at the Regional Dairy Farm of the Year competition; governance roles within industry organisations;
- Some farmers are involved with community groups, e.g. the Tararua Economic Impact Society (TCEIS);
- Farmers interact with a wide range of agricultural suppliers and service companies. Some examples include: farm consultant, vet, accountant, fertiliser representative, grain/seed company representative, bank manager, stock agent, DairyNZ staff, Horizons staff, Fonterra Area Manager, QCONZ farm inspector, tanker driver, electrician, farm source stores (this list is not exhaustive).

After exploring the socio-economic and cultural context of commercial vegetable growing and dairy farming, the next section examines the socio-political context, and in particular, legacy issues associated with the Proposed One Plan process.

Socio- political context

Legacy issues – the One Plan

People's experiences with past policy interventions, past projects and historical events can shape their expectations of new interventions. Awareness and understanding of the legacy issues associated with a past intervention, Vanclay et al. (2015) argue, is essential to understanding the community's response to a new intervention. This section examines the legacy issues associated with the Proposed One Plan process.

Collins (2018) explored Manawatu-Wanganui dairy farmers' responses to water quality interventions, including responses to the One Plan. The dairy farmers in this research described a deteriorating relationship with Horizons during the Proposed One Plan (POP) process, from factors including a perception that Horizons: did not consult with them; were trying to take control of their farms; were disregarding their local knowledge and were being dictatorial and not listening to them. They also believed Horizons were taking a singular environmental focus and disregarding the socio-economic effects of the POP on farmers and their communities. The relationship between farmers and Horizons after the POP process influenced if and how the farmers in this research interacted with Horizons. Some farmers chose not to approach Horizons for advice, and others were sceptical and disbelieved the information provided by Horizons. In addition, the farmers felt Horizons were being disrespectful and challenging their farm practices, which violated the relationship norms associated with expectations of how individuals will mutually behave. Trust reduced between farmers and Horizons during the POP process.

Concerned about the negative economic impact of the POP on the local community, and Horizons' apparent disregard of the community's concerns, the Tararua Economic Impact Society (TCEIS) formed in 2013 (Collins, Gray, Reid, Shadbolt, & Dooley, 2018) The farmer-led TCEIS supported farmers, built relationships and worked with staff from Horizons, DairyNZ and Fonterra during the One Plan implementation. The TCEIS continue to support dairy farmers and to work with Horizons and industry around implementation of the rules. Additionally, many farmers in this research believe their relationship with Horizons has improved since the POP process, which they attributed to a change in Horizons' approach and manner towards farmers and a perceived flexibility of the One Plan rules.

Vanclay et al. (2015) also argue that addressing past policy issues will contribute to building trust and respect. Being aware and understanding the past legacy issues associated with the POP process (e.g. perceived lack of consultation, a perception of external control; disregarding the socio-economic impacts of the POP on the community) will contribute to building trust and respect between farmers, the community and Horizons during Proposed Plan Change 2. Following this description of the people, their businesses and the communities that are potentially affected by PPC2, the next section identifies and explores the social impacts associated with this proposed plan change.

Identification and assessment of social impacts

Introduction

The purpose of this SIA is to identify, assess and mitigate the social impacts associated with the proposed plan change provisions to:

1. Maintain the status quo (no change to One Plan Table 14.2); and
2. Recalibrate One Plan Table 14.2 cumulative nitrogen leaching maximum (CNLM) with OVERSEER 6.3.0.

This section identifies and assesses the social impacts associated with PPC2. During the community engagement process, it was widely discussed that some farmers and most commercial vegetable growers will not meet the current or revised Table 14.2 and will remain unconsented. It was also acknowledged that another process(es) after PPC2 will be required, and that these processes will potentially mitigate the social impacts for the unconsented farmers and growers. The community engagement meetings also highlighted some legacy issues associated with the Proposed One Plan and the more recent Environment Court declaration proceedings. These legacy issues influenced some individuals' perceptions of and interactions with Horizons, and some individuals' perceptions and concerns about: the PPC2 process; the outcome of this process; relationships between parties and the outcome of future planning processes.

Impacts on individuals, families/whanau

The social impacts on individuals and their families/whanau include changes to their:

- Wellbeing/hauora – changes to their physical, mental, social and spiritual wellbeing;
- Way of life – changes to how people live, play and run their businesses; and
- Personal and property rights - whether they are economically affected or experience personal disadvantages.

A perfect storm is brewing in the Tararua. There are lots of things going on. They can't be taken individually, they are all happening at the same time. (Rural professional)

Wellbeing - hauora

The New Zealand concept of wellbeing, or hauora, encompasses the physical, mental (and emotional), social, and spiritual dimensions of health. A New Zealand Ministry of Education website, that describes New Zealand health-related concepts, outlined the components of wellbeing (www. http://health.tki.org.nz). Of relevance to this SIA, wellbeing includes:

- Mental and emotional wellbeing - thinking processes, emotions and feelings;
- Social wellbeing - family relationships, friendships, and other interpersonal relationships; feelings of belonging, compassion, and caring; and social support; and
- Spiritual wellbeing - the values and beliefs that determine the way people live, the search for meaning and purpose in life, personal identity and self-awareness.

From the perspective of those involved, PPC2 is anticipated to improve the wellbeing of the unconsented farmers and growers who can obtain an Intensive Farming Land Use Consent, their staff and their families/whanau. PPC2 may not improve the wellbeing of the unconsented farmers and growers who remain above Table 14.2 and are unable to obtain an Intensive Farming Land Use Consent.

The unconsented farmers and growers feel uncertain about implementation of the One Plan and uncertain about their future in farming or growing: '*we're sitting in limbo'*, '*in a vacuum and can't do anything*'. Uncertainty, combined with concerns about implementation, a lack of understanding of what PPC2 will mean for them and their businesses and a feeling of a loss of control, contributed to increased stress on individuals, staff and families. Some unconsented dairy farmers described feeling worried, nervous, frustrated and angry. Others described feeling drained: '*where's this all heading*?' Some described the slow long-term stress of uncertainty around compliance: '*Not having a consent adds to the other things we worry about, one more thing on top of the others*.' While some of these unconsented farmers are seeking solutions ('*what do we need to do if we can't farm to the table?*'), others are avoiding ('*head in the sand mentality*'). In particular, uncertainty and concern around compliance has increased stress among dairy farmers in the higher rainfall areas near Dannevirke. Some interviewed rural professionals are concerned about the increasing stress on dairy farmers, staff and families:

This is about families, not just businesses. Farm businesses support families and their staff and their families. Stress filters down to sharemilkers and workers and their families and it snowballs, staff don't show up or leave and you can't get dairy staff in the Tararua. There's no direct link between compliance and staff, it's just one more issue, one more stress. (Rural professional)

'Vulnerable' was used by some to describe the unconsented dairy farmers who are not expected to meet revised Table 14.2. A dairy farmer shared a story about his neighbours, an older dairy farming couple on an unconsented dairy farm, who planned their retirement strategy a number of years ago. Without an Intensive Farming Land Use Consent, both property value and equity are decreasing,

therefore, reducing this couple's opportunity to retire. Others described how some of these 'vulnerable' farmers are withdrawing: not going to meetings and not obtaining accurate information about whether they can obtain an Intensive Farming Land Use Consent.

Some of the specific concerns voiced by the interviewed consented and unconsented dairy farmers include:

- Unconsented farmers don't know what they need to be doing: '*we don't know what we have to do'*.
- Unconsented farmers want to know their current N leaching and whether they will meet the CNLM in the recalibrated table 14.2. They also want to know where they will fit into the revised Table: Year 1 or another Year?
- Consented farmers want reassurance about how PPC2 will influence their current Intensive Farming Land Use Consents. Some consented dairy farmers with an RDA consent want to know if they can change to a CA consent and the implications of this change to their business.
- Consented and unconsented farmers want information about enforcement of Intensive Farming Land Use Consents:

  '*What are the consequences if we go over our number?'*

  'Will they enforce it [our consent] rigorously?'
- Consented and unconsented farmers want to know how many dairy farmers will obtain a consent and the implications for the farmers that remain unconsented. Rumours about half or more not meeting the new CNLM increased this uncertainty.

  What happens to the people who can't meet the table? Where will they go? What will they do? What if dairying is the only thing they have done? Who will look after them? Who will support them?

In addition, both farmers and growers voiced their concerns about the stigma attached to being unconsented, to being viewed as '*environmentally unfriendly'*. Other descriptors were '*reckless*' and '*not operating cleanly - that's why they can't get a consent*'. A vegetable grower added: '*We're extremely proud of what we grow, but we're seen as the villains. It does my soul in. I'm proud of what we've done'*.

Many unconsented farmers and growers are also concerned about operating '*illegally*' and concerned that Horizons might be required to take legal action against unconsented operations and '*shut them down*'. In the words of a dairy farmer: '*we could be rounded up and taken to jail'*. A Tararua rural professional commented:

How will Horizons enforce those without a consent? This is a serious situation for the security of targeted dairy farms and the region. Horizons don't want to have to enforce. They're doing a service by carrying the weight on their shoulders and keeping farmers in a holding pattern.

Associated with uncertainty, are concerns raised by some around the inevitability of litigation and challenge of PPC2 by some environmental groups. Legacy issues around the recent Environment Court declaration proceedings influenced their belief. Others voiced a perception that some environmental groups are not acting collaboratively or involved in the process. The expectation of litigation is contributing to the anxiety and stress and the continued state of uncertainty: *'If it's voted out, how long will it take until we know or are consented? We'll be more in limbo'.* Concerns were raised by others that if PPC2 is not successful, Horizons could be removed and commissioners could be brought in. Some are concerned that these actions may result in unconsented farmers being prosecuted or forced to exit the industry. Importantly, concerns about PPC2 highlighted apprehension about future planning processes. A rural professional shared his opinion:

If the table changes don't come off, then what confidence will that give for PPC3? It will be never ending litigation. This can't carry on, it has to stop, no one gets anywhere.

Some farmers and growers raised concerns about Overseer and the CNLM in Table 14.2. At a broader level, concerns were raised about the suitability of Overseer to model N leaching: '*using a computer package for something for which it wasn't intended*'. From some commercial vegetable growers' perspectives, Overseer is based on a pastoral rather than horticultural system, does not model the majority of fresh vegetables, and is therefore not considered to be a suitable tool to accurately model N leaching from fresh vegetable crops. A Horowhenua vegetable grower commented: '*We grow 22 crops and only 6 are modelled in Overseer*. *How can that work out our N leaching? We need another system'.* More specifically, some dairy farmers wanted to know: how the CNLM in Table 14.2 were calculated; why the numbers have changed and '*who*' changed them; and information about the Table's 20-year timeframe.

While there was a general understanding that Overseer changes over time, concerns were raised about the accuracy of changing data and that the Table will need to be updated each time Overseer changes. The farmers want to know if a plan change process is required each time Overseer is updated. The frustration and concern about changing rules and knowing what the targets are and how to reach them, ('shifting goal posts'), is reflected in this farmer's words:

'It's shifting goal posts with Overseer updates. We haven't done anything differently on farm but the numbers have changed. Someone keeps changing the goal posts'. (Consented dairy farmer, Rangitikei)

Way of life

Way of life includes how people live, work, play and interact with others (Vanclay et al., 2015). The dairy farmers who can obtain an Intensive Farming Land Use Consent under a revised Table 14.2, described how they could make business decisions based on future certainty of operation. Some farmers and growers want to expand and grow their operations and employ more staff, and others want to invest in new technology and facilities (e.g. for packaging and processing). As illustrated in Box Two, a commercial vegetable grower, who expects to remain unconsented after PPC2, is reluctant to make future investment without policy certainty.

Investment in new facilities

In a recent email letter to the Minister of Agriculture, a commercial vegetable grower described their future plans to relocate a vegetable washing and packaging facility in order to minimise any effect on local rivers or lakes. The relocation would involve a large capital investment (estimated $1-2 million), and the business would require certainty of consent before making this decision. The grower added:

'*We've decided to wait for more policy certainty before undertaking a move of our wash down facility. Due to the large amounts of capital required to support this move, we cannot commit to this while such ambiguity around the future of vegetable production in the Horizons regions continues to exist.*'

Some dairy farmers who are unable to meet both the current or revised Table will need to make significant changes to their farm systems. Concerns were raised about whether these properties could sustain major farm system changes and remain financially viable; farm system changes that are coupled with banks signalling a softening in value for unconsented properties and an associated loss of farm equity. Land use change away from dairying was described as the only option for some dairy farm businesses. Concerns were raised about the market's expectations of a price discount for unconsented dairy farms (anecdotally up to 50%) and the future options for these farmers.

'We moved here in the 13/14 season. We can't meet the old or revised table. We don't know what we're going to do'. (Unconsented dairy farmer, Dannevirke)

We've been here 18 years and we bought because of the high rainfall. We don't have a consent and we may never get one because we're around 2m [of rain] a year. I don't think we'll ever comply. What will we do? I haven't thought about it yet, we'll just wait and see. I've talked with [Fonterra Area Manager], he's a really good guy. But it's not just us, there are other farmers. My neighbour's in his 60s, he hasn't got a consent and no decision's been made about what he'll do. He doesn't go to meetings anymore. He's had a gutsful. I'm really disappointed with how it's all gone.' (Unconsented dairy farmer, Dannevirke)

Some of those interviewed shared anecdotal stories and their opinions around the sale of 4-5 smaller Tararua dairy farms. Some thought they were sold to sheep/beef enterprises as run-offs, and others to corporations and larger dairy farms. Speculative comments included: '*they exited dairying because of the rules, they couldn't get a consent*'; '*they weren't big enough to absorb the shocks*'; and '*it was too much money to meet the One Plan requirements*'. Compliance being a factor in these businesses' decisions to exit dairying could not be confirmed, but speculation and gossip within the community increased the uncertainty and risk around non-compliance for other dairy farmers and the wider industry. A change from dairying to alternative land uses could result in the loss of employment for the dairy farm workers, a flow-on impact to their families, and as one interviewed farmer described, the loss of families in our community. The flow-on effect could be a decrease in school rolls as families shift from the area in search of new employment, and less people to volunteer in and support schools and community facilities.

A flow-on impact from the loss of these smaller dairy farms to other farmers and the structure of dairy farming was also identified. Smaller dairy farms traditionally provided a stepping stone for sharemilkers to progress to farm ownership, and sales of these smaller farms is '*slowly shrinking our pathway*'. A rural professional commented: '*This is changing the shape of our industry and it's a permanent change. The rung on the ladder is disappearing*'. A Dannevirke sharemilker shared his story:

Under the One Plan, those little farms are harder to get. There's more beef farms buying for runoffs. They don't need consents and they can do what they want. I need 60% equity and I don't know whether I'll get there. (Dannevirke sharemilker)

PPC2 will not resolve all issues for the unconsented commercial vegetable growers. A vegetable grower believes the leaching limits in the One Plan would reduce production to 1/10th of what is produced from the land today or 10 times more land would need to be brought into production. He added: '*neither of these options are economically viable or physically possible given the constraints on land suitable for vegetable production, meaning enforcement of the One Plan would shut down the industry in the Horowhenua*.' One older grower exclaimed: '*The rules mean we won't be able to grow vegies and I can't sell so I'll have to go on the dole!*'. This grower has an intergenerational business, strong ties within his local community, and had earlier described how '*the clan strength keeps us here, we're among friends'.*

We're all intergenerational. We all want to be sustainable. We want to keep growing so why would we stuff it up? (Vegetable grower).

Personal and property rights

Changes to personal and property rights includes whether individuals and their families/whanau will be economically affected or experience personal disadvantages from a planned intervention (Vanclay et al., 2015). It is anticipated that PPC2 will reduce some of the negative economic impacts for the unconsented dairy farmers who are able to meet revised Table 14.2. The negative economic impacts are anticipated to remain for the unconsented farmers and vegetable growers unable to meet revised Table 14.2.

Dairy farmers and dairy industry staff are concerned about lending institutions' perceptions of the increased risk of unconsented dairy properties. Rumours and anecdotal stories of some banks reviewing loans from unconsented dairy clients, some banks decreasing paper valuations, and some banks not lending to unconsented farmers to purchase more land (e.g. runoffs) is increasing dairy farmers' uncertainty and stress. Some believe banks have lost confidence in the Tararua dairy industry. Others believe banks '*don't understand what farmers are going through'* and their actions are putting more pressure on dairy farmers. A rural professional added: '*One of their [farmers] biggest fears is devaluation of their asset'.*

An unconsented dairy farmer described a letter they received from their bank:

'*They are reviewing back their security lending, increasing our interest rate and requiring us to pay back more debt. We're viewed to be higher risk. They've weakened our balance sheet. They've devalued us on paper. Their wording was: value is softening and the bank expects value to drop more as a result of Horizons One Plan. It's another continuous pressure and stress for farmers*'.

From the perspective of those interviewed, Box Three summarises some of the perceived financial risk from unconsented dairy farms. This risk is perceived to affect consented and unconsented dairy farms and the community.

The perceived financial risk of unconsented dairy farms and flow-on impacts

- Consented dairy farms have security of land value and security of enterprise, therefore consented properties are perceived to be '*worth more*' than unconsented.
- Devaluation of unconsented dairy farms is not related to farming ability.
- Unconsented properties are difficult or impossible to sell.
- Unconsented properties are perceived as '*more risky'*: after due diligence, buyers expect a substantial price discount (anecdotal evidence of 40- 50%).
- A softening in valuation results in a fall in farm equity; a fall in equity reduces ability of the business to invest in other enterprises or expand.
- A fall in farm equity of unconsented farms impacts on the exit strategy of older farmers (asset reducing, less retirement income).
- Perception of an increased risk of unconsented properties impacts on the entry and growth strategies of sharemilkers (anecdotal evidence of 60% equity required).
- Falling land values reduces rates income for local councils, resulting in less services to the community or a rate increase.

In contrast to comments made by dairy farmers and industry, anecdotal evidence was not forthcoming of banks devaluing unconsented horticultural land in Horowhenua. An industry representative believes land values are not decreasing because of the significant and increasing demand for subdivision and housing. However, the Horowhenua District Plan does not currently enable the subdivision of rural productive land for housing. Vegetable growers unable to meet the CNLM set in Table 14.2, are unable to obtain an Intensive Farming Land Use Consent, thereby unable to sell unconsented land (for vegetable production or subdivision) and unable to realise equity.

Excerpt from a letter sent to the Minister of Agriculture by a commercial vegetable grower

Leafy green vegetable production currently commands the highest value for land of all agricultural land use. Failure to ensure rezoning/reclassification of the land inside the WMZ if restrictions on nutrient and therefore productivity are applied, would bankrupt the business concerned. Land value is tied to the productivity achievable on that land resource, therefore if you restrict the nutrient use/productivity, you will decrease the value of that land and drop the equity in those business to the point where not able to carry their current debt.

For example, a 50% reduction on nutrient would result in a 50% decrease in land value. This would reduce our equity by 50% and therefore put us in breach of debt covenants with our financiers. This would apply across all the growers concerned and is currently playing out in the Canterbury Region where farmers are unable secure finance to sell or buy land due to lack of consents and risk of reduced productivity.

Impacts on the community and industry

The social impacts on the community and industry include changes to their:

- Wellbeing – changes to the community's physical, mental, social and spiritual wellbeing; and
- Way of life – changes to how people live, play and run their businesses.

'The loss of community will be far quicker than the loss of farms.'

Wellbeing

Community wellbeing includes components of equity (individuals are treated with fairness and justice), connectedness (social networks that offer support, community participation) and liveability (access to services and facilities). Community wellbeing is a key focus for the Horowhenua and Tararua District Councils. Council staff interviewed are concerned about the impact of unconsented dairy farms and vegetable growing businesses on the wellbeing of their communities. One participant used the term *'social deprivation'* to describe the potential impact of unconsented farmers on community wellbeing. These concerns are further expanded in the following section.

Regional equity was an area of concern for some dairy farmers. From their perspective, inequality is increasing between: consented and unconsented dairy farmers; dairy and sheep/beef farmers (sheep/beef farmers run cattle yet are not required to obtain an Intensive Farming Land Use Consent); and different LUC classes (CNLM are higher for LUC I compared with LUC III). PPC2 is not expected to address concerns around regional equity, and other planning processes will be required.

Way of life

The social impact of unconsented dairy farm and vegetable growing businesses on the community was widely discussed. These discussions focused on the community cost of lost production and/or the community cost of a loss of dairy farm and vegetable growing businesses. Four main scenarios were identified by those interviewed:

1. Dairy farm and vegetable growing businesses are required to reduce production to meet revised Table 14.2.
2. Unconsented farmers and growers do not have future business certainty and are not expanding or investing in their businesses.
3. Unconsented dairy farm and vegetable growing businesses exit the industry (one factor may be the inability to obtain an Intensive Farming Land Use Consent).
4. Dairy farm and vegetable growing businesses are forced to exit because they were deemed to be operating illegally.

'Levin needs ag and hort. If there's no hort, Levin will die and if there's no Levin, it affects dairy and sheep and beef farmers. Everything stops. It's a domino effect. Horowhenua Motors will fall over tomorrow, Fuitfed and Farmlands will be gone, and those staff and families won't have jobs so they'll leave the district'. (Vegetable grower, Horowhenua)

Dairy farms and vegetable growing businesses employ staff, many of whom are local staff with families in local communities. From the perspective of those interviewed, reduced production or the loss of these businesses could result in a loss of employment and flow-on effects to local families, local businesses and their local communities. A loss of employment may result in families moving away from the community in search of employment, or families remaining in local communities and an increase in unemployment. A vegetable grower highlighted his concerns about a link between increasing unemployment and increasing domestic violence. In addition, farmers and growers are part of clubs and teams, they belong to churches and other groups and they volunteer in the community. Local businesses (e.g. town businesses, commercial vegetable growers) support schools, sports teams and charities within the community. Box Four illustrates the perceived community cost of farmers and growers remaining unconsented.

The perceived community cost of farmers and growers remaining unconsented

- Potential loss of jobs, people moving from the district to find employment, a falling ratepayer base to support and fund community services. In addition, falling land values leads to decreased rates to councils. Councils either increase rates or provide reduced community services.
- Families move from the area, falling school rolls, less funding for schools, less parents to help at and support schools.
- A land use change from dairying may impact on other jobs - the loss of 4-5 dairy farms may result in the loss of a tanker driver.
- Potential impacts on rural supply firms and local businesses: less investment and less on-farm improvements, less money spent in town, loss of businesses ('*closed shops'*); loss of farms, less need for rural suppliers and services.
- A flow on effect to farms if town businesses and services are lost: a farm becomes isolated from services, everything becomes more expensive, less interest in isolated farms, farms reduce in value.
- Less opportunities for RSE workers, their families and their local communities.

'*In Pahiatua and Dannevirke businesses are treading water. They won't survive, they're all based on agriculture. Businesses will go first, farmers will hang in longer'.* (Interviewee, Pahiatua).

'*The plan change will be better for Dannevirke. There'll be increased business confidence for businesses that supply agriculture. The businesses will see farmers spending money in town, making improvements*.' (Interviewee, Dannevirke)

Unconsented dairy farm businesses are perceived to have a flow-on impact to dairy companies and the wider dairy industry. Unconsented dairy farms are '*unlawful*', and as such, can present a risk of supply for dairy companies. If Horizons require that all dairy farms must have a consent, under the terms of supply, dairy companies believe they may not be able to collect milk from unconsented suppliers. A dairy company employee commented: '*It hasn't happened yet for us, but it's a worry*'. In addition, to meet Table 14.2, dairy farmers may need to reduce production and others may need to exit the industry, thereby potentially reducing milk supply to dairy companies.

Unconsented dairy farm businesses are perceived to pose a risk to the wider dairy industry in two ways. Firstly, increasing uncertainty is reducing confidence in dairying and in the future of dairy farming in the region. Secondly, the media coverage around unconsented dairy farms '*narrows the spotlight on dairy farmers*' and contributes to the public perception that unconsented farmers are *'environmentally unfriendly*': '*If PPC2 comes off, it demonstrates progress, and shows the community that dairy farmers are environmentally responsible'*. However, if only some dairy farmers obtain a consent under a revised Table 14.2, some rural professionals believe this has the potential to leave a smaller group of dairy farmers exposed to public scrutiny and pressure.

For many commercial vegetable growers, district council and horticultural industry staff, the social impact of unconsented vegetable production extends beyond their local community to New Zealand society's way of life. These impacts relate to scenario four, or vegetable growing businesses forced to exit because they are deemed to be operating illegally. It was acknowledged that PPC2 could not address these issues, and that another process would be required. The key questions raised during the SIA community engagement included:

Is local fresh vegetable production important to New Zealanders?

How can we protect the future of vegetable growing in Horowhenua?

From the perspective of those interviewed, Box Five summarises some potential social impacts on the wider community if fresh vegetables were no longer grown in the Horowhenua.

What might happen if fresh vegetables were no longer grown in Horowhenua?

The security of New Zealand's food supply: '*we're part of New Zealand's food jigsaw'*. Horowhenua is one of the three large fresh vegetable production hubs in New Zealand (along with Pukekohe and Canterbury). 'A sustainable year-round supply of produce for New Zealand is only possible if the different growing regions work in conjunction to ensure that seasonality and other variables, such as diseases and weather, do not drastically interrupt that supply' (Horticulture New Zealand, 2017, p.10).

New Zealanders expect affordable quality fresh vegetables. If vegetable production in Horowhenua ceases, vegetables will be sourced from other regions or internationally (fresh and frozen). It is anticipated that price might increase, quality and freshness may decrease.

The local food story. People enjoy purchasing from local growers, from knowing 'their stories', from knowing where their food is produced. The connection between consumers and growers could be lost.

Impacts on the environment

Some dairy farmers and dairy industry staff highlighted the potential impact of unconsented dairy farms on the environment. '*I reckon the dairy industry has gone backwards environmentally, especially in the last 3 years'* (rural professional). Another industry professional described the current One Plan process as a '*man-made barrier to environmental progress'*, and a dairy farmer added '*it's not encouraging people to understand their environmental footprint*'. While some dairy farmers are making on-farm change for environmental benefit, others were thought to be are doing less. Future uncertainty is believed to have contributed: '*farmers are sitting and waiting*.'

Summary of social impacts

Table Six compares and contrasts the social impacts associated with the proposed plan change provisions to:

1. Maintain the status quo (no change to One Plan Table 14.2); and
2. Recalibrate One Plan Table 14.2 cumulative nitrogen leaching maximum (CNLM) with OVERSEER 6.3.0.

Table 6: A Comparison of the Social Impacts for the Status Quo and for PPC2.

Social Impact	Status quo No change to Table 14.2	Proposed Plan Change 2 Recalibration of Table 14.2
Individual wellbeing	The status quo is anticipated to decrease the wellbeing of the unconsented farmers and growers who will remain above Table 14.2 and are unable to obtain an Intensive Farming Land Use Consent. Unconsented farmers and growers believe they will be operating unlawfully or illegally. The status quo will result in continued uncertainty for farmers and growers: uncertainty of operation and uncertainty about their future in farming and growing. Unconsented farmers and growers are '*in limbo'*. Increasing uncertainty will contribute to the long-term '*slow stress'* for farmers, growers, their families, and staff. Speculation and gossip about who might obtain an Intensive Farming Land Use Consent, and what may happen to unconsented farmers and growers, is contributing to this uncertainty and stress. The perceived stigma of being unconsented will remain.	PPC2 is anticipated to improve the wellbeing of the unconsented farmers and growers who can obtain an Intensive Farming Land Use Consent, their staff and their families/whanau. Those who can obtain a consent will have increased certainty and stress is anticipated to reduce. Consented farmers and growers will be operating legitimately and the perceived stigma of being environmentally unfriendly will reduce. However, uncertainty and stress will remain for the farmers and growers unable to meet revised Table 14.2, with a flow-on impact on their families/whanau and staff.
Individual way of life	The status quo will not improve unconsented farmers, growers and their families' way of life. Without certainty of operation, future plans for expansion and investment are on hold. Some unconsented farmers and growers may need to make significant farm system change to meet the Table, and others may exit the industry. Exit options are uncertain. Particularly vulnerable, are the older farmers who are unable to implement their planned retirement strategies. For the intergenerational farmers and growers who expected to continue their family businesses, their family/whanau's way of life will change. Those who exit the	PPC2 is expected to retain or improve the way of life for the unconsented farmers and growers who can obtain a Land Use Consent, their families/whanau and staff. Consented businesses can implement investment and expansion plans, with associated flow on effects to their local communities (increased employment and investment in goods and services). Intergenerational businesses can plan for continued family ownership. However, PPC2 will not improve the way of life for the farmers and growers unable to meet Table 14.2. The

	industry may need to leave their communities, thereby leaving friends and support networks. The sale of smaller dairy farms in the region to larger operations or for land use change, is 'shrinking' the farm ownership pathway for sharemilkers, thereby reducing their future opportunities.	commercial vegetable growers in particular are aware that without an Intensive Farming Land Use Consent they remain vulnerable to enforcement of One Plan rules, and a perceived forced exit from the industry.
Individual personal and property rights	The status quo will decrease individual farmers and growers' personal and property rights. Dairy farmers and some rural professionals expected financial institutions will continue to perceive unconsented dairy farms as an increased risk to their businesses. Bank' '*softening*' of unconsented dairy farm valuation, and increased pressure on farmers to repay loans, is anticipated to increase. A softening in valuation reduces farm equity, thereby reducing a business's ability to expand, invest, or to exit the industry. Additionally, decreasing valuation and eroding farm equity, reduces opportunity and increases stress. Speculation and gossip about banks devaluing unconsented dairy farms, is increasing dairy farmer and industry uncertainty and stress.	PPC2 may retain or improve some unconsented farmers and growers' personal and property rights. It is possible that banks may perceive the consented dairy farms to be of less risk, therefore, reducing downwards pressure on farm value and business equity. However, PPC2 will not improve the personal and property rights for the farmers and growers unable to meet Table 14.2
Community wellbeing and way of life	The status quo is anticipated to reduce community wellbeing and way of life: '*A loss of community*'. If dairy farms and vegetable growing businesses remain unconsented, the risk of forced exit from the industry is perceived to increase. In addition, some businesses may need to reduce production to obtain an Intensive Farming Land Use Consent. Both scenarios are anticipated to result in a loss of jobs, which may result in families moving away from their community in search of employment, a subsequent fall in school rolls which may result in less school funding and less parental support within schools.	PPC2 will result in more dairy farms becoming consented and that is anticipated to retain or improve dairy farming community wellbeing and way of life. Increased confidence among businesses in the Tararua and Rangitikei Districts is anticipated from the flow-on effect of increased farm business confidence. Some farm businesses will remain unconsented. The impact of PPC2 on the dairy industry's perceived risk of supply could not be determined at this stage. However, the majority of vegetable growing businesses do

	Families moving from the districts/region will reduce membership of clubs and teams and those who volunteer in rural communities. A loss of farm and growing businesses will result in reduced support and sponsorship for teams, schools and community charitable groups. Reduced production and/or a potential loss of dairy farms and vegetable growing businesses will negatively impact on rural goods and service providers, town businesses and rural professionals: less money spent will result in a potential loss of goods and service businesses and a loss of jobs for their staff. The negative downwards spiral continues, with business families moving from the districts/region in search of employment and a flow-on impact on rural communities, rural services and local businesses. If town and rural businesses are lost, farms are perceived to be isolated and their value decreases. For the RSE workers, a loss of employment will mean moving from a culturally diverse community they feel part of, and could result in less support for their families and local communities. Additionally, unconsented dairy farms will remain unlawful and the perceived risk of supply to dairy companies will continue.	not believe they will obtain an Intensive Farming Land Use Consent. Uncertainty, and the perceived negative economic impact of unconsented vegetable growing businesses on Levin, remains amongst growers. PPC2 will also not address broader concerns about the potential impact of a loss of vegetable growing businesses on New Zealand's food security and New Zealander's expectations of fresh healthy locally grown produce.
Environment	While uncertainty remains, some rural professionals believe the status quo will have a negative impact on the environment.	Some rural professionals believe PPC2 will have a beneficial impact on the environment.

Mitigation and management

Overall, there are significant positive effects of PPC2 and the majority of negative social impacts can be mitigated. Many of the negative social impacts lie outside the scope of PPC2 and further plan changes (PPC3) and community processes (Our Freshwater Future) will be required. Mitigation is a process of:

Devising and implementing processes, procedures and/or changes to a planned intervention in order to avoid, reduce, minimise or to compensate (offset) for impacts likely to be experienced (Vanclay et al., 2015, p.88).

Community engagement was a key mitigation strategy. Community engagement aimed to: address any Proposed One Plan legacy issues (i.e. perceived lack of consultation); raise awareness about PPC2 (thereby reducing fear and uncertainty, Vanclay et al, 2015), and encourage discussion and involvement in the design and implementation of mitigation and monitoring strategies. The community engagement process also aimed to build relationships between Horizons and the community and between stakeholder groups. The PPC2 community engagement provides a useful template for future planning processes. It is recommended that future planning processes (e.g. PPC3) build on the local knowledge, local contacts and networks developed during this SIA.

Following the principle that underpins this SIA, 'from the perspective of the people potentially affected', the following mitigation strategies are recommended. These strategies will help to address some of the specific concerns about: PPC2; future planning processes; and the farmers and growers who will remain unconsented even if PPC2 is adopted.

- Clear, concise and accurate communication between Horizons and those potentially affected by PPC2: What will this mean for you and your business? Accurate communication will help to address some of the speculation and gossip within the community. In particular:
    - A letter to consented dairy farmers around what PPC2 will mean for their consent conditions, information about changing from a restricted discretionary to a controlled activity consent (content based on the questions asked at the community meetings);
    - If possible, information around enforcement of Intensive Farming Land Use Consents; and
    - Information about the plan change process for future Overseer updates.

- Horizons foster relationships and work with individuals (e.g. Fonterra Area Manager) and groups (e.g. TCEIS, Tararua Growers Association) within the rural community to enable effective communication around PPC2 and other planning processes. Case study research found some individuals and established groups were a better conduit of information between Horizons and rural communities in some cases; particularly for individuals who have withdrawn from communication with Horizons.

- Investigate the establishment of a social support team for the farmers and growers who remain unconsented. This team could include the Rural Support Trust (RST) coordinators. Farmers and growers could be made aware of how the RST can assist in this area.

- Horizons' staff continue to discuss PPC2 and future planning initiatives with regional and national agribusiness bank staff, to increase their awareness and understanding of the process.

- DairyNZ and Horizons' staff continue to run their 'drop-in' sessions and work one-on-one with unconsented dairy farmers, comparing farm baseline data to recalibrated CNLM in Table 14.2. This will provide some certainty for unconsented farmers.

- DairyNZ and Horizons' staff and nutrient management consultants continue to provide specific farm management advice to the farmers and growers that will remain unconsented around the potential mitigation strategies they can adopt to reduce on-farm Nitrogen leaching.

- Some dairy farmers asked Horizons to hold community water quality update meetings, to discuss trends in water quality and what these trends will mean for farmers' businesses.

- Horizons continue to work collaboratively with stakeholders and continue to build relationships with some environmental groups. This was suggested as a strategy to minimise any potential litigation and challenge of PPC2.

- Continued support of dairy industry community projects to reduce N leaching (e.g. Plantain Project)

- Continue to support industry and grower initiatives to explore alternative methods to measure N leaching from commercial vegetable crops and methods to reduce N leaching. Some commercial growers believe these projects will demonstrate to the community that growers are working to improve water quality.

Some Horizons' staff acknowledge that the future proposed plan change (PPC3) is in itself a mitigation strategy. It is anticipated that PPC3 will help the One Plan work 'more effectively', thereby giving communities the chance to discuss the future they want (Our Freshwater Future). It is anticipated that broader issues, such as the future of vegetable growing in the Horowhenua and district council zoning restrictions to protect elite LUC I and II soils, could be part of these community conversations.

Monitoring plan

A monitoring plan measures and tracks any temporal changes from a planned intervention. The future proposed plan change (PPC3 -anticipated mid 2019) will bring new changes that may contribute to or reduce changes brought by PPC2. As such, any interim changes arising directly from PPC2 can be monitored by:

- Regular on-going discussions between Horizons' staff, individuals (e.g. Fonterra Area Manager) and groups (e.g. TCEIS, Tararua Growers Association) within the rural community around the positive and negative changes from PP2 evident in their communities. The Rural Support Trust coordinators could be part of these discussions.

- Utilise the planned Dairy industry social monitoring initiatives (e.g. the Tararua Plantain Project).

References

Anderson, H. (2018). *How does horticulture fit into the amended Table 14.2?* . Unpublished report.

Ballingall, J., & Pambudi, D. (2017). *Dairy Trade's Economic Contribution to New Zealand*. New Zealand: New Zealand Institute of Economic Research.

Barber, A., & Wharf, L. (2010). *Code of Practice for Commercial Vegetable Production in the Horizons Region. Best Management Practices for Nutrient Management and Minimising Erosion on Cultivated Land* New Zealand: Horticulture New Zealand.

Bowen, T., & Peet, N. (2018). *Proposed Planning Package to Address Intensive Land Use Rules and Policies and Wider Catchment Planning. Report presented to the Strategy and Policy Committee, 14 August 2018* New Zealand: Horizons Regional Council.

Collins, H. M. (2018). *Dairy Farmers' Responses to Water Quality Interventions: A Case Study in the Manawatu-Wangnaui Region of New Zealand.* (Doctor of Philosophy), Massey University, New Zealand.

Collins, H. M., Gray, D. I., Reid, J. I., Shadbolt, N. M., & Dooley, A. E. (2018). Accessing and building social capital: How a farmer-led initiative influenced environmental policy implementation. *Rural Extension & Innovation Systems Journal, 14*(1), 73-82.

DairyNZ. (2017). *QuickStats about dairying - Manawatu Region*. New Zealand: DairyNZ.

DairyNZ, & Horizons Regional Council. (2014). *Dairy Farming Under the One Plan. Your guide to obtaining a land use consent for an existing dairy farm*. New Zealand: DairyNZ.

Eaqub, S., & Ballingall, J. (2015). *Manawatu-Whanganui Growth Study. Opportunities Report*. New Zealand: Ministry for Primary Industries.

Gilliland, B. (2017). *Notes On the Derivation of One Plan Table 14.2. An internal staff report* New Zealand: Horizons.

Horizons Regional Council. (2014). *One Plan. The Consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region*. New Zealand: Horizons Regional Council.

Horizons Regional Council. (2015). *Regional Council Agenda. For a meeting of the Horizons Regional Council from 28 October 2015*. New Zealand: Horizons Regional Council.

Horizons Regional Council. (2017). One Plan Intensive Farming Rules Continue to be Reviewed [Press release]

Horowhenua District Council. (2018). *A Profile of the Food and Beverage Sector in Horowhenua* Unpublished report.

Horticulture New Zealand. (2017). *New Zealand domestic vegetable production: the growing story*. New Zealand: Horticulture New Zealand.

Lake Horowhena Trust, Horowhenua District Council, Horizons Regional Council, Department of Conservation, & Horowhenau Lake Domain Board. (2014). *HE HOKIOI RERENGA TAHI. The Lake Horowhenua Accord Action Plan 2014-2016*. New Zealand: Horizons Regional Council.

Lee, L., & Lam, R. (2012). *Sons of the Soil. Chinese Market Gardeners in New Zealand*. New Zealand: Dominion Federation of New Zealand Chinese Commercial Growers Inc.

LIC. (2017). *New Zealand Dairy Statistics 2016-17*. New Zealand: Livestock Improvement Corporation Limited & DairyNZ Limited.

Massey University. (2015). *Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants*. New Zealand: Massey University.

McArthur, K. J., Roygard, J. K. F., Aussiel, O., & Clark, M. E. (2007). *Development of Water Management Zones in the Manawatu-Wanganui Region: Technical Report to Support Policy Development*. New Zealand: Horizons Regional Council.

O'Leary, Z. (2005). *Researching Real-World Problems. A Guide to Methods of Inquiry*. London: Sage Publications Ltd.

O'Leary, Z. (2014). *The essential guide to doing your research project.* (2nd ed.). London: Sage Publications Ltd.

The Agribusiness Group. (2017). *Farm Scale Economic Impact Analysis of One Plan Intensive Land Use Provisions* New Zealand: Horizons.

Vanclay, F., Exteves, A. M., Aucamp, I., & Franks, D. M. (2015). *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects*. United States: International Association for Impact Assessment.

Wellington Fish And Game Council and Environmental Defence Society Inc vs Manawatu-Wanganui Regional Council, Decision [2017] NZEnvC 31-ENV-2016-WLG-000038, The Environment Court (2017).