

I hereby give notice that an ordinary meeting of the Catchment Operations Committee will be held on:

**Date:** Tuesday, 10 October 2017  
**Time:** to follow at the conclusion of the  
**Environment Committee**  
**Venue:** Tararua Room  
Horizons Regional Council  
11-15 Victoria Avenue, Palmerston North

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## **CATCHMENT OPERATIONS COMMITTEE**

### **AGENDA**

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#### **MEMBERSHIP**

<b>Chair</b>	Cr DB Cotton
<b>Deputy Chair</b>	Cr LR Burnell QSM
<b>Councillors</b>	Cr JJ Barrow
	Cr EB Gordon JP(ex officio)
	Cr RJ Keedwell
	Cr PJ Kelly JP
	Cr GM McKellar
	Cr NJ Patrick
	Cr PW Rieger QSO JP
	Cr BE Rollinson
	Cr CI Sheldon
	Cr WK Te Awe Awe

**Michael McCartney**  
**Chief Executive**

Contact Telephone: 0508 800 800  
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for further information regarding this agenda, please contact:  
Julie Kennedy, 06 9522 800

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<b>SERVICE CENTRES</b>	<b>Kairanga</b> Cnr Rongotea & Kairanga-Bunnythorpe Rds, Palmerston North	<b>Marton</b> Hammond Street	<b>Taumarunui</b> 34 Maata Street	<b>Woodville</b> Cnr Vogel (SH2) & Tay Sts
<b>REGIONAL HOUSES</b>	<b>Palmerston North</b> 11-15 Victoria Avenue	<b>Whanganui</b> 181 Guyton Street		
<b>DEPOTS</b>	<b>Levin</b> 11 Bruce Road	<b>Taihape</b> Torere Road Ohotu		
<b>POSTAL ADDRESS</b>	Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442			
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## AGENDA

1 Welcome/Karakia

2 Apologies and Leave of Absence

Leave of Absence has been granted to Cr Burnell.

3 **Public Forums:** Are designed to enable members of the public to bring matters, not on that meeting's agenda, to the attention of the local authority.

**Deputations:** Are designed to enable a person, group or organisation to speak to an item on the agenda of a particular meeting.

Requests for Public Forums / Deputations must be made to the meeting secretary by 12 noon on the working day before the meeting. The person applying for a Public Forum or a Deputation must provide a clear explanation for the request which is subsequently approved by the Chairperson.

**Petitions:** Can be presented to the local authority or any of its committees, so long as the subject matter falls within the terms of reference of the council or committee meeting being presented to.

Written notice to the Chief Executive is required at least 5 working days before the date of the meeting. Petitions must contain at least 20 signatures and consist of fewer than 150 words (not including signatories).

Further information is available by phoning 0508 800 800.

4 Supplementary Items

To consider, and if thought fit, to pass a resolution to permit the Committee/Council to consider any further items relating to items following below which do not appear on the Order Paper of this meeting and/or the meeting to be held with the public excluded.

Such resolution is required to be made pursuant to Section 46A(7) of the Local Government Official Information and Meetings Act 1987 (as amended), and the Chairperson must advise:

- (i) The reason why the item was not on the Order Paper, and
- (ii) The reason why the discussion of this item cannot be delayed until a subsequent meeting.

5 Members' Conflict of Interest

Members are reminded of their obligation to declare any conflicts of interest they might have in respect of the items on this Agenda.



Minutes of the fifth meeting of the tenth triennium of the Catchment Operations Committee held at 1.12pm on Tuesday 8 August 2017, in the Tararua Room, Horizons Regional Council, 11-15 Victoria Avenue, Palmerston North.

**PRESENT** Crs DB Cotton (Chair), LR Burnell QSM, EB Gordon JP (ex officio), RJ Keedwell, PJ Kelly JP, GM McKellar, NJ Patrick, PW Rieger QSO JP, BE Rollinson, CI Sheldon, and WK Te Awe Awe.

**IN ATTENDANCE** Chief Executive Mr M McCartney  
Committee Secretary Mrs JA Kennedy

**ALSO PRESENT** At various times during the meeting:  
Mr R Strong (Group Manager Operations), Dr J Roygard (Group Manager Natural Resources and Partnerships), Mr G Shirley (Group Manager Regional Services & Information), Mr J Bell (Investigations & Design Manager), Mr G Cooper (Environment Manager Land), Mr W Spencer (Area Engineer Northern), Mr D Harrison (Environmental Programme Coordinator), Mr M Guy (Land Management Co-ordinator Whanganui), Mrs C Hesselin (Communications Advisor).

The Chair welcomed everyone to the meeting and invited Cr Te Awe Awe to open the meeting with a Karakia.

#### **APOLOGIES**

**COP 17-36** *Moved* **Rollinson/McKellar**  
*That the Committee receives an apology from Cr Barrow.*  
**CARRIED**

#### **PUBLIC SPEAKING RIGHTS**

There were no requests for public speaking rights.

#### **SUPPLEMENTARY ITEMS**

There were no supplementary items to be considered.

#### **MEMBERS' CONFLICTS OF INTEREST**

There were no conflicts of interest declared.

#### **CONFIRMATION OF MINUTES**

**COP 17-37** *Moved* **Te Awe Awe/Gordon**  
*That the Committee:*  
**confirms** the minutes of the Catchment Operations Committee meeting held on 13 June 2017 as a correct record.  
**CARRIED**



## LOWER MANAWATU SCHEME (LMS) RURAL UPGRADE PROJECT - REVIEW AND WORK PROGRAMME FOR 2017-18 (PRD 5 35)

Report No 17-131

This item updated Members on progress with implementing the Lower Manawatu Scheme (LMS) Rural Flood Protection Upgrade Project (the Rural Upgrade Project (RUP)) and outlined the programme of works for Year 12 (2017-18 financial year) of what was currently a 12 year programme. It also highlighted a range of current project delivery issues. Mr Strong (Group Manager River Management) took the item as read. Mr Strong depicted a map and identified the section of stopbank that had already been raised/widened. He then identified the issues associated with raising the balance of the stopbank on its current alignment and also to an alternative alignment. Given these issues it was recommended that the balance of the Te Matai Road section of the Rural Upgrade Project be removed from the project scope and potentially be added as a separate stand-alone project as part of the Long-term Plan. He then explained some of the difficulties associated with progressing and finishing the RUP in this financial year. Mr Strong responded to Members' questions about the increased total project cost and impacts associated with removing the Te Matai Road project.

**COP 17-40**      **Moved**      **Te Awe Awe/McKellar**

*That the Committee recommends that Council:*

- a. *receives the information contained in Report No. 17-131;*
- b. *notes progress with implementing the LMS Rural Upgrade Project; and*
- c. *endorses the removal of the balance of the Te Matai Road work from the Rural Upgrade Project delivery programme.*

**CARRIED**

## MAKIRIKIRI AUDIT

Report No 17-132

This item reported the findings of a recent audit of the Makirikiri Scheme and sought the Committee's approval for the release of the audit to Scheme ratepayers. Mr Strong (Group Manager River Management) took the item as read and invited questions. There was discussion around the level of ratepayer involvement, and at what stage of the process to invite their input into the audit recommendations. Mr Strong explained it was his preference to get endorsement from the Committee in the first instance, then have a conversation with the ratepayers. He said ratepayers would have the opportunity to present their views through the Long-term Plan. Mr Strong clarified Members' questions about the audit process.

**COP 17-41**      **Moved**      **Burnell/Gordon**

*That the Committee recommends that Council:*

- a. *receives the information contained in Report No. 17-132 ;*
- b. *adopts the audit of the Makirikiri Flood Control Scheme;*
- c. *instructs the Group Manager River Management to implement the audit recommendations;*
- d. *instructs the Group Manager River Management to communicate the audit findings to affected ratepayers.*

**CARRIED**

## FRESHWATER IMPROVEMENT FUND

Dr Roygard (Group Manager Natural Resources & Partnerships) gave a brief overview of the key funding outcomes from the Freshwater Improvement Fund.

## SUSTAINABLE LAND USE INITIATIVE (SLUI)

*Report No 17-133*

This report updated Members about progress on Council's Sustainable Land Use Initiative (SLUI) for the period 1 May to 30 June 2017. Mr Cooper (Manager-Land) introduced the item and highlighted several points. The total area of Whole Farm Plans (WFP) mapped under SLUI was now 500,797 ha, and the works target for the 2017-18 year was 2,900 ha with 2,647 ha of work already committed. Mr Guy (Land Management Co-ordinator Whanganui) provided an update on the outcome of two successful SLUI meetings organised by Ruapehu Federated Farmers at Tokorima and Kirikau. Dr Roygard (Group Manager Natural Resources & Partnerships) gave a summary of progress against targets, noting a very strong finish for SLUI at the end of the 2016-17 financial year. Mr Cooper commented on damage caused by snowfall in July to the Ridge Road forestry block. Mr Cooper and Dr Roygard responded to Members' questions on activities contained in the report. The Chair congratulated Dr Roygard and his staff for their efforts.

**COP 17-42**      **Moved**      **Gordon/Burnell**

*That the Committee recommends that Council:*

- a. receives the information contained in Report No. 17-133 and Annex.

**CARRIED**

## REGIONAL COAST AND LAND

*Report No 17-134*

This report updated Members on progress on Council's Regional Land and Coastal and Whanganui Catchment Strategy activities to 30 June 2017. Mr Cooper (Manager-Land) highlighted that the National Environmental Standard for Plantation Forestry was notified on 31 July 2017, effective 1 May 2018. Crs Cotton and Rollinson commented on the two successful and positive Sustainable Land Use Initiative meetings held in Tokorima and Kirikau. They were attended by Horizons Regional staff, Crs Rollinson and Cotton, and organised by Ruapehu Federated Farmers.

**COP 17-43**      **Moved**      **Rollinson/Keedwell**

*That the Committee recommends that Council:*

- a. receives the information contained in Report No. 17-134.

**CARRIED**





Report No.	17-182
Information Only - No Decision Required	

## REPORT ON BALLANCE FARM ENVIRONMENT AWARDS INCLUDING PRESENTATION FROM TERRY OLSEN, REGIONAL AWARDS CHAIR

### 1. PURPOSE

- 1.1 This report is to update members about how the **Ballance Farm Environment Awards (BFEA)** works nationally and within our region.
- 1.2 This will be followed by a verbal presentation by Mr Terry Olsen and other members of the Horizons Region committee outlining local matters of interest.

### 2. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information in Report No. 17-182.
- b. receives the presentation from Mr Terry Olsen.

### 3. FINANCIAL IMPACT

- 3.1. There is no financial impact associated with this report. Horizons contributes to the Ballance farm awards as a part of the Annual Plan budget.

### 4. COMMUNITY ENGAGEMENT

- 4.1. This is a public item and therefore Council may deem this sufficient to inform the public.

### 5. SIGNIFICANT BUSINESS RISK IMPACT

- 5.1. There is no direct significant business risks associated with this report. Horizons contributes to the Ballance Farm Awards as a part of the Annual Plan budget.

### 6. BACKGROUND

#### National Approach

- 6.1. The BFEA are a national awards programme based on Regional boundaries and are spread throughout New Zealand. Twelve region/districts are partners in 11 different award programmes, this includes all of the North Island with Gisborne and Hawkes Bay having a combined event, and Canterbury, Otago and Southland.
- 6.2. The awards are run by an independent trust called the **New Zealand Farm Environment Trust (NZFET)**, the Chair is Simon Saunders and the General Manager is James Ryan. Local farmer Hugh Dalrymple was one of six trustees but he has resigned recently.
- 6.3. The majority of the trustees are elected by the committee's of the 11 participating regions, with the principle sponsor and the regional councils also providing a trustee. The current regional council trustee representative is Simon Stokes of Bay of Plenty region.

- 6.4. Ballance Agri-Nutrients are the naming rights sponsor.

### Regional Approach

- 6.5. Within the Horizons Region the local committee is Chaired by Terry Olsen and supported by the Regional Coordinator – Stella Rackham, and the Judging Coordinator – Mary Hopkins.

### History

- 6.6. The awards were instigated in the Waikato Region, and the national showcase award is the Gordon Stephenson Trophy in honour of the farmer and environmentalist who founded the awards.
- 6.7. The BFEA in the Horizons region was instigated in 2003-04. The initial awards program was cancelled due to the 2004 floods, so the inaugural awards ceremony was in 2005 with the first winner being Ian McKelvie's Pukemara property at Tangimoana.
- 6.8. The awards are run along the lines of environmental performance is a journey, and the Trust defines environmental sustainability as; "Can what is being done now, still be working successfully in 100 years?"

### Process

- 6.9. Entrants are taken in August and September.
- 6.10. Judges are then called together for a judging pre-brief to ensure consistency in the teams. Usually a judging team consists of two sponsors and two farmers. Horizons Regional Council has a staff member in each team. Horizons judges take note to ensure that no property with poor environmental performance reaches the finalist phase.
- 6.11. The first round of judging is completed by November and all entrants receive a judges feedback report.
- 6.12. The judging teams meet and six entrants are selected to be put through to the final round of judging. The judging team again comprises two farmers and two sponsors including a Horizons staff member. This round of judging is completed by December and a prize winners and an overall winner are selected.
- 6.13. The winners are announced at the "Awards Evening" which is held during the Central Districts Field Days week in March.
- 6.14. The overall winner will host a public field day on their property in May and attend the National Showcase event in June.

### Budget

- 6.15. The Horizons Region committee has a budget of \$38,000, funded by partners and sponsors. Horizons Regional Council contributes \$25,000 to this and this is "ring fenced" to remain within the regional programme.
- 6.16. The local programme budget is allocated to:
- |                               |          |
|-------------------------------|----------|
| Awards event                  | \$20,000 |
| Regional Coordinator contract | \$12,000 |
| Judging Coordinator contract  | \$4,000  |
| Winner Field day              | \$2,000  |
- 6.17. Tickets are also sold for the awards night and last year \$7,000 was raised to cover additional costs of the awards dinner.

- 6.18. While Horizons contributes \$25,000 there is also an “in kind” contribution of staff time. With staff members on each judging team and also on the committee the time commitment varies depending on the number of entrants. Horizons staff also have input to the winners field day. Normally staff time contribution is in the vicinity of 150 hours.

### **Performance**

- 6.19. On the basis of the number of entrants Horizons Region is very successful. Only the Waikato Region has had more entrants over the last eight years with 104 entrants to Horizons 102.
- 6.20. Horizons awards evening is generally rated as the most polished and professional night of all the regions. This is mainly due to the efforts of our Regional Coordinator and the regional committee.
- 6.21. Whilst Horizons have not had a national winner, the supreme winners in the Region have performed with distinction at the National Showcase.

## **7. PRESENTATION**

- 7.1. Mr Terry Olsen will give a verbal presentation to the committee.

## **8. SIGNIFICANCE**

- 8.1. This is not a significant decision according to the Council’s Policy on Significance and Engagement.

Grant Cooper  
**ENVIRONMENTAL MANAGER LAND**

Jon Roygard  
**GROUP MANAGER NATURAL RESOURCES & PARTNERSHIPS**

### **ANNEXES**

There are no attachments for this report.



Report No.	17-178
Information Only - No Decision Required	

## SUSTAINABLE LAND USE INITIATIVE (SLUI)

### 1. PURPOSE

- 1.1. This report is to update Members about progress on Council's Sustainable Land Use Initiative (SLUI) for the period 1 July to 31 August 2017.

### 2. EXECUTIVE SUMMARY

- 2.1. This report provides an overview of progress on SLUI, primarily for this financial year.
- 2.2. Since the SLUI programme began in 2006 more than 30,745 ha of work has been completed.
- 2.3. At mid-September 2017, 17,500 ha of farm plans have been allocated towards a target of 20,000 ha. A further 23,690 ha of farm plans have progressed to the stage of farmers providing information for a farm plan to be prepared. The programme is over-allocated and a waiting list will likely be required this year. Efforts are underway to increase production of plans this year.
- 2.4. By mid-September 2017, 3,203 ha of works have been allocated towards a target of 2,900 ha and the programme at 110% allocated. Further work is still being sought and can be completed within approved budgets (including approved use of resources).

### 3. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 17-178.

### 4. FINANCIAL IMPACT

- 4.1. There are no direct financial impacts associated with this report. However, it does update Members on a number of financial matters associated with SLUI.

### 5. COMMUNITY ENGAGEMENT

- 5.1. Consultation was carried out through the 2012-22 **Long-Term Plan** (LTP) submission process and the recent Annual Plan process.
- 5.2. MPI has a key role in funding and overseeing this activity.
- 5.3. The SLUI Advisory Group is updated every six months on progress with this programme and receives copies of these agenda items. A meeting was held on 3 October 2017.
- 5.4. Progress on the SLUI programme is communicated through a range of mechanisms including discussions with landowners, at targeted workshops and via media.

### 6. SIGNIFICANT BUSINESS RISK IMPACT

- 6.1. There are no significant risks inherent in the adoption of recommendations contained in this report.

## 7. BACKGROUND

- 7.1. SLUI has been in operation in the Horizons Region since 2006. The initiative, targeting hill country erosion, is funded from Central Government's **Hill Country Erosion Fund** (HCEF), Horizons' rates and farmer contributions.
- 7.2. The **Ministry of Primary Industries** (MPI) is contracted to provide \$1.15 m of \$2.2 m in total available funds through the national HCEF this year.
- 7.3. SLUI is delivered by Horizons in partnership with the HCEF and MPI through a contracted works programme which sets targets for plans and works completed.
- 7.4. This report is delivered as we enter year three of a four-year contract with MPI which runs until June 2019.

## 8. REPORT ON PROGRESS

### Contract and Annual Plan Targets (2017-18)

- 8.1. At this very early stage in the season, pole planting is complete and went as planned. Numbers should be on track to meet targets. Tree planting programmes will be largely completed and claims will begin once release spraying is complete.
- 8.2. The contract targets for 2017-18 are:
  - 26,500 poles planted;
  - 850 ha of non-retirement work;
  - 1,150 ha of forestry established;
  - 350 ha retired;
  - 450 ha riparian retirement;
  - 100 ha managed retirement;
  - 20,000 ha of farm plans mapped;
  - 14,000 ha of land in priority area under farm plans;
  - 1 sediment monitoring report; and
  - 1 SLUI 10-year review.
- 8.3. Progress against these targets is reported later in this report.

### Whole Farm Plan (WFP) Production

- 8.4. WFPs are a tool for both bringing new land into the programme and for allocating grants to the various land types (priority land). An important part of maintaining the momentum of the SLUI programme is the ability to bring new farms, new land and new work onto the books. This table shows the plans completed in SLUI's **Life to Date** (LTD) and progress in bringing new plans on board.

**Table 1: WFP Production (Life to Date)**

No. Plans	Hectares	
669	500,942	WFPs completed in SLUI until <b>30 June 2017</b>
2	2,503	Less plans completed but not yet delivered to farmers (from 2016-17)
0	0	Plus plans completed in 2017-18 and delivered to farmers
<b>667</b>	<b>498,439</b>	<b>Equals landowners able to be engaged in SLUI WFP implementation</b>
4	1,026	Plans mapped in 2017-18 but yet to be delivered to farmers
25	17,500	Remaining plans on the books for 2017-18
50	23,690	Paper work with landowners for plan, not committed to a plan at this stage
0	n/a	On wait list. We have not instigated a wait list at this stage

- We have 17,500 ha of plans on the books plus another 23,690 ha of info out with farmers. Those still with paperwork have been prioritised by having existing plans, Top, High, Oroua catchment and likelihood of doing works.
- Staff have a priority list (a subset of the 23,690 ha) and if farmers don't return their information to be given to contractors by the end of October, we will move on to the next priority. The priority list has been selected based on the top and high priority farm lists and the likelihood of the preparation of a farm plan being followed up with works on the farm.
- Our mapping contractors are currently allocated with plans until January.
- We propose to complete as many plans as is feasible from a budget and capacity perspective based on the above priorities.

### Whole Farm Plan Implementation (2017-18 Year)

8.5. The implementation rate of WFPs provides a measure of uptake of work this year. The number of landowner contacts made, the amount of work completed to date and the projections for work this year are shown in Table 2. Some of these numbers have not been regularly collected in the past and new systems for collecting this information are now being implemented.

**Table 2: WFP Implementation (Current Year – actual YTD 2017-18)**

No. Plans	Hectares	
636	476,590	Plans available for implementation at <b>June 2016</b> , means they have had all of 2016-17 to begin implementation i.e. plans have been delivered and landowner has had time to consider and start a works programme
60	n/a	Landowners contacted in 2017-18
15	416	Work completed and claimed through the grant process
273		Indicative commitment to works 2017-18 (grant expenditure of \$2.240 m)
0	n/a	Plan reviews and five-year programmes completed

- The record of contacts to date this year is based on items recorded on the iPads and includes phone, written and personal contacts. Most of the 60 contacts to date this year relate to pole delivery.

### Whole Farm Plan Activity (LTD July 2006 – June 2017)

8.6. While contract targets focus on the number of plans completed, the activity of individual plans is another measure of SLUI activity. The number of plans active in any one year can and does change, and this table also tracks the number of plans that have had no activity at all in terms of implementation of grant works. This measure is complicated by the increasing number of plans as new plans come into the programme during the year.

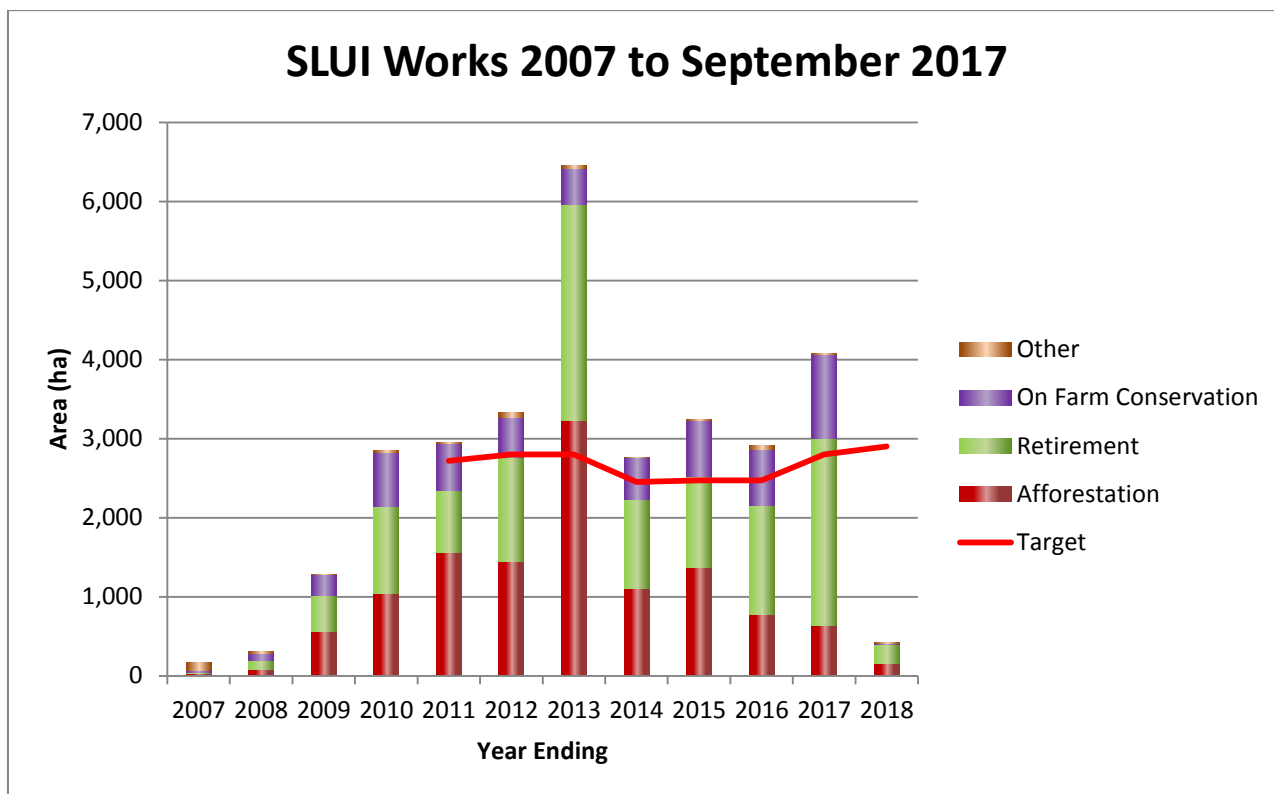
**Table 3: WFP Activity (as at 30 June 2017)**

No. Plans	Hectares	
<b>667</b>	<b>498,439</b>	<b>Landowners able to be engaged in SLUI WFP implementation (see Table 1)</b>
<b>535</b>	30,745	Active plans have completed; 2,680 individual claims or 5.0 claims per plan (ranging from 1-33 claims per plan)
<b>132</b>	n/a	Non-active plans, 64 of which have been non-active for more than 5 years, 34 between 2-5 years, and 34 plans non-active but less than 2 years old
<b>13</b>	n/a	Non-active plans; farmers contacted this year, 10 have committed to a work programme

- The number of active plans has increased from 530 to 535 since the last report compared to November 2016 when there were 482 active plans.
- The bands on non-active plans cannot be compared to last year as we have moved into a new year, thus the bands change. For this year the bands are:
  - Non-active > 5yr                      64
  - 2-5 yrs                                      34
  - less than 2 yrs                          34.
- Staff are tasked with contacting farmers with long-term non-active plans at least once every two years.
- Plans non-active and less than two years old are therefore likely to start works within the next season. While this is not reflected in Table 3, staff indicate more than 90% of these landowners have verbally committed and are expected to do so provided materials (e.g. poles) are available, their financial situation doesn't change significantly and weather allows implementation.

### Life to Date Achievements (by work type)

8.7. Graph 1 shows the annual works completed in the programme split out by work type.



Graph 1: SLUI works completed by work type over the life of the programme against annual contract targets (red line).

- The amount of work completed has been relatively stable from 2010-16. However, 2013 was an exceptional year. This was due to uptake of Afforestation Grant Scheme and retirement projects in association with Ngā Whenua Rāhui. There was 3,224 ha of afforestation in that year.
- The 2016-17 year has been the second largest work year, largely due to a big increase in the retirement category. This is driven by Managed Retirement, where we have agreed with MPI on a funding formula for this work type.
- Afforestation (red) has made up approximately 42% of the work completed and retirement/riparian retirement (green) 36%. These two work types account for the bulk of the hectares of work completed over the life of the programme.
- On-farm conservation (purple) is predominantly space and gully planting with poles, but also includes structures and earthworks. In total the programme has planted more than 164,000 poplars with 29,269 of these planted in 2016-17. An audit in 2014-15 noted overall pole survival at that stage of 81% (in line with expectations).

## Year to Date Achievements

8.8. Table 4 shows the split of works completed and claimed until 31 August 2017.

**Table 4: Works YTD (completed and claimed by grant amount and land priority)**

Work Type	2017-18			Priority Land Type				
	Farms	Claims	Grant \$	Total Ha	Not Erodible	Erodible	High Priority	Top Priority
Afforestation	2	3	84,375	149.9	17.9	20.6	107.7	3.7
Retirement	1	1	11,819	224.2	0.1		10.7	213.5
Riparian Retirement	9	9	33,960	25.9	7.4	10.7	0.8	6.9
Wetland Retirement								
Managed Retirement								
Space Planting	2	2	4,368	15.4		1.2	14.2	
Gully Planting								
Structures/Earthworks								
Other	1	1	818	0.2		0.1	0.1	
<b>Total</b>	<b>15</b>	<b>16</b>	<b>135,340</b>	<b>415.6</b>	<b>25.3</b>	<b>32.6</b>	<b>133.5</b>	<b>224.2</b>

- 416 ha of works have been completed and claimed this year, which is 14% of the target (2,900 ha).
- The number of claims completed this year (16) is six more than this time last year and the amount of grants paid out is approximately \$50,000 more than this time last year.
- The bulk of the work claimed to date is for fencing projects, many of which were carried over from last year as a result of the wet autumn conditions.

## Current Year Forecast / Commitments (targets vs actual by work type)

8.9. Table 5 shows the forecast figures against target for 2017-18. The work programme is fluid and changes throughout the year. Some is due to postponements or cancellations and some due to new plans coming on stream and bringing in new work programmes. The new centralised recording of this information is now up and running.

**Table 5: Current year grant forecast (includes the work already completed and reported in table 4)**

Work Type	Farms #	Claims #	Contract Target Ha	Forecast Ha	Dif Ha	Dif %	Target x\$1000	Forecast x \$1000	Dif. x\$1000
Afforestation			1,150	862	-288	75	695	503	-92
Retirement			350	368	18	105	219	266	47
Riparian Retirement *1			450	721	271	160	756	1047	291
Managed Retirement			100	154	54	154	30	48	18
Space and Gully Planting			750	1034	284	138	322	326	4
Structures/Earthworks			100	60	-40	60	30	38	8
Other				4	4	-	83	7	-76
<b>Total</b>	<b>273</b>		<b>2,900</b>	<b>3,203</b>	<b>303</b>	<b>110</b>	<b>2135</b>	<b>2240</b>	<b>57</b>

\*1 – includes wetland

- Looking ahead for the 2017-18 year the target for works is 2,900 ha and at this stage 3,203 ha of work (110%) has been committed.

## 9. ACTIVITY SUMMARY

### Season

- 9.1. The pattern of wet weather has continued with a slightly drier June followed by wetter than average July and August. This pattern was experienced throughout the Region.
- 9.2. Farmers experienced difficulties getting poles on site during winter as tracks were very slippery. The positive result of the wet winter has been good planting conditions and poles are relatively easy to plant.

### Staff activity

- 9.3. Staff have completed the pole planting programme; this includes arranging for delivery of poles, assisting new clients to lay out and plant, overseeing contractors and logistical help with pole laying out on farm.
- 9.4. A number of farmer contacts have been made and while most relate to pole delivery others include advice on consents, claims, plan delivery, and work programme advice.
- 9.5. Five large grant applications have been approved for this winter including fencing, afforestation and manuka planting, with a total grant outlay of \$285,000. Five other projects are being negotiated.

### Contract

- 9.6. Final report for 2016-17 year sent to MPI on 26 July which included the end of year invoice and farm plans and works shapefiles.
- 9.7. The 2017-18 Operational Plan was sent to MPI.

### Operational Plan Work Streams

- 9.8. This section discusses completion of internal targets and progress on issues outlined in Sections 4.3 and 5 of the SLUI Operational Plan.
  - The research proposal agreed with SCION, titled Forest Options in the Manawatu-Wanganui Region, has been completed in draft form and is undergoing Horizons' staff review.
  - GNS Science carried out regional surveillance and photography after the flooding in March. We have been sent the photography and the draft report, awaiting final report.
  - We have set up a project team for the SLUI review and will present a Terms of Reference to the SLUI Advisory Group on 3 October.
  - A Councillor reference group for this project is being established.

### Forestry issues

- 9.9. A storm event in July, which included snow and wind, has caused damage to the Silk and Seddon Joint Venture forests. Manawatu Aerial Mapping were engaged to fly these areas and map damage. Further on-ground assessment will be required but at this stage there has been an insurance claim submitted for wind damage.
- 9.10. A contractor was engaged to check forest health by looking for dothistroma and red needle cast. Dothistroma is present in three forests and on McGregor's and McIntosh's we are pricing up the cost of an aerial spray. The other forests are free of both diseases. Both areas are likely to be sprayed this spring/summer.

- 9.11. Thompson's forest has been inspected, assessed and measured for this year's first thinning operation.
- 9.12. The Stellingwerf property has been sold. The transfer of Forestry Right has been explained to the new owner and we are in the process of arranging a meeting to discuss access and pest control issues.

**10. NEXT THREE MONTHS (Sept-Nov)**

- Ensure all invoicing for pole purchases is completed
- Continue claims for work programmes.
- Begin inspections for afforestation works claims.
- October report to MPI.
- Continue work on the SLUI review as in the 2017-18 contract.
- Receive final reports from GNS and SCION.
- Complete and deliver the two outstanding plans from 2016-17.
- First priority cut of plans for 2017-18 to be made.
- Continue to follow up on insurance claim and damage from July weather events.
- Begin collection of farm contacts and information via iPads and survey application.
- Implement improvements to the WFP template to streamline plan production.
- SLUI Advisory Group meeting held 3 October.
- Possible MPI meeting for those receiving HCE funding in November.

**11. SIGNIFICANCE**

- 11.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Grant Cooper  
**MANAGER - LAND**

Jon Roygard  
**GROUP MANAGER NATURAL RESOURCES & PARTNERSHIPS**

**ANNEXES**

There are no attachments for this report.

Report No.	17-179
Information Only - No Decision Required	

## REGIONAL COAST & LAND

### 1. PURPOSE

- 1.1. This report is to update Members on the progress on Council's Regional Land and Coastal and Whanganui Catchment Strategy activities from 1 July to 31 August 2017.

### 2. EXECUTIVE SUMMARY

- 2.1. The report updates both the Regional Land and Coastal and Whanganui Catchment Strategy (WCS) work streams as outlined in the Annual Plan and Operational Plan for 2017-18.
- 2.2. The Regional Land and Coastal and WCS programmes have seven Annual Plan targets, as shown in table 1, and further Operational Plan targets as shown in table 2.
- 2.3. The WCS programme is supported through funding from the Whanganui River Enhancement Trust (WRET).

### 3. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 17-179.

### 4. FINANCIAL IMPACT

- 4.1. There is no financial impact associated with recommendations in this report.

### 5. COMMUNITY ENGAGEMENT

- 5.1. This is a public item and therefore Council may deem this sufficient to inform the public.

### 6. SIGNIFICANT BUSINESS RISK IMPACT

- 6.1. There are no significant risks inherent in the adoption of recommendations contained in this report.

## 7. OUTPUTS FOR ANNUAL PLAN 2017-18

Table 1: Annual Plan targets and progress YTD

MEASURE	PROCESS FOR THE REPORTING PERIOD				YTD	TARGET	%	Result
	1st	2nd	3 <sup>rd</sup>	4 <sup>th</sup>				
<b>Regional Land and Coastal</b>								
Provide support for industry partnership	started					4		
Fund Ballance Farm Environment Awards	entries					1		
Operate nursery to deliver poles	33,034					31,000		provisional
Source additional poles								
Land improvement through Environmental Grant (ha)	0					100		
<b>Whanganui Catchment Strategy</b>								
Carry out agreed WRET programme	started					1		
Land improvement through Environmental Grant (ha)	0					75		

## 8. OPERATIONAL PLAN OUTPUTS 2017-18

- 8.1. In addition to the Annual Plan targets, a number of supporting work streams have been agreed to in the Operational Plans. These targets are more flexible and can change depending on workload, priorities and demand from the public.

Table 2: Operational Plan outputs and progress YTD

TARGET	QUANTITY	PROGRESS	RESULT
<b>Regional Land and Coastal</b>			
Produce Environmental Property Plans	As required	nil	
Manage Environmental Grant projects (\$80,000)	50	42 (allocated)	
Manage consents for vegetation clearance in the coastal zone	na	nil	
Run Soil Health Workshops	2	nil	
Produce Soil Health Plans	As required	nil	
Implement <b>State of Environment (SoE)</b> monitoring programme for soil health and report results of previous year's programme	1	started	
Commit funding to the <b>Poplar and Willow Research Trust (P&amp;WRT)</b>	1	started	
Provide technical support to the P&WRT	1	started	
Provide sites suitable for trial and bulking new varieties as supplied by P&WRT	4	started	
<b>Whanganui Catchment Strategy</b>			
Produce WCS property plans	As required	nil	
Manage Environmental Grant projects (\$50,000 + \$53,000)	50	38	
Provide copies of Catchment Operations reports to WRET	4	nil	
Provide progress reports to WRET	2	started	
Continue demonstration farm – hold field day	1	nil	
Visit every WCS farm plan holder during the year (see note 1)	38	nil	
Sell all poles produced from Council nursery	All poles sold	complete	met
Increase pole production from Taumarunui-Ruapehu area	increase	complete	met
<b>Region-Wide Outputs</b>			
Complete vegetation clearance consents within timeframe	na		
Complete cultivation consents within timeframe	na		
Complete land disturbance consents within timeframe	na		
Manage Plantation Forestry Erosion and Sediment Control Plans	na		

Note \*1 – aim to make contact with every plan holder; this may not include a farm visit.

## 9. ENVIRONMENTAL GRANT FUNDING

9.1. Environmental Grant funding is in place to support landowners to undertake works that will reduce erosion and protect the environment. This funding is targeted slightly differently between Regional and Coast and the WCS work streams. Under the WCS, support from WRET enables a greater variety of work to be funded and at higher grant rates.

9.2. Twenty-five farmer contacts have been recorded to date this year including:

- 13 for pole delivery/pole planting;
- Eight other, includes phone calls and shifting pole rammers etc;
- Three to discuss proposed work programmes;

- Two for environmental and erosion control advice;
- Two farm plan enquiries; and
- One claim.

**Table 3: Environmental Grant expenditure progress YTD**

	Actual Grant Spend	Approved Grant Spend	Target
<b>Whanganui Catchment Strategy</b>	\$0	\$88,637	\$103,000
<b>Regional and Coast</b>	\$0	\$64,557	\$80,000
<b>Total</b>	<b>\$0</b>	<b>\$153,194</b>	<b>\$183,000</b>

- 42 Regional Environmental Grant projects have been approved (81% of funds).
- 38 WCS Environmental Grant projects have been approved (85% of funds).

## ACTIVITY

### General:

- 9.3. After a drier June conditions Region-wide reverted to being wet and latterly wet and windy. Temperatures have been mild, pasture growth is occurring but wet conditions can result in a high amount of wastage due to trampling.
- 9.4. Pole planting has been completed, with the wet conditions making it difficult to get poles on site but ideal for the physical aspect of planting.
- 9.5. Early pole varieties are already showing sign of leafing up.
- 9.6. The snow fall in July was heavy through Pohangina, Apiti, Rangiwhahia, and Kawhatau. There was quite extensive damage to trees, both plantation forests and old man poplars, with branch breakages and subsequent fence damage.

### Soil Health:

- 9.7. The State of the Environment soil health sampling programme has been completed and laboratory results have come back. The 2016-17 programme report is at draft stage.
- 9.8. Staff and a part-time student employee have begun the erosion monitoring for the State of Environment report.

### Industry Partnerships (see tables 1 and 2 for contribution to Annual Plan and Operational Plan Targets):

#### **Ballance Farm Environment Awards (BFEA)**

- 9.9. Entries are open for the 2017-18 awards.
- 9.10. The local BFEA committee held a manuka information seminar on 16 September where Libby Owen (Land Management Advisor) spoke about Horizons' involvement with manuka throughout the Region.

#### **Beef + Lamb New Zealand (BLNZ)**

- 9.11. Staff attended one **Land and Environment Plan** (LEP) day but a second day scheduled for Pongaroa was postponed.
- 9.12. Staff attended a number of the water reticulation workshops, and where appropriate spoke around funding available for riparian retirement.

- 
- 9.13. Beef + Lamb are undertaking a review of farm planning and their LEP programme. Staff have had an input into the baseline data collection part of this project.
  - 9.14. Beef + Lamb and regional councils are following up on the advertisements regarding winter grazing (see previous Catchment Operations Report), with a new advert to be run in *NZ Farmers Weekly*.

ADVERTORIAL

# TOP TIPS TO SET YOU UP FOR NEXT WINTER

As you prepare crops for next winter, now is the time to take actions that will help you hold onto your soil and protect waterways during winter grazing.

First up, ask yourself – is winter cropping appropriate for my farm and catchment?

The Pastoral 21 research programme demonstrated that you can reduce losses of sediment and phosphorus (P) from winter crops by up to 80-90% through strategic grazing and careful management of Critical Source Areas (CSAs).

**Paddock choice and preparation is key**

- Avoid paddocks with very heavy soils (prone to excessive pugging and increased overland flow).
- Select a paddock that is relatively flat, well-drained, with a deep soil profile.
- If the paddock is close to waterways make sure you leave appropriate buffer zones to minimise overland flow.
- Select paddocks with less critical source areas such as gullies, swales, or other natural drainage channels.
- Consider where sub surface drainage outlets are, especially in paddocks with mole or pipe drains.
- Use nutrient budgeting to inform your wintering decisions. Take particular note of nitrogen losses – winter crops can pose a high risk to N loss.
- Soil test your chosen paddocks, so your fertiliser decisions are well informed.
- Catch-crops, either sown with the main crop or after it has been grazed – increase feed availability and help keep nutrients in the soil profile.

**Cultivation tips**

- Leave uncultivated pasture buffer strips around waterways and critical source areas.
- Cultivate paddocks along the contour and maintain a coarse seed bed if possible.
- Use minimum tillage practices, especially on sloping land.

**While it's summer – think about how you want to graze the crop**

- Consider stock exclusion and light crop grazing options for critical source areas.
- Place supplementary feed in your crop paddocks when the soil is still dry to minimise heavy vehicle use during winter.
- Plan to start grazing at the end of the paddock away from waterways and at the top of a sloping paddock.
- Plan how you will allow stock to access clean reticulated water.



**READ**

B+LNZ Factsheets on good management practice for winter grazing. Visit [beeflambnz.com](http://beeflambnz.com) to download or email [resources@beeflambnz.com](mailto:resources@beeflambnz.com)

**LISTEN**

AgResearch soil scientist Ross Monaghan discusses winter grazing on a B+LNZ podcast: [beeflambnz.podbean.com](http://beeflambnz.podbean.com)

**DISCUSS**

For more info, contact your Regional Council's land management advisor.

Proposed advert for *Farmers Weekly* to be run by Beef + Lamb NZ

### Poplar and Willow Research Trust (P&WRT)

- 9.15. Staff helped with planting of the new demonstration site on land next to SH1 near Taihape.
- 9.16. Staff have been working on setting up trial sites for new maxi nigra clones which have been grown in the Woodville nursery, with approximately 360 poles to be trialed alongside new plantings of more established clones. These sites are spread through the Region and have been plotted onto our database.

### Forestry and Farm Forestry

- 9.17. One staff member attended the Middle Districts Farm Forestry field day at Horoeaka in Taranaki District.
- 9.18. Staff met with farm forestry and a forest consultant to discuss issues for forestry in our Region, to be fed back to the Primary Sector Reference Group for Accelerate 25.

### Other

- 9.19. Attended a Primary Sector Reference Group Accelerate 25 project team meeting and a follow-up meeting with farmers interested in a community stock water scheme.
- 9.20. Three staff attended the **Agricultural Communities Respecting the Environment (ACRE)** field day on riparian planting at Sanson.
- 9.21. Staff have been involved in assessing support for a number of **Sustainable Farming Fund (SFF)** initiatives. At this stage we are looking to support Catch Cropping for Sediment Control in Winter Grazing and Environmental and Economic costs of Helicropping. Other projects we have been canvassed on include carbon sequestration around shelterbelts and use of visual soil assessment extension programme.

### Nurseries:

- 9.22. Horizons has purchased "Murrays Nursery" at Woodville and work is underway to complete the capital upgrade work at the site.
- 9.23. Woodville: Pole cutting completed, tidy up and mulching underway. Preparation for planting of a new block of 10,000 stakes.
- 9.24. Bulls: Pole cutting completed, tidy up underway.
- 9.25. Northern: Harvesting completed at Ohura, NZ Redwood Company, Manunui and depot. Inspection of **Whanganui Regional Environment Trust (WRET)** funded nursery at Ongarue to confirm all on track for first harvest next year.
- 9.26. Weber: Pole cutting completed, slightly fewer poles than expected.

### Whanganui Catchment Strategy (WCS) and Whanganui River Environment Trust (WRET):

- 9.27. The Annual Report to WRET was completed and forwarded to them in time for their AGM, although this was postponed and will now be held in October. Staff will attend to talk to the report.
- 9.28. Once the AGM is held and the annual report accepted, Horizons will invoice WRET for their share of the 2016-17 work programme (\$65,000 exc GST).

**Training:**

- 9.29. Staff have attended courses to remain updated in Health and Safety issues including; Light Utility Vehicle (LUV), four wheel drive and first aid.
- 9.30. Two staff members are involved in the **Manawatu-Wanganui Local Authority Shared Services** (MWLASS) management development programme.

**One Plan Implementation:**

- 9.31. Six staff members have between them spent 33 hours working on One Plan implementation this year. This has involved granting 43 consents (see table 4) and reviewing seven Erosion and Sediment Control Plans. The statistics on the number of consents issued do not tell the full story of the work being carried out in this area. Work during the reporting period included:
  - One site inspection for sand dune disturbance where a consent was not required;
  - Two follow-up compliance inspections for forest harvesting though one does not wish to replant and discussions are ongoing;
  - One stream diversion, meets permitted activity;
  - One follow-up quarry inspection, referred to compliance;
  - Two roadside soil fill sites;
  - One forest inspection where no **Erosion and Sediment Control Plan** (ESCP) was supplied, subsequently complied;
  - One inspection and support for a **Sustainable Land Use Initiative** (SLUI) farmer to apply for consent to lower the water level in a wetland. This will take some time to negotiate.
- 9.32. Courtney Haywood is leading a small project team looking at the implications of the Plantation Forestry **National Environmental Standards** (NES), which includes Policy and Compliance team members. The team will also liaise with the **Ministry for Primary Industry** (MPI) regarding the public notification and information workshops for our Region.
- 9.33. Total consents issued to date are recorded by type and location:

**Table 4: Land Use Consents Issued YTD**

Consent Type	Location		Total
	WCS Area	Regional and Coast Area	
Vegetation clearance	1	1	2
Cultivation > 20 degrees			0
Land disturbance < 20 degrees	1	2	3
Land disturbance >20 degrees	3	2	5
<b>Total</b>	<b>5</b>	<b>5</b>	<b>10</b>

**Next Three Months (September-November):**

- Complete new planting in nursery at Woodville, continue nursery operations;
- WRET AGM and invoice;
- BFEA 2017-18 entries will open and first round judging will be completed;
- Confirm SFF applications and funding;
- Accelerate 25 Primary Sector Reference Group meeting and further follow up regarding forestry;
- Continue with approvals for 2017-18 Environmental Grant programmes for Regional and WCS works;
- Plantation Forestry NES project; and
- Begin claims, early afforestation and pole planting.

**10. SIGNIFICANCE**

- 10.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Grant Cooper  
**MANAGER - LAND**

Jon Roygard

**GROUP MANAGER NATURAL RESOURCES & PARTNERSHIPS**

Grant Cooper  
**MANAGER - LAND**

Jon Roygard

**GROUP MANAGER NATURAL RESOURCES & PARTNERSHIPS**

**ANNEXES**

There are no attachments for this report.



Report No.	17-180
<b>Decision Required</b>	

## RIVER AND DRAINAGE ENGINEERING REPORT (PRD 01 02)

### 1. PURPOSE

- 1.1. The purpose of this item is to report on progress with river and drainage activities for the period 1 August to 30 September 2017.

### 2. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 17-180.

### 3. FINANCIAL IMPACT

- 3.1. Funding provision for all activities reported on in this item is either included in the River and Drainage General or River and Drainage Schemes Activity sections of the 2015-25 **Long-term Plan (LTP)**; is covered by an approved carry-forward of unexpended budget in 2016-17; or additional approval will be specifically sought by way of recommendation in the item.

### 4. COMMUNITY ENGAGEMENT

- 4.1. Various matters contained in this item either have been, or will be, communicated with scheme ratepayers through their respective Scheme Liaison Committee and / or Catchment Community Meetings. As necessary, other issues will be the subject of media releases or where necessary / warranted specific community engagement (e.g. public meeting).

### 5. SIGNIFICANT BUSINESS RISK IMPACT

- 5.1. There are no significant risks inherent in the adoption of recommendations contained in this report.

### 6. DISCUSSION

- 6.1. As the various area commentaries within the body of the report note, the prolonged period of wet weather continues to significantly influence operational activity within the River Management group, with little sign at present that the prevailing weather patterns are of a mind to alter. That has a range of impacts for Council, such as high pump station workloads and inevitable outages to the increased levels of stock damage to stopbanks.
- 6.2. Although much of the focus around the slips in the Manawatu Gorge has centred on transport impacts, consideration has been given to whether further slope movement has other potential public safety impacts – ponding / dambreak scenarios potentially affecting communities east and west of the gorge respectively.

- 6.3. In particular this relates to monitoring work undertaken by engineering consultants working for the New Zealand Transport Agency – repeat ground-based LiDAR monitoring of the Kerry's Wall / Slip area undertaken since September 2015. That monitoring work suggests the potential for a slip in that general area much larger in volume than the 2011 slip, which on the face of it would suggest a more complete blocking of the river channel than occurred in 2011.
- 6.4. As an interim measure, I have reviewed the 2012 Institute of **Geological and Nuclear Sciences (GNS)** assessment of the stability of the Manawatu Gorge, the more recent monitoring and assessment work commissioned by NZTA and some earlier (late 1990's) staff assessments of what issues a blockage of the Manawatu River through the gorge could pose for the adjoining communities.
- 6.5. Although the potential for a slip much larger than the 2011 event clearly exists, evidence of past slope movements (the GNS report) suggests that they are typically relatively broad and shallow, consistent with the geology of the gorge (highly weathered / fractured greywacke rock). That combined with the suggestion that slope movement in the vicinity of Kerry's wall would occur in stages rather than a single movement, suggests that the level of risk to public safety adjacent to either end of the gorge is relatively low.
- 6.6. Much like the phenomena of slow-slip earthquakes that followed the 2016 Kaikoura Earthquake, technological advances have enabled very precise measurements to easily be obtained over sizeable areas, enabling a level of quantification not previously possible. Slope movement through the gorge on a comparable size / scale to that recently observed, could well have happened relatively frequently in the past and the evidence supports that, meaning that while the actual level of risk may not have changed much over time, our understanding of it has evolved considerably over the last few years.
- 6.7. Consistent with the work underway to update Council's Long Term Plan and 30 Year Infrastructure Strategy, the period has seen significant activity in and around management of the river control structures located along the lower reach of the Whanganui River. A report outlining an adjustment in the delineation of responsibilities between Horizons and Whanganui District Council was considered by both organisations. That was preceded by a hui with both Tupoho and **Nga Tangata Tiaki (NTT)** representatives around a **Memorandum of Understanding (MoU)** between the four parties, relating to management of the river.
- 6.8. Crs Gordon, Cotton, McKellar, Te Awe Awe, Keedwell, Reiger and Kelly, accompanied by NTT Chair Gerard Albert, former Whanganui District Mayor Annette Main and Horizons staff were then given a first-hand understanding of the many challenges with maintaining this infrastructure, should it form part of an expanded Lower Whanganui Scheme.
- 6.9. Another key activity over the period has been advancing the concept of a broader approach to river management. That included outlining the concept to Councillors in the course of an LTP workshop and Cr Barrow and I meeting Tararua District Mayor Tracey Collis and Chief Executive Blair King; key stakeholders. A report that outlines the proposal is presented separately to the Strategy and Policy Committee meeting.
- 6.10. The development of an Ohakune Scheme continues, with a public meeting taking place in Ohakune on 29 September. That meeting provided the community with more information on the proposal for an Ohakune Scheme, giving staff an opportunity to obtain further feedback and refine elements of the proposal accordingly. Chaired by Cr Rollinson and attended by Ruapehu District Mayor Don Cameron, the meeting had a good level of attendance (in the order of 60 to 70 residents).
- 6.11. Staff have met twice with representatives from Ngati Kauwhata over the period to discuss the upcoming programme of stopbank construction work alongside the Oroua River. That dialogue reflects two primary issues; that Iwi consultation around that part of the Rural Upgrade Project was not as robust as it could have been at the investigation / planning

stage, and the considerable complexities (in some areas) relating to land ownership between Awahuri and Feilding.

- 6.12. Staffing changes over the period relate to the Rural Upgrade Project delivery; Project Engineer Rob Gardner has signalled an intention to resign his position with Horizons at the end of the year with Engineering Officer Geoff Gibson transferred from the Central team to fill that role. As a consequence, the Central team have employed Andrew Williams in the role of engineering cadet.

## **7. INVESTIGATIONS AND DESIGN**

### **INVESTIGATIONS**

- 7.1. Over the last two months the Investigations and Design team has run at a reduced capacity as the recruitment process for a new River Management Analyst has continued. Despite this, the team has continued to produce designs and information to support the Rural Upgrade Project and to assist with the year end revaluation of our infrastructural assets.

### **LOWER MANAWATU SCHEME**

- 7.2. Work has begun to look forward and prepare designs for the coming summer's Rural Upgrade Project programme. Works have been designed to achieve the Scheme's standard of 1% AEP (100 year) with 450 mm freeboard. During this reporting period design work has included:

- Design advice relating to the proposed alignment of stopbanking along the Oroua River.
- Design advice relating to the drainage of stormwater from land on which new stopbanks are to be constructed.
- Consideration of survey requirements of the Kopane Spillway to ensure that the spillway crest is at the right height.

- 7.3. In order to complete the City Reach part of the upgrade of the Lower Manawatu Stopbanks, it will be necessary to construct new stopbanks adjacent to Benmore Avenue on the outskirts of Palmerston North. The potential impacts of this new stopbanking, on water levels in the Taonui Basin, have been modelled by specialist hydraulic modelling consultant DHI Ltd. The results of this modelling are being used to inform a consent application that is currently being drafted.

- 7.4. The development of a design for protection works at the Ashhurst domain has been a priority for the team. Given the profile relating to this issue, the final design will be externally peer reviewed before the construction contract is let (subject to PNCC confirming the balance – 70% - of the construction cost).

### **MODELLING OF THE MANAWATU RIVER THROUGH PALMERSTON NORTH**

- 7.5. A project to update the hydraulic model of the Manawatu River through Palmerston North has begun. The purpose of this work is to better understand berm flows through the city to enable more robust decision to be made around the use of berm land in the city.
- 7.6. The modelling will refine the existing flood flow model, creating a detailed 2-dimensional model based upon the LiDAR survey of the Manawatu River carried out last year. Currently work has begun to scope the work required to deliver the most useful results from this project.

## FLOOD DETENTION DAM MANAGEMENT

- 7.7. Following the contract award to engineering consultant Stantec, work on this project has begun. To date Investigations and Design staff have been assisting the consultant with data acquisition, site visits and collation of survey information.
- 7.8. The outcomes of the work will be used to inform Operation and Maintenance Manuals for the Schemes that have dams.

## OHAKUNE

- 7.9. Work alongside the Northern Area team has been on-going to refine and to present options to the Ohakune community at a public meeting on 29 September.

## MANAWATU DRAINAGE SCHEME MODELLING

- 7.10. Work has begun on the project to develop a model of the Manawatu Scheme drain network. This project aims to better understand the network limitations and likely future pressure points. It will also determine with a greater level of precision, levels of service we seek to ascertain the current levels of service, and where network improvements can be made without impacting levels of service in other areas.
- 7.11. To date the Investigations and Design team have been involved in a desktop exercise to collate all existing data and information that HRC hold in relation to the drainage network. A project brief is currently being developed to enable consultants to tender for the modelling work.

## REGULATORY ADVICE

- 7.12. During this reporting period advice was provided on a number of substantive matters. This regulatory work has included specialist advice on flood risk and the production of technical reports for consent applications, rezoning and subdivisions.
- 7.13. In addition to this work, time was taken to visit Rangitikei District Council alongside District Advice to talk to staff at the Council about the recent Tutaenui modelling work that has been undertaken.

## LAKE HOROWHENUA

- 7.14. Work has begun alongside the Freshwater and Partnerships team, to seek expressions of interest to undertake a design and build contract for the access and boat ramp that is required for the weed harvester to access Lake Horowhenua.

## HAZARD MAPPING

- 7.15. As part of the Hazard Mapping project, contracts have been let to a consultant to carry out detailed 2-dimensional modelling of the Makowhai catchment, as well as the catchments to the west of Feilding that drain to the Makino Stream. The Makowhai work has now been substantially completed and the Feilding Work is progressing well with final results expected in the next month.

## ASSET MANAGEMENT

- 7.16. The last couple of months have seen a substantial amount of work undertaken in terms of asset management. The revaluation of our Infrastructural Assets has been undertaken and an external peer review of the substantial part of the revaluation has been delivered as

required by Audit NZ. A full peer review is currently underway to confirm the work undertaken and processes followed.

### LOWER MANAWATU SCHEME RURAL FLOOD PROTECTION UPGRADE PROJECT

The following table schedules all current Rural Upgrade Project (RUP) works and provides commentary on 2017/18 project status.

Project Title	Description	Status
Manawatu River Right Bank Concrete Floodwall, Ervine Property, Rangiotu	Construct 38 m of concrete floodwall on the Manawatu River right bank at Ervine's property, Rangiotu.	ABC Contractors Ltd have been engaged to undertake this project. Excavation and site preparation work commenced but construction has been suspended due to wet ground conditions. Concrete blocks have been imported to shore up the site over winter.
Manawatu River Right Bank Stopbank Upgrade, Jamie Tait-Jamieson's Property to Riverside Drive.	Realign and raise the Manawatu River right bank stopbank through Tait-Jamieson's property at Te Matai Rd.	This project was scheduled for construction in Year 10 of the RUP however a significant issue exists around overland flows from Stoney Creek. This project has been removed from the RUP pending further design & investigation.
Manawatu River Right Bank Stopbank Upgrade, Himatangi Block Rd.	Upgrade 5,700 m of existing stopbank on the Manawatu River right bank upstream of the Moutoa Floodgates.	Site survey has been completed and the general scope of work established. Due to resource constraints and the large scale of this project, the works are currently scheduled for construction in 2018/19.
Manawatu River Left & Right Bank Stopbank Notch, ML5 & MR11	Upgrade four short low sections of Manawatu River left and right bank stopbank crest in the vicinity of Foxtton-Shannon Rd.	A private survey company and approved (Plant Hire Register) contractor will be engaged to complete these works when weather and ground conditions permit.
Oroua River Left & Right Bank Stopbank Upgrade, Downstream of Awahuri Bridge	Upgrade 3,300 m of existing stopbank and construct 1,300 m of new stopbank on the left and right banks of the Oroua River immediately downstream of the SH3 bridge at Awahuri.	A Contract was awarded to M&M Earthmovers and work commenced on 18 January 2017. Work on the left bank was completed in March 2017 however right bank construction on LIC owned land was suspended due to poor weather and ground conditions. Work is programmed to resume in November 2017.
Oroua River Left Stopbank Upgrade, Upstream of Awahuri Bridge to Feilding.	Construct new stopbanks on the left bank of the Oroua River from the SH3 bridge at Awahuri up to Feilding. This project will extend over a river distance of approximately 6,000 m.	Land entry is currently being negotiated with landowners. Some resistance to the proposed works has been experienced which prevented these works from commencing during the previous construction season. Alternative land acquisition processes have commenced.
Oroua River Right Bank Stopbank Upgrade, Upstream of Awahuri Bridge to Makino confluence.	Construct new stopbanks on the right bank of the Oroua River from the SH3 bridge at Awahuri up to the Makino Stream confluence. This project will extend over a river distance of approximately 500m.	Land entry agreement is currently being negotiated with landowners. Some uncertainties over Maori land ownership are still being resolved. These issues contributed to works not being able to commence during the previous construction season.

Oroua River Right Bank Stopbank Upgrade, Makino Stream Confluence to Feilding.	Construct new stopbanks on the right bank of the Oroua River from the Makino Stream confluence at Awahuri up to Feilding. This project will extend over a river distance of approximately 6,000 m.	Consultation meetings have taken place with landowners from SH3 to a point upstream of the MDC Waste Water Treatment Plant. Some landowners voiced concerns in relation to the impact of works on Makino Stream overland flows which are being investigated further. MDC have indicated they are keen for the works to progress as soon as possible.
Oroua River Left and Right Bank Stopbank Upgrade, Rangiotu	Upgrade existing stopbanks on the left and right banks of the Oroua River from the Rangiotu Rd bridge to the Manawatu River confluence. Works will extend over a river distance of 3,000 m.	A tender for this project was awarded to Alan Gibson Ltd. Practical completion was achieved on 20 April 2017. Some finishing work and compaction testing remains to be completed in 2017/18 which was not able to be undertaken in April 2017 due to poor weather and ground conditions.
Oroua River Right Bank, Te Rangimarie Marae Concrete Floodwall, Rangiotu	Construct a 45 m long by 2.6 m high reinforced concrete floodwall on the Oroua River right bank adjoining the Te Rangimarie Marae. The marae building and narrow berm width at this location prevented the continuation of the upgraded stopbank past this point.	A tender for this project was awarded to Narley Construction Ltd. Construction work on the wall is complete and practical completion was awarded on 20 April 2017. Topsoiling and seeding of the bank was delayed due to poor weather and ground conditions in April and as a result some finishing works remains to be completed when conditions permit.
Oroua River Right Bank, Passey/Ranson Property, 174 Lockwood Rd, Stopbank Repair	Upgrade a 75m long low section of previously upgraded stopbank adjoining the Passey/Ranson house at 174 Lockwood Rd.	The crest height at this location is at the 1% AEP design height however it remains lower than adjoining sections of stopbank. Siltation of the river bed is creating a localized overtopping risk immediately beside the Passey/Ranson house. Works will proceed this construction season.
Oroua River Left & Right Bank Stopbank Upgrade Upstream of SH 54.	Investigate, design and construct appropriate flood protection to the left and right banks of the Oroua River upstream of the SH 54 bridge at Feilding.	Due to resourcing constraints, this work is now programmed for the 2018/19 construction season.
Oroua River Left Bank, Kopane Spillway Adjustment.	Investigate, design and upgrade the Kopane Spillway to achieve and/or maintain its required design standard.	Survey and design work are currently in progress. A contract for this upgrade is programmed to go out for tender in late 2017.
Oroua River Left and Right Banks - Adjust Summer Banks.	Investigate, design and upgrade the Oroua River Summer Banks to achieve and/or maintain their design function.	Further investigation and design work is required to determine the effectiveness of these banks and this work is now programmed to occur in 2018/19.
Makino Stream Right Bank Stopbank Extension, Makino Floodgates.	Investigate, design and construct an upstream extension of the existing right bank stopbank to prevent outflanking.	Investigation work has not yet commenced on this project.

Linton Main Drain Left and Right Bank Stopbank Upgrade, Tane Rd	Upgrade existing stopbanks on the left and right banks of the Linton Main Drain downstream of Tane Road. Works will extend over a river distance of 1,000 m. The right bank involves significant road reconstruction along the crest of the upgraded stopbank.	A tender for this project was awarded to Pratt Quarries Ltd. Construction work on the Left bank commenced in January 2017 and after very slow progress was suspended for Winter in April. Work on the right bank was not able to commence during the 2016/17 season. Work is expected to resume in November 2017.
Tokomaru River Left and Right Bank Stopbank Upgrade, Okuku Rd	Upgrade existing stopbanks on the left and right banks of the Tokomaru River from Okuku Pumpstation to a point immediately downstream of Opiki Road. Works will extend over a river distance of 4,000 m.	The tender for this project was awarded to D&V Bargh Ltd. Construction commenced in February 2017 and work downstream of Okuku Road was completed in April 2017. Due to very slow progress the remaining work was suspended for Winter at this time. Work is expected to resume in November.
Tokomaru River Stopbank Upgrade, Below Opiki Rd (Rutted Section)	Upgrade existing stopbanks on the left and right banks of the Tokomaru River downstream of Opiki Road. Works involve importing approximately 8,000m <sup>3</sup> of fill material over four sections (2,000m) of stopbank.	Survey and design drawings have been completed and initial contact made with landowners. Land entry agreements and tender documents are expected to be finalized in September. Work is programmed to commence when suitable ground conditions permit.
Tokomaru River Stopbank Upgrade, Opiki Rd to Railway Line.	Upgrade existing stopbanks on both banks of the Tokomaru River upstream of Okuku Road. Works extend over a river distance of 6,300m	Survey has been completed and the scope of works established. Drawings and land entry discussions are programmed for the coming weeks. Work is programmed to commence when suitable ground conditions permit.
Mangaore Stream Left and Right Bank Stopbank Upgrade, Shannon	Upgrade existing stopbanks on the left and right banks of the Mangaore Stream downstream of Otauru Road, Shannon. Works will extend over a river distance of 2,700 m.	A tender for this project was awarded to Graeme Bagrie Ltd. Construction commenced in February 2017 but poor ground conditions slowed progress and work was suspended for Winter. Work is expected to resume in November 2017.
Kara Creek Paddocks, Left & Right Bank Stopbank Upgrade.	Upgrade existing stopbanks on both banks of Kara Creek Upstream of SH56.	Due to resourcing constraints, this work is now programmed for the 2018/19 construction season.
Mangapuketea Stream Left & Right Bank Stopbank Upgrade.	Upgrade existing stopbanks on both banks of the Mangapuketea Stream Upstream of the Kara Creek confluence.	Due to resourcing constraints, this work is now programmed for the 2018/19 construction season.
Protect Individual Property – Taonui Farms, Main Drain Rd	Provide flood protection to the Taonui Farms dairy shed to a height of RL 10.19 m MSL.	A tender for this project has been awarded to John Ray Ltd. Construction commenced and good progress was made until wet weather stopped work in April 2017. Work is programmed to resume in November 2017.

Protect Individual Property – Meehan’s, 9 Tiakitahuna Rd.	Provide flood protection around the Meehan house at 9 Tiakitahuna Rd, Rangiotu.	Consultation is in progress with the landowner to agree a suitable flood protection solution for this property. Survey is complete and three alternative designs are currently being developed.
Protect Individual Property – Strahan’s, 1450 Rangiotu Rd	Raise the Strahan house at 1450 Rangiotu Rd, Rangiotu	Consultation with the landowner has occurred to agree suitable timings and scope of the proposed works. Drawings, Building Consent and general contract management will be undertaken by Affalon Building Consultants.
Protect Individual Property – McNeil’s, 939 Lockwood Rd	Provide flood protection to the McNeil house at 939 Lockwood Rd, Rangiotu.	Consultation with the landowner has occurred. Survey and design work are in progress to construct an earth bund around this house whilst minimizing disturbance to the surrounding lawns and amenities.
Foxton Storm Surge Repair	Stabilize erosion areas of the concrete floodwall where coastal erosion has been undermining the wall.	A rock supply contract was tendered in December 2016 however prices were significantly higher than expected. Pressure Grouting has been undertaken to fill the voids beneath the wall and an amended rock contract is programmed to be put to tender later in the year.
Protect Individual Property, J.Mason, Lockwood Rd	Lift the Mason house at 943 Lockwood Rd by 500mm to a height of RL 10.19 m MSL.	A tender for this project was awarded to BB Construction Ltd. Work commenced on 25 May 2017 and has now achieved practical completion delivering a good result.
City Reach Project: Benmore Ave Stopbank Upgrade	Upgrade a section of the Flyers Line Spillway stopbank adjoining Benmore Ave, Palmerston North.	The design work for this project was outsourced to DHI Ltd. Due to delays in receiving design detail back and resource consent considerations, this work was postponed until 2017/18. A contract is expected to be tendered in late 2017.

## 8. CENTRAL AREA

### GENERAL

- 8.1. The reporting period was characterised by consistent rainfall through both August and September. Consequently ground conditions remained saturated limiting operational activity; riverbank slumping is evident throughout the Scheme with indications that expenditure on planting and bank battering is likely to exceed budget.
- 8.2. The total rainfall for this period (1st of August 2017 to the 20th of September 2017) was: 144.0mm at Milson Line on the Mangaone, 147.0mm at Cheltenham, Makino; 249.0mm at Scott’s Road, Kahuterawa, and 234.5mm at Rangiwahia, Oroua. The rainfall was distributed quite evenly over the recorded period.
- 8.3. The Manawatu River at Teacher’s College peaked on the 9th of September at 512 cumecs (2.89m).
- 8.4. The Oroua River at Almadale Slackline peaked on the 2nd of August at 56 cumecs (2.02m). This was beneath the 3.2m stage height where the Duty Officer is notified.

- 8.5. The Mangaone Stream, at Milson Line peaked on the 9th of September at 18.5 cumecs (2.1m).
- 8.6. The Makino Stream at Reid's Line peaked on the 1st of August at 3 cumecs (1.23m).
- 8.7. The Tokomaru at Riverland Farm was beneath 0.2 cumecs in low flow gauging throughout the majority of the reporting period before a peak on the 11th of September 25.6 cumecs (2.4m).
- 8.8. The Kiwitea Stream at Strathspey Farm peaked on the 2nd of August at 23.3 cumecs (2.2m).
- 8.9. Scheme engineers have continued to assist in the delivery of the Rural Upgrade Project (RUP), especially in regards to fencing and berm shaping.
- 8.10. All assets have been inspected and rated for condition and remaining useful life. The results of these inspections drive the coming year's works programme. Staff have noted that landowner damage to stopbanks has increased due to an unprecedented increase in livestock grazing saturated stopbanks. Staff are aware of the pressures the prolonged period of wet weather places on farmers but nevertheless also need to ensure that the damage is made good within a reasonable time frame. If not Horizons will undertake the repairs and recover the cost from the landowner. Detailed records of the damage are taken including a complete photographic record.
- 8.11. Asset Management Plans for all Schemes are in the process of being updated although finalisation will occur when the Long Term Plan is adopted by Council. The annual hazard reviews have been completed with input sought from all Scheme staff. Several training courses were attended during this period, including an in-house run Geographic Information System (GIS) training for updating asset maps, a project management course run by the Institute of Professional Engineers New Zealand (IPENZ), and a four wheel driver training course.
- 8.12. The 15th August saw Scheme staff host a visit from Taranaki Regional Council river management staff. This included an overview of the Lower Manawatu Scheme and key structures (e.g. Makino gates and drop structure, the Hoihere Road demountable barrier, the principles behind rock linings that used a graded rock design).
- 8.13. The sole provider of soil and rock testing in Palmerston North has ceased operation, with the closest alternative provider based in Whanganui. To avoid inevitable time delays and additional costs for smaller projects, staff have up-skilled themselves to test rock grading compliance using in-house resources. Testing requirements for larger rock supply contracts will still be undertaken by an independent and certified testing facility.
- 8.14. The Kairanga Depot held an open day for staff from other parts of the organisation. All depot staff enjoyed getting involved for this event in the spirit of the Big Five, with positive feedback received from those who attended.
- 8.15. Staff have been assisting AuditNZ with their annual audit of activities.

#### **LOWER MANAWATU SCHEME**

- 8.16. Works undertaken on the various rivers within the Scheme during this period include the following:

#### **MANAWATU RIVER**

- 8.17. Maintenance work throughout the City Reach is continuing and has included weed spraying, native plant freeing, repairs to the Dittmer Drive platform and inspections. Mowing of stopbank and berm areas within the city has not been completed this period due to saturated ground conditions. A tree in Buick Crescent was removed as it was found that

- the root system had been terminally damaged by the construction of the flood wall planter box running through the property.
- 8.18. The mulching programme is continuing with over 5km completed around the Moutoa area in this reporting period.
  - 8.19. There was a large amount of bank slumping observed downstream of Palmerston North during the jet boat inspection last reporting period. As a result, the planting programme for 2017-18 has been significantly increased over previous years to address this erosion, with a subsequent decrease in the mulching programme. Planting has been limited due to access issues; especially ground conditions, in locations where harvestable willows are available. Engineers have visited concerned ratepayers whose drainage system was affected by a slumping riverbank. The area will be monitored and pole planted when possible and advice has been offered regarding the non-scheme drain system.
  - 8.20. Rock delivery and updated design work is underway for repairs to a section of vegetated bank a short distance downstream of the Esplanade rock lining, first appearing last reporting period. Initially a small section of the bank slumped into the river, which has subsequently continued to erode. A contract for supply of rock has been awarded, and rock is currently being stockpiled at Winstones Awapuni gravel quarry. The placement contract will be put out for tender at the end of September with an award anticipated in November. Work will hopefully start in December, but this is dependant on river levels.
  - 8.21. The Esplanade erosion is typical of the erosion that the scheme has experienced at a number of sites over winter / early spring, a function of the high river berms present at many locations and the saturated ground conditions. Such damage is normally repaired by battering back the bank and re-planting unless particular assets or infrastructure are threatened; a full Scheme-funded rock rip-rap revetment approach at every site would be prohibitively expensive for what is fundamentally a flood protection scheme.
  - 8.22. Were LMS stopbanks threatened and/ or substantial river alignment change possible the Scheme would fully fund more robust protection (rock rip-rap revetment); neither scenario exists in this circumstance, with the primary effect being impacts on the shared path alongside the river. A 50/50 cost sharing proposal for a half height rock lining was put to PNCC and has subsequently been approved. The site is downstream of the new bridge across the Manawatu, and Scheme Engineers are working closely with PNCC to ensure that site works are optimised for both projects.
  - 8.23. Waitoetoe/ Ahimate Park has been a topic of discussion and development for several years. Engineers are excited about realising the potential of this Park, that will provide recreation and sporting opportunities in a wilderness type setting. As the development is on the berm and subject to flooding and berm flows, Engineers have been working in partnership with Palmerston North City Council (PNCC) and the local community group to finalise the details which includes; planting islands around the wetland during conservation week, a boardwalk loop, pump track for biking, selected willow removal on bank overlooking the beach and fenced dog area.
  - 8.24. Works continued on the PNCC shared pathway from the Fitzherbert Bridge out to the NZ Defence Force camp and housing area at Linton. Detailed design decisions are now being made between PNCC, Tanenuiarangi Manawatu Inc (TMI), Massey University, Linton Army Camp and Horizons, which includes siting the new bridge across the Kahuterawa and cut and fill operations for pathway construction.
  - 8.25. Engineers assisted PNCC and Department of Conservation (DoC) to remove two large totara trees exposed by the bank erosion at Ashhurst Domain. These totara, and several other large logs which were also removed from the beach, will be utilised by local Maori Carvers to produce Whakairo for a number of projects around the City. The operation was funded by PNCC, supervised by Horizons and approved by TMI and DoC.

- 8.26. Engineers have continued maintenance tasks along the Manawatu River, floodway and around the Moutoa Sluice Gates and Tower. These included inspecting and clearing floodgates and apron area; weed spraying; new fencing and repairs; mechanical cleaning and spraying of drains; repairs to control tower spouting; minor stopbank repairs; willow pole planting. The most recent electrical inspection of the Moutoa sluice gate revealed problems with gate number eight which have now been repaired.
- 8.27. Beach raking was undertaken in the Manawatu, and will be undertaken in the Oroua River in the coming days, in an effort to mobilise armoured beaches. This work is permitted under our global gravel consents. Beach raking is a common practice used extensively in the Greater Wellington and the Hawke's Bay Regional Councils. Horizons staff previously visited Hawke's Bay to observe their beach raking practices, and after investigating the practicalities of developing our own plant to undertake this work, decided it would be more cost-effective to hire their equipment and operator, with over 20 years of beach raking experience, from Hawkes Bay Regional Council.
- 8.28. The work was undertaken by an eighteen tonne tractor pulling large, custom-made ripping tynes. The work was only undertaken on exposed beaches above water level. By ripping the beaches of inside bends, the river gravels are loosened and move more easily downstream in larger river flows, encouraging the river to become semi-braided where space allows, maintain channel capacity, and take the pressure off the opposite bank slowing lateral erosion.
- 8.29. Selected beaches from the Ashhurst Domain to the Waste Water Treatment Plant have been raked. PNCC are concerned about the gravel bar building up at the city outfall that will adversely affect their mixing zone, and therefore, we have offered to rake the bar to mobilise the gravel to help maintain sufficient flow mixing past their outfall.
- 8.30. One bank erosion issue of particular concern is to the true right bank close to Te Matai Road, just upstream of the city. The riverbank at this location is high with relatively minimal setback to the stopbank. The risk at present is seen as tolerable but the site will continue to be monitored closely. The rock rip-rap revetment required to protect this part of the network is substantial and if required will be a substantial draw on Scheme operating expenditure.
- 8.31. The Te Matai bank erosion is a typical of the wide river reach between Ashhurst and Palmerston North, with a number of beaches appearing to become more pronounced over the last few years. To quantify the extent of gravel beach growth, a cross sectional survey of the river from Ashhurst to Whirokino is programmed for this year. Largely unbudgeted, costs will be shared between Science through the fluvial portfolio and the Lower Manawatu Scheme.
- 8.32. The contract to supply rock for Ashhurst Domain has been put out for tender, and will be awarded early October. The contract for the placement of rock will be put out for tender in October with a contract awarded in November. Work is scheduled to commence in December, but is dependant on river flows.
- 8.33. Scheme engineers noted a culvert through a stopbank maintained by PNCC was in a poor condition. PNCC, acknowledging that Scheme engineers had specialised expertise in this area, have requested help with preparing contract specifications to undertake repairs to their asset, which we were happy provide.

## **OROUA RIVER**

- 8.34. As part of ongoing vegetation management on the Oroua River, wattles were removed at three different sites. Wattles smother willow growth and have small, shallow root systems which make them susceptible to falling over. If unattended these can destroy willow planting assets and damage assets down stream. Following the removal 1,100 willows were planted, restoring the asset to its designed level of service.

- 8.35. Willow poles were also planted upstream of Timona Park to protect a bare section of river bank after wattle removal was undertaken by a landowner at no cost to the Scheme.

#### **MANGAONE STREAM**

- 8.36. The Mangaone Stream City Reach is frequently inspected by Scheme engineers and, overall, is in a good condition with regard to flood protection. There are a few areas that will require attention as a result of the flood event in July. These works will be undertaken once ground conditions improve. Rock has been stockpiled in preparation for repairs to a site just above Pioneer Highway Bridge. Any areas where risk to stopbanks becomes imminent, works will be undertaken immediately.
- 8.37. Palmerston North City Council channel stabilisation works along their drain near Milson, between Apollo Parade and the confluence with the Mangaone Stream, remain suspended until better weather and ground conditions return. The work is being completed by contractor RST Limited and consists of geogrid reinforcement of the stream banks, narrowing the channel to enhance the waterway's in-stream values.
- 8.38. Works within the channel around PNCC's underpasses at Botanical Road and Highbury Avenue continues to be suspended for winter, with work resuming on infrastructure under the road. The underpasses are mostly complete with only a few items remaining to be rectified or repaired. The original completion date was 31 March, however due to weather and other factors; this date has long since passed. Horizons have insisted the Flood Contingency Plan remains in place as PNCC still has a duty of care over the sites.
- 8.39. PNCC approached scheme engineers with a proposal to extend the lime pathway along the Mangaone behind the Awapuni Racecourse to Totara Road. This section of the Mangaone was overgrown with blackberry and willow congesting the channel and was due for a clear out. As the design developed, it quickly became apparent that this would require some significant channel works to run the path along the berm. As PNCC did not have the skills in-house, Scheme engineers agreed to design and supervise the works required which included; 40 metres of rock lining with associated bank battering, channel alignment tweaks, and vegetation clearance to enable the pathway to be extended, all fully funded by PNCC. This work has been successfully completed, with PNCC happy to have completed their pathway extension on time and to budget, while the Scheme has improved the flood carrying capacity of the channel, placed erosion protection to a high standard and helped develop a new recreational amenity for the city.

#### **TURITEA STREAM**

- 8.40. No works have been undertaken in this reporting period.

#### **MAKINO STREAM**

- 8.41. The flood in the Makino Stream in July activated the Makino Diversion Gates, and hence the use of the Reid's Line Spillway. The discharge of excess flood waters caused significant erosion at the downstream end of the spillway, at the confluence with the Kiwitea Stream. This erosion has now been repaired using approximately 3000 tonnes of quarry reject rock that was compacted into the site to make good the repairs.

#### **KIWITEA STREAM**

- 8.42. Maintenance works consisted on the removal of the wattle tree regrowth through the recently completed tied tree protection works. The wattle tree regrowth was stifling the growth of the protection willow planting.

### **KAHUTERAWA STREAM**

- 8.43. The only work undertaken over the period involved the removal of several large trees that had fallen across the Stream. Although within the exclusion period covering fish spawning, if left the trees would have caused significant bank erosion and upstream flooding. A special condition within the Resource Consent allows 'Extraordinary Works' to be undertaken when required. 'Extraordinary Works' are 'works' of an unplanned or unforeseen nature that occur from time to time, and that fall within the exclusion period for activity in the Stream.

### **MOUTOA FLOODWAY**

- 8.44. Scheme engineers have had regular meetings with the contractors undertaking the replacement of the Whirokino Trestle Bridge. The contractors are currently constructing a temporary bridge across the Manawatu River from which to transport fill to the new embankment between the River and Floodway. A number of issues have arisen during the construction such as new ramps required on stopbanks, access to our pumpstations and flood gates, temporary bridges across major drainage channels, maintenance of bank protection works, the building of temporary stopbanks and the moving of power lines in our stopbanks, all of which needed a Scheme engineer to approve and monitor.

### **LOWER KIWITEA STREAM SCHEME**

- 8.45. Persistent wet weather over this reporting period resulted in numerous 'freshes' in the Kiwitea Stream. Programmed maintenance works were delayed because of this.
- 8.46. Several beaches which had excessive gravel build-ups from these 'freshes' and which were then causing erosion problems, were removed by either gravel extraction and/or gravel relocation.
- 8.47. Willow poles were harvested off the river system ready for future planting in the Scheme.
- 8.48. Two sites which had erosion repairs undertaken on them following the 2015 floods, had become overgrown with wattle tree regrowth. These had to be cut out to allow the willow plantings to establish.
- 8.49. A further three sites, which had sustained flood damage from the July flood, had works completed. One site was a permanent repair using several tree groynes, plus willow plantings; the second was concrete riprap protection. The third site was only a temporary repair to halt any further erosion from the re-occurring 'freshes'. Materials required for the full repair have been stockpiled on site.

### **ASHHURST STREAM SCHEME**

- 8.50. No works undertaken in this reporting period.

## **9. NORTHERN AREA**

### **GENERAL**

- 9.1. For many in the Northern Area the winter rainfall totals this year have exceeded those observed for many years previously. Soil conditions have remained saturated creating access problems to many work sites. Many farmers have simply ceased all but essential movement around their properties in an attempt to minimize pasture damage.
- 9.2. These wet weather patterns translate to on-going and constantly high river levels. While not high enough to constitute a flood event, levels have been up around the annual flood

height level on several occasions and for extended periods of time. The damage to scheme infrastructure from these prolonged periods of high flow is becoming clearer as access again becomes possible.

- 9.3. At this time of year staff are busy updating information into the Asset Management System and preparing the scheme work programmes for the coming year. We are also in the third year of a three year Asset Management Plan cycle that has us reviewing and updating all scheme plans to keep them relevant and current. Also in this three year cycle, and an important component of the plan upgrades, is the revaluation of all assets. Work here includes ensuring that all assets are captured in the system, that capital expenditure is reconciled against budgets, and the recalculation of three year work cost averaging is complete for use in determining unit standard rates.
- 9.4. Engineering consultant Stantec has commenced a robust assessment of all of Horizons' detention dams. All but one of these fifty three dams is located in the Northern Area so the outcome of the assessment may have a significant impact on how we operate. Included in the contract deliverables are **Operations, Maintenance and Surveillance (O,M&S)** Manuals together with Renewal and Replacement strategies for the depreciable components of each structure. This information will feed into the updated Long Term Plan.
- 9.5. Our two new recruits, Dougal Ross and Melissa Churchouse, have settled in well and are fast becoming valuable members of the Northern Area team. Both have played an important role in keeping our asset management work programme on track and up-to-date with the required time line.

#### TRAINING AND FORUMS

- 9.6. Staff have been involved in the following training opportunities this period including:
- One staff member attended a two day 4WD course 7-8 August.
  - Two staff attended an IPENZ Practical Project Management course in Wellington on 8 August.
  - Two staff members attended a two day 4WD course 18-19 September
  - Area Engineer attended the New Zealand Society on Large Dams 2017 symposium and workshop in Wellington 20-21 September

#### COMMUNITY INVOLVEMENT

- 9.7. Staff have been busy attending the following community meeting over the past two months:
- Planting of native plants to enhance the recreational area below the Bulls Bridge on 24 August. Several staff supported students from Rangitikei College, Nga Tawa College, Clifton School and Bulls School to plant over 1,000 natives near the raised picnic area upstream of the bridge.
  - Community presentations on the proposed Ohakune Flood Protection Scheme were undertaken;
    - 3 August Waimarino-Waiouru Community Board
    - 10 August Ohakune 2000 inc
    - 15 August Lions and Rotary
    - 5 September Ngati Rangī
    - 29 September Public information session

### **RANGITIKEI RIVER CONTROL SCHEME**

- 9.8. A series of four flow events were experienced in August and September where river levels exceeded four metres at the Mangaweka recording site. Although none were particularly noteworthy the length of time that flow in the river has remained elevated is - river levels remained above the lower flood alarm stage level of 3.6m continuously for 37 of the 61 days over the August/September period. A further river inspection to assess damage will take place once routine servicing of Horizons' jet boat is completed.

### **RANGITIKEI MAINTENANCE WORKS**

- 9.9. The wet wintery weather conditions have restricted work to essential maintenance tasks only and to the frequent inspections of flap gates in response to the elevated river levels experienced.
- 9.10. This has cleared time for the river gang to concentrate on the annual planting of new willow poles. Over the late August and through the September period, in excess of 10,000 poles were planted to stabilize river banks and provide future material for bank protection works. Having good willow plantations and a good vegetative buffer along the managed river fairway boundaries has long proved to be an effective management practice for this scheme, and continues to remain priority work for each year.
- 9.11. A work programme will be implemented in September to rip gravel beaches along reaches of the river. A joint and shared operation between Horizons river management areas has secured the use of the Hawkes Bay Regional Council's beach ripping equipment. This is a dedicated large tractor unit fitted with deep rippers used to loosen up gravel beaches to encourage movement during high flow events. This management practice has proved to be very effective in the Hawkes Bay where it has become the dominant river management tool for some schemes. Our intention is to evaluate its effectiveness here to assess the feasibility of ripping as a long-term management strategy.

### **RANGITIKEI CAPEX WORKS**

- 9.12. Tender documents for the next stage of the Parewanui stopbank upgrade are being compiled with an anticipated tender period from mid October to mid November. A Land Entry Agreement has been drawn up and a meeting with the property owner will take place before the end of September. The Parewanui stop bank upgrade work is located on the Walmac Farm near Scotts Ferry over river distance 4.5km to 5.5km. The proposed contract will see one kilometre of stop bank upgraded and two large scour holes filled.

### **RANGITIKEI RIVER ENHANCEMENT**

- 9.13. Staff met with Rangitikei District Council staff to discuss the problem of illegal rubbish dumping around the Bulls Bridge. To avoid having to restrict public access to a popular picnic and recreational area, the two Councils will work together and install CCTV cameras to monitor traffic in and out of the area. There is a high likelihood that the problem is caused by only a few offenders and once these are identified and prosecuted the problem will cease.

### **GRAVEL EXTRACTION**

- 9.14. No gravel extraction has taken place under Council's consents over the reporting period.

## **POHANGINA-OROUA RIVER CONTROL SCHEME**

- 9.15. River management operations are restricted by environmental conditions during this part of the year. Trout spawning between 1 May and 30 September has an influence on what work is able to be undertaken within the channel. For this reason work tends to focus on activities that are well clear of the wetted channel e.g. willow planting, erosion repairs that are well clear of the waterway. Dotterel nesting further constrains activity between 1 August and 31 December. These small birds build their nests on the gravel beaches and are very difficult to spot. We generally avoid all work around gravel beaches during this period so as not to disturb their breeding cycle.

### **POHANGINA RIVER**

- 9.16. Unstable, fluctuating river levels have meant that several programmed repairs have been delayed, however progress has been good at the Passey property after a rise in river levels took out some partly constructed rope and rail groynes. The work up at this site is now complete but when the river drops some extra channel maintenance to widen the river at this location is to be done when trout spawning is over.
- 9.17. Work at the Moughan property near the Raumai Bridge (a small section of tree bank repair work) has also been completed and the owner has expressed his thanks to Horizons for the prompt action.
- 9.18. Pole planting has continued with 2,895 poles planted to date at the Fairless, Eales, Moughan's and Carroll's property. Shortly, additional planting will occur at the MacDonald and Hammond properties; however access to the Hammond property is difficult and consequently the work may not proceed this year.
- 9.19. In addition, an established area of large lupins and wattles at the Carroll property near the two recent repairs will be cleared to allow for last years previously planted willows to grow, as these were being smothered by the surrounding vegetation.
- 9.20. Two ongoing issues at the Ward and Eales properties culminated in a site meeting in late August. Attended by Crs Cotton and McKellar, the Group Manager, Area Engineer and Scheme Engineer the visit highlighted some of the challenges and some of the landowner frustrations.
- 9.21. Recent developments at the Ward location upstream of the Raumai Bridge have seen interest from an established contractor who is keen to extract gravel and this site is a prime candidate for gravel extraction and it would take considerable pressure off the already erosion prone banks on the left side of the river. We are waiting for information back from the Wards in relation to vehicle access out to Pohangina Road. Removal of gravel at this beach remains a priority.

### **GRAVEL EXTRACTION**

- 9.22. On the Pohangina River gravel extracted over April May amounted to 1,355 m<sup>3</sup>.

### **OROUA RIVER**

- 9.23. Again seasonal fluctuations in the river have made work difficult however pole planting has continued with 2,630 poles already planted at the Griffiths, Hoggards, Silk and McDougall properties. A large log jam at Roaches property just downstream of McDougall's property was also cleared in August. This landowner has thanked Horizons for the prompt and timely action as the river was starting to dam up. This was a gratifying result and the feedback was appreciated by both the Contractor and the Horizons Engineer.

- 9.24. There have been a few areas of minor channel maintenance on the Oroua River and the completion of six rope and rail groynes at the McDougall property which will go a long way to repairing the erosion damage at this location. This area has also been extensively planted with willows as an insurance against future damage with 1,000 poles being planted.
- 9.25. The tree bank protection work continues at the Brown property at Terrace Road and Thevenards repair will shortly get underway with the assistance of our new engineering cadet who will receive on the job training in river repair works.
- 9.26. Gravel extraction continues at the Apiti Road Bridge site and at Spur Road.

#### **GRAVEL EXTRACTION**

- 9.27. A total of 2,900 m<sup>3</sup> extracted during the period.

#### **TOTARA RESERVE**

- 9.28. The programmed repairs within the reserve are delayed due to weather conditions and trout spawning. An inspection a few weeks ago with the contractor highlighted further areas for repair following the wet winter experienced. Due to the fluctuating river levels, it was discovered that a couple of the large Totara trees near the Gilcrest track area had fallen into the river due to bank erosion. We are unable to enter the river due to trout spawning, plus there is the added complication that river depths in the area exceed five metres making access impossible with heavy machinery. Work is now delayed until after 31 September when river access will allow better options to complete the work. On the positive side there have been 1,120 poles planted up at the old camp ground and the Rangi Woods area. Once river level drops there is also some groyne repair works planned at Rangi Woods opposite the Meeting Hall.

#### **UPPER WHANGANUI RIVER MANAGEMENT SCHEME**

- 9.29. Work has started at Cherry Grove, clearing trees in preparation for the cycle-walkway to be built by RuDC from one end of Taumarunui to the other.

#### **TARINGAMOTU RIVER MANAGEMENT SCHEME**

- 9.30. No work undertaken this period.
- 9.31. The heavy rainfall in early April caused widespread erosion on numerous properties and there have been over two issues of landowners working in the river bed before 1 October in an effort to mitigate erosion caused by trees across the channel.
- 9.32. The small works programme will be taken up removing debris from the channel in select locations.

#### **MATARAWA FLOOD CONTROL SCHEME**

- 9.33. General maintenance and inspections of dams only undertaken this period.

#### **MATARAWA URBAN**

- 9.34. Preparatory work is underway for a full year's works programme on the Matarawa channel with an emphasis on some of the more expensive work involving arborists and the removal of bamboo.

**TUTAENUI FLOOD CONTROL SCHEME**

- 9.35. General maintenance and inspections of dams only undertaken this period.

**MAKIRIKIRI FLOOD CONTROL SCHEME**

- 9.36. No work undertaken this period

**POREWA FLOOD CONTROL SCHEME**

- 9.37. General maintenance and inspections of dams and channel only undertaken this period.
- 9.38. Changes in farm management this year is proving challenging to staff as they endeavour to remain up-to-date with on farm contacts.

**WHANGAEHU MANGAWHERO RIVER MANAGEMENT SCHEME**

- 9.39. No work undertaken this period.
- 9.40. Ernslaw One has harvested most of this forest on the peninsular at the end of Pauri Road. Fifty trees which were out of reach of machinery, were left standing on a lower terrace on the right bank, at risk of falling into the river in the next storm.
- 9.41. After some negotiation they have been persuaded to drill and poison to prevent them becoming a clean up liability to the Scheme.

**TURAKINA RIVER MANAGEMENT SCHEME**

- 9.42. Work has started just above the SH 3 and rail bridges, removing trees from the channel and felling and burning willow on the O'Neill and Stewart properties.

**LOWER WHANGANUI VEGETATION MANAGEMENT AND FLOOD PROTECTION PROGRAMME**

- 9.43. No work undertaken this period
- 9.44. Work by Whanganui District Council to finalise repairs to the Karoro Road sewer and reinstatement of the road is progressing slowly. Engineering consultant AECOM was on site in September carrying out Cone Penetrometer Testing (CPT) to evaluate subsoil composition and strength to guide the repair methodology.
- 9.45. This project has been on-going now for over twelve months with Horizons was initially advised on 15 September 2016 that an investigational borehole being drilled in Karoro Road had passed through a Whanganui District Council (WDC) 1600mm diameter gravity sewer line close to the main WDC pumping station. We have a particular interest in this site as Karoro Road is located beside Horizon's Balgownie stopbank; the depth of the sewer line (located in the order of 7 to 8m below ground level) and the sandy nature of the soils led to the rapid formation of a sinkhole in Karoro Road. Although not verified, it is almost certain that the sinkhole formation has compromised a section of the Balgownie stopbank, making the repair methodology essential to the integrity of our flood protection assets.
- 9.46. Mosquito Point was the overall winner in the Horizons "Spruce up your swim spot" survey last summer. In recognition of this, Whanganui River recreational sites popularity; a joint project in partnership with the Whanganui District Council, has commenced looking at innovative site improvements. These upgrades to further enhance the public's enjoyment of the site, should be completed before Christmas in readiness for the summer swim season.

### **PAKIHI SCHEME**

- 9.47. No work undertaken this period.

### **FOREST ROAD DRAINAGE SCHEME**

- 9.48. No work undertaken this period.

### **HAUNUI DRAINAGE SCHEME**

- 9.49. No work undertaken this period.

### **OTHER WORKS**

#### **NORTHERN ANNUAL SCHEME REPORT**

- 9.50. Each year an Annual Report is prepared outlining the activities and financial standing of the fourteen schemes in the Northern Area for the previous financial year. Work on the 2015/2016 report is now 80% complete.

#### **THE BIG FIVE**

- 9.51. No update this period.

#### **ENGINEERING ADVICE**

- 9.52. During the last two months and with the lingering wet conditions there continues to be a constant demand on staff time for advice in non-scheme areas.

#### **OTHER PROJECTS**

##### **MOAWHANGO RIVER**

- 9.53. The annual community was hosted by Genesis Energy on 6 September in the village hall at which the previous year's works programme was discussed together with proposals for next year.

#### **MISCELLANEOUS**

- 9.54. No update this period

### **10. EASTERN AREA**

#### **GENERAL**

- 10.1. The last two months have generally been more settled for the streams in the South Eastern Ruahine Scheme area, the Upper Manawatu and Tiraumea Rivers only recording a couple of minor flow events in early August and around 9 September. In between, there was a three week period from mid August to 6 September, when the north and eastern areas of the Tararua District experienced warm and fine spring weather. Many streams recorded the lowest flows since mid March 2017, including the Makakahi River.
- 10.2. In contrast, wet and cold weather patterns developed from the south, with rainfall in the Tararua Ranges elevating flows in the Mangatainoka and Mangahao Rivers. Those two river systems experienced about ten flood events during the period with the highest event producing peak stage heights of 2.9m and 2.84m respectively on 9 September. The

southern part of the district also experienced about three weeks of fine weather from mid August to 6 September.

- 10.3. Consequently, staff have been able to make very good progress with the planting programme on the major schemes, along with significant progress especially on the Upper Manawatu and South East Ruahine Schemes with the remedial repairs from the flood damage sustained in the large flood events of April and July 2017.
- 10.4. River levels on the Upper Manawatu have allowed Kiwi Rail to continue with the underpinning of the Ngawapurua Rail Bridge about 7km south of Woodville. Horizons staff, continued to liaise with Kiwi Rail staff regarding river design work, resource consents and advice on planting the berm areas either side of the Tiraumea River diversion, and bank protection works.
- 10.5. These last two months, staff have had training and commenced using the new TM1 "Mindfull" accounting software package for preparing budgets and monitoring expenditure. In addition, all Scheme **Asset Management Plans (AMP)** are due for their three year review. Consequently a programme has been prepared and staff have begun working on the draft AMP review.
- 10.6. Staff members have completed their First Aid revalidation, Health & safety, Quad bike and 4WD training; Scheme Works programmes and financial monitoring spreadsheets are in place; a stocktake of Eastern Scheme materials was undertaken; currently as part of the annual Plant Hire Register update, an opportunity is being taken to review the documentation so that the Register can be more widely used across the organisation.
- 10.7. During this period there has been numerous requests for engineering advice, including several flooding issues to houses and property, which has involved liaising with Tararua Alliance; several gravel extraction requests from individuals, contractors and Tararua Alliance staff; planting and bank erosion advice; culvert installations and information on properties being sold to overseas buyers, and several requests for information and assistance for preparing resource consent applications.

#### **AKITIO SCHEME**

- 10.8. This period, weather conditions have been more settled with only 103mm rainfall recorded at the Akitio Toi Flat site for August and September, compared to the average of those two months for the last eight years which is 210mm.
- 10.9. Recent inspections of the Akitio River show that the river channel is substantially clear of vegetation and debris, testament to the success of the willow removal programme.
- 10.10. This year a works programme has been prepared and work will be carried out over the summer months. The works anticipated will be minor maintenance involving some tree and debris removal and maintenance spot spraying of any willow regrowth.

#### **EASTERN MANAWATU SCHEME**

- 10.11. Weather conditions have been more settled over the last two months allowing staff to complete an aerial inspection of the upper reaches of the Manawatu River, difficult to access due to the entrenched nature of the river. The inspections showed that generally most reaches of the river have responded well to the aerial spraying programme over the last few years, with just a few spots requiring debris removal and spraying of willow regrowth. A works programme has been prepared and it is expected that maintenance work will commence later in the year and through the summer months.

### IHURAU SCHEME

- 10.12. Inspections and a programme of works have been prepared recently, but works on this scheme are generally undertaken during the summer months – late January to March.

### MANGATAINOKA SCHEME

- 10.13. Over the last couple of months one of the focuses for staff has been to update the scheme Asset Management Plan. It is expected that this review will be completed by the end of the year. Staff have been liaising with staff from engineering consultant Opus, network management consultant for the **New Zealand Transport Agency (NZTA)**, around maintenance of shared flood protection assets on the Mangatainoka River (Kamo Bend) located close to State Highway 2.
- 10.14. Further areas of erosion have appeared since the aerial inspection, which has led to a minor re-prioritising of works. When the trout spawning season ends on the 30th of September there will be several rock lining jobs ready to start the season with. In the meantime the planting programme is in full swing covering areas from the top to the bottom of the scheme. Approximately 1,500 poles have been planted over twelve sites.
- 10.15. Discussions have continued with Tararua Alliance staff and private contractors in regards to gravel extraction for the coming season. A recently completed gravel resource study of the scheme has introduced recommended restrictions especially for the extraction of gravel from the lower reach of the Mangatainoka River from just south of the Pahiatua township down to the rivers confluence with the Tiraumea River. The report indicates that gravel extraction should be directed to the middle reaches of the Mangatianoka River where gravel is accumulating. This has not caused too much concern as there are still many beaches within the recommended zone for gravel extraction.
- 10.16. The flood events in the Mangaramarama Stream during April and July earlier this year has renewed interest with some of the property owners in the Mangaramarama valley around efforts to mitigate the flood hazard in the area. Progress on the consultation with affected parties for a resource consent application for four proposed diversions in the Mangaramarama stream between Pongaroa and Carisbrook Roads has been slow.
- 10.17. While the consent consultation process continues over the coming months, it is proposed that the first priority should be increasing channel capacity by clearing debris and cleaning about 5km of channel from the stream confluence with the Mangatainoka River up the Carisbrook Road. It is estimated that \$25,000 from the scheme's annual budget be set aside for this clearing and cleaning. This will then be timely for the diversion work just upstream of Carisbrook Road to be carried out the following financial year.

### SOUTH EASTERN RUAHINE SCHEME

- 10.18. With settled weather conditions in the **South Eastern Ruahine (SER)** Scheme area, a solid start has been made to maintenance and flood damage repairs within this scheme. To date a mix of 11,560 willow poles and native shrubs have been planted on nine sites across the SER streams with 20% of the plantings being native plants. Flood debris was cleared from nearly 1km of the Manga-atua Stream with the remaining work being flood damage repairs. This included repairing two weirs, 35m of new groynes and 260m of tree bank protection work at two sites.
- 10.19. The moist warmer weather has been good for tree growth with willow trees looking in good condition. Currently there is no sign of any Giant Willow Aphids. In response to damage suffered from the aphids in the past couple of years, staff have been planting other species of willow, Matsudana, Golden Willows, and some new varieties from the Massey University based, "NZ Poplar & Willow Research Trust", which are more resistant to the Giant Willow Aphid.

- 10.20. The streams with high in-stream values have had the repair works deferred until October and later. This has not sat well with some ratepayers where erosion has continued at some sites, and the risk of further erosion, should another flood event occur.

#### **TAWATAIA - MANGAONE SCHEME**

- 10.21. Inspections and a programme of works has been prepared recently, but works on this scheme are generally undertaken during the summer months – late January to March.

#### **UPPER MANAWATU – LOWER MANGAHAO SCHEME**

- 10.22. Weather conditions for this scheme can vary quite significantly depending on whether the weather patterns are coming from the south and the Tararua Ranges or from the north and the Ruahine Ranges. This has been the case over these last two months with quite settled weather in the north and wet and cold weather in the south. The upper Manawatu River recorded two minor flow events while the Lower Mangahao River had ten flow events.
- 10.23. Consequently all the work completed has been on the Upper Manawatu River and has included planting 500 willow poles, clearing flood debris from two sites, and repairing one flood damage site with 300 tonnes of rock rip rap, with no maintenance or repair works being undertaken on the Mangahao River.
- 10.24. On the 22 August staff carried out an aerial inspection of flood damage and scheme assets for both the Lower Mangahao and Upper Manawatu Rivers. The majority of the flood damage is located on the Upper Manawatu River from just upstream of the Ngawapurua Bridges down to the confluence with the Mangahao River. Work has been programmed and will be undertaken over the next few months. Staff have had site meetings with several property owners in relation to proposed repair works to ensure good working relationships and an understanding of the proposed work to be undertaken.

### **11. SOUTHERN AREA**

#### **GENERAL**

- 11.1. Spring has again brought with it unsettled weather, with periods of heavy rain causing drains to rise and leading to significant surface flooding around the Horowhenua District.
- 11.2. Staff have been kept busy responding to the constant enquiries regarding both scheme and non-scheme drainage issues, as landowners tire of the constantly saturated ground conditions.
- 11.3. Two Hui at the Tukorehe Marae have been attended by staff, along with representatives of the **Horowhenua District Council (HDC)**, local residents and NZTA staff to discuss flooding issues at Kuku. Options discussed include upstream detention, redirection of some of the upstream catchment, larger culverts under the state highway and channel improvements. Further meetings are proposed with NZTA and HDC to refine the options before taking this information back to the community.
- 11.4. Staff have attended two workshops run by NZTA representatives to discuss the various route options for the Otaki to North of Levin highway.
- 11.5. Both staff and contractors have been kept busy ensuring that scheme pumpstations remain fully operational. Both mechanical and manual clearing of weed has been required at a number of sites. Electricians have also been called out a number of times to respond to faults.

### **OHAU-MANAKAU SCHEME**

- 11.6. All the channels within the scheme area saw numerous freshes in them over the period, with most being small. The largest of these were: Ohau at 1.3m peak stage height (59m<sup>3</sup>/s) on 15th August and both Waikawa at 1.2m (12m<sup>3</sup>/s) and Manakau at 2.3m (25m<sup>3</sup>/s) on 9 September.
- 11.7. Saturated ground conditions and fluctuating water levels continue to make it difficult to get materials and machinery to site and for contractors to undertake work.
- 11.8. This period has seen numerous sites along the Ohau River between river distance 9.8km and 17.9km planted up, to repair erosion sites caused by earlier floods. In total over 1,200 willow poles, 820 willow wands and 250 native plants have been planted this period. As well as planting, additional works included battering of the banks, digging in tree groynes or fortifying existing tied tree work with more railway irons and trees.
- 11.9. Two sites on the Ohau at the Ta Hamata property required extensive work to fill in large holes that were developing on outside bends. The holes were backfilled with material from the berm and protected with concrete rip rap.
- 11.10. Willow maintenance was done on the Waikawa stream between distances 3.5 and 4.0km. This work was undertaken to remove willows that were beginning to grow into the channel restricting flow, as well as the placement of additional willows on bends that were showing signs of early erosion.
- 11.11. Channel maintenance was also conducted on the Manakau stream upstream of Takapu Rd. Debris and willows that were growing into the channel and accumulating, were removed. A small amount of concrete rip rap was placed directly above the bridge where some erosion was occurring.
- 11.12. Concrete rip rap was placed on the Kuku stream just down-stream of the SH1. Erosion was undermining the boundary fence on a property and 3 loads were required to address the issue. Material was also taken from the inside of the bend to take some of the pressure off.
- 11.13. 1.9km of drain was machine cleaned and a few culverts that were blocked with weeds were cleared.

### **MANAWATU DRAINAGE SCHEME**

- 11.14. Sections of Mitchell Creek and Green Drain have been machine cleaned.
- 11.15. A 900mm diameter floodgated culvert has been installed at the downstream end of Cheetham Drain. This work is part of the short term measures discussed with local residents around Triple 'R' Engineering site beside State Highway 3 to reduce the ongoing risk of flooding in the area. Detailed modelling of the Manawatu Scheme drain network is likely to identify what the more substantive 'fix' is and what it might cost.

### **MAKERUA DRAINAGE SCHEME**

- 11.16. Donnelly's #2 pump was pulled and serviced then reinstalled. The roof of the pumpstation was bird proofed at the same time. Works have also been completed at this station to repair the discharge line connecting the pumps to the surge chamber.
- 11.17. Makerua East floodgate was jammed open with a large amount of wood and this was cleared.
- 11.18. Slumps were cleared and drain bank battered along Blackmores drain.
- 11.19. 7km of drains were machine cleaned during this period.

### **KOPUTAROA DRAINAGE SCHEME**

- 11.20. The combination of low lying farmland, elevated river levels and constant rain are proving challenging for the scheme, particularly the No.4 station, with landowners becoming increasingly reliant on the station for duty drainage. While this station does have a small submersible to provide some low level pumping, this pump has a modest discharge capacity, meaning the larger axial flow MacEwans pumps is being asked to assist more often.
- 11.21. This pump is already operating below the manufacturer's recommended minimum stop level and while staff have slightly lowered the start level, this has significantly reduced the pumping range and increased the susceptibility of this pump to damage (cavitation and the stress that short operating cycles place on the unit).
- 11.22. Like many of the schemes pumpstations, originally this pump was installed to reduce the frequency of flooding in the adjacent paddocks. However these pumps are now being relied on more frequently to assist with duty drainage, an operating context that they were not designed for. While the pumping levels can be raised during the summer months, discussions need to start happening soon regarding the future viability of these pumpstations.
- 11.23. Slips on both the P5 and M1 drains caused by saturated ground conditions, have been repaired.

### **MOUTOA - WHIROKINO DRAINAGE SCHEME**

- 11.24. This period saw the failure of three individual pumps, two pumps in the Cooks pumpstation and one pump in the Diagonal pump station. All were removed for repairs.
- 11.25. While it is difficult to determine precisely the cause of the failures, two of the pumps have had their bell mouth drop off the end of the pump and all have shown significant wear and tear on both the pump shafts, impellers and bearings.
- 11.26. Two pumps have since been rebuilt and have now been re-installed however one pump is still to be returned to Cooks station due to delays in the casting of new components for the pump, reflecting the age of the pumps (spares are not held in stock).
- 11.27. The cost of rebuilding these pumps has significantly exceeded the budgeted renewal expenditure for the 2017-18; additional funding will almost certainly need to be drawn down from the renewal and emergency reserve funds.
- 11.28. A portion of the track to Diagonal station was refurbished. This will assist with contractors accessing the station.
- 11.29. Native trees were planted in an area adjacent to Cooks pump station. The area was created when large poplar trees were removed. These trees were at a size where they were dropping branches into the drain, adding to the debris load at the station.

### **TE KAWAU DRAINAGE SCHEME**

- 11.30. A 600m butt jointed culvert had come apart along Sandhill drain with a matted ball of weed blocking the culvert, causing ponding at the upstream end. This culvert was removed, replaced with a new 600mm polyethylene pipe.
- 11.31. A floodgated outlet next to the Raupo Road pumpstation required the floodgate to be reattached using steel rods as it had come off its original band.
- 11.32. Two large weed blocks had formed along Taylor Morrison Drain at the point where culverts pass beneath Raupo Road and Puawia Road. These were removed using a 10t excavator.
- 11.33. Spillway drain was machine cleaned due to a large build up of weed

## HOKIO CATCHMENT DRAINAGE SCHEME

11.34. A 600m section of Boulton drain up-stream of CD Farm Rd was upgraded. This work is part of the drain upgrade programme to enable more water to stay in the drains rather than flow across the ground surface and pick up sediment. This section of drain upgrade included replacing two culverts and the deepening of the drain.

## FOXTON DRAINAGE SCHEME

11.35. A short length of retaining wall was constructed along the Purcell Street drain to address significant bank slumping.

11.36. Two 450mm floodgated culverts and plastic culvert pipes were placed in Kings Canal.

## 12. ENVIRONMENTAL GRANT WORK

Name	River	Description	Application Status	Estimated Cost	Expected Subsidy Cost	Work Status
N Randell	Tutaenui Stream	Bank Protection Works	Approved	\$7,000	\$2,197	Completed, yet to be invoiced. (2015-16 Carry over)
Rangitikei DC & Redmayne	Makirikiri Stream	Construct Flood Gate Egress Structure	Approved	\$125,000	\$37,500	Approved construction completed (2015-16 Carry over)
Ruapehu DC	Makotuku River	Remove of Willow Congestion	Approved	\$45,000	\$13,500	Approved and work yet to commence defer to 2018
Walker & McKean	Mangawharariki River	Bank Erosion Works	Approved	\$20,500	\$3,734	Work completed
Robb	Mangamaiti & Mangaetoroa Streams	Removal of Willow Congestions	Awaiting Approval	\$34,050	\$10,215	Approved
G Bennett	Upper Mangahao river	TBPW, RipRap and Planting	Approved	\$23,691	\$3,033	Work partially completed - to complete in 2017-18 FY
PNCC	Ashhurst Domain	Bank Protection – Rock Riprap / Rail Groynes & Tied Tree Work	Approved	\$260,000	\$78,000	Approval given by Council on 22 September 2016 to cap at \$80,000
N Kelland	Ongarue River	Remove Poplars from River Banks	Application being Prepared	\$10,000	\$3,000	Application being Prepared

D Smith	Tutaenui Stream	Bank Protection Work	Application being Prepared	\$12,000	\$3,600	Property Owner has put Work On Hold
R Redmayne	Mangatikotoko Stream	Construct Concrete Weir & Timber Retaining Wall at Tunnel Hill Flume	Application being Prepared	\$18,000	\$5,400	Approved
J Patel	Tutaenui Stream	Rock Lining Bank Protection Work	Application being Prepared	\$45,000	\$13,500	Discussing Design with Consultants
J Allen – Kauangaroa Marae	Whangaehu River	Ring Bank Flood Protection	Application being Prepared	\$90,175	\$27,053	Iwi Funding – Highly Possible
Marton Motel	Tutaenui Stream	Rock Lining Bank Protection Work	Application being Prepared	\$20,000	\$6,000	Client to get Independent Design
K Norman	Mangahao River	R&R Groynes, Planting	Application being Prepared	\$5,000	\$1,500	To be Investigated
Riding for the Disabled	Mangaramarama Stream	Stopbank Work	Application being Prepared	\$5,000	\$1,500	To be Investigated
J McNaught	Mangatoro	Willow congestion	Preparing application			
Q Hooper-Smith	Mangatoro	Bank Protection	Preparing application			
S Marsden	Mangahao River	Bank Protection	Preparing application			
G Bennett	Upper Mangahao tributary	Bank protection		\$13,500	\$4,050	Work partially completed
A McKay	Kiwitea	R&R Groynes		\$18,820	\$5,650	Yet to commence
M Hoggard	Kiwitea	Bank Protection		\$14,714	\$4,414	Yet to commence
V Larsen	Kiwitea Tributary	Bank Protection		\$7,543	\$2,263	Yet to commence
N Randall	Tutaenui	Groynes, rock, willow work		-	-	Under investigation
E Brook	Kiwitea	R&R Groynes		-	-	Under investigation
<b>TOTAL (All Items Listed)</b>				<b>\$774,993</b>	<b>\$226,109</b>	

**13. SIGNIFICANCE**

- 13.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Ramon Strong  
**GROUP MANAGER RIVER MANAGEMENT**

**ANNEXES**

There are no attachments to this report.



Report No.	17-181
<b>Decision Required</b>	

## HAUNUI SCHEME RATING CLASSIFICATION

### 1. PURPOSE

- 1.1. This report outlines anomalies with the way in which rates are levied for the Haunui Drainage Scheme and proposes rectifying those anomalies through the Long Term Plan process.

### 2. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 17-181 and Annexes;
- b. adopts the solid black outline as shown in Annex B as the areal extent of the targeted rate classification for the Haunui Scheme;
- c. changes the basis of the rating for the Haunui Scheme from capital value to land area;
- d. consults with those affected as part of the Long Term Plan process.

### 3. FINANCIAL IMPACT

- 3.1. Although the proposal has a range of impacts on individual landowners in the Haunui area there are no financial impacts to Council at this time.

### 4. COMMUNITY ENGAGEMENT

- 4.1. Subject to endorsement by Committee and Council, staff will consult with Haunui Drainage Scheme ratepayers on the alterations and amendments proposed through the 2018 Long Term Plan process.

### 5. SIGNIFICANT BUSINESS RISK IMPACT

- 5.1. There are no significant business risks inherent with the adoption of recommendations contained in this report.

### 6. BACKGROUND

- 6.1. The Haunui Drainage Scheme is one of the smallest river management schemes administered by Horizons and is located on the true left Whangaehu River berm some six kilometres upstream of State Highway 3. Despite its small size the Haunui Scheme pre-dates the Rangitikei Catchment Board – a Haunui drainage collective has existed in one form or another since 1926.
- 6.2. The Scheme maintains four drains with a total length of 8.8km, providing drainage to approximately 340 hectares of valley floor. Targeted rate revenue sought in the current financial year is \$8,413 distributed over 12 landowners using a single tier, capital-value based rating (\$29.19 per \$100,000 capital value).
- 6.3. In June 2008 a report proposed a new rating classification, driven by a Rangitikei District Council proposal to combine the Haunui Drainage Scheme with the nearby Rakautaua

Drainage Scheme, managed by RDC. That proposal did not sit well with Rakautaua farmers and the idea of combining the two drainage areas was not pursued.

- 6.4. The review identified considerable anomalies in the way rates were being levied for the Haunui scheme relative to the original 1926 classification; a number of land parcels extending down into the Turakina Valley were paying Haunui Scheme rates (refer to Annex A). It isn't clear how these anomalies have come about. The 2008 staff recommendation to Council was to abandon the combined scheme proposal but proceed to adopt a modified rating area (shown in green in Annex B) for the Haunui scheme and to change from capital value to land area based rating, consistent with Council's other drainage schemes.
- 6.5. In October 2008 the Council rejected these recommendations and instead requested a hearing process to properly consider the proposed amalgamation. The submission hearing was tentatively scheduled for February 2009 and then 7 May 2009 but was again postponed due to higher priority work and was not picked back up. The fact that the new classification had not been implemented and those anomalies still existed around the way in which rates are being levied were errors identified by staff earlier this year.

## 7. DISCUSSION

- 7.1. The key issue is whether the original rating classification (the black outline shown in Annex B) or the revised benefit area (the green area identified in Annex B) is the most equitable funding model. The anomalies around land parcels that lie within the Turakina River catchment and the move to a consistent basis for rating drainage schemes (land area), along with a single tier classification are all fundamentals. It is worth noting, however, that a capital value rating would load more of the cost on the higher value valley floor, the main area that benefits from scheme maintenance activities.
- 7.2. The author of the 2008 report is the same external consultant who has review and proposed amendments to a number of other targeted rate classifications; recognising the somewhat inevitable degree of subjectivity involved, in my view the green area identified in Annex B is too 'skinny'. The black outline represents a reasonable apportionment of the operating cost.

## 8. CONSULTATION

- 8.1. It is intended that staff will consult with affected ratepayers around the report recommendations as part of the Long Term Plan process.

## 9. SIGNIFICANCE

- 9.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Wayne Spencer  
**AREA ENGINEER NORTHERN**

Ramon Strong  
**GROUP MANAGER RIVER MANAGEMENT**

## ANNEXES

- A Current Haunui ratepayers  
B 2008 Proposed Haunui Rating Boundary

