PALMY
PAPAIOEA
PALMERSTON
NORTH
CITY

Palmerston North Wastewater Best Practicable Option (BPO) Review

Stakeholder & Community Engagement Assessment

August 2021

PALMERSTON NORTH
NATURE CALLS

Prepared for Palmerston North City Council by:

JUST ADD LIME

QUALITY STATEMENT

Project Details

Project Manager:	Roger Hulme
Project Technical lead:	Melaina Voss / Jim Bradley

Report Details

Prepared by:	Claire Wannamaker	30/07/2021
Checked by:	Melaina Voss/ Julie Boucher	4/08/2021
Reviewed by:	Julie Boucher/ Simpson Grierson	4/08/2021
Approved & Issued by:	Melaina Voss	5/08/2021

Executive Summary

This report has been prepared to assist Palmerston North City Council (PNCC) to identify preferred options as part of the final Wastewater Best Practicable Option (BPO) assessment. The report assesses community and stakeholder feedback using a methodology and scoring process consistent with that used for the other BPO assessments.

Engagement was carried out in line with the requirements of the LGA Resource Management Act processes and involved two rounds of public engagement – the first in June and July 2020 and the second in April and May 2021. Both rounds included a survey and round two invited written feedback.

Feedback has been analysed for each of the 11 shortlisted options and a score of 1 (least preferred) to 5 (most preferred) has been allocated. The basis for scoring is documented in the methodology section of this report.

Analysis of the feedback has identified a preference for option six (ocean), with less support for options 1(river) and 4 (land and river).

CONTENTS

1 Introduction 5
1.1 Overview of Engagement and Feedback 5
1.1.1 Assumptions and limitations 5
1.2 Shortlist Options 6
2 Engagement 7
3 Methodology for this Assessment 8
3.1 Classification Process 8
3.2 Scoring 9
4 Analysis 10
5 Assessment & Scoring 11
6 Recommendations 12
6.1 Options ranking 12
6.2 Summary 12

List of tables

Table 1 Options Description 6
Table 2: Survey 1 and 2 shortlist options 8
Table 3: Public support scoring criterion 9
Table 4: Assessment table 10
Table 5: Detailed option description and scoring 11
Table 7: Options ranking 12

List of figures

Figure 1: Wastewater BPO assessment process 5

APPENDICES

Appendix 1: ..Engagement Feedback Summary Report 13

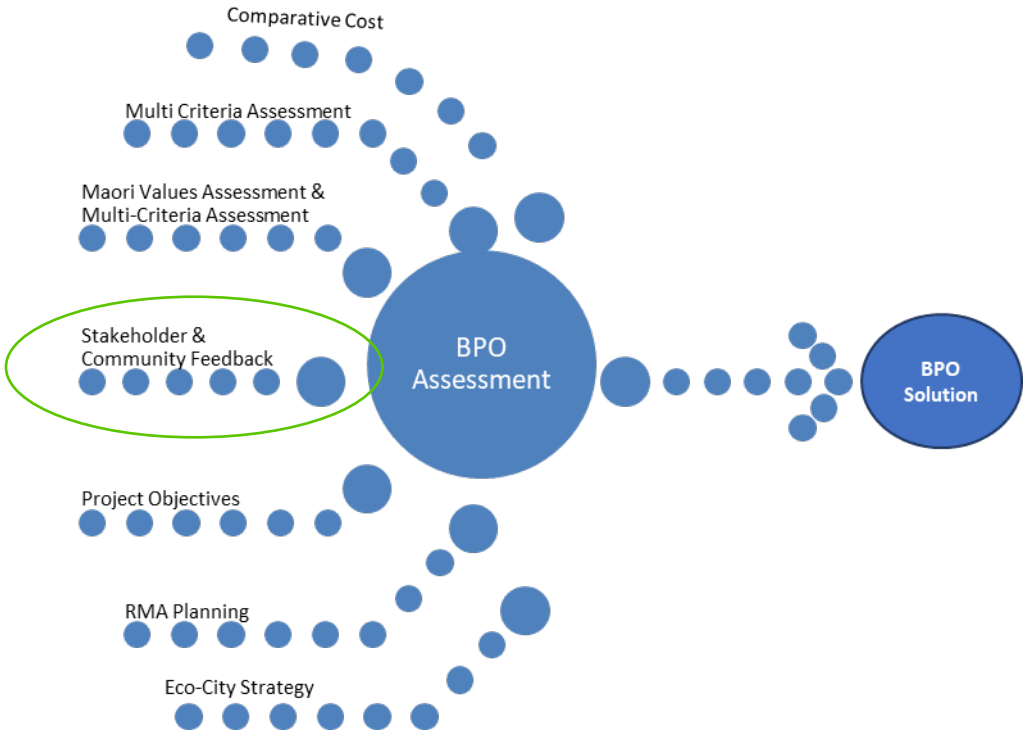
1 Introduction

1.1 Overview of Engagement and Feedback

This report documents the methodology and scoring of shortlist options for the stakeholder and community feedback element of Palmerston North City Council's Wastewater BPO assessment shown in Figure 1 below.

Engagement was carried out in line with the requirements of the LGA Resource Management Act. and involved engagement over two rounds with both the wider Palmerston North community and stakeholders.

Figure 1: Wastewater BPO assessment process



A full report on feedback received, demographics of respondents and options preferences can be found in the appendices to this report. A summary of the written submissions and analysis of stakeholders by industry and organisation type is also included in the report.

1.1.1 Assumptions and limitations

Assumptions and limitations recorded in the Engagement Feedback Summary Report apply to this report and assessment, with the addition of the following:

- BPO options included in the engagement process differed between the two rounds of engagement. Round one asked for feedback on five shortlist options, while round two sought feedback on three options. Although the full range of shortlist options were included in the round two engagement material no feedback was

received on these. To enable comparison between the two rounds of engagement, the assessment methodology has sought to link feedback on the three options round two to the corresponding options in round one. For example, survey two option 1 (River with enhanced treatment) corresponds to survey one shortlist option 1 (R2).

- This assessment considers shortlist options as presented and does not address suggested changes or redesign of existing options submitted in the feedback.
- The feedback provided may not be representative of the Palmerston North population.
- Option 5 – discharge to groundwater – was found to be unfeasible and was removed from the shortlist after survey round one. Feedback related to this option has not been included in this assessment. Scores for survey round 1 have been standardised with the removal of 12% support for option 5 in survey round 1.
- Written submissions formed part of round two engagement and have been included in the scoring and weighting assessment.
- Neither survey asked participants if they directly opposed any option(s). Although participants were able to rank an option as "least preferred" in survey one, this does not imply opposition. Opposition to options is not a factor in assessment scoring.
- It is assumed that the additional information provided in response to requests from submitters between the two rounds of engagement has resulted in more informed participant engagement during the second survey. For this reason, scores for survey one have been given a lower weighting(30%) and survey two higher (70%).

1.2 Shortlist Options

The following table lists the shortlist options as identified in round one and two. Further details of the shortlist options are provided in the Shortlist Options Summary Report, May 2021.

Table 1 Options Description

Option No.	Option Summary Description
1	R2(b) River discharge with Enhanced Treatment
2	R2(b) River discharge with Enhanced Treatment, 75% ADWF to land at low River flow
3	Dual R+L(b) Two River discharge points with 75% ADWF to Land at low River flow
4	L+R (a) 97% of the time to Land (inland)
5	L+R (b) 97% of the time to Land (coastal)
6	L+R (d-1) to Land <80m^3/s / 53% of the time to Land (inland)
7	L+R (d-2) to Land <62m^3/s / 43% of the time to Land (inland)
8	L+R (e-1) to Land <80m^3/s / 53% of the time to Land (coastal) TN = 35 mg/L
9	L+R (e-2) to Land <62m^3/s / 43% of the time to Land (coastal) TN = 35 mg/L
10	O+L / Ocean with Land (coastal)
11	Ocean discharge

2 Engagement

Engagement was carried out in line with the requirements of the LGA Resource Management Act. This involved engagement in two rounds with the Palmerston North community and stakeholders to gain feedback.

Opportunities to participate in both engagement rounds, complete both surveys and make written submissions were promoted to the public through community print and social media, council and related communication channels and community events.

Round 1: June – July 2020

- Feedback was collected through online and paper surveys.
- Feedback consisted of 1108 survey responses.

Round 2: April – May 2021

- Feedback was collected through online and paper surveys, written submissions and comments via social media
- Feedback consisted of 250 survey responses and 20 written submissions received during April and May 2021.
- Twenty written submissions were received during the 2021 consultation period including feedback forms, letters, and long form reports with appendices.

The following technical factsheets were developed to inform stakeholders and the community of the shortlist options and the development and assessment process:

2O19- 2020

- Our wastewater networks
- Wastewater treatment – best practice and innovation
- Palmerston North's existing wastewater scheme
- Resource Management Act and the consent process
- Understanding the effects on the Manawatū River
- Best practicable options review: project background
- Best practicable options review: vision, objectives and timeline.

2020 - 2021

- Wastewater BPO Problem statement
- Wastewater systems and sustainability
- Wastewater BPO Shortlist options summary
- Wastewater BPO Shortlist feedback
- River health
- Ocean and coastal health
- Contaminants
- Treatment assessments.

In addition, brochures, posters and social media adverts were created and used to inform and educate the public about the shortlist options and promote both engagement rounds.

3 Methodology for this Assessment

3.1 Classification Process

This section documents the levels of support among engagement participants for shortlist options during both round one and round two engagement, and the rationale for assigning a score for each. A combined overall score has been assigned based on the combined survey responses and written submissions. Table 2 summarises the shortlist options and the descriptions and names used in each engagement round. It is understood that PNCC assessed Option 5 (discharge to groundwater) not to be feasible, and so was removed from consideration after round one of the engagement.

Table 2: Survey 1 and 2 shortlist options

Option number	Shortlist option	Description	Survey 1 name	Survey 2 name
1	Option 1: R2	R2(b) River discharge with enhanced treatment	Option 1	River with enhanced treatment
2		R2(b-2) 75% ADWF to land / river discharge with enhanced treatment	Option 1	River with enhanced treatment
3	Option 2: Dual R + L	Dual R+L(b) 75% of the time application to land / two river discharge points	Option 2	Not applicable
4	Option 3: L+R (a) & (b)	L+R(a) 97% of the time to land (inland)	Option 3	Not applicable
5		L+R(b) 97% of the time to land (coastal)	Option 3	Not applicable
6	Option 4: L + R (d) & (e)	L+R(d-1) to land <80m3/s / 53% of the time to land (inland)	Option 4	Land 55% / River 45%
7		L+R(d-2) to land <62m3/s / 43% of the time to land (inland)	Option 4	Land 55% / River 45%
8		L+R(e-1) to land <80m3/s / 53% of the time to land (coastal)	Option 4	Land 55% / River 45%
9		L+R(e-2) to land <62m3/s / 43% of the time to land (coastal)	Option 4	Land 55% / River 45%
10	Option 6: Ocean	O+L ocean with land (assume coastal)	Option 6	Ocean
11		Ocean discharge only / ocean	Option 6	Ocean

The following steps were followed in completing the assessment and scoring:

1. Report findings for the two surveys in the Engagement Feedback Report were reviewed and the percentage of respondents who preferred each option collated. Written submissions which were part of engagement round two were combined with survey results for round two.
2. Scoring criteria was adapted from that used for the other BPO comparative assessments with support level scores 1 - 5 defined to align with other comparative assessments i.e. Level 1 was defined as indicating a low level of support (<20%) and level 5 reflecting high levels of support (>50%). Specific definitions for each scoring level are shown in Table 3 below.
3. The response preferences as a percentage of total responses for each option in each engagement round were entered into Table 4, the assessment table.
4. Weightings were applied with more weight given to round two of engagement based on the assumption that participants had acquired greater understanding of the options and so were able to provide more informed feedback. Round one results were assigned a 30% weighting and round two results were assigned a 70% weighting.
5. Weighted preferences expressed as a percentage were combined to provide an overall preference percentage for the two engagement rounds.
6. For each option, a support level score was assigned based on the weighted percentage of preferences.

3.2 Scoring

Table 3 outlines the levels of support ranging from 1 to 5 and the classification criterion for each level.

Table 3: Public support scoring criterion

Description	Level
Little or no support based on feedback from the public (<20%) of feedback identified as most preferred)	1
Feedback doesn't provide a clear indication of support (20 – 30%) feedback identified as most preferred)	2
Feedback indicates some support (30 - 40%)	3
Moderate level of support based on feedback from the public (40 -50%)	4
High level of support based on feedback from the public (>50% of feedback identified as most preferred)	5

4 Analysis

Table 4 shows the original percentage scores of support for each option from survey one and survey two, and the weighted scores for each survey. As described in the methodology, both weighted scores were combined and the support level was assigned from Table 3.

Table 4: Assessment table

	Unweighted option preference %		Weighted option preference %		Combined weighted preferences (%) and Support level scores	
Shortlist Option	Round 1*	Round 2	Round 1 (30%)	Round 2 (70%)	Combined % (rounded)	Support level Score
1	32	28	10	20	29	2
2	19	0	6	0	6	1
3	32	0	10	0	10	1
4	9	25	3	18	20	2
6	8	47	2	33	35	3

*Percentage scores from Round 1 have been standardised on the basis that Option 5 was not considered in Round 2. Therefore the original score was divided by .88 to standardise percentages after the removal of 12% for Option 5, which was found to be unfeasible and is not included in this assessment.

5 Assessment & Scoring

Table 5 summarises the shortlist option and descriptions as described in engagement round one. The final combined weighted preferences by percentage, along with the applicable support level score are shown in the far right column.

Table 5: Detailed option description and scoring

Option number	Shortlist Option	Description	Weighted score
1	Option 1: R2	R2(b) River discharge with enhanced treatment	2
			29%
2		R2 (b-2) 75% ADWF to land / river discharge with enhanced treatment	2
			29%
3	Option 2: Dual R + L	Dual R+L (b) 75% of the time application to land / two river discharge points	1
			6%
4	Option 3: L+R (a) & (b)	L+R(a) 97% of the time to land (inland)	1
			10%
5		L+R(b) 97% of the time to land (coastal)	1
			10%
6	Option 4: L + R (d) & (e)	L+R(d-1) to land <80m3/s / 53% of the time to land (inland)	2
			20%
7		L+R(d-2) to land <62m3/s / 43% of the time to land (inland)	2
			20%
8		L+R(e-1) to land <80m3/s / 53% of the time to land (coastal)	2
			20%
9		L+R(e-2) to land <62m3/s / 43% of the time to land (coastal)	2
			20%
10	Option 6: Ocean	O+L ocean with land (assume coastal)	3
			35%
11		Ocean discharge only / ocean	3
			35%

6 Recommendations

6.1 Options ranking

Table 7 below shows the ranked order of options based on the assessment and the support levels scoring. Where options were given the same score they have been given an equivalent rank order.

Table 6: Options ranking

Option	Description	Ranking
1	R2(b) River discharge with Enhanced Treatment	3
2	R2(b) River discharge with Enhanced Treatment, 75% ADWF to land at low River flow	3
3	Dual R+L(b) Two River discharge points with 75% ADWF to Land at low River flow	11
4	L+R (a) 97% of the time to Land (inland)	9
5	L+R (b) 97% of the time to Land (coastal)	10
6	L+R (d-1) to Land <80m^3/s / 53% of the time to Land (inland)	5
7	L+R (d-2) to Land <62m^3/s / 43% of the time to Land (inland)	5
8	L+R (e-1) to Land <80m^3/s / 53% of the time to Land (coastal) TN = 35 mg/L	5
9	L+R (e-2) to Land <62m^3/s / 43% of the time to Land (coastal) TN = 35 mg/L	5
10	O+L / Ocean with Land (coastal)	1
11	Ocean discharge	1

6.2 Summary

Overall there was not strong support for any one of the survey options:

- The ocean discharge option (Option 6) received the highest level of support at 35% (weighted score).
- Options proposing a combination of land and river (options 2, 3 and 4) discharge received the lowest overall support.
- Of the combination land and river options, option 4 which proposed 45 – 55% splits between land and river discharge received the most support.
- The river discharge option (option 1) received some support.
- The ocean discharge option (option 6) also received some support.

Appendix 1:

Engagement Feedback Summary Report

Palmerston North City Council

Wastewater BPO

Engagement Feedback Report

June 2021

JUST ADD LIME

Contents

1. Introduction 4
   1.1. Purpose and structure of this report 4
   1.2. Limitations and assumptions 4
2. Survey demographics 5
   2.1. Age groups 5
   2.2. Gender 5
   2.3. Tangata whenua affiliation 6
   2.4. Residential and business respondents 6
   2.5. Where people live 7
      2.5.1. Place of residence 7
      2.5.2. Environment of residence 7
      2.5.3. Recreational users of river and coast 7
3. Survey results – all options 8
4. Survey results - river options 9
   4.1. Preference by age and gender 9
   4.2. Preference by tangata whenua 10
   4.3. Preference by home and business owners 10
   4.4. Preference by place of residence 11
   4.5. Preference by environment of residence 11
   4.6. Preference by recreational users of river and coast 12
5. Survey results - land and river options 13
   5.1. Preference by age and gender 13
   5.2. Preference by tangata whenua 14
   5.3. Preference by home and business owners 14
   5.4. Preference by place of residence 15
   5.5. Preference by environment of residence 15
   5.6. Preference by recreational users of river and coast 16
6. Survey results - ocean options 17
   6.1. Preference by age and gender 17
   6.2. Preference by tangata whenua 18
   6.3. Preference by home and business owners 18
   6.4. Preference by place of residence 19
   6.5. Preference by environment of residence 19
   6.6. Preference by recreational users of river and coast 20
7. Survey results – values and outcomes 21
   7.1. What people like about their preferred option 21
   7.2. River Options 22
   7.3. Land and River Options 23
   7.4. Ocean Options 24
   7.5. What outcomes matter most 25
8. Summary of written submissions and other feedback 26
   8.1. About submitters 26
   8.2. Preferred options 27
   8.3. Values and outcomes 27
   8.4. Social pinpoint 27
9. Summary and conclusions 1
   9.1. Preferred options 1
   9.2. Supported values and outcomes 1

Contents

List of Figures

Figure 1: Survey respondents by age group....5
Figure 2: Gender....5
Figure 3: Tangata whenua affiliation....6
Figure 4: Business respondents....6
Figure 5: Home owner respondents survey 1....6
Figure 6: Respondents living in Palmerston North....7
Figure 7: Environment people live in....7
Figure 8: Recreational users of river and coast - survey 1....7
Figure 9: Options preference (all options) survey 1....8
Figure 10: All respondents preferred option....8
Figure 11: Preference by age group – river options....9
Figure 12: Preference by gender – river options....9
Figure 13: Preference by tangata whenua – river options....10
Figure 14: Preference by home owners – river options....10
Figure 15: Preference by business owners – river options....10
Figure 16: Preference by place of residence – river options....11
Figure 17: Preference by environment of residence – river options....11
Figure 18: Preference by recreational users – river options....12
Figure 19: Preference by age group – land and river options....13
Figure 20: Preference by gender – land and river options....13
Figure 21: Preference by tangata whenua – land and river options....14
Figure 22: Preference by home owners – land and river options....14
Figure 23: Preference by business owners – land and river options....14
Figure 24: Preference buy place of residence – land and river options....15
Figure 25: Preference by environment of residence – land and river options....15
Figure 26: Preference by recreational users – land and river options....16
Figure 27: Preference by age group – ocean options....17
Figure 28: Preference by gender – ocean options....17
Figure 29: Preference by tangata whenua – ocean options....18
Figure 30: Preference by home owners – ocean options....18
Figure 31: Preference by business owners – ocean options....18
Figure 32: Preference buy place of residence – ocean options....19
Figure 33: Preference by environment of residence – ocean options....19
Figure 34: Preference by recreational users – ocean options....20
Figure 35: Word Cloud Survey 1 Reasons for preferred river option....22
Figure 36: Survey 2 Value rankings by river option supporters....22
Figure 37: Word Cloud Survey 1 Reasons for preferred land and river option....23
Figure 38: Survey 2 value rankings by land and river option supporters....23
Figure 39: Word Cloud Survey 1 reasons for preferred ocean option....24
Figure 40: Survey 2 value rankings by ocean option supporters....24
Figure 41: Word Cloud S1 all respondents - What matters most?....25
Figure 42: Sector representation of submissions....26
Figure 43: Option preference from submitters....27

List of Tables

Table 1: Options common between survey 1 and survey 2....8

Appendices

Appendix A: Written Submissions

1. Introduction

Palmerston North City Council is investigating options for a new wastewater system using a Best Practicable Option (BPO) process. A range of options were developed, and longlist and shortlist option processes involving technical investigations, multi-criteria analysis and iwi engagement have been completed. Two public consultation periods have been held as part of this process to determine preferred options and the values and priorities held by the Palmerston North community with regard to wastewater discharge. Both consultations offered a survey for the public to submit online, or on paper through engagement events. Public consultation was supported by factsheets, brochures, and multimedia resources. More information about the engagement and the engagement materials for this project can be found on the Nature Calls website https://www.pncc.govt.nz/naturecalls.

1.1. Purpose and structure of this report

The purpose of this report is to summarise feedback received during two consultation periods:

June – July 2020

- Feedback was collected through online and paper surveys.

April – May 2021

- Feedback was collected through online and paper surveys, written submissions and comments via comments.

The report first summarises the feedback received through surveys, presenting demographic information, preferred options and analysis and values for both surveys to provide a snapshot of each survey and enable comparisons of how demographics, preferences, and values have changed between the two consultation periods and associated options. Second, written submissions are summarised with demographic information, option preferences and values described where possible.

In addition, feedback received through the online engagement platform social pinpoint is included although this feedback option had very low uptake.

An overall summary is provided to conclude the report.

1.2. Limitations and assumptions

In the analysis of feedback and development of this report the following limitations have been identified.

- The demographics of two surveys are not directly comparable, as there were key differences including differences in questions about gender, tangata whenua identification, and home ownership between survey 1 and survey 2.
- Option preferences are not directly comparable – at the time of survey 1 there were six options being consulted on, at the time of survey 2 that number had been reduced to three.
- Rankings and preferences of values and options are not directly comparable between the two surveys. Survey 1 asked participants to rank values, Survey 2 asked them to rank options.
- For the purposes of this report, the written submissions have been summarised in a way that enables consideration alongside the surveys. This does not capture the range and complexity of information and feedback provided in the submissions nor recommendations made in them.
- The low number of written submissions means that the summary should not be considered representative of any demographic group or of the population of Palmerston North.

This report reflects the identity, preferences, values and views of individuals and organisations that participated in the two consultation periods. These may not reflect or be representative of the Palmerston North population.

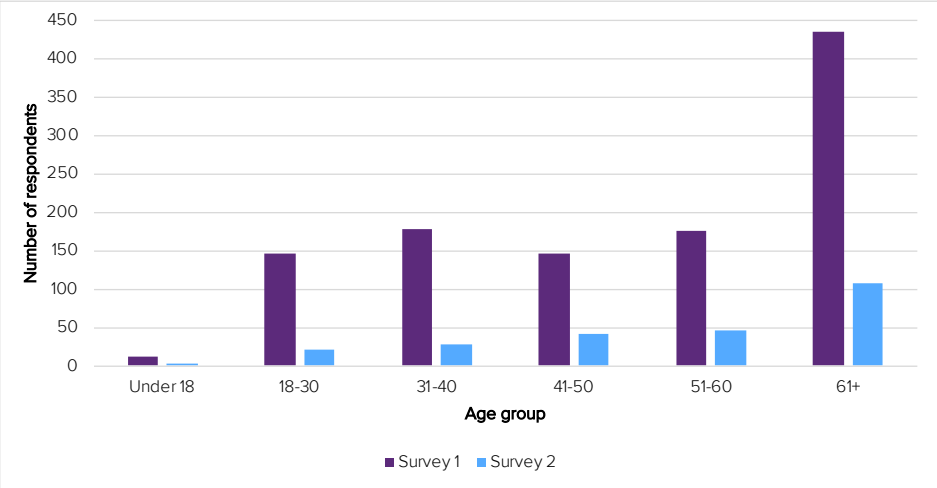
2. Survey demographics

2.1. Age groups

Overall there was a significantly higher participation rate in survey 1 compared to survey 2 with over 4 times the number of respondents to survey 1.

Figure 1 shows survey 1 and survey 2 both yielded a high proportion of participants in the 61 years + age group, and low participation rates from the under 18 age group. While survey one had roughly even participation from the middle range age groups, survey two shows consistently increasing participation as age groups increase.

Figure 1: Survey respondents by age group

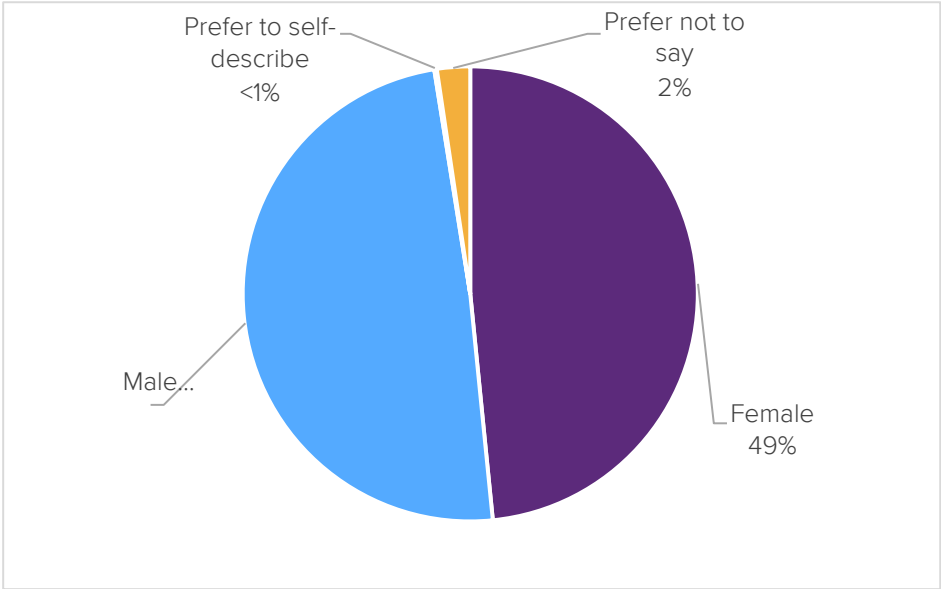


2.2. Gender

Gender identification was asked in survey 1, but not survey 2.

Participants in survey 1 were given options to self-describe or not state a gender, along with male and female options. Figure 2 shows that participation was split evenly between males and females with 2% opting not to state their gender.

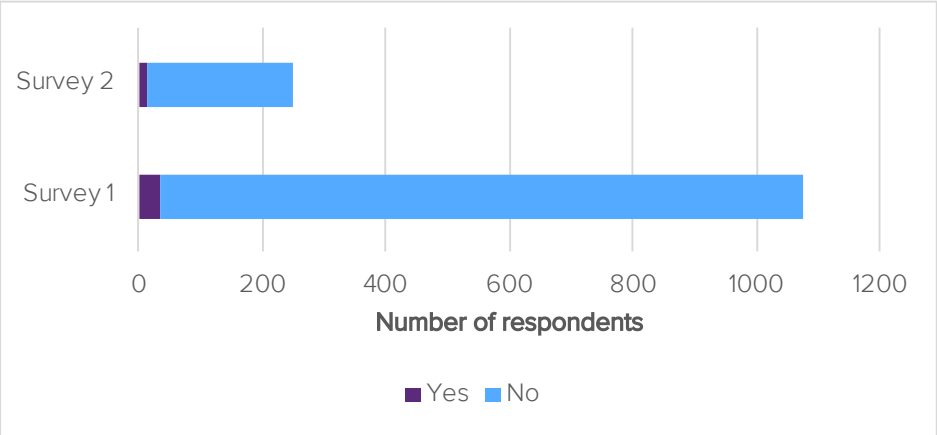
Figure 2: Gender



2.3. Tangata whenua affiliation

Both surveys show a small percentage of participation by those who identify as tangata whenua with higher representation in survey 2.

Figure 3: Tangata whenua affiliation



2.4. Residential and business respondents

In order to understand whether respondents were business owners or not survey 1 asked participants to identify whether they were a business owner in Palmerston North. Survey 1 also asked people to identify as home owners. It can be expected that some respondents may have been both business owners and home owners. Survey 2 did not include a question about home ownership.

Figure 4: Business respondents

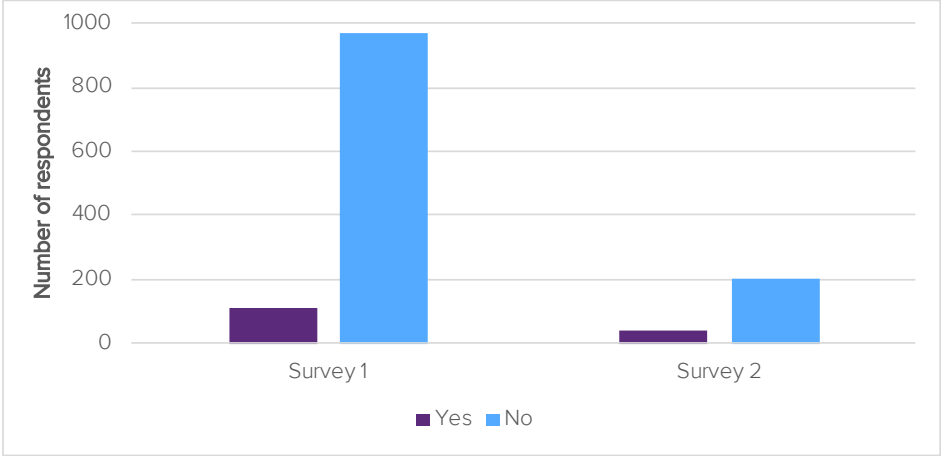
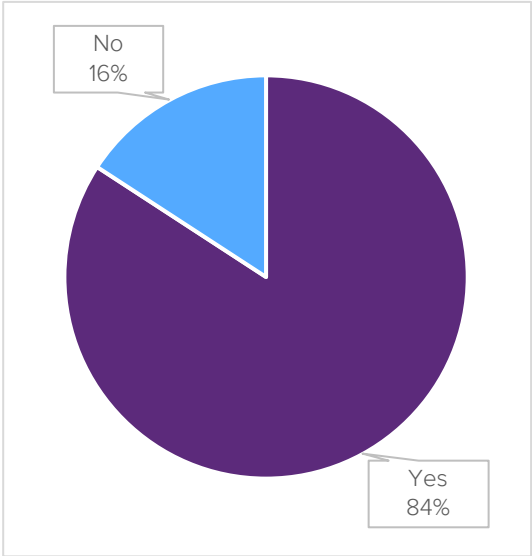


Figure 5: Home owner respondents survey 1



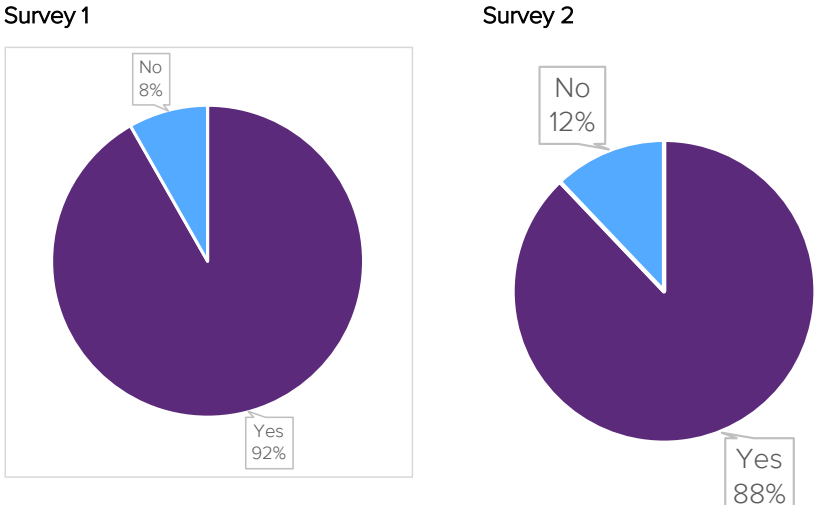
Both surveys show a similar proportion of business owners participating, with survey 2 having a higher rate of business owner participation compared with non-business owners.

2.5. Where people live

2.5.1. Place of residence

Survey 1 asked participants where they live and provided options of Palmerston North, Horowhenua, Manawatu and other. All answers for survey 1 except Palmerston North have been classified as “no” to enable comparison with survey 2 which asked participants if they live in Palmerston North and did not provide other options.

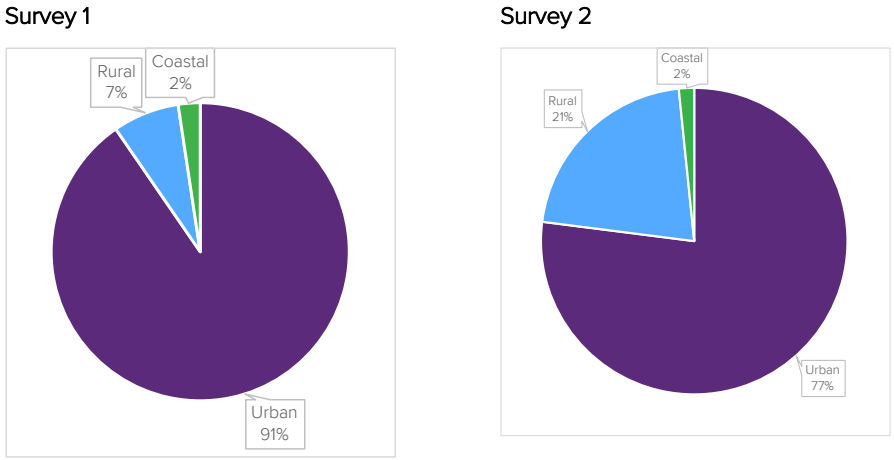
Figure 6: Respondents living in Palmerston North



2.5.2. Environment of residence

Both surveys provided participants with options of urban, rural and coastal to describe the environment of their residence. While survey 1 respondents are overwhelmingly urban, a greater proportion of rural residents participated in survey 2. Representation of coastal residents is consistent at 2%.

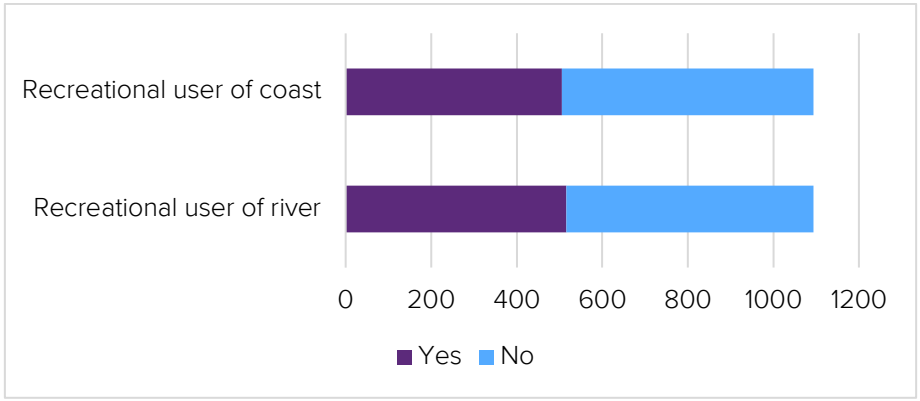
Figure 7: Environment people live in



2.5.3. Recreational users of river and coast

Survey 1 asked respondents if they are regular recreational users of the Manawatū River or coast. Just under half of participants identified as regular users of the river and/or the coast.

Figure 8: Recreational users of river and coast - survey 1



3. Survey results – all options

This section presents the preferred options for survey 1 and survey 2. At the time of survey 1 there were six shortlist options, all included in the survey. By April 2021, the time of survey 2, this shortlist had been further reduced to three options. This section reports on the three survey 2 options, and the survey 1 options that correspond to those. The options from the shortlist in survey one that did not progress have not been included except in Figure 9 where a full summary of results for survey 1 options is provided.

Table 1: Options common between survey 1 and survey 2

Option	Survey 1 (June 2020)	Survey 2 (April – June 2021)
River Option	Option 1: River	Option 1: River
Land and River Option	Option 4: Land & River 45-55%	Option 2: Land & River 45-55%
Ocean Option	Option 6: Ocean	Option 3: Ocean

Figure 9: Options preference (all options) survey 1

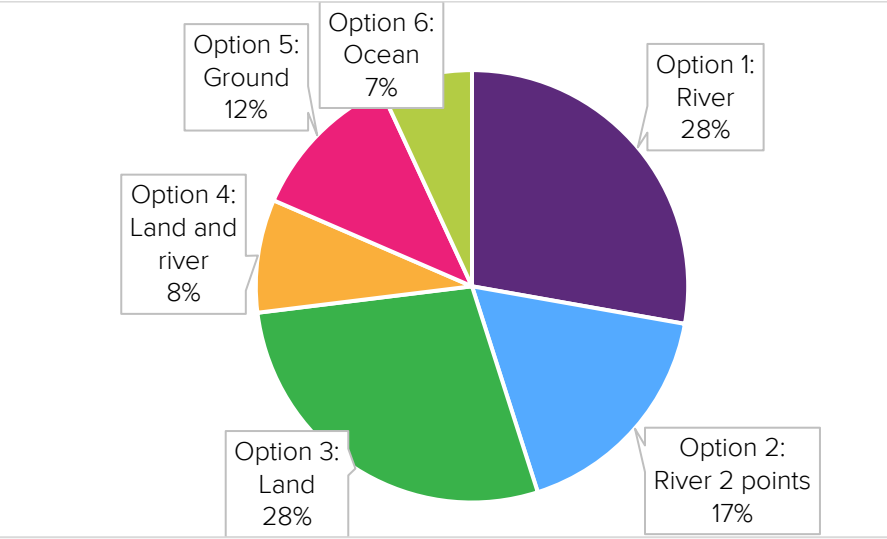
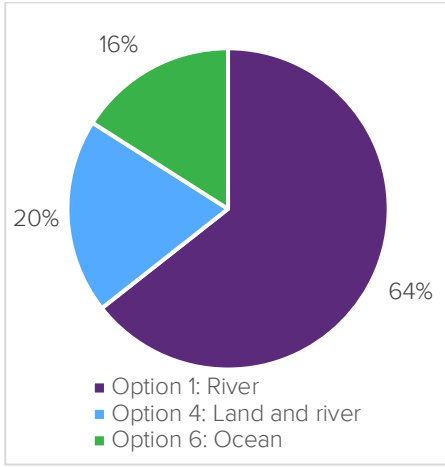
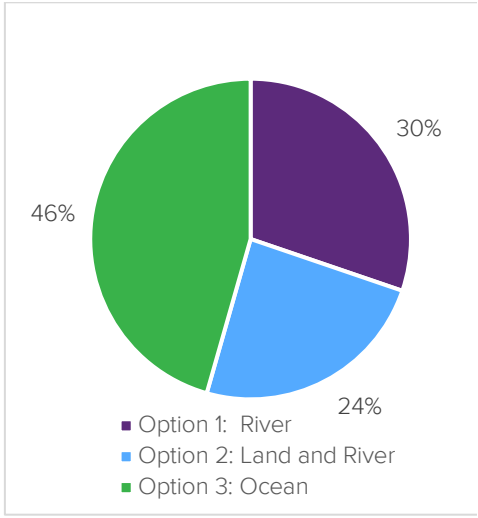


Figure 10: All respondents preferred option

Survey 1



Survey 2



Error! Not a valid bookmark self-reference. and **Error! Reference source not found.** show a significant change in support for river and ocean options while the popularity of land and river options has remained consistent. Support for discharge to the ocean has more than doubled, while support for discharge to the Manawatū River has more than halved.

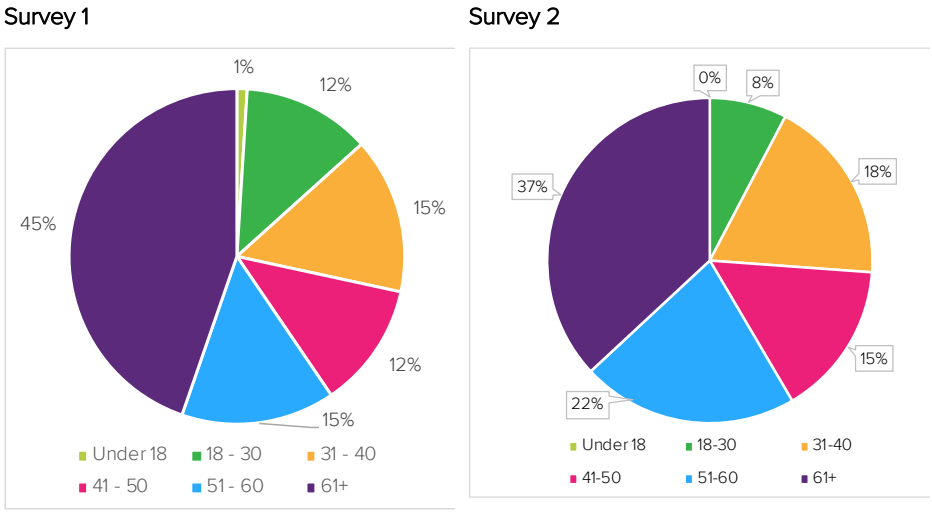
Survey 1 asked respondents to rank the six options from most preferred to least preferred, and for the purposes of this report, the options ranked first and second have been counted as preferred options. Survey 2 asked participants to identify their one preferred option of the three being consulted on.

4. Survey results - river options

4.1. Preference by age and gender

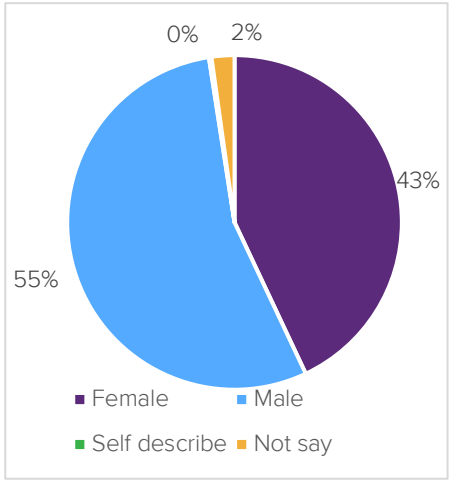
Among those who prefer the discharge to river options, there is little change between the two survey periods in age group representation, which is consistent with overall survey participation for both surveys. One small change is a decrease in support from the 61+ age group and an increase from the 51 – 60 age group.

Figure 11: Preference by age group – river options



Survey 1 asked participants to identify their gender and the results for the river only option skew towards males compared with the gender representation of all participants.

Figure 12: Preference by gender – river options

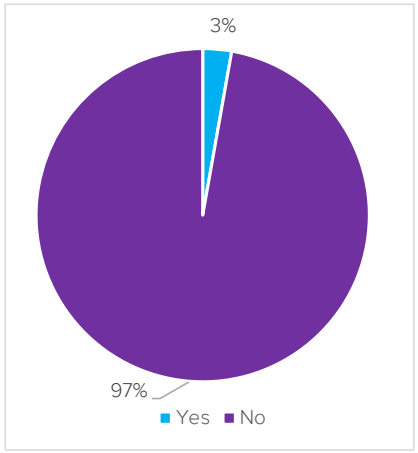


4.2. Preference by tangata whenua

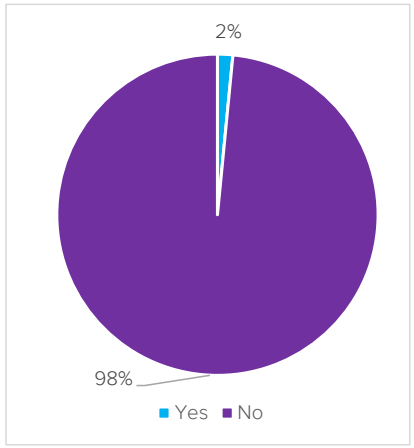
Support for discharge to river options has remained consistent from those who identify as Tangata Whenua.

Figure 13: Preference by tangata whenua – river options

Survey 1



Survey 2

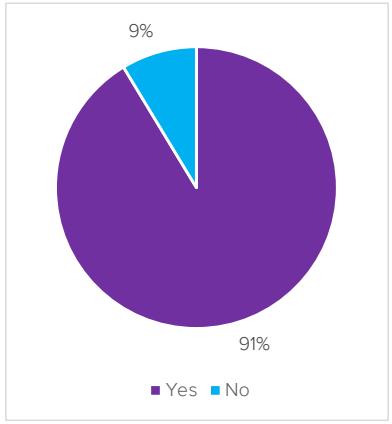


4.3. Preference by home and business owners

With 91% support from home owners, the rivers option has slightly higher support than the 84% baseline of respondents for all options.

Survey 2 did not include a question about home ownership.

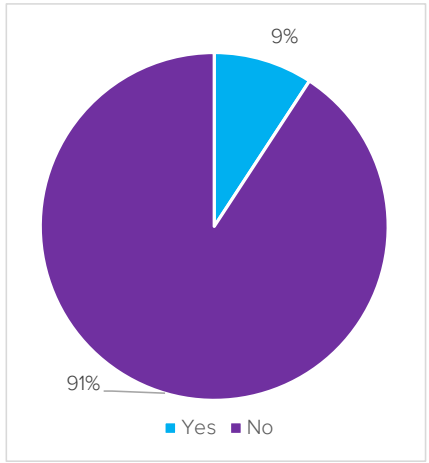
Figure 14: Preference by home owners – river options



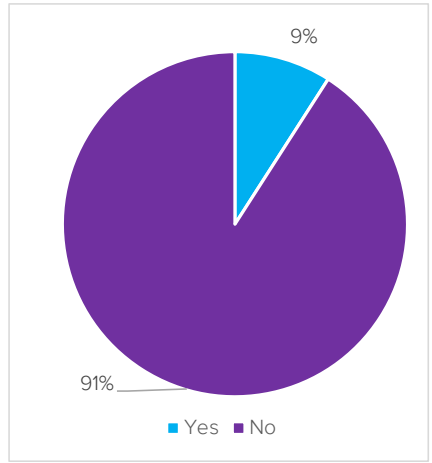
Support from business owners for options proposing discharge to river has remained consistent.

Figure 15: Preference by business owners – river options

Survey 1



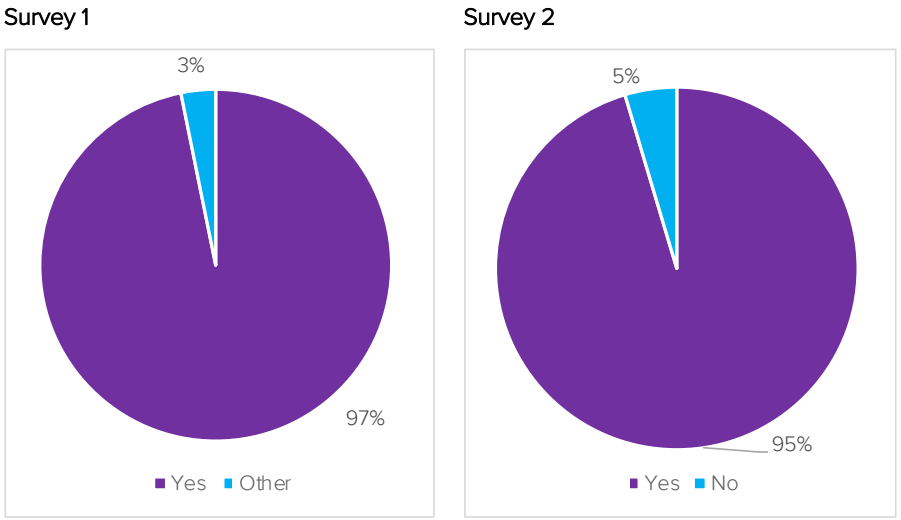
Survey 2



4.4. Preference by place of residence

92% and 88% participation by Palmerston North residents for survey 1 and survey 2 respectively indicates a higher rate of support from Palmerston North residents for river options.

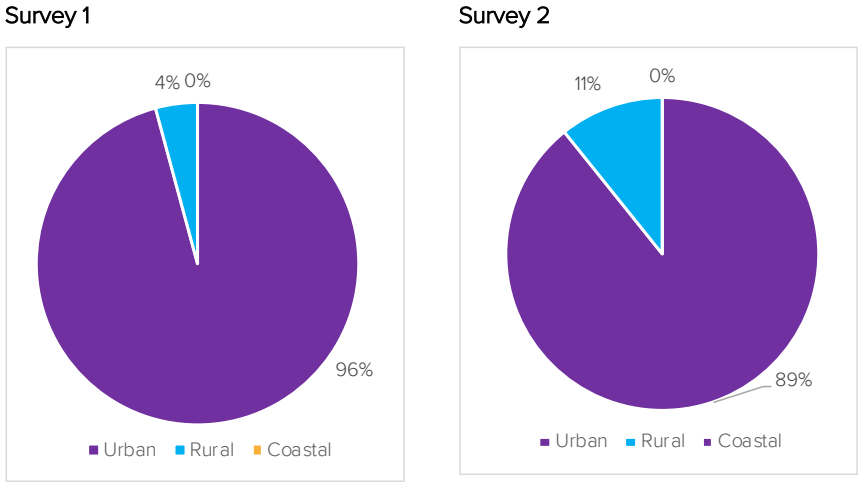
Figure 16: Preference by place of residence – river options



4.5. Preference by environment of residence

The level of support for discharge to river options has reduced among those who live in an urban environment and increased among those who live in a rural environment between the two survey periods. Even though the level of support from urban residents has decreased, it is higher than their proportional participation in both surveys, and even though the level of support from rural residents has increased, it is lower than their proportional participation in both surveys, indicating higher overall support from urban residents and lower support from rural residents. There was little to no support for the river options from coastal dwellers.

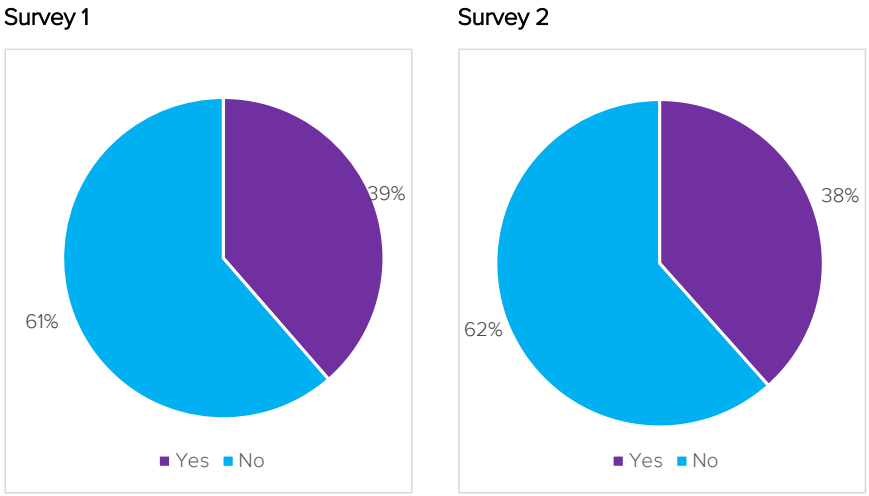
Figure 17: Preference by environment of residence – river options



4.6. Preference by recreational users of river and coast

Survey 1 asked respondents if they are regular recreational users of the Manawatū River and of the coast. Of the supporters for option 1 – discharge to river - 39% are regular river users and 38% are regular coast users.

Figure 18: Preference by recreational users – river options

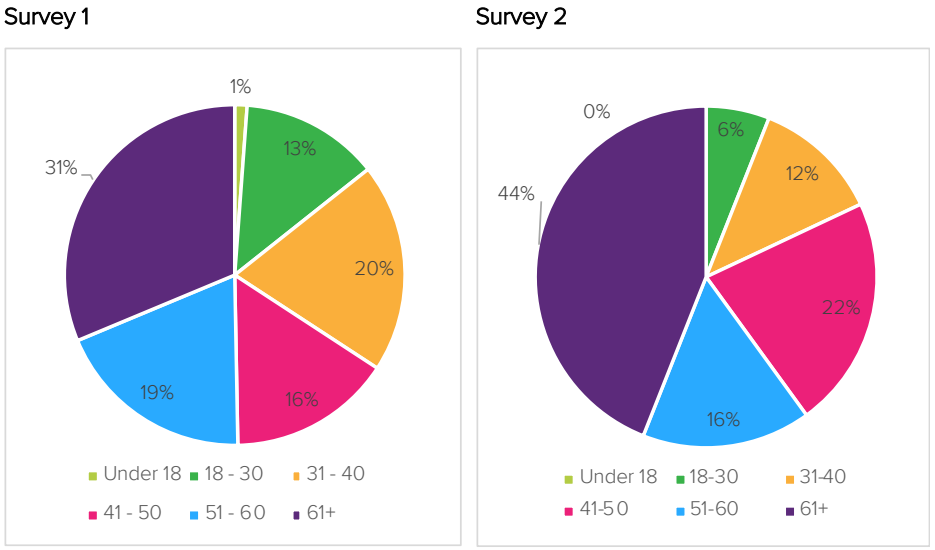


5. Survey results - land and river options

5.1. Preference by age and gender

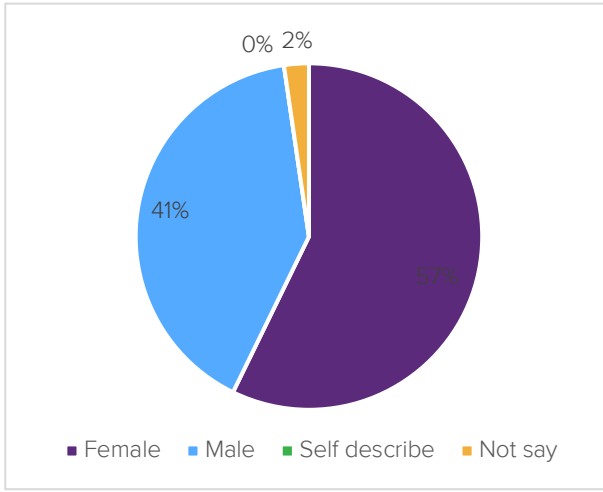
Participants who support discharge to both land and river have consistent representation across age groups between the two surveys, with a slight increase in support from the 61+ and 41-50 year age group, and a slight decrease in support from age groups under 40 years.

Figure 19: Preference by age group – land and river options



Survey 1 asked participants to identify their gender and the results for the land and river option skew towards females compared with the gender representation of all participants.

Figure 20: Preference by gender – land and river options

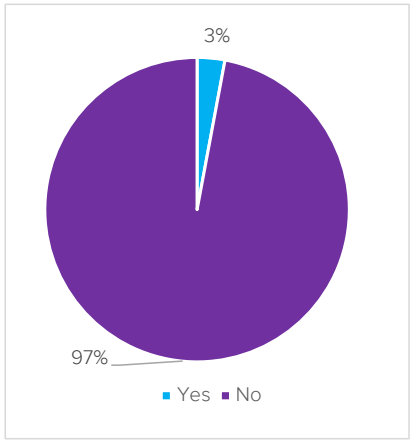


5.2. Preference by tangata whenua

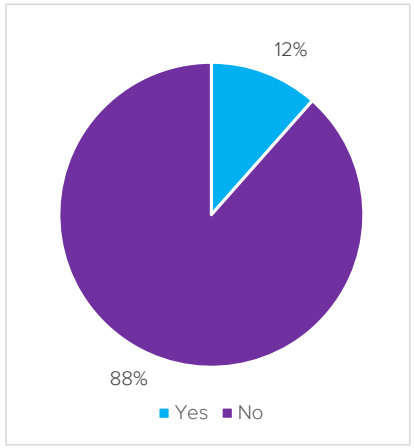
Support for discharge to a balance of land and river has grown among those survey participants who identify as Tangata Whenua.

Figure 21: Preference by tangata whenua – land and river options

Survey 1



Survey 2

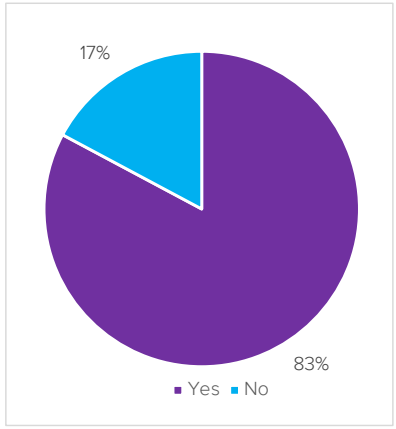


5.3. Preference by home and business owners

With 83% support from home owners, the land and river option a level of home owner support consistent with the survey 1 home owner participation rate of 84%.

Survey 2 did not include a question about home ownership.

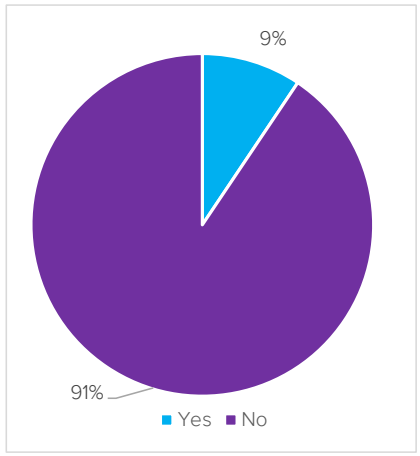
Figure 22: Preference by home owners – land and river options



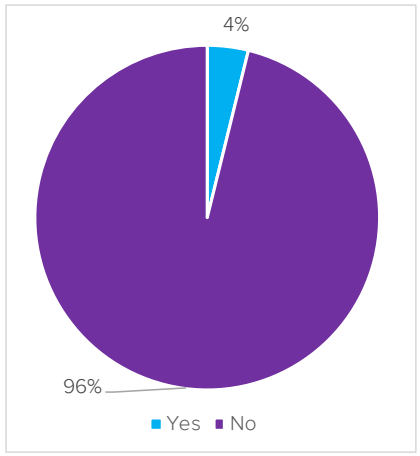
Support from business owners for options proposing discharge to a balance of land and river has reduced slightly from survey 1 to survey 2.

Figure 23: Preference by business owners – land and river options

Survey 1



Survey 2

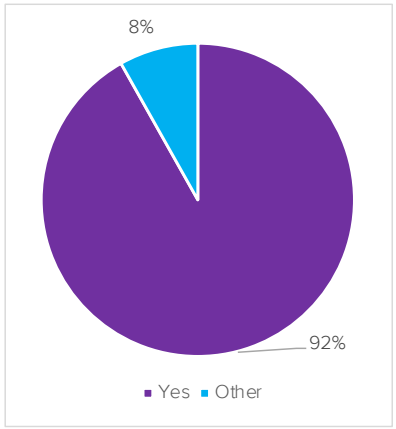


5.4. Preference by place of residence

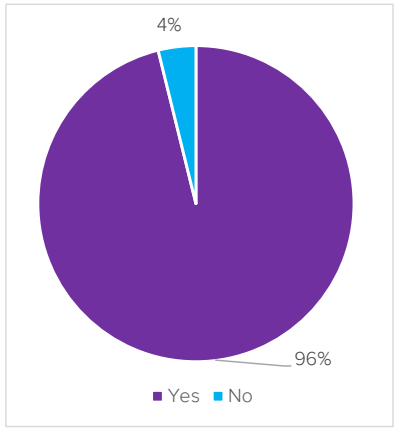
These results indicate support for a balance of discharge to land and river has grown among Palmerston North residents between the two survey periods.

Figure 24: Preference buy place of residence – land and river options

Survey 1



Survey 2

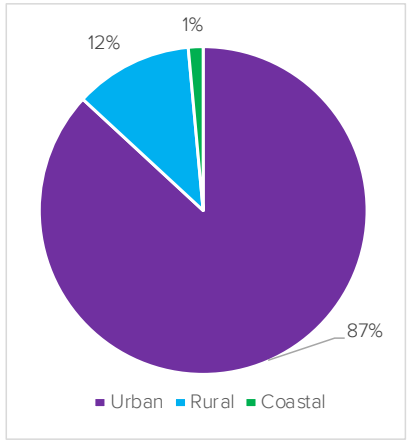


5.5. Preference by environment of residence

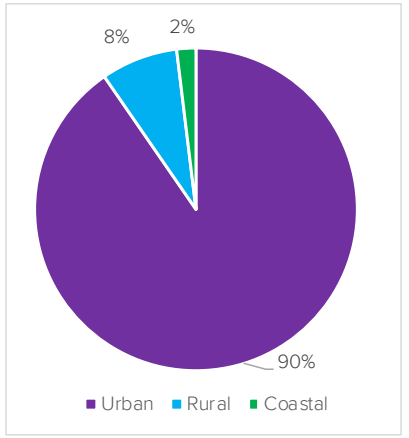
Support for a combination of discharge to land and river options has significantly increased for urban dwellers given their participation rate in survey 2 (72%) was lower than survey one (91%). Although many more rural residents participated in survey 2 (21% compared with 7% for survey 1), their support level for land and river options has reduced between the two surveys.

Figure 25: Preference by environment of residence – land and river options

Survey 1



Survey 2

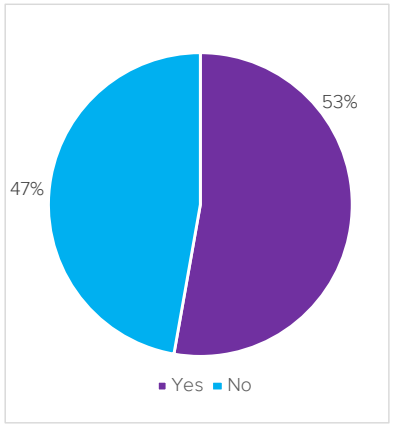


5.6. Preference by recreational users of river and coast

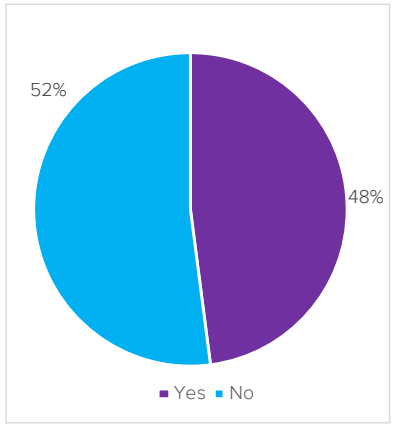
Survey 1 asked respondents if they are regular recreational users of the Manawatū River and of the coast. Of the supporters for option 4 – discharge to land and river, 53% are regular river users and 48% are regular coast users.

Figure 26: Preference by recreational users – land and river options

Survey 1



Survey 2

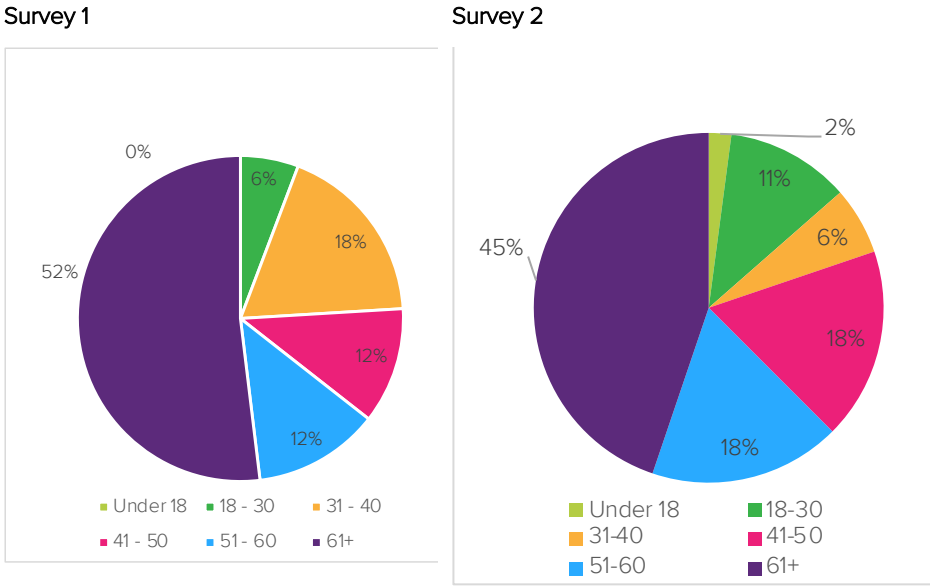


6. Survey results - ocean options

6.1. Preference by age and gender

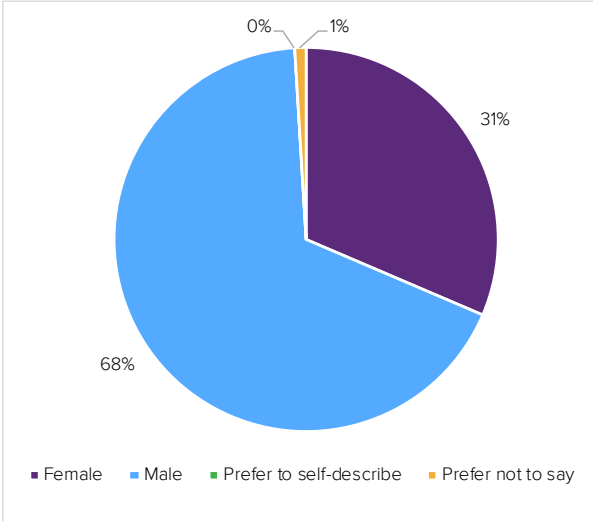
The 61+ age group shows a consistently high level of support for the ocean options, and support has grown within the 41-50 and 51-60 age groups and reduced in the 31-40 age group.

Figure 27: Preference by age group – ocean options



Survey 1 gender results for the ocean option indicate stronger support from males than any other gender group compared with overall gender representation in the survey.

Figure 28: Preference by gender – ocean options

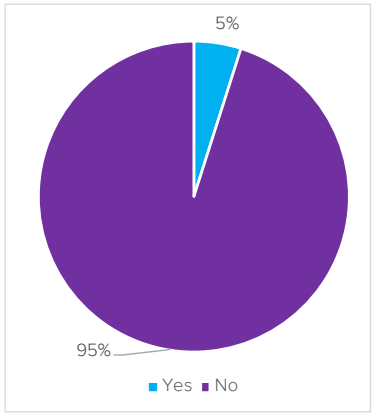


6.2. Preference by tangata whenua

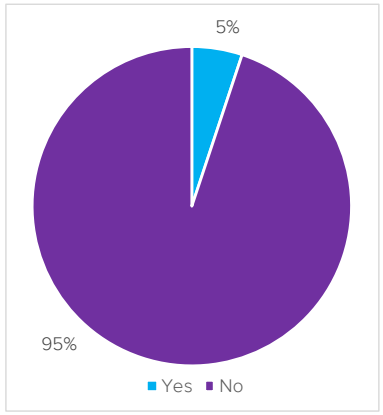
Support for discharge to the ocean has remained consistent at 5% from the survey respondents who identify as Tangata Whenua.

Figure 29: Preference by tangata whenua – ocean options

Survey 1



Survey 2

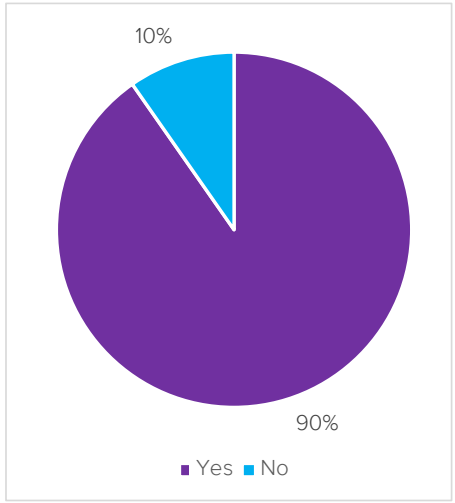


6.3. Preference by home and business owners

90% indicates a higher level of support than the survey participation rate of 83% for the discharge to Ocean option as presented in survey 1.

Survey 2 did not include a question about home ownership.

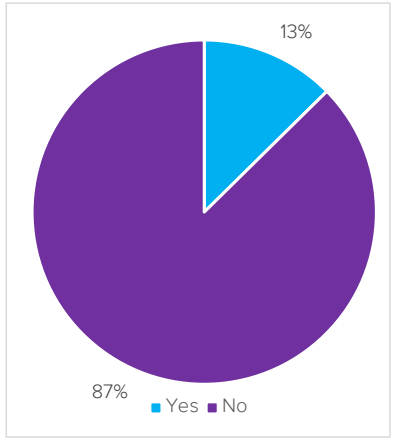
Figure 30: Preference by home owners – ocean options



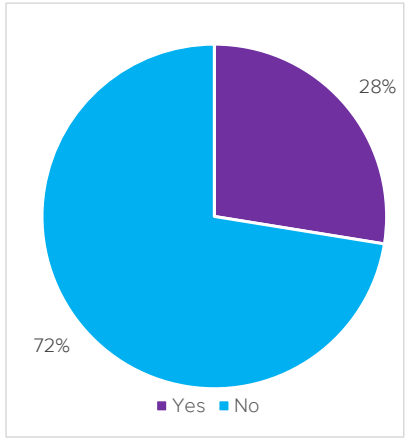
There has been a significant increase in business owner support for discharge to ocean options between survey 1 and survey 2.

Figure 31: Preference by business owners – ocean options

Survey 1



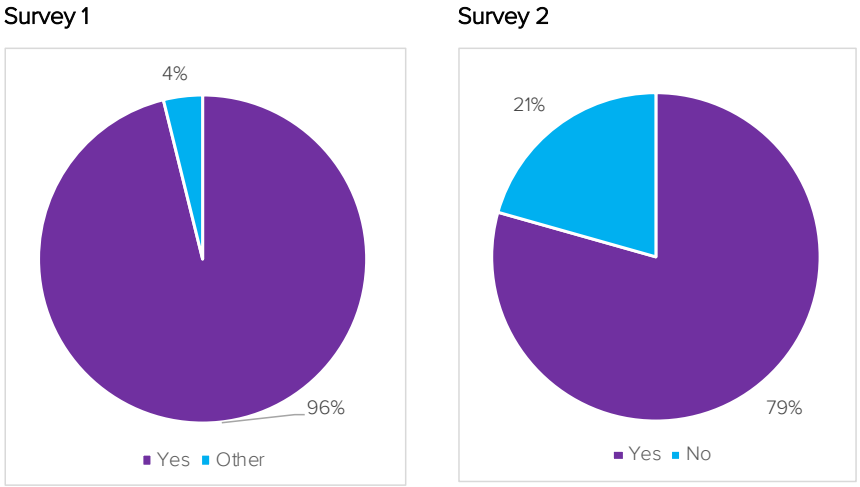
Survey 2



6.4. Preference by place of residence

These results indicate that the residents of Palmerston North residents have reduced their level of support for discharge to ocean options between the two survey periods.

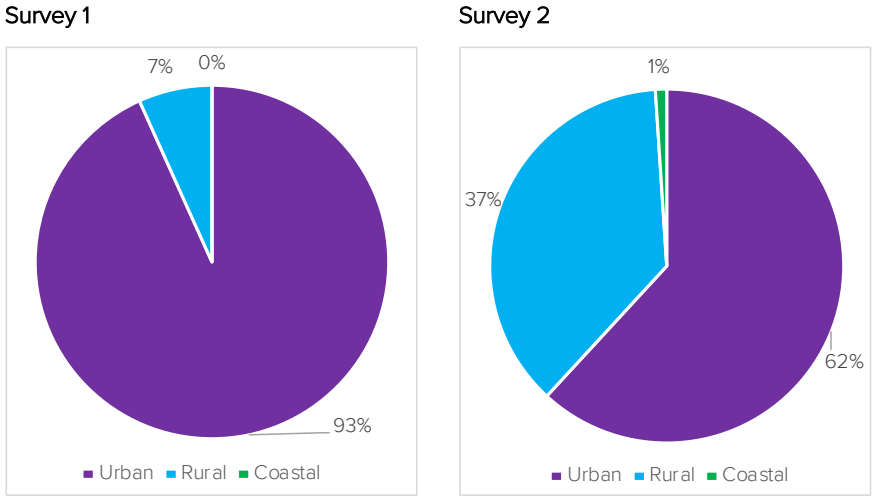
Figure 32: Preference buy place of residence – ocean options



6.5. Preference by environment of residence

Support for a options that propose discharge to the ocean has significantly decreased among urban dwellers and increased among rural dwellers between the two survey periods. Support from coastal residents has increased slightly.

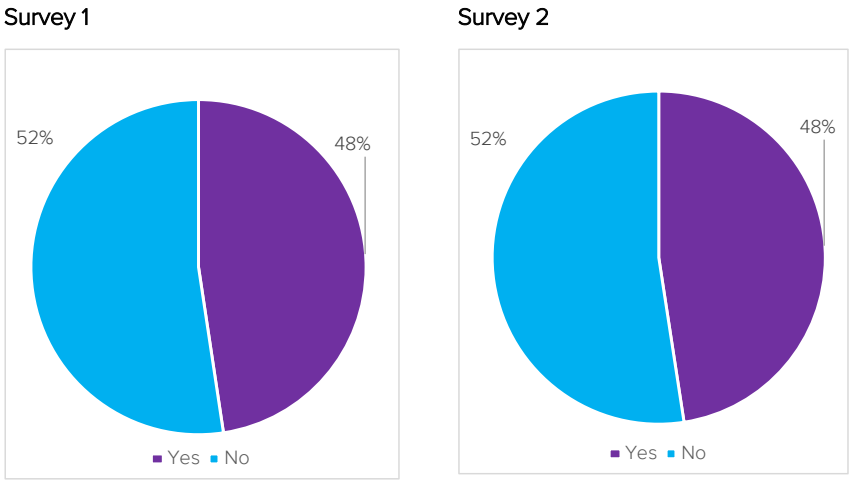
Figure 33: Preference by environment of residence – ocean options



6.6. Preference by recreational users of river and coast

Survey 1 asked respondents if they are regular recreational users of the Manawatū River and of the coast. Of the supporters for option 6 – discharge to the ocean, 48% are regular river users and 48% are regular coast users.

Figure 34: Preference by recreational users – ocean options



7. Survey results – values and outcomes

7.1. What people like about their preferred option

The two surveys provided different questions and possible responses for participants to indicate the values associated with and desired outcomes for their preferred option.

Survey 1 presented the question “Which option do you prefer and why?” and provided an open text field for responses. The content of the open text responses has been divided into groups for each option preferred and is presented in the following sections as word clouds. Word clouds are a visual tool to communicate the frequency words are used by font size. The bigger and bolder a word appears, the more often it has been used in answers. The words “outcome,” “option” and “water” have been removed from the word cloud to provide a clearer picture of feedback themes.

Survey 2 asked participants to rank the BPO outcomes from most important to least important. Participant rankings have been grouped by their preferred option and graphed to show how many people ranked each value first, second and third.

This section presents these findings for the river, land and river, and ocean options.

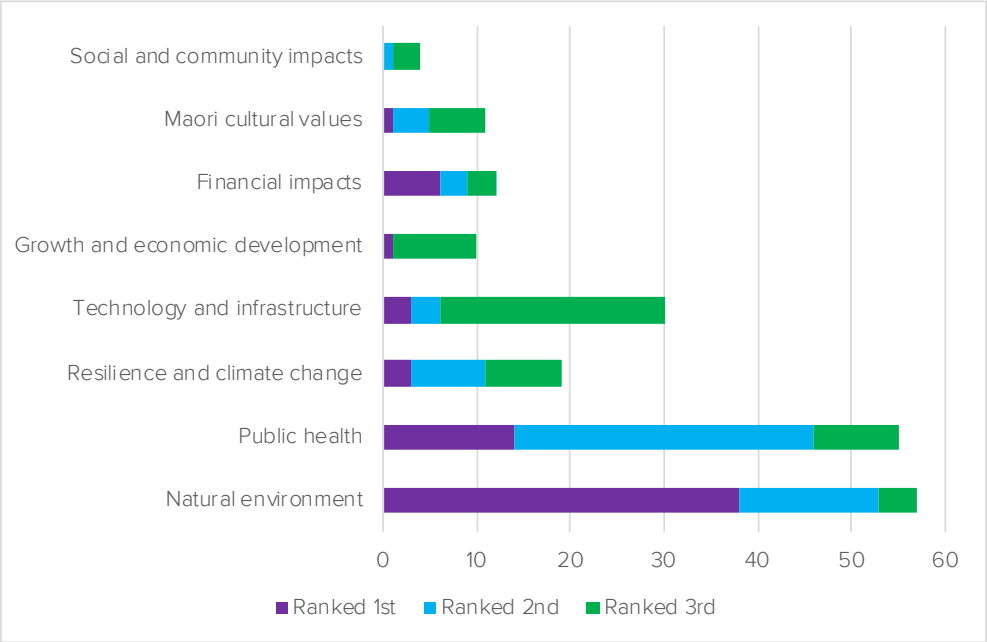
7.2. River Options

Figure 35 shows in a word cloud the reasons survey 1 participants who supported the river option gave for their choice.

Figure 35: Word Cloud Survey 1 Reasons for preferred river option

Error! Not a valid bookmark self-reference. shows how supporters of the river option ranked the eight BPO values presented in survey 2.

Figure 36: Survey 2 Value rankings by river option supporters



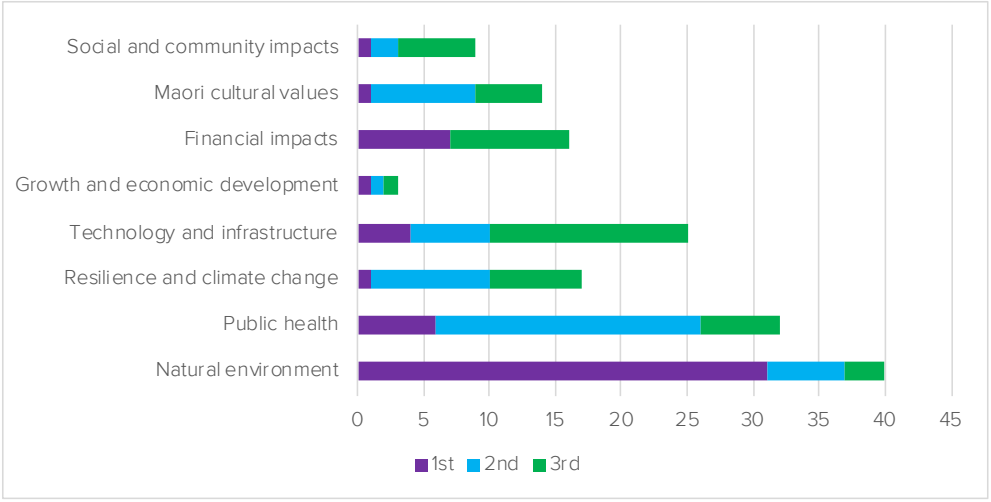
7.3. Land and River Options

Figure 37shows the reasons survey 1 participants who supported the land and river option gave for their choice.

Figure 37: Word Cloud Survey 1 Reasons for preferred land and river option

Figure 38 shows how supporters of the land and river option ranked the eight BPO values presented in survey 2.

Figure 38: Survey 2 value rankings by land and river option supporters



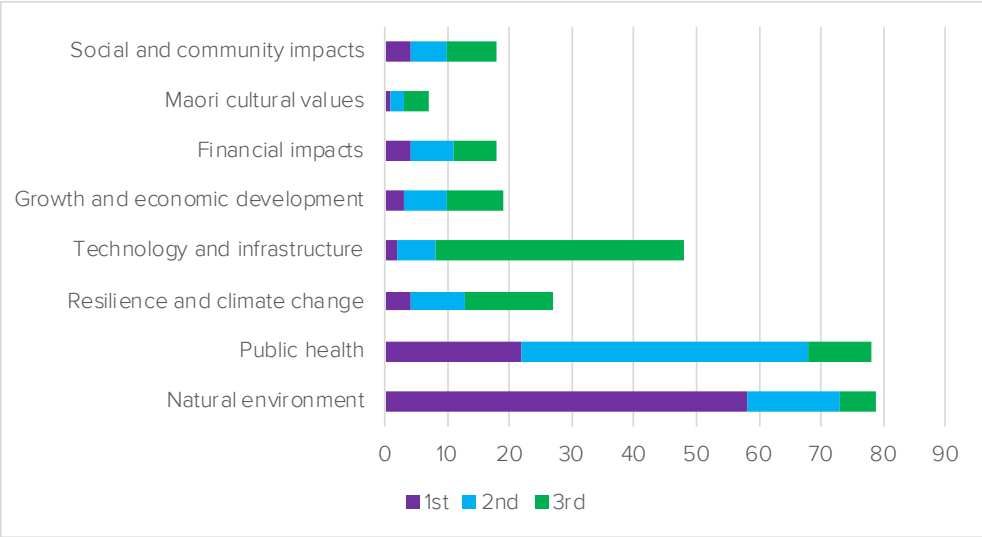
7.4. Ocean Options

Figure 39 shows the reasons survey 1 participants who supported the ocean option gave for their choice.

Figure 39: Word Cloud Survey 1 reasons for preferred ocean option

Figure 40 shows how supporters of the land and river option ranked the eight BPO values presented in survey 2.

Figure 40: Survey 2 value rankings by ocean option supporters



7.5. What outcomes matter most

Figure 41 presents a word cloud of the responses to the survey 1 question “what matters most to you?”

Figure 41: Word Cloud S1 all respondents - What matters most?

8. Summary of written submissions and other feedback

Twenty written submissions were received during the 2021 consultation period. Submissions took a variety of forms, including feedback forms, letters, and long form reports with appendices. Some submissions did not specify a preferred option but discussed the relative strengths and weaknesses from their perspective, and perceived implications for them or their constituents. Submissions include suggestions for alternative options, amendments to existing options or further investigation of existing options.

Some submitters voice concerns about the consultation process, saying they were not adequately consulted about perceived impacts on them, their properties and/or businesses.

The most substantial submission is a joint submission from the Food and Fibre Forum and Federated Farmers. Six other submissions state support for this one, including one by Federated Farmers separately.

The diverse nature and small number of the submissions precludes quantitative and qualitative analysis and this section will provide an overview of the submitters and preferred options and values where these were stated.

Where technical reports, recommendations and requests are made, Palmerston North City Council may consider the merits of these in the next phase of BPO technical investigations and engagement activities.

Written submissions are provided in Appendix A.

8.1. About submitters

20 written submissions were received, 14 from organisations and 6 from individuals.

The industry and interests represented by the organisations who submitted are shown in Figure 42, as well as two individuals who identified as farmers. The remaining four are shown as individuals.

Submissions were received from:

Farming:

- Food and Fibre Forum and Federated Farmers
- Federated Farmers
- Hopkins Farming Group
- Campbell Buchanan
- Peter Wells

Environmental:

- Environment Network Manawatū / Manawatū River Source to Sea
- Manawatu Forest and Bird
- Water and Environmental Care Association (WECA)
- The Water Protection Society
- Lower Manawatū Scheme
- Manawatū Drainage Scheme

Individuals:

- Dr Chris Teo- Sherrell
- BA and TG McErlean
- JFG O'Brien
- Mr Stacey Parlane

Council or Government:

- Manawatū District Council
- Horizons Regional Council
- Horowhenua District Council

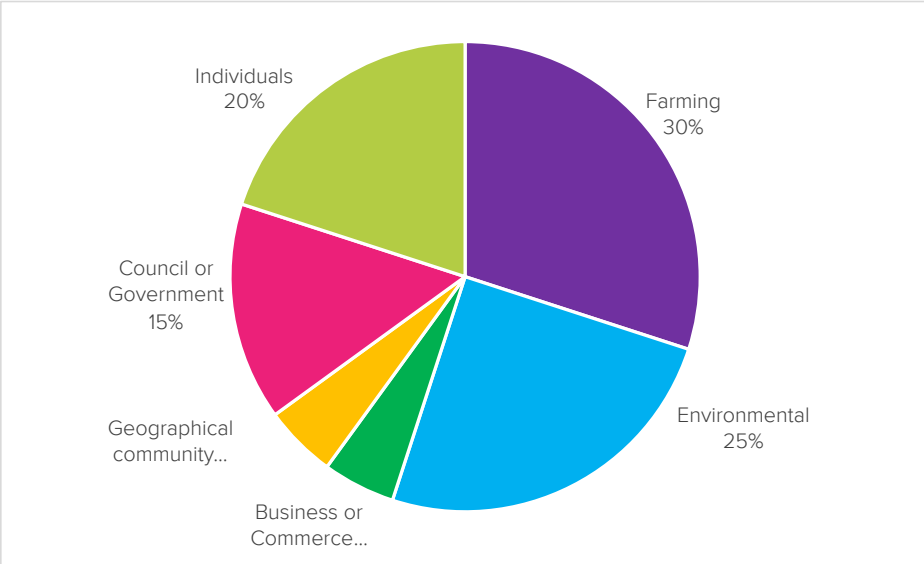
Business or Commerce:

- Manawatū Chamber of Commerce

Geographical community:

- Bainesse/Rangiotu Community Committee

Figure 42: Sector representation of submissions



8.2. Preferred options

Figure 43 shows the preferred options of written submitters where a preferred option was identified.

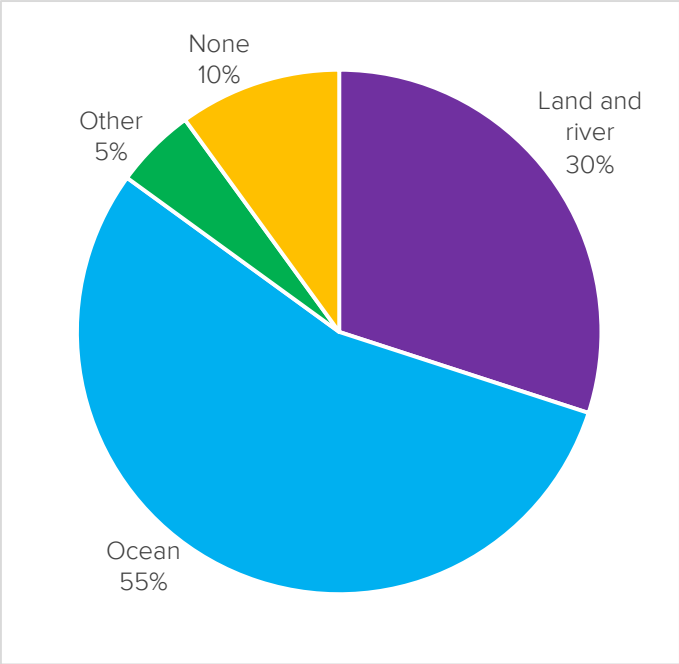
The ocean option is preferred by the Food and Fibre Forum, Federated Farmers and their supporters who state that options 1 and 2 not viable and that negative impacts to primary producers of discharge to land and/or river have not been considered sufficiently.

Support for the Land and River options is voiced by the Environmental groups who submitted and by the Manawatū and Horowhenua District Councils.

No preferred option was given by the Manawatū Chamber of Commerce or the Lower Manawatu Scheme.

The “other” preferred option proposes a higher percentage of discharge to land and more “front of pipe” measures to reduce quantities of wastewater.

Figure 43: Option preference from submitters



8.3. Values and outcomes

Of the five submissions specifically ranked BPO project outcomes, four rated public health the most important.

Four of those five submissions rated natural environment second.

The Food and Fibre Forum, Federated Farmers and supporters say they are unable to score the BPO values as they are based on an urban perspective and do not relate to them.

8.4. Social pinpoint

During April and May 2021, six pieces of feedback were received via online engagement platform, Social Pinpoint.

The six comments were received from four submitters, excluding two pieces of spam.

One comment supported land based discharge

The remainder voiced personal opinions upholding the importance of wise financial decisions, the environment and Te Ao Maori.

Another option was proposed by one submitter, to convert human waste to water and fertiliser.

.

9. Summary and conclusions

9.1. Preferred options

Discharge to ocean emerged as the preferred option for those who participated in the latest consultation period April to May 2021 with 46% support from survey participants and 55% support from written submissions.

The move towards ocean discharge corresponds with a move away from discharge to river, which had 64% support from participants in survey 1, reducing to 30% in survey 2.

In some demographics, there was strong support for a combination of land and river discharge however the overall results indicate a lower level of support for this option.

9.2. Supported values and outcomes

Public Health and natural environment emerged consistently as the leading values for participants in both surveys and the written submissions. Technology and infrastructure.

The outcomes that concerned participants most strongly were managing the costs, the need to minimise environmental impacts through effective treatment, impacts on land health and potential effects on farming and primary industries, and certainty around maintaining the long-term health of the Manawatū River.

These findings represent the views of people and organisations who participated in the consultation and may not reflect or be representative of the views of the whole Palmerston North population.

Appendix A

Submissions received

Environment NETWORK manawatu

P.O. Box 1271
Level 2, 74 The Square
Palmerston North 4440
P 06 355 0126
E coordinator@enm.org.nz
www.enm.org.nz

NATURE CALLS (PNCC Wastewater Project) submission

Name: Environment Network Manawatū / Manawatū River Source to Sea

Address: 145 Cuba St., Palmerston North 4410

Email Address: coordinator@enm.org.nz

Values

Please rank the following items from 1 (most important) to 8 (least important)
(see 'How did we get here' page on Nature Calls website for explanations of these values).

2 Natural environment (Potential adverse environmental effects on the receiving environment (including Manawatū River), particularly in relation to water quality, soils, aquatic ecology and terrestrial ecology.)

1 Public health (Degree of public exposure to health risks in treated wastewater (including through land application or re-use options.)

3= Innovation and future proofing technology (Degree to which the option uses reliable and proven technology, can be staged, is able to be constructed, can be constructed within the appropriate timeframe, allows resource recovery/ beneficial re-use.)

8 Growth and economic development (Will the option support the population and economic growth the Council forecasts for Palmerston North?)

7 Financial (cost of option) (Comparative capital, operational, whole of life costs of the option, assessment of this criterion includes consideration of land acquisition costs, capital gains and product net revenue.)

5= Maori cultural values (Potential adverse effects on the mauri of natural resources, on kai moana, and on the relationship of Māori, their cultures and traditions, with ancestral lands, water, sites, waahi tapu and other taonga.)

5= Social and community impacts (Significance of potential social effects based on the gravity, distributive equity, the need for land acquisition and degree of permanence of land use change, and public support for the option.)

3= Resilience and future climate change impacts (Degree to which the option is resilient to natural hazards and climate change and offers operational resilience.)

Rank Options

Based on your rankings above, which option do you believe will meet your set of priorities values?

No Option 1 - 100% discharge to the river with enhanced treatment

2 Option 2 - 55% discharge to land and 45% discharge to the river

No Option 3 - 100% discharge to the ocean with improved treatment

1 **Other option** - discharge to land of a greater proportion of the treated wastewater as well as 'front of pipe' measures to decrease creation of wastewater. At the very least the proportion should be that which can be achieved at a cost equal to that of the discharge to water options (i.e. an extra $430/year/rateable unit). We recognise that this is not likely to enable a total discharge to land but it should be more than 55%. **Before the BPO is selected, councilors (and the public) should be provided with the cost of discharging 65%, 75%, 85% and 95% to land.**

We support measures being taken to decrease the creation of wastewater in the first place. This should occur no matter which option is chosen. These measures include:

a) installation of water meters and charging all users by volume above a base volume, the base volume being paid for as part of the general rates. Water metering is a proven way to decrease water use and wastewater generation.

b) a reinvigorated Inflow and Infiltration prevention programme that:
   - involves regular inspection of properties and pipes in areas where flow in the city's wastewater pipes is higher than expected

- continues the programme to replace old pipes.

c) encouragement and incentives for installing and using grey water tanks, dry toilet systems and other water saving devices in existing homes.

d) requiring the installation and use of grey water tanks and water saving devices in new free-standing homes and other appropriate buildings.

PNCC's treatment system should be designed to decrease contaminants sufficiently to meet any limits of the land and of the ability of plants grown on it to absorb nutrients and any aquatic limits that would pertain during periods when treated wastewater would have to be released into the river (at high flow only).

The land discharge area(s) should be used for biomass for energy production either by conversion to liquid or gaseous fuel or by direct burning to generate electricity and heat (the latter usable in associated greenhouses for food production or for other activities with high heat needs). This aspect introduces the prospect of co-funding the project with a commercial partner.

Finally, any excess wastewater as well as any water leaching into the shallow ground water would be intercepted by cut off drains and directed through wetlands designed for further treating the water and for biodiversity restoration with ultimate discharge of water from the wetlands to the river.

This system has multiple benefits including:

i. Economic : Not only does it mitigate any harm to the tourism potential of having a direct discharge to the river but it could in itself be a tourist attraction as a progressive, future-focused solution that deals with wastewater in the most beneficial, environmentally-positive way.

   It would also negate the possible negative effect of a discharge to river or ocean on future inshore fisheries/shellfish production operations.

And the bioenergy production side of the proposal would be a new economic activity for the region creating extra employment on top of that needed to manage the discharge area.

ii. Affecting a relatively small number of land owners and some of these would be able to be employed managing the land for its new purpose or in the biomass to energy operation.

iii. Making a significant contribution to restoring the biodiversity of the Lower Manawatu basin with the inclusion of large-scale wetlands (managed in a variety of ways). The area was previously largely covered in wetlands and associated vegetation so recreating some large wetlands appears very practical.

iv. Providing additional resilience if the system were located in more than one place and/or involved operating parallel systems that enable maintenance and different management to be carried out on parts of the system while the rest of the system functions as usual.

v. Decreasing the leaching of nutrients that is normally associated with the land if it is currently used for stock production since stock would no longer graze the land and nutrients would be removed from it with any biomass harvested.

vi. Possibly making a positive contribution to decreasing greenhouse gas emissions from the bioenergy produced, especially if liquid fuels were produced. However, this may be offset by emissions from any wetland area included.

vii. Decreasing the risk of the system failing to meet river water quality standards (either current ones or future ones). The ocean discharge also has this benefit but the discharge to river option does not. Treatment failure or the possibility that our understanding of river nutrient dynamics is incomplete are both ways in which the river discharge option may fail to meet expectations (as occurred for the current system). This is all the more likely with the longer dry periods and hence longer periods of low river flow that we are likely to experience in coming years, as climate change progresses, making the river more sensitive to nutrient enrichment.

viii. Better meeting broader society's expectations about water quality and the cultural preferences of local iwi and hapū who have always expressed a strong opposition to discharging human wastewater into the river.

Tell us more about your preferred option

Which value is most important to you and why?

Public health: The reason we collect human wastewater is to protect human health by taking it away from where people might come into contact with it. It is treated so as to decrease the health risk to people who come into contact with it in the receiving environment (the environment into which it is discharged) either directly, such as by swimming, or indirectly, such as by consuming food contaminated by growing in that environment. Clearly any option which fails on this criterion is an unacceptable option and would not be able to get a resource consent. Equally clearly, all options put forward will achieve the required level of protection of human health. So this can be taken as a given - it cannot be compromised.

After that, environmental protection is the most important value to us. We see ourselves as part of and dependent on the environment and also value other species for their own sake. Thus, we believe that we should protect them from any harm that our wastewater may cause. Less direct environmental protection comes from utilising both the nutrient content of wastewater as well as the water itself as a resource instead of viewing it only as a waste. By using it we can decrease reliance on material extraction (e.g. phosphate) and the associated energy use (e.g. synthetic nitrogen production and pumping of water from aquifers) helping to protect the global environment, not just our little bit of it.

What do you think is the most sustainable solution for Palmerston North and our region?

Minimising wastewater: In our view, the most sustainable solution must involve producing as little wastewater as possible and applying as much as possible of it to land.

We need to address the cause of the issue by changing the way we do things or the things we use so as to decrease the amounts of water we use and wastewater we create. This will help decrease the cost of treatment for whatever option is chosen. It is particularly important for any option involving discharge to land as the amount of wastewater is a major determinant of the amount of land needed. Although discharge to the river or ocean option would benefit from decreased wastewater flows, primarily

from decreased treatment costs, those discharge options provide little or no other incentive to decrease wastewater, (The pumping cost is likely to be negligible in the case of the river discharge and a relatively minor cost for the ocean discharge.)

Public values: These are constantly changing and there is a progressive increase in the desire of the public for having less impact on the environment. These changes in public viewpoints will result in new standards being promulgated concerning the level of impact we should not exceed. This is likely to continue as younger generations, who have grown up with negative environmental impacts reaching lifestyle- and life-threatening levels, are more concerned about those impacts than previous generations. As they become the decision-makers of society they will demand and enforce higher standards. We should be selecting an option that recognises this and doesn't just meet the standards of today. We should exceed today's standards so that the readily anticipated higher standards of tomorrow don't require yet another revamp of our wastewater system.

Persistent pollutants: There is considerable uncertainty about the impacts of some of the chemicals we use. These include persistent organic pollutants but metals, including heavy metals, as well. Discharge to the river and the ocean both disperse contaminants in a way which makes them virtually impossible to recover or manage. In contrast, appropriate (in terms of quantity of water applied to avoid leaching) discharge to land will result in any persistent contaminants at least being contained within a known area. If any become problematic there is some chance of recovering them or at least of keeping them isolated by managing the land accordingly.

Beneficial use: Obtaining greater benefit from the use of resources is desirable especially when doing so can simultaneously decrease negative effects of the disposal of those resources. It is completely out of step with the City's EcoCity Strategy to be just throwing resources away such as by pouring wastewater into the river or ocean.

Economic potential: A solution which creates economic opportunity and decreases the risks to current or potential economic activity is more desirable than one which doesn't do these things. Discharging to water has potential to harm tourism and possible inshore fisheries/shellfish operations and has no potential for creating a tourist attraction. It also has

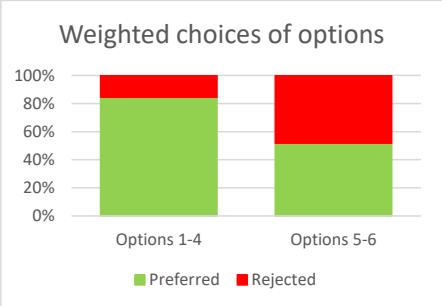
no potential to create new economic activity in the way a land discharge scheme does.

A system which can contribute positively to biodiversity restoration is considered more sustainable than one which doesn't, especially given the almost complete destruction of wetland habitat, both swamp and swamp forest, in the lower Manawatu. Only the discharge to land option that we have proposed does so on any significant scale.

Which option has the right balance between environmental protection / impacts and community affordability?

Only options with substantial discharge to land have the right balance since full discharge to either river or sea is unacceptable to us. Discharge to the river or sea both enable continuation of the thinking that we can just throw it away without further effect on us and would provide little or no incentive for people to take measures to minimise the amount of wastewater they create.

Discharge to the ocean not only received little public support during the last consultation but it was also ranked least preferred option of nearly half of respondents. The discharge to river also had a considerable proportion of respondents saying it was their least preferred option. In contrast, those options involving substantive discharge to land was not only more favoured but also were the least preferred option of the fewest number of respondents. The following graph visualizes preferences expressed by submitters against the six options available in the previous round of consultations:



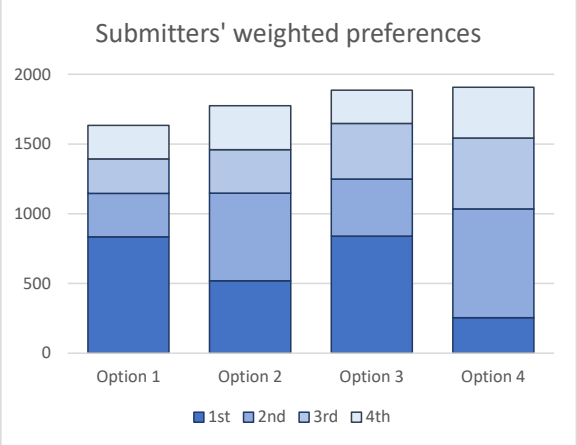
How to read the graph:

For the original public consultation, the following options were offered:
Option 1 = discharge to river at Totara Rd except when river flow is below 1/2 median when 75% of discharge will be diverted to 670ha of land.
Option 2 = discharge to river at 2 places, Totara Road and Opiki, and when river flow is below 1/2 median, at which time 75% of discharge will be diverted to 670ha of land.
Option 3 = 97 % discharge to land, at coast or inland
Option 4 = 45-55% discharge to land, at coast or inland
Option 5 = discharge to groundwater but to land during drier months
Option 6 = discharge to ocean but to land during drier months

Note: The original 6 options have been reduced to three preferred options in this consultation round. Those are highlighted in yellow.

Overall, submitters greatly (73%) prefer options 1-4 to Options 5-6 (27%). This strongly suggests that Options 5 and 6 should be discarded at this stage.

The next graph shows weighted preferences amongst the 4 options (= options 1 – 4 in the full list of six options above), preferred by submitters during the last consultation.



A submitter's first preference can be given more weight than their second preference, etc. When weighted for level of preference (see figure below), the most acceptable option is Option 3 (discharge to land), but overall there is little variation between Options 1-4 amongst submitters. There is more variation between the preferences for

Options 5-6. Groundwater discharge has subsequently been rejected by PNCC, on what appear to be reasonable grounds.

General Comment

- A lot of people in our network feel that they have not been heard in the first round of consultations, and that there is not much point to keep engaging.
- As per the last round, we are still feeling that we are making value calls in absence of understanding the bigger picture. While we understand that the team is trying to minimise effort by only doing more detailed work on the preferred option, the preferred option based on current level of understanding might ultimately not be the best option.
- The online feedback form is limiting in what can be submitted. We, therefore will send our full document via e-mail as well.
- We want to speak to our submission.

NATURE CALLS

HAVE YOUR SAY FEEDBACK FORM

Please drop your feedback form to our Customer Service Centre or the central library.
You can also fill this in online at **naturecalls.nz**

Or post it to: Nature Calls Submissions, Palmerston North City Council, Private Bag 11034, The Square, Palmerston North, 4442

You may add additional pages if you want to expand on any of your answers.
Your feedback from this form will be summarised in a report to Council.

Name	Manawatū Branch of Forest & Bird					
Address	P.O. Box 961, Palmerston North, 4440					
Email Address	manawatu.branch@forestandbird.org.nz					
Do you live in Palmerston North? *(please tick)*					[x] Yes	[ ] No
Are you a business owner in Palmerston North? *(please tick)*					[ ] Yes	[x] No
What age range are you in?	[ ] under 18	[ ] 18 - 30	[ ] 31 - 40	[ ] 41 - 50	[ ] 51 - 60	[ ] 61 +
Do you identify as tangata whenua in Palmerston North, Horowhenua, Manawatū? *(please tick)*					[ ] Yes	[ ] No
If yes, please identify your iwi/hapu/tribal affiliation	We don't hold this information about our members.					
What kind of area do you live in? *(please tick)*	mostly	[x] Urban	[ ] Rural	[ ] Coastal		

Values discussion

Our MCA process considered scoring and weighting of criteria, which are representative of values. We want to know which values are more important, to you. Refer to the table on page 8 for the descriptions.

Please rank these items from 1 (most important) - 8 (least important)			
1	Natural Environment (ecology etc)	8	Financial (cost of option)
	Public Health		Maori Cultural Values
	Innovation and future proofing technology		Social and Community Impacts
	Growth and Economic Development		Resilience and Climate Change Impacts (future)

Based on your ranking above, which Option do you believe, will meet your set of prioritised values?	
Discharge option 1 - River with enhanced treatment	[ ]
Discharge option 2 - To land 55% of the time and river 45% of the time	[x]
Discharge option 3 - To ocean with improved treatment	[ ]
Other option (please describe below)	[ ]

FEEDBACK CLOSES AT 5PM ON SUNDAY 9 MAY

Feedback forms are not returned, so please make a copy for yourself.

Tell us more about your preferred option

Tell us which value you selected as most important and why?
Forest & Bird is a voice for nature, protection of the natural environment is one of our top priorities. The Manawatu catchment is already experiencing nutrient levels that affect ecological health. We support the options that have the greatest potential to minimise the negative effects of wastewater discharge. There are no impediments except cost but the environment has been absorbing that cost for too long. It's time for us to step up and be a leader in environmental sustainability.
What do you think is the most sustainable solution for Palmy and our Region?
None of the options presented were 'sustainable'. Rather, it was a matter of choosing the 'least bad' option. We would only support Discharge option 2 if it came with the level of treatment associated with Discharge option 1. We do not support Discharge option 3 at all.
Which option has the right balance between environmental protection/impacts and community affordability?
The option with the best balance between environmental protection and impacts would be Discharge option 2 with the same level of treatment proposed for Discharge option 1. We would also have high monitoring and compliance expectations on the council.

Sustainability in your home

Please tick which measures you'd use to reduce your wastewater at home	
☐ Remove insinkerator	☐ Low energy appliances
☐ Greywater tank	☐ Urine separate toilets
☐ Water reducing showerheads and taps	☐ Water metering
☐ Composting toilet	☐ None of the above

NATURE CALLS SUBMISSION (PNCC Wastewater Project)

Name: Blue Forsyth and Geoff Keith

WECA (Water and Environmental Care Association Inc)

Values discussion

Please rank the following items from 1(most important) to 8 (least important)
(see 'How did we get here' page on Nature Calls website for explanations of these values).

1. Public health (Degree of public exposure to health risks in treated wastewater (including through land application or re-use options.)

2. Natural environment (Potential adverse environmental effects on the receiving environment (including Manawatū River), particularly in relation to water quality, soils, aquatic ecology and terrestrial ecology.)

3. Maori cultural values (Potential adverse effects on the mauri of natural resources, on kai moana, kai awa, and on the relationship of Māori, their cultures and traditions, with ancestral lands, water, sites, waahi tapu and other taonga.)

4. Innovation and future proofing technology (Degree to which the option uses reliable and proven technology, can be staged, is able to be constructed, can be constructed within the appropriate timeframe, allows resource recovery/ beneficial re-use.) For example: seriously consider eco-technological interventions from a life time of work to treat industrial and other waste in international contexts by John Todd.

5. Social and community impacts (Significance of potential social effects based on the gravity, distributive equity, the need for land acquisition and degree of permanence of land use change, and public support for the option.)

6. Resilience and future climate change impacts (Degree to which the option is resilient to natural hazards and climate change and offers operational resilience.)

7. Financial (cost of option) (Comparative capital, operational, whole of life costs of the option, assessment of this criterion includes consideration of land acquisition costs, capital gains and product net revenue.)

8. Growth and economic development (Will the option support the population and economic growth the Council forecasts for Palmerston North?)

Rank Options

Based on your rankings above, which option do you believe will meet your set of priorities values?

Option 1 - 100% discharge to the river with enhanced treatment
Strongly rejected
Option 2 - 55% discharge to land and 45% discharge to the river
The best of the options presented but far from optimum (see Other option below)

Option 3 - 100% discharge to the ocean with improved treatment
Strongly rejected

Comment
Decisions that have long term impacts for communities and the environment must start from 'first principles'. This requires a genuine and concerted effort to decrease the creation of wastewater ***before*** dealing with the end of pipe results. This should occur no matter which option is chosen. These measures include:

1. Encouragement and incentives for installing and using grey water tanks, dry toilet systems and other water saving devices in existing homes.
2. Requiring the installation and use of grey water tanks and water saving devices in new free-standing homes and other appropriate buildings.
3. Installation of water meters and charging all users by volume above a base volume, the base volume being paid for as part of the general rates. Water metering is a proven way to decrease water use and wastewater generation.
4. A reinvigorated Inflow and Infiltration prevention programme that:
    a. works proactively with businesses to eliminate or minimize water use/trade waste (eg. Cleaner Production initiatives)
    b. involves regular inspection of properties and pipes in areas where flow in the city's wastewater pipes is higher than expected
    c. continues the programme to replace old pipes.
5. Educating the community about the cost (environmental, financial etc) and equity of a 'flush and forget' mentality.

Other option
The measures suggested above are long term aspirations and will not reduce the immediate flow of wastewater. For WECA, the preferred option in the meantime is discharge to land of the greater proportion of the treated wastewater. At the very least the proportion should be that which can be achieved at a cost equal to that of the discharge to water options (i.e. an extra $430/year/rateable unit). We recognise that this is not likely to enable a total discharge to land but it should be more than 55%. **Before the BPO is selected, councilors (and the public) should be provided with the cost of discharging 65%, 75%, 85% and 95% to land.**

PNCC's treatment system should be designed to decrease contaminants sufficiently to meet any limits of the land and of the ability of plants grown on it to absorb nutrients and any aquatic limits that would pertain during periods when treated wastewater would have to be released into the river (at high flow only).

The land discharge area(s) should be used for biomass for energy production either by conversion to liquid or gaseous fuel or by direct burning to generate electricity and heat (the latter usable in associated greenhouses for food production or for other activities with high heat needs). There is also great potential for other high value crops that would support much needed local industry (eg. Hemp for construction). These options present

the prospect of co-funding of projects with commercial partners. Such arrangements would take time to scope and develop so ‘cut and carry’ harvesting operations could provide a short-term solution.

Finally, any excess wastewater as well as any water leaching into the shallow ground water would be intercepted by cut off drains and directed through wetlands designed for further treating the water and for biodiversity restoration with ultimate discharge of water from the wetlands to the river.

This system has multiple benefits including:

i. Economic : Not only does it mitigate any harm to the tourism potential of having a direct discharge to the river but it could in itself be a tourist attraction as a progressive, future-focused solution that deals with wastewater in the most beneficial, environmentally-positive way.
   It would also negate the possible negative effect of a discharge to river or ocean on future inshore fisheries/shellfish production operations.
   The crop production from discharge to land could be a new economic activity for the region creating extra employment and business oportunities.

ii. Affecting a relatively small number of landowners many of whom could be employed or contracted to manage the land for its new purpose or in the resultant downstream operation.

iii. Making a significant contribution to restoring the biodiversity of the Lower Manawatu basin with the inclusion of large-scale wetlands (managed in a variety of ways). The area was previously largely covered in wetlands and associated vegetation so recreating some large wetlands appears very practical.

iv. Providing additional resilience if the system was located in more than one place and/or involved operating parallel systems that enable maintenance and different management to be carried out on parts of the system while the rest of the system functions as usual.

v. Decreasing the leaching of nutrients that is normally associated with the land if it is currently used for stock production since stock would no longer graze the land and nutrients would be removed from it with any biomass harvested.

vi. Possibly making a positive contribution to decreasing greenhouse gas emissions from the bioenergy produced, especially if liquid fuels were produced. However, this may be offset by emissions from any wetland area included.

vii. Decreasing the risk of the system failing to meet river water quality standards (either current ones or future ones). The ocean discharge also has this benefit but the discharge to river option does not. Treatment failure or the possibility that our understanding of river nutrient dynamics is incomplete are both ways in which the river discharge option may fail to meet expectations (as occurred for the current system). This seems increasingly more likely, with longer dry periods resulting in longer periods of low river flows with the forecast impact of climate change, making the river more sensitive to nutrient enrichment. Drier conditions would also increase the viability and value of land discharge.

viii. Better meeting broader society's expectations about water quality and the cultural preferences of local iwi and hapū who have always expressed a strong opposition to discharging human wastewater into the river.

Tell us more about your preferred option

Which value is most important to you and why?

Public health
The reason we collect human wastewater is primarily to protect human health by reducing risk of exposure to the harmful pathogens, chemicals etc that it may contain. It is treated to decrease the health risk to people who come into contact with it in the receiving environment (the environment into which it is discharged) either directly, such as by swimming, or indirectly, such as by consuming food contaminated by growing in that environment. Clearly any option which fails on this criterion is an unacceptable option and sould not be able to get a resource consent. Equally clearly, all options put forward will achieve the required level of protection of human health. As such, public health cannot be compromised and is therefore top priority.

Environmental protection
WECA is an environmental group so improving environmental outcomes is most important to us. We are dependent on the environment for our future and have an obligation to protect and regenerate its services, not only for ourselves, but all other species threatened by our actions. Thus, we believe that we should protect them from any harm that our wastewater may cause and by so doing we will best protect ourselves, our health and our species future.
A less direct environmental protection will come from utilising both the nutrient content of wastewater and the water itself as a resource instead of treating it as a waste without value. By using it we can decrease reliance on material extraction (e.g. phosphate) and the associated energy use (e.g. synthetic nitrogen production and pumping of water from aquifers) helping to protect the global environment, not just our little bit of it.

What do you think is the most sustainable solution for Palmerston North and our region?

Reducing wastewater production
In our view, the most sustainable solution must involve reducing wastewater production to a minimum and then applying as much of the remainder as possible to land.

We need to address the cause of the issue by changing the way we do things or the things we use so as to decrease the amounts of water we use and therefore wastewater we create. This will help decrease the cost of treatment for whatever option is chosen. This is particularly important for any option involving discharge to land, as the amount of wastewater is a major determinant of the amount of land needed. Although discharge to the river or ocean option would benefit from decreased wastewater flows, primarily from decreased treatment costs, those discharge options provide little or no other incentive to decrease wastewater. (The pumping cost is likely to be negligible in the case of the river discharge and a relatively minor cost for the ocean discharge.)

Public values
These are constantly changing and there is a progressive increase in the desire of the public for having less impact on the environment. These changes in public viewpoints will result in new standards being promulgated concerning the level of impact we should not exceed. This is likely to continue as younger generations, who have grown up with negative environmental impacts reaching lifestyle- and life-threatening levels, are more concerned about those impacts than previous generations. As they become the decision-makers, they will demand and enforce higher standards. We should be selecting an option that recognises this and doesn't just meet the standards of today. We should exceed today's standards so that the readily anticipated higher standards of tomorrow don't require yet another revamp of our wastewater system.

Rank Options

Based on your rankings above, which option do you believe will meet your set of priorities values?

Option 1 - 100% discharge to the river with enhanced treatment
Strongly rejected
Option 2 - 55% discharge to land and 45% discharge to the river
The best of the options presented but far from optimum (see Other option below)

Option 3 - 100% discharge to the ocean with improved treatment
Strongly rejected

Comment
Decisions that have long term impacts for communities and the environment must start from 'first principles'. This requires a genuine and concerted effort to decrease the creation of wastewater ***before*** dealing with the end of pipe results. This should occur no matter which option is chosen. These measures include:

1. Encouragement and incentives for installing and using grey water tanks, dry toilet systems and other water saving devices in existing homes.
2. Requiring the installation and use of grey water tanks and water saving devices in new free-standing homes and other appropriate buildings.
3. Installation of water meters and charging all users by volume above a base volume, the base volume being paid for as part of the general rates. Water metering is a proven way to decrease water use and wastewater generation.
4. A reinvigorated Inflow and Infiltration prevention programme that:
    a. works proactively with businesses to eliminate or minimize water use/trade waste (eg. Cleaner Production initiatives)
    b. involves regular inspection of properties and pipes in areas where flow in the city's wastewater pipes is higher than expected
    c. continues the programme to replace old pipes.
5. Educating the community about the cost (environmental, financial etc) and equity of a 'flush and forget' mentality.

Other option
The measures suggested above are long term aspirations and will not reduce the immediate flow of wastewater. For WECA, the preferred option in the meantime is discharge to land of the greater proportion of the treated wastewater. At the very least the proportion should be that which can be achieved at a cost equal to that of the discharge to water options (i.e. an extra $430/year/rateable unit). We recognise that this is not likely to enable a total discharge to land but it should be more than 55%. **Before the BPO is selected, councilors (and the public) should be provided with the cost of discharging 65%, 75%, 85% and 95% to land.**

PNCC's treatment system should be designed to decrease contaminants sufficiently to meet any limits of the land and of the ability of plants grown on it to absorb nutrients and any aquatic limits that would pertain during periods when treated wastewater would have to be released into the river (at high flow only).

The land discharge area(s) should be used for biomass for energy production either by conversion to liquid or gaseous fuel or by direct burning to generate electricity and heat (the latter usable in associated greenhouses for food production or for other activities with high heat needs). There is also great potential for other high value crops that would support much needed local industry (eg. Hemp for construction). These options present

Persistent pollutants
There is considerable uncertainty about the impacts of some of the chemicals we use. These include persistent organic pollutants but metals, including heavy metals, as well. Discharge to the river and the ocean both disperse contaminants in a way which makes them virtually impossible to recover or manage. In contrast, appropriate (in terms of quantity of water applied to avoid leaching) discharge to land will result in any persistent contaminants at least being contained within a known area. If any become problematic there is some chance of recovering them or at least of keeping them isolated by managing the land accordingly.

Beneficial use
Obtaining greater benefit from the use of resources is desirable especially when doing so can simultaneously decrease negative effects of the disposal of those resources. It is completely out of step with the City's EcoCity Strategy to be just throwing resources away such as by pouring wastewater into the river or ocean.

Economic potential
A solution which creates economic opportunity and decreases the risks to current or potential economic activity is more desirable than one which doesn't do these things. Discharging to water has potential to harm tourism and possible inshore fisheries/shellfish operations and has no potential for creating a tourist attraction. It also has no potential to create new economic activity in the way a land discharge scheme does.

A system which can contribute positively to biodiversity restoration is considered more sustainable than one which doesn't, especially given the almost complete destruction of wetland habitat, both swamp and swamp forest, in the lower Manawatu. Only the discharge to land option that we have proposed does so on any significant scale.

Which option has the right balance between environmental protection / impacts and community affordability?

Only options with substantial discharge to land have the right balance since full discharge to either river or sea is unacceptable to us. Discharge to the river or sea both enable continuation of the thinking that we can just throw it away without further effect on us and would provide little or no incentive for people to take measures to minimise the amount of wastewater they create.

Sustainability in your home

Please tick which measures you would use to reduce your wastewater at home.

___ Remove insinkerator
___ Greywater tank
___ Water reducing showerheads and taps
___ Composting toilet
___ Lower energy appliances
___ Urine separating toilets
___ Water metering
___ None of the above

WECA and its members are broadly supportive of all the above measures.

Geoff Keith and Blue Forsyth

NATURE CALLS (PNCC Wastewater Project) submission

Name: The Water Protection Society Incorporated

Address: c/- 129 Raukawa Road, RD 10, Palmerston North 4470

Email Address: wps@inspire.net.nz

Do you live in Palmerston North?
Most members do but some are beyond the city boundary.

Are you a business owner in Palmerston North?
Not as an organisation but some members may be.

What age range are you in? <18 18-30 31-40 41-50 51-60 >60
A range of ages 18 years and older.

Do you identify as tangata whenua in Palmerston North, Horowhenua or Manawatu?
Some members may do so.

If yes, please identify your iwi / hapu / tribal affiliation.

What kind of area do you live in? Urban Rural Coastal
Some members live in each of these kinds of area.

Values

Please rank the following items from 1(most important) to 8 (least important)
(see 'How did we get here' page on Nature Calls website for explanations of these values).

2 Natural environment (Potential adverse environmental effects on the receiving environment (including Manawatū River), particularly in relation to water quality, soils, aquatic ecology and terrestrial ecology.)

1 Public health (Degree of public exposure to health risks in treated wastewater (including through land application or re-use options.)

3= Innovation and future proofing technology (Degree to which the option uses reliable and proven technology, can be staged, is able to be constructed, can be constructed within the appropriate timeframe, allows resource recovery/ beneficial re-use.)

8 Growth and economic development (Will the option support the population and economic growth the Council forecasts for Palmerston North?)

7 Financial (cost of option) (Comparative capital, operational, whole of life costs of the option, assessment of this criterion includes consideration of land acquisition costs, capital gains and product net revenue.)

5= Maori cultural values (Potential adverse effects on the mauri of natural resources, on kai moana, and on the relationship of Māori, their cultures and traditions, with ancestral lands, water, sites, waahi tapu and other taonga.)

5= Social and community impacts (Significance of potential social effects based on the gravity, distributive equity, the need for land acquisition and degree of permanence of land use change, and public support for the option.)

3= Resilience and future climate change impacts (Degree to which the option is resilient to natural hazards and climate change and offers operational resilience.)

1 is the primary purpose of wastewater collection and treatment.
2 must be achieved while carrying out 1.
3= these amount to saying any proposed system can be built and will work now and into the future

Rank Options

Based on your rankings above, which option do you believe will meet your set of priorities values?

No Option 1 - 100% discharge to the river with enhanced treatment

2 Option 2 - 55% discharge to land and 45% discharge to the river

No Option 3 - 100% discharge to the ocean with improved treatment

1 Other option - **discharge a higher (than 55%) proportion of the treated wastewater to land and implement more 'front of pipe' measures to decrease the amount of wastewater that is created in the first place.**

At the very least the proportion disposed of on land should be that which can be achieved at a cost equal to that of the two options which discharge the treated wastewater to water whether that be the river or the ocean (i.e. whatever could be achieved for an extra $430/year/rateable unit).

We recognise that this is not likely to enable a total discharge to land but it should be more than 55%. Before the BPO is selected, councilors (and the public)

should be provided with the cost of discharging 65%, 75%, 85% and 95% of the treated wastewater to land.

This option would incorporate measures being taken to decrease the creation of wastewater in the first place. This should occur no matter which option is chosen. These measures include:

a) installation of water meters and charging all users by volume above a base volume, the base volume being paid for as part of the general rates so that reasonable use is provided for. Water metering is a proven way to decrease water use and wastewater generation.

b) a reinvigorated Inflow and Infiltration prevention programme that:
   - involves regular inspection of properties and pipes in areas where flow in the city's wastewater pipes is higher than expected
   - continues the programme to replace old pipes

c) *encouragement and incentives* for installing and using grey water tanks, dry toilet systems and other water saving devices in existing homes

d) *requiring* the installation and use of grey water tanks and water saving devices in new homes and other buildings.

This option would have a treatment system designed to decrease contaminants sufficiently to meet any limits of the land and plants grown on it to absorb nutrients and any aquatic limits that would pertain during periods when treated wastewater would have to be released into the river (at high flow only). It would also include a significant capacity to store wastewater.

The land discharge area(s) would be used for biomass for energy production either by conversion to liquid or gaseous fuel or by direct burning to generate electricity and heat (the latter usable in associated greenhouses for food production or for other activities with high heat needs). This aspect introduces the prospects of increasing economic activity and of co-funding the project with a commercial partner .

Finally, any excess wastewater as well as any water leaching into the shallow ground water would be intercepted by cut off drains and directed through wetlands designed for further treating the water before it is finally discharged to the river.

This system has multiple benefits including:

i. Economic : Not only does it mitigate any harm to the tourism potential of having a direct discharge to the river but it could in itself be a tourist attraction as a progressive, future-focused solution that deals with wastewater in the most beneficial, environmentally-positive way.

   It would also negate the possible negative effect of a discharge to river or ocean on future inshore fisheries/shellfish production operations.

   And the bioenergy production side of the proposal (with possible associated greenhouses) would be a new economic activity for the region creating extra employment on top of that needed to manage the discharge area.

   This would be a good example of moving towards a circular economy.

ii. Affecting a relatively small number of land owners and some of these would be able to be employed managing the land for its new purpose or in the biomass to energy or greenhouse operations.

iii. Making a significant contribution to restoring the biodiversity of the Lower Manawatu basin with the inclusion of large scale wetlands (managed in a variety of ways). The area was previously largely made up of wetlands and associated vegetation so recreating some large wetlands appears very practical and beneficial.

iv. Providing additional resilience if the system were located in more than one place and/or involved operating parallel systems that enable maintenance and management to be carried out on parts of the system while the rest of the system functions as usual.

v. Decreasing the leaching of nutrients that is normally associated with the land if it is currently used for stock production since stock would no longer graze the land and nutrients would be removed from it in any biomass harvested.

vi. Possibly a positive contribution to decreasing greenhouse gas emissions. This would accrue if liquid fuels were produced from the biomass and used to substitute for fossil-derived fuel. The decrease in ruminant animals on the land would also result in a decrease in these emissions. However, these may be offset to some extent by emissions from any wetland area included.

vii. Decreasing the risk of the system failing to meet river water quality standards (either current ones or future ones). The ocean discharge also has this benefit but the discharge to river option does not. Treatment failure or the possibility that our understanding of river nutrient dynamics is incomplete are both ways in

which the river discharge option may fail to meet expectations (as occurred for the current system). This is all the more likely with the longer dry periods and hence longer periods of low river flow that we are likely to experience in coming years, as climate change progresses, making the river more sensitive to nutrient enrichment.

viii. Better meeting broader society's expectations about water quality and the cultural preferences of local iwi and hapu who have expressed a strong opposition to discharging human wastewater into the river.

Tell us more about your preferred option

Which value is most important to you and why?

Public health: The reason we collect human wastewater is to protect human health by taking it away from where people might come into contact with it. It is treated so as to decrease the health risk to people who come into contact with it in the environment into which it is discharged, either directly, such as by swimming, or indirectly, such as by consuming food obtained from that environment. Clearly any option which fails on this criteria is an unacceptable option and would not be able to get a resource consent. Equally clearly, all options put forward will achieve the required level of protection of human health. So this can be taken as a given - it cannot be compromised.

After that, environmental protection is the most important value to us. We see ourselves as part of and dependent on the environment and also value other species for their own sake. Thus, we believe that we should protect them from any harm that our wastewater may cause. Environmental protection comes from using both the nutrient content of wastewater as well as the water itself as resources instead of viewing them only as waste. By using them as resources, we can decrease reliance on material extraction (e.g. phosphate) and the associated energy use (e.g. synthetic nitrogen production and pumping of water from aquifers) helping to protect the global environment, not just our little bit of it.

What do you think is the most sustainable solution for Palmerston North and our region?

Minimising wastewater: In our view, the most sustainable solution must involve producing as little wastewater as possible and applying as much as possible of it to land.

We need to address the cause of the issue by changing the way we do things or the things we use so as to decrease the amounts of water we use and wastewater we

create. This will help decrease the cost of treatment for whatever option is chosen. It is particularly important for any option involving discharge to land as the amount of wastewater is a major determinant of the amount of land needed. Although discharge to the river or ocean option would benefit from decreased wastewater flows too, primarily from decreased treatment costs, they provide relatively little or no other incentive to decrease wastewater (the pumping cost is likely to be negligible in the case of the river discharge and a relatively minor cost for the ocean discharge).

Public values: These are constantly changing and there is a progressive increase in the desire for having less impact on the environment. These changes in public view result in new standards being promulgated concerning the level of impact we should not exceed. This is likely to continue as younger generations, who have grown up with our negative impacts on the environment reaching lifestyle and life-threatening levels, being more concerned about those impacts than previous generations. As they become the decision makers of society it is likely they will demand higher standards. We should be selecting an option that recognises this and doesn't just meet the standards of today. We should exceed today's standards so that the readily anticipated higher standards of tomorrow don't require yet another revamp of our wastewater system.

Persistent pollutants: There is considerable uncertainty about the impacts of some of the chemicals we use. These include persistent organic pollutants but metals as well. Discharge to the river and the ocean both disperse contaminants in a way which makes them virtually impossible to recover or manage. In contrast, appropriate (in terms of quantity of water applied to avoid leaching) discharge to land will result in any persistent contaminants being contained within a known area. If any become problematic there is some chance of recovering them or at least of keeping them isolated and managing the land accordingly.

Beneficial use: Obtaining greater benefit from the use of resources is desirable especially when doing so can simultaneously decrease negative effects of the disposal of those resources. It is completely out of step with the City's EcoCity Strategy to be just throwing resources away such as by pouring wastewater into the river or ocean.

Economic potential: A solution which creates economic opportunity and decreases the risks to current or potential economic activity is more desirable than one which doesn't do these things. Discharging to water has potential to harm tourism and possible inshore fisheries/shellfish operations and has no potential for creating a tourist attraction. It also has no potential to create new economic activity in the way a land discharge scheme does.

A system which can contribute positively to biodiversity restoration is considered more sustainable than one which doesn't, especially given the almost complete destruction of wetland habitat in the lower Manawatu. Only the discharge to land option that we have proposed does so on any significant scale.

Which option has the right balance between environmental protection / impacts and community affordability?

Only options with substantial discharge to land have the right balance since full discharge to river or sea are unacceptable to us. Discharge to the river or sea both enable continuation of the thinking that we can just throw it away without further effect on us and would provide little or no incentive for people to take measures to minimise the amount of wastewater they create.

Discharge to the ocean not only received little public support during the last consultation but it was also ranked least preferred option of nearly half (44%) of respondents. The discharge to river also had a considerable proportion (23%) of respondents saying it was their least preferred option.

In contrast, those options involving substantive discharge to land were not only more favoured but also the fewest respondents ranked these as their least preferred option (7% for option 3, 97% discharge to land, and 1% for options 4, 45-55% discharge to land).

Sustainability in your home

Please tick which measures you would use to reduce your wastewater at home.

___ Remove insinkerator
___ Greywater tank
___ Water reducing showerheads and taps
___ Composting toilet
___ Lower energy appliances
___ Urine separating toilets
___ Water metering
___ None of the above

These are more appropriate for individuals to answer. Many of our members have advocated for these in the past.

Thank you.

Myles Stilwell
Secretary
Water Protection Society.

NATURE CALLS (PNCC Wastewater Project) submission

Name: Chris Teo-Sherrell

Address: 37 Oxford St, Palmerston North 4410

Email Address: carfreechris@inspire.net.nz

Do you live in Palmerston North?
Yes

Are you a business owner in Palmerston North?
No

What age range are you in? <18 18-30 31-40 41-50 51-60 >60
51-60

Do you identify as tangata whenua in Palmerston North, Horowhenua or Manawatu?
No

If yes, please identify your iwi / hapu / tribal affiliation.

What kind of area do you live in? Urban Rural Coastal
Urban

Values

Please rank the following items from 1(most important) to 8 (least important)
(see 'How did we get here' page on Nature Calls website for explanations of these values).

2 Natural environment (Potential adverse environmental effects on the receiving environment (including Manawatū River), particularly in relation to water quality, soils, aquatic ecology and terrestrial ecology.)

1 Public health (Degree of public exposure to health risks in treated wastewater (including through land application or re-use options.)

3= Innovation and future proofing technology (Degree to which the option uses reliable and proven technology, can be staged, is able to be constructed, can be constructed within the appropriate timeframe, allows resource recovery/ beneficial re-use.)

8 Growth and economic development (Will the option support the population and economic growth the Council forecasts for Palmerston North?)

7 Financial (cost of option) (Comparative capital, operational, whole of life costs of the option, assessment of this criterion includes consideration of land acquisition costs, capital gains and product net revenue.)

5= Maori cultural values (Potential adverse effects on the mauri of natural resources, on kai moana, and on the relationship of Māori, their cultures and traditions, with ancestral lands, water, sites, waahi tapu and other taonga.)

5= Social and community impacts (Significance of potential social effects based on the gravity, distributive equity, the need for land acquisition and degree of permanence of land use change, and public support for the option.)

3= Resilience and future climate change impacts (Degree to which the option is resilient to natural hazards and climate change and offers operational resilience.)

1 is the primary purpose of wastewater collection and treatment.
2 must be achieved while carrying out 1.
3= these amount to saying any proposed system can be built and will work now and into the future

Rank Options

Based on your rankings above, which option do you believe will meet your set of priorities values?

No Option 1 - 100% discharge to the river with enhanced treatment

2 Option 2 - 55% discharge to land and 45% discharge to the river

No Option 3 - 100% discharge to the ocean with improved treatment

1 Other option - **discharge a higher (than 55%) proportion of the treated wastewater to land and implement more 'front of pipe' measures to decrease the amount of wastewater that is created in the first place.**

At the very least the proportion disposed of on land should be that which can be achieved at a cost equal to that of the two options which discharge the treated wastewater to water whether that be the river or the ocean (i.e. whatever could be achieved for an extra $430/year/rateable unit).

I recognise that this is not likely to enable a total discharge to land but it should be more than 55%. Before the BPO is selected, councilors (and the public)

should be provided with the cost of discharging 65%, 75%, 85% and 95% of the treated wastewater to land.

This option would incorporate measures being taken to decrease the creation of wastewater in the first place. This should occur no matter which option is chosen. These measures include:

a) installation of water meters and charging all users by volume above a base volume, the base volume being paid for as part of the general rates so that reasonable use is provided for. Water metering is a proven way to decrease water use and wastewater generation.

b) a reinvigorated Inflow and Infiltration prevention programme that:
   - involves regular inspection of properties and pipes in areas where flow in the city's wastewater pipes is higher than expected
   - continues the programme to replace old pipes

c) *encouragement and incentives* for installing and using grey water tanks, dry toilet systems and other water saving devices in existing homes

d) *requiring* the installation and use of grey water tanks and water saving devices in new homes and other buildings.

This option would have a treatment system designed to decrease contaminants sufficiently to meet any limits of the land and plants grown on it to absorb nutrients and any aquatic limits that would pertain during periods when treated wastewater would have to be released into the river (at high flow only). It would also include a significant capacity to store wastewater.

The land discharge area(s) would be used for biomass for energy production either by conversion to liquid or gaseous fuel or by direct burning to generate electricity and heat (the latter usable in associated greenhouses for food production or for other activities with high heat needs). This aspect introduces the prospects of increasing economic activity and of co-funding the project with a commercial partner .

Finally, any excess wastewater as well as any water leaching into the shallow ground water would be intercepted by cut off drains and directed through wetlands designed for further treating the water before it is finally discharged to the river.

This system has multiple benefits including:

i. Economic : Not only does it mitigate any harm to the tourism potential of having a direct discharge to the river but it could in itself be a tourist attraction as a progressive, future-focused solution that deals with wastewater in the most beneficial, environmentally-positive way.

   It would also negate the possible negative effect of a discharge to river or ocean on future inshore fisheries/shellfish production operations.

   And the bioenergy production side of the proposal (with possible associated greenhouses) would be a new economic activity for the region creating extra employment on top of that needed to manage the discharge area.

   This would be a good example of moving towards a circular economy.

ii. Affecting a relatively small number of land owners and some of these would be able to be employed managing the land for its new purpose or in the biomass to energy or greenhouse operations.

iii. Making a significant contribution to restoring the biodiversity of the Lower Manawatu basin with the inclusion of large scale wetlands (managed in a variety of ways). The area was previously largely made up of wetlands and associated vegetation so recreating some large wetlands appears very practical and beneficial.

iv. Providing additional resilience if the system were located in more than one place and/or involved operating parallel systems that enable maintenance and management to be carried out on parts of the system while the rest of the system functions as usual.

v. Decreasing the leaching of nutrients that is normally associated with the land if it is currently used for stock production since stock would no longer graze the land and nutrients would be removed from it in any biomass harvested.

vi. Possibly a positive contribution to decreasing greenhouse gas emissions. This would accrue if liquid fuels were produced from the biomass and used to substitute for fossil-derived fuel. The decrease in ruminant animals on the land would also result in a decrease in these emissions. However, these may be offset to some extent by emissions from any wetland area included.

vii. Decreasing the risk of the system failing to meet river water quality standards (either current ones or future ones). The ocean discharge also has this benefit but the discharge to river option does not. Treatment failure or the possibility that our understanding of river nutrient dynamics is incomplete are both ways in

which the river discharge option may fail to meet expectations (as occurred for the current system). This is all the more likely with the longer dry periods and hence longer periods of low river flow that we are likely to experience in coming years, as climate change progresses, making the river more sensitive to nutrient enrichment.

viii. Better meeting broader society's expectations about water quality and the cultural preferences of local iwi and hapu who have expressed a strong opposition to discharging human wastewater into the river.

Tell us more about your preferred option

Which value is most important to you and why?

Public health: The reason we collect human wastewater is to protect human health by taking it away from where people might come into contact with it. It is treated so as to decrease the health risk to people who come into contact with it in the environment into which it is discharged, either directly, such as by swimming, or indirectly, such as by consuming food obtained from that environment. Clearly any option which fails on this criteria is an unacceptable option and would not be able to get a resource consent. Equally clearly, all options put forward will achieve the required level of protection of human health. So this can be taken as a given - it cannot be compromised.

After that, environmental protection is the most important value to me. I see myself as part of and dependent on the environment and also value other species for their own sake. Thus, I believe that we should protect them from any harm that our wastewater may cause. Environmental protection comes from using both the nutrient content of wastewater as well as the water itself as resources instead of viewing them only as waste. By using them as resources, we can decrease reliance on material extraction (e.g. phosphate) and the associated energy use (e.g. synthetic nitrogen production and pumping of water from aquifers) helping to protect the global environment, not just our little bit of it.

What do you think is the most sustainable solution for Palmerston North and our region?

Minimising wastewater: In my view, the most sustainable solution must involve producing as little wastewater as possible and applying as much as possible of it to land.

We need to address the cause of the issue by changing the way we do things or the things we use so as to decrease the amounts of water we use and wastewater we

create. This will help decrease the cost of treatment for whatever option is chosen. It is particularly important for any option involving discharge to land as the amount of wastewater is a major determinant of the amount of land needed. Although discharge to the river or ocean option would benefit from decreased wastewater flows too, primarily from decreased treatment costs, they provide relatively little or no other incentive to decrease wastewater (the pumping cost is likely to be negligible in the case of the river discharge and a relatively minor cost for the ocean discharge).

Public values: These are constantly changing and there is a progressive increase in the desire for having less impact on the environment. These changes in public view result in new standards being promulgated concerning the level of impact we should not exceed. This is likely to continue as younger generations, who have grown up with our negative impacts on the environment reaching lifestyle and life-threatening levels, being more concerned about those impacts than previous generations. As they become the decision makers of society it is likely they will demand higher standards. We should be selecting an option that recognises this and doesn't just meet the standards of today. We should exceed today's standards so that the readily anticipated higher standards of tomorrow don't require yet another revamp of our wastewater system.

Persistent pollutants: There is considerable uncertainty about the impacts of some of the chemicals we use. These include persistent organic pollutants but metals as well. Discharge to the river and the ocean both disperse contaminants in a way which makes them virtually impossible to recover or manage. In contrast, appropriate (in terms of quantity of water applied to avoid leaching) discharge to land will result in any persistent contaminants being contained within a known area. If any become problematic there is some chance of recovering them or at least of keeping them isolated and managing the land accordingly.

Beneficial use: Obtaining greater benefit from the use of resources is desirable especially when doing so can simultaneously decrease negative effects of the disposal of those resources. It is completely out of step with the City's EcoCity Strategy to be just throwing resources away such as by pouring wastewater into the river or ocean.

Economic potential: A solution which creates economic opportunity and decreases the risks to current or potential economic activity is more desirable than one which doesn't do these things. Discharging to water has potential to harm tourism and possible inshore fisheries/shellfish operations and has no potential for creating a tourist attraction. It also has no potential to create new economic activity in the way a land discharge scheme does.

A system which can contribute positively to biodiversity restoration is considered more sustainable than one which doesn't, especially given the almost complete destruction of wetland habitat in the lower Manawatu. Only the discharge to land option that we have proposed does so on any significant scale.

Which option has the right balance between environmental protection / impacts and community affordability?

Only options with substantial discharge to land have the right balance since full discharge to river or sea are unacceptable to us. Discharge to the river or sea both enable continuation of the thinking that we can just throw it away without further effect on us and would provide little or no incentive for people to take measures to minimise the amount of wastewater they create.

Discharge to the ocean not only received little public support during the last consultation but it was also ranked least preferred option of nearly half (44%) of respondents. The discharge to river also had a considerable proportion (23%) of respondents saying it was their least preferred option.

In contrast, those options involving substantive discharge to land were not only more favoured but also the fewest respondents ranked these as their least preferred option (7% for option 3, 97% discharge to land, and 1% for options 4, 45-55% discharge to land).

Sustainability in your home

Please tick which measures you would use to reduce your wastewater at home.

___ Remove insinkerator - don't have one, use a compost and worm bin instead
_√_ Greywater tank
_√_ Water reducing showerheads and taps
_√_ Composting toilet
_√_ Lower energy appliances
_√_ Urine separating toilets
_√_ Water metering
___ None of the above

Thank you.

Dr. Chris Teo-Sherrell
9/5/2021

Palmerston North City

Nature Calles – Wastewater Discharge

Submission to Palmerston North City Council (PNCC)

From

Manawatu Chamber of Commerce (MCoC)

Manawatu Chamber of Commerce
Unit 9a, Northcote Office Park
86, Grey Street
Palmerston North
4410

8 May 2021

Mobile: 021 0533071 Email: amanda@manawatuchamber.co.nz

Contact People: Amanda Linsley, CEO, Manawatu Chamber of Commerce

Blair Alabaster, Chairperson, Manawatu Chamber of Commerce

Manawatu Chamber of Commerce Board Members: Ed Teece, Paul O'Brien, Steve Davey, Lisa Matena, Matthew Jeanes, Caren Bailey, Cam Hadfield, Adrian Doyle, Rahui Corbett and Alex Boustridge.

1. The Manawatu Chamber of Commerce ("MCoC") is a 440+ Business Member organisation, that represents a significant proportion of the City and Region's GDP.

2. This submission is presented to Council by the MCoC Board after consultation with our Advisory Board and on behalf of our Members.

Nature Calls – Waste Water Discharge

3. MCoC thank PNCC for the opportunity to consult on this matter.

4. MCoC acknowledge that the treatment of our wastewater is the biggest environmental and financial decision that the city needs to make in the coming years. The decision will affect the treatment of our wastewater for up to 35 years.

5. MCoC understand that whilst this consultation is ongoing, the likelihood is with the changing legislation (Three Waters Bill) at a national level, by 2025 the Council will likely no longer be responsible for the delivery of the three waters and services to users. However, Council is still

required to continue with the Nature Calls project until these changes are implemented. We understand that Resource Consent is required to be lodged with Horizons Regional Council prior to June 2022. We are concerned that this consultation and the outcome (and cost) thereof will ultimately have to be revisited given the changing legislation as above.

6. MCoC note that from a business perspective, the costs involved, regardless of which option is chosen, could be quite significant given that these businesses will also have to pay 'per pan'.

7. MCoC have received differing views from our Membership with regards to the three (3) discharge options that have been put forward for consultation. However, we understand from the previous consultation that the discharge to ocean was the least supported option.

8. MCoC are unable to put forward a collective or clear majority view point with regards to the preferred option as a result of the differing views from our Membership.

9. MCoC believe that whatever option is chosen the treatment should have the highest treatments available in New Zealand for that option.

10. MCoC urge PNCC to continue consultation with all stakeholders across the wider Region, especially with those communities who would be most affected.

11. MCoC would like to see some direction from Council to businesses as to how they could reduce their wastewater and improve sustainability.

Summary

There are a lot of unknowns at present with regards to legislation and where responsibility for the Three (3) Waters will ultimately lie. At this stage MCoC are unable to put forward a collective preferred option, due to the differing views of the MCoC membership.

Yours sincerely

Signed on behalf of the Manawatu Chamber of Commerce Board
by;

Amanda Linsley
CEO
Manawatu Chamber of Commerce

Palmerston North City Council

'Nature Calls'

Submission 2021

Organisation: Bainesse/Rangiotu Community Committee

We do wish to speak to Council in person about our feedback.

Evidence from around the country is that Long Term land based discharge is not working. Eg. Feilding (continual bogging), Rotorua (trees substandard).

We support option 3 – with the highest level of treatment **AT ALL TIMES** and then discharge 5km out to sea. Being 5km out will be far enough away from the tidal wash and currents along the coastline.

The standard **must be built to last 50 years.**

Alan Horsfall (chairman)
RD7
Palmerston North
email: a.j.horsfall@xtra.co.nz

Thank you on behalf of our community,

Bainesse/Rangiotu Community Committee

6 May 2021

Grant Smith
Mayor
Palmerston North City Council
Private Bag 11034
Manawatū Mail Centre
Palmerston North 4442

Emailed to: naturecalls@pncc.govt.nz

Dear Grant

Submission from the Manawatū District Council (MDC) to the Short List of Options for the Palmerston North City Council's (PNCC's) Wastewater Treatment Plant

Thank you for the opportunity to provide feedback on the short list of options for the "Nature Calls" project looking at the future management of wastewater in Palmerston North.

In our submission to PNCC's 10 Year Plan 2018-2028, MDC noted its support for any upgrades to the Wastewater Treatment Plant that improve the state of the Manawatū River, in accordance with the Palmerston North City Council's responsibilities under the Manawatū River Leaders' Accord. MDC reiterates our support for options that remove wastewater discharges from the Manawatū River. MDC offered to share its learnings in relation to the re-consenting of the Manawatū Wastewater Treatment Plant in Feilding with PNCC. This offer is ongoing.

We understand that PNCC is seeking feedback on which of the three shortlisted options best meet submitters prioritised values; is the most sustainable solution for Palmy and the region; and strikes the right balance between environmental protection/impacts and community affordability. As a local authority that has a purpose to promote the social, economic, environmental and cultural well-being of communities in the present and for the future, this submission does not attempt to assign priority to these different values. However, general feedback is given that may assist the elected members of PNCC in their decision-making.

MDC obtained a new consent for the Manawatū Wastewater Treatment Plant in Feilding in November 2016. The consent granted to MDC for the discharge of treated wastewater to the Ōroua River is only for a period of 10 years and includes requirements around land discharges to reduce discharges to water. MDC's discharge consent is very restrictive has a very low level of compliance tolerance for nitrogen levels which means that the discharge of treated wastewater from the Manawatū Wastewater Treatment Plant into the Ōroua River is sometimes restricted when flow rates in the river are higher than the consented low flow levels. MDC encourages PNCC to ensure that the compliance limits for nitrogen and phosphorus be based on robust science. The trigger for the low flow cut-off needs to be based on scientific analysis of the sensitivity of the receiving environment and set at a level that is appropriate for avoiding ecological harm. PNCC must then commit to not discharging to the Manawatū River during low flows which may require a land area in between that proposed

for option 1 and option 2. This commitment will underpin the ecological, cultural and aesthetic values of the Manawatū River.

MDC questions why, under Option 1, only 75% of treated wastewater would be discharged to land during low flows. The Manawatū Wastewater Treatment Plant in Feilding achieves 100% discharge of treated wastewater to land during low flows (defined as the half median flows or 3.49 m^3/sec) in the Ōroua River.

MDC supports the proposal in Options 1 and 2 to further treat the wastewater by passing it through a wetland and/or land passage before it enters the Manawatū River. While Option 1 is likely to be cultural unacceptable to iwi and hapū in the Manawatū District, given the reliance on river discharge, MDC recognises that this further treatment is in recognition of these cultural concerns. The treatment by way of wetland or land passage is also necessary to meet the requirements of Horizons One Plan. MDC acknowledges that the goal for iwi is to avoid all discharges of wastewater to the Awa. However, we recognise that this is not likely to be feasible or realistic when balancing all factors, including affordability.

Option 2 is likely to be the most culturally acceptable in terms of impacts on the mauri of the Manawatū River. However, given the amount of land that must be acquired under this option, it is possible that it may include land that is culturally significant to Māori. MDC notes PNCC's concern about the area of land required for the irrigation of treated wastewater under Option 2. This is a valid concern given PNCC's obligations under the National Policy Statement for Highly Productive Land.

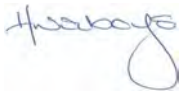
The land that receives irrigated treated wastewater from the Manawatū Wastewater Treatment Plant in Feilding is currently operated as a pasture based cut and carry operation, in accordance with the conditions of the discharge permit. This land produces a significant amount of dry matter that supports food production elsewhere. MDC's permit also allows for the land application area to be grazed by young cattle and/or sheep. MDC therefore considers its irrigation operations for the Manawatū Wastewater Treatment Plant in Feilding as a "resource recovery" operation rather than being just wastewater disposal or an unproductive use of land. PNCC will need to consider the productive potential of the land that is to be acquired under this option and whether the proposed use is, on balance, the best use for this land. The comments made above in relation to setting compliance limits for nitrogen and phosphorus and the low flow limits are also relevant to Option 2.

As noted in the commentary on Option 3, this option is not culturally acceptable to the iwi and hapū in the Manawatū and Horowhenua.

Any technical questions on our submission may be directed to MDC's General Manager – Infrastructure, Hamish Waugh (email: Hamish.Waugh@mdc.govt.nz).

We would like to speak to our submission.

Yours sincerely



Helen Worboys
Mayor
On behalf of the Manawatū District Council

Palmerston North City Council

NATURE CALLS

Joint Submission from the Food and Fibre Forum and Federated Farmers of New Zealand

Food and Fibre Forum Members

- *Peter Wells (Chair)*
- *Braeden Whitelock*
- *Paul Olsen*
- *James Stewart*

Federated Farmers of New Zealand

- *Coralee Matena - Regional Policy*
- *cmatena@fedfarm.org.nz*

FEDERATED FARMERS OF NEW ZEALAND

CONTENTS

te awa, te tangata, te whenua 2
Te Ao Māori 2
New Zealand regulation 3
Resource Management Act 3
National Policy Statement Freshwater Management (NPSFM) 4
National Environmental Standards for Freshwater Regulations 2020 5
Three waters 5
Regional regulations 5
Horizons One Plan provisions for Territorial Authorities 5
Ground water 5
Location and extent of aquifers 6
Contaminants of Emerging Concern 7
Antimicrobial Resistance 7
Soil 7
NPS High Productive Soils 8
Climate 8
Value of primary production to the region 8
Option 1 – Discharge to River 9
Events 9
Use of existing infrastructure 9
Climate change considerations 9
Economic impact on neighbours and those downstream. 10
Impact on high productive soils, wetlands 10
Option 2 – Land based discharge 10
Option 3 – Discharge to Sea (Growth) 11
Gaps – detail still required from Council 13
Recommendations 14
Table 1 – Options: Cost- benefit analysis 15
Attachment 1 – Alternative Proposal 16
Attachment 2 - Horizons Regional Council Wetlands Inventory 17
Attachment 3 – Soil classes 18
Attachment 4 – Three Waters Background 19

SUBMISSION

1. This submission is a joint submission from the Food and Fibre Forum and the Manawatu Rangitikei Province of Federated Farmers, hereafter jointly referred to as 'farmers'.

2. Unless otherwise referenced, the detail used to populate this submission has been taken from the following reports:

    i. Horizons Regional Council State of the Environment Report 2020
    ii. New Zealand Wastewater Sector Report October 2020 – prepared for the Ministry for Environment by BECA, GHD, Boffa Maskell New Zealand
    iii. October 2018 Boffa Miskell Report – Cost of upgrading Wastewater to meet NPS
    iv. Ministry for Environment – Three Waters Reform Presentation – April 2021
    v. Bradley, J. Maori cultural considerations in developing and operating wastewater systems – case history experiences.

te awa, te tangata, te whenua

3. We appreciate this opportunity to feedback to the Palmerston North City Council (Council) Nature Calls project. We thank Council for their willingness to work with farmers as the project develops, both prior to this consultation but also for the remainder of the project.

4. Nature Calls has the potential to adversely impact the awa individually (recognising that it is an entity), mana whenua and also the communities with an affirmation with the awa because of where they/their families reside. We recognise that the majority of those impacted by this proposal will reside outside of Council boundaries.

5. As Council Governance is elected from its ratepayer base, we are concerned that Council may aim to represent only the interests of City ratepayers in order to minimise any long term adverse voting impacts from decisions made. We caution Council against taking a narrow view on effects, noting that it does not align with Council's obligations under, te tiriti, the Resource Management Act, or wider Government and Regional Council regulations.

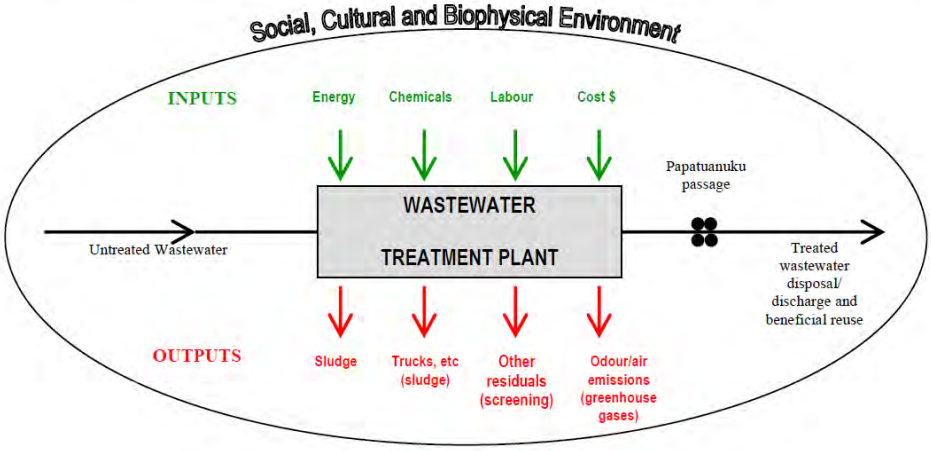
6. Sustainable management is important to the regions farmers and we are proud of the commitment that the primary production industry has made to the responsible management of its resources. Our rural landowners, farmers and horticulturalists take great pride in their work, the stewardship of the land, and their economic contribution locally and nationally. Farmers also appreciate the generational interdependence on the awa and the whenua, and the importance of protecting these assets in the long term.

Te Ao Māori

7. We understand that the Te Ao Māori position on human waste that it should not discharge directly to water, no matter how well it is treated. As shown in Figure 1, Applications to provide for this in other Districts require the waste to pass via Papatuanuku (earth mother) in a rock channel, riparian strip or pond before discharge to surface or marine waters.

8. We also appreciate the importance of mana whenua governance of the awa, noting that this has been formally recognised by the Manawatu River Leaders Forum.

Figure 1: The Generic Integrated and Holistic Approach to Wastewater Management



New Zealand regulation

9. Wastewater management in New Zealand is multi level, with various national and regional legislation considerations.

Resource Management Act

10. The purpose of the Resource Management Act 1991 (RMA) is "…*to promote the sustainable management of natural and physical resources*" where sustainable management means: "…*managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety…*"

11. The RMA is effects based and as such, "the assessment of new and existing water and wastewater infrastructure on the natural and physical environment needs to focus on the various types of effects that are encompassed in the meaning of effect as set out in this legislation. This approach clearly puts the focus on the effects of the water / wastewater infrastructure and service on the natural and built environment, including people and communities, rather than on the technology and infrastructure itself".

12. Section 104 of the RMA sets out the matters for a consent authority to consider in relation to an application for resource consent. This includes consideration of the actual or potential effects on the environment, relevant provisions of policy documents and any other matter considered relevant.

National Policy Statement Freshwater Management (NPSFM)

13. The NPSFM sets out objectives and policies of freshwater management and provides direction to regional councils as to how to manage freshwater. This includes each council developing objectives and values for each defined freshwater management unit, through consultation with local iwi and the community. From these objectives, water quality and quantity measures will implemented in order to meet identified bottom lines.

14. In 2018, Boffa Miskell undertook an analysis of the costs by District to bring Wastewater Treatment Plants up to the standard required in the 2017 NPS. The assessment indicated that 24 wastewater treatment plants in the Manawatu required upgrades in order to meet the water quality standards in the NPSFM.

Table ES-1 Estimate of capital cost to upgrade WWTPs discharging to freshwater to meet NPS Freshwater Attribute B state in the discharge

Region	No. WWTPs affected	Pop affected	Estimate of probable capital cost ($ Million)	Estimate of probable operating cost ($ Million per annum)
Auckland	4	10,030	$32 - $48	$0.59 - $0.89
Bay of Plenty	6	20,320	$55 - $83	$1.2 - $1.8
Canterbury	12	5,270	$31 - $46	$0.28 - $0.41
Gisborne	1	640	$3.5 - $5.2	$0.034 - $0.05
Hawke's Bay	5	7,960	$34 - $52	$0.63 - $0.94
Manawatu-Wanganui	24	132,940	$330 - $500	$13 - $20
Marlborough	1	690	$2.7 - $4.1	$0.021 - $0.032
Nelson	0	0	-	-
Northland	11	26,560	$100 - $150	$2.1 - $3.2
Otago	20	23,590	$120 - $180	$2.1 - $3.1
Southland	14	20,150	$84 - $130	$1.6 - $2.4
Taranaki	5	9,620	$74 - $110	$2.6 - $3.8
Tasman	3	2,580	$16 - $24	$0.22 - $0.32
Waikato	23	117,340	$240 - $360	$6.5 - $9.7
Wellington	6	39,630	$130 - $200	$4.8 - $7.2
West Coast	10	18,060	$120 - $180	$3.1 - $4.7
Total	**145**	**435,370**	**$1,400 - $2,100**	**$39 - $59**

National Environmental Standards for Freshwater Regulations 2020

15. The Essential Freshwater package, including the Freshwater NES, that came into force in September 2020 introduced strong new policies and regulations to protect natural wetlands on a national scale. The core intent of the wetland policies is to provide strong protection for natural inland wetlands, there is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.

16. The Horizons Wetland Inventory maps known inland wetlands. Attachment 2 shows where these wetlands are with regard to the Nature Calls project.

Three waters

17. In July 2019, Cabinet agreed to the Three Waters Regulatory reform. The intent of the reform is to consolidate/cluster water services nationally with a goal of sharing resources leading to the possible regional treatment of the three waters. A key pillar of the reform programme, is the protection and restoration of water quality in New Zealand's lakes, rivers and beaches.

Regional regulations

Horizons One Plan provisions for Territorial Authorities

18. Policy 3-4 of the One Plan requires Territorial Authorities to pay particular attention to the benefits of the retention of Class 1 and 11 Versatile soils for use as production land in their assessment of how best to achieve sustainable management. Production land as referred to under Objective 3-4 and defined in the RMA 1991, means any land and auxillary buildings used for the production (but not processing) of primary products (including agricultural, pastoral, horticultural, and forestry products).

19. Cumulative nitrogen leaching maximums in the Horizons One Plan, designed to protect surface water quality, set stringent standards for nitrogen loss. Landowners in targeted catchments are tasked with making substantial changes to farming practices in order to comply with required maximums. Horizons Plan Change 2 confirmed that land receiving human waste discharges were not exempt from these requirements.

Ground water

20. In the Horizons region, groundwater is widely utilised, with around 8,700 bores located throughout the Whanganui, Rangitīkei, and Manawatū catchments. Horizons groundwater quality monitoring from 2012 to 2017 shows nitrate concentrations are generally below the drinking water standard, with some elevated levels in Horowhenua and Tararua. Trends for nitrate concentration are generally indeterminate or improving, with one bore north east of Levin showing a declining trend.

Location and extent of aquifers

21. Monitoring of groundwater levels is important to check for changes over time, and to ensure this important resource is appropriately managed. The map adjacent shows the location of aquifers relevant to the Nature Calls project.

Contaminants of Emerging Concern

22. Contaminants of Emerging Concern (CECs) are chemicals and other substances that have recently been discovered in natural water bodies and can lead to potentially adverse ecological and human health impacts and are not currently regulated for. CECs are not necessarily new chemicals and can include endocrine disrupting chemicals (e.g oestrogens), microplastics and PFAS and PFOS.

23. PFAS recently become a focus following the discovery of PFAS in soil and water on and around the New Zealand Defence Force Base Ohakea, near Bulls. Widely used since the 1950s in commercial and industrial products such as non-stick cookware and food packaging, PFAS resist heat, stains, grease and water, making them very effective for smothering petroleum fires. However, because of these properties they are difficult to break down and have a tendency to accumulate in people, animals and in the environment. These foams have been widely used in specialised firefighting foams at airports and training bases throughout New Zealand.

24. The long-term effects of PFAS exposure are not well-known. Of particular concern, several Australia studies regarding PFOS and PFAS removal found that conventional treatment processes have limited success in removing PFAS, thus PFAS can be present in treated discharges and biosolids. This is of particular concern for Options 1 and 2, given that the output from the treatment plant will be discharge to the river or to land.

Antimicrobial Resistance

25. Internationally, concern has increased regarding the presence of many chemicals at low concentrations within the water environment. With so many different substances in use, many chemicals reach surface waters via urban wastewater treatment plants applying traditional treatment methods. Research has shown that many of the chemicals in waste waters now arise from use in our homes and leaching from products or are directly added in the case of cleaning products and excreted pharmaceuticals. Concern is growing over the presence of mixtures of chemicals in the environment — the so-called ‘cocktail effect’ — that may be impacting aquatic life.

26. There is concern internationally that use and excretion of antimicrobials, such as antibiotics, in human and veterinary medicine has resulted in the evolution of resistant bacteria, viruses and microbes. which can cause disease and are now resisting medicinal treatment. In response the World Health Organisation is investigating whether urban waste water treatment plants could be transferring AMR genes to the environment, to reach humans.

Soil

27. In New Zealand, highly versatile soils are known as Land Use Capability (LUC) Class 1 and 2 soils. These are the best quality soils, considered to be prime land for horticulture and agriculture. Horizons is one of four regions, including Canterbury, Taranaki and Waikato, where LUC Class 1 and 2 soils predominantly occur. Attachment 3 shows the soil classes in the lower Horizons region.

NPS High Productive Soils

28. The NPS High Productive Soils has been consulted, however we are yet to see the outcome of the consultation. As proposed, Objective 2 aims to maintain the availability of highly productive land for primary production for future generations. Council supported the draft NPS when consulted, noting that it would "*bring some much needed recognition for the importance of protecting high class versatile soils for productive purposes. Given the recent urban growth pressures that New Zealand is facing, a NPS High Productive Land provides some much needed counter balance to the NPS Urban Development to ensure that valuable finite soil resources are adequately protected*".

Climate

29. Horizons climate modelling forecasts:
    - The regions temperatures are likely to increase 0.7 to 1.1 by 2040 and up to 3.1 percent by 2090.
    - Summer flows in the Manawatu River are projected to decrease 14% by 2092 and the number of high flow events are likely to increase.
    - Annual average precipitation is predicated to increase 15 to 20% in the north of the region and decrease 20% in the south by 2090.
    - Further modelling suggests a greater pace of works will be required to offset the impact of climate change on sedimentation of rivers in the long term

Value of primary production to the region

30. The agriculture sector is incredibly important to the Manawatu-Whanganui regional economy. In 2018 the agriculture, forestry and fishing sector directly contributed $1.02b and 11,970 jobs to the Manawatu-Whanganui economy. This is 11.3% of total Gross Domestic Product (GDP) and 10.5% of all jobs. Information from DairyNZ indicate that if as proposed 1700 ha was taken out of dairy production that would equate to $13.6m less income flowing through the region per year.

31. The Central Economic Development Agency (CEDA) launched the Manawatu Agritech Strategy in late 2019 to recognise and promote Manawatu's leadership in agritech and agrifood on a global platform. The strategy recognises the significance of the agrihub that the Manawatu is built upon, notably the existing educational, science and research facilities and the significance of the pastoral landscape that it sits within.

NATURE CALLS – THE OPTIONS

32. We understand that while three options have been put forward for feedback, the wider set of options consulted by Council remain under consideration. We note that the three consulted are the top three in terms of scoring the highest across a range of criteria and values.

33. Given the potential and varying impact of the options on rural landowners, farmers have been frustrated with the lack of detail Council have shared to date about what each option will look like. We consider it is hard to understand the full impact (costs and benefits) of each option without the detail. Despite this, the options analysis below

draws upon the key and common concerns raised by farmers/rural ratepayers, about the shortfalls or otherwise of each option. The discussion below is supported by the cost benefit analysis shown in Table 1.

Option 1 – Discharge to River

Majority of treated wastewater is discharged to the Manawatu River via a wetland and/or land passage, with significantly improved removal of contaminants including phosphorus and nitrogen.

34. We understand that Option 1 largely aligns with Council's current practices, or the status quo. The majority of treated wastewater will be discharged to the river, albeit with improved treatment. However we also note that when the river is at low levels, about 75% of treated wastewater will be applied to land. Council have estimated that around 670ha of land will be required for this application.

35. Farmers do not consider Option 1 to be a viable option for the following reasons.

Events

36. The Wastewater Sector Report notes that untreated or inadequately treated wastewater discharged from failed wastewater management in response to various 'events' contains elevated levels of contaminants such as nitrate and phosphorus as well as pathogens, viruses and protozoa that can cause harm to humans and the surrounding environment. Reference to the conclusions of a study on the performance of New Zealand wastewater networks concluded that given the multiple ways in which a network can overflow, and the openness of the system, complete elimination of wastewater overflows from networks is likely an unrealistic expectation". We are therefore concerned that Option 1 be subject to the same events as today, resulting in multiple events to the detriment of te awa, mana whenua and those downstream.

37. We understand that Council have attempted to provide for the Papatuanuku passage by including a wetland which wastewater will pass through before reaching the river. We are however concerned that in the likelihood of an 'event' the wetland will likely be bypassed resulting in direct discharge to the river. We note that this does not uphold the Maori world view of how wastewater should be provided for, nor does it protect mahinga kai.

Use of existing infrastructure

38. We understand that Council are intending to utilise their current wastewater plant, while making significant improvements. Farmers are concerned that Council may be inadvertently limiting the projects possibilities, as the location and size of the current plant is problematic. Farmers are concerned that upgrading will result in another short term solution, as pressures on growth will impact the longer term viability of the plant. Farmers are also concerned that a wastewater treatment plant adjacent to the City, continues to silo the treatment of the City's waste, and therefore does not align with the future direction of the Government with regard to the three waters.

Climate change considerations

39. Horizons projections with regard to climate change, place further uncertainty on the ability of Option 1 cope with future needs. For example, we understand that climate

change will mean rainfall will be more frequent. In urban areas — where rainwater drains into the stormwater, it will mean greater surface water flooding and overflow at urban waste water treatment plants, with untreated sewage flowing into the river.

Economic impact on neighbours and those downstream.

40. Farmers are concerned that Council's intention to continue to discharge to the river, will in time negatively impact their businesses. New Zealand primary producers routinely face pressure from international markets to comply with ever increasing food safety standards, but also private standards based on matters such as environmental footprint or ethics.

41. The World Trade Organization Committees for Sanitary and Phytosanitary (food safety and health) and Technical Barriers to Trade (non-health/safety technical measures) are burdened by complaints put forward from countries about unfair protectionist measures enforced by some markets. Commercial risks of product contaminated with human waste (perceived or actual) are a very real risk to farmers.

42. We understand that in response to concerns, farmers are well placed to ensure that liability notifications are in place before Council progress. Council will also have to consider the purchase of all implicated land, ie land receiving discharge but also land adjacent to the river and also within the spillways.

Impact on high productive soils, wetlands

43. Noting the information set out earlier, it is likely that the land Council will seek for discharge to land will either be highly productive soil or contain a wetland as detailed by Horizons inventory and therefore subject to the NES regulations. The fiscal and environmental impacts of the loss of land or loss of wetland are likely to be significant.

Option 2 – Land based discharge

Hybrid discharge between land (55%) and the Manawatu River (45%)

44. Many of the rationale outlined for Option 1, regarding farmer opposition/concerns, are applicable for this Option also. We have refrained from restating these matters here, however the duplication is reflected in Table 1.

45. Farmers also have concerns that the size of land required for this option is unreasonable and unworkable. We understand that there are local wastewater discharge to land operations that operate on a much smaller scale with varying levels of success. This includes a significantly smaller operation in Shannon that is currently operating efficiently however has required adjustments in management made possible by having an experienced farmer on site to appreciate the flow on consequences to the land of the decisions made.

46. Conversely, we understand that a larger scale discharge to land operation in a neighbouring District, is not enjoying the same level of success. We understand that issues include (*not an exhaustive list):*
    - aerosols and odour concerns and closely aligned with this, concerns with actual vs reported/measured spray drift;
    - occupational health and safety implications for staff on neighbouring properties;

- overflow of wastewater onto neighbouring properties and subsequent disadvantages to the neighbouring farmer (withholding period for implicated stock);
- Discharging direct to a neighbouring stream and groundwater contamination;
- Elevated water table leading to pugging issues;
- Inability to cope with weather events;
- Underestimation of the size of the land parcel required;
- Concern with cut bales – traceability/use/need or demand for these; and
- Impact on land values.

47. These lessons are very real to the current proposals, given that the land that could be sought for discharge to land is previously drained swamp land. Farmers report that the water table on their farms is already high, and therefore do not consider the land appropriate to take the level of discharge required.

Option 3 – Discharge to Sea (Growth)

Treated wastewater is discharged to the ocean

48. Given the risks associated with discharge to the river or application to land, farmers consider that there is real benefit in investigating the viability of Option 3, however with a slight refocus. Farmers consider that a practical revision of Option 3 could be something like that illustrated in Attachment 1.

49. This option looks to re direct the wastewater away from the river to a treatment facility located at a more appropriate site. Storage ponds are located on the current site and also at the proposed facility. The intention is that no wastewater is discharged to the river. The option also provides for the ability for the site to coordinate drinking water and stormwater facilities, for the Council and also surrounding Districts.

50. As set out below, we consider an alternative approach would provide benefits on a community, regional and national scale. Benefits include:

    a. No discharge to river, no impact on groundwater, safe drinking water.

    b. No liability risks from landowners/Council. No loss of productive soils.

    c. Ability to leverage funding from Central Government and also share costs with neighbouring Districts.

    d. Ability to re-design the treatment facility, to take on board national and international lessons and provide for a facility that is future enabling/adaptive

    e. Co-Governance with iwi – an ability to redesign this project with iwi co-governance. Rather than try to make a culturally inappropriate solution fit, redesign the approach with iwi guidance/direction/leadership.

Leveraging *of the Three Waters Reform*

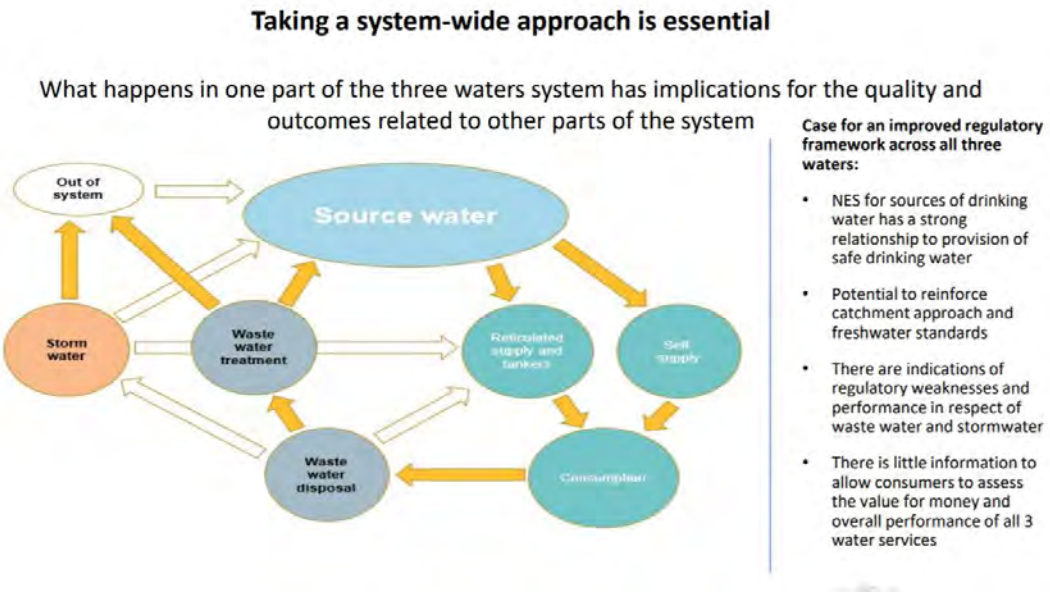
51. The Governments proposed Three Waters Reform, aims to cluster services for waste, storm and drinking water, to leverage resources across Territorial Authorities. The

alternative option proposed, aligns with the intent of the three water reform, and will enable neighbouring Districts to utilise the infrastructure developed.

52. In their 2021 draft Long Term Plan's, Rangitikei District Council and Manawatu District Council signal the need for wastewater spending as a result of failing current infrastructure and/or growth within their Districts. Council is in a position where it could redevelop Option 3 to provide a more centrally located facility designed to accommodate the needs of surrounding districts for the three waters.

53. We understand that the Hawkes Bay region is progressing options to regionalise their three waters infrastructure. We also understand that their early buy in to the programme has been rewarded by Central Government with elevated levels of investment compared to those Councils who have not. We consider Council to be in a position where it could proactively work with surrounding District Council's to explore this opportunity in the short term, so to make use of any possible Government investment available.

54. The following diagram has been shared by Government to identify the benefits of a system wide approach to the three waters.



Protection of soil resource

55. Option 3 provides for the protection of high productive soils. This aligns with Section 7 of the RMA, ensuring finite stock of land of high productive value is maintained for future generations.

Ability to comply with NPSFM

56. The 2018 Boffa Miskell Wastewater assessment indicated that 24 waste water treatment plants in the Manawatu will require upgrade in order to meet the water quality standards in the NPSFM. The ability for this project to remedy the failings of other plants is of significant benefit to this Council and neighbouring Councils.

Technologically adaptive solution

57. The New Zealand Wastewater Sector Report identifies potentials benefits for new wastewater projects. The proposed regional solution gives Council the opportunity to further explore the possible benefits of a technologically adaptive solution, for example:

    a. Biogas production – Biogas from anaerobic digestion process is used for hot water heating or power generation via co-generation engines.

    b. Biosolids drying - Christchurch City Council previously disposed of wastewater treatment plant biosolids by spreading them on forestry land and rehabilitating a closed landfill. A new strategy for biosolids management was required – and a thermal belt drying plant was developed. The Biosolids Drying Facility now provides valuable sources of nutrients and humus for land rehabilitation.

    c. An alternative treatment option could also leverage of international successes. In the Netherlands, the Amersfoort urban wastewater treatment plant receives domestic and light industrial effluent. The treatment process comprises physical treatment, and carbon, nitrogen and phosphorus removal. It uses innovative technologies to recover phosphorus and nitrogen from sludge for commercial nutrient use, producing a fertiliser as well as biogas. It is 100% energy self-sufficient and exports energy to power 600 city dwellings.

    d. The Wulpen urban wastewater treatment plant in Belgium includes more stringent treatments to remove phosphorus and disinfect the effluent. The treated water is of superior quality — similar to that of drinking water — is free of micropollutants and pathogens, and is used to recharge the acquifier.

Gaps – detail still required from Council

58. Given the significant gaps in the analysis provided, farmers seek information from Council to address the following:

    a. How has the MCA (multicriteria analysis) accounted for the full costs to human health (bathing, recreation, water abstraction, fishing), cultural costs and biodiversity (habitat destruction, degrading habitat, build up of pollutants in ecosystem)?

    b. How has the MCA accounted for the full costs to human health (bathing, recreation, water abstraction, fishing), social costs (loss of livelihoods, impact/dislocation on community/families), the economy (loss of revenue from productive land), and biodiversity (habitat destruction, degrading habitat, build up of pollutants in ecosystem)?

    c. How has the MCA accounted for the full costs (and benefits of avoided local impact) of human health (bathing, recreation, water abstraction, fishing), avoided social

costs, the avoided economic impact, and relative biodiversity impact (avoided river and land pollution vs marine environment)?

Recommendations

59. The Food and Fibre Forum and Federated Farmers recommend that Council:

a. Consider the negative impacts of Options 1 and 2 as identified by farmers;

b. Recognise the potential benefits of a redesigned Option 3 to the Council, neighbouring Districts and nationally;

c. Recognise the potential benefits from a redesigned Option 3 as a regional scale approach to managing the three waters;

d. Commit to exploring Option 3 growth – Kotahi tangata, Kotahi otinga, to tatou heke mai;

e. Continue to work with farmers as the Nature Calls project is progressed.

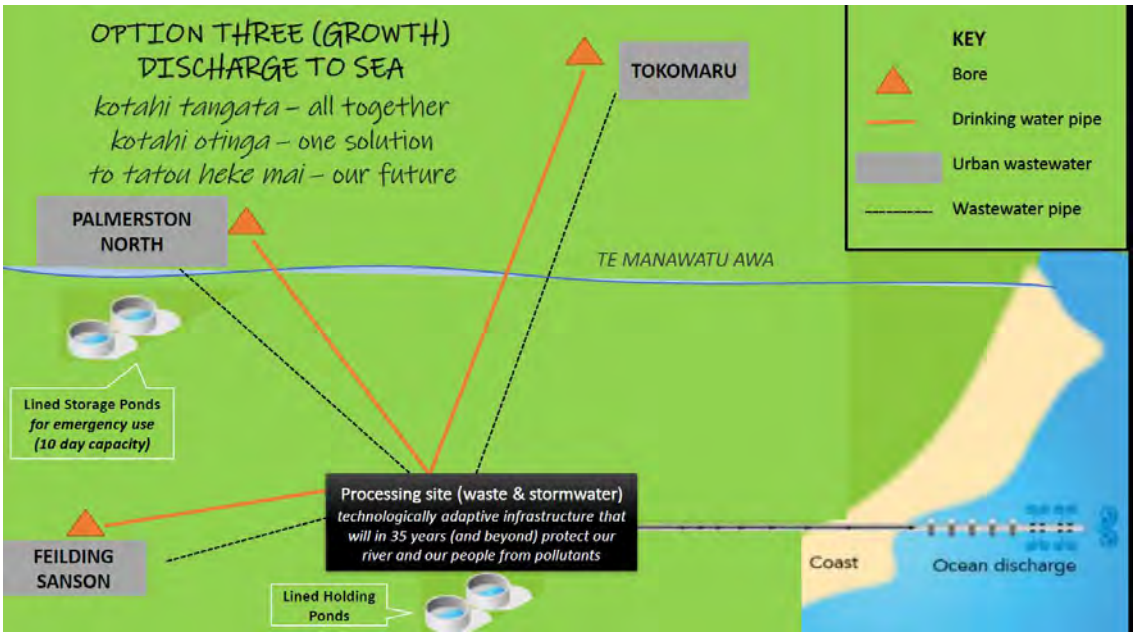
Table 1 – Options: Cost- benefit analysis

Weighting criteria

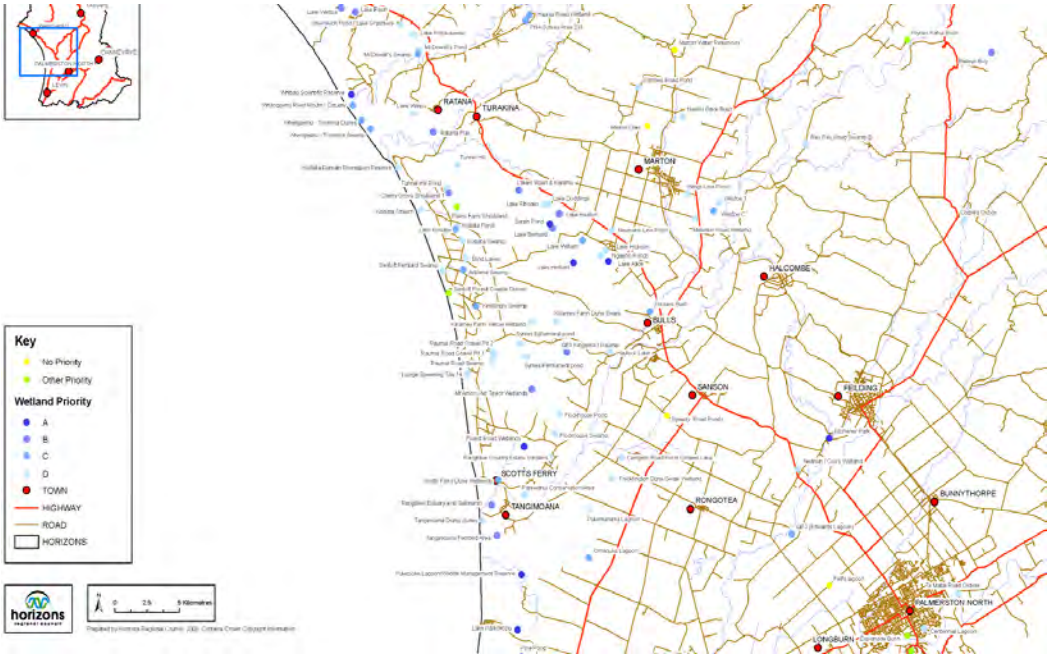
Negative impact	-10
Neutral impact	0
Positive impact	10

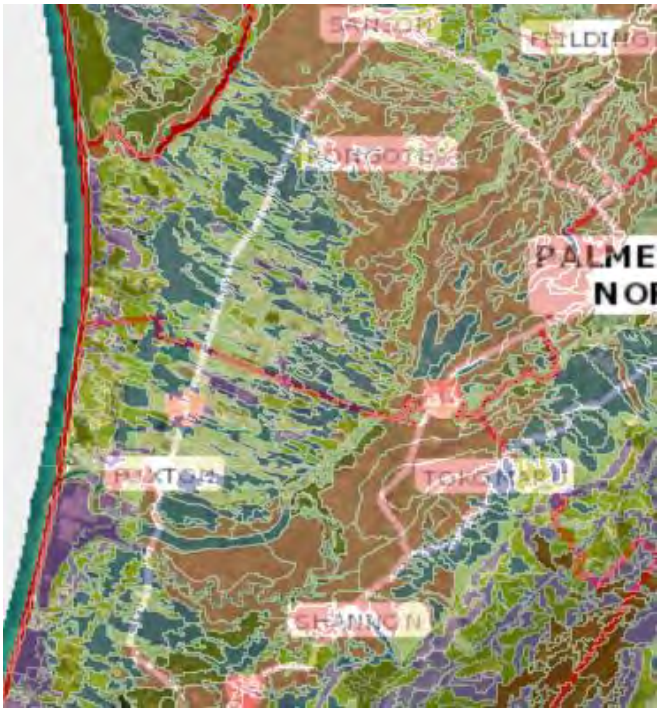
	River	Land	Sea	Sea (Growth)
Cost to PNCC	-10 PNCC have not factored in the cost of buying land off landowners (spillway land also)		0 Assume costs as previously forecasted	10 Potential to leverage from the Governments three waters fund
Cost to wider districts/ ability to provide for future regional approach	-10 Option will not be able to cope with growth/expansion at scale proposed.			10 Upgraded/centralised treatment plant could be developed from outset to provide for regional service
Cost to national/economy/trade	-10 Farm land lost for effluent discharge and also land adjacent to river or in spillway no longer able to be farmed		0 Status quo	10 Ability for new treatment plant to provide for three waters on a regional scale
Impact on productive land	-10 Farm land lost for effluent discharge and also land adjacent to river or in spillway no longer able to be farmed		0 Status quo retained	0 Status quo retained
Impact on te ao maori	-10 Lack of ability to provide for 'events'. Untreated waste to river		-10 No papatuanuku passage	10 Ability for new treatment plant to provide for co-governance with iwi and input into culturally appropriate design
Alignment with Govt three waters	-10 Does not provide for three waters or wider regional approach			10 Treatment plant developed to provide for PNCC three waters but also neighbouring districts
Impact on sensitive catchments/wetlands	-10 Options both require discharge to land		0 Discharge to sea bypasses catchments	0
Public health considerations (drinking water)– ecoli, AMR	-10 Potential for groundwater loss, drinking water contamination		0 No impact on groundwater	0 No impact on groundwater
Liability issues	-10 Council risk from liability – future loss to landowners		0 No impact on landowner	0 Identify suitable site for treatment to avoid liability issues.
TOTAL	**- 90**		**-20**	**50**

Attachment 1 – Alternative Proposal



Attachment 2 - Horizons Regional Council Wetlands Inventory





Attachment 3 – Soil classes

Soil classes - key

Attachment 4 – Three Waters Background

What outcomes is the Government seeking for the three waters system?

Specific outcomes are still being discussed with Ministers – but likely to relate to:

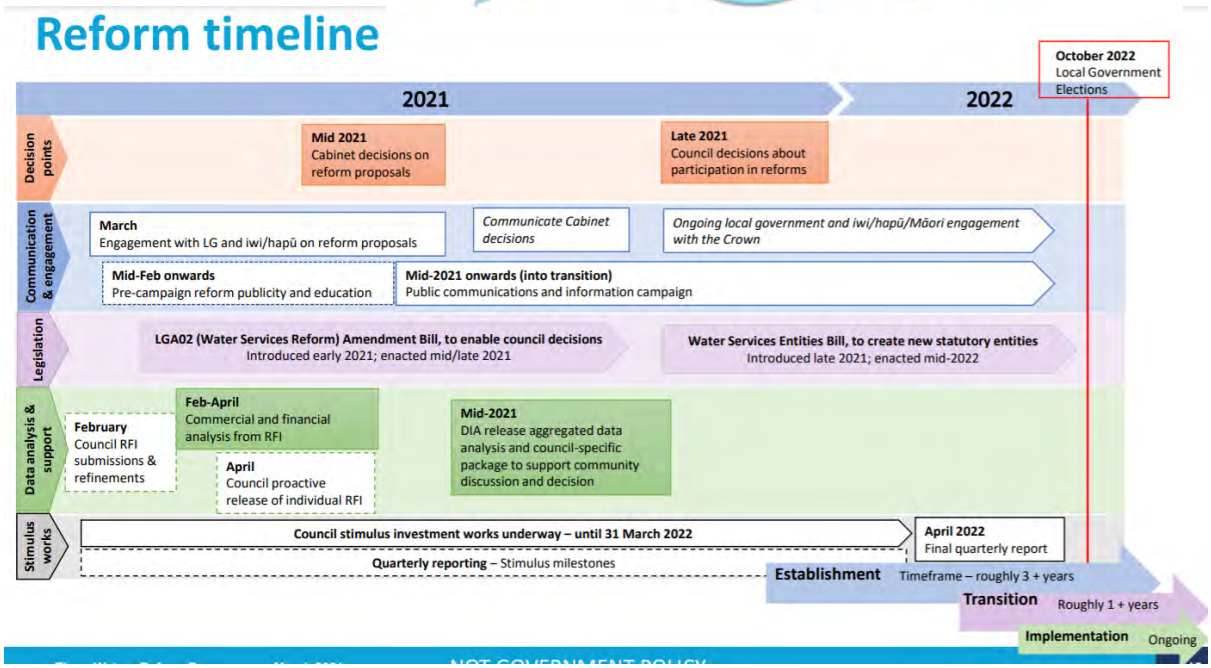
- **ensuring safe, reliable, fit-for-purpose drinking water**
- **better environmental performance**
- **three waters services that contribute to the wider social (eg housing), environmental and economic outcomes that are important to New Zealand**
- **achieving the above outcomes in ways that are affordable for our communities**

Broader goals relate to things like:

- Delivering the water infrastructure needed to support growth
- Protecting/enhancing our reputation as a tourist destination and export market
- Continuity of water services in the face of climate change and natural disasters

The HNI recommended moving to a system of aggregated, dedicated water providers.
If we were to consider a new model, what might the options look like?

Reform timeline



Federated Farmers of New Zealand

Submission to the Palmerston North City Council on the Draft Long Term Plan 2021

14 May 2021

0800 327 646 | FED FARM .ORG.NZ

SUBMISSION ON PNCC DRAFT LONG TERM PLAN 2021

To: Palmerston North City Council
submissions@pncc.govt.nz

Name of submitter: Federated Farmers of New Zealand

Murray Holdaway
Manawatu/ Rangitikei Province
President

Paul Olsen
Manawatu/ Rangitikei Province
Vice President

James Stewart
Manawatu/ Rangitikei Province
Executive

Contact person: Coralee Matena
Senior Regional Policy Advisor - Federated Farmers of New Zealand
PO Box 945, Palmerston North, 4340
cmatena@fedfarm.org.nz

---

1. The Manawatu-Rangitikei of Federated Farmers (Federated Farmers) welcome the opportunity to comment on the Palmerston North City Council Long Term Plan 2021. We acknowledge any submissions made by individual members of Federated Farmers.

2. We wish to be heard in support of this submission. Our preferred hearing time is on the morning of the 27th of May.

3. Federated Farmers also put forward a joint submission with the Food and Fibre Forum on the Nature Calls project. We would like our hearing time to be scheduled alongside the Forum's allocated hearing time.

SUBMISSION

2021 – Council position and impact on LTP

4. Federated Farmers appreciates that for Regional and District Councils alike, the 2021 LTP is heavily directed by external factors. Increasing costs to implement Central Government regulatory changes, coupled with the ongoing impact of COVID19 are untimely challenges for Councils. We appreciate that for many Councils, the pressure to invest in new and upgraded infrastructure while also maintaining existing infrastructure, is forcing tough conversations to be

had about nice to have services compared to core services. For our members, this conversation is long overdue.

5. We note the introductory comments from the Mayor with regard to the complexity of the current environment, the unknown future and the need to make tough decisions over the 10 years of the Plan. We also note the comments made in the Independent Audit Report with regard to the inconsistencies in the information proposed in the Long Term Plan compared to the Council's financial strategy. We note in particular the recommendation from the auditor that "*the Council needs to reduce levels of service, removing or deferring planned projects and increasing rates further*". We would support Council taking a hard line on nice to have projects in the short term and instead focus on key projects like the wastewater project and earthquake strengthening.

Rates – General comments

6. Rates are among the top ten operational expenses of a farming business. They are a source of considerable financial pressure for all farmers. Federated Farmers makes submissions on Annual and LTP's to ensure Council's exercise fiscal prudence, and consider affordability, fairness and equity issues when recovering rates (to the extent this is possible in land and capital value taxation systems).

7. Rates are a charge for services, and they are supposed to reflect the access to, and benefit derived by ratepayers from council services. This is a key principle, reinforced in 2019 by the Productivity Commission and a key provision in s.101 of the Local Government Act 2002 that sets out funding principles for local authorities. In practice though, Federated Farmers considers that the 'benefit principle' is often eroded by factoring in other considerations like 'affordability' or 'ability to pay', albeit without evidence about the real financial situations of individual ratepayers.

8. We therefore support the current rating differentials for wastewater and drinking water, which more fairly require those who are benefiting or utilising the activity to provide the required rating contributions.

Nature calls

9. Federated Farmers also supports developments to wastewater treatment as we have a number of members who have farms in proximity to the river, and therefore the condition of the river has a direct impact on them socially and economically. Federated Farmers has worked with the Food and Fibre Forum to put forward a joint submission to Council on the Nature Calls project. The submission is attached to this submission.

10. We consider Council to be well placed to reconsider the direction of the Nature Calls project, with a view to aligning with neighbouring Districts to create a regionalised solution for wastewater, and potentially also storm water and drinking water. We consider that this would enable Council to leverage funding from Central Government, while also developing a culturally inclusive (co-governed with iwi) future proofed three waters facility.

Manawatu/Rangitikei Federated Farmers thanks Palmerston North City Council for considering our submission.

FEDERATED FARMERS OF NEW ZEALAND

NATURE CALLS FEEDBACK FORM

Email to naturecalls@pncc.govt.nz – Feedback closes Sunday 9 May 2021

Submitter details	
Name:	**Lower Manawatu Scheme** **Peter Wells, LMS Chairman**
Address:	
Email Address:	**peterwells@lansdale.co.nz**
I wish to speak to this submission on behalf of this organization	

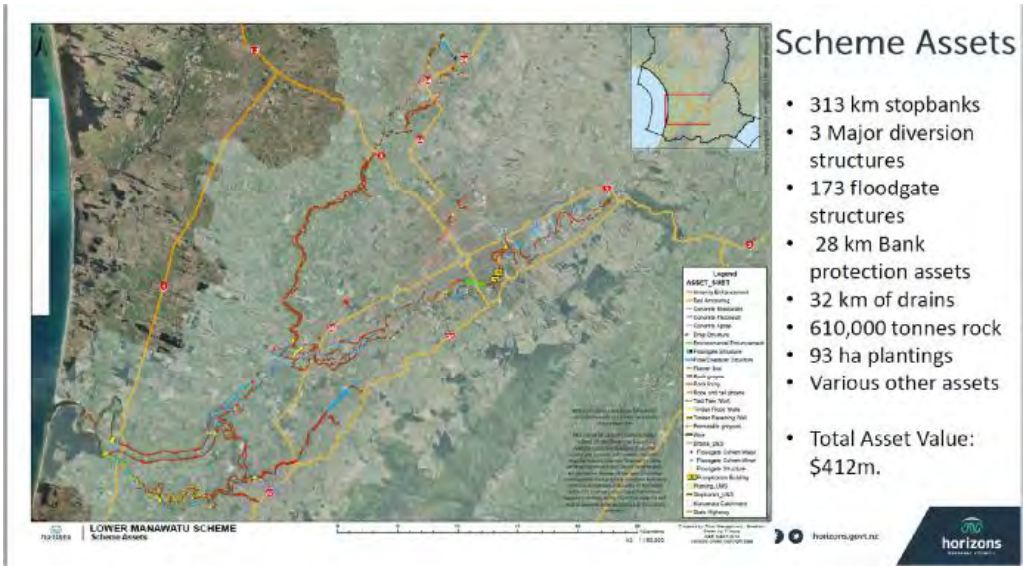
The Lower Manawatu Scheme (LMS) provides 100-year flood protection as a minimum for landowners in its geographic area. The Scheme has 412m in assets encompassing areas associated with the Manawatu River from the Manawatu Gorge to Foxton Beach. Option 1 & 2 under the PNCC Nature Calls Waster Proposal could have a significant impact on the workings of the scheme and its revenue used to finance the scheme.
Note: several other drainage schemes that would be affected by Nature Calls Proposal 1 & 2 won't have been consulted or even aware that their schemes and properties could be affected.

- The scheme has a significant investment in the area covered by the Nature Calls proposals and despite a submission dated July 13th, 2020, there has been limited consultation that we are aware of between ourselves or affected landowners by PNCC
- The LMS owns a significant area of the spillway and accretion that it leases to farmers. We are concerned that the continued discharge of treated waster water into the river could affect farmers' ability to sell their produce and meet their compliance obligations. Most farm compliance programs preclude the selling of any product that comes into contact with human wastewater. (Fonterra for example)
- We are also aware of farmers who own accretion and spillway land that could be affected
- If the accretion or spillway can't be grazed this could have an impact on river flows and result in additional siltation, putting at risk the 100-year flood protection requirement of the scheme.
- If farmers cannot derive their normal income from these areas we suggest it may be necessary to purchase these areas as part of the scheme.
- The proposal to irrigate wastewater to 1700 hs of farmland in the LMS catchment will affect water flow from drainage systems into the Manawatu River. This could include contaminants and nutrient loading from on-farm drainage systems
- There are known issues from the transfer of disease from birds to pastoral animals. We believe research needs to be put into this issue if wetland birdlife increases.

Summary

There are significant issues from the Nature Calls proposal which we believe require more consultation and data before councilors can make an informed decision on options 1 and 2. And whilst we are the river/drainage largest scheme in the area we are aware of other drainage schemes that will be affected who won't be aware of proposals or have been consulted.

Appendix 1



Appendix 2.

Most of the drainage schemes (not river) listed below will be affected by the Natures Calls Proposals 1 & 2

38. Flood Protection and Control Works (5000)

		Book Value as at 30 June 2017	Assets Vested to Horizons During the Year	Assets Constructed by Horizons	Book Value as at 30 June 2018
River Schemes					
Ashhurst Stream		398	-	-	398
Lower Kiwitea		2,388	-	-	2,388
Lower Manawatu		247,087	-	4,645	251,732
Lower Whanganui		5,555	-	36	5,710
Makirikiri		1,640	-	-	1,653
Mangatainoka		16,640	-	98	16,730
Mistnewa		2,716	-	-	2,301
Ohau-Manakau		12,739	-	-	12,739
Pohihi		650	-	-	665
Pohangina-Oroua		5,938	-	64	5,389
Porewa		6,459	-	-	7,139
Rangitikei		52,286	-	394	51,788
South East Ruahine		20,719	-	62	20,512
Tawataia-Mangaonin		391	-	-	410
Tiitoreka		1,578	-	-	2,423
Upper Manawatu Lower Mangahao		8,761	-	125	8,848
Upper Whanganui		4,877	-	-	4,874
River Schemes Total		**389,871**	-	**5,716**	**397,193**
Drainage					
Forest Road		413	-	-	412
Foxton East Drainage		87	-	-	79
Hauiru Drainage		273	-	-	274
Himatangi Drainage		389	-	-	325
Hokio Drainage		421	-	-	414
Ingestre Drainage		7,059	-	47	6,938
Makerua Drainage		8,384	-	66	8,331
Manawatu Drainage		31,459	-	-	31,234
Moutoa Drainage		5,397	-	108	4,994
Te Kawau Drainage		7,923	-	23	7,903
Whirokino Drainage		580	-	-	569
Drainage Total		**61,896**	-	**344**	**61,472**
All Schemes Total		**451,767**	-	**5,968**	**458,671**
Infrastructure assets are re-valued on a three year cycle basis. The last valuation was done as at 30 June 2017.					
Our estimated replacement cost is (5000)	River Systems	5406,927			
	Drainage systems	567,617			
	Total Replacement	**$474,544**			

Appendix 3

13 July 2020

PRD0535
IM/JB

To:	Palmerston North City Council
Comments on:	Nature Calls
Comments by:	Horizons Lower Manawatu Scheme
Address for Service:	**Area Engineer Central** Horizons Regional Council Private Bag 11025 Manawatu Mail Centre Palmerston North 4442 **Email: ian.mcmahon@horizons.govt.nz**

1. The Horizons Regional Council - Lower Manawatu Scheme appreciates this opportunity to comment on the Palmerston North City Council (PNCC) project 'Nature Calls'.

2. As owners of land adjacent to the Manawatū River, the Horizons Lower Manawatu Scheme would like to be consulted on an 'effected party' basis.

3. The Horizons Regional Council Resource Management Plan requires each landowner to individually be responsible for the sustainable management of their businesses. We expect to see urban activities managed in a commensurate way. This project must also achieve the sustainable management principles as set out in the Resource Management Act.

4. Consultation process - Horizons Lower Manawatu Scheme is concerned that Council are not intending to consult with the public, and in particular rural landowners, in further detail on the option the project will progress. We consider that the detail provided on each option has not enabled a robust assessment of the merits or otherwise of each option. We therefore ask that Council include a further round of formal public consultation with all parties on the specifics of the option Council will progress.

5. Information consultation – We consider that Council have not drawn on the wealth of experience and knowledge that sits within the wider community. We therefore consider that it is important that going forward, Council factors in opportunities to informally share information with the primary sector and also seek feedback or input on specific matters. We therefore ask that Council

horizons
REGIONAL COUNCIL

a. Establish a primary sector reference group with the aim of regularly meeting with the group to provide face to face updates/seek information, and also share information via email as the project develops. The importance of the agricultural sector to the city, region and nationally cannot be forgotten as the project is refined. It is therefore vital that Council ground truths the direction it will take to ensure that it does not have any adverse impacts on agriculture, and rather, progresses opportunities to better work with or enable the sector.

b. Identify impacted groups to provide active and regularly updates – We are concerned that Council have not identified groups with an direct interest in the project, in particular those with a discrete mandate that will be impeded by the project. There are for example a number of River Scheme User/Management Groups that should be regularly consulted with as the project is developed.

6. Exploration of Option 6 – We consider that while Option 6 could have the greatest cost implications to Council in terms of infrastructure, it could also provide considerable benefits to Council and the wider region. Without exploring the option in any great depth, it is not possible to fully explore or understand the potential gains from discharging direct to sea. We therefore request that Council fully explore this Option, to ensure that it is not bypassing what could be a significant win for all. This includes for example:
   - Removing discharge to the river
   - Redirecting the discharge to areas that could benefit (for example for irrigation).

7. Concerns with discharge to Land – We have a number of concerns about any option that proposes discharge to land including:

   a. A lack of understanding about the land required – what land and how much.

   b. Risks – We are concerned that Council has not considered the risks of discharging to land (and also river). This includes both known risks, but also potential, future risks as identified (for example the impact of class A drugs in waste, hormones, communicable diseases etc).

The Horizons Lower Manawatu Scheme look forward to working together with PNCC to ensure the success of this vital project.

Yours sincerely,

Ian McMahon
AREA ENGINEER CENTRAL

Copies to Michelle.allan@pncc.govt.nz

Enclosures Nil

Submission for Nature Calls Feedback

Manawatu Drainage Scheme

Richard Green, Committee Member
greenrichard415@gmail.com
0211028852

The Manawatu Drainage Scheme provides 100-year flood protection for landowners in its geographic area. The Scheme has 31 million in assets and covers 16,400ha. Option 1 & 2 under the PNCC Nature Calls Waster Proposal could have a significant impact on the drainage scheme workings and its revenue used to finance the scheme.

The standard feedback form does not meet the concerns we have.

Our committee is tasked with liaising with the Horizons Regional Council to facilitate efficient and safe drainage systems within the Kairanga area.

- We are concerned by proposals to dispose of city wastewater onto large areas of flat low-lying soils with clay and blue pug bases.
- Most farm systems include subterranean pipe systems to transport water to internally owned drains that transfer water to Horizons drains, that are protected by spillways, and then to the main river systems, which are also protected by spillways.
- The local landowners incorporated an expensive drainage pumping system located at Rangioutu to dispense water into the Oroua River.
- Our concern is that the intrusion of large volumes of extra water into the current high capital cost drainage system structures will overload the current design causing major production losses to the wider region.
- The volumes of water proposed would raise water tables affecting current land uses not only on the site being used to apply the wastewater but also in the wider region due to the nature of the topography.
- Also, water not fully treated that could contain elements, salts, chemicals, and toxins could contaminate the whole region in the regular flood events that prevail in this area, including major river stopbank breeching.
- The integrity of the drainage and flood systems is critical to the local economy.
- Some of the scheme income is derived from leasing land, and proposals 1 & 2 could impact this income,
- The consultation process by PNCC has neglected to consult with affected landowners and groups like ourselves in the areas in the proposals

We would only support option 3, discharge to the ocean, as the only viable option of the 3 options presented.

MANAWATU DRAINAGE SCHEME

Scheme Facts

- Scheme Assets.
  - 75 floodgated culverts
  - 276 km of drainage channels
  - 1 Pump station
  - 34 km Stopbanks
- Total Asset Value: $31,681,465.
- Scheme Area 16,400ha.
- Majority of the catchment flows out into the Manawatū River at the Burkes Floodgates.
- Predominantly servicing dairy, horticultural land and an increasing number of lifestyle blocks.

horizons.govt.nz

Call Us

Find Us

Email Us

Business is better with a little twist

JUST ADD LIME

www.justaddlime.co.nz