



If calling, please ask for Democratic Services

Council

Thursday 30 April 2020, 9.30am

Via Zoom meeting

Members

Cr Ponter (Chair)

Cr Staples (Deputy Chair)

Cr Blakeley

Cr Brash

Cr Connelly

Cr Gaylor

Cr Hughes

Cr Kirk-Burnnand

Cr Laban

Cr Lamason

Cr Lee

Cr Nash

Cr van Lier

Recommendations in reports are not to be construed as Council policy until adopted by Council

Council

Thursday 30 April 2020, 9.30am

Via Zoom

Public Business

No.	Item	Report	Page
1.	Apologies		
2.	Conflict of interest declarations		
3.	Public Participation		
4.	Confirmation of the Public minutes of the Council meeting 9 April 2020	20.123	4
5.	Update on progress of action items from previous Council meetings – 30 April 2020	20.128	15

Strategy/Policy/Major Issues

6.	Crisis Management Team business continuity update	Oral report	
7.	COVID-19 public transport response	20.99	19
8.	Proposed Waiohine river plan – approval for public consultation and submissions	20.90	24
9.	Draft parks network plan 2020-30 – strategic directions	20.89	202
10.	Post implementation review – better Metlink fares 2018-19	20.135	244
11.	Advertising on buses – further extension of trial	20.111	279
12.	Local Government Funding Agency (LGFA) amending documentation	20.139	295
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Governance

13.	Revised sensitive expenditure (elected members) policy	20.3	300
14.	Report on the Civil Defence Emergency Management Group joint committee meeting on 24 April 2020	20.133	319

Resolution to exclude the public

15.	Resolution to exclude the public report	20.137	325
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Public Excluded Business

- | | | | |
|-----|---|-----------|-----|
| 16. | Confirmation of the public excluded minutes of Council 9 April 2020 | PE.20.124 | 327 |
| 17. | Appointments to Public Transport Advisory Group | PE20. | 330 |



Please note these minutes remain unconfirmed until the Council meeting on 30 April 2020

Report 20.123

Public minutes of the Council meeting on Thursday 9 April 2020

All members participating by Zoom at 9.31am.

Members Present

Councillor Ponter (Chair)
Councillor Staples (Deputy Chair)
Councillor Blakeley
Councillor Brash
Councillor Connelly
Councillor Gaylor
Councillor Hughes
Councillor Kirk-Burnnand
Councillor Laban (from 9.34am)
Councillor Lamason
Councillor Lee
Councillor Nash
Councillor van Lier

All members participated at this meeting via Zoom, and counted for the purpose of quorum, in accordance with clause 25B of Schedule 7 to the Local Government Act 2002.

Public Business

1 Apologies

Moved: Cr Gaylor / Cr Staples

That the Council accepts the apology for lateness from Councillor Laban.

The motion was **carried**.

2 Declarations of conflicts of interest

There were no declarations of conflict of interest.

3 Public participation

There was no public participation.

4 Confirmation of the Public minutes of the Council meeting of 27 February 2020 – Report 20.80

Moved: Cr Blakeley / Cr Staples

That the Council confirms the Public minutes of the Council meeting of 27 February 2020 – Report 20.80.

The motion was **carried**.

Noted: Councillor Laban joined the meeting at 9.34am during the above item.

5 Confirmation of the Public minutes of the Emergency Council meeting of 24 March 2020 – Report 20.108

Moved: Cr Lamason / Cr Brash

That the Council confirms the Public minutes of the Emergency Council meeting of 24 March 2020 – Report 20.108.

The motion was **carried**.

Strategy, policy or major issues

6 Update on progress of action items from previous Council meetings – April 2020 – Report 20.91 [for information]

7 Crisis Management Team business continuity update – oral update

Greg Campbell, Chief Executive, and Nigel Corry, General Manager People and Customer, spoke to the report.

The Crisis Management Team (CMT) was stood up three weeks ago when the country entered COVID-19 alert level two. All staff are working remotely, and some operations have been curtailed. The set up for remote working has gone well.

Greater Wellington continues to resource the region's Emergency Coordination Centre with 25-30 officers deployed daily on a roster. This will continue over the Easter weekend.

Mr Campbell advised that he is proud of the successful implementation of remote working and how officers have supported one another. Greater Wellington has deployed its mental health first aiders.

Mr Corry advised that the CMT is meeting regularly and has discussed what return to office work will be, once the relevant alert level allows for it. This will follow the lead of the Government, its guidance, and the relevant alert level. There will be a transition to returning to the office, with staff welfare prioritised. There is greater flexibility for transition with most officers having

remote access. Flexible working will be more deliberate and will embed different ways of working.

8 COVID-19: public transport commercial matters – Report 20.106

Scott Gallacher, General Manager Metlink, spoke to the report.

Moved: Cr Blakeley / Cr Brash

That the Council:

1. Notes that the New Zealand Transport Agency and the Ministry of Transport collective objective through the COVID-19 crisis is to ensure that public transport services continue to be provided to the extent possible, consistent with any advice received from the Ministry of Health, and that the public transport sector can recover quickly when we enter the recovery phase.
2. Endorses the actions taken to date by Greater Wellington and Metlink operators (as set out in paragraphs 9 to 15 of this report) in response to COVID-19.
3. Notes the additional actions that may be required by operators during Alert level 4.
4. Notes the guidance provided by the New Zealand Transport Agency and the Ministry of Transport regarding the additional financial support that will be provided from the National Land Transport Fund until 30 June 2020 and is subject to review.
5. Agrees that the additional funding from the National Land Transport Fund is based on the expectation that the Council will fund its pre-budgeted local share (rates) of the cost public transport service provision for the financial year to 30 June 2020.
6. Notes that Council will be required to fund the loss of fare revenue and any net increase in operator costs that are incurred after the move to Alert 2 and prior to 25 March 2020.
7. Notes that a Force Majeure Event has occurred under the Public Transport Operating Model (PTOM) contracts with each of the bus, rail and ferry operators.
8. Notes that the General Manager, Metlink has issued a letter to each of the Metlink operators regarding:
 - a in the case of the bus and rail operators, the declaration of a national state of emergency constituting a Force Majeure Event,
 - b in the case of the ferry operator, the Epidemic Notice issued by the Prime Minister constituting a Force Majeure Event,
 - c the approach that Greater Wellington intends to take to ensure that Metlink operators will continue to be funded in accordance with the New Zealand Transport Agency and Ministry of Transport guidance for

any net increase in costs incurred by operators in response to COVID – 19, and

d in each case confirming that Greater Wellington specifically wants operators to maintain their respective workforce and assets so that public transport is ready to play a key role in the recovery phase whenever that point is reached.

9. Notes that (in the absence of officer delegated authority) three specified Councillors (in accordance with, and subject to the conditions set out in the Council resolution passed on 24 March 2020) have the delegated authority to approve any further actions by PTOM operators or Greater Wellington (including by incurring expenditure and /or the forgoing of revenue) required in response to COVID –19.
10. Authorises the Chief Executive to extend the timetable for negotiation of variations to the NZ Bus and Tranzurban PTOM contracts to enable the purchase of electric vehicles due to COVID –19.
11. Notes the delay in the work required to implement the rest and meal break changes due to COVID-19.
12. Notes that exempt services (fully commercial services not contracted by Greater Wellington), including the Airport Flyer service and Wellington Cable Car, have been suspended.

Moved as an amendment (to be additional motions): Cr Nash / Cr Laban

2. Acknowledges the impacts of the pandemic on drivers and other public transport workers and welcomes the co-operation between Greater Wellington, unions, and operators to support and maintain the Region’s public transport workforce.

The amendment was **carried** and became part of the substantive motion.

The substantive motion was put:

1. Notes that the New Zealand Transport Agency and the Ministry of Transport collective objective through the COVID-19 crisis is to ensure that public transport services continue to be provided to the extent possible, consistent with any advice received from the Ministry of Health, and that the public transport sector can recover quickly when we enter the recovery phase.
2. Acknowledges the impacts of the pandemic on drivers and other public transport workers and welcomes the co-operation between Greater Wellington, unions, and operators to support and maintain the Region’s public transport workforce.
3. Endorses the actions taken to date by Greater Wellington and Metlink operators (as set out in paragraphs 9 to 15 of this report) in response to COVID–19.
4. Notes the additional actions that may be required by operators during Alert level 4.

5. Notes the guidance provided by the New Zealand Transport Agency and the Ministry of Transport regarding the additional financial support that will be provided from the National Land Transport Fund until 30 June 2020 and is subject to review.
6. Agrees that the additional funding from the National Land Transport Fund is based on the expectation that the Council will fund its pre budgeted local share (rates) of the cost public transport service provision for the financial year to 30 June 2020.
7. Notes that Council will be required to fund the loss of fare revenue and any net increase in operator costs that are incurred after the move to Alert 2 and prior to 25 March 2020.
8. Notes that a Force Majeure Event has occurred under the Public Transport Operating Model (PTOM) contracts with each of the bus, rail and ferry operators.
9. Notes that the General Manager, Metlink has issued a letter to each of the Metlink operators regarding:
 - a in the case of the bus and rail operators, the declaration of a national state of emergency constituting a Force Majeure Event,
 - b in the case of the ferry operator, the Epidemic Notice issued by the Prime Minister constituting a Force Majeure Event,
 - c the approach that Greater Wellington intends to take to ensure that Metlink operators will continue to be funded in accordance with the New Zealand Transport Agency and Ministry of Transport guidance for any net increase in costs incurred by operators in response to COVID – 19, and
 - d in each case confirming that Greater Wellington specifically wants operators to maintain their respective workforce and assets so that public transport is ready to play a key role in the recovery phase whenever that point is reached.
10. Notes that (in the absence of officer delegated authority) three specified Councillors (in accordance with, and subject to the conditions set out in the Council resolution passed on 24 March 2020) have the delegated authority to approve any further actions by PTOM operators or Greater Wellington (including by incurring expenditure and /or the forgoing of revenue) required in response to COVID –19.
11. Authorises the Chief Executive to extend the timetable for negotiation of variations to the NZ Bus and Tranzurban PTOM contracts to enable the purchase of electric vehicles due to COVID –19.
12. Notes the delay in the work required to implement the rest and meal break changes due to COVID-19.
13. Notes that exempt services (fully commercial services not contracted by Greater Wellington), including the Airport Flyer service and Wellington Cable Car, have been suspended.

The motion was **carried**.

Noted: The Council Chair acknowledged Greg Pollock for his work over the last 18 months, as General Manager Public Transport, and thanked him for extending his time with Greater Wellington to assist with the COVID-19 response.

9 Financial update for 2019/20 – Report 20.122 [for information]

Alan Bird, Chief Financial Officer, spoke to the report.

10 Report on Wellington Water Committee meeting – 5 March 2020 – Report 20.92 [for information]

Samantha Gain, General Manager Corporate Services, spoke to the report.

11 Report on the Emergency Civil Defence Emergency Management Group Joint Committee meetings of 30 March 2020 and 2 April 2020 – Report 20.115 [for information]

Francis Ryan, Manager, Democratic Services, spoke to the report.

Climate Committee business

12 Design of the low carbon acceleration fund – Report 20.112

Jake Roos, Climate Change Advisor, spoke to the report.

Dr Maria Bargh, as an appointee to the Climate Committee, joined the meeting for the discussion on this item, but did not vote.

Moved: Cr Nash / Cr Laban

That the Council:

- 1 Notes that, as Council's COVID-19 pandemic response included the cancellation of Committee meetings, Council is considering urgent items that were scheduled for those cancelled Committee meetings.
- 2 Notes that this report is considered an urgent item as ensuring effective climate action is one of Council's top priorities.
- 3 Approves the proposed design of the Low Carbon Acceleration Fund (Attachment 1).

The motion was **carried**.

Environment Committee business

13 Stormwater – regulatory framework and monitoring – Report 20.95 [for information]

Al Cross, General Manager Environment Management, Shaun Andrewartha, Manager, Environment Regulation, Lucy Baker, Manager, Environmental Science, and Matt Hickman, Manager, Environmental Policy, spoke to the report.

Barbie Barton, as Chair of the Farming Reference Group and appointee to the Environment Committee joined the meeting for the discussion of this item, but did not vote.

Moved: Cr Gaylor / Cr Connelly

That the Council requests officers to report back to the next Council meeting on options including, but not restricted to, legal processes and enforcement tools, to require local councils to act on finding and stopping unplanned stormwater discharges.

The motion was **carried**.

Resolution to exclude the public

14 Resolution to exclude the public – Report 20.97

Moved: Cr Gaylor / Cr Connelly

That the Council excludes the public from the following parts of the proceedings of this meeting, namely:—

Multi-user ferry terminal

Confirmation of the public excluded minutes of the Council meeting of 27 February 2020

Confirmation of the restricted public excluded minutes of the Council meeting of 27 February 2020.

The general subject of each matter to be considered while the public is excluded, the reasons for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 (the Act) for the passing of this resolution are as follows:

Multi-user ferry terminal – Report PE20.121	
<i>Reason for passing this resolution in relation to each matter</i>	<i>Ground(s) under section 48(1) for the passing of this resolution</i>
The information contained in this report includes commercially sensitive information about the likely business impacts of the site options for a Multi User Ferry Terminal (MUFT). Withholding this information is necessary to avoid unreasonably prejudicing the commercial position of CentrePort and its commercial partners as holding this part of the meeting in public would release information that is	The public conduct of this part of the meeting is excluded as per section 7(2)(b)(ii) of the Act, (to protect information where making available of the information would be likely to unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information).

<p>detrimental to their commercial activities. Greater Wellington has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	
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Confirmation of the public excluded minutes of the Council meeting of 27 February 2020 – Report PE20.81	
<i>Reason for passing this resolution in relation to each matter</i>	<i>Ground(s) under section 48(1) for the passing of this resolution</i>
<p>Information contained in these minutes relates to a proposed contractual arrangement regarding land owned by Greater Wellington, including details of the commercial terms. Having this part of the meeting open to the public would disadvantage Greater Wellington in that it would reveal Greater Wellington’s expectations as to the final terms and conditions that would be acceptable to Greater Wellington. It also relates to due diligence information obtained in relation to the holder of the Forestry Rights, RMS FGI New Zealand Limited and the proposed new shareholder in RMS FGI New Zealand. The disclosure of this information would likely to unreasonably prejudice the commercial positions of the persons supplying or the subject of the information. It may also prejudice or disadvantage Council in the negotiation of the proposed Deed of Covenant and the Ancillary Deed that Council is seeking to secure as a condition of Council consenting to the Proposed Transaction.</p> <p>The minutes also contain information that relates to negotiations with the New Zealand Transport Agency and other public transport authorities in New Zealand. Release of this information would be likely to prejudice or disadvantage the ability of Council to carry on negotiations with the New Zealand Transport Agency and public transport authorities. In addition, information in the minutes relates to procurement processes for a ticketing</p>	<p>The public conduct of this part of the meeting is excluded as per section 7(2)(i) of the Act (to enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)), 7(2)(b)(ii) of the Act (to protect information where making available of the information would be likely to unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information) and section 7(2)(g) of the Act (to maintain legal professional privilege).</p>

<p>solution provider and associated financial service providers that are underway. Release of this information would be likely to prejudice or disadvantage the ability of the New Zealand Transport Agency and public transport authorities (including Council) to carry on negotiations with parties participating in the procurement process. Council has not been able to identify a public interest favouring disclosure of this information in public proceedings of the meeting that would override the need to withhold the information.</p>	
<p>Confirmation of the restricted public excluded minutes of the Council meeting of 27 February 2020 – Report RPE20.82</p>	
<p><i>Reason for passing this resolution in relation to each matter</i></p>	<p><i>Ground(s) under section 48(1) for the passing of this resolution</i></p>
<p>Information contained in these minutes relates to negotiations with Stride and Wellington City Council. Release of this information would be likely to prejudice or disadvantage the ability of Greater Wellington to carry on negotiations with Stride and Wellington City Council. Council has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	<p>The public conduct of this part of the meeting is excluded as per section 7(2)(i) of the Act (to enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)).</p>

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by section 6 or section 7 of that Act or section 6 or section 7 or section 9 of the Official Information Act 1982, as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public.

The motion was **carried**.

The public part of the meeting closed at 11.53am.

Councillor D Ponter
Chair

Date:

**Council
30 April 2020
Report 20.132**



For Information

UPDATE ON PROGRESS OF ACTION ITEMS FROM PREVIOUS COUNCIL MEETINGS – 30 APRIL 2020

**Te take mō te pūrongo
Purpose**

1. To update Council on the progress of action items arising from previous Council meetings.

**Te horopaki
Context**

2. Items raised at Council meetings, that require actions by officers, are listed in the table of action items from previous Council meetings ([Attachment 1](#)). All action items include an outline of the current status and a brief comment.

**Ngā hua ahumoni
Financial implications**

3. There are no financial implications from this report, but there may be implications arising from the actions listed.

**Ngā tūāoma e whai ake nei
Next steps**

4. Completed items will be removed from the action items table. Items not completed will continue to be progressed and reported. Any new items will be added to the table following this Council meeting and circulated to the relevant business group/s for action.

**Ngā āpitihanga
Attachment**

Number	Title
1	Action items from previous Council meetings

**Ngā kaiwaitohu
Signatories**

Writers	Al Cross – Kaiwhakahaere Matua mo te Taiao/General Manager Environment Management Luke Troy – Kaiwhakahaere Matua Rautaki/General Manager Strategy
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He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> The action items are of an administrative nature and support the functioning of the Council.
<i>Implications for Māori</i> There are no direct implications for Māori arising from this report.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> This report does not contribute directly to Council or Greater Wellington's key strategies and policies; however, the identified action items may.
<i>Internal consultation</i> There was no internal consultation.
<i>Risks and impacts: legal / health and safety etc.</i> There are no known risks.

Attachment 1 to Report 20.91

Action items from previous Council meetings

Meeting date	Action	Status and comment
27 February 2020	<p>Noted</p> <p>Council requested officers undertake a review of fees payable to external members of all Greater Wellington bodies to ensure appropriate relativity with other public bodies.</p>	<p>Status</p> <p>In progress.</p> <p>Comment</p> <p>Information is being sought from a selection of local authorities to provide comparative information for this review.</p>
9 April 2020	<p>Stormwater – regulatory framework and monitoring – Report 20.95</p> <p>Resolved</p> <p>Council requests officers to report back to the next Council meeting on options including, but not restricted to, legal processes and enforcement tools, to require local councils to act on finding and stopping unplanned stormwater discharges.</p>	<p>Status</p> <p>In progress.</p> <p>Comment</p> <p>A report will be prepared for the 21 May 2020 Council meeting.</p>

**Council
30 April 2020
Report 20.99**



For Information

COVID-19: PUBLIC TRANSPORT RESPONSE

Te take mō te pūrongo

Purpose

1. To provide Council with an overview of the operational work undertaken by Metlink and its partners in preparation for moving out of COVID-19 Alert Level 4.

Te tāhū kōrero

Background

2. The World Health Organisation (WHO) declared a world-wide novel coronavirus (COVID-19) pandemic. The New Zealand Government responded with a range of measures, including the 21 March 2020 announcement of a COVID-19 alert level system and the declaration of Alert Level 2 status, with a subsequent move to Alert Level 3, and then to Alert Level 4 from 11.59pm Wednesday 25 March 2020.
3. Alert Level 4 was reviewed by Government on 20 April 2020, with a decision to move to Alert Level 3 at 11.59pm on Monday 27 April.
4. Public transport is free for all eligible users under Alert Level 3.
5. At all alert levels, the Government expects Greater Wellington to maintain essential public transport services (in line with the Government's guidance on COVID-19 alert levels) to support essential services while maintaining front line health and safety. These expectations include user contact tracing.
6. Metlink has systems and processes in place for Alert Level 4, which are operating well.
7. This paper focuses on Metlink's preparation for Alert Levels 3 and 2.

Access to public transport under Alert Levels 3 and 2

8. The people who should be accessing public transport under Alert Level 3 are those:
 - a Accessing local services and businesses
 - b Travelling to work or school (for those who have to)
 - c Travelling to permitted gatherings.

9. At Alert Level 2, the Government's guidance provides that the following people should not use public transport:
 - a People undertaking non-essential travel (avoid)
 - b People at risk of severe illness from COVID-19 (e.g. those with underlying medical conditions and the elderly)
 - c Those required to self-isolate or quarantine.

Service levels at alert levels

Alert Level 4

10. Metlink has undertaken a large number of tasks to respond to the COVID-19 pandemic and to the Government's guidance issued for COVID-19 alert levels. Officers have based this response on the criteria in Alert Level 4.
11. At Alert Level 4, Metlink has operated a reduced timetable based on a Sunday service for bus and rail operations (note that ferry services did not operate at this alert Level).
12. School services do not operate at Alert Level 4.
13. Physical distancing was applied on bus and rail services to ensure a two metre distance between passengers.
14. This level of service, including physical distancing, met government criteria and customer demand.

Alert Level 3

15. As with Alert Level 4, operating services under Alert Level 3 is uncharted territory. Metlink has never had to operate under an Alert Level 3.

Move to normal scheduling – bus and rail

16. At Alert Level 3 bus and rail operations will move to a normal schedule.
17. The rationale behind the move to a normal schedule is based on:
 - a The Government's expectation that moving to Alert Level 3 will result in an additional 500,000 people across the country returning to work
 - b Schools up to Year 10 will be open (but at reduced capacity)
 - c Physical distancing (two metres) being required on our public transport services (see paragraph 18 below for further explanation)
 - d Separation of key front-line staff remains in place.
18. Waka Kotahi NZ Transport Agency (NZTA) and the Ministry of Transport have indicated that the expectations under Alert Level 3 for physical distancing and contact tracing are "best endeavours" and pragmatism will be to the forefront.
19. We are working with operators and the NZTA to prepare for a return to full services. We have also been liaising with other regional councils and, most notably, Auckland Transport. We note that Auckland Transport will be moving to normal scheduled services in the same manner as Metlink.

20. The network changes will be monitored to ensure that public transport provides its services in accordance with the Government's guidelines.

Bus operations

21. Bus operations will move to normal scheduled timetabling from Sunday 26 April 2020.
22. School services will operate at Alert Level 3.
23. Passengers boarding bus services (including school services) are required to use the rear door. This maintains the isolation of the bus driver to protect against potential transmission of COVID-19.
24. When boarding at the rear door, safety is a priority and drivers are expected to take additional time and consideration (using Closed Circuit TV (CCTV) cameras for example) to ensure the passengers have loaded and are seated and safe on the bus.

Rail operations

25. At Alert Level 3, rail will move to a normal scheduled timetable. However, it will take the operator some additional time to move from Alert Level 4 to Alert Level 3 service levels. We anticipate full rail services being available from 4 May 2020.
26. During the relatively short transition period for rail, the rail network will operate at the current (Alert Level 4) amended timetable with further capacity significantly added with the extra carriages for all services.

Ferry operations

27. The Wellington Harbour ferry will not operate at Alert Level 3.

Alert Level 2

28. At Alert Level 2 bus and rail operations will remain at normal scheduled timetabling.
29. Officers are currently working with the harbour ferry operator to confirm its level of service during Alert Level 2.
30. At Alert Level 2, significantly more people are likely to travel.
31. Current advice is that a reduction of physical distancing to one metre will be required on our public transport services.
32. The reduction in physical distancing requirements will help the capacity to deal with the expected increase in patronage.
33. We will need to closely monitor progress and plan for the move to Alert Level 2.

Contact tracing

34. The Government's guidance requires contact tracing throughout the four alert levels.
35. Metlink has several methods available to support contact tracing of customers. These are:
 - a CCTV cameras on our bus fleet, rail fleet, at main bus interchanges and at our railway stations. These cameras can be used to confirm if a passenger used a particular bus or was at a Metlink bus interchange or railway station

- b Snapper ticketing system on our bus fleet. Snapper requires passengers to ‘tag on and tag off’. To effectively trace a passenger by name the Snapper card needs to be registered by the individual. Currently approximately 50 percent of Snapper cards are registered.
36. We are currently working with the operator of the ferry to determine operation at Alert Levels 3 and 2. Due to the relatively low patronage we would envisage that, if the ferry did operate at these alert levels, contact tracing would not be problematic.

Community engagement

37. Officers are working to ensure that our communities are aware of the service levels to be provided and of the Government’s guidelines for use of public transport.

Ngā tūāoma e whai ake nei

Next steps

38. Officers will continue to monitor the situation as it evolves and make any necessary operational adjustments in line with the Government’s alert level guidelines and Metlink’s Business Continuity Plan.

Ngā kaiwaitohu

Signatories

Writer	Matthew Lear – Manager, Operations, Metlink
Approver	Scott Gallacher – General Manager, Metlink

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> This is an information report for Council.
<i>Implications for Māori</i> There are no implications for Māori.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> This report relates to Metlink's response to the impact of the COVID-19 pandemic on public transport, which is a key activity in the Long Term Plan 2018—28.
<i>Internal consultation</i> Customer Engagement has been involved in developing communications.
<i>Risks and impacts: legal / health and safety etc.</i> This report sets out actions taken to respond to our public transport responsibilities under the Government's alert level system.

Council
30 April 2020
Report 20.90



For Decision

PROPOSED WAIOHINE RIVER PLAN – APPROVAL FOR PUBLIC CONSULTATION AND SUBMISSIONS

Te take mō te pūrongo Purpose

1. To seek the Council's approval to undertake a formal public consultation and submissions process on the proposed Waiohine River Plan.

He tūtohu Recommendations

That the Council:

- 1 **Agrees** that the proposed Waiohine River Plan ([Attachment 1](#)) is suitable for public consultation.
- 2 **Agrees** that the Wairarapa territorial authorities - Masterton District Council, Carterton District Council, and South Wairarapa District Council - will have two weeks to provide feedback on the proposed Waiohine River Plan before public consultation commences.
- 3 **Notes** the proposed Consultation and Engagement Strategy ([Attachment 2](#)) is still fit for purpose given the Government's and Council's response to the COVID-19 pandemic.
- 4 **Approves** the proposed Consultation and Engagement Strategy seeking submissions from the wider community.
- 5 **Establishes** the Waiohine River Plan Hearing Panel.
- 6 **Adopts** the draft Terms of Reference for the Waiohine River Plan Hearing Panel ([Attachment 3](#)).
- 7 **Appoints** the members and Chair of the Waiohine River Plan Hearing Panel (as set out in paragraph 8).

Te tāhū kōrero

Background

Development of the proposed Waiohine River Plan

2. The Waiohine River Plan (the River Plan) project was initiated as a result of the public rejecting the Draft Waiohine Floodplain Management Plan. That document was developed by Greater Wellington Regional Council (Greater Wellington) from 2009 to 2016 and then revoked in 2017 before it had been formally adopted by Council.
3. The proposed River Plan ([Attachment 1](#)) has been developed by a project team (the Project Team) made up of members of the local Wairarapa community, who were elected at a public community meeting in July 2017, including representatives of Ngāti Kahungunu ki Wairarapa. The Project Team meetings are attended and supported by Greater Wellington officers.
4. The Waiohine River Plan Steering Group (the Steering Group), chaired by Councillor Staples, has been established to oversee the River Plan's development. Representatives of Ngāti Kahungunu ki Wairarapa and Rangitāne o Wairarapa sit on the Steering Group.
5. The Project Team has been successful in engaging with the local community throughout the entirety of the project. The pivotal choices on the content of the proposed River Plan were made by the community by general consensus at public events. An example of this was the preferred location of the proposed stopbanks.
6. Key stakeholders were invited to attend Project Team meetings to contribute to the development of the proposed River Plan, which has since been distributed to these stakeholders for comment.
7. On 10 February 2020, the Steering Group informally approved a formal public consultation and submissions process on the proposed River Plan.
8. At the same meeting, the Steering Group proposed eight nominees to form the Waiohine River Plan Hearings Panel (the Hearing Panel) to hear submissions on the proposed River Plan. These nominees are:
 - a Michael Hewison – Waiohine Action Group
 - b Adrienne Staples (Chair) – Greater Wellington Regional Councillor
 - c Colin Wright – Waiohine Action Group and South Wairarapa District Council delegate
 - d Ra Smith - Ngāti Kahungunu ki Wairarapa
 - e Prue Lamason – Greater Wellington Regional Councillor
 - f Bruce Slater – Waiohine Action Group
 - g Horipo Rimene – Rangitāne o Wairarapa
 - h Brian Deller – Carterton District Council.
9. The Terms of Reference for the Hearings Panel is provided in [Attachment 3](#).

Focus of the proposed River Plan

10. The proposed River Plan sets out provisions for the community to engage and contribute to the management of the Waiohine River.
11. Updated flood hazard modelling and mapping has been produced as part of the development of the proposed River Plan. Greater Wellington would like the proposed River Plan to be approved by Council so this modelling and mapping can supersede existing flood hazard mapping for the use in planning and development.
12. The proposed River Plan provides direction to Greater Wellington in managing the flood and erosion hazards from the Waiohine River. These hazards include structural works, such as stopbanks and rock groynes, and non-structural works, such as considerations for emergency management, flood hazard mapping, planning recommendations and operational and maintenance works.
13. The proposed River Plan will inform river management, and flood risk management activities carried out by Greater Wellington in the Waiohine Catchment.

Consideration by Council, rather than the Wairarapa Committee

14. This report was intended to be considered on 31 March 2020 by the Wairarapa Committee. However, given Council's response to the COVID-19 pandemic and the temporary suspension of Committee meetings, this opportunity is no longer available.
15. This report is before Council for consideration as parts of the consultation process can be progressed during the Government's alert level system, enabling timely delivery of the River Plan for the benefit of the community.

**Te tātaritanga
Analysis**

Public consultation on the proposed Waiohine River Plan

16. The proposed River Plan was developed by community members with extensive input from the wider community and key stakeholders, and is owned by the community. Undertaking a public consultation and submissions process is the next step required to ensure that all stakeholders are accepting and supportive of the proposed River Plan. It will also provide an opportunity to revise parts of the proposed River Plan if necessary.
17. The approval process for the River Plan does not require a formal submissions and hearings process under the Local Government Act 2002. However, the Project Team (together with the Steering Group) believes that, for the proposed River Plan to be implemented effectively by Greater Wellington and the community, the further development should follow a formal public consultation and submissions process. Greater Wellington supports this recommendation.

Prior feedback by Wairarapa territorial authorities

18. The proposed River Plan will likely have implications for building, planning and development controls for South Wairarapa District Council and Carterton District Council. This may also affect the revision of their combined District Plan, which they share with Masterton District Council. Given these implications, the Project Team would like to ensure that the three territorial authorities mentioned are given two weeks to allow a first pass on the proposed River Plan prior to it being released for public consultation. Greater Wellington supports this recommendation.

Establish the Waiohine River Plan Hearing Panel

19. To support the public consultation process, Greater Wellington recommends that Council establishes the Waiohine River Plan Hearing Panel, adopts the draft Terms of Reference ([Attachment 3](#)) and appoints the proposed Hearing Panel members and Chair (paragraph 8).
20. These proposed Hearing Panel members have been put forward due to their knowledge of the proposed River Plan, their technical expertise and because they represent the communities impacted by the River Plan.

Communications and Engagement Strategy

21. A proposed Communication and Engagement Strategy (the Strategy) has been prepared to assist with the proposed public consultation process ([Attachment 2](#)). The Strategy:
 - a Sets out key dates for consultation, engagement, submissions and hearings
 - b Identifies methods for public communication and engagement
 - c Identifies key activities and dates for public engagement.
22. The Strategy has been developed to ensure that a wide range of the community and demographic is consulted. The Strategy addresses potential issues, arising from the Government's alert level system and Council's response to the COVID-19 pandemic, for the consultation and submissions process and provides options for managing these issues. Greater Wellington recommends that Council approves the Strategy.

Ngā hua ahumoni

Financial implications

23. The proposed River Plan includes recommendations involving significant capital works as well as operational and maintenance works. The value of the capital works is estimated at approximately \$2 million (GST exclusive). Funding provision have been made in Council's Long Term Plan 2018—28 to support this work. The operational and maintenance works are proposed to be funded through Greater Wellington's existing operational and maintenance budget for the Waiohine River.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

24. The matters for decision in this report were considered by officers in accordance with the process set out in the Greater Wellington's *Climate Change Consideration Guide*.

Mitigation assessment

25. The *Consideration for Climate Change Guide* requires officers to consider these decisions in terms of climate change for:
- a *The impact that the work has on the global climate* - Officers recommend that these matters will have an effect that is not considered significant, and note that the proposed River Plan does not affect the Council's interests in the Emissions Trading Scheme or the Permanent Forest Sink Initiative.
 - b *The impact that climate change will have on the work* - The proposed River Plan is focused around managing the effects of flooding on the community with a planning horizon to 2100. Advice from expert climate scientists has been incorporated into the modelling of the flood hazard to manage the effects of flooding from a one percent Annual Exceedance Probability flood event with climate change allowances incorporated to the year 2100.

Adaptation assessment

26. The proposed River Plan must recognise the predicted impact of climate change on flooding. There are only specific, limited situations in which climate change is not relevant (for example, planning for present-day emergency management).
27. In assessing flood hazard and determining appropriate structural and/or non-structural response in areas subject to flood risk, the Project Team has applied a rainfall increase of 16 percent to the flood hydrology to account for climate change over the next 80 years. For investigation purposes, the Project Team has also considered the flood hazard at the year 2050, for which a rainfall increase of 10 percent was applied to the hydrology. This was carried out with consideration to the Dynamic Adaptive Pathway Planning framework in which various planning horizons are considered to allow for development in information and technology within the range of the final planning horizon.
28. The Ministry for the Environment's current guidelines recommend that 20 percent additional rainfall should be incorporated into planning to allow for climate change considerations for the next 100 years. The Project Team considers that allowing for 16 percent additional rainfall is appropriate for planning to 2100 (80 years) given catchment-specific considerations in line with information presented to them by climate change experts.
29. As further developments are made in the field of climate change science and new understanding for the impacts of climate change arise, the River Plan will be revisited and adjusted as necessary. The Living Plan framework that underlies the proposed River Plan allows for it to be updated when appropriate.

Ngā tikanga whakatau
Decision-making process

30. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

31. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter, taking into account the Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that the matters for decision are of low to medium significance. This assessment is based on the proposed River Plan's ability to affect the future social, economic, environmental and cultural well-being of the Greytown area. We also note that because past plans of this nature have a history of generating public concern within the Wairarapa Region.

Te whakatūtakitaki
Engagement

32. Engagement on the matters for decision in this report aligns with the level of significance assessed. A summary of engagement to date, and the proposed public consultation process, is included in **Attachment 2**.

Ngā tūāoma e whai ake nei
Next steps

33. The timeline and proposed activities leading up to the adoption of the proposed River Plan by Council have been affected by the Government's COVID-19 pandemic response. The following activities are proposed to occur as soon as permitted:
- a 30 April 2020 (today) – Council approval to undertake the public consultation and submissions process and to appoint the Hearings Panel
 - b Opportunity provided for the Masterton District Council, Carterton District Council and South Wairarapa District Council to comment on the proposed River Plan for two weeks before going out for public consultation
 - c Public communication and engagement period (six week minimum)
 - d Submissions accepted (four week minimum)
 - e Hearing of submissions (two weeks)
 - f Wairarapa Committee's adoption of the proposed River Plan
 - g Council approval of the proposed River Plan.

**Ngā āpitihanga
Attachments**

Number	Title
1	Proposed Waiohine River Plan
2	Proposed Waiohine River Plan Communication and Engagement Strategy
3	Draft Terms of Reference for the Waiohine River Plan Hearing Panel

**Ngā kaiwaitohu
Signatories**

Writer	Jock McNaught, Graduate Engineer, Flood Protection
Approvers	Andy Brown, Team Leader Investigations, Strategy and Planning, Flood Protection Graeme Campbell, Manager, Flood Protection Wayne O'Donnell, General Manager, Catchment Management

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council's roles or Committee's terms of reference</i></p> <p>Council's Committees have the authority, under the Local Government Act 2002, to establish hearing bodies to consider submissions on matters that fall within the scope of each committee's terms of reference. As the delegator of these Committees' functions, Council can also exercise these powers.</p>
<p><i>Implications for Māori</i></p> <p>Iwi partners - Rangitāne o Wairarapa and Ngāti Kahungunu ki Wairarapa - have been involved in the Steering Group and Project Team during the entirety of the Waiohine River Plan project.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>The delivery of the Waiohine River Plan addresses the flood hazard management in Greytown and Carterton, which contributes to delivering on Greater Wellington's Regional Resilience strategic priority.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation took place through participation in project working days and, in some instances, through invitation to comment on various aspects of the proposed River Plan. The departments consulted were Flood Protection, Biodiversity, Wellington Regional Emergency Management Office, and Environmental Regulation.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>Attempting to progress the Communications and Engagement Strategy during the COVID-19 pandemic could yield unnecessary health risks to the public and officers.</p>

Proposed Waiohine River Plan

The Waiōhine River Plan

Incorporating the Waiōhine Flood Plain Management Plan

Published as Not Yet Even a Draft Version 1.41 January 2020



Credit: Rebecca Laird

A Holistic River Plan

This is the first plan produced for the Greater Wellington Region that [views the river as a holistic, living, changing entity](#). It lays out a [30 and 70 year](#) vision for better flood protection and the gradual improvement and restoration of a [living corridor, pristine water, flora](#) and [fauna](#) (including aquatic species) for better environmental, [cultural](#), social and economic outcomes, for the river, from the gorge to the confluence with the Ruamahanga. It is prepared by the [community](#), Tangata Whenua, all other [stakeholders](#), and GWRC under the leadership of a Project Team reporting to the community and all stakeholders, statutory and otherwise.

We have tried to “walk a mile” in everyone’s shoes and recognise the goals and statutory mandates of each group. Wherever we say “community” or “stakeholders” in this plan, it is an inclusive term, recognizing these inputs and needs. Significant professional expert inputs have also been made by Ian Heslop, Chartered Professional Engineer ([Independent Peer Review](#)), incorporating the findings

Commented [JB1]: Modified to emphasize the role of statutory bodies and bring the “walk a mile” comment further forward.

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Proposed Waiohine River Plan

of BECA ([Independent Peer Review](#)), also by Ra Smith of Hurunui o Rangi and Ngati Kahungunu ki Wairarapa, Horipo Rimene of Rangitane and Michael Roera of Papawai Marae, Kahungunu ki Wairarapa and Rangitane, Report by Tonkin and Taylor ([Geomorphic Trends Assessment](#)), [Professor Ian Fuller](#), [Professor Russell Death](#) and [Will Conley](#) of Massey University, Matthew Gardner of [LandRiverSea Consulting](#) and [Doctor Brett Mullan](#) and [Doctor Trevor Carey-Smith](#) of NIWA and many more. In this plan GWRC have taken the progressive step of agreeing to place the responsibility for researching and creating the Waiohine River Plan and the inherent ongoing [Living Plan](#), as resting on the collective shoulders of the community, Iwi, all other [stakeholders](#) and statutory bodies and GWRC itself and that leadership for this has been taken by the community, on behalf of, and working with all parties. It is recognized that the legal responsibility for delivering the agreed level of flood protection, amongst other responsibilities, rests with GWRC within the aegis of this plan. The community also recognize the innovation, foresight and genuine intent for partnership GWRC, Iwi and all the participating stakeholders bring to this community led plan on an ongoing basis. Our approach follows the [MfE advice](#): **“All communities and levels of government are able to make sustainable long-term decisions based on the best available information to reduce flood risk.”**

The community of the Waiohine.

When this plan says “community”, this is what the term embraces:

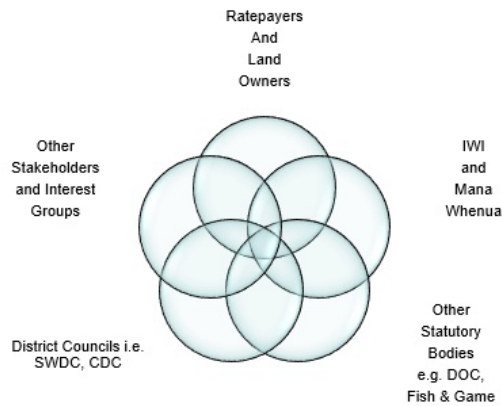


Figure 1: The term “Community” includes these entities within this document unless otherwise stated.

A Whole-Of-River Plan

As a whole-of-river plan, we must recognize the cultural significance of the Waiōhine. Nowadays, the flood plains of the Waiōhine exist on a very different level than they did traditionally. What we must all hope for and all work for is that important principles might transcend the changed landscape so that a sense of cultural landscape remains. We have sought and will always seek leadership from Maori in understanding the cultural landscape of the Waiōhine, and where opportunities lie to restore its cultural elements, naturalistic elements and beauty. For the whole community, the work of building this River Plan, incorporating Floodplain Management Plan, has been inclusive, and a

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recognition of the need for a practical, natural, ongoing co-governance model for our river, between iwi, other statutory bodies, community and local government.

Developing a whole of river plan that embraces all the hopes and needs of the community, will take time. So this is not a one-time, fixed plan. It includes a Living Plan Process through which topics such as the gradual improvement of the ecological values and amenity of the river can be fleshed out and evolve to take advantage of advances in cultural understanding, science and our societal values.

Flood Protection. Flood protection is intended to withstand a once-in-a-hundred-year flood for Greytown and a [once-in-twenty-year flood](#) for dwellings in the rural area of the floodplain. Allowance has been made for [climate change](#) estimates, derived from [IPCC](#) scenario [RCP6.0](#),

allowance for margin of error of [LIDAR](#) surveying and as appropriate [freeboard](#) (where wind or velocity might push water higher up the side of an upright structure) or [flood sensitivity](#) (where there are reasons why the flood might spread slightly

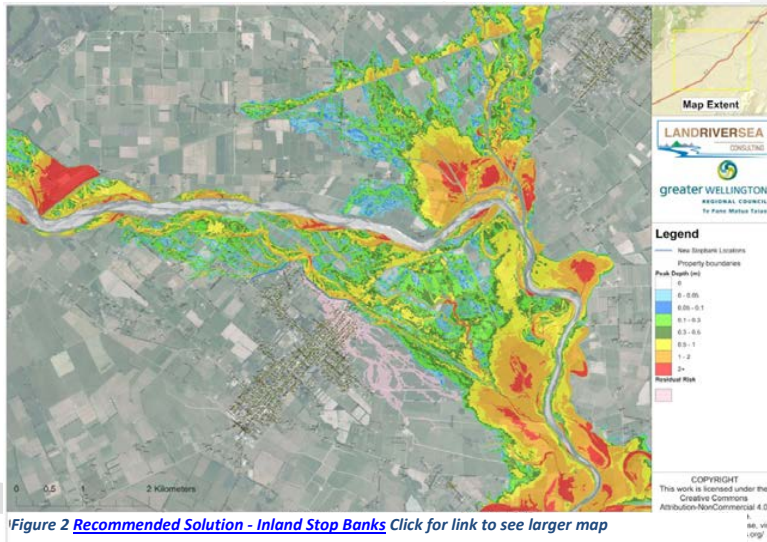


Figure 2 [Recommended Solution - Inland Stop Banks](#) Click for link to see larger map

further in some places in some circumstances).

There is, of course, no such thing as a flood that is precisely the shape, duration and behaviour of a modelled one-in-one-hundred-year flood (1% chance of occurring in any year) that occurs only once, if at all, in a hundred years. There is nevertheless, a high degree of confidence in the underlying data and [accuracy of models](#) and maps used to develop this plan, based upon careful cross-checking against aerial photography of actual floods, multiple flood events and a range of other [tools for correlating evidence](#). Over time this will keep on improving, as more events yield more data and new technology (e.g. more sophisticated LIDAR using drones) are available. We have made provision in the living plan models and processes within this plan, to [revise and improve the plan](#). We have also set an intermediate planning horizon that ensures the plan will be reviewed and updated before 2050, including climate change data.

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A Living Plan

A pragmatic, cost effective and workable compromise has been reached between the need to protect important assets (railway, roads, towns, existing river defences and homes) and the need to step flood defences back from the river to allow it to assume more of a natural character.

This plan adopts [a model and mechanism for ongoing partnership](#) between the community and GWRC. This Living Plan will continually grow, change, manage and improve the River Plan. Whilst adopting new science and trialling new techniques it will remain faithful to the [vision for the river](#), owned by the community. The vision, targets and requirements of the [Whaitua](#) programme are also incorporated here.

A series of “triggers” have been identified and built into the [Living Plan](#) section, to identify situations for the [Project Team](#) to urgently review this plan and modify it. Also, in its ongoing capacity as an advisory [sub-committee](#) to the Wairarapa Committee, it will continue to provide leadership with the community as a partner to GWRC in [driving the annual and other planning cycles](#) to keep working to realise the [vision](#).

The Living Plan Process allows us to continue developing and improving the plan and address future questions such as: Should the plan become a catchment plan, in line with other catchment group plans, recognizing the interconnectedness of water? Should it seamlessly integrate with storm water management? Should it address the whole of the Waiohine – including the gorge itself? Can the plan better respect Maori values, culture and wisdom? What impact are willows having on water levels? How can we improve water quality and water quality measurement, pest management, weed control, access – and many more opportunities? So, we ask that you see this document as a start, not an end in itself.

New Flood Protection Structures

The reach of the Waiōhine, running from above the rail bridge ([Cross Section or “XS” 43](#)), down to the SH2 Bridge ([XS 17](#)), is a steep gradient, gravel bed, river that has been extensively widened from the rail bridge to Fullers Bend, following a previous strategy for flood management.



Figure 3 SH2 North of Greytown ([XS 17](#))

The river runs atop an alluvial fan, like a delta above the surrounding flood plain. It carries more water than the Ruamahanga itself at the point they join. The catchment sits deep in the Tararuas, well behind catchments for other rivers, it tends to flood only between October and February and floods, last from six to twelve hours and do not tend to pond. The floodplain consists of free draining soils.

New flood protection structures and strategies are proposed. New inland stop banks are to be constructed along the northern side of Greytown’s [North Street](#) to prevent flooding into the

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Attachment 1 to Report 20.90**Proposed Waiohine River Plan**

northern outskirts and, if required, across farmland to the North West of the town, [close to Kuratawhiti Street](#), to protect that side of Greytown. Gradual improvement to existing riverside defences, principally using rock groynes, where the river could outflank existing defences and threaten to set a new course across country. Maintaining the Apple barrel Floodway as a diversion of floodwater away from Greytown.

River Management

Ongoing [river management](#) will rely on the maintenance and gradual improvement of most existing riverside flood defences, and work to protect some critical existing riverbanks. For example, work needs to continue to gradually improve the protection of the outside of Fullers Bend, with a combination of rock lining and, where practical, snub-nosed rock groynes. Where the river can safely move within buffer zones and develop a more natural “hourglass” shape, this should be allowed but a set of guidelines for preventing this getting out of control, have been developed. [Gravel extraction](#) will continue to be used to manage bed levels, for the purpose of erosion control and flood prevention but more closely surveyed, to allow for more precise management. Where extraction occurs, preferred extraction methods have been identified, to minimise impact on the natural character of the river. In some cases, these will be [leading edge techniques](#), proposed by internationally recognized experts. These techniques should be trialled and closely monitored, to prove their ecological value. Whilst measures of bed level have been made recently, there is insufficient data yet to cover all the cyclical behaviours of the river (See [Tonkin and Taylor re: Interdecadal Pacific Oscillation](#)) that cause the gravel bed to build up or lower. Continued measurement is necessary, until a full picture of bed level behaviour can be built up and a long-term strategy finalised, this is expected to be before 2050 (when a compulsory review of this plan occurs anyway).

We recommend using [Management of the height of the crown of SH2](#) in three locations between Greytown and the SH2 Bridge ([XS 17](#)).

There is a need for selective planting along the foot of, and extending the end of, the existing Greytown Stop Bank. Small, rock groynes are needed at the toe of and at right angles to, that stop bank, that will prevent scouring in the event of major flood. There is an urgent need for the introduction of flood risk warning signs at locations where the public access the river.

Three zones for river management have been identified: i) the ideal path or [design lines](#), within which the river will normally run, ii) buffer zones that allow some movement and an “hourglass” or “beaded”, shape to develop and iii) the flood plain, where some features and stands of trees will play an important part in spreading and slowing the river in a major flood. Recommendations are made for a practical approach to [planning options](#) for the area between the vegetative buffer zones, bordering the river, and the extent of flood risk. These show high, medium and low flood risk areas, informing District Council planning decisions.

Cost and Funding

The capital cost of the proposed stop bank works and related programmes is [estimated to be less than \\$2 million](#). It is recommended that where this relates to construction of new stop banks near North Street and Kuratawhiti Street, this cost should be [amortised over 25 years](#) and recovered from rates paid by all urban Greytown ratepayers and those rural ratepayers immediately benefiting from the new defences. This is roughly estimated to cost up to \$80 per annum on average per ratepayer within the new flood defences. All other works and programmes are recommended to be funded through the existing rating models.

Governance and partnership in the Waiōhine River Living Plan

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[MfE States](#) that local government's aim for flood risk management is: "Sustainable river and catchment management that achieves the particular level of flood hazard protection desired and accepted by each distinct community of interest, with residual risks fully understood and taken into account." Planning principles set by this community input to this process have guided decision making and should continue to do so, they include: A whole of river plan. A Living Plan, guided and overseen by the [community](#) together. We have taken the concept of co governance and partnership to a new level, one that, to our knowledge, has never been attained before. . Our approach complies with law and regulation, and respects and builds on, the Memorandum of Partnership between [Tangata Whenua ki Te Upoko o te Ika a Maui and Wellington Regional Council](#). Previous processes recognised the need for some co-governance. The new method builds on this and embraces:

1. **Co-research** – all parties (in the room as Project Team Members, the community and subject matter experts) used open and transparent sharing of information and a range of ways to participate.
2. **Co-development**– all parties (in the room as Project Team Members, the community and subject matter experts) used open and transparent sharing of information and a range of ways to participate.
3. **Joint decision making**– all parties (in the room as Project Team Members, the community and subject matter experts) used open and transparent sharing of information and a range of ways to participate.
4. **Co-governance**– The Waiōhine valley community share governance through both the Steering Group and Wairarapa Committee.
5. **Community** participates in the process, through open and transparent feedback by all those not in the room being received and actioned by the Project Team.
6. **Extensive consultation** with a wide range of subject matter experts was invaluable and was also shared openly and transparently for feedback.
7. **Frequent public meetings**, including drop-ins and discussions encouraged the community to participate directly in making key decisions, such as which flood defence scenario to adopt.

For example, tangata whenua and iwi participate directly in the core Project Team, the Steering Group, the GWRC Wairarapa Committee and the GWRC Environment Committee as well as the Waiōhine Action Group and public meetings.

This approach applies to both the initial plan development and for the Living Plan – taking a long term view that takes into account the needs of all stakeholders, bodies and influences (such as Iwi outcomes and cultural imperatives, Whaitua, Climate Change, amenity) We will continually learn and acquire more facts, so we must make decisions now, that don't box us in – e.g. taking an adaptive management approach (i.e. a [Living Plan](#)) to key aspects such as housing and stop bank locations and making allowance for future upgrade to, for instance, meet future needs.



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 Figure 4: Each Project Team Working Day's outputs are photographed and shared with the community via Facebook and emails with summary and links and an invitation for feedback or questions.

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Proposed Waiohine River Plan

We must incorporate and improve Whaitua outcomes, in a pragmatic way, as it is an essential building block for our vision, for our river. We must use assessment tools that are simple, transparent and where everyone can see their views considered, to meet the needs of as many people as affordable and practical. We must recognize, that past decisions mean that some reaches of the river may require more intensive [channel maintenance](#), but we must be able to explain why this is, to each other, and for example, how river management/stop bank locations are interrelated to the community. The overarching principle of community leadership is proclaimed to be a success by GWRC. We recommend that it continues for the future of our river.

DRAFT

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Proposed Waiohine River Plan

1. How This Document Works

A full [Table of Contents](#) is at the end of this document.

Read through, or pick a topic and click on the link on the right:	Link
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The Vision for the River of the Community and Stakeholders	Page n
Climate Change	Page n
Planning Horizon	Page n
Which Flood Could We Use as the Basis for Developing and Proving Our Models?	Page n
Understanding of the Waiōhine Hydrology	Page n
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Structural Solutions	Page n
Cost and Funding Implications	Page n
Non-Structural Solutions	Page n
Emergency Management and Flood Warning	Page n
The Living Plan	Page n
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Planting for River Management, Biodiversity and Cultural Resource	Page n
Stopbank Design	Page n
Appendix A: Waiōhine Floodplain Management Plan Initiation	Page n
Appendix B: Terms of Reference for the Project Team and Process	Page n
Appendix C: Terms of Reference for the Waiōhine River Plan Committee/Project Team	Page n
Appendix D: Relevant Standards and Guidelines	Page n
Appendix E: Example of Easement Agreement	Page n
Appendix F: Original Diagrams and Charts	Page n
Appendix G: Maps and Notes on the Approach to Mapping	Page n
Appendix H: Glossary and Other Explanatory Notes	Page n
Appendix I: Links to Supporting Reference and Background Documents	Page n
Appendix J: Which Cross Section is Where Reference Maps	Page n
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Figure 5 : Plan Structure

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Proposed Waiohine River Plan

1.2 The structure of the Waiohine River Plan, is based on the structure of the [mind map](#) put together on project team working day 1! The intention is to:

1. **Make this River Plan easy to find your way around**, so that you can click on easy links above or use the [table of contents](#) or use word search tools to find what you need, wherever and whenever, on any device
2. **Make this River Plan easy to read** and not too complicated or technical to be useful for everyone,
3. **Make it easy to drill down** and see how the River Plan developed - as new information, fresh expert inputs and [community](#) feedback changed thinking and made the plan more relevant.

The original mind map (and all other flip charts and white board photos that make up this plan) can



Figure 6: Waiohine River Plan Mind Map

be seen [here](#). The Project was broken into 'chunks' by subject, using a mind map technique, and a strategy based on this, was used to develop the Waiohine River Plan.

Planning horizons were set and aspects of cost/funding/affordability were chosen, so stakeholders could understand this and provide useful feedback, when weighed against risks.

Note that [Supporting Information](#), [Original Charts](#), [maps](#) and [Links](#) are retained and are the foundation of the plan. They are shown as examples in the diagram but apply to and can be accessed from, links in The Plan and Plan Topics levels. In this way the integrity of the journey, consultation and decision process, is captured for all time, and can be used to retain an understanding of how, and why, decisions were made. Also, the plan allows for the team to change or add elements as the Living Plan aspect of the River Plan develops and adapts, to meet changing needs over time and the

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availability of significant new data (e.g. restoration strategies and projects, amenity projects, climate change data, flood events or law changes).

Throughout the history of this project, the Waiōhine valley [community](#) have directly participated in the development of this River Plan through the following widely advertised channels:



1. Open and free participation in the [Waiōhine Action Group](#).
2. Directly choosing and electing community representatives for the majority of the Project Team, who wrote this plan.
3. [Facebook](#), where documentation from every Project Team Working Day has been posted online for reading, comment and question.

4. Public meetings and WAG meetings.

Figure 7: Waiōhine River Plan Project Team Working Day

5. Public Drop in Sessions.
6. Sharing information and answering questions at public events.
7. Media releases and Greytown Grapevine articles.
8. Flyers and posters.
9. Speaking to community organisations.
10. Interaction via the "Parking Lot" method.
11. Reports to the Wairarapa Committee of GWRC.
12. Presentation to SWDC, and to joint councils.
13. Invitations to stakeholder groups to participate in Project Team Working Days.
14. Regular emails to an extensive mailing list of interested parties.

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Proposed Waiohine River Plan

1.3 Strategy of the Project, the Waiōhine River Plan and Its Living Plan

1.3.1 Role of the Waiōhine River Plan Project Team:

This River Plan and incorporated Floodplain Management Plan was developed by a Project Team appointed by the Waiōhine [community](#) and GWRC. A copy of its Terms of Reference and a description of the working methods can be found at [Appendix B](#).

The Project Team has oversight over production of this River Plan (and Floodplain Management Plan) document on behalf of the community. Everyone has had full access to all the work in progress during the development of the plan and has been able to interact with the plan and process, throughout the project.

Upon completion of the Waiōhine River Plan, the Project Team will continue to lead the Living Plan process as needed by the community, in its current form and terms of reference, but reporting to the community and as a sub-committee to the Wairarapa Committee of GWRC - [see Appendix C](#).

1.3.2 This plan was developed on behalf of all stakeholders by the core of The Project Team (alphabetically):

Mike Ashby (CDC), John Boon (Facilitator and Project Leader), James Flannagan (Senior Engineer, GWRC), Michael Hewison, Mark Hooker (Team Leader GWRC), Jock McNaught (Engineer GWRC), Michael Roera (Kanhungunu, Rangitane, Papawai Marae), Bruce Slater, Colin Wright (SWDC).

Aided by FOW (now WAG) representatives: Ron Sharpe, Tony Waters, Bob Chambers, Rebecca Laird and others.

Hundreds of people: GWRC employees, subject matter experts, stakeholders, community members, landowners and passionate individuals have voted, written, asked questions, suggested changes and improvements, edits and shared valuable information, maps, books, photos, videos and diagrams.

A special thankyou to Professor RAG and Mrs. Smith, without whom this would not have been possible.

1.3.3. This plan is a living plan.

It should never be finished or become static. The river changes, legislation changes, cultural understanding and reconciliation advances, communities and economies develop, science grows, climate changes, new threats and triumphs change the needs of flora and fauna, agriculture and land use change, expectations of amenity change.

The most important aspect of this plan is that it offers a process, model and mechanism for everyone who cares about the river and its future, to genuinely participate and have more than just a say but to come together to work towards consensus and find solutions that see the river as much more than a flood problem, a drainage problem, a waste disposal problem, a weed problem and a source of stone and water.

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Our children already grow up knowing things we do not, they will find ways to live with the river that we have not. The Living Plan process hands the baton to future generations of our [community](#).

1.3.4 Consulted Stakeholders

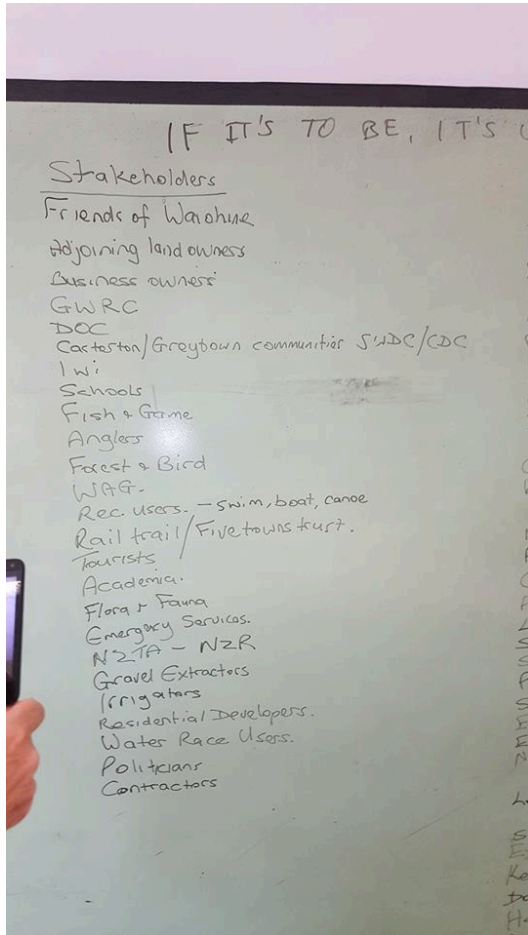


Figure 8 Brainstorm of Stakeholders

A wide variety of [community](#), [statutory bodies](#) and stakeholder groups have an interest in the Waiōhine. In alphabetical order (those with whom workshops were held are shown in [blue](#)):

- [Academia \(Massey University\)](#)
- [Adjoining Landowners](#)
- [Anglers](#)
- Business Owners (within the community)
- [CDC](#)
- Community Organizations
- Contractors
- [DOC - statutory body](#)
- [Emergency Services](#) (e.g. [WREMO](#))
- [F&B](#)
- [Fish and Game – A statutory body](#)
- Flora and fauna enthusiasts
- [FOW: Friends of the Waiōhine \(now WAG\)](#)
- Gravel extractors
- [GWRC Exec](#)
- Irrigators & water race users
- [Kahungunu – A statutory body](#)
- NZR
- [NZTA](#)
- [Politicians](#)
- [Rail Trail/Five Trails Trusts](#)
- [Rangitane – A statutory body](#)
- [Recreational Users](#) (e.g. swim, boat, canoe)
- (Residential) developers
- Schools
- Tourists
- [SWDC](#)
- [Whaitua](#)

Visions and strategies for all stakeholders are broadly compatible, making it possible to draw these together in a single [Living Plan](#). There is a need to keep looking out for best practices and new data, then weaving this into the River Plan. Represented here are the merged and summarized visions, strategies and concepts identified, as at end of 2019.

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2. The Vision for the River of the Community

The GWRC strategy is that the [Waiōhine catchment community](#) should drive outcomes its own way, to set a vision for the catchment, or [Freshwater Management Unit](#) (FMU).

2.1 Manaakitanga ki o Papatuanuku (taking care of mother earth) – Our Vision for Our River

The [Cultural Impact Assessment](#) written by Ra Smith of Ngati Kahungunu ki Wairarapa, explains that many valued wetlands have been lost through drainage. These included: Papawai, Te Ahikouka and Kuratawhiti (aka Potakakuratawhiti). He states that the author A. G. Bagnall (*Wairarapa, An Historical Excursion*), noted that there were few breaks in the south of the Wairarapa bush cover, "At Papawai itself there was a much smaller clearing of a few hundred acres and another of approximately the same extent to the north west on the Waiōhine at Ahikouka. The Kuratawhiti clearing, roughly two and a half miles long by half a mile wide, lay parallel to the Waiōhine from which it was separated by a narrow belt of bush." These clearings might well be indicators of areas affected by flooding, at least in terms of vegetation that did not settle long enough to establish wooded wetlands or dry land forests. On the other side of the river from Kuratawhiti and Ahikouka is Te Uru o Tane, known as an entrance to a forested area, while flood prone, there is an indication that the area was able to recover so it could establish at least wetland forest, typically made up of Kahikatea. On the other side of the river from Papawai is Pukengaki again as the name suggests a hilly area as is still the case today. It is of course a natural stop bank in a major flood event.

It is recommended that a Living Plan strategy of seeing the river and its GWRC environs would benefit from a vision for gradual restoration, to a naturalistic (as distinct from its pre-European natural) state, would best respect its historical and cultural attributes. This plan represents a holistic approach to managing our river and the Wairarapa catchment – ki uta ki tai. We recommend that the vision for the restored flora and fauna of the river, should be based upon it being "seen through Maori eyes", empathising with iwi and hapū values. We should use, wherever practical, given the changed landscape and society, Maori understanding of the right flora, fauna and ways to develop appropriate accessible ecosystems as the underlying philosophy, to deliver on the following community vision:

1. A beautiful and safe river for people, flora and fauna,
2. A (linear) park with restored natural beauty, with areas of public access so they can do whatever they want in keeping with the values of the river,
3. Maintaining the best water quality, purity and naturalness and for further conscientious use and local pride,
4. It is our back yard – we want no mess behind Greytown,
5. We must treat it as a holistic living entity, including native fish life and a respect for bird nesting etc.,
6. We need to build and maintain practical, unobtrusive flood protection,

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7. We will be aware of the whole environment (including the Ruamahanga downstream) and improve it until it will be clean and safe to swim in the downstream lakes in 2090.



Figure 9 Photo: Rebecca Laird

2.2 Things We Care About for the Next 70 Years that Require the Community and GWRC to Work in Partnership

1. GWRC will share in good time, with the WAG Project Team and [community](#), all relevant trigger data, events and findings that might inform planning inputs or actions that might need to be taken in between GWRC annual planning cycles.
2. With that in hand, everything listed below will be reviewed by the community including interested stakeholders, prior to each GWRC planning cycle (annual, operational or long term) commencing. New items may be added to this list with the agreement of the Wairarapa Committee. This in no way restricts the other ways in which statutory bodies and other stakeholders may choose to interact.
3. GWRC and the community will share all planning inputs, that

The Living Plan Process

Describes how this partnership works, to read more about it, [click here](#).

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might affect the river and environs for discussion, as needed prior to the start of each formal GWRC planning cycle.

4. GWRC will produce each type of draft plan that affects the Waiōhine, for instance the annual plan and budget for management of the river, and share this with the WAG Project Team and community, in good time for the community to review it. The community will identify differing views or endorsements and present these along with any proposed initiatives to the Wairarapa Committee at which the GWRC plan is also presented.
5. GWRC will support the day to day running costs budgeted annually.
6. GWRC Wairarapa Committee will decide what steps, if any, need to be taken where there are significant differences between what the community and GWRC wishes for the river.

2.3 Things That This Includes but Isn't Limited To:

2.3.1 Safety:

1. We need reasonably cost-effective measures for the prevention of death or injury between the banks of the river and in the buffer zones. Also, any improvements that can be made to [emergency procedures](#).

2.3.2 Water quality and Te Mana o te Wai:

1. Keep improving where and when, on the river, [water quality testing](#) is best carried out.
2. Where the results are below target quality, GWRC and the community (linking with Whatitua and citizen science) will jointly define a plan to address any issue including a review of the sample sites as the issue arises.

2.3.3 Flood Protection Works:

1. The community will monitor the implementation and engagement of the [flood defences](#) that are recommended by the FMP. Possible variations to the planned defences will be shared and agreed between the community and GWRC in accordance with the [Living Plan](#) process.
2. The construction of stop banks, flood protection plantings and other river defence works must be carried out in accordance with this plan. The WAG Project Team and community shall have oversight of their implementation and be party to the planning process for any alterations to the FMP occasioned by the GWRC planning cycles, or any of the review triggers.
3. The Following Level of Flood Protection is Aimed for (with care taken to consider the best affordable level of protection that is practical):
 - ~~8-4~~ Town - protection from one in one-hundred-year flood plus climate change, freeboard and sensitivity. This applies to Greytown, as flooding of the Waiōhine does not threaten urban Carterton. This level of protection is required for towns and cities.
 - ~~9-5~~ SH2 – no worse than now but with gradual management of levels of State Highway 2, by shaving approximately 100 mm off the crown, [in sensitive spots](#).
 - ~~10-6~~ Fullers Bend – maintain the status quo but continue to gradually reinforce strength of Greytown side (True Right Bank) defences.
 - ~~11-7~~ Rural – Attempt to provide protection for dwellings on the floodplain from one in twenty-year floods plus climate change, freeboard and sensitivity. For new build dwellings it

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will be recommended however that these should be built to withstand a one-in-one-hundred-year flood plus climate change, freeboard and sensitivity allowances.

~~4.2.8.~~ Apart from the requirement to defend the urban area against one-in-one-hundred-year plus climate change floods, wherever possible the plan must not advantage one area at the disadvantage of another i.e. rob Peter to pay Paul.

2.3.4 Access:

1. The community and GWRC will always seek improved access for river maintenance and stone extraction, to minimise impact on flora and fauna where practicable, and for amenity access, where and when agreed with landowners. Care will be taken to protect natural habitats and culturally significant sites.

2.3.5 Commercial use and Support for Activities that may Generate Business:

1. Any changes in proposed commercial uses of the river is to be discussed between the Iwi, community and GWRC as they arise or included in the pre-discussion of any planning cycle.
2. [Methods of extracting material](#) from the riverbed are set out in detail in this river plan and the subsidiary Code of Practice and will be overseen by the community where it considers this necessary.
3. It is possible that other opportunities for commercial activity might arise beyond the traditional activity of gravel extraction that benefit iwi, tourism and regional development aspirations. Community agreement, will be required prior to applying for consents to do business in the environs and the river.

2.3.6 Sustainability of Flora, Fauna and Aquatic Life in the Gradual Development of a Wildlife Corridor

1. Planning for flora and fauna, including aquatic life, to improve the natural character and beauty will be developed by the community working with GWRC and be incorporated in each planning cycle. The community aspires to incorporate the tenets of the [Cultural Impact Assessment \(2010\)](#) document and the inputs of Iwi, other statutory bodies such as Fish and Game and DOC, recognized conservation groups and organisations e.g. [Department Of Conservation](#).
2. We will restore the natural character of the river (as distinct from the river being “natural” i.e. as it was before humans found it), wherever practical. See [Natural Character](#).
3. A plan to protect nesting birds will be maintained by the community and GWRC. Where rare and protected flora and fauna require extra care, therefore additional expense, GWRC support for this will be requested directly, or through the Wairarapa Committee.
4. Opportunities for and issues arising from riparian plantings will be agreed between the community and GWRC, adjoining landowners, Iwi and other interested parties as part of each GWRC planning cycle.
5. Maintenance of plantings (including necessary ground clearing, spraying and irrigation consents) and the best appropriate use of joint resources, will be planned between GWRC and the community.

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6. The Community will work with GWRC to choose the most appropriate measures for pest and weed control. This will dovetail with the Maintenance of Planting and [Riparian Planting projects](#) and maintenance. Appropriate protocols will be decided between the Community, GWRC, Iwi, and affected landowners.
7. The community has a long-term vision to enhance specific habitats, such as wetlands, in cooperation with Iwi, GWRC, and landowners willing to participate. The entire Waiōhine River and its environs should become a living corridor for bird life and other flora and fauna to inhabit.
8. Opportunities to enhance the living corridor will be sought by the community and any planning sessions with GWRC should seek to improve this habitat.
9. Actions which substantially affect the natural character and beauty must be decided jointly by the [community](#), including Iwi, GWRC, and other stakeholders. Projects which influence the river environs will require agreement from the community in the planning stage. The community must have an oversight to any proposed activities in the upper reaches via GWRC, DOC or other stakeholders to ensure the river is properly managed.

2.3.7 Water & Bed levels

1. GWRC will continue to share all sets of bed level, gravel and water flow and level data with the community as it becomes available. Where issues occur, then GWRC will consult the community on future changes.

2.3.8 Educating the next generation

1. The community will liaise with local schools, enviro-schools and other academic institutions to educate future generations, to develop expertise to address the ongoing living plan and engage future generations. Community engagement with GWRC will provide an opportunity to develop an education plan.
2. Local Iwi knowledge and depth of understanding of the Waiōhine River and its habitat is a valuable resource to help the Community to better plan for and protect the River into the future. The Community will consult with Iwi to see the Waiōhine through Maori eyes, develop knowledge of native plants, medicinal and edible plant sources and information about the health and moods of the River and to identify opportunities to inform visitors to the river about these.
3. The community's long term vision is to support the provision of scholarships for local students who wish to undertake post graduate study that focuses on the Wairarapa River systems and catchment with a view to helping the community to ensure ongoing expertise and access to the newest learnings to serve the Community. Expertise in the community may serve to mentor and encourage local talent. Scholarship funding may be accessible through the many sources that are available from time to time.

2.3.9 Climate change

1. The community will receive copies of all relative reports obtained by GWRC relating to climate change that either may, or are certain to, have an impact on the River, its habitat and environs and create or modify plans to mitigate any foreseen risks.
2. In the event of lack of clarity or conflicting information, GWRC will bring agreed independent experts to offer their advice to the community and GWRC jointly.

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2.3.10 Walking, cycling, access tracks and amenities

1. The development and maintenance of these will be discussed between GWRC, District Councils and the Community. Plans for these projects will be input to GWRC planning cycles.

2.3.11 Protection of sacred places - Waihi Tapu

1. The community will continue to acknowledge and support the protection and care of [cultural and sacred places](#) and cultural practices. It is important that burials are undisturbed in context of any activities in proximity of Te Uru O Tāne Urua or other known burial sites.
2. The cultural impact of not acknowledging places of memory is that Wairarapa Maori feel marginalised by work being done in places of significance. A **confidential** register of memorials should be kept by GWRC at the direction of iwi, or a process of consultation respected, to ensure care is taken not to damage significant places relating to the river.
3. If wetlands and/or native flora is used in floodplain buffer zones, a group of weavers could be established to instruct what plants would be best for use in weaving. This approach could also apply to other culturally significant materials.

2.3.12 Sourcing funds

1. The Community may seek to fundraise for projects to advance its long-term vision of the river or may approach GWRC to jointly fund some projects. Proposals will be input to the Living Plan Process and thence to the Wairarapa Committee.

2.3.13 Events – activities

1. The community aspire to the river being a site for events from time to time. The improvement of the river and its environs by the community working with GWRC should not exclude this.
2. The community will require consultation regarding events and activities prior to consents being considered, allowing the community to organise support for activities which are beneficial to the river, and being alerted to any which may impact iwi rights or the long-term vision for the river.

2.3.14 Keeping our profile high

1. The community profile will be maintained to provide all stakeholders with regular feedback on activities it is involved with including discussions with GWRC. Communication channels like email lists, Facebook page, and a website will all be used for general coverage. The principal adopted during the FMP process of openness and transparency will be sustained.

2.3.15 Downstream effects

1. The Waiōhine, Mangatāre and Beef creek have the potential to affect the Ruamahanga and southern Wairarapa lakes downstream through increased flows or degraded water quality. GWRC will discuss with the community, if the Waiōhine has a detrimental effect on waters downstream. The community will liaise with other catchment groups to promote

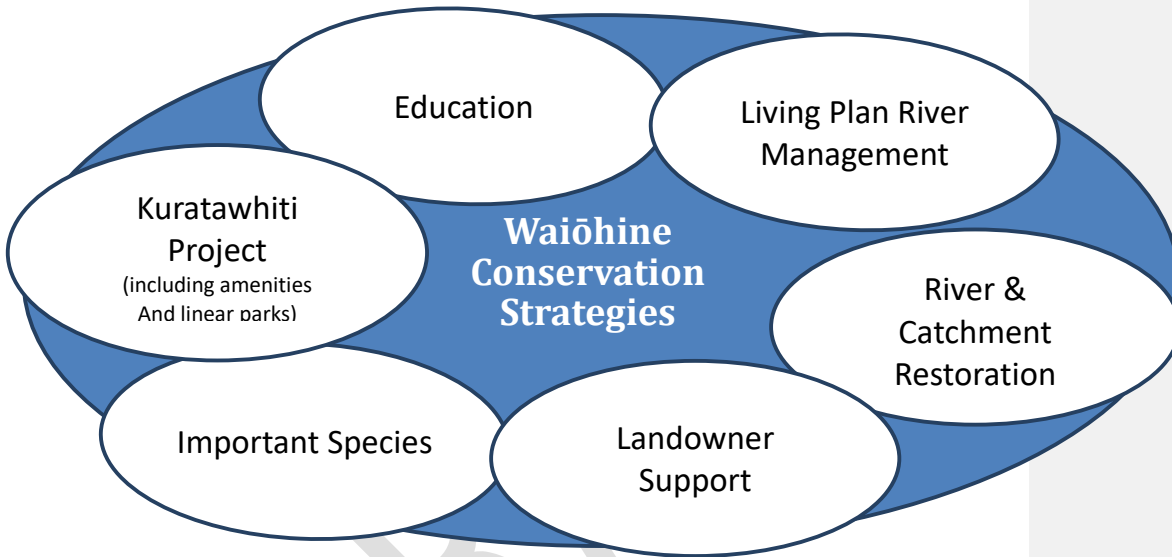
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and participate in, where practical, a greater view and vision for Wairarapa rivers and catchments.

2.3.16 Conserving, Sustaining and Improving our River



2.3.17 Conservation, Sustainability and Restoration Strategies

13.9. We have developed a set of clear statements about how value identification and prioritisation will be set, how decisions will be made reach by reach e.g. balancing flood protection versus river ecology. These statements are our vision for the Waiōhine.

14.10. Direction is more important than time – we need to have a consistent vision of what the river should be and make sure we are always working and moving closer to realising it.

GWRC allocate an approximate annual 3% of total budget for the river, to be set aside as river enhancement budget and therefore recognizes the need to sustain and enhance environmental projects.

2.3.18 Freshwater Values (Incorporating Whaitua)

The concept of a "Catchment Community" to implement the Ruamahanga Whaitua Implementation Programme outcomes is incorporated within the Waiōhine River Plan. Waiōhine has a lot less fine sediment than most other Wairarapa rivers. Flood works do not seem to have had as much ecological impact as may have been thought.

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78% Of water quality outcomes, and most macroinvertebrates, come from smaller streams and it can be seen from the illustration below that whilst the river itself has very good water quality, there is opportunity to improve the quality of small feeder streams.



Figure 10: Illustration depicting polluted streams in orange and clean in green courtesy of [Professor Russell Death of Massey University](#).

2.3.19 Principles for maintaining and improving water quality

2.3.19.1 General: Whilst the [Ruamahanga Whaitua](#) Implementation Programme (WIP) has been received in Council, the question remains as to how it is to be practically implemented in a way that meets the general intent of Whaitua. We recommend that it is for the community in partnership with GWRC to determine how to implement it in a way that delivers useful outcomes and fits to the overall strategy of Whaitua. The carrying out of measurement and working towards Whaitua goals by community catchment groups, such as WAG, is seen as positive.

2.3.19.2 Measurement: As at 2018 the water quality of Waiōhine is rated “A”. Ecological Health is rated “C”. In accordance with [Whaitua](#), we have set a goal to maintain water quality as a minimum. Improving the ecological health is our goal. **The measured natural suspended sediment load to be reduced to 5% by 2080.**

2.3.19.3 Conservation & Restoration Strategies:

Objectives that can join up together into a holistic strategy, have been collated from Iwi, FOW, DOC, F&B, F&G, Landowners and all other stakeholders’ inputs to this plan:

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1. Retain the river's natural character of braidedness, backchannels and allow lower high beaches but minimise disturbance to the river itself. Well defined channels are preferable.
2. There is a need to run Health Quality Index measurement every few years, or after trigger events or works, take place,
3. Slow the water down where practical, it helps aquifers recharge and creates habitat. Deep pools are better for aquifer recharge,
4. We recommend taking care to avoid mobilizing fine sediment in the water ("fines"), which results in:
 - a. Smothering,
 - b. Filling in the voids,
5. Where practical, pools should be reinstated or created,
6. Whilst the main river still provides important habitat, riparian planting has the biggest water quality effect in smaller streams.

2.3.19.4 Water quality measurements should be taken at three locations and eventually meet or exceed [Whiatua](#) objectives:

1. The beach on the corner of the "Goose Neck" with access off the Waiōhine Valley Road.
2. The beach at SH2 Bridge ([XS 17](#)) with access off SH2.
3. The end of Tilson's Road, upstream of the Ruamahanga confluence, downstream of the Mangatāreere confluence.

2.3.20 Fauna

1. Fauna (Including Fish and other aquatic life): Implement a "living" realistic recovery plan for the Waiōhine to meet or exceed Whaitua recommendations and to meet the goals of the community between now and the year 2100 including:
 - a. The macro-invertebrate health of the river is to be gradually improved,
 - b. Protect and sustain Dotterels and Black-Billed Gulls that nest along the river,
 - c. Work towards gradually developing the concept of a "corridor" for native birds, that exploits "stepping stones" in the buffer zones and along the river itself,
 - d. Work towards gradually developing more places (pools) where migrating fish can pause and rest when moving up or down the river.
2. Start to designate zoned areas (e.g. dog control to conserve species etc.),
3. It is noted that snub groynes are better for providing habitat for fauna, including fish, than rock walls,
4. Gravel extraction and river maintenance should seek to minimise sediment release into the river and wherever possible, avoid using machines in the wet channel,
5. We recommend that the known Mangatāreere nutrient problem needs to be addressed, as part of the Mangatāreere Catchment Plan project, as this feeds the lower Waiōhine.
6. A regular count of pools, riffles and runs should be made and shared with all interested Stakeholders.

2.3.21 Flora

1. To collaborate with individual landowners, who wish to help develop joined-up plans, to restore the ecology of the buffers and edges of the Waiōhine,

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2. Focus on gradually restoring the planting and ecosystems at the end of Kuratawhiti street on GWRC land, as a priority area, to develop a sustainable environment and amenity for the community and native wildlife,
3. Develop the offer by DOC, for Involvement in planning, planting and advice,
4. Develop and maintain wetlands in buffer zones, to create a “wildlife ladder” or corridor, along the river,
5. Wetlands – seek opportunities for native planting, restoration and sustenance of wetlands,
6. “Ring fence” identified wetlands, engage Iwi and interested stakeholders to jointly develop the best planting strategy,
7. To seek appropriate management of browsing animals on the catchment, within the [gorge](#),
8. Plan and prioritise pest control throughout the river and buffer zones,
9. Where practical, leave room for the river to move around ([see River Management](#)),
10. Keep vegetation clear (within the defined fairway) on “dry” beaches, to minimise impact on fauna; mechanical spray work is OK to control weeds vegetation,
11. Consider the use of Manuka and Mahoe as [recommended planting](#), where flood protection is required, as well as Kanuka, Carexes also for underplanting (Germinata),
12. Where there is a general degrade of the riverbed next to high banks, willows planted on the high ground will struggle to hold mass – which can result in bank failure. Planting should be carried out on beaches below the high banks where practical.

2.3.22 Cultural Considerations:

The whole river is considered [taonga](#). There are historic sites of habitation, Urupa and other sites of significance along the length of the river. **Mana Whenua and Iwi should always be consulted regarding cultural considerations.**

2.3.23 Rural Landowner Considerations

Structural and non-structural solutions are ~~addressed elsewhere~~[addressed here](#). Several landowners occupy rural land adjacent to the river, whilst this brings some benefits, they are affected by environmental and social aspects of the river, including the necessity to site inland stop banks on their land. Factors considered in the development of this plan include:

1. Impact on commercial use of land for Inland Western (near Kuratawhiti Street) and Eastern (North Street) stop banks,
2. Impact on farming operations.

There is a desire by landowners that proactive [river management](#) must continue, so that flood erosion management for rural land minimises the destruction of viable farmland. The Waiōhine Flood Plain contains some very high-quality agrarian soils, suitable for food production. The project team recognises that these soils may be needed for food production in future years. More Flood control systems may need to be considered at some point, by the Project Team, to protect this type of Farming within the [Living Plan](#).

KEY FINDINGS:

- **Target urban areas to be defended against 1:100-year floods plus climate change (1% annual probability)**

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Field Code Changed

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- **Target rural dwellings to be defended against 1:20 year floods plus climate change (5% annual probability)**
- **Work towards gradual realisation of the vision for the river within the framework of the plan and the Living Plan process.**

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3. Climate Change

“Our changing climate will affect our economy, environment and way of life. We are uncertain about the pace and scale of future change. We do know that planning for the future means planning for a different climate. New Zealand needs resilient systems able to deal with the scale and pace of change.” Ministry for the Environment.

3.1 What we Plan For: [Climate change](#) will increase river levels in an extreme rainfall event by up to 10% by the year 2050 (high confidence) and up to a further 6% by the year 2100 (low confidence in climate change predictability).

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3.2 Why this increase? There is an overall increase in temperature annually by 2090, which will vary by season. Total rainfall appears to have little annual change, but large seasonal



Regional seasonal changes in rainfall and temperature between 1986-2005 and 2081-2100 for Wellington (temperature) or Masterton (rainfall)(data from MfE 2016).

Season	Variable	RCP2.6	RCP6.0	RCP8.5
Spring	Temperature (°C)	0.6	1.6	2.8
	Rainfall (%)	2	-1	-3
Summer	Temperature (°C)	0.7	1.9	3.1
	Rainfall (%)	-1	2	8
Autumn	Temperature (°C)	0.7	1.9	3.1
	Rainfall (%)	1	0	3
Winter	Temperature (°C)	0.7	1.9	3.1
	Rainfall (%)	1	-4	-7
Annual	Temperature (°C)	0.7	1.8	3.0
	Rainfall (%)	1	-1	-1

Figure 12: Tonkin & Taylor 2018

Figure 11: Two maps of New Zealand, giving projected changes in annual mean temperatures relative to 1990 for 2040 and 2090. Source: <https://www.mfe.govt.nz/publications/climate-change/preparing-future-flooding-guide-local-government-new-zealand/part-one>

changes. It will rain more on the western side of the Tararua Range. Drought days (over 25 degrees) will increase from thirty to seventy each year here in the Wairarapa. An increase in extreme rainfall events is predicted under RCP6.0 (0-5% increase), it is not known how this is shared amongst the seasons (but the Waiōhine historically floods only between October and February). The number of ex-tropical cyclones affecting New Zealand is unlikely to change due to climate change by 2090, however they will likely intensify, with an increase in rainfall accumulations and wind speeds. It is expected these will mainly affect the Western side of the Tararuas but with rain falling in the Waiōhine catchment, which is deep in the hills. Some research suggests that storm intensity, small scale wind extremes and occurrence of thunderstorms, is likely to increase in New Zealand (Mullan et al. 2011 in MfE 2016). Temperature rise from climate change increases the amount of moisture that can be held in a column of air. This in turn makes rain events more extreme and increases the volume of water in a flood.

The increase in annual temperatures with a decrease in annual precipitation, may lead to a decrease in vegetation condition in the upper catchment, and possibly even a vegetation community shift (long term). Should this occur, then hillslopes will be less protected during rain events. This suggests

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that more landslides could occur with smaller rain events, than in the past. This would increase gravel build up in the Waiōhine River, should it eventuate. [See Tonkin and Taylor Report](#).

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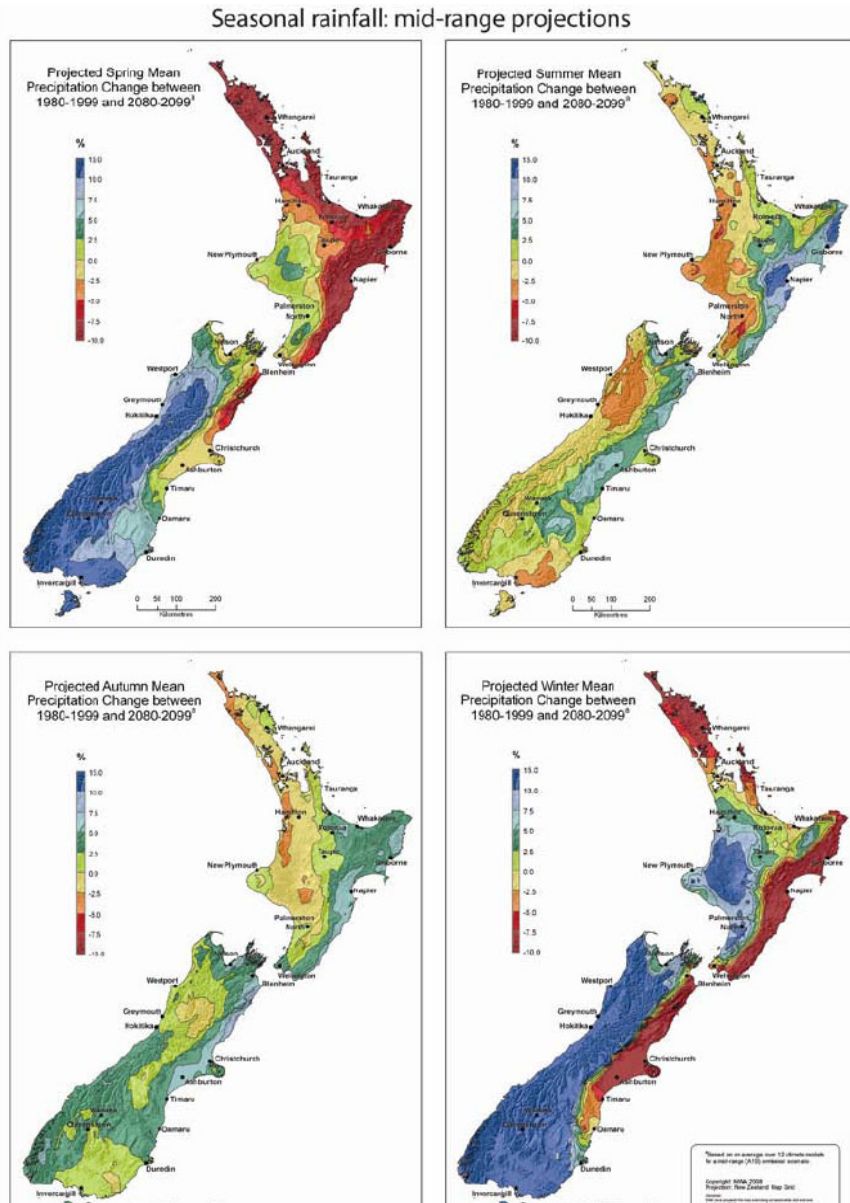


Figure 13: This figure shows four seasonal maps of projected changes in seasonal mean rainfall (in percentage) over New Zealand for 2090 relative to 1990. Courtesy NIWA. [See Extreme Rain Presentation.](#)

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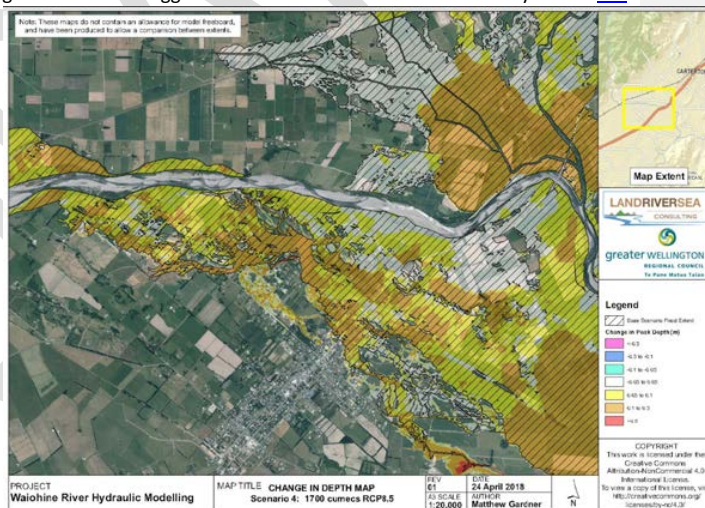
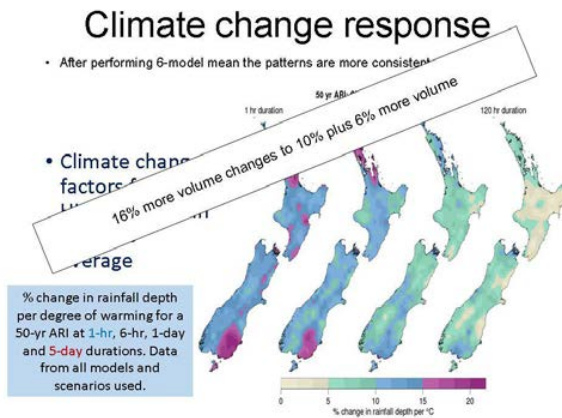
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3.3 How much climate change do we think there will be and when?

We have two planning horizons in this river plan, chiefly because of climate change: 2040/2050 and 2090/2100. Climate change is reasonably predictable up until sometime between 2040 and 2050, by then the actions of humans in the meantime, will dictate which of many climate change paths will be set in train between then and at least 2100. So, post 2050, climate change scenarios will be highly divergent (they fan out a lot). Therefore, until we can see what humans do to combat climate change, there can be little confidence in predictions of what path climate change will take, after 2050, and out until 2100.

Whilst current climate change information suggests that we should not need to worry about [sea level rise influencing the Waiōhine](#), as a precaution, we have chosen to include it as a [Trigger](#) to be included in the mandated 2050 review.

Note: Further work needs to be done on the impact of climate change on: flora and fauna in the Waiōhine, the upstream effects of sea level rise on flora and fauna in the Waiōhine and the effects of the impact from increases in drought days on river water levels, water tables, irrigation channels, artesian water or springs.



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3.4 What did we choose? After [extensive consultation with climate change experts from NIWA](#), we chose a flood modelling guideline of:

- By 2040/2050 +10% flood water volume and
- By 2090/2100 +16% flood water volume.

3.5 Where does this come from and will it change? World-wide data is accumulated and published on an 8-year cycle and of course, more is understood about climate change as time passes. Furthermore, as time passes our base of historical flood data extends and enables more accurate flood modelling. NIWA and other New Zealand agencies work to try to understand what this means to New Zealand. New Zealand has limited climate data measurement and a complex local climate, because of oceans and mountain ranges. So, our scientists must work hard to try to come up with what this might mean to an area as small as the Wairarapa, with limited historical data.

3.6 We expect that as much more information on climate change will be available by 2040/2050, tools to more accurately model that and ways we can analyse it, will become more sophisticated. There will be a review of the climate change implications by then. So that is an obvious first planning horizon (there are other reasons for this, in addition to climate change). We are obliged to try to plan out towards 2090/2100: so, have that as the second planning horizon – although it is still difficult to predict how severe the impact of climate change will be by then.

3.7 Which Climate Change Scenario did we use?

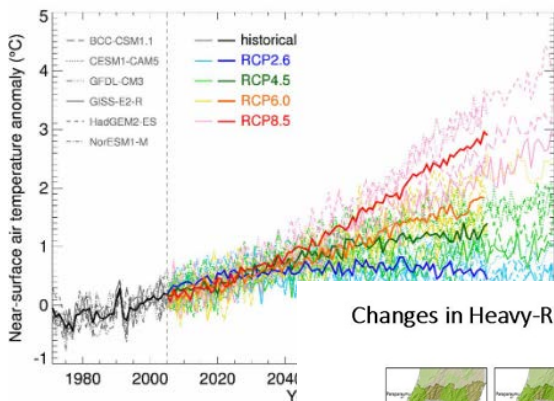


Figure 16: IPCC scenarios diverging

case scenario, in which the world fails to curb the use of

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An explanation of climate change as it could affect the Wellington Region [can be found here](#).

3.7.1 We Selected RCP 6.0 - what does that mean? It's complicated. **RCP6.0** is a high mid-range outcome for climate change. It's not as aggressive as RCP8.5, which was created as a worse

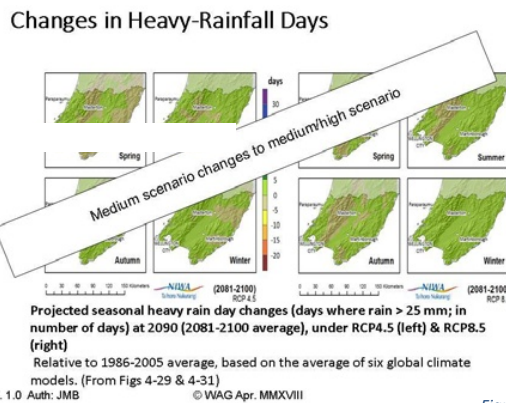


Figure 17: Courtesy NIWA

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fossil fuels, or take other measures to slow or reverse climate change. RCP 8.5 is sometimes called “Business as Usual” because way back in the 1990’s journalists quite rightly latched onto the idea that if we continued as we were then, then disaster was certain – if we carried on with “business as usual”. Some things have already changed – some worse, some better. Following discussions with NIWA, the feeling of the project team was to have more faith in humanity than the grimness of RCP 8.5, but we did pick the next worst modelled scenario: RCP 6.0. Of course things will change and the models will improve but this is the best it is possible to do, before new data comes to light. [Much more information about RCP6.0 versus other scenarios can be found here.](#)

See [NIWA’s Presentation](#) to the Project Team on Climate Change and [on Rainfall](#) factors that influence the Waiōhine.

3.8 Floods do not last long on the Waiōhine. Examining data on past floods we see that [major floods last between 6 and 12 hours](#) on the Waiōhine.

A worst case 12 hour flood, once in every one hundred years on average flood (1:100), with additional volume of water [for climate change scenario RCP 6.0](#), was looked at as an exploratory model. This gave a modelling guideline of 19.2% additional flood water volume for a 12-hour flood duration at 2090/2100. This will not be used because it is a highly unlikely combination of events, climate modelling out to 2100 is wildly unpredictable and we will review the climate change aspects of the River Plan by [2050](#), when a lot more data will be available anyway.

The soils of the floodplain are very free draining, so residual floodwater drains away very quickly.

KEY FINDINGS:

+10% increased volume of flood water by 2050,

+16% flood water by 2100,

Review this:

- a. By 2050,
- b. If climate change exceeds 1 degree during that period,
- c. Or if significant new data becomes available from NIWA.

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4. Planning Horizon

We have adopted two planning horizons for the Waiōhine River Plan: 2050 and 2100. Factors that have contributed to the selection of these:

1. Ministry for the Environment (MFE) guidance recommends up to 35 years span of time to pay off investment in major structural works,
2. The borrowing horizon for loans to build structural assets such as stop banks, is typically 20-25 years,
3. Also, by 30 years we will see a generational change, the next generation may see things differently and see things better,
4. Councils typically have 30-year infrastructure strategies,
5. Climate change is reasonably predictable in the near term and by and large, has its course set until 2040-2050.

4.1 We have selected 2050 as the first planning horizon as most of the factors that determine planning horizon above suggest a time for review between 2040 and 2050.

- For new stop bank design, we will initially design to 2050 but will frequently test this and plan contingency for possible future need.
- Where the difference in estimated cost between building to 2050 and 2100 is insubstantial, we may opt to build to the 2100 horizon.
- If we build to only the 2050 horizon, we will ensure that adjacent bare land is enough to allow addition to the stop bank, to cater for a possible “as at 2100” increase in height.

Note: This also means we will have tried to consider wider circumstances and the longer time horizon in choosing stop bank locations to keep our options open in future.

4.2 The principle of adaptive management is being able to set a point in future for a known decision that may be triggered by an event (the types of event that can [trigger](#) a revisit of this plan and new decisions being made have been [catalogued here](#)). This allows us to pick more than one planning horizon and a list of events which, if they occur, may trigger a review of this plan. This is seen as a key driver for the principle of a “Living Plan”. In other words, “if this happens, get the community together, quickly agree actions, and review this plan”.

4.3 What Do These Planning Horizons Inform?

- House design life,
- Stop bank location security, room to grow if needed,
- Zoning implications, where future subdivision and development should occur and how,
- Important horizons for understanding climate change,
- Horizons for inter-generational change,
- Ideal investment planning horizons, balancing cost of money versus spreading repayment.

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5 Which Flood Could We Use as the Basis for Developing and Proving Our Models?

A wide range of information sources were correlated and used to cross validate the flood history of the Waiōhine, including:

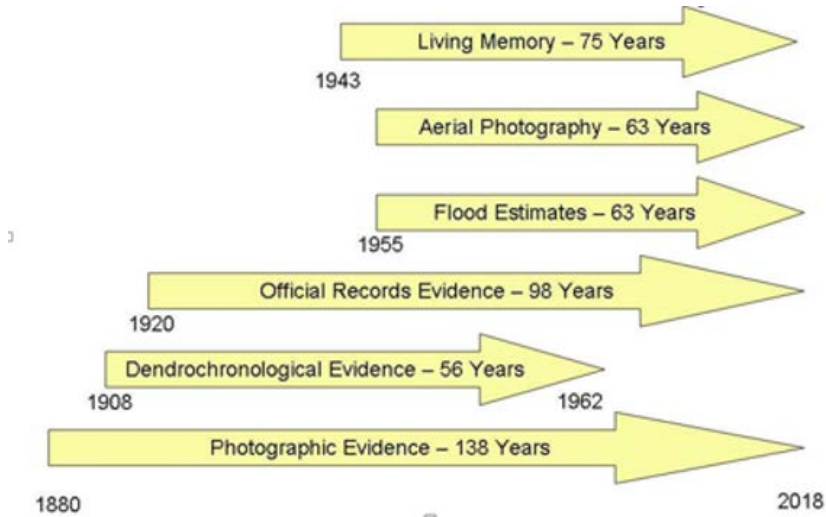


Figure 18: Sources of Information on past floods tally

5.1 The kind of things that had to be determined:

- 1. Which floods are of note?
- 2. Which of these is best to base a model on?
- 15.3. Which flood events can be used to calibrate against (i.e. more than one flood)?
- 16.4. Is there enough data to inform design scenarios from these?
- 5. Is an analysis of flood frequency needed? Are there historic floods to consider?
- 6. Given 1990 is being modelled, which other floods might be important?

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5.2 Which flood did we use?

It was decided to create a base model from which all other models could be derived, using the flood of 1990. Whilst several other floods were considered (see table below), those did



Figure 19: Aerial Photograph of 1990 flood - [click here for other photos from the 1990 flood](#)

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not offer the larger return period (a one in twenty-year event or average frequency), or the relative wealth of information for cross referencing, such as aerial photographs.

New computer modelling software available to [LandRiverSea Consulting](#) allowed a far more detailed LIDAR (Light Detection And Ranging) sourced model for critical flood sensitive areas of the map. New sections and drone data were also correlated and used to improve the accuracy of the model.

[The map for a one in one hundred year flood,](#)

including climate change and allowance for flood sensitivity, was subsequently cross-checked against data modelled for the [2004 flood](#), which also was further cross checked against local knowledge and aerial photography. As a result of this exhaustive process, a very high degree of confidence in the base model was reached. This base model was then

confidently used to develop all further map sets and models, used to investigate flood risk and develop flood defence options.

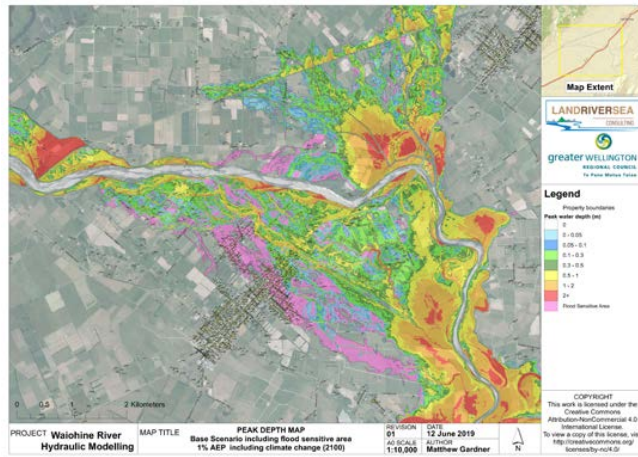


Figure 20 One in one hundred year flood, with climate change as at 2100, also showing Flood Sensitive Areas (where there may be some possible flooding in the event of unusual things happening in addition to climate change and a one in one hundred year flood)

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Date	Flood - and - [quality of flood, out of 10, for deriving base model]
01/1980	1424 cubic metres per second. Some photos. Long duration – 2 peaks. Extensive land flooding. Getting old [4/10]
12/12/1982	1558 cubic metres per second (some doubt about this number). Biggest on record. Some photos. Long duration (30 hours) Gauge validation/ Matt/ Hydrographs. New stop bank at Platform Farm [4 to 7/10]
1990	1408 cubic metres a second, single peak, plenty of aerial photos and other reference material [8/10]
06/09/1998	1104 cubic metres per second Long duration. Stop bank failure at TiceHurst. (used for validation) [0/10]
2002 #	915 cubic metres per second [0/10]
12/02/2004	1362 cubic metres per second. Small amount into Apple Barrel. Lack of photos. At night and short duration [5/10]
2005 #	857 cubic metres per second
18/01/2006 #	762 cubic metres per second. Small amount into Apple Barrel.
07/10/2008 (Phil Wallace) #	982 cubic metres per second. New bridge was in place
2009 (Phil Wallace)#	Too small. Didn't leave channel

Figure 21: Floods of Note - to identify candidates from which to develop a base model

#- these floods were too small to use to model

As can be seen from the table above, the 1980 flood was also eminent and therefore of interest as a one of the largest recent floods on record. Although there is some useful aerial photography, the double peak profile and landslide damming the Waiōhine in the gorge was atypical, and it was therefore set aside in favour of the more typical 1990 flood event.



Figure 22: Landslip in Gorge during 1982 flood

The earliest full cross section set, dates from 1984. Given that there were major floods in 1982 and 1980, it's questionable whether the 1984 data set could represent the river cross sections at the peak of the 1980 flood, based on experience calibrating the 1990 event. Also, there were no flood marks to check against (showing the wet extent of the flood at peak), only flood photos.

Finally, the 2004 event was chosen to be used to cross check and calibrate the new flood model. There were two floods in Feb 2004 – our candidate is the first one on 12th Feb. Surveys

were done in 1999, and May 2004 after the floods. These were validated against the May 2004 survey.

Assumption Used for Modelling: - agricultural land is to be grazed grass (in modelling we must choose the degree of roughness for land surface and of course for farmland, use may change).

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5.3 Initial Findings from Review of the 1990 and 2004 Floods (used to verify 1990)

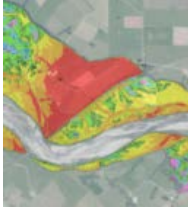


Figure 23: Detail from base scenario flood map

1. The 2m deep “red” area behind the north side of the railway initially looked too high. After further investigation it was found this was entirely reasonable, it could be put down to the lack of spill from the channel due to the fast/sharp rise and fall of the river during this flood.

2. The modelling of the State Highway 2 Bridge did not appear to show the correct amount of overflow from that flood event (remembering this flood occurred when the old State Highway Bridge was still in place).

3. The flooding on the Mangatāre looked incorrect but we do not yet have Mangatāre data with which we might understand the real impact of this. Local experience suggests this might be more like 1m. It was noted that any findings of the yet to be completed Catchment Planning Project Incorporating Flood Plain Management Plan for the Mangatāre should be used to verify this aspect of the Waiōhine model and any substantial variation can be used to [Trigger](#) a review of this plan.

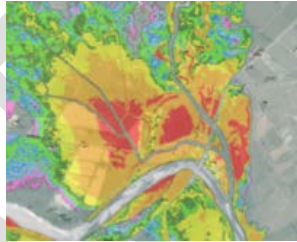


Figure 24 Mangatāre area flood depth

4. Note that: Once the Catchment Planning project for the Mangatāre is completed, it is proposed that the boundary between the rivers be aligned with the [Freshwater Management Unit](#) boundaries, i.e. at the actual confluence of the Mangatāre and Waiōhine rivers.
5. The model showed riverbed widening effects – this is to be expected.
6. The 1990 flood calibration results do not reflect the exact observations on the ground e.g. flood levels on North Street

5.4 Waiōhine FMP – Flood Modelling and Mapping Audit

Once the 1990 flood had been identified as by far the best on which to base the development of a base flood model – and that model had been developed and verified against the 2004 flood model and a variety of other [cross referenceable sources of data](#), we were able to develop a high degree of confidence in the base model.

We then asked Beca Ltd to return to the project to conduct an independent peer review of the model to help verify it and to ensure that several key shortcomings identified in the preceding draft Waiōhine Floodplain Management Plan had been successfully addressed. [This report can be found here](#). It was completed and presented to the Project Team and community on 14th February 2018. It was subsequently also reviewed by the [Ian Heslop](#) led, additional Independent Peer Review process.

This then allowed us to create a wide variety of other models to study floods of various intensities, durations, profiles and a wide range of other factors, such as climate change, channel blockages or gravel build up. In fact, the base model has provided the foundation for all subsequent floodplain management work in this River Plan.

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Key Findings:

1. Ages/Dates attributed to photos 1990: 1980 needed correcting.
2. Newer modelling software with the ability to use variable mesh sizes allowed more detailed modelling.
3. The model is accurate: there is a high degree of confidence in its accuracy. This has been independently peer reviewed.
4. The area of the lower Mangatāreere tributary perhaps shows more overflow than occurred – but this could be attributable to a higher bed as cross sections for this stretch of river are not available. This has not impacted the plan or stop bank design.
5. Bed levels have a very high impact on flood levels, especially in the stretch between the end of Kuratawhiti Street and Fullers Bend (XS-20) and therefore we note that river maintenance is key.
6. Bed level was found to be more significant in comparison to increased Mannings 'n' (riverbed roughness) and peak river flow volumes for the 1990 flood event calibration.
7. Once the Catchment Planning project for the Mangatāreere is completed, it is proposed that the boundary between the rivers be aligned with the [Freshwater Management Unit](#) boundaries, i.e. at the actual confluence of the Mangatāreere and Waiōhine rivers.

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6 Understanding the Waiōhine Hydrology

6.1 Background

Climate change and weather patterns combine with its hydrology to make the Waiōhine a challenge to manage well. The combined impact of these three factors on gravel and bed levels is a major concern for the community. Higher bed levels increase the risk of flooding, erosion and course change.

Issues were identified within the previous draft Floodplain Management Plan. Consequently, Matt Gardner of LandRiverSea Consulting was contracted to this project team, as a hydraulic modelling specialist, and extensive use was made of his skills and services. In addition, the Project Team conducted workshops with Mike Gordon (GWRC), commissioned a detailed study by [Tonkin and Taylor](#) Consulting and also sought expert opinions from others, such as Professor Ian Fuller of Massey University. Independent Peer reviews of this work were conducted by [Beca](#) and [Ian Heslop](#).

Establishing which floods of note from past events could be best relied upon, from which to develop and prove a trustworthy hydraulic model, was of vital importance. From there an understanding of the characteristic hydrology could be pieced together and gaps in data, as well as areas where more detailed surveys, independent expert advice and models were needed, assembled. These have been used to explore options and outcomes for flood defence, river management and maintenance, for the Waiōhine. These were reviewed by the community as well as independently peer reviewed. A considerable number of sources of data, from living memory to a study of the [dendrochronology of Kahikatea trees in the Waiōhine floodplain](#) carried out by Rob Kennedy were compared and found to be remarkably consistent. Note that they have also helped in the development of the vision, conservation and restoration strategies in this river plan.

The outcome is a set of hydrological modelling data that the Project Team now has a high level of confidence in, together with a range of hydrology maps used throughout this plan.

GRAVEL

When we use the term “gravel” we mean stones of every size carried down the river. From boulders to fine sand (sometimes called “fines”).

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6.2 Factors affecting Waiōhine Hydrology:**6.2.1 Climate Cycles Mean Floods Occur For 20-30 Year Periods that are 20-30 Years Apart**

[Tonkin & Taylor](#) identify a number of key influences that shape the Waiōhine: *“The character and behaviour of the Waiōhine River is influenced by and responding to a range of climatic cycles including those that occur over long timeframes (stadials/glacial maximums), those that operate over multi-decades (the [Interdecadal Pacific Oscillation](#) – IPO) and those that happen more frequently (El Niño and La Niña). Further to this, the Waiōhine River has shown a significant change in behaviour following a large-scale episodic event (1855 Wairarapa fault rupture).”* **Some of these, such as the Interdecadal Pacific Oscillation appear to be responsible for the periods of large flooding and then little or no flooding (as at present) on the Waiōhine, this in turn influences gravel and bed levels in the river.**

The report goes on to say: *“Increases in temperatures and decreases in baseflows under two of three climate scenarios may lead to vegetation changes in the upper catchment. This **may lead to increases in sediment supply** to the valley floor under less intense rainfall events than current conditions. These predicted sediment stores will possibly be redistributed under less frequent but larger flood events in the future.... The IPO is a large-scale, long-period oscillation that affects climate variability over the Pacific Basin, **with phases lasting around 20 to 30 years** (NIWA 2016). Positive IPO phases are generally associated with an increase in anticyclones resulting in drier than normal conditions, with some catchments showing lower than average base flow conditions (e.g. Manawatu River) (NIWA 2016). However, the Waiōhine River shows an increase in large magnitude flood events during positive phases of the IPO (PDP 2014, and Figure 17). Conversely, negative IPO phases are generally associated with more north easterlies over northern regions of New Zealand (NIWA 2016; MfE 2008) which is likely to increase annual precipitation in the Tararua Ranges, possibly resulting in higher base flows in the Waiōhine River. **There was a switch to a negative IPO phase in 1999** (NIWA 2016, PDP 2014; MfE 2008).”*

Note: **Bold** added for emphasis of key points.

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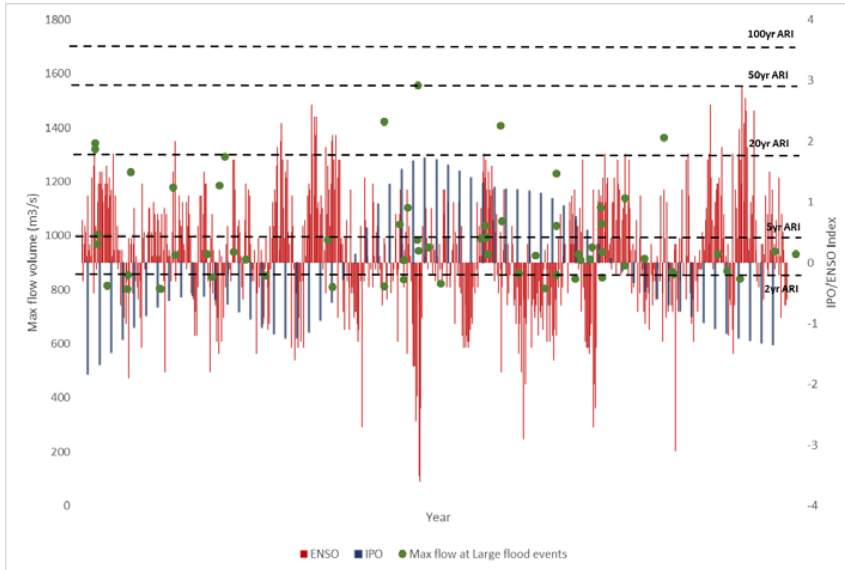


Figure 25: Maximum flood peaks for the 50 largest recorded floods in the Waiohine River Catchment are shown as GREEN DOTS, El Nino Southern Oscillation (ENSO) cycles are shown in red, IPO cycles are in blue. Tonkin and Taylor from Creative Commons

6.2.2 Stream Characteristics – Gravel Trapping and Build Up, Spreading In Flood

Note on Figure 23 above (Tonkin and Taylor): “Reach 2 (this is between the Goose Neck and State Highway 2 Bridge) is an unconfined wandering gravel-bed river. Wandering gravel-bed rivers are a transitional form of river form between a single thread meandering channel, and a braided river. This reach has previously been described as a braided river, and evidence of paleo-channels on some of the terrace surfaces suggest it would have been a braided river at some point in history. This reach also acts as a large instream sediment store, effectively trapping the larger gravels in this reach (Brierley et al 2011).”

	Stream location	Reach Length	Valley setting	Thalweg	Valley slope (%)	Valley width	Dominant Sediment process	Sediment type
Reach 1	The gorge to the gooseneck	5.5 km	Partly confined	1 channel well defined	0.45	236 m	Transport reach	Coarse (boulder/gravel)
Reach 2	The gooseneck to SH2	8.7 km	Unconfined	1 channel regularly shifting	0.43	1,352 m	Deposition reach	Coarse (Cobble/gravel fining downstream)
Reach 3	SH2 to the confluence	6.15	Unconfined	1 channel well defined meandering	0.19	>2,000 m	Deposition reach	Fine (sands and small gravels)

Figure 26: Identified stream characterisation reaches of the Waiohine River and their characteristic attributes. Tonkin and Taylor 2018

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Tonkin and Taylor further identify: "...localised bank retreat in some areas of up to 110 m. In a wandering gravel bed river, with limited change in bed level despite gravel extraction, lateral adjustment is expected. As the entire true right and true left floodplain comprises alluvial material, lateral adjustment of the channel is possible across the whole floodplain and is not limited to the current managed active channel extents. Engagement of the floodplain during out of bank events may limit the extent and severity of lateral erosion, by reducing flood peak velocities." i.e. allowing floods to spread out will reduce the overall damage from erosion.

6.2.3 How Big Is a One-In-One-Hundred Year Flood?

The Project team considered the important subject of what a 1:100-year (1% chance of occurring in any year) flood volume of water really should be, given the inaccuracy of measuring this in a major flood. Three formulae were considered:

- Based on data for major floods between 1955 and 2008, we arrived at a volume of 1738 cubic metres per second (M^3 per second) within plus or minus 110 M^3 per second,
- Based on data between 1955 and 2016, we arrived at a volume of 1700 M^3/s within plus or minus 200 M^3 per second,
- Based on data between 1979 and 2016, we arrived at a volume of 1730 M^3/s within plus or minus 230 M^3 per second.

The Waiōhine sometimes has double peak floods, such as the 1980 flood. The nature of the catchment with its two separated major tributaries can cause a double peak if the wind direction carries rain over first one, then the other.

The decision was therefore made to model using 1700 m^3 per second \pm 200 m^3 per second, using two temporal patterns, i.e. double and single peak hydrographs. Note that the largest estimated flood volume known in the Waiōhine was around 1558 M^3/s – a double-peak flood in 1982. 1700 m^3/s plus 200 $^3/s$ plus up to 16% extra for climate change plus flood sensitivity where applicable may help put this in context.

Findings:

1. **Flood hydrology, models and maps were peer-reviewed by Ian Heslop who found that "the adopted Waiōhine and Mangatāre River 100 and 20 year return period design and flow estimates are reasonable and appropriate."**
2. **Any measurements or observations of the hydrology of the Waiōhine must be viewed within the context of the full cycle of successive extended periods of major floods and periods of little or no flooding to account for the effect of the Interdecadal Pacific Oscillation.**
3. **The decision was made to model using 1700 m^3 per second \pm 200 m^3 per second.**

WHAT DOES "ONE-IN-ONE-HUNDRED-YEAR" MEAN?

A one-in-one-hundred-year flood is a flood event that has a one in one hundred chance (1%) of being equalled or exceeded in any one year. For more information [click here](#).

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6.3 How do Climate and Hydrology Affect Bed Level and Gravel Management?

[Tonkin & Taylor](#) note: “The predicted river response to the 1855 fault rupture (earthquake) would have increased sediment supply and transport and would have been additional to any sediment contributed to the catchment through landslides generated by the rupture earthquake. It is possible that the Waiōhine River is still trying to achieve bed grade equilibrium from this event through incremental incision of the bed, especially in upstream reaches of the river. Any bedrock within the channel (below the gravel bed) will limit the depth of incision.”

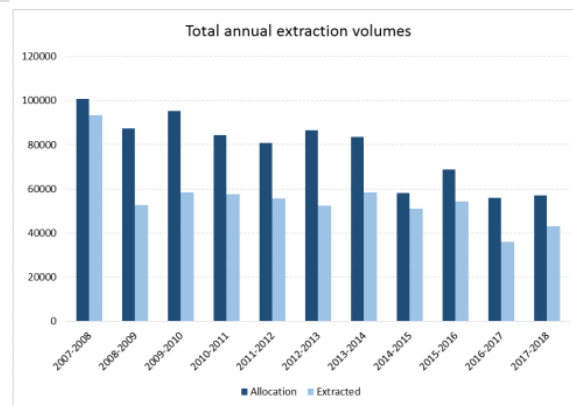
Community history also shows that Waiōhine riverbed levels were lower in the 1930s than they are today. In addition to the 1855 quake, the 1942 Earthquake also caused bed levels to rise. This event led to the present Stop banks being built in 1951 by Feast Contractors and paid for by the Ministry of Works, before the Catchment Board took over in 1953. Events suggest high beaches have caused past bank and berm erosion. The best-known estimates of frequency of the Wairarapa fault line earthquakes is an estimated 1:1200 years.

The Ministry of Works also built a weir above the previous State Highway 2 Bridge in 1945. The aim of this weir was to clear the gravel under the Bridge, which, at that time, only had half a metre of clearance. However, within two months the weir was destroyed by a flood. With so much flooding of State Highway 2 and the high bed levels, the present stop banks were built in 1951.

These events and records suggest that the natural bed level may be lower than present bed levels and perhaps may indeed be lower than they were in the 1930s.

In contrast to the records of issues caused by high bed levels, there is no record of lower bed levels being a problem. However, there is evidence of some lowering of the riverbed (degradation) in the recent period (c. 32 years), since a series of measurements have been recorded. So, the question is: is the current trend, which is seen to be degrading, representative of the natural bed level?

[Tonkin & Taylor](#): “The Waiōhine River immediately upstream of Greytown is thought to be showing a degrading trend. Degradation (lowering) of the bed has been specifically noted in the gorge, where the flow gauge was left perched in 1954. Previous research suggests that the Waiōhine River may have cyclical periods of aggradation and degradation depending on several climatic factors (PDP 2014; NIWA 2016).” See [Climate Cycles Mean Floods Occur For 20-30 Year Periods that are 20-30 Years Apart](#) above.



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 Figure 27: Gravel extraction Analysis Tonkin and Taylor from GWRC

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When major flooding occurs, the river tends to flood many times over a period of around twenty or thirty years (influenced by the [IPO](#) climate effect), with considerable build-up of gravel brought down from the gorge ([XS 43](#) and above) and the stretch of the river reaching far back into the Tararua hills upstream – [see figure 30 below for a photograph of this](#). The last major flood was in 1990, with a smaller flood in 2004 that saw a “trickle” enter the Apple Barrel Floodway. It is therefore over 29 years since a flood of a scale likely to bring substantial amounts of gravel down from the gorge has occurred.

Detailed records of bed levels and gravel extraction have only been kept during the current period of limited or no significant flooding. It is no surprise therefore that the current, limited data implies a gradual decline in bed levels. However, history, the experience of past officers responsible for flood protection and records show that this will be followed soon, by a similar length period during which major flooding is more likely.

[Tonkin and Taylor](#): “While data provided to T+T shows a minor degradation response (between the Rail Bridge ([XS 37](#)) and State Highway 2 Bridge) in Reach 2 of the Waiohine River since 1986, assessment of the wider landscape supports a slow-long term incision trend as secondary sediment stores in the upper catchment associated with the end of the last stadial are slowly exhausted. Annual gravel extraction of between 35,000 and 60,000 m³, does not appear to be having a detrimental impact on bed levels in Reach 3 with only minor incision observed at 5 of the 17 cross section locations downstream of SH2 bridge ([XS 17](#)), all of which are located on a straight section that has recently lost a meander. This suggests that gravel extraction at these volumes is not interrupting bed load transport, and acceptable bed level envelopes could be adapted for gravel management, instead of total allowable extraction volumes.”

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We do not have enough measurements yet to understand both the “dry” and “wet” climate cycles affecting gravel build up or reduction in the Waiōhine. Clearly completing this set of measurements is critical to knowing where we could set high and low marks to arrive at a meaningful “bed level envelope”, to confidently manage gravel between. Such an “envelope” is desirable and will be

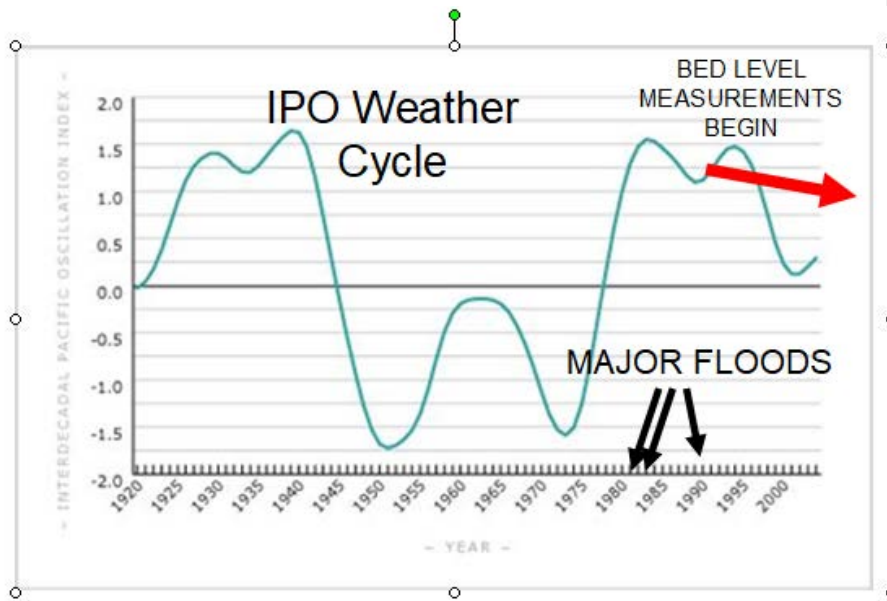


Figure 28: Major floods and start of bed level measurements shown against stages of IPO weather cycle

important to long-term management, erosion control and flood prevention. As noted in the [Independent Peer Review by Ian Heslop](#), “It would be ideal if the design bed level question could be clarified...it is understood that the river has a stable to degrade trend, so gravel extraction volumes and locations need to be carefully managed. A design bed envelope will greatly assist this.”

Findings:

- Stretches 3 and 4 (from above Kuratawhiti to the confluence with the Ruamahanga) are prone to aggradation (depositing) gravel (stones).
- During the current phase of the IPO (Interdecadal Pacific Oscillation) cycle, the riverbed tends to deposit far less gravel in these stretches.
- Nevertheless, there appears to be enough gravel deposited in these stretches to need a substantial extraction regime, even during this quieter phase of the IPO cycle. Indeed, in the current year (2019) more than 60,000 cubic metres has been extracted from below the SH2 bridge to control aggradation).
- During the coming IPO cycle the riverbed will be likely to aggrade (deposit a lot more gravel), this has not been measured but is the very thoroughly observed and understood

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experience of those responsible for managing the river, during the last such phase (prior to 1999).

- Being able to set a bed level envelope would be very useful in the future management of the river, particularly as regards gravel extraction and flood prevention.
- We do not yet have sufficient data to usefully indicate upper or lower limits for a bed level envelope.

In the absence of a reliable bed level envelope, we have developed a flexible but conservative rules-based approach that meets the needs of the current regulatory environment. We have also created a [Trigger](#) within the Living Plan to implement a bed level envelope, as soon as it is agreed that a reliable one can be created from measurements.

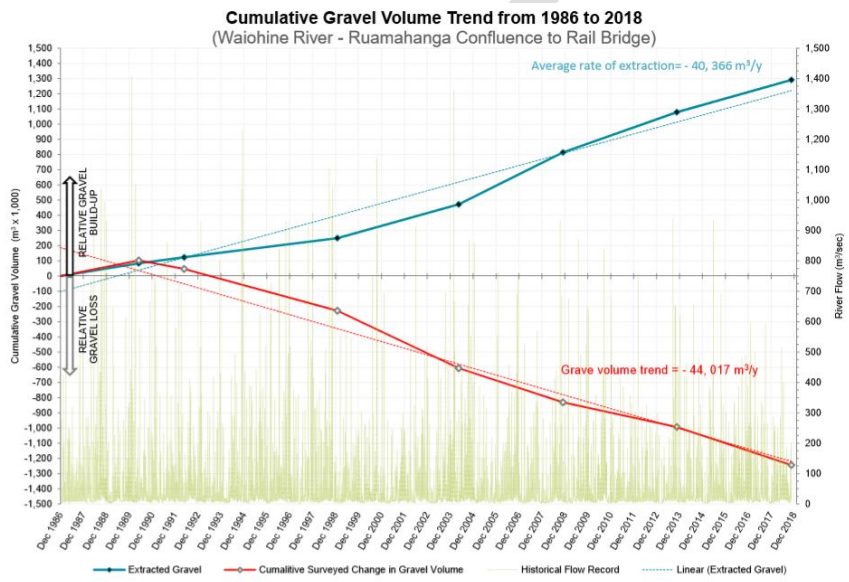


Figure 29: GWRC Study of measured bed levels and gravel extraction for the period after a cycle of major flooding occurred

A study of trends in impact on riverbed levels from gravel extraction during the current IPO “dry” cycle shows some degradation of riverbed level overall, in line with findings above. In addition to those findings there are some further qualifying notes:

6.3.1 Qualifying notes to lend context to the diagram above:

1. In 1986, when bed levels began to be measured the river was not in ideal condition, as a result of the following factors:

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- a. River scheme funding deficits had run-down maintenance and led to several maintenance crises,
 - b. The river had experienced several significant major floods, especially 1980 and then 1982 which involved the bursting and carrying away of large amounts of dammed gravels, which raised (aggraded) the riverbed.
2. The study shows a total deficit of 1.2 million cubic metres of gravel and a 1.3 million cubic metres of extracted gravel. This indicates that gravel extraction does play a significant part in arriving at net degradation across the period studied.

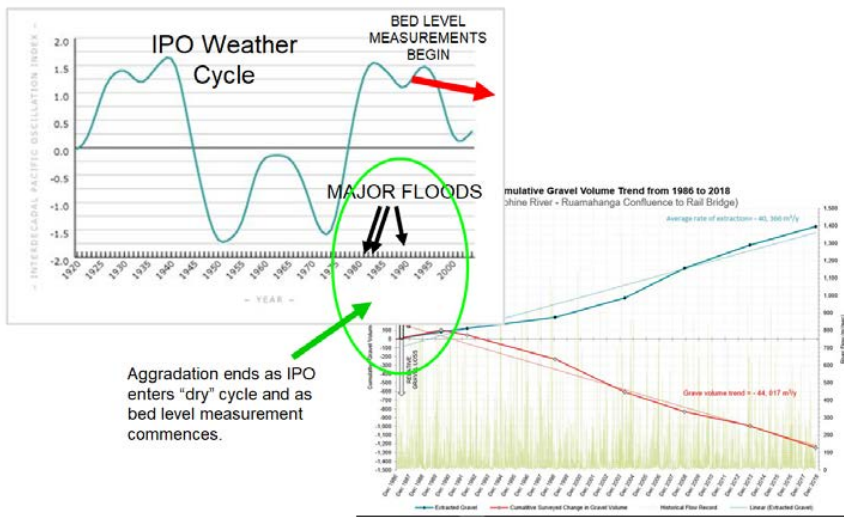


Figure 30: IPO "Dry" cycle begins as bed degradation and measurement begin.

In effect the years of bed level measurement since 1990 have helped us learn how much we do not know. If we were, for instance, measuring a sine wave, it would give us an idea of less than one half of it. Because we have not experienced a change of IPO phase, we do not yet know where the high and low points of a bed level envelope should be. Continuing measurement through the change in IPO phase and through periods of major floods, that are likely to accompany that, will give us the other half of the sine wave, so to speak, as well as a reasonable idea of where the top and bottom of the wave occurs. As we find each of these changes between phases of the IPO cycle, we will be able to successively set a lower and an upper bed level envelope limit for each stretch of the river. With each subsequent change of IPO cycle phase, we will be able to tweak and improve on the bed level envelope to consider the effects of ENSO, climate change etc.

Finding:

- As the IPO phase changes and the river enters the next phase of the IPO cycle characterised by heavy floods and aggradation, we will be able to set the lower limit for the bed level envelope for each reach.

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- Then eventually, when that phase ends and we return to a low flood IPO phase, we will be able to set the higher limit for the bed level envelope.
- Successive changes of phase will allow these limits to be adjusted to allow for factors such as ENSO and climate change.

6.3.2 How Serious a Threat Could Gravel Build Up be?

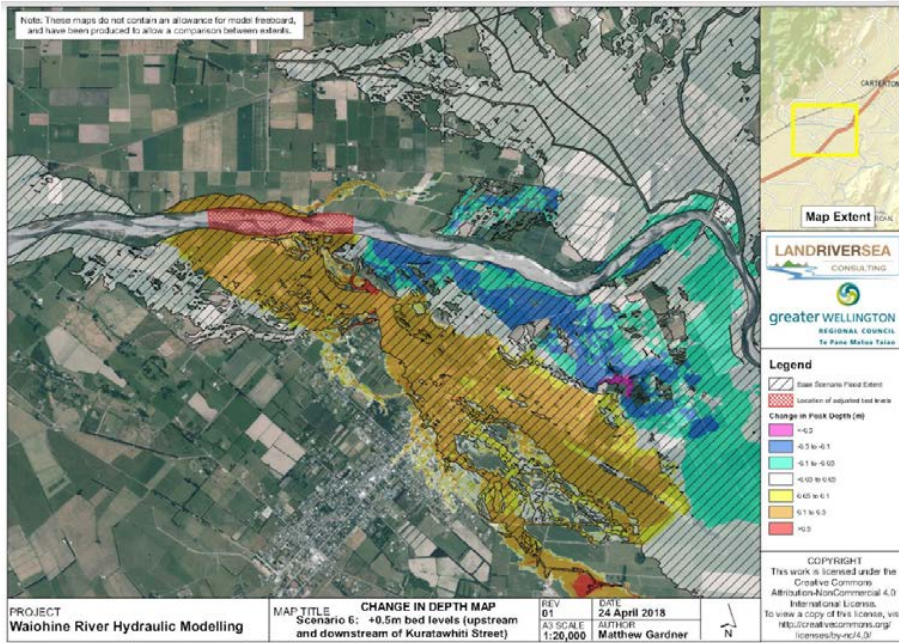


Figure 31: How the build-up of gravel beaches creates flood risk - yellow colour shows additional flooding

Studies and computer modelling show that the reach between SH2 Bridge (XS 17) and the Rail Bridge (XS 37), particularly around and above the end of Wood Street and Kuratawhiti Street, is the most dynamic and the most critical for erosion control and flood protection. This stretch may be important as a “transport reach” i.e. transporting substantial amounts of gravel down the steep river and helping to prevent problematic build-up of gravel. The elevated risk of river course change (avulsion) here is noted by [Tonkin and Taylor](#): “The end of Wood Street was identified as being an avulsion risk area for climate change scenarios RCP6.0 and RCP8.5, with the risk increasing if lateral bank erosion immediately upstream is initiated.”

Indeed, as will be seen later in this plan: in the [analysis of flood sensitivity scenarios](#) that could make flooding worse, the risk of gravel build-up had by far the greatest impact. This reflected the experience of the community and those with past responsibility for flood prevention and river management in the Waiōhine valley and wider Wairarapa.

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The risk posed by insufficient gravel management, in the event of gravel aggradation, caused by one or more successive major floods, expected to occur in the next Interdecadal Pacific Oscillation (IPO) phase, has had a major impact on the size and extent of stop banking needed. If we could be sure gravel would continue to be well managed or that the IPO would not change phase, or that we will never lose gravel extraction as a management tool, or that there would never be two major flood events in very quick succession, then a major savings could be made, as the [Western \(Kuratawhiti Street Stop Bank\)](#) would not be needed.

6.4 Proposed: Rules for Gravel Extraction

As noted above, until sufficient data is collected to record gravel and bed levels through both “wet” and “dry” phases of the IPO, an uncomplicated but conservative set of gravel extraction rules are needed, to ensure there is no unnecessary lowering of bed levels, and no unnecessary flood risk created.

To be able to develop a simple strategy for a complex problem, a set of Test Questions were developed, which are recommended as a simple but effective set of rules for gravel extraction, well within the current allocation. Any proposed gravel extraction should satisfy one or more of these:

6.4.1 Gravel Extraction Must Pass These Tests:

1. **Is it for flood protection or erosion control? And especially so where:**
2. It will either protect assets or protect critical banks? Or;
3. Is it in a critical reach of the river i.e. known to be a flood or erosion sensitive reach, identified in this plan – i.e. between SH2 bridge ([XS 17](#)) and the railway bridge ([XS 37](#))?

Note that: Gravel extraction should not detrimentally affect water quality ([MCI](#)) and a number of techniques to improve this [have been identified with the help of experts from Massey University](#).

Findings:

1. **Waiōhine hydrology is heavily affected by weather patterns, including climate change.**
2. **There is a lot of concern within the community over related issues such as gravel build up and flood risk.**
3. **A great deal of emphasis has been placed on understanding flood patterns and behaviours to get the best possible basis on which to model many future scenarios.**
4. **There is a high level of confidence in the base model upon which the many scenarios and flood maps have been developed.**
5. **If gravel build up caused the river to change course (avulse) it may threaten urban Greytown or key assets such as the State Highway 2 Bridge, roads and dwellings. See Figure 23**
6. **Measured bed levels have degraded gradually over the last 30 years, this is attributed to:**
 - a. **Measurements largely being taken in an IPO “dry” cycle when gravel is not refreshed by large floods and**
 - b. **Gravel extraction lowering (degrading) bed levels,**

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c. A possible long-term trend since the 1855 earthquake, of the river very slowly lowering its bed level to its natural state.

7. We do not have a complete set of measurements until there have been a series of further major floods in the coming IPO “wet” cycle.
8. Continued measurement, until a full picture of bed level behaviour can be built up and a long-term strategy finalised, is necessary.
9. Until this is completed, we are not able to create a complete set of bed levels – (as recommended by Tonkin and Taylor and Ian Heslop)– between which we can manage gravel extraction with any confidence.

We therefore recommend continued collection of measurements towards developing a bed level envelope and in the meantime, a flexible but conservative, rules based, approach to extraction of gravel for necessary flood prevention and erosion control purposes.

We are concerned to sustain the viability of gravel extraction to ensure it can be used for flood prevention and erosion control when needed in future. Especially considering the increased size and power of flooding expected due to [climate change](#) (estimated to be an additional 16% volume of flood water by 2090).

We recommend that the current upper limit of extraction of 90,000 cubic metres is retained, as a contingency against sudden major successive floods creating severe aggradation (gravel build-up), from the next series of big flood events. Until there is certainty that a cycle of major floods has been recorded and the full picture is understood. Too much or too little gravel, could result in increased flood risk to assets such as the State Highway 2 Bridge, stop banks, roads and dwellings.

90,000 cubic metres is roughly the same as 6,000 truck and trailer loads or on average 40mm off the whole river bed.

We recommend that the extraction test questions, and hierarchy identified above should be adhered to, to avoid unnecessary gravel removal but ensure flood protection.

We have a [Trigger](#) in the Living Plan that is affected by issues arising from significant changes in gravel levels (aggradation or degradation).

Survey data is taken once every five years and at distant intervals on the river. Again, more frequent, ideally every two years, as well as more detailed surveying, would be helpful.

Note that GWRC has invested in drone technology which would help to begin to build up a more detailed picture over time. Drone [LIDAR](#) is needed to be used for far more regular and detailed surveying between the Rail Bridge ([XS 37](#)) and SH2 Bridge ([XS 17](#))

6.5 Dam Breaks - how likely are they and what happens if we get one?

The history of earthquakes and their effects on the Waiōhine and similar rivers can be found in Section 3 of the [Tonkin and Taylor report](#).

In recent history, the flood of 1982 is included in the data for 100-year flood analysis. In 1982, despite large-scale land slips in the Waiōhine Gorge, no damage occurred. The combination of a



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Figure 32: Major landslide and dam break in 1982 flood

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100-year flood & (erosion or quake) slip is a combination of frequency of two rare events and therefore is very rare. If due to a landslide a dam forms but doesn't breach, it may in fact serve to attenuate, rather than exacerbate, the flood peak.

As can be seen from the photograph above, large floods introduce a very large amount of gravel (stones) to the river, which is then carried down the gorge and into the stretch of river between the Rail Bridge ([XS 37](#)) and State Highway 2 Bridge ([XS 17](#)).

There are no special features of the Waiōhine River that indicate it is more prone to damming caused by slippages than other rivers. The risk and impact of damming of the river in its catchment due to slips, is so rare and has no history of causing additional damage that, in keeping with other flood plans, it is regarded as impractical to regard it as other than Force Majeure.

[Emergency Management](#) procedures will come into effect should a slip cause damming of the gorge that might result in sudden flooding. A slip forming that dams the river is to be a [Trigger](#) for the Living Plan provisions to come into effect.

Finding:

Damming and other effects of slips and earthquakes to be regarded as force majeure – it is extremely hard to prevent the effects of them.

6.6 Gauging & Rating

For a brief explanation of stream gauging, [see here](#).

It is known that the best gauging to date is unreliable at higher ratings and can only cope with less than an annual flood (therefore gauging is seen to not be very accurate or useful). **Therefore, it is recommended to investigate what investment is involved in installing better gauging systems.** **NOTE:** that this would improve emergency management capability. Improving gauging and rating will eventually pay for itself through being able to optimise future works/costs.

Finding:

We need to investigate what investment is involved in installing better gauging systems.

6.7 Mangatāre Hydrology

The Hydrology of the Mangatāre is the subject of a separate study, which, when completed should be assessed for possible impact on the Waiōhine, including whether any aspect of the Waiōhine River Plan may need adjusting to take its findings into account. See [Living Plan Triggers](#)

6.8 1:20 Year (5% annual flood risk) Flood Map discussion

The Project Team have evaluated the impact of the road surface elevation (on State Highway 2) at the end of the Apple Barrel Floodway. We considered the impact on flood levels

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Figure 33: locations where altering crown height would help minimise flood impact on dwellings alongside SH2

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in the local area from changes in the road surface elevation, we did this with hydraulic modelling. It was found that an improvement (reduction) in these flood levels could be achieved by lowering the surface elevation of the road by 0.1m. We also discovered that lowering the road surface by 0.2m or more would have a negative effect by increasing flooding to local properties. In addition, any increase in the road surface elevation above the existing level would directly increase the flooding levels for local properties. We had an opportunity to discuss this with a representative of NZTA on Thursday 25 October 2018. In our conversation we outlined our discoveries and the fact that we would like the road surface decreased slightly (by 0.1m) in the future and that the road surface should not get higher than this as a result of any future NZTA works on State Highway 2. Greater Wellington Regional Council also sent a letter outlining this and requesting the permanent lowering of State Highway 2 at these locations by 0.1m as opportunity permits.

Finding:

NZTA Asked to consider lowering of SH2 crown by 100mm in selected places to minimise flood effect.

6.9 Freeboard and Flood Sensitivity

What is a Flood Sensitive Area? The Flood Sensitive Area shows where, if exceptional things happen, above and beyond the modelled flood, the extra floodwater, might spread to.

For instance, the flood modelled for the Waiōhine River by the year 2090, is a one-in-one hundred-year flood (1% probability in any year), plus an extra 16% of water volume to represent climate change. In addition to this it is possible, but unlikely, that other factors could come into play and, however unlikely, might slightly extend the area affected by flood. Also, usually but not always, because these are typically, not major additional factors, the area and depth of extra flooding is relatively small. An example of an exception to this is the possible impact of gravel build-up (aggradation) in the stretch of river above the end of Kuratawhiti Street.

For instance, a flood sensitivity scenario might be:

- A one-in-one-hundred-year flood,
- PLUS 16% extra water volume for climate change,
- PLUS, a culvert being blocked by debris,
- EQUALS a slightly larger coloured area on the map (we've used pink colours to show what extra flooding might occur).

6.10 Setting the Flood Sensitive Area

A range of things were identified as possible contributors to flood sensitivity and each one became a separate "scenario". In his study of flood sensitivity "Waiōhine River – Hydraulic Modelling – Summary of [Sensitivity and Stop Bank Runs](#)", Matt Gardner of LandRiverSea Consulting worked with the Project Team to identify, then model a wide range of possible factors that may influence flood sensitivity. These included:

- Scenario 1 – LandRiverSea Consulting explain this as: "The base scenario simulates a 100-year event (peak inflow of 1700 Cumecs, or cubic metres per second of water, for the Waiōhine River), plus a climate change allowance until year 2100, running through the

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calibrated model setup. The climate change allowance is defined in terms of increase in peak rainfall intensity, which is 16% for this scenario (see Table 1). The inflow hydrograph for Waiōhine River has a single peak (temporal pattern 2 or “TP2”) for this run. The sensitivity runs detailed in the following paragraphs are defined with respect to this base scenario. “

- Scenario 2 – 20% increase of Mannings ‘n’ (a measure of bed “roughness” or friction caused by a build-up of stones or other detritus)
- Scenario 3 – 20% decrease of Mannings ‘n’
- Scenario 4 – IPCC climate change scenario RCP 8.5
- Scenario 5 – IPCC climate change scenario RCP 2.6
- Scenario 6 – Bed levels near Kuratawhiti Street raised.

Note that for Scenario 6, the bed levels near Kuratawhiti Street have been raised uniformly by 0.5m. The reach of the Waiōhine over which the bed levels have been adjusted, is highlighted in the following diagram. These alterations were in practice, applied between cross sections 26 and 29:

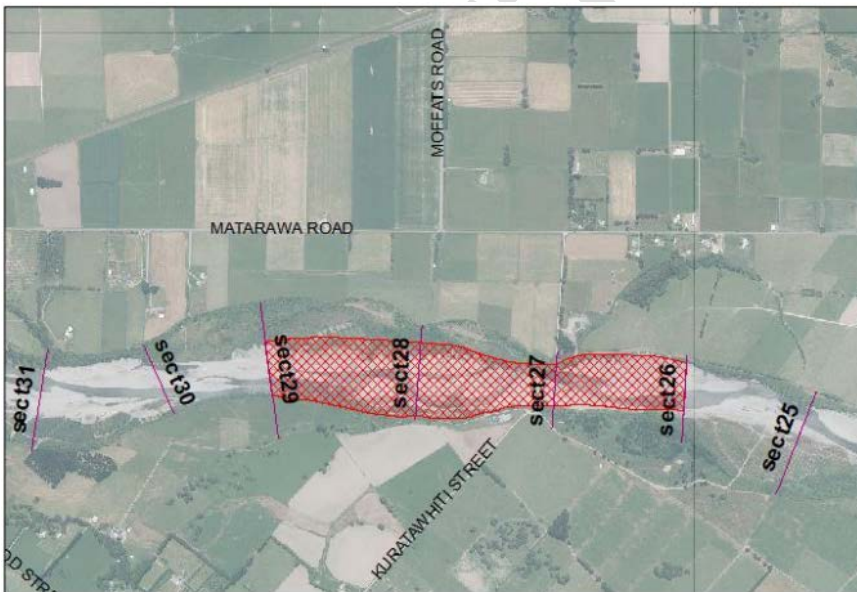


Figure 34: LandRiverSea Consulting, Showing raised bed level at end of Kuratawhiti Street

- Scenario 7 – Bed levels near Kuratawhiti St lowered 0.5m
- Scenario 8 – Blockage at bridges and Apple Barrell floodway
- Scenario 9 – Small banks removed
- Scenario 10 – 1500 cumecs (cubic metres per second of water) single peak plus climate change up to year 2100
- Scenario 11 – 1500 cumecs double peak plus climate change up to 2100
- Scenario 12 – 1700 cumecs double peak plus climate change up to 2100

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- Scenario 13 – 1900 cumecs single peak plus climate change up to 2100
- Scenario 14 – 1900 cumecs double peak plus climate change up to 2100
- Scenario 15 – 20-year (5% probability in any year) event temporal pattern 1 (current climate)
- Scenario 16 – 20-year event temporal pattern 2 (current climate)
- Scenario 17 – 50-year event temporal pattern 1 (current climate)
- Scenario 18 – 50-year event temporal pattern 2 (current climate)
- Scenario 19 – Bank erosion 1
- Scenario 20 – Bank erosion 2
- Scenario 21 – 1700 cumecs single peak (current climate)
- Scenario 22 – 50-year event temporal pattern 1 plus climate change up to 2100
- Scenario 23 – 20-year event temporal pattern 1 plus climate change up to 2050
- Scenario 24 – 20-year event temporal pattern 2 plus climate change up to 2050
- Scenario 25 – 20-year event temporal pattern 2 plus climate change up to 2100
- Scenario 26 – 50-year event temporal pattern 2 plus climate change up to 2050
- Scenario 27 – 50-year event temporal pattern 2 plus climate change up to 2100
- Scenario 28 – Base Scenario + Increase in Manning’s ‘n’ by 20% between XS33 to XS38
- Scenario 29 – 20-year event temporal pattern 2 plus climate change up to 2050 + Increase in Manning’s ‘n’ by 20% between XS33 to XS38
- Scenario 30 – 50-year event temporal pattern 2 plus climate change up to 2050 + Increase in Manning’s ‘n’ by 20% between XS33 to XS38
- Scenario 31 – Base Scenario + Increase in Bed LEVELS by 1m between XS27 and XS28
- Scenario 32 – Base Scenario + Increase in Bed LEVELS by 0.5m between XS25 and XS18

All of these “what if” factors were modelled in turn and the resulting maps were laid one over the other, to find the outer edge of the flood sensitive zone, that accounted for every identified scenario. This was then added to the flood map as a pink area. Where the proposed stop banks prevent this possible extra flooding, a paler pink “ghost” was left on the maps to show the area protected from flooding and flood sensitivity.

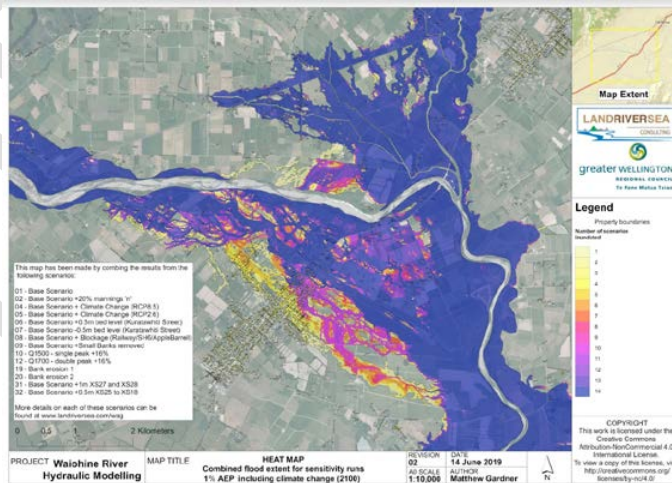


Figure 35: 14 significant flood sensitivity scenarios laid on top of each other

Investigations into all these contingent risks were exhaustive. For a more detailed description refer to: https://drive.google.com/open?id=1UcZ0GXzm_UXNG38wuQh4fbP4fgoZdkP7.

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[How could the area of flood sensitivity be used?](#) For instance, councils might ask for new houses constructed there, to be higher than normal above ground.

Findings:

Setting a Flood Sensitive Area allows for an informative, comprehensive view of any possible risks, no matter how unlikely, that could occur that may exacerbate flood conditions.

By far and away the most significant sensitivity is that of gravel build up/increase in bed “roughness” (as modelled using the Mannings “n” tool).

Local councils can make best use of a tool that allows them, and their clients, to readily identify the potential depth and velocity of modelled floods in each location on a given property, with an accompanying guideline on the nature of the risk. The [ARR](#) guidelines offer such a tool.

Using this approach, we are able to offer local councils and the community useful advice on minimum height for a build in a flood sensitive zone based upon the use of High, Medium and Low Hazard classification labels for land within the flood plain.

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7 Structural Solutions

Structural solutions are designed to keep floods away from people.

Ministry for the Environment: *"Flooding will always be a part of living in New Zealand, and decisions will need to be made continually on the best ways to manage the flood risk in response to the weather and people's expectations. The challenge New Zealand faces now is how best to reduce the damages and losses from flooding as part of our everyday living and working lives."*

7.1 Identifying Important Flood Defence Factors

To guide decision making, factors justifying flood defence have been identified, by the Project Team, in response to [community](#) feedback:

1. Protect the town
2. Erosion Control/optimisation
3. Keep Apple Barrel Working
4. Beware of old river courses
5. Avoid ponding next to stop bank
6. Total Cost of Ownership (explained opposite)
7. Landowner preferences
8. Safety of people
9. Consentability
10. Insurability of dwellings
11. Sustainability

TOTAL COST OF OWNERSHIP

The total cost of ownership (TCO) is the [purchase price](#) of an asset plus the costs of operation. Assessing the total cost of ownership represents taking a bigger picture look at what the asset is and what its value is over time.

When choosing among alternatives in a purchasing decision, buyers should look not just at an item's short-term price, known as its purchase price, but also at its long-term price, which is its total cost of ownership. The item with the lower total cost of ownership is the better

7.2 Goal Set for Flood Defence Design

The design criteria chosen for urban defences is: to be protected from an average once in 100 year flood (1%)* in the urban area of Greytown, up until the adaptive management [Trigger](#) of reaching the year 2050; by when this plan is to be refreshed or when another relevant Trigger event occurs beforehand.

Where * above is:

1. Flow is 1,700 cubic metres per second plus climate change (10% by 2050, 16% by 2100) + flood sensitivity,
2. Excludes projects completed within the annual works programme (budgeted c. \$350k p.a. at present),
3. Upgradeability should result in "no regrets" i.e. that the space is reserved alongside flood defences that allow them to be upgraded if a trigger or the 2050 review requires it.

Rules adopted for considering flood defence options:

1. All comparisons to be as at 2050,
2. All comparisons are on base model,
3. All design must allow for it to be possible to upgrade/extend flood defences, to be able to deal with conditions we may face by the year 2100.

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Note however, it may be justified to build the new stop banks to the estimated 2100 specification straight away, where the cost differential between design to 2050 and design to 2100, is small enough. Such a decision would be subject to the [Living Plan](#) process.

The design criteria chosen for rural defences is for dwellings to be protected from an average once-in-20-year flood (5%), plus climate change in the flood plain area.

It is however, recommended that planning authorities consider that:

1. New build dwellings should be constructed to a one-in-one-hundred year plus climate change (1% risk each year of such a major flood happening) standard.
2. For existing properties not meeting the one-in-twenty year plus climate change (5%) standard, [subsidised house raising](#) may be considered.

Where applicable, cases should be worked through to be fully understood, prior to resource consent being applied for.

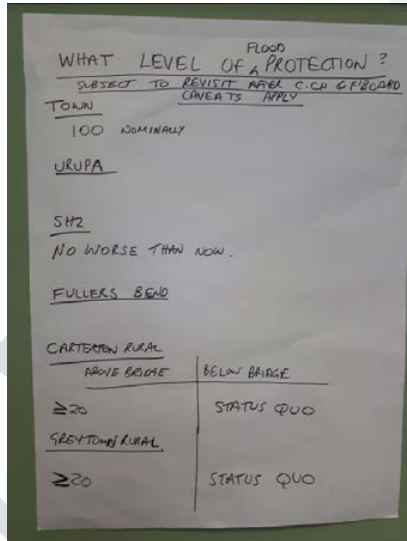


Figure 36: Decision reached on principles of what level of protection at the outset of the project (November 2017), then shared with and set by the community, Iwi and stakeholders

7.3 Principles for Location and Land Ownership of Stop Banks

Several things determine the recommended location of the two new stop banks:

1. Protection of urban Greytown,
2. Avoiding existing dwellings,
3. Avoiding public roads,
4. Using existing high ground where practical,
5. Try to minimise impact on farm operations,
6. Cost.

The [community](#) needs security for its investment – so some form of control over the land beneath stop banks is critical. [Easements](#) are an acceptable tool to try to meet landowners needs. An example of an Easement agreement is included at [Appendix E](#).

7.4 Identifying Stretches of the

WHICH BANK DOES WHAT?

Stop Bank – A shaped earth and gravel formation generally parallel to the river channel to confine floodwaters.

Training bank – A training bank is used to direct the flow and speed of floodwater to a better path during a minor flood. A training bank may be used to protect low risk assets, such as open farmland, from high frequency events, but will allow the area to be flooded in a large flood event to alleviate pressure on higher risk assets.

Sill Banks - provide a slightly higher edge to ground, or in many cases, reinstate a higher

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River Sides That Might Need Differing Flood Defences

TRUE LEFT BANK (Carterton):	TRUE RIGHT BANK (Greytown):
River Road to Fullers Bend (XS 20)	Greytown Stop Bank to between Vines and Kuratawhiti Street
	Bottom Greater Wellington Land to Kuratawhiti Street
Fullers Bend inside	Kuratawhiti Street to Fullers Bend
	Fullers Bend outside
Fullers Bend to SH2 Road Bridge (XS 17)	Fullers Bend to SH2 Road Bridge

7.5 What Stop Bank Design is needed for This River Plan?

A topographical survey of the proposed alignments was made – including the full width of road reserve where required. This showed the preliminary footprint and height of the stop bank, with respect to boundaries, and confirmed any works needed on or near State Highway 2.

The option to combine stop bank construction with North Street widening, or to use the lateral grass reserve alongside North Street road, was rejected. As building within the road reserve offered insufficient space, inboard of the existing power poles and we are advised against combining the stop bank with a foot or cycle way, for reasons of maintainability or of

considering relocating the power poles there.

The legal boundary of the North Street road corridor extends into the farmland to the north and east of the existing carriageway. SWDC has told the project team that they would like to ensure that the location of the North Street stop bank does not inhibit their future ability to widen the road corridor. The alignment of the North Street stop bank will therefore need to reflect the legal road boundary. There will also need to be at least 5 m between the bottom of the stop bank and the road boundary to allow for maintenance of the stop bank. This will also allow contingency if, for any reason such as failure to combat rampant climate change, the stop bank needs to be topped up.

As it is necessary to build on private land, then factors such as safety, security and access must be considered.

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COMBOS AND WHAT INFORMATION WE NEED TO COMPARE AND DOWN SELECT (IF POSSIBLE) AND SHARE WITH COMMUNITY:

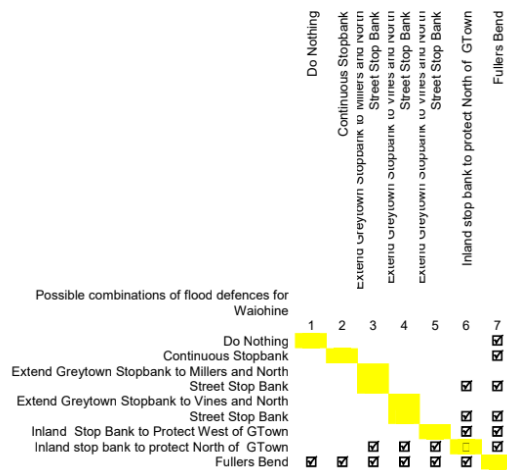


Figure 37: Various combinations of flood defences were analysed to find viable combinations

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It is recommended that stop banks constructed on the land of Platform Farm will consist of silt or mixed silt/gravel banks only and have a shape with sloping sides (batter) that minimizes impact on farm operation and grazing pasture.

It is recommended that stop banks should be built where there is an optimum mix of minimal impact on farming operations, combined with minimal cost, yet maximised flood defence.

Full preliminary costing of these works has been provided. It has been necessary to push the design work to the next stage, to survey more detailed stop bank placement, height etc. to give more certainty to the conversation with landowners, and cost information to the ratepayers. Interim information has been obtained from [Cameron Fauvel](#), who were engaged to complete this work. Note that this will still be regarded as not yet a completed estimation, until final detailed design is completed, and all costs and works are fully known.

It is recommended that rock work on the true right bank (outside of) Fullers Bend ([XS 20](#)) should be gradually completed, from river maintenance budgets, over coming years. Following advice from the [Ian Heslop](#) review, where practical snub rock groynes should be considered, working from upstream, from proposed rock armouring on the True Right Bank (TRB or Greytown side) of Fullers Bend.

Regarding the area on Platform Farm characterised as the underside of the low bank with a hook, **it is recommended** not to attempt to protect this from erosion with trees on the high ground above the river as this is proven to be ineffective. The river simply would undercut the bank below the tree roots. Instead we recommend planting the resulting beach, if erosion creates one. This is necessary in order to maintain channel alignment and deter further erosion.

Regarding protecting the True Right Bank (Greytown side) at the Vines' Farm (XS 28-30) **it is recommended** a similar strategy is to be adopted, i.e. to plant the resulting beach if the high ground erodes (to deter further erosion). If this occurs and it is necessary, a sill bank should be constructed, to maintain height of the edge if necessary, to prevent substantial incursion.

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7.6 Analysis of Six Options Identified for Flood Defences

The Independent Peer Review of the following options by [Ian Heslop](#) noted: “The range of modelling options considered is comprehensive, and appropriate for the adopted design standard”.

7.6.1
Option
1: Build
Nothing

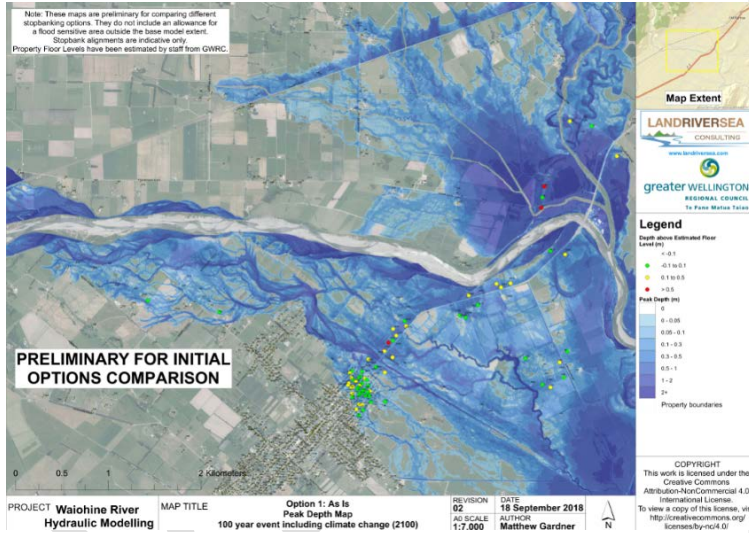


Figure 38: Used to identify impact if no defences are constructed. Note that there is some impact on urban dwellings at the North end of Greytown and along State Highway 2.

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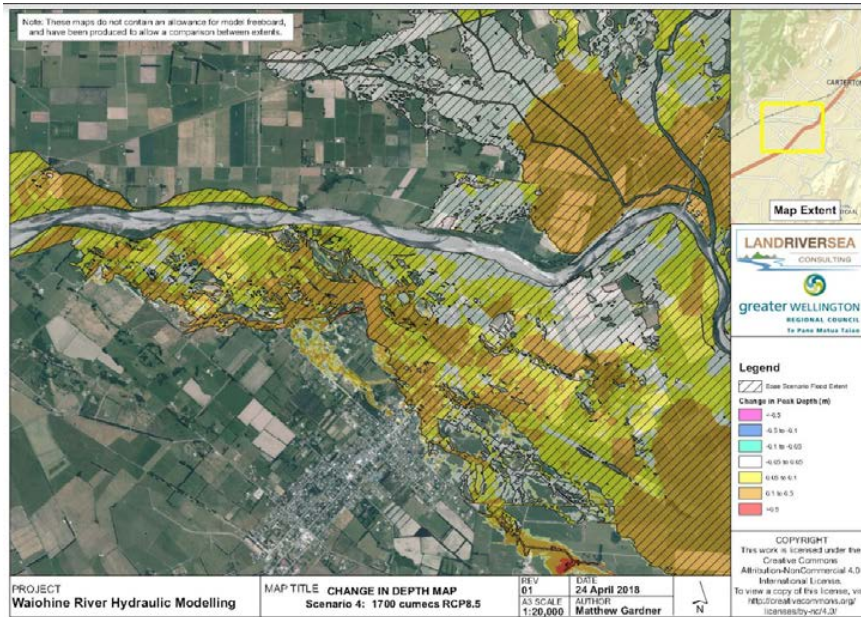


Figure 39: An option showing a severe 1% flood with severe climate change (IPCC RCP 8.5)

Option 1 was provided as a basis for comparison and to show what impact there would be if a decision were made not to invest in any additional form of flood protection and a major flood event occurred in the future.

Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m below floor joists (no. of houses)	Above >0.1m above bottom of floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
1 (build nothing)	\$0	128	45	18	1
2 Inland Stop Banks (North Street & K Street)	\$0.7m	46	23	11	1
3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. &	\$2.3m	33	20	10	1

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Vines (XS 28-30))					
5 (North St, Vines and Fullers Bend (XS 20))	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

7.6.2
Option 2: Inland Stop Banks Western - near North Street, and Eastern - near Kuratawhiti Street)

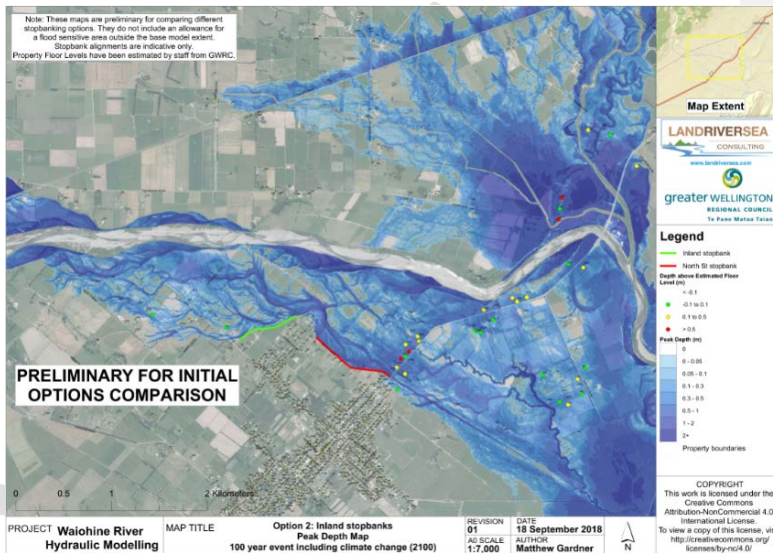


Figure 40: The option strongly preferred by most of the community and the Project Team after consultation with all major stakeholders.

It is recommended that this option be implemented.

Option 2 allows the river to behave relatively naturally, to spread out and slow down in flood. Relatively inexpensive stop banks can be constructed near the edges of the urban area to provide one-in-one-hundred year, flood plus climate change, plus sensitivity standard. Seeking a slight change in road crown height on selected stretches of SH2 would enhance protection to some rural properties. This approach relies on continued good river and [gravel management](#) to prevent the river from taking a new course.

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Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m below floor joists (no. of houses)	Above >0.1m above bottom of floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
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3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines (XS 28-30))	\$2.3m	33	20	10	1
5 (North St, Vines and Fullers Bend (XS 20))	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

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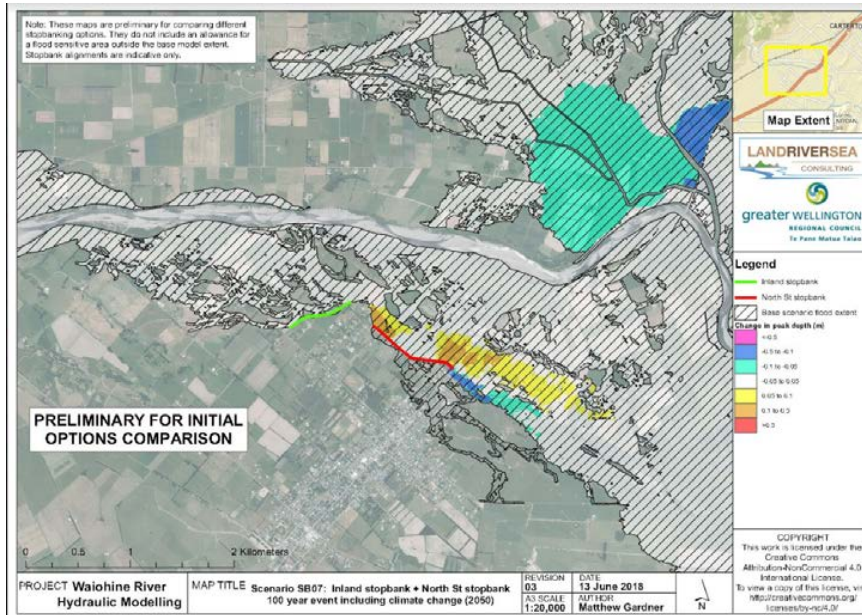


Figure 41: Shows minimal change in flood depth due to inland stop banks and shows urban area saved from flooding

Further study of Option 2 above, showing cross-hatched urban area is **recommended** to be saved from flooding by the **urgent and important**, Eastern or North Street Stop Bank – shown as a red line.

The Inland Western or Kuratawhiti Street Stop Bank, shown in green, is close to Kuratawhiti Street. **It is recommended that**, whilst not as urgent as the North Street Stop Bank, this stop bank is built **as soon as is practical**.

A series of [flood sensitivity models](#) showed the risk of much greater flooding, as the result of possible gravel build up (aggradation) – see [Tonkin and Taylor report](#), in the stretch of river

IF	1:100 Year Flood (1%)	PLUS	Climate Change RCP 6 (+16% water)	THEN		North Street Stop Bank is Needed	BUT	Kuratawhiti Street Stop Bank is Not Needed	
IF	1:100 Year Flood (1%)	PLUS	Climate Change RCP 6 (+16% water)	PLUS	Gravel builds up from poor management	THEN	North Street Stop Bank is Needed	AND	Kuratawhiti Street Stop Bank is Needed
	or								
IF	1:100 Year Flood (1%)	PLUS	Climate Change RCP 6 (+16% water)	PLUS	Gravel extractor quits	THEN	North Street Stop Bank is Needed	AND	Kuratawhiti Street Stop Bank is Needed
	or								
IF	1:100 Year Flood (1%)	PLUS	Climate Change RCP 6 (+16% water)	PLUS	Second 1:100 Year Flood (1%) follows	THEN	North Street Stop Bank is Needed	AND	Kuratawhiti Street Stop Bank is Needed

Figure 42: Decision table for Western - Kuratawhiti Street Stop Bank

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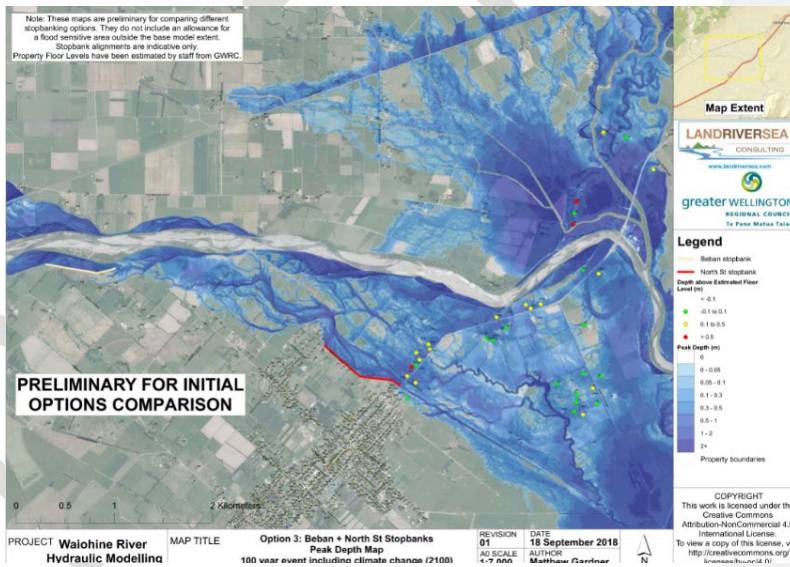
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near the end of Kuratawhiti Street, although unlikely, would necessitate the Kuratawhiti Street Stop Bank being built to avoid planning, permitting and insurance issues, for a large part of urban Greytown. The combinations of factors and possible outcomes are shown in this diagram:

[The Ian Heslop led Independent Peer Review](#) noted that: *“The preferred option is the combined North Street and Inland (Kuratawhiti Street) Stop Bank. This option ticks the most boxes given least capital and ongoing maintenance costs, minimal flood diversion effects, negligible erosion and under-design breach risk, and least need for channel management. The prospect of securing high community support and resource consent will be high, and risk of inappropriate ongoing floodplain development minimised. One key point that needs to be reinforced is that bed level and channel management will need to continue, to maintain the current river alignment and both the rural and flood protection standards. Stop banks on the northern side will continue to be protected and maintained.”*

7.6.3
Option 3 –
Inland
Stop
Bank near
North
Street and
Extension
of
Greytown
Stop
Bank to
Beban’s
Farm



In scenario 3, the existing

Greytown Stop Bank near the end of Wood Street is extended to force flood water back towards the Waiōhine river channel (see pale yellow line on map below). No significant difference could be found in flood risk to either urban or rural dwellings but the cost to build and maintain was substantially more than Option 2. See diagram below:

Figure 43: Has the same flood defences to the North but moves the Western defences out to the riverbank

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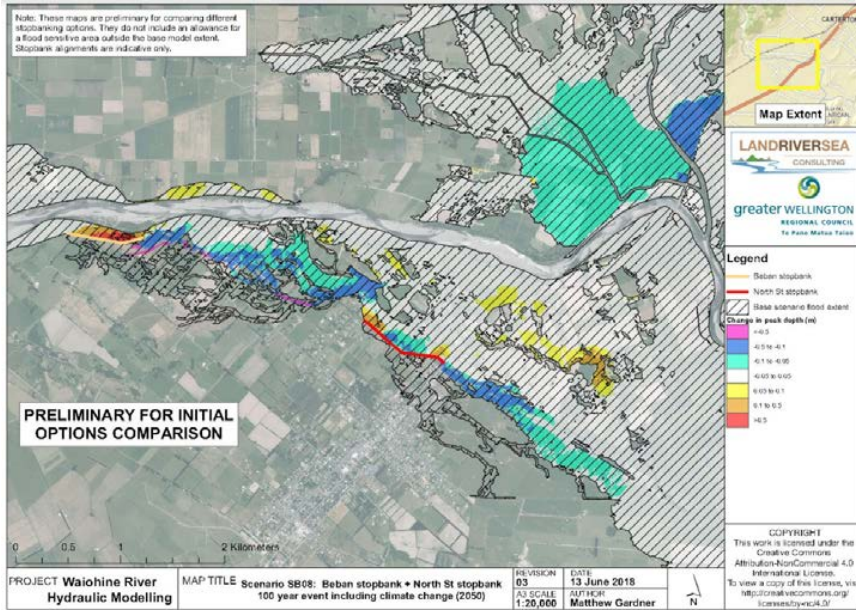


Figure 44: Beban (XS 30) stop bank option (extends Greytown Stop Bank)

Much of the “spread out and slow down the flood” effect was lost. Attempts were made through subsequent studies to try to model the effect of a much rougher/higher riverbed to force more water onto the Greytown Stop Bank to see if it was justified through the creation of additional risks, either:

- Through scouring the lowest parts of the Greytown Stop Bank and threatening to undercut the bank itself or
- Through pushing more water around the end of the Greytown Stop Bank to take a new path and threaten dwellings outside the flood plain.

Neither of these things could be made to happen. At that point the Project Team, supported by the strong public preference for Option 2 decided this option was less attractive and provided inconsistent flood protection for the rural community. However, it was nevertheless decided to:

- Plant trees along the toe of the existing Greytown Stop Bank to help prevent scouring along it that might undermine the bank. If this is not viable, to alternatively build three small rock groynes, at right angles to the toe of Greytown Stop Bank, to disrupt flood water and reduce the risk of scouring of the stop bank and;
- Recommend that planners require the retention of the row of mature trees that continue the line of Greytown Stop bank towards the river. Also, to plant additional trees on the toe and slope of the small escarpment on top of which the existing mature trees stand. The aim of this is to reinforce the escarpment and protect the mature trees to slow down any major flood and help to reduce excessive scouring of farmland etc.

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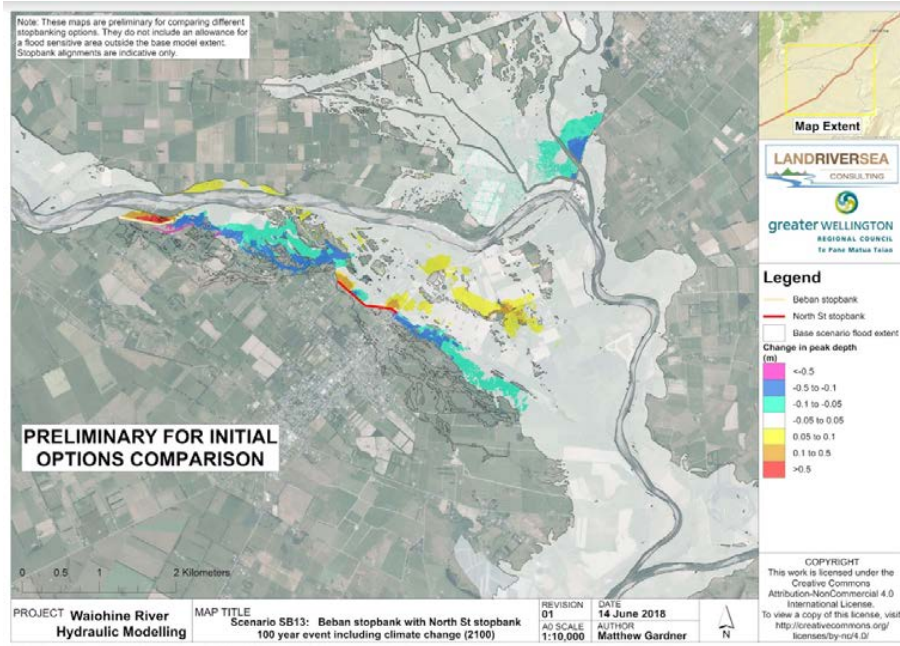


Figure 45: Showing changes in flood depth - principally to farmland but some downstream consequences in the SH2 and Ahikouka area

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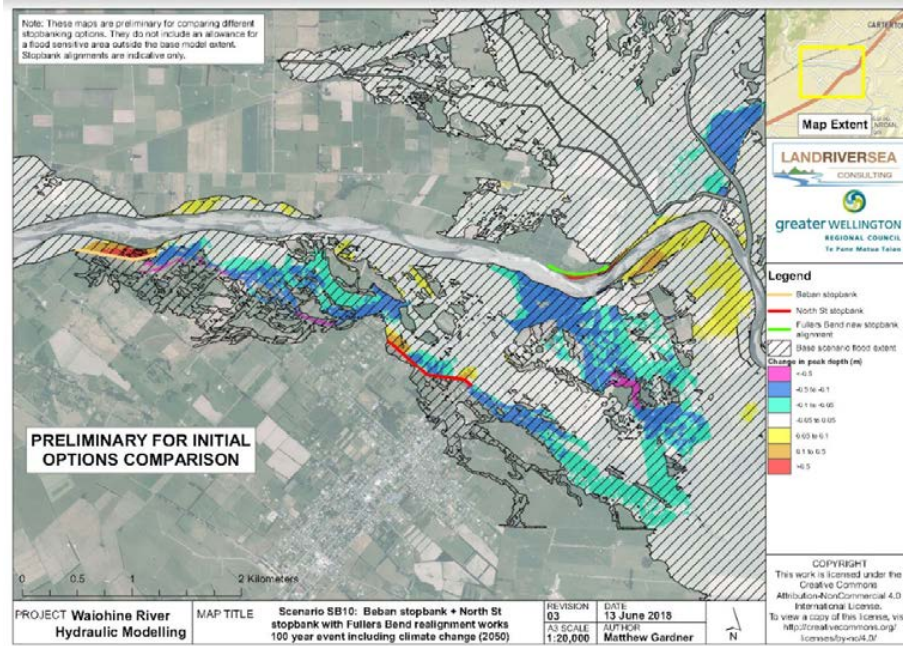


Figure 46: Option explored of adding the realignment of the inside of Fullers Bend to this scenario

Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m below floor joists (no. of houses)	Above >0.1m above bottom of floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
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2 Inland Stop Banks (North Street & K Street)	\$0.7m	46	23	11	1
3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines (XS 28-30))	\$2.3m	33	20	10	1
5 (North St, Vines and Fullers Bend)	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

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7.6.4 Option 4 - Inland Stop Bank near North Street and Extension of Greytown Stop Bank beyond Beban's Farm(XS 30)

The idea of a long extension to Greytown Stop Bank as well as a Stop Bank at North Street and the re-alignment of the inside of Fuller's Bend (XS 20) , was explored in Option 4. This added no improvement over Option 2 or 3, in terms of dwellings protected, or spreading out and slowing down the flood. In fact, it served to increase the flood depth in some areas, downstream from the long stop bank. The cost was considerably higher than options 2 or 3 for this approach with no discernible benefit and considerable downside.

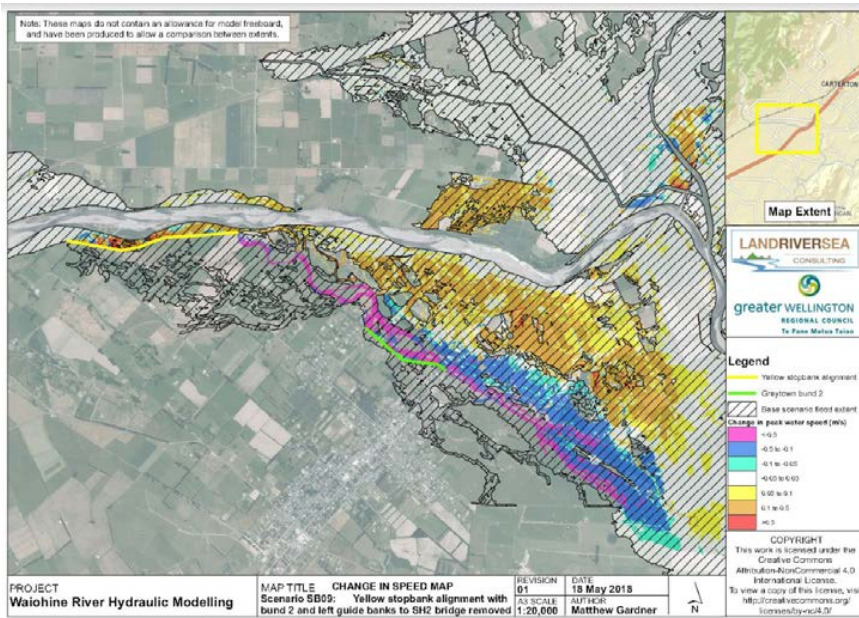


Figure 47: Extended stop bank added to Greytown Stop Bank with North Street Stop Bank

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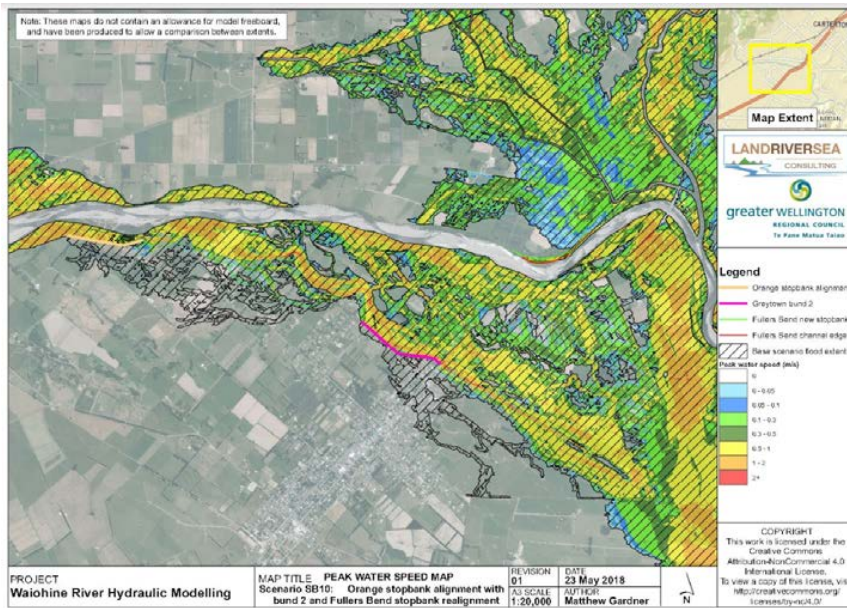


Figure 48: Studies were carried out for each option to show the speed at which floodwater crossed the flood plain

Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m below floor joists (no. of houses)	Above >0.1m above floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
1 (build nothing)	\$0	128	45	18	1
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3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines)	\$2.3m	33	20	10	1
5 (North St, Vines (XS 28-30) and Fullers Bend)	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

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7.6.5 Option 5 – Inland Stop Bank near North Street and Extension of Greytown Stop Bank beyond Beban’s Farm (XS 30) with Realignment of Stop Bank Inside Fuller’s Bend

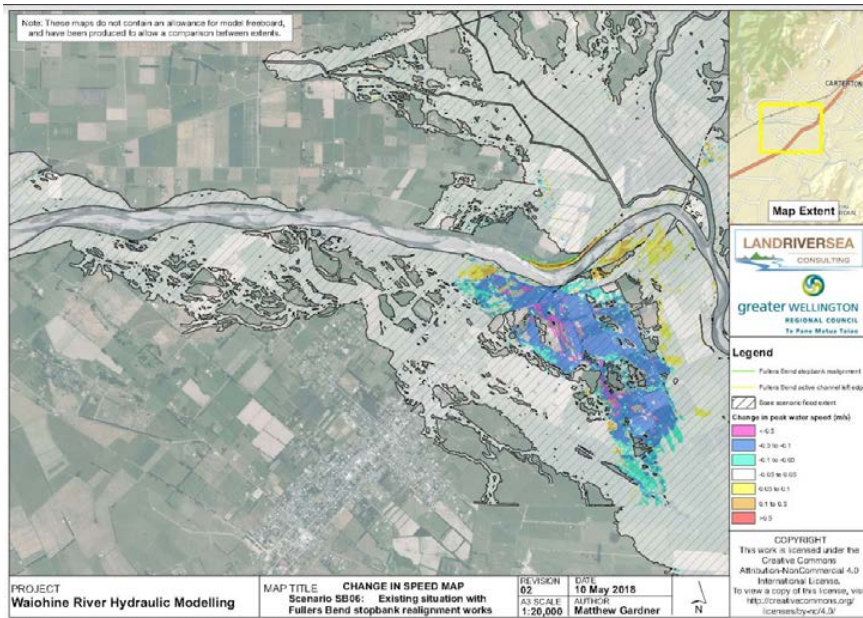


Figure 49: A study of the impact on flood depth of re-aligning the inside of Fuller's Bend - showing little benefit in flood depth

Option 5 shares the same concept as Option 4 but includes the realignment of Fuller’s Bend (XS 20) on the Carterton (true left) bank. Again, this added no improvement over Option 2 or 3 or 4 in terms of dwellings protected or spreading out and slowing down the flood and in fact increased the flood depth in some areas downstream from the long stop bank. The cost was considerably higher than options 2 through 4 and this approach was unpopular with the public.

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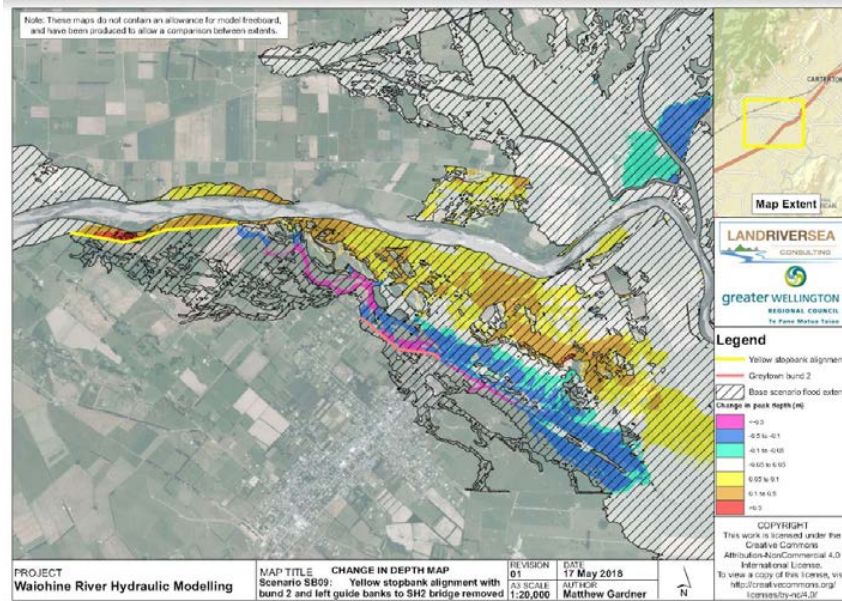


Figure 50: Option 5 - Long extension to Greytown Stop Bank and Nth. Street Stop Bank, showing change to depth.

Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m floor joists (no. of houses)	Above >0.1m above bottom of floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
1 (build nothing)	\$0	128	45	18	1
2 Inland Stop Banks (North Street & K Street)	\$0.7m	46	23	11	1
3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines)	\$2.3m	33	20	10	1
5 (North St, Vines(XS 28-30) and Fullers Bend (XS 20))	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

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7.6.6 Option 6 - Full True Right Bank (Greytown Side) Stop Bank with Realignment of Stop Bank Inside Fuller's Bend (XS 20)

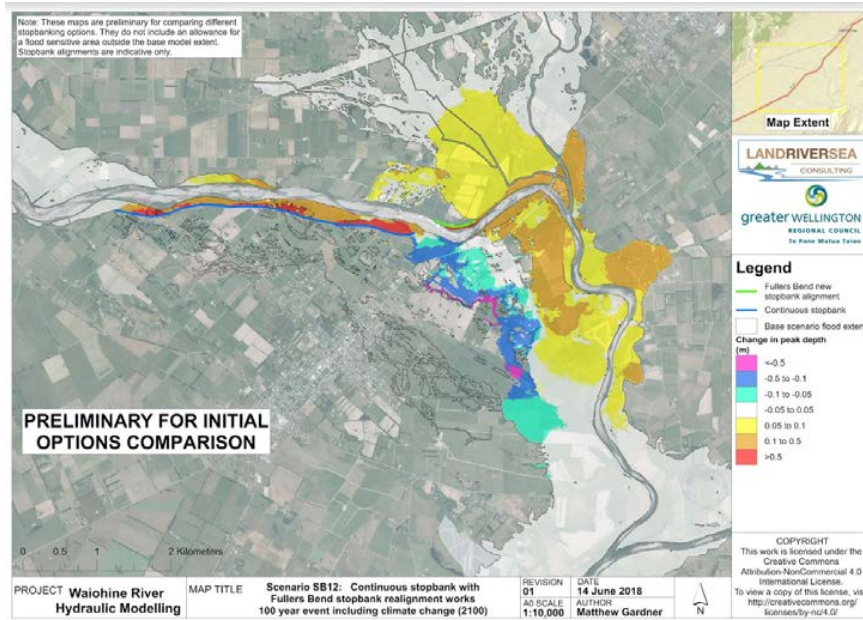


Figure 51: Study of impact of increasing depth and flooding created by a continuous stop bank. Bank is blue line.

One of the principles adopted at the beginning of the design stage was that beyond our obligation to try to protect the urban area against “one-in-one-hundred year” (1%) floods, it was unacceptable to protect one area at the expense of another – to “rob Peter to pay Paul”. The above map shows that the option of building a continuous stop bank on the Greytown (true right) bank simply pushes deeper flood water onto the Carterton (True Left) bank and downstream SH2 Road Bridge (XS 17) and Ahikouka Road area. A continuous stop bank, close to the river, also would lead to maintenance challenges, disruption of farm operations and higher build and maintenance costs. Furthermore, by implication, this approach of hemming the flooding river in fails to take the opportunity to spread out, and thus slow down and dissipate the flood, with consequences for downstream properties and assets. It was further noted that all the solutions that required stop banks close to the river or works to encourage the river to realign may struggle in the consenting process. See map study of this effect below:

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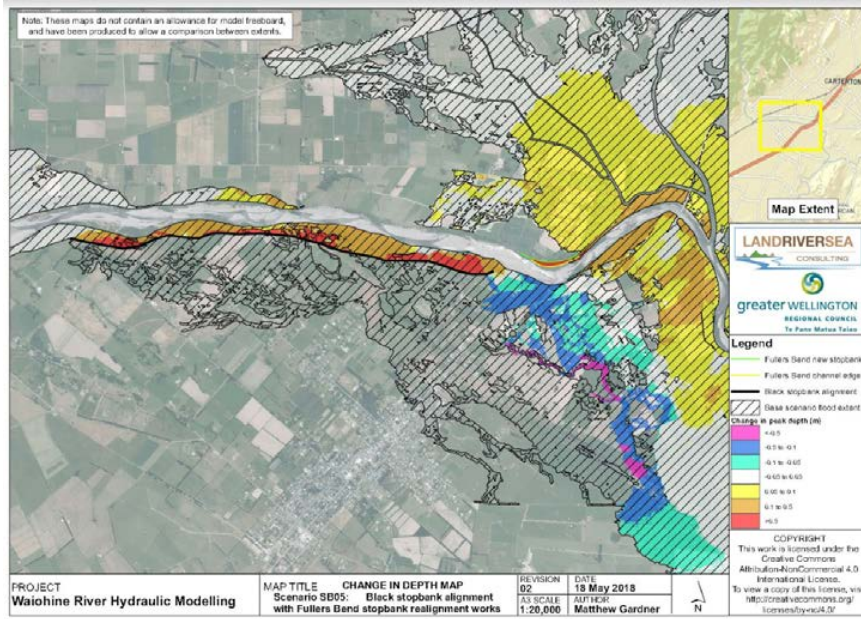


Figure 52: Study of increased flood depth downstream caused by continuous stop bank

Option	Rough Cost (plus or minus 30%)	Water somewhere on property (no. of houses)	Below >-0.1m below floor joists (no. of houses)	Above >0.1m above bottom of floor joists (no. of houses)	>0.5m above bottom of floor joists (no. of houses)
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3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines(XS 28-30))	\$2.3m	33	20	10	1
5 (North St, Vines and Fullers Bend)	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

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Findings:

1. Option 2 is recommended as likely to be the best solution, best meeting criteria for defending against a one in one-hundred-year flood event (1%) i.e. a straw man of 1700 cubic metres per second plus or minus 200 M³ per second.
2. Option 2 is more likely to meet the requirement of the solution being consentable.
3. Option 2 was also far more popular than other options for the large number of people who attended the two community drop in events, WAG meetings and online feedback.
4. Other options revealed a very poor trade off of much higher cost for little or no additional protection of dwellings and critical assets and/or protected some agricultural land at the expense of greater flooding on other agricultural land (robbed Peter to pay Paul).

7.7 Table of Initial Estimates of Materials and Costs of Components of Structural Works

Note: Re-aligning by widening the inside of Fuller's Bend is approximately \$1m build cost, is required for Options 4, 5 and 6. Other options also allow the sale of three parcels of land on the inside of Fullers Bend that were acquired to facilitate those works, freeing the annual cost of servicing this debt to boost river maintenance work.

'Rough As Guts' estimates	Volume of Material	\$ Cost of Build	\$ Maintenance Cost +/- \$	\$ Contingencies (at 30% of Construction cost)
Continuous Stop Bank	99.4k M ³ 111.6k M ³	1.9m	0.56	0.57m
Fullers Bend (XS 20)		0.3m		0.85m
Inland	1.6k M ³	0.04m	0.075	0.01m
Beban (XS 30)	19.0k M ³	0.44m		0.13m
Vines (XS 28-30)	43.0k M ³	0.82m		0.25m
North Street	14.8k M ³ 11.0k M ³ 18.0k M ³	0.34m 0.25m 0.41m		0.10m 0.075m 0.123m

Notes:

1. From James Flanagan's Preliminary Numbers.
2. Excludes investigation.
3. Excludes normal river maintenance.
4. Plus sourcing the material from the Mangatāre banks near SH2, if practical, will allow trapped flood water to escape better from that area.
5. Plus "right hand column costs".
6. Subject to refinement see [Cameron/Fauvel](#) report.

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7.8 The Six Options for Flood Defence Strategies were opened to Public Consultation Using the Following Channels:

1. Publishing on social media (Facebook and Neighbourly) and email (WAG email list) to share information about the options,
2. Two very well advertised (posters, WAG meetings, word of mouth and local newspapers and publications) ‘open day’ type events for the public to drop in, ask questions and voice opinions to help with the decision making – one in the evening and one on a Saturday afternoon to provide alternatives for widest reach, attended by approximately one hundred and fifty residents,
3. Offers to community groups to meet and share (ongoing),
4. Public meetings were hosted by Waihoine Action Group prior to and after the drop-in sessions for the same purpose (public meetings were hosted by WAG (open membership to everyone in Waiōhine valley) throughout this project – to share information and seek questions, feedback and help with decision making),
5. For each of the six options the following information was provided:
 - a. Detailed maps, showing flood defences and impact on flooding,
 - b. RAG (‘Rough As Guts’) comparative build costs,
 - c. Best available data on the number of dwellings affected and impact on them,
 - d. Project Team members to provide further information and answer questions.
6. What was learned:
 - a. What information resonated well with the community,
 - b. That there was an overwhelmingly obvious response as to which options were most favoured and which were not,
 - c. Ideas for additional improvements were received to the most favoured options (these were all investigated and some adopted).

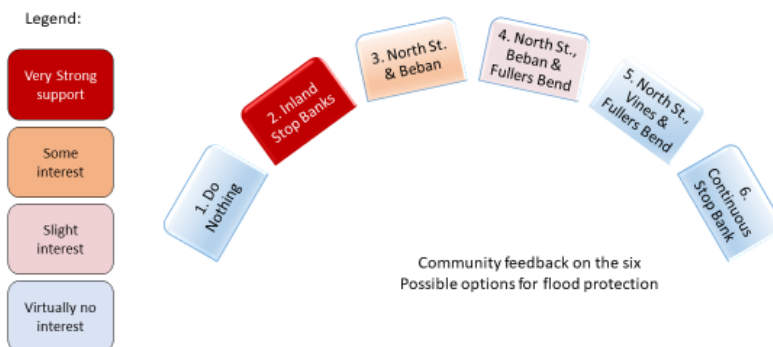


Figure 53: Heat Map – The Six Options for Flood Defence for the Public Drop-In Sessions and WAG Meetings:

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7.10 Options Comparison of Costs and Property Impacts (out to 2050, without sensitivity)

Note: All numbers are 'Rough As Guts' (RAG) and subject to refinement.

Option	Rough Cost (plus or minus 30%)	Water on property (no. houses)	Below >-0.1m (no. houses)	Above >0.1m (no. houses)	>0.5m (no. of houses)
1 (do nothing)	\$0	128	45	18	1
2 Inland Stop Banks (North Street & K Street)	\$0.7m	46	23	11	1
3 (North Street and Beban (XS 30))	\$1.3m	41	23	11	1
4 (North St. & Vines(XS 28-30))	\$2.3m	33	20	10	1
5 (North St, Vines and Fullers Bend)	\$2.5m	35	19	10	1
6 (Continuous Stop Bank)	\$3m	24	14	6	0

Notes:

- Based on visual assessment of floor levels as at present for recently built dwellings as well as data on other dwellings from GWRC database. Excludes outbuildings.
- Projected to 2050 (this allows +10% extra flood water for [climate change](#))
- Costs exclude the remaining cost of purchasing the three parcels of land for the Fullers Bend (XS 20) re-alignment in options 4,5,6. For options 4-6 this additional cost (of around \$1.2 million plus mortgage interest) and for options 1-3 any net profit from sale will contribute to the scheme.
- In estimating costs of this solution, a 50% loading was added to land values, to represent fees etc. that could be incurred. This was adjusted to 60% if the land is close to the town.

7.11 Decision Reached at 1:30 p.m. on 15th August 2018

Having reviewed all the public feedback from the August 2018 public drop-in sessions, the six available options were short-listed to just three flood protection options, in order of public preference (high to low):

- Inland North Street (Eastern) and Western stop bank, near Kuratawhiti Street (was option 2 at drop-ins) also known as 'Protect the Town'
- North Street and Beban (XS 30) (was option 3 at drop-ins) also known as 'Protect the town and short extension to Greytown Stop Bank'

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- North Street, Bebans and Fuller's Bend([XS 20](#)), (was option 4 at drop-ins) also known as 'Protect the town, short extension to Greytown Stop Bank and re-align Fuller's Bend'

The highlighted cells in the table [above](#) show the best available data relating to these three options, where there is a difference between the options. It was therefore decided that there is no need to do further work on flood defence options 1,5 or 6, as there was either little or no interest in these by the community.

7.12 Decision Reached at 1:30 p.m. on 20th September 2018

Once the decision was made by the community as to which flood defence option best matched its vision for the future of the Waiōhine River, it was decided to undertake a series of more detailed studies on a number of topics around [Option 2 \(inland stop banks\)](#). These included:

1. A [flood sensitivity study](#) to identify the impact of extraordinary events coinciding with a one-in-one-hundred-year flood (1%) as at both the 2050 and 2100 planning horizons,
2. [Conceptual design](#) – to see more clearly where, how high, how long, what profile and what cost was associated with each of the two new stop banks, including an additional investigation was made into the impacts of [re-aligning the Western Stop Bank](#).
3. A more detailed study into modelling what would happen if the riverbed built up or was blocked near the end of [Greytown Stop Bank](#), to find out if or what extension or other defences might be needed there and
4. How much [Freeboard](#) (room for water velocity or wind action etc. pushed up the side of the stop banks) should be planned for.
5. What the impact of re-aligning Fullers Bend might be.

Having obtained the results of further modelling work for detailed investigations the following observations were made:

7.12.1 Do Nothing.

This additional study did not show any new information but clearly illustrated that there is a need to eliminate this option of "do nothing" in order to prevent extensive flooding to the northern end of Greytown.

7.12.2 Conceptual Design.

See [Cameron Fauvel Report](#) for conceptual design information.

As the result of a landowner consultation, an alternative path for the Western Stop Bank (near Kuratawhiti Street) [was investigated](#).

Unfortunately, indications are that this path would result in a stop bank of at least twice the length, far higher, with a much wider base. It was realised that this would present several challenges:

1. A far higher cost than the preferred path,
2. A greater impact on farm operations,

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3. It still exposed an open flank to the West that would require considerable further work to ensure the flood defences were not outflanked, bringing further cost and issues.



Whilst the exercise had been informative, it was decided that further work on this possible alternative was unjustifiable for these reasons.

Figure 54: Investigation into possible alternative path for Western Stop Bank - design path in blue, alternative path in black

7.12.3 Greytown Stop Bank.

Following landowner consultation, work was undertaken to attempt to find a way to attempt to prove if there could be a need for the extension of Greytown Stop Bank, directing flood water back towards the river. To achieve this, a substantial increase in bed roughness (to make it behave as if there were a major obstruction or increase in gravel build up in that area) above Greytown Stop Bank, was simulated in the model. This allowed for 1:100-year (1%) flooding plus 16% climate change, plus the additional 20% of channel roughness. The resulting model could not prove the need for extension to the Greytown Stop Bank.

Regardless, as an extra precaution, in order to bolster flood defences here, it was decided, unless proven otherwise, to use trees to do the job of slowing any flood down. This can be done by planting along the toe of Greytown stop bank and to extend this planting along the base and face of the natural low bank that extends from Greytown Stop Bank to support the existing tree line. Note that it is important that the existing trees are NOT cut down.

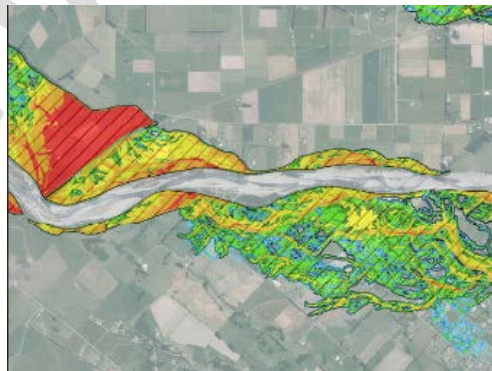


Figure 55: Attempt to force extra flood water at end of Greytown Stop Bank (+20% bed roughness on top of 1:100 year plus climate change) makes little difference but has some negative downstream effects.

If evidence emerges that these defences become inadequate, ~~then~~ the River Management/Living Plan contains [a Trigger](#) that allows two further measures to be considered:

1. If observed effects of sheer stress on ground alongside of the Greytown stop bank or tree planting is unsuccessful due to the nature of

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the ground or substantial channel blockage of one of the two main river channels below the rail bridge (XS 37) occurs, then there should be a review of need for some protection here – for instance small spur banks, [this has been accounted for in projected costs](#).

2. If future models indicate the need, the question of some form of extension to the Greytown Stop Bank should be revisited. However, this should, if possible, not focus on forcing the flood back to the river but continue the strategy of spreading it out and slowing it down.

Subsequent modelling of increases in bed level of up to 1 metre in places show that the preferred option is quite tolerant of this with no significant increase to flood spread resulting in this location.

Note that raising the bed level further downstream does have serious consequences, near the end of Kuratawhiti Street.

This was presented and supported at a public community meeting.

7.12.4 Freeboard.

A definition of Freeboard in Civil Engineering: the height of the watertight portion of a building or other construction (in this case the stop bank) above a given level of water in a river, lake, etc.

Following advice from Ian Heslop during his review of the project it was agreed to build up a specific freeboard separately i.e. specific to the needs of each part of the system. This recognizes that 'not one size fits all'. The biggest components of Freeboard were recognized as:

- Velocity effects – how much power the flood waters exert as they collide with a stop bank
- Bed level changes – which could elevate the river level and increase flooding

Clearly this means that stop banks set far back from the river will need a different approach to those close to the river. For instance, flood waters that have spread out and travelled far across the floodplain are likely to have a much lower velocity than those in or near the river channel.

[Freeboard](#) is distinguished from [Flood Sensitivity](#). Flood Sensitivity is used to denote the extra area sometimes found on the edge of the flood plain that might in some unlikely combination of circumstances, be [slightly](#) prone to a relatively small amount of flooding. This area is defined to help advise local authorities on building platform height [might](#), specific location of dwellings, [and](#) access [etc.](#)

Freeboard has been set for the two inland stop banks:

1. North Street – 500mm but tapering off at the Westernmost end,
2. Inland Stop Bank (near Kuratawhiti Street) is set at 100mm.

This was arrived at having discussed the following considerations:

1. Probability
2. Tolerance
3. Weightings
4. Cumulative effects
5. Allowance for increase close to SH2
6. Accounting for:
 - a) Ground survey error
 - b) Stop bank cross section accuracy tolerance
 - c) Velocity Head (blocking of flow)

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- d) Other uncertainty
- e) Wave and wind set up

7.12.5 Fullers Bend.

The third and final additional study was to try to prove a need for the re-alignment of the inside of Fuller's Bend ([XS 20](#), True Left Bank). This was developed as an analysis by modelling, of the force applied to the existing Stop Bank on the outside of Fuller's Bend (True Right Bank) both with and without the best shape of re-alignment of the inside of the bend. The result of this investigation was that no significant additional flooding occurred when the inside of the bend was realigned. However, the point of impact of the force of the flood was moved slightly further downstream, to where existing river defences are weaker and inadequate to the task. In addition, the force of the river would likely be deflected to the outside of the next bend (True Left Bank) where there would be a high risk of the river breaking its banks. The concept of realigning the inside of Fullers Bend was therefore abandoned.

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8 Cost and Funding Implications

8.1 MfE Guidance to Communities on Flood Risk Management:

Can be found [here](#). It states: “Lower-income areas and areas with a smaller rating base also experience difficulties in affording good flood risk management. Councils with better resources, including better information and funding, are more likely to achieve more robust flood risk management. This results in an equity issue, as some communities may not be able to afford an acceptable level of flood risk management. Reducing flood risk across the country requires that all councils are able to manage the flood risk effectively.”

As part of the Wairarapa, the Waiōhine Valley is part of a large area, with less than 10% of the population of the Greater Wellington Region and approximately 80% of the river and lake area of the region. Average incomes are also lower than the remainder of the region, with a relatively older demographic. The practicalities of this dictate a high degree of care for what kind of burden the overall cost of flood protection is to such a community.

8.2 Estimation of total capital cost of proposed works:

It is estimated that the total capital cost of the proposed solution will be less than \$2 million.

This includes an estimated cost of \$1,131,431.85 has been provided by [Cameron Fauvel Projects](#) for the physical works to complete the new Western and Eastern inland stop banks near North Street and Kuratawhiti Street respectively. Their [Topographical Survey Report](#) contains a conceptual design of the two proposed stop banks, including the topographical survey of the subject site, co-ordination and consultation with local stakeholders and optimization of the stop bank alignments, heights and earthworks volumes.

The total of \$1,131,431.85 for (both) the stop banks construction costs therefore breaks down by location, as follows:

Preliminary & General	\$67,500
Kuratawhiti Street (West) Stop Bank:	\$304,805.64
North Street (East) Stop Bank:	\$759,126.21
Total:	\$1,131,431.85

This cost is made up as follows (West Bank is near Kuratawhiti Street, East Bank is near North Street):

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Item	Description	Unit	Quantity	Rate	Amount
1.00	PRELIMINARY AND GENERAL				
1.01	Construction Set Out Survey	LS	1.00	\$ 10,000.00	\$ 10,000.00
1.02	Mobilisation of Plant and Equipment	LS	1.00	\$ 7,500.00	\$ 7,500.00
1.03	Site Establishment	LS	2.00	\$ 2,500.00	\$ 5,000.00
1.04	Installation of Environmental Controls	LS	1.00	\$ 15,000.00	\$ 15,000.00
1.05	Compaction Testing	LS	1.00	\$ 20,000.00	\$ 20,000.00
1.06	As Built Survey and Documentation	LS	1.00	\$ 10,000.00	\$ 10,000.00
				Subtotal 1	\$ 67,500.00
2.00	EARTHWORKS				
2.10	STOP BANK 1 - WEST BANK				
2.11	Top Soil - Strip 250mm to Stock Pile	m ²	2,327.00	\$ 14.19	\$ 33,020.13
2.12	Sub Grade Treatment	m ²	9,308.00	\$ 1.56	\$ 14,520.48
2.13	Imported Material (FOC) - Carted from 15 minute Radius	m ²	6,909.20	\$ 9.90	\$ 68,401.08
2.14	Place and Compact Imported Fill	m ²	6,909.20	\$ 20.10	\$ 138,874.92
2.15	Respread Top Soil on Bank	m ²	930.80	\$ 20.38	\$ 18,969.70
2.16	Respread Top Soil off Site	m ²	1,396.20	\$ 10.19	\$ 14,227.28
2.17	Undercut - Provisional Sum	m ²	690.92	\$ 14.19	\$ 9,804.15
2.20	STOP BANK 2 - EAST BANK				
2.21	Top Soil - Strip 250mm to Stock Pile	m ²	4,459.75	\$ 14.19	\$ 63,283.85
2.22	Sub Grade Treatment	m ²	17,839.00	\$ 1.56	\$ 27,828.84
2.23	Imported Material (FOC) - Carted from 15 minute Radius	m ²	17,811.00	\$ 9.90	\$ 176,328.90
2.24	Place and Compact Imported Fill	m ²	17,811.00	\$ 20.10	\$ 358,001.10
2.25	Respread Top Soil	m ²	4,459.75	\$ 20.38	\$ 90,889.71
2.26	Respread Top Soil off Site	m ²	-	\$ 10.19	\$ -
2.27	Undercut - Provisional Sum	m ²	1,781.10	\$ 14.19	\$ 25,273.81
				Subtotal 2	\$ 1,039,423.95
7.00	MISCELLANEOUS				
7.10	STOP BANK 1 - WEST BANK				
7.11	Vehicle Crossing Surfacing (Farm Access) - AP40 Supply and Place	m ²	40.00	102.51	\$ 4,100.40
7.12	Fencing Reinstatement Works	LM	165.00	17.50	\$ 2,887.50
7.20	STOP BANK 2 - EAST BANK				
7.21	86 North Street Detailed Earthworks and Landscaping	LS	1.00	15,000.00	\$ 15,000.00
7.22	Fencing Reinstatement Works	LM	144.00	17.50	\$ 2,520.00
				Subtotal 7	\$ 24,507.90

Figure 56: Source Cameron Fauvel Projects - Physical Works/Schedule of Rates 30/08/2019

We investigated whether the build/cost of the Western stop bank, near Kuratawhiti Street, could be deferred until clear evidence of need emerges – this could be managed under the [Living Plan process](#). However, some risk, if unlikely, would exist and might possibly have a potential impact on issues like minimum build heights, insurance etc. for many urban properties. So, it is recommended that whilst the new stop bank near North Street is urgent and important, the new stop bank near Kuratawhiti Street is also needed and should be built as soon as is practical.

In addition the estimate of approximately \$2 million includes estimates of structural and related works capital (one time) costs relating to improving flood defences at the Eastern end of Greytown Stop Bank are:

[17.11.](#) **\$30,000** (+ or - 30%) for planting at foot of and end of [Greytown Stop Bank](#). This cost is based upon a recent planting of natives,

[18.12.](#) **Or alternatively: \$45,000** (+ or -30%) for the construction of [3 spur banks](#) for the Greytown Stop Bank.

In addition, there will be other costs associated with the process, consents and related matters.

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Therefore, at this stage we recommend that an estimated budgetary expectation of up to \$2,000,000 (which includes contingencies, options etc.) should be adequate for all one-time (CAPEX) costs to implement this Waiōhine River Plan, Incorporating Floodplain Management Plan.

We recommend that all other work on the river be addressed through the existing operational (OPEX) maintenance annual budget.

8.3 Note to costing – parcels of land inside Fuller’s Bend:

Ratepayers are currently having to pay rates to cover loans taken out by GWRC to acquire three parcels of land. These were purchased by GWRC in recent years and set aside, in case the widening and re-alignment of the inside (true left bank) at Fuller’s Bend should need to go ahead. The first two of these were purchased (utilising the Public Works Act), specifically for realignment of the inside of Fullers Bend:

1. The Land at 127A Mataroa Road/Swamp Road, purchased for \$120,000 as at 2015.
2. The Land at 127C Mataroa Road/Swamp Road, purchased for \$595,000 as at 2014.
3. A third parcel of adjacent land was also later purchased at 65 Mataroa Road/Swamp Road for \$454,000 as at 2016.

Note that a small portion of this land, which lies between the river’s edge and the existing stop banks, would need to be retained by GWRC. Also, current access to the river buffer will need to be retained (a portion of this access is over mana whenua land and will continue to need ongoing permission for access to be kindly granted).

It is roughly estimated that the total burden to ratepayers of servicing these three interest-only loans is in the order of **\$65-70,000 per annum**. Disposing of this land or at a minimum, shifting it out of the Floodplain Management aegis, would remove the annual burden of loan repayment from the ratepayer community and release it into the pool of funds set aside annually for river maintenance operations (OPEX). This would help speed stop bank strengthening of the outside of Fuller’s Bend for instance and would be most beneficial to the river overall.

As retaining this land within the flood plain management portfolio is no longer necessary, the community and Project Team have been asking for some time, for this land to be released back onto the market and sold, or moved to another cost centre, to remove this unnecessary financial burden. It is not clear why this has not yet been actioned by GWRC, but we urge that it be expedited.

Finding: We recommend that these parcels of land, (except for land between the river edge and back of stop banks) are sold as soon as possible, that any residual profit, should be used to progress

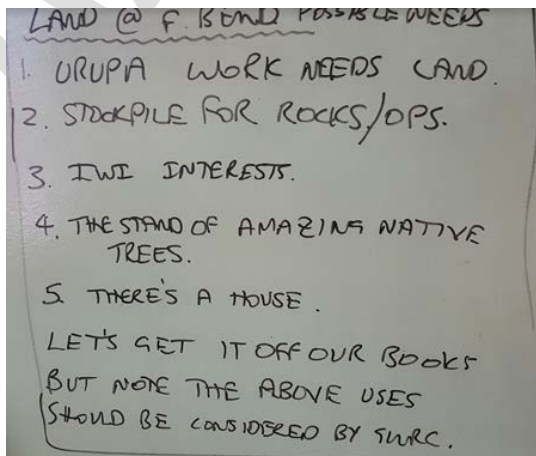


Figure 57: Photograph of Project Team Working Day Brainstorm and decision made on three parcels of land inside Fuller’s Bend – October 2018

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protection work on the outside of Fuller’s Bend, which otherwise is funded from the annual river maintenance budget.

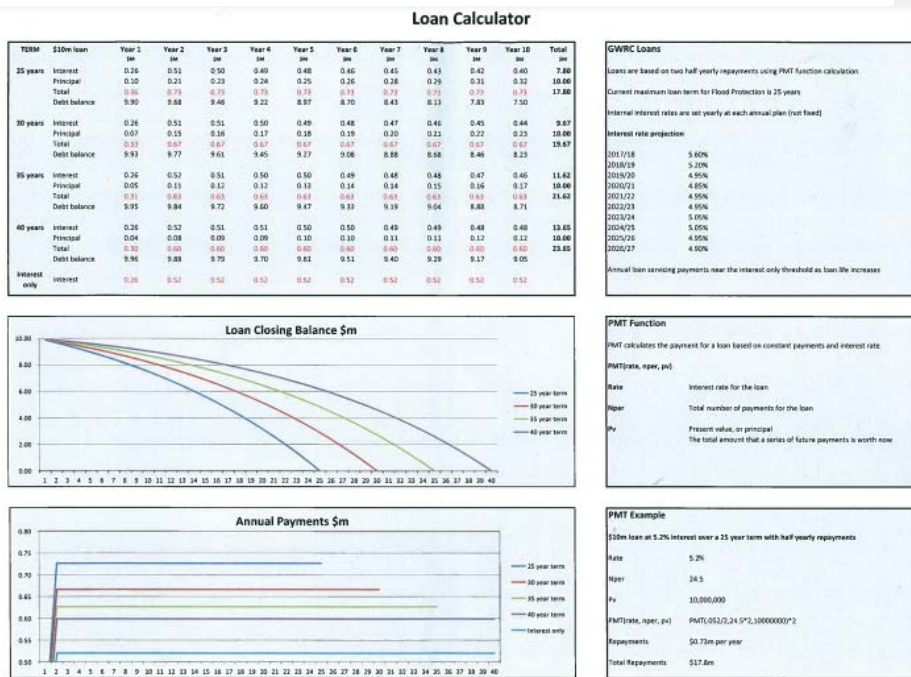


Figure 58: Expert advice was sought from GWRC on the most cost effective financing models

8.4 Further Notes on Costs:

8.4.1 Term of Loan to fund Structural Works:

The roughly estimated capital cost of works associated with this River Plan has to balance a range of factors, to find a way to meet the capital cost of structural solutions, needed to provide flood defences, added to cost effective ways to continue to manage the river.

Capital works can now be funded to a 25-year funding horizon if needed, or up to 30 years in some instances.

Different works can be phased and timed differently, therefore financed in different ways, that are the right fit for their use, cost and life.

It is recommended that capital costs are funded through a loan for a term of around 25 years. This will roughly align with the 2040-2050 first planning horizon, and proposed full review of the plan at that time, whilst minimising the impact on annual rates in the meantime.

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8.4.2 How did we arrive at this? See flip chart [on Capital Build](#).

The capital works for new inland stop banks to protect urban Greytown and a small proportion of rurally zoned properties within the flood defences are [relatively inexpensive](#). If spread over 25 years, including interest, split between pan regional and local rates (currently a 50/50 split), this will have a very small impact on urban ratepayers and others within the defences, who will be the major beneficiaries of a 1:100 defence of dwellings, facilities and businesses. It is roughly estimated that on average, this should work out at approximately \$50-80 per ratepayer, per year.

It is recommended that the new inland (Western and Eastern) stop banks and the minor work to build perpendicular snub groynes at the foot of Greytown Stop Bank, should be funded from rates contributed by all urban dwellings and rural dwellings protected within the new (Western and Eastern) inland stop banks.

Other rural dwellings along both sides of the whole river will continue to benefit from existing flood defences and river maintenance for flood protection to at least 1:20 year flooding (5% chance of occurring in any one year). New rural dwellings will be required to be built to the 1:100-year (1%) standard.

It is recommended that as those rural dwellings outside the new inland stop banks, are not the major beneficiaries of the main new flood defences, they should not need to contribute above current levels to flood protection. As at present the maintenance projects and annual budget seems to be adequate to needs, this should continue as is but we recommend this should be subject to review if a significant [Trigger event](#) requires.

8.4.3 Target Rating – Clarifying New Build Versus Maintenance:

It is recommended that redistributed benefit should be recognised, and that the existing target rating classification remain for all **river maintenance and operational management works**. We see these as operational (**Opex**) in nature.

Therefore, we recommend that they should continue to be funded from annual rates, rather than capital expenditure, funded from long term borrowings identified for capital build.

Conversely, we recommend that new capital funding be raised for the construction of new stop banks (such as Western (near North Street), Eastern (near Kuratawhiti Street) stop banks and the perpendicular snub groynes at the toe of the Greytown Stop Bank).

We recommend that a new targeted rate for this should be implemented, to be repaid over a term of 25 years, from a targeted rate on all urban and other properties behind (protected by) the new Inland Western and Eastern stop banks.

Current policy is that up to 50% of the cost of flood defences are found from pan regional rates and the remainder is raised from the local share, based upon whatever is the current policy for that river.

8.4.3.1 Findings: Recommended Approach to Funding Structural Solutions:

Finding: It is Recommended that new capital works be Funded using a finance horizon of 25 years – fitting the horizons identified above.

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Proposed Waiohine River Plan**These capital works include:**

- Kuratawhiti Street (Western) Stop Bank (new construction).
- North Street (Eastern) Stop Bank (new construction).
- New perpendicular groynes, should they be required, on the toe of Greytown Stop Bank.

This excludes:

- Completion of ongoing work to strengthen the major stop bank on the outside of Fuller's Bend ([XS 20](#)) to protect SH2.
- Other maintenance and operational works.

The excluded projects should be funded from operational funds allocated to river maintenance, which would be significantly boosted by the disposal of the three parcels of land on the inside of Fullers Bend.

8.4.3.2 Benefits of this approach:

- Capital works will be fully amortised by the first [planning horizon of up to 2050](#) this will leave the way clear to invest in further works then needed.
- This fits to repaying the loans within the span of one generation, leaving a much better-informed next generation to review the needs beyond the up-to-2050 horizon out to 2100 where climate change and new data might drive adjustments to the River Plan.
- By 2050 strategies for river management, fuelled by new science, engineering and technology may well provide new opportunities for a new generation to adopt its own strategy for their river. We will, for instance, have a zero-carbon economy and hopefully have made steps in the vision of this plan, which will positively change the relationship between mana whenua, town, country, land, climate and river.

8.4.3.3 CAPEX, OPEX, & spend to date:

Spend to Date on developing a Waiōhine Floodplain Management Plan has been approximately \$1 million. This was funded through a consolidated loan over 15 years: Levied equally across GWRC in accordance with current GWRC policy (that Floodplain Management Plan Investigations and plan development is spread 100% across the regional funding base). These costs therefore have no impact on the costs associated with this, current, River Plan.

8.4.3.4 Reserves for Emergency Works:

A strategy is in place of setting aside a small portion of the operational river management budget in quiet years and periods (see [Waiōhine Hydrology](#)) when no damaging floods occur to build up a financial reserve that can be drawn upon in the event of emergencies and damaging events (for instance major floods or earthquakes). We understand that **this reserve currently amounts to approximately \$720,000.**

It is important, given the aggressive and unpredictable nature of the Waiōhine, the urban infrastructure and other assets at risk, that this reserve be exclusively retained for use as intended, on the Waiōhine, whose ratepayers have funded it.

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Finding: It is recommended that the reserve fund should be maintained at or near the current amount, allowing for it to be gradually replenished, in the event of its use in an emergency. This reserve should be clearly and distinctly reported on separately and categorically earmarked for emergency use on the Waiōhine river.

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9 Non-Structural Solutions

Non-structural solutions keep people away from floods.

9.1 Interim maps, final maps, planning controls

Until the proposed new inland stop banks can be built soon (≈ 2 years from approval of this plan), we recommend that we should retain the interim maps currently in use for planning and approvals, then publish new maps that can be adopted after the stop banks are completed.

There are two major flood hazard zones identified through the mapping exercise and that we have agreed to, these are:

1. The Flood Hazard Area
2. The Flood Sensitive Area

Here is a description of these two hazard zones:

9.1.1. The Flood Hazard Area

– This relates to the area of flood hazard from the Q100 flood event in the river plus an increase in water to consider the increase in rainfall intensities from climate change. In this case the increases were 10% and 16% for the 2050- and 2100-year planning scenarios respectively. In this hazard area we were going to use the hazard categorization (H1 to H6) that is in the Australian Rainfall and

Runoff (ARR) guidelines. Flood levels given out would be to the Q100 + 16% climate change + the top of the flood sensitive area. These rules are given in section [9.2 What Controls Are We Seeking on Flood Plain \(Between Green and Edge of Flood Risk Zones\) as a Recommendation to Territorial Authorities?](#)

9.1.2 The Flood Sensitive Area

– We agreed that there should be recommended build levels in this

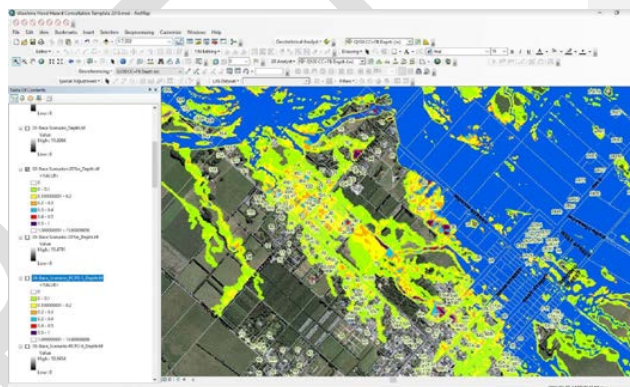


Figure 59: Detailed study of part of the [flood sensitive area 1](#)

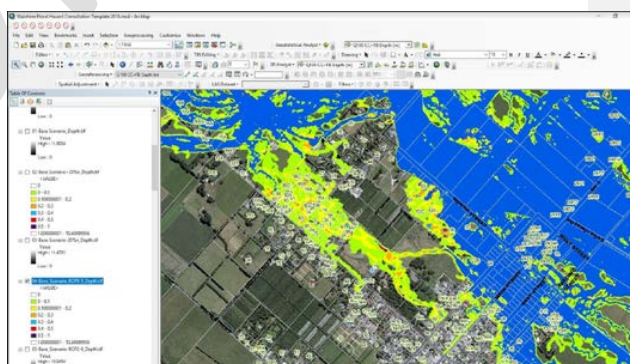


Figure 59 Detailed study of part of the [flood sensitive area 2](#)

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area, but that these would be based on a blanket 300mm above ground level flood height requirement for the entire area. We subsequently learned when looking through this area in some detail, that there are quite a few locations where the sensitivity flood depths are greater than the 300mm (see detailed study images inset) we have chosen; so we needed to consider what to do to address this. It was agreed that it would be prudent and more informative, to use the actual flood depths in this flood sensitive area to recommend building levels.

9.2 What Controls Are We Seeking on Flood Plain (Between Buffer Zones and Edge of Flood Risk Zones) as a Recommendation to Territorial Authorities?

The area outside the riverbanks but inside the greatest extent the river may flood to in a 1% (one-in-one-hundred-year flood) is the floodplain of the Waiohine river.

It was decided to use the Australian Rainfall and Run-off method (ARR) for depicting the degrees and types of risk from flood waters in the floodplain. This was chosen in consultation with Planning Officers from SWDC and CDC. Using this method allows the Project Team to provide information that is most useful to both the community and territorial authorities.

The following recommendations are made:

1. Land Information Memorandums (LIMs) will still be annotated for properties still in at-risk areas.
2. A control on building floor levels at minimum height should be adopted.
3. The planning principle that the town should intensify/spread away from river.
4. No filling/impeding of old flood channels also storm water channels should be allowed.
5. Land in the flood plain will indicate the degree of hazard from major floods using the [Australian Rainfall and Runoff Guidelines](#).
6. That Land designated as Australian Rainfall and Runoff model **High hazard (H5 & H6)** has a high velocity multiplied by depth combination that should not be considered as fit for new building or access,

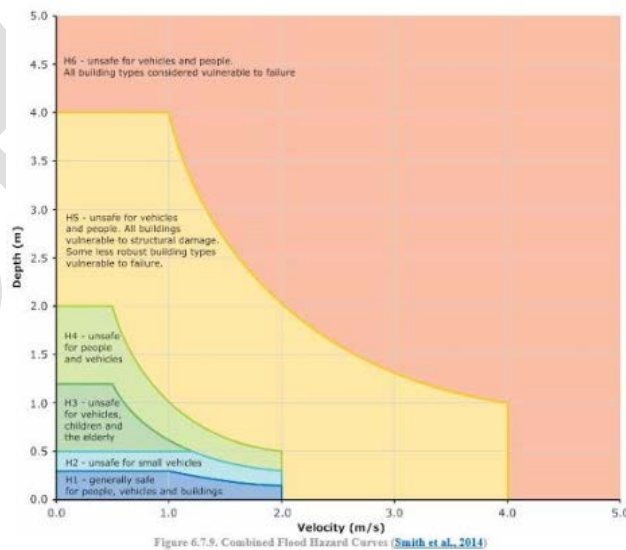


Figure 6.7.9. Combined Flood Hazard Curves (Smith et al., 2014)

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7. That **Medium Hazard (H3 & H4)** may be used for building or access, subject to specific requirements,
8. That **Low Hazard (H1 & H2)** does not mean no hazard, but includes the rest of the flood risk area and includes the flood sensitive area

Hazard Vulnerability Classification	Description
H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles.
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust buildings subject to failure.
H6	Unsafe for vehicles and people. All building types considered vulnerable to failure.

Figure 60: Australian Rainfall Runoff Guidelines hazard classification

9. Recommendations relating to subdivision:
 - i. Maintain low density i.e. minimum 4-hectare sections
 - ii. Must have suitable building site
 - iii. Must have safe access
 - iv. Must not impede flows
10. That Territorial Authorities (T.A.s) adopt the implementation of control on vegetation we want protected in the flood risk zone because it does an important job of flood protection – and on areas that need to be kept cleared of large vegetation or other impediments
11. That T.A.s adopt measures to protect critical landscaped features e.g. small bumps that may play any part in impeding flooding
12. The Independent Peer review by Ian Heslop recommends considering the use of Protection Works Contracts on the titles of land on which existing features, such as banks, groups of trees and so on, need to be retained in order to protect the integrity of flood defences.
13. That within the flood risk zone, shipping containers and other large objects that could be swept away by a major flood, should be somehow securely anchored. A shipping container or similar obstruction can cause serious blockage or damage when carried along on floodwater.

Findings:

1. **To propose that local councils adopt a minimum height for a build in a flood sensitive zone based upon the use of High, Medium and Low Hazard classification labels for land within the flood plain. These are designated, considering both depth and velocity of flood water in any location on the floodplain.**

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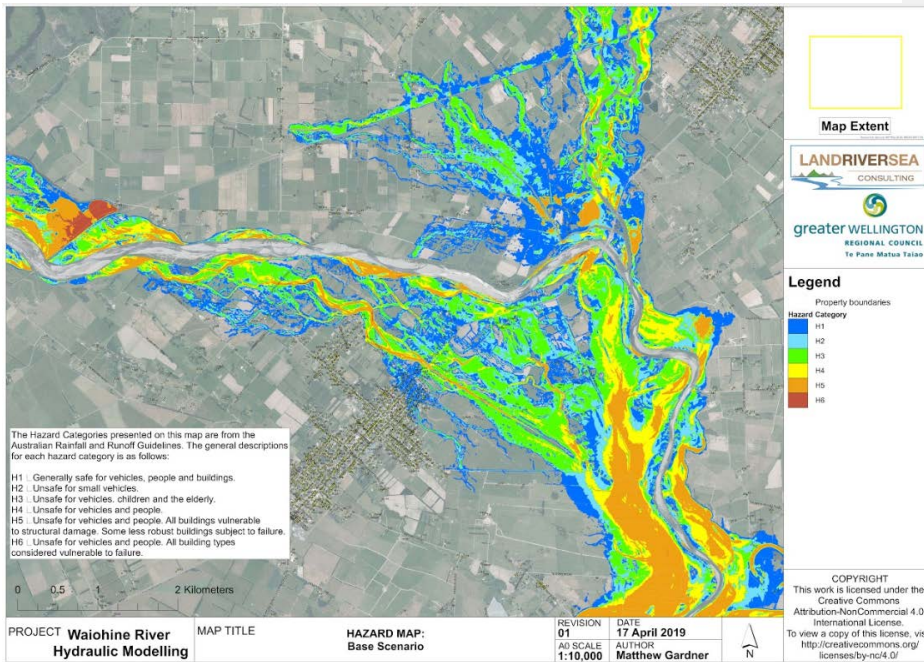


Figure 61: Hazard Map depicting types of risk from flood waters using the Australian Rainfall and Run-off Guidelines method. [A map that can be expanded can be found here.](#)

9.3 Relating to State Highway 2

NZTA reseal this stretch of road, typically raising the height of the crown by 10-12 mm every 8-10 years. This gradual increase in height increases the effect of damming water behind the road crown and increasing flood depth and risk to dwellings in a 1:20 plus climate change flood event, putting some adjacent properties at additional risk.

We recommend that NZTA maintain the height of the crown of SH2 in identified locations, within an envelope of heights (for the crown of the road surface).

There are 4 key locations for maintaining the road surface height:

1. To slightly raise the road south of the Apple Barrel shop (e.g. 100 mm), creating an improved barrier to the risk of flood water over spilling the Apple Barrel and entering the North end of Greytown,
2. To keep the Apple Barrel floodway at the current height,
3. To keep the road crown past Pinehaven retail outlet (2471 SH2), on the straight stretch, between current height and -100mm,
4. To keep the road crown at its current height, in the slight dip in the road near Clark’s farm (XS 18).

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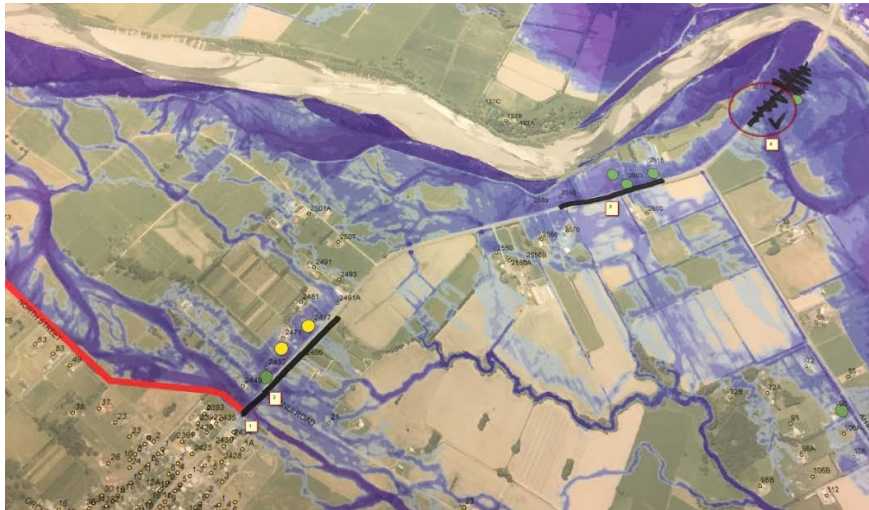


Figure 62: Map showing locations for adjusting crown of SH2

NZTA have undertaken to consider these recommendations in their own planning.

NZTA advise that that pavement heights are upgraded at 25-year intervals.

Computer information has been provided to NZTA by GWRC, depicting the locations of start and stop for surface heights, for each stretch of road.

Progress on this will be monitored under the [Living Plan Process](#).

9.4 House Raising

In some situations, the possibility of offering to part subsidise [the raising of house foundations](#), where properties are seriously threatened by floodwaters, and other defences that fall within the plan have been considered. At the time of planning, there are no rural dwellings that we know will be inundated by up to a 1:20 year flood plus climate change and no urban dwellings will be inundated by 1:100 year river floods plus climate change (conditional upon the [proposed stop banks](#) being constructed), as at 2050. However, if for some reason an [event trigger](#) in the [Living Plan](#) occurs to change this (e.g. a dramatic upswing in [climate change](#) forecasting, or the result of the forthcoming catchment planning of the Mangatārerere), then this can be revisited within the [River Maintenance](#) Living Plan provisions of this plan. We also note that house raising options are rarely taken up for a variety of reasons, but feel this should be nevertheless held in reserve, as a tool that the Living Plan may call upon, if good reason to do so emerges in the future.

Notes:

1. House raising is a possible tool that has been used elsewhere. For the Waiwhetu stream in 2013 the estimated cost of house raising was in the region of \$170k - \$300k per house, [this is not budgeted within this plan](#).
2. There is no identified need for house raising for properties relating to the Waiōhine at present, although there might at some stage be a possible application on the true left bank

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(Carterton side) relating to the Mangatāreere. This should be considered, following completion of the Catchment plan for that river and consequent review, if necessary, of the Waiōhine River Plan.

3. For these reasons, any consideration of need in the future is adequately covered by [existing triggers](#)

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10 Emergency Management & Flood Warning

10.1 What do we know about the risks?

The nature of its remote catchment and its steep gradient make the Waiōhine prone to sudden flash floods that can be life threatening. It is necessary to install suitable signage to warn the public of the possible dangers of sudden flooding. These should be provided at the following major access points:

1. At Kuratawhiti Street end access,
2. At State Highway 2 access,
3. At the access area above the railway bridge ([XS 37](#)) known as the gooseneck,
4. At River Road access.

Flooding of the Waiōhine is rated as a “Major” risk by [WREMO](#).

WREMO Coordinates Civil Defence and emergency management services on behalf of the nine councils across the Wellington Region.

10.2 What tools do we use to mitigate these risks?

Stop banks are the main tool to [protect urban Greytown](#).

Planning controls are the main tool to [protect new development](#).

Emergency Management is the main tool for protecting residents of existing development in [high hazard area](#). See [hazard map](#).

Provide Warning: Flash flooding occurs so quickly that the current method of escalation and warning to the public cannot respond in time to prevent risk.

It is recommended that some form of automated flash flood warning system, as those in widespread use overseas, should be investigated under the [Living Plan Process](#). Examples of such technologies are media tools e.g. phone alerts, sirens, text alerts.

As a minimum, we need to add Greytown and Carterton Civil Defence volunteers into alerts from the current flood telemetry system.

Utilizing the text-based emergency mobile alert service should also be investigated under the Living Plan.

Enable Evacuation: High hazard properties should have evacuation plans and warnings of one in twenty year or greater flood events. These should be maintained via online portal and implemented and periodically reviewed under the [Living Plan Process](#). It is likely that road closure at the Apple Barrel Floodway may occur and a practical system for this needs to be verified.

There is a system of notification of neighbours in rural flood risk areas where flooding above 1:20 year return period could pose risk, with evacuation plans to go to “safe houses”.

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Maintain Awareness: SWDC, CDC and WREMO must be included in developing joint planning via the Living Plan Process.

Appropriate signage should be provided at the most popular access points to the river to help make users aware of the sudden danger flash flooding poses.

Findings:

- **Install suitable warning signs at popular access points to the river**
- **Investigate automated flash flood warning system within the Living Plan**
- **Add Greytown and Carterton area Civil Defence volunteers into the flood warning process**
- **Investigate using the text-based emergency mobile alert service in the Living Plan**
- **Keep emergency evacuation process up to date under Living Plan**
- **Include WREMO as stakeholder in Living plan process**

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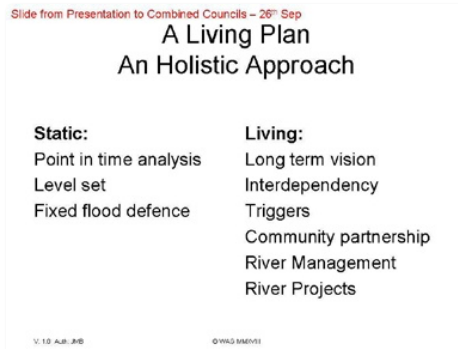
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11 The Living Plan

It would be folly to assume that a River Plan would be able to anticipate every eventuality that may arise for seventy years into the future. So, we must have an approach that allows the community to continue to work together with GWRC to keep on developing and adapting this plan, as the river, legislation, the community, climate and our society and economy evolve and interact.

Finding: It makes sense that the processes and models that have been successful in bringing everyone together to analyse and understand the issues, and to come up with solutions, based on consensus, should continue to deliver in a living plan form. This is what the Living Plan Model is built upon.



While developing the Waiōhine Floodplain Management Plan it was agreed that it should address all aspects of the river (and therefore became the Waiōhine River Plan). It was agreed that it must contain all the necessary process, mechanisms, personnel, triggers and plans to continue the partnership of [community](#) and GWRC. It was agreed that to be any use, it must have a mechanism for the ongoing management and improvement of the river, for the timespan of the River Plan: this aspect of the Waiohine River Plan is the Living Plan.

Finding: The Living Plan: It is recommended that the Waiōhine River Plan can evolve as needed by consensus between the community represented by the Waiōhine Action Group Project Team in partnership with GWRC. Its job is to make decisions and recommendations on what the community conceive as the best model for engagement; to ensure the most likely success of the Living Plan. This will report formally as an advisory committee to the Wairarapa Committee of GWRC.

The Waiōhine River Plan as a Living Plan is subordinate to the law, and superordinate to operating manuals, annual and other GWRC operational plans, and other operational instruments. It must address the needs of the whole river, not just floodplain management.

It is noted that different communities and different rivers have different needs and thus expect (GWRC to have) a flexible enough model to accommodate this – including the stakeholders combined needs for their shared vision of the Waiōhine.

Monitoring of flood protection and other work by the community include Maori cultural consideration from research and monitoring. The possibilities for cultural enhancement of the environment, should be considered as an opportunity, when undertaking flood protection work in the Waiōhine Floodplain – [see Cultural Impact Assessment](#)

The Terms of Reference and Operating Model for the Waiōhine River Living Plan and the Waiōhine WAG Project Team Committee are at [Appendix C](#). This will be refined by WAG reporting to the Wairarapa Committee, as the Living Plan comes into effect, once this plan is ratified and adopted by GWRC in Council.

“The Living Plan model is very sound, and given continued ongoing strong community engagement and consultation, it is expected to produce a Floodplain Management Plan which aligns community and Council expectations.” [Review of Waiōhine River Floodplain Management Plan](#)

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Slide from Presentation to Combined Councils – 26th Sep

What Partnership Looks Like



Figure 63: The Living Plan Process in outline

1. GWRC will share in good time, with the WAG Project Team and **community**, all relevant trigger data, events and findings that might inform planning inputs or actions that might need to be taken in between GWRC annual planning cycles, or that fall within the aegis of this Waiōhine River Plan (Incorporating Floodplain Management Plan), such as, for instance, Living Plan trigger events, or that generally relate to the river and floodplain.

The Waiōhine Living River Plan (Incorporating Floodplain Management Plan) Process

1. Information Sharing: As it becomes available to GWRC, GWRC continues to share all information relevant to the plan and river management with the Community.



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2. With that in hand, everything provided will be shared to and reviewed by the community prior to each GWRC planning cycle (annual, operational or long term) commencing. New items and topics may be added to this with the agreement of the Wairarapa Committee.

The Waiōhine Living River Plan (Incorporating Floodplain Management Plan) Process

2. Consultation: Information the community has collected itself, from GWRC and other sources is shared with 'wi all interested stakeholders and they are invited to share in the planning process, or "do their own thing".



3. GWRC, the WAG Project Team and community will share all planning inputs and discuss as needed, by both parties, prior to the start of each formal GWRC planning cycle that might affect the river and environs.

The Waiōhine Living River Plan (Incorporating Floodplain Management Plan) Process

3. Evolve the Living Plan: Engage as a Project Team with GWRC planners, subject matter experts and interested stakeholders, using the same open and transparent process and tools as are used in developing this plan, whilst GWRC also develop their draft plan.



4. GWRC will produce their draft plan and share this with the WAG Project Team and community in good time for the community to communicate with all stakeholders, meet, seek additional information if necessary, review it, identify differing views or endorsements. It may be necessary to engage independent subject matter experts during this period.

The Waiōhine Living River Plan (Incorporating Floodplain Management Plan) Process

4. Discuss GWRC's draft plan. This may be an annual budget and plan, a three year revision of a ten year plan, planning required under the consent process or other. Keep everyone engaged as with the development of this plan.



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- 5. The Project Team will present these along with any proposed community initiatives to the Wairarapa Committee at which the GWRC plan is also presented.

The Waiōhine Living River Plan (Incorporating Floodplain Management Plan) Process

5. Provide and present the Wairarapa Committee with the updated Living Plan Draft and any views making recommendations with regard to GWRCs own draft operational plan: Either a) through agreement with GWRC to view the Wairarapa Committee as reviewer and arbiter for any divergence between the updated Living Plan draft and the GWRC draft operating (or other) plan, or b) By recommendation from the Wairarapa Committee to GWRC in Council or c) Through delegated authority to the Wairarapa Committee from GWRC in Council to govern the Living Plan planning process and outcomes.

Notes:

- 1. This is not intended to displace any of the existing rights of iwi or community groups as per the consenting process.
- 2. GWRC will support the actual and reasonable day to day running costs of this process, budgeted annually, in keeping with the process for producing the River Plan.
- 3. GWRC Wairarapa Committee will decide what steps, if any, need to be taken where there are significant differences between what the community and GWRC wishes for the river. Either a). through agreement with GWRC to view the Wairarapa Committee as reviewer and arbiter for any divergence between the updated Living Plan draft and the GWRC draft operating (or other) plan, or b). By recommendation from the Wairarapa Committee to GWRC in Council or c). Through delegated authority to the Wairarapa Committee from GWRC in Council to govern the Living Plan planning process and outcomes. D) Any other model agreed to by the community and GWRC.



The principle of the Living Plan model is to create a collaborative partnership in which the community remains in a leadership position as keeper of the vision and overall plan for the river (the Waiōhine River Plan, Incorporating Floodplain Management Plan), with GWRC and there are checks and balances to make sure rifts cannot happen again, between the community and GWRC. It should in effect act as a tool for collaboration and therefore a “fence at the top of the cliff” rather than, as in times past, relying on an “ambulance at the bottom of the cliff”.

Finding: We recommend that the process incorporates the current planning cycles of GWRC: annual and Long-Term Plan, budgeting, planning around consented activities, other planning process current or future that relate to or impact on the Waiōhine River, incorporated data sharing and shared decision making for significant aspects of river management and development to eventually realise the vision and River Plan. This process can be updated as necessary by agreement between community and GWRC, which may be delegated to the Wairarapa Committee.

11.1 Active Management Triggers for the Living Plan

These are events that compel the WAG Project Team to reconvene, compel GWRC in a timely fashion, to provide to the community with any information required by WAG and for the Project Team to identify what actions need to be taken and how the River Plan should be improved upon, using the lessons provided by the trigger event. The WAG Project Team may learn about these from any source and choose to reconvene as they feel the need, but the general expectation is that the

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commitment by GWRC to quickly pass on any information that relates to any of these triggers, will be the main source. If in doubt about the relevance of any information, then GWRC should supply it and rely on the WAG Project Team to always advise if it is no longer necessary. It is expected that the WAG Project Team will engage closely with GWRC throughout the process.

Trigger events may be added to in future but presently include:

1. 2050 – The first of two major planning horizons for this River Plan. This review of the plan may occur earlier if significant new data comes to light.
2. [Climate Change](#) – any new information that changes our understanding of how climate change will affect flood or other risks to the Waiōhine catchment and valley,
3. Earthquake – an event that changes the geomorphology or creates a [dam](#) or other change that substantially affects the behaviour of the river, new LIDAR should be obtained,
4. A Large flood i.e. unforeseen consequences (for example major stop bank failure or damage to flood defence or other critical infrastructure, or the likelihood of this), new LIDAR and/or survey data should be obtained,
5. Failure/dissolution of WAG, it's Project Team or its successor as [community](#) catchment group/organization such that (in their opinion) the community are no longer able to work in partnership with GWRC and other stakeholders, or of the Wairarapa Committee,
6. Major change in insurance protection conventions or community demand for change in flood protection level based on new societal expectations and norms,
7. [Bed level maintenance](#) not meeting targets of preventing the river from changing course and threatening towns or critical assets (such as bridges, roads, stop banks and dwellings) and creating additional flood risk through the riverbed rising (aggradation) or bed level dropping (degradation),
8. Environmental objectives (e.g. [Whaitua](#)) not met,
9. Significant impacts on flora, fauna and ecology,
10. Major change in funding policy or cost, affecting affordability, in the eyes of the community,
11. Major change in flood hazard information,
12. Major change in land use,
13. Major change (of knowledge) in relationship between river and catchment,
14. Annual [work programmes](#) cannot deliver Waiōhine River Plan commitments,
15. Rapid change in vegetation in catchment (e.g. move away from grass paddocks to other forms of farming which will affect the way floods may behave),
16. Major economic impact (e.g. massive increase in interest rates),
17. Possible future extension of [Greytown stop bank](#). This can be invoked if evidence emerges that the currently proposed measures will no longer be enough to protect vital assets (such as bridges), the town (from 1% floods) and rural dwellings (from 5% floods),
18. Any major influence from Ruamahanga or Mangatāre schemes,
19. If as a result of observing high velocity points, issues are identified that threaten flood defences or key assets,
20. Treaty settlement or other significant cultural implications,
21. Risk to the oxidation ponds bringing any heightened flood threat,
22. Any substantial risk to [water quality](#) improvement or it's measurement,

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23. Any opportunity, such as the availability of significant new knowledge, techniques, data, methods, events, to improve the Waiōhine River Plan (such as enough data and science to implement a meaningful bed level envelope).
24. Any issue that arises that is seen as critical by iwi, landowners, or any other [stakeholder](#) group, including GWRC, that engages in the [Living Plan process](#),
25. Any time there is a new river related issue deemed important enough for inclusion in this list by [the community](#).

The WAG Project Team or it's community nominated successor can, during the full term of this plan, convene as needed by the community to consider any issues relating to the river and floodplain management plan. This includes but is not limited to any indication that a Trigger event or threshold may have been reached, significant information has been shared from GWRC regarding the Waiōhine, planning information or inputs to planning information relating to the Waiōhine are available from GWRC, to prepare a report to the Wairarapa Committee or GWRC in Council, if the Wairarapa Committee is unavailable for any reason, to engage with GWRC regarding the river or their annual planning and budgeting cycle or any other planning or budgeting cycle (such as the three year revision of the ten year Long Term Plan) or one-time event of interest.

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12 River Management

A river has a natural balance, or equilibrium and this is affected by any intervention that is necessary to manage the river to protect existing assets. Managing the Waiohine therefore is based upon the principle of least intervention necessary, using the lightest touch techniques, which do not place these things at risk. A range of principles, tools and hierarchies to help choose the best tools for each situation have been identified below.

The expertise shared by subject matter specialists [Professor Ian Fuller](#), [Professor Russell Death](#) and [Will Conley](#) of Massey University, has been the cornerstone of this aspect of the Waiohine River Plan. The living plan depends upon continued access to those or similar, skills from time to time to trial, measure and develop solid science around the techniques, tools and hierarchies discussed below.

We have also [engaged with NZTA](#) who have agreed to attempt to mesh the plan into their planning process for the maintaining of State Highway 2. This offers the opportunity to maintain the level of stretches of the highway in a way that reduces the impact of flooding on dwellings alongside the highway and helps to protect the Greytown urban area. For example, between the Apple Barrel and Waihakeke Road the level of SH2 should not be raised, otherwise it will reduce the capacity of the flood way.

We note that approximately 3% of the budget GWRC allocate to the annual River Management budget may be available for river enhancement and restoration. We recommend that this practice should continue and where available, be used to promote native planting and the restoration of targeted naturalistic areas, in keeping with the [Vision for the River](#).

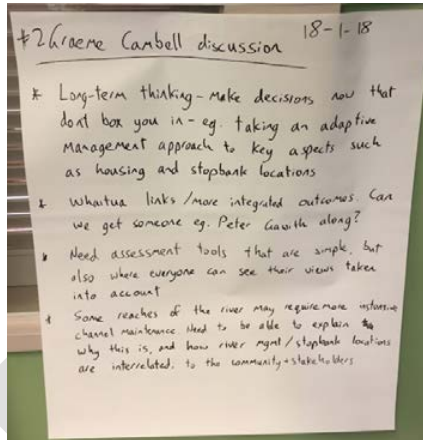


Figure 64: The critical nature of river management and the need to identify stretches where greater intervention may be required was [identified early in the project](#)

12.1 River Management Principles Adopted

River management should be undertaken in compliance with statutes and regulations and in consultation with statutory authorities, such as Iwi, Fish and Game and the Department of Conservation. This is embraced in the Living Plan Process for the Waiohine River and should also be reflected in the Code of Practice that is to be developed for the Wairarapa rivers.

Commented [JB2]: Have we got the right words to reference the yet to be updated Code of Practice for the Wairarapa?

12.1.1 Shape and character:

1. Achieving Natural Character, as distinct from returning the river to its original natural state. See [Natural Character](#).
2. Giving the river room, wherever practical, is good and better supports the geomorphology, gives flexibility and future options and room for natural eco systems to develop.
3. Geomorphically, “working with the river” is better, where assets are not threatened and the threat of the river adopting a whole new course, can be safely contained.

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4. Maintaining wider margins reduces the need for intervention.
5. The distance between the banks doesn't necessarily have to be the same width all the way down. It is natural for a river to adopt an "hourglass" or "beaded" shape, of alternating wider and narrower distances between banks. Whilst maintaining an "hourglass fairway" has no NZ precedent yet in practice: it is now recognized as the current best way to manage the river channel.
6. Structural work for prevention of flooding should be set back as far as practical from the river where practical, and there is no immediate threat of a change in river course. Consequently, some erosion of high banks may have to be tolerated pending more permanent repairs. If collapse does eventuate, then there is a need to quickly manage the eroded area (i.e. the beach from the collapsed bank) by planting vegetation to resist further erosion. This is the case in several locations, notably along the Beban (XS 30)/Vines(XS 28-30) /Fairbrother section of the true right bank and at points alongside Platform Farm, also on the true right bank.
7. Defend, where practical, areas where there might be high sheer stress (to prevent the erosive power of the river from causing it to break out and change course, threatening assets and dwellings) with [riparian mosaics](#) (planting along lines/spaces that will slow and control the river in extreme events).
8. High beaches (in and alongside the river) are an effect of a constrained river: so, the more we attempt to constrain the river, the more we will be faced with high beaches that need to be reduced.
9. It is noted that the Matarawa area is ponding and creates potential gravel storage. Over time, the river is going to want to change direction there. Fuller's Bend ([XS 20](#)) works would be an engineering, rather than geomorphic response, and will not usefully solve the problem.
10. Where practical we will allow floods to spread and slow, this means more silt will be deposited across the flood plain and less will be carried downstream, to damage lower reaches of the river, Ruamahanga and Wairarapa Moana. We note that there is some benefit to aquifer recharge from allowing a flood to spread.
11. It is important to maintain dual river channels in the reach immediately below the rail bridge ([XS 37](#)), in order to ensure the river in flood does not block with debris easily, and force too much water onto the true right bank, alongside Greytown Stop Bank, that could scour its toe and undermine the bank. Or create such a volume of water at the end of the Greytown Stop Bank, which if rapid or otherwise unmanageable, would lead to greater flows on that berm.
12. Velocity modelling results based on a substantial (+20% roughness) blockage of the existing channel has been used to generate significant sheer stress, at the toe and end of Greytown stop bank. Planting should be made (or if this is unsuccessful over time, spur banks) along the toe of the existing stop bank and in extension of the line of the stop bank. This needs to be done in a way that reinforces the existing bank and row of trees, so it will bolster existing defences here.
13. There is a need to dispose of the three Fullers Bend properties that were specifically acquired to facilitate the repositioning of flood defences. These are no longer required for that purpose and should be freed from being an ongoing financial burden to ratepayers, releasing costs into the river maintenance budget to speed such work as the rock lining of the outside of Fullers Bend.
14. Bed levels have been monitored periodically since 1986. Whilst there appears to be some slight degradation over time, there is no evidence that the Waiōhine is degrading significantly, or that gravel extraction should reduce at this time; but this should be monitored and is a Trigger for review under the [Living Plan](#). In order to avoid increased risk

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of flooding and erosion, we recommend that continued gravel extraction must be sustained.

Note other comments relating to triggers needed to [manage effects of gravel extraction](#).

15. Bank erosion is the biggest maintenance issue at present (between the Rail Bridge ([XS 37](#)) and State Highway Bridge).
16. Designate features on the floodplain that should not be altered without care and consultation, as they may affect flood management and safety. These should be listed and maintained as part of the Living Plan and will include:
 - a. Rows of trees and vegetation (for example the row of mature pine trees that run from the gate at the end of the Greytown Stop Bank in an Easterly direction, towards the river buffer zone),
 - b. Old water channels and drains,
 - c. Existing road crossings and culverts,
 - d. Roads of any sort.

12.1.2 Bed Level and Gravel:

1. An [envelope](#) to guide the upper and lower acceptable levels of the riverbed at each cross section (sometimes called a morphological or hydraulic envelope) is needed. Once adequate data has been collected, to reliably develop one, to envision what could happen to high velocity stretches (where a lot of gravel and water is moving), so that we can understand a 1:100-year flood event (1% probability in any one year), i.e. set a high and low mark, to maintain the bed level between. This should be safeguarded through the use of Trigger Events within this Living Plan, to ensure action is taken where any evidence emerges that there might be increased risk of flooding, bank instability that could lead to collapse, risk to assets, such as bridge abutments, or significant erosion in the view of a stakeholder.
2. Gravel extraction is a necessary part of river maintenance and it is considered imperative to the success of flood defences that gravel extraction is continued by reasonable consensus, within the plan: see [Gravel Extraction Tool Hierarchy](#).
3. Removing large material higher up is not recommended, as it will increase riverbed mobility and cause the river to move channel more.
4. Removing large material and leaving fines creates a pollutant problem, this is to be avoided wherever possible. The introduction of excessive fines into the river damages fauna and impacts the river downstream.
5. Where extraction takes place, techniques should be used that take the fines (sand and grit that is easily carried away in the river), and that minimise impact on the water and habitat quality. Extraction is all about balance, this can be achieved by taking a range of material, rather than only one type. Only taking large stones must be avoided as, if this happens, fines can overwhelm invertebrates in the next flood event: stripping the river of life.
6. It is necessary to think that every time heavy equipment enters the riverbed, it is doing harm to delicate eco-systems that will take time to recover. Where possible, we recommend increasing the number of points of access for machinery, to reduce the need to travel up and down the river.
7. Beach extraction could create a sediment trap, encouraging more gravel to drop. Leaving a more hydraulically effective channel might be better; it is recommended to consider new techniques, even wet extraction in some carefully considered cases.

12.1.3 Ecology, Habitat, Flora and Fauna:

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It is necessary to Identify an agreed toolbox for protection and eco zoning of the river to help manage the ongoing [Living Plan](#):

4. Use appropriate plantings (see [E&S](#)).
5. Prioritise the establishment of buffers.
6. Protect plantings until they are established.
7. Create amenity where there is an [opportunity](#).
8. Create diversity of habitat wherever there is a choice.
9. Involve [stakeholders](#) where they have expressed interest.
10. Habitat diversity is better ecologically. A varied range of habitats is [better](#). Keep up weed and pest control and where practical, the trimming of willows.
11. Where practical, use non-structural tools (vegetation, planning tools etc.) to manage the river,
12. If there is a fine sediment problem ripping should not be employed.
13. Ensure a supply of willow poles/sterile hybrid or equivalent and appropriate natives where practical.
14. Rock groynes are preferable to rock revetments (rock lining of the bank), as groynes create a better environment for flora, fauna, habitat diversity and slowing down the river, to recharge aquifers. Expert advice is that groynes may be more effective larger and further apart, work needs to be done to study and test this in controlled, measured conditions.
15. Allowing a "Crumple Zone" of vegetation. Provides large woody debris too, which helps to develop erosion and flood protection, natural habitat and eco systems.
16. There has been the potential long-term loss of some flood plain habitat, e.g. former river channels that are now spring fed streams, as the river no longer floods the floodplain as frequently as it once did.
17. The [stakeholders](#) need to share a common set of objectives for weed and pest control (IWI/GWRC/WAG/DOC etc...), within the combined vision for the Living Plan.
18. Regular counts of pools, runs and riffles need to be conducted, recorded and published by reach, in consultation with the Department of Conservation, Wellington Fish and Game Council, mana whenua and other interested stakeholders as part of the [Living Plan](#) process.

12.2 River Management Toolbox

12.2.1 Including Techniques That Need Proving

There is an opportunity to conduct well defined experiments to prove new management techniques in such areas as gravel management. These should be a partnership between GWRC, the community and an agreed body of independent experts such as Massey University. These would be best consented as standalone consents in the short term, rather than the less agile vehicle of global consenting.

12.2.2 Showing River Management Tool Hierarchies Where These Can Be Used

Hierarchies are shown "best to worst" i.e. try to use the lowest numbered tool that works.

12.2.3 Gravel Extraction Tool Hierarchy -

1. **Trench close to the river technique.** This technique creates a dry trench to remove all material, close to the river but not connected to the river. Only once all extraction is

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completed, can the river be allowed to enter the trench, thus minimising the transport of fines downstream. If this technique is to be considered, then either:

- a) information on its successful use elsewhere is needed or
 - b) a carefully managed trial should be conducted, and its effectiveness measured before determining whether to continue to use the tool. It would be useful to get the direct oversight of experts from Massey University or elsewhere for a trial.
2. **Remove the armour layer and then re-establish** this, once extraction is complete. Once removed, this fragile ecosystem is destroyed, and fine sediment is released into the river to interrupt downstream ecosystems. The concept of the “tool” of removing the armour layer and then attempting to restore it after gravel extraction, is intended to restore this environment in a way that encourages the protection and eco environment that the armour layer provided. It is agreed that the concept of armour layer restoration needs to be further investigated with the possibility of conducting trials, to measure actual effectiveness. It was also considered whether it was possible to remove stone, in such a way as to expose an earlier armour layer, that might exist intact below. However, it was concluded this would be difficult and investigating restoration would probably be a better option.
 3. **“Scalp” Beaches.** This is the traditional approach to gravel extraction. It involves removing a layer off the top of a gravel beach, removing the armour layer and disrupting any eco systems, whilst exposing the loose fines to being washed into the river in the event of high water.
 4. **Wet Channel Work.** This involves working in the river to remove material, releasing all the fines to be carried downstream. It is undesirable.

12.3 Possible Alternatives to Ripping (A Hierarchy in order of preference from the perspective of river health):

1. **Widen the Channel.** This needs to be properly understood either through access to data from the technique being used elsewhere or through a managed and measured trial here on the Waiōhine, before being more widely adopted. The concept is to evaluate the practicality of widening the channel in selected problem sections. This may create the need for additional edge protection. Note that widening the channel does not increase the risk of avulsion. It creates lower energy in slower water. This needs data from a proven application elsewhere or a properly managed and measured trial to assess efficacy.
2. **Avoid Ripping in the First Place.**
3. **Targeted gravel extraction – [see above](#)**

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ARMOUR LAYER

The armour layer is the surface of a gravel beach that has compacted naturally over time, with the finer sediment falling between the gaps between the rocks and locking the surface layer together, whilst forming purchase for flora and then a habitat for fauna to

WHAT IS “RIPPING” OR “BEACH RAKING”?

Beach ripping or beach raking is a process which involves the manual breakup of the armour layer on the surface of river beaches, using a tractor, and custom-built ‘ripping’ blades. For a background to this click

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- 4. "Ripping" After Extraction. It has limited effectiveness, is only ever a temporary solution and causes considerable damage to the environment. It is seen as a tool of last resort, because of damage to the armour layer and attendant eco-systems.
- 5. Using rock-built groynes should always be preferred to ripping beaches. Generally, the rule should be not to use this tool. However, it may be required, if other "tools" are not available, when extracting gravel is not desirable at that time, or excess gravel is not available.

12.4 Possible Additional Tools

Use of a Sediment Trap Further Upstream.

A sediment trap is created by scooping out a section of the riverbed to create a hollow into which sediment and gravel being transported will fall and remain. Clearly this is not a permanent solution and will require ongoing attention if it is to be maintained over any period. We do not yet have any clarity around its effectiveness or impacts, so an agreed approach to trialling and measuring the trial to investigate feasibility would be required, unless that data can be acquired from elsewhere.

Use of Groynes for Bank Protection

Groynes are much better than rock revetments, offering better opportunities for flora, fauna, habitat diversity and slower water in the form of rock pools. For this purpose, Groynes are preferred to be larger and further apart. How large and how far apart should be the subject of a managed and measured trial, ideally under the guidance of Massey University subject matter experts.

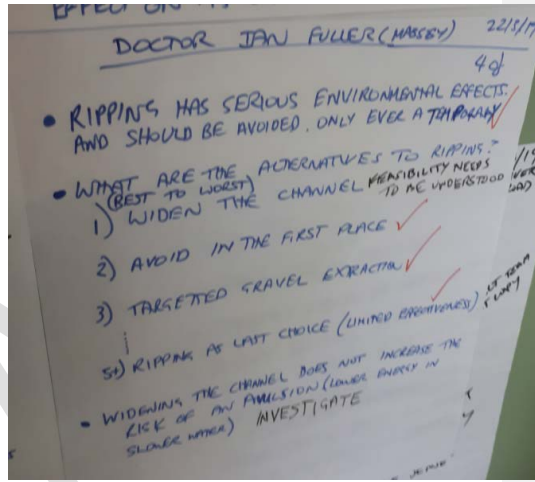


Figure 65: Finding the best way to manage gravel – Workshop with Professor Ian Fuller (Massey University).

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12.5 River Management Design Lines

River design lines are used as a planning, management and maintenance tool. They simply act as a guide to show, at the time of planning:

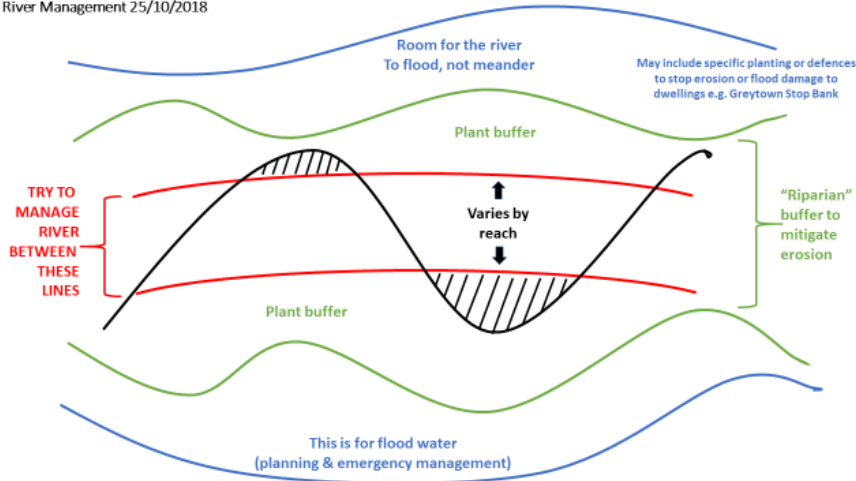
1. What care and maintenance are intended for each zone (Riverbed, buffer and floodplain)?
2. What agreement has been reached as to how each of these is to be treated,
19. Why and when to act.

In reviewing River Design Lines, what job they need to do it was asked:

1. Do we accept using River Management Lines as useful for the Waiōhine?
2. What do these lines represent to [everyone](#)?
3. Do site specific directions fit River Management Lines?
4. How do we improve these lines to work better for the [techniques we now use](#)?
5. Can we evaluate the current river management width and/or make it better?

The diagram below shows the method devised for River Management Lines on the Waiōhine. NOTE this differs from previous approaches to meet the need for management of the flood plain out to the extent of the flood risk area and the planned stop banks.

River Management 25/10/2018



The river design lines are provided as a guide, NOT set in stone and must be interpreted holistically. Note that contrary to long standing expectation that river management lines should in the main, be parallel, newer science calls for more of an hourglass shape. The Waiōhine is to be allowed to evolve to conform more to the hourglass shape, where practical. It is proposed to ask Massey University subject matter specialists to assist in redrawing this set of management lines in a way that makes most sense for the Waiōhine river management strategy.

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It was agreed that this needs adjusting above the rail bridge ([XS 37](#)) to create an alignment that protects the pumps and wells for the Greytown water supply.

It is also desirable to allow the river to develop a combination of braiding and (without threatening the viability of defences, utilities, homes and farms) meandering, now known as “wandering” that allows the river, as much as is practical, to obey its own dynamics and natural processes.

12.5.1 This approach to river design lines answers several important questions:

Q: In what circumstances would we be happy about the river being outside the red lines?

A: Following major flooding.

Q: Are we happy with the river being entirely within the red lines?

A: No. See below.

Q: How much of the river should be expected to fall within the red lines at any time?

A: approximately 80% should be relied on as a guideline.

Q: When should these lines be reviewed?

A: After a relevant [trigger event](#) and whenever the FMP is fully reviewed.

Q: What would be relevant triggers for intervention for erosion into the buffers?

1. **A:** The risk of the river breaking through the buffer,
2. **A:** The risk of erosion on the opposite side, caused by the widening meander of the river as the result of it eating into a buffer zone,
3. **A:** Likely risk to existing assets, such as stop banks where maintenance is desirable,

Q: What are the **simple rules for management of the buffer**?

A: We will use the principle of a ‘stitch in time’ to prioritize work that significantly impacts the Buffer Zones.

12.5.2 River management width (shown in diagram above in red). This varies by reach and location:

- A. Above rail bridge ([XS 37](#)) to upstream of Fullers Bend = 145 m. (steep bed)
- B. Upstream Fullers Bend ([XS 20](#)) to SH2 bridge ([XS 17](#)) = transition down to 100 m
- C. SH2 bridge ([XS 17](#)) to Mangatāre confluence = 80 m
- D. Beyond the red lines on either bank is a buffer zone, delineated in green. The buffer zone does these jobs:
 - a. Tolerates some river erosion and slows it,
 - b. Forms an ecological corridor that can be sustained and improved as a reserve for environmental improvement projects.
 - c. Provides a landscape and amenity value,

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- d. Acts as a riparian filter to groundwater and run-off between adjacent farms and the river.
- E. **Beyond the Buffer zone on either bank is an area that depicts the expected maximum reach of a 1:100-year flood (delineated in blue)** with added contingency for climate change and for the flood sensitive area. The outer-blue lines are a new concept that we feel is necessary as our river plan has some things that should happen and shouldn't happen in that space. This area between the green and blue lines on the diagram should be designated as the floodplain in district and other plans. Some reasons for this are:
 - a. **Proposed stop banks** will be out at the edge of the blue lines, protecting the limits of the urban area.
 - b. **Floodplain care:** There will be one or two places between the blue and green lines where for example, we'd suggest some trees be planted and gulleys should not be filled in, without carefully considering planning the changes: as these things would affect the behaviour of flood waters in the event of a major flood.
 - c. **Building:** Obviously, there will have to be a care about where and how high off the ground new buildings and safe access to new buildings, might be allowed to be built [in this zone](#)
- F. Several locations have been identified as key for maintaining the river in its current course and to avoid unnecessary risk, to major flood protection assets and dwellings:
 - a. Platform Farm,
 - b. Vines Farm (XS 28-30),
 - c. Kuratawhiti Street.

Guide notes on following sections:

- "XS" is an abbreviation of "Cross Section",
- "TLB" and "TRB" stand for "True Left Bank" (Carterton side) and "True Right Bank" (Greytown side) respectively.

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12.6 River Management Needs Vary by Stretch of River

There are four distinct stretches of the Waiōhine River, each with a distinct character, each presenting different river management challenges and opportunities for the long term delivery on the community's [vision](#) for the river. Several approaches were taken to understanding these and developing strategies for each stretch. It was recognised that there was a need to balance a number of competing goals, including: the protection of culturally sensitive sites, restoration and conservation of habitat to, for instance, preserve the high water quality, improve macro-invertebrate and fish environments, use a light but cost effective touch to protect existing assets, manage flooding and erosion risks through river and gravel action, preserve important nesting sites and provide amenity. It is recognised that the job of effectively delivering against all these interests is difficult and complex but best achieved by partnership between Iwi, community, stakeholders and GWRC as proposed in [the Living Plan process](#).

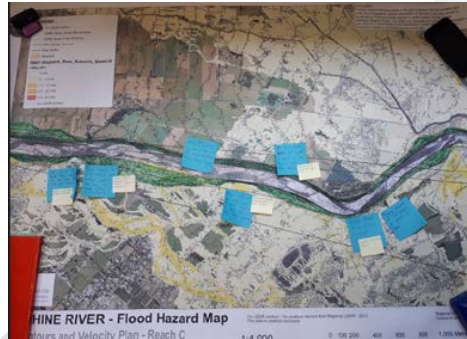


Figure 66: [Example of tools](#) used in developing an understanding of the needs of each stretch of river.

12.6.1 Reach A: Gooseneck to Rail Bridge

[See full maps](#)

1. This reach is steeper due to the fault line.
2. Wairarapa Fault: Water speed here is very fast at XS41:43 so a 140-metre width is not needed as overflows use Farmland Road.
3. Increase width of buffer areas to reflect existing vegetation.
4. XS 43-42 Carterton side (True Left Bank) replace training bank if destroyed, to protect from a river course change which could impact the water intake.
5. XS 42-40 TRB: Town water supply and bore field need bank to protect from river encroachment.
6. Just below and above the rail bridge ([XS 37](#)) – no mining of boulders is to be permitted e.g. near the water race intake ([XS 42](#)).



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7. XS 38: Optimise design lines upstream and downstream of the Rail Bridge.



12.6.2 Reach B: Downstream of Rail Bridge to Wire Shed

1. XS 38 Optimise design lines upstream and downstream of the Rail Bridge.
2. XS 37-34: River to be kept wide to allow for split channel below Rail Bridge to obviate risk to Greytown Stop Bank and beyond.
3. XS 38-34: Maintain split channel downstream of Rail Bridge.
4. XS 36-35: Maintain stop bank bund as it is.
5. XS 36-33 (TRB): Design lines to follow groynes to prevent river putting extra pressure on TLB downstream.



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6. XS 33: Design lines can move closer to river to prevent alignment issues downstream.

7. XS 29: The high riverbank on the TRB, if eroded, plant the resulting beach to counter further erosion.

8. XS 27 TRB:

Move design lines to north to avoid road end (River Road) and adjacent low ground.



12.6.3 Reach C: Wire Shed to SH2 Bridge

20. XS 27: there is an unquantified risk that if the river gets above the true right bank here it could escape into lower ground beyond the car park and Kuratawhiti Street.



Where practical, the existing riverbank should be hardened with rock groynes. If this should become non-viable and at risk of failure, then this will trigger a review within the [Living Plan](#) provisions. Note that this area is also the lower spill location to the start of the Apple Barrel floodway.



21. XS 27-26 Gravel extraction likely to be necessary in this area due to risk of avulsion (the river changing course) on the true right bank (Kuratawhiti Street side). We have also modelled the bed level to show it is sensitive to aggradation in this area, increasing some risk of flooding.

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22. XS 27-21: True left bank high edge - rock groynes need to be keyed back into the bank to avoid them being outflanked.

23. XS 24-23 True right bank. Floodwater here may be already affecting State Highway 2. There is a need to plant and maintain the buffer zone. If high bank erodes, plant on resulting beach.



24. XS 27-21: Needs at least some rock groynes to extend to inner line of buffer zone to protect buffer development. These would be big groynes – around 40 metres long. For reasons of practicality the chosen strategy is to harden the river edges with groynes but to maintain a [trigger](#) that if this ceases to be viable, then a new management strategy is needed.

25. XS21-19: At Fullers Bend maintain the 100-metre active channel. Fuller’s Bend true right bank (Greytown side) stop bank: Whilst ongoing scouring out of the toe of stop bank is a problem, it does not require a true left bank (Carterton side) stop bank retreat. Repairs in this area to work towards a consistent design with ability to draw on Capex if agreed with the [community](#), or flood reserves under the Living Plan process. Focus on improving



standard of protection in stages, in response to erosion. Preference is for a programme of rock groynes on the outside of Fullers Bend (true right bank) upstream of new rock lining as this potentially offers most cost-effective solution – to be undertaken as maintenance funds permit.

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26. XS 21-17 Options for the long-term vision for the stretch of the true left bank (Carterton side) River Road and SH2 bridge could follow this decision hierarchy:
- a. Harden the edge with groynes,
 - b. Push stop bank back from the river,
 - c. Surrender land on the true right bank (Greytown side) to create more room.



For reasons of practicality the chosen strategy is to harden the river edges with groynes but to maintain a **trigger** that if this ceases to be viable, then a new management strategy is needed.

12.6.4 Reach D: Below State Highway 2 Bridge

All banks below the State Highway 2 Bridge are training banks, rather than stop banks (they do the job of helping the river stay within design lines in normal situations but will not prevent major flooding). They will be managed based on the principle of maintain and replace, if the need arises.

Shingle aggrades on this reach and by its nature, can be less attractive to contractors to quarry. So, extraction may not be able to keep pace with aggradation in the long term and there is an acceptance that flood risk may gradually increase here.

1. XS 14: True right bank (Greytown side). Maintain rock line at property known as Wong's.
2. XS 5-6: Design Line to follow line of groynes.
3. XS 17-1: Maintain channel width and channel by periodic vegetation removal.
4. XS 4-2: Bicknell Lower Gravel Bank. We confirm the need for the Bicknell lower gravel bank, to protect SWDC wastewater.



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5. XS 2: True left bank. We recommend the retirement of the damaged Herrick bank and the need for a new training bank to deal with regular flooding at that location. Important note, this is a site of cultural significance – several Maori burials are located here

12.6.5 Gravel Extraction and Management Fees

The steep nature of the river and its catchment mean that large amounts of gravel have been washed down onto the floodplain historically. The amounts of gravel have been significant after large earthquakes (e.g. 1855 and 1942) and major floods in the area (which coincide with the Interdecadal Pacific Oscillation). Experience has shown that during these times gravel extraction was crucial in controlling flood and erosion risk. Since then gravel extraction has been found to also be essential during the quiet times in the river. In particular when used to manage bed levels and the related flood risk. We understand that there are a great number of constraints on gravel extraction, but we consider it important that it continue into the future. The main reason for this is to constrain and limit flood risk. There are management fees collected for gravel extraction from the Waiōhine River. It is recommended that the monies obtained as management fees for gravel extraction in the Waiōhine River continue to remain set aside for the Waiōhine.

13 Water Quality Management and Other Whaitua Programme Obligations

We recognize that GWRC have not yet conceived or implemented an overall solution to the urgent and important need for water testing and quality improvement yet.

In support of GWRC, the community see a shared opportunity to proactively engage in being part of the solution, until and unless something better comes along:

1. We will seek help from subject matter experts within GWRC, such as Amanda Death, and experts within the community, such as mana whenua, or other independent experts,
2. We will develop a community led, collaborative solution, under the Living Plan process.
3. We will incorporate whatever exists that is useful,
4. We want access to any test results, materials and methods etc. that exist in the public or GWRC domain,
5. We need to know on an ongoing basis what, if any, resources exist to help.

A [trigger](#) exists in the Living Plan to adapt and adjust the process and model as new knowledge and resources come to light.

The Whaitua Implementation Plan document concerns itself with the long-term improvement of the natural character of rivers and lakes. This includes water quality, in-stream ecosystems, riverbank ecosystems of flora and fauna and the attendant control of pests and weeds. Although not yet a regulatory document, it must form an integral part of any river plan and sets some specific targets and target dates for things like water quality improvement. The community and GWRC should work in our own way, within the general direction set by Whaitua, to meet or exceed, water quality commitments.

The Waiōhine River provides town water supply and serves a water race ([XS 42](#)). Past flood management regimes and gravel extraction have had a significant impact on macroinvertebrate health. The Waiōhine River has good water quality and ecological health in its forested headwaters, contrasting with macroinvertebrate (MCI) scores at the very bottom of the “fair” grade farther down

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in the catchment, where the river has been subject to ongoing mechanical disturbance but principally, the influx of polluted water from the Mangatāre and Beef Creek tributaries.

The Waiohine River has very good water quality above the confluence with the Mangataarere. Whilst MCI outcomes are at the very bottom of the “fair” band according to the Whaitua research, this appears to be arrived at interpolatively – i.e. without the benefit of actual measurement. Advice from Doctor Russell Death of Massey University suggests this should be checked and based upon actual measurement.

To fulfil obligations under the Whaitua programme to improve the natural character of the river, water measurement and observation will need to be regularly conducted in three key locations:

1. The Gooseneck (access off Waiōhine Valley Road) [XS 43](#),
2. At the State Highway 2 Road overbridge,
3. At the end of Tilsons Road upstream of the confluence of the Ruamahanga (identified in Ruamahanga Whaitua document as “Bicknells” [XS 1](#)).

Water quality goals (at the end of Tilsons Road below the confluence of the Mangatāre) are as follows:

- Ammonia (toxicity) need to remain as quality “A”, with a median (average) concentration of no more than 0.05 milligrams per litre and no more than 0.015 milligrams per litre at the 95th percentile.
- Nitrate (toxicity) need to remain as quality “A”, with a median (average) concentration of no more than 0.34 milligrams per litre and no more than 0.85 milligrams per litre at the 95th percentile.
- Periphyton and Macroinvertebrate Community Index (MCI) need to remain as quality “A”, with a count of less than or equal to 50 per cubic metre. This holds a current rating of “Fair” and the goal should be to lift this to a rating of “Good” with a count of between 110 and 130 per cubic metre by 2040. It should be noted that this is largely dependent on water quality improvement in the Mangatāre.

12.1 Current State vs Targets for Water Quality Improvement

	<i>E. coli</i>		Periphyton		Ammonia toxicity		Nitrate toxicity		MCI		Achieve by
	Now	Objective	Now	Objective	Now	Objective	Now	Objective	Now	Objective	
Waiōhine River	A	A	A	A	A	A	A	A	Fair	Good	2080

13.1 In-stream nutrient criteria for the management of periphyton

	Nutrient criteria (concentrations)			
	Dissolved inorganic nitrogen (DIN) (mg/L)		Dissolved reactive phosphorus (DRP) (mg/L)	
	Median	95 th percentile	Median	95 th percentile
Waiōhine River	0.35	0.87	0.006	0.023

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13.2 Nutrient limits and targets for diffuse sources of nitrogen and phosphorus, to be achieved by 2040

NB. "Limit" = current load. Loads are un-attenuated. t/yr = tonnes per year

	Nitrate (NO ₃ -N)			Total phosphorus (TP)		
	Limit load (t/yr)	Target load (t/yr)	% load reduction	Limit load (t/yr)	Target load (t/yr)	% load reduction
Waiohine River	122	121	1	9.0	8.6	5

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13.3 Sediment load limits and targets to be achieved by 2050

Notes: 1. Current total FMU sediment load = current annual sediment load from all “non-native” and all “native” land. 2. Sediment limit = current annual sediment load from all “non-native” land. 3. Load reduction required by 2050 = reduction in sediment load from “non-native” land only, as annual load. 4. Sediment target = change in annual sediment load from all “non-native” land as % reduction from sediment limit. 5. Figures derived from modelling of sediment loss from net bank and hill-slope erosion processes for land uses at 2017.

Freshwater management unit	Current total FMU sediment load	Sediment limit	Load reduction required by 2050	Sediment target
	t/yr	t/yr	t/yr	% reduction from limit
Waiōhine River	137,200	22,200	6,400	26

13.4 Water Quantity Management under the Whaitua Programme

The Waiōhine River supports large town supply and water race takes (XS 42). A proportion of these large takes continues below the minimum flows in order to provide water for domestic and stock drinking needs. Two minimum flow thresholds are prescribed in the Proposed Natural Resources Plan (PNRP) (3,040L/s and 2,300L/s) to ensure that takes for other purposes are progressively reduced as river flow drops.

The Whaitua dictates the higher minimum flow of 3,040L/s (litres per second) and considers that this threshold represents an appropriate balance between giving effect to the habitat objective and largely maintaining existing reliability of supply for users. However, the lower PNRP minimum flow (2,300L/s) is to be removed. This minimum flow is well below that which would provide for the habitat objective (2,990L/s). The Committee considers that all reasonable efforts to reduce takes in the catchment should have been made before 2,300L/s is reached.

Currently the 2,300L/s threshold is used to manage the town supply and water race takes (XS 42), with some amount of

reduction in take required at this flow. The town supply and water race will have to further reduce their takes from current levels at the 3,040L/s minimum flow to just those volumes necessary for the health needs of people and stock drinking needs.

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Figure 67: PNRP Principles – Source GWRC

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Whaitua recommends: Greater Wellington includes in the PNRP the following water allocation limits for the Waiōhine River:

1. Remove the existing PNRP “lower” minimum flow of 2,300L/s.
2. Retain the “higher” minimum flow level of 3,040L/s.
3. Cap the amount of water available to be allocated through consents at the existing consented use. (Existing consented use at June 2018 is 950L/s).

The total existing allocation from the catchment (950L/s) is moderate but below the default allocation amount in the PNRP (1,590L/s). The PNRP allocation amount is seen as too generous and recommends capping the allocation at the existing level of use. The reasoning for this is similar to that for the other rivers in which there is potentially some allocation headroom on paper: further allocation would be incompatible with the Committee’s view that more resilience needs to be built in to the river management regime to counteract the likely future impacts of climate change.

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14 Planting for River Management, Biodiversity and Cultural Resource

It is recommended that the **cultural impact** on the connected places and the indigenous flora in these places can be restored as a part of the river and floodplain management.

It is recommended that: Buffer zones in the floodplain area include managed planting of indigenous flora and the opportunity for larger scale wetlands be researched in line with the biodiversity regional strategy and the mana whenua and community vision for the river.

There is a question as to how to make best use of traditional river management planting tools, such as willow in combination with native varieties. This is complicated by possible reductions in willow condition through pests such as giant willow aphid and willow sawfly and natural stand aging could limit their effectiveness in maintaining design lines and reducing bank erosion.

It is recommended that existing plantings should be complimented with suitable indigenous species that will have a long-term benefit for managing river widths, maintaining bank stability if mass wasting occurs, and improving wet and dry habitats.

The Cultural Impact Assessment makes an excellent point that the original natural environment cannot be fully restored as a revolution, but the scope for establishing indigenous flora in buffer zones behind protective exotics as plants like kahikatea establish themselves, is part of the evolution. The Papawai Marae project for riparian planting of the Papawai stream is an example of planting that Wairarapa Maori expect in the Waiōhine River Living Plan.

The Living Plan Process should ensure that community driven projects and local government plans and budgets are coordinated and in agreement. We can learn together the best way to restore the river to a naturalistic state that will benefit the entire community.

In addition to Kahikatea, Tonkin and Taylor suggest use could be made of:

- Tutu (*Coriaria arborea*) is a river edge (riparian) specialist and copes with periodic flooding, high velocity flows and poor gravel soils. However, it should be noted tutu is toxic to stock, and honey produced from tutu may also be toxic to humans (poisoning is attributed to honey dew from scale insects, as opposed to directly from the plant itself).



Figure 68: Tutu



Figure 69: Mānuka

- Mānuka (*Leptospermum scoparium*) is also suited to riparian environments and is a strong coloniser of recent soils.

- Māhoe (*Melictyus ramiflorus* subsp. *ramiflorus*) is another robust species suitable to riparian areas, and often forms a fibrous root system like willows when in recent gravel soils.



Figure 70: Māhoe

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- Kahikatea



Several approaches to slowing or preventing bank erosion, using a variety of vegetative tools, have been developed internationally, including vegetated groynes, linear willow plantings with indigenous plantings in between, or timber pile training fields with vegetated buffers. [See Tonkin and Taylor](#) .

Supporting existing features on the floodplain, with willow and indigenous plantings, would reduce maintenance costs in the long term, and potentially alleviate some of the concerns around flooding of neighbouring properties. An example of this would be the opportunity to plant additional trees to bolster existing trees in line with the end of Greytown Stop Bank.

Another location of cultural significance is the junction or confluence of the Waiōhine and other rivers, the Mangatāreere and Ruamahanga. The cultural impact of protecting the junctions of rivers in the flood protection work can ensure a place for sacred rituals to be repeated.

Finding: It is recommended to highlight these river junctions and other significant areas through targeted planting with indigenous flora to fit the significance of the area.

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15 Conceptual Stop Bank Design

15.1 Introduction

This section provides more detailed information on the work done by the Project Team and [Cameron Fauvel Projects Limited](#) in developing a greater understanding for the path, location, shape, length and costs for the proposed two new inland stop banks required for the recommended ([Option 2](#)) solution.

Costs for these can be [found here](#).

The Cameron Fauvel Projects Design documentation can be [found here](#). This includes a series of detailed annotated aerial maps, showing the possible path of the stop banks in large scale, as well as detailed profile diagrams illustrating the height and profile of the proposed stop banks.

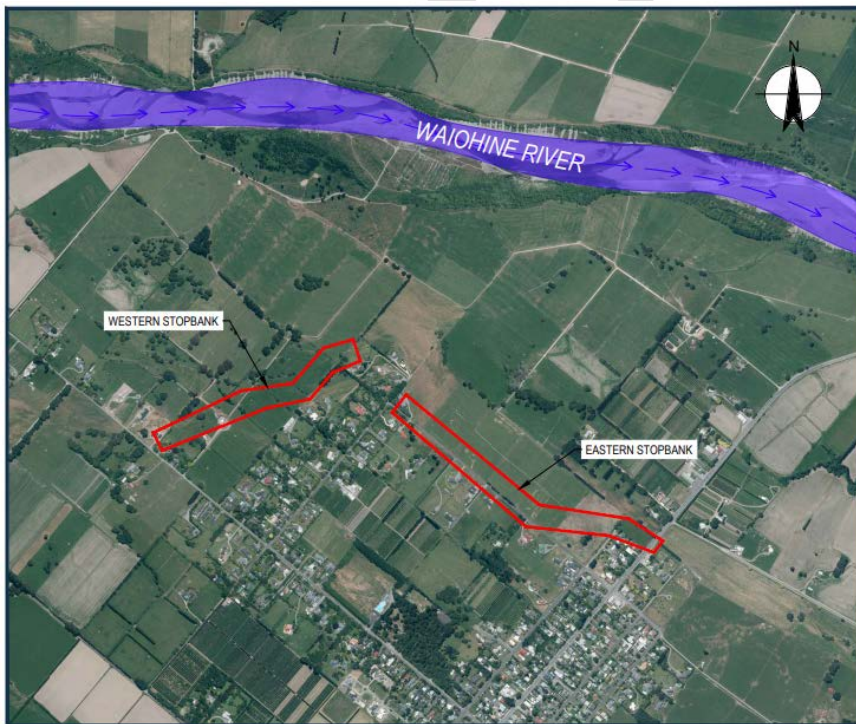


Figure 71: Courtesy CF Projects Ltd.

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It is important to note that these form a preliminary conceptual design. This is further into the design process than traditional river plans have gone, however, there is a wish to provide the community, stakeholders and landowners, with as full a set of information as practical, prior to the detailed design and associated discussions and procedures.

Ideally material resulting from the removal of unnecessary banks near the State Highway 2 Bridges over the Mangataarere and Beef Creek could become available to assist in the construction of the inland stop banks. This may be complicated by discussions between GWRC and the Urupa Trust, so it may become necessary to source material from elsewhere. The size of the inland stop banks also suggests that that material alone may not be enough for the whole construction.

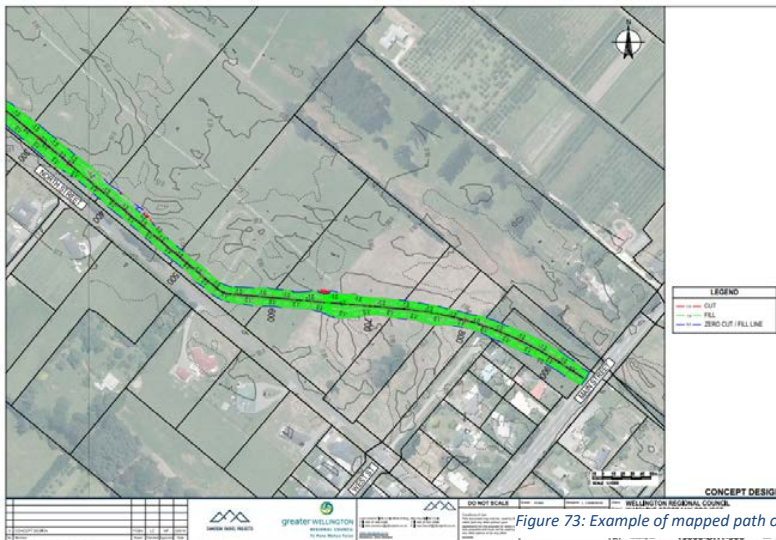
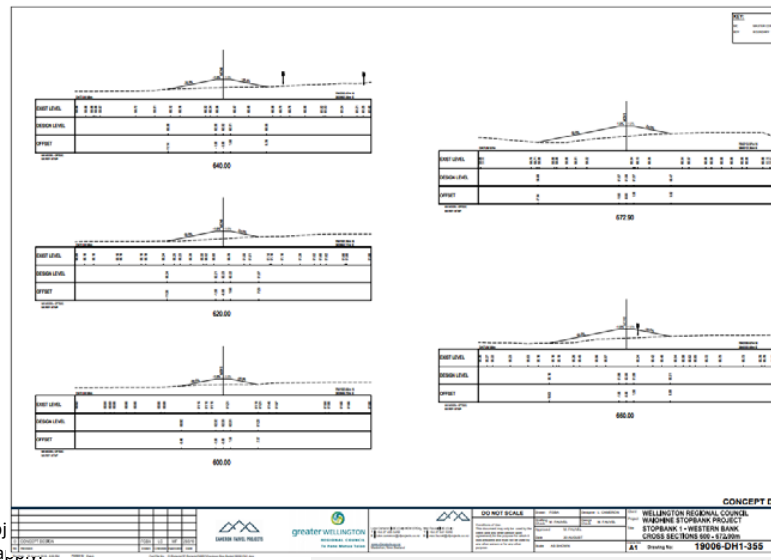


Figure 73: Example of mapped path of stop bank - CF Limited 2019



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Figure 72: Example of Stop bank Profiling - CF Projects Ltd

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15.2 Investigation of alternative Western (Kuratawhiti Street) Stop Bank Alignment

In response to a suggestion of a possible alternative stop bank alignment for the upstream Western (Kuratawhiti Street) stop bank, a first level investigation was carried out to assess the viability of this by comparison to the proposed path and design. It revealed the following information illustrated in the following diagrams:

- Yellow line, the proposed stop bank alignment chosen by the community, approximately 650m in length and 3000m³ in volume, this bank effectively blocks all the flood waters coming across the floodplain towards Udy street;
- Red line, the possible alternative stop bank alignment suggested by landowner, approximately 1400m in length and 14,000m³ in volume. Unfortunately, this bank does not effectively block all the flood water coming across the floodplain towards Udy Street so additional works, cost and impact on farm operations would be implied, in addition to the figures shown above.

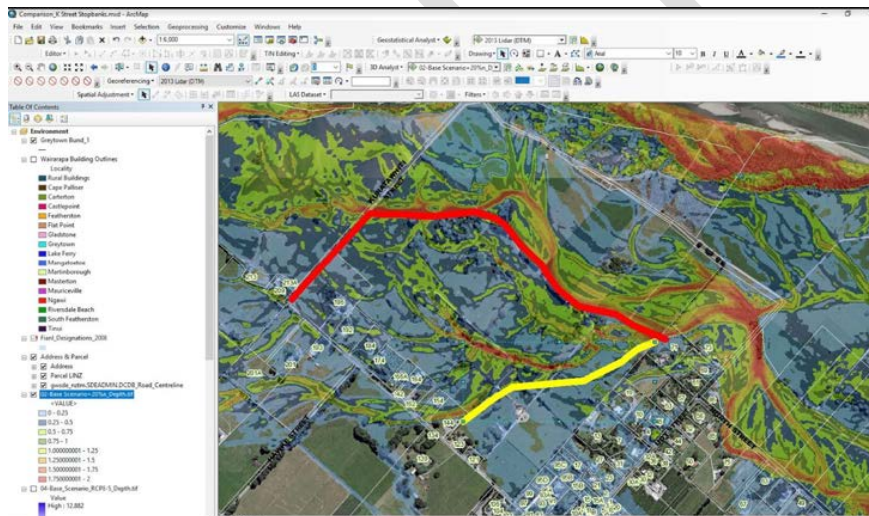


Figure 74: Possible alternative Western stop bank alignment investigated

Recommendation is not to proceed with further investigation of this possible stop bank alignment as there would be a very substantial additional cost (at least 4 times higher). Based on the design guidelines set out at the start of the project no discernible benefit can be identified against the design goals.

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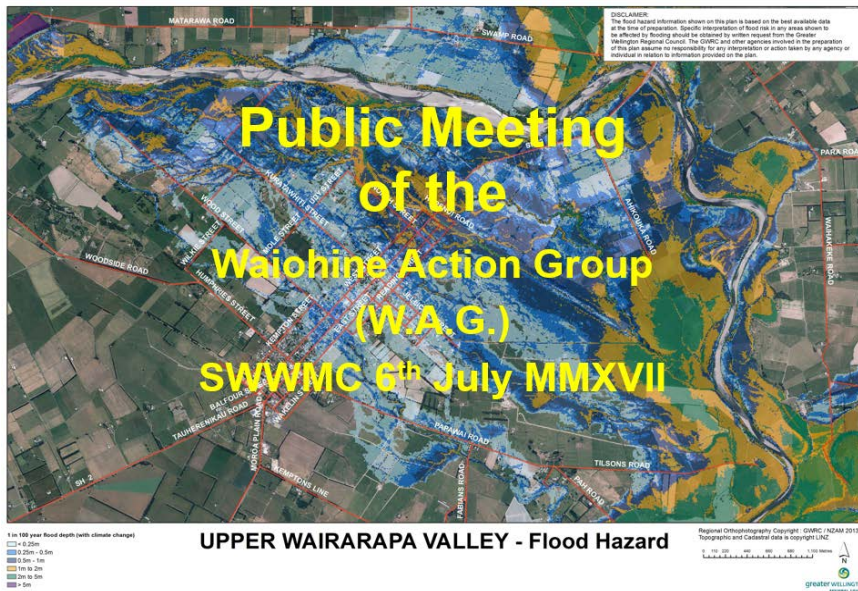
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16 Appendices:

Appendix A: Waiōhine Floodplain Management Plan Initiation

A record of the slides from the public meeting forming the WAG Project Team:



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WELCOME – COLIN WRIGHT:

- Recap on last year’s public meeting
 - The Public Submissions “process”
 - Fire Station Group = Waiōhine Action Group
- What we’ve been doing

THE WAIŌHINE – BRUCE SLATER:

The River and its Flood History:

- Impact of past Waiōhine floods
- Why nothing for over 60 years?
- Why the river has more capacity now

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THE GWRC FMP – MIKE HEWISON

The BECA report, survey and flood map

- What was excluded
- What was included
- What was the real message
- Why the flood map is no use

GWRC AND LOCAL GOVERNMENT INVOLVEMENT – COLIN WRIGHT AND MIKE ASHBY

- SWDC (South Wairarapa Council)
- CDC (Carterton Council)
- GWRC (Greater Wellington Regional Council)
- Impact on property owners
- The latest approach to our community & WAG

WHAT WE KNOW – JOHN BOON

- GWRC ads: after 9 years GWRC FMP process has not worked
- GWRC Flood Management Plan has multiple flaws
- GWRC FMP GWRC FMP is overkill
- GWRC FMP is insanely expensive for a rural community
- GWRC has conceded they will not proceed until community supports an FMP
- GWRC councillors and our councils have come to WAG
- They suggested a new, project team approach working to steering group of Wairarapa Committee to GWRC

A WAY FORWARDS – JOHN BOON

WAG Picking up the ball from GWRC

- Taking the initiative on the Project Team strategy
 - A core Project Team of local experts
 - Affordable, practical, adequate flood protection
 - Continuous consultation with community
 - Invitation to GWRC to participate in community driven project team
 - Questions
 - Consider draft resolution

THE COMMUNITY OF GREYTOWN AND OF THE CARTERTON SIDE OF THE WAIÖHINE RESOLVE TO:

Approve the establishment of a project team and facilitators drawn from the WAG speakers and such other expertise as may from time to time be required. The Project Group will, as far as is practicable, engage constructively and collaboratively with the GWRC and its staff to determine the parameters of sensible flood protection for the Waiöhine River, establish an accurate cost; keeping the WAG and Waiöhine Ratepayers continuously informed of progress.

Passed Unanimously by circa 200 present.

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WRAP UP AND QUESTIONS – COLIN WRIGHT

- Spot WAGers you know
- Where you can get more information and stay informed – website or Facebook coming
- Trust fund at WCM Legal
- How to get involved and keep having your say
- Invite to cup of tea
- Thanks to everyone and close



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Appendix B: Terms of Reference (TORs) for the Project Team

Origins – A Community Led Process in Partnership with GWRC and Stakeholders – Establishment by the Waiōhine [community](#) in July 2017 following two years of community discussion and opposition to the preceding draft flood plain management plan which had taken ten years to develop.

Terms of Reference - WFMP Project Team

Version: 1.0

Authors Boon, Wright, Ashby, Hayes, Hewison, Slater et al

Date: 4th May 2017

Purpose and introduction: What does success look like?

GWRC wish to complete a new FMP for the Waiōhine River. The background and history of this project is well documented elsewhere.

It is recognised by all parties that the process to date, whilst accumulating much valuable data, - has failed to bring about a plan that is credible and meets the needs of all stakeholders - GWRC, SWDC, CDC and importantly, the community to be served by and pay for, a flood management plan.

There is an opportunity to put aside unsuccessful practices and start afresh, using a facilitation process and team trusted by the community to review and pull together a trusted, acceptable to all, plan under the aegis of a WFMP Steering Group (Steering Group) appointed by the new Waiōhine Committee.

Once lost for whatever reason, rebuilding trust is hard. So to succeed in this and deliver to the Greater Wellington Regional Councillors and District Councillors a completed outcome that is technically viable, low risk and trusted: a WFMP Project Team (Project Team) must be facilitated by and made up of individuals who possess appropriate skills and the confidence of the community. It requires a departure from the past, according to Einstein: “The definition of insanity is doing the same thing over and over again but expecting different results”.

The process, method and techniques employed will review existing data and wherever it is trustworthy, validate this consensually. It will identify what can be readily done to as many remaining issues as practical in the time available to come to a consensus on these and through analysis make recommendation on the remainder based upon pre-defined guides from the Steering Group. In this way the process will build upon consensus and positive step by step outcomes.

This approach therefore proposes a low-risk, win-win path to delivering a successful FMP. It also serves as a Terms Of Reference (TOR) for the formation of a facilitated project team charged with delivering on this, quickly and inexpensively. Obviously, it assumes easy, timely access to GWRC WFMP information and a positively oriented participation by willing officers, who can work in a new paradigm to share in a successful outcome. It also relies upon modern facilitation techniques, together with simple, immediate sharing of the workings of the team, to grow and demonstrate transparency and trust by all stakeholders. It must therefore be immediate, open and transparent for all. It is specifically designed to build trust and support whilst meeting the tenets of government and regulatory frameworks.

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Time matters. This approach will speed up outcomes. Until the FMP is resolved, council planning and consenting and community subdivision and building work, amongst other things, are trapped in a nightmare of wasted time and money.

This is the approach that will be acceptable to the community and local councils. It represents the lowest risk in the circumstances. By following this course GWRC at the highest levels, can once again plan for a successful outcome to the WFMP and focus it's time and energy on other, pressing issues.

How will we know when we are there?

Three tests are to be pre-ordained by the Steering Group that can be used to guide investigation and decision making by the project team on a day to day basis and used by the Steering Group when reviewing whether the practice and recommendations of the Project Team are fit for purpose. In this way everyone can be guided to build consensus and be confident of when issues are resolved.

For the purposes of preparing the Terms of Reference we have proposed three "straw man" examples of such tests:

- e.g. Does this meet the minimum requirements of the law?
- e.g. Does this provide adequate protection in the eyes of the community in a way that is affordable and pragmatic (risk vs. cost)?
- e.g. Has there been transparency of communication and information with all stakeholders so that they can understand, comment if needed and agree?

Chosen by the Steering Group:

1. That the draft FMP be implementable
2. That it provides adequate protection in the eyes of the community and other affected parties that is affordable, pragmatic and sustainable.
3. That there has been transparency of communication and information with all affected parties so that they could understand and comment if needed

The Three Tests must come under the aegis of the Steering Group, handed down and regarded as mandated to the Project Team (past experience of this technique shows that more than three will become cumbersome, hard to remember in context and reference without unduly complicating process and delaying outcomes: less than three tends not to provide a firm enough framework).

Once every issue is resolved through consensus or acceptance of recommendation by the Steering Group, the project should be ready to be re-presented as-a-whole to the community (see below). After that, the work of the project Team is done.

Terms of Reference Outputs:

What is to be delivered by the end of the project?

1. **FIRST DELIVERABLE:** engagement of the community to build trust
2. Convene project team
3. Familiarisation with TORs, inputs, methods, housekeeping
4. Settle in - forming/storming/norming/performing curve starts
5. Meet GWRC Steering Group
6. Receive Three Tests and other guidance
7. Set up community communication channels, inform and engage public

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SECOND DELIVERABLE: common basis for understanding

All existing assumptions, data, inputs and outputs are to be shared and common understanding reached on their virtue.

Target subjects should cover:

1. Assumptions and inputs
2. Survey efficacy
3. Engineering design
4. Contingencies
5. Funding/staging/timing
6. Costs vs Risks
7. Options
8. Mitigations
9. Other subjects as needed by Steering Group to meet deliverables

Terms of Reference Approach:

How will subjects be evaluated, consensus reached, or recommendations made?

THIRD DELIVERABLE: It is anticipated that in the first workshop priorities, dependencies and completeness of this list will be addressed and passed to Steering Group for ratification.

All deliverables should be shared with the community as delivered and community feedback, questions and comments should be responded to by project team via facilitator. An immediate and simple mechanism is required for this. All findings and notes of the workshops will be initially written onto flip charts during the workshops. At the close of each workshop these will be digitally photographed and posted up online, where all stakeholders can see, question and comment on them. This meets the need for immediacy, transparency and full communication with everybody - instilling confidence, sharing findings and showing progress. This offers a degree of probity that engenders trust and encourages progress.

FOURTH DELIVERABLE: *Recommendations to Steering Group on each target subject and how to modify draft FMP to pass each test.* It is expected that in some instances later findings will result in review of earlier recommendations where previously unknown material exists. If significant, these will be re-presented to the Steering Group, otherwise presented to them when the project ends, and the completed solution is presented for final review and approval.

To deliver these regular workshops will be conducted by a project team comprising:

Facilitator:

1. Convenes and runs workshops
2. Drive for consensus wherever possible, or an agreed process to resolve differences, or failing that note positions and arguments and make recommendation that is best known fit to Three Tests
3. Deliver recommendations that pass the Three Tests
4. Lead a positive and constructive process, free of past politics and break down any entrenched positions using modern tools, processes and techniques fit for purpose
5. Captures outputs and posts online or delegates this
6. Drives timeline and delegates offline tasks

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7. The Facilitator reports to Steering Group on:
8. Consensuses, recommendations (and rationale) on non-consensual issues,
9. Recommendations relating to opportunities and roadblocks
10. Progress and forecasts for completion including dependencies
11. Manages process, drives outcomes, facilitates understanding and consensus, resolves conflict, keeps things moving
12. Ensures transparency of process, information, recommendations and outcomes to all interested parties

Members:

1. At least 5 Core Members: Greytown and Carterton community representatives with essential knowledge of the river and it's maintenance, floodplain management, surveying and engineering, economics and local government,
2. Additionally at least 2 further Core Members: GWRC staff able to share FMP information and advice, liaison and continuity as determined appropriate by Steering Group,
3. As needed representative landowners from both sides of the river,
4. Others as needed, invited by the Facilitator such as GWRC specialists and civil works experts based upon subjects under consideration.

The task of core members is to share assumption, inputs and data, identify all items that are consensual, isolate the delta of non-consensual items and under the guidance of the facilitator find the best solution that passes the three tests and delivers outcomes.

Sending alternates is subject to Facilitator's agreement and requires full delegated authority of alternate

It is anticipated that more than one member of the Project Team may also be present in the Steering Group, ensuring good governance, communication and liaison with local councils.

FIFTH DELIVERABLE: Completed WFMP acceptable to Steering Group and community, final presentation and dissemination to community, followed by final review and sign-off by Steering Group as being complete, accepted by the community and passing the Three Tests.

Time Constraints: By When should it start and finish?

The project team could convene and hold it's first workshop within three weeks of being agreed by Steering Group. It is envisaged that workshops will be weekly for a minimum of half a day each, with background work being carried out between. This is fairly intense by the standards of past approaches but it is believed that it is in the interest of all stakeholders to work expeditiously to minimise the impact of current issues on planning and consent within the community.

The first task is to inform the wider community of the process, how they can come up to speed (if not already involved) and how they can stay informed and have input if desired. This will be done via public meeting, flyers, news media and a Facebook site (or equivalent). By involving the wider community from day 1 we work in a way that will serve to restore confidence in the process and therefore outcomes. The importance of this cannot be overstated.

The first Project Team workshop will establish the team, it's culture and collective way of doing things (form/storm/norm), deal with housekeeping, digest TORs and absorb direction from the Steering Group, such as Three Tests.

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Then no more than three months to complete tasks and deliver outputs ready for final presentation to community and sign-off. Beyond three months if project not completed Facilitator must recommend changes to rapidly complete project and seek Steering Group approval for these.

Assumptions:

1. Prioritisation of time by participants.
2. All information is made available and ready when needed.
3. Team members available to complete "homework" off-line.
4. No interference. No redirection. No change. No information from the draft FMP and contributory processes withheld, incomplete, incomprehensible or redacted - but fittest for use.
5. Facilitator can replace unavailable or non-contributing members if necessary (with Steering Group agreement) .

Method: What is to be determined?

1. Ratify and extend if necessary, the Target Facts list,
2. Dig down to find the facts,
3. Analyse and understand these, where they have not been previously shared
4. Share assumptions and model inputs,
5. Share all background documents and data,
6. Identify items that have consensus (**Consensus**),
7. Categorise remainder as either able to be resolved (**Resolve**) and how to reach consensus or needing recommendation (**Recommend**),

Recommend items should be explored (with other subject matter experts and contributors as necessary), positions noted and a recommendation developed by the chair that must pass the three tests, then that recommendation presented to the Steering Group for them to cross examine and ratify as resolved, or push back for further work.

When all subjects are resolved the project team will prepare an easy to understand summary and information for all stakeholders that can be presented by well publicised web site, mail shot, media and public meeting, ensuring the community and all other stakeholders are fully informed and supportive. Project Team to propose coms. pack to Steering Group.

Once all these tasks are completed the Project Team should be dissolved by the WFMP Steering Group, but all the documents produced should remain in the public domain to assure probity during the implementation and operation of the WFMP.

Added by the Steering Group:

The Steering Group also wished to stress that a Flood Management Plan encompasses a much broader range of options than just stop banks and that the Project Group must be able to demonstrate that all these options have been considered in the course of its work. This would include but is not limited to:

- 1 Values of the river environment
- 2 Iwi values
- 3 Flood mapping
- 4 Climate Change

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- 5 River management
- 6 Emergency management
- 7 Structural river control
- 8 Non-structural river control

Paper to the Environmental Committee of GWRC to Establish the Project Team Waiōhine Floodplain Management Plan governance and project delivery structure

1. Purpose

To propose a governance and project delivery structure for completing the development of the Waiōhine Floodplain Management Plan (Waiōhine FMP).

2. Background

- Draft Waiōhine FMP – development
 1. The intended purpose of the Waiōhine FMP is to manage the risk of flooding and erosion from the Waiōhine River.
 2. In 2016 a draft Waiōhine FMP (Draft FMP) was developed by the Waiōhine Floodplain Management Plan Advisory Committee (Advisory Committee).
 3. On 10 May 2016 the Environment Committee approved the Draft FMP for public consultation.
- Draft Waiōhine FMP – consultation
 1. On 21 Jun 2016, the Environment Committee (on recommendation of the Advisory Committee) established the Waiōhine River Draft FMP Hearing Subcommittee (Hearing Subcommittee) to hear and consider submissions on the Draft FMP.
 2. The hearing that was to have been held on the Draft Waiōhine FMP never took place due to the unavailability of Hearing Subcommittee members.
 3. The Draft FMP did not achieve community support.
 4. Submitters on the Draft FMP have not been heard.

Waiōhine Action Group

The Waiōhine Action Group is a large, diverse and growing number of ratepayers, including three serving Councillors. It works for the ratepayers and communities of Greytown and those who live near the Waiōhine river on its Carterton side. Amongst the members are deep skills including expertise and experience in managing the Waiōhine River issues, relevant engineering and surveying Greytown and the area, actually maintaining the riverbanks and bed, running local District Council and so on. Some members have a heritage of three or more generations of knowledge of the community and river. The group have completed many thousands of hours of reading, research and contribution of findings relating to the draft FMP project and the draft plan. Through consensus and genuine consultation, the group fosters openness and transparency to help the community investigate the good, bad and other work done on the draft FMP by GWRC, understand the costs and implications and participate in a better outcome than the failed approaches of the last nine years.

3. Review of the Draft FMP

Due to feedback on the Draft FMP, officers consider that the Draft FMP should be set aside and reconsidered.

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Attachment 1 to Report 20.90

Proposed Waiohine River Plan

3.1 Proposed approach to review the Draft FMP

Following discussions with Carterton District Council (CDC) and South Wairarapa District Council (SWDC), and in response to their approach, a proposed TORs and Project Team from WAG have been elected by a public meeting attended by over 180 ratepayers for a community led, open, consultative and consensus driven model, using a range of local experts to carry out due diligence throughout the draft FMP and make recommendations for a pragmatic, affordable solution that fits within the law and re-established trust between the community and GWRC.

This proposed delivery model will be subject to a steering group to oversee the completion of a Waiōhine FMP.

3.2 Proposed Waiōhine FMP Steering Group

Officers recommend the establishment of a Waiōhine FMP Steering Group (Steering Group).

A copy of proposed terms of reference for the Steering Group is attached as Attachment 1 to this report.

A summary of the Steering Group's proposed membership, roles and Responsibilities is set out below.

3.2.1 Steering Group – purpose

The purpose of the Steering Group is to make recommendations to the Wairarapa Committee on areas of practical improvement identified and recommended by the Project Team of the Draft FMP that are preferred by the community, including local IWI and council representatives.

The management of the existing river scheme and the implementation will sit outside the remit of this Steering Group unless directed by the Waiōhine Committee to review areas of overlap with implications for the draft FMP. An example would be the ongoing maintenance implications and costs of FMP design options.

The draft terms of reference (see **Attachment 1** to this report) propose that the recommendations of the Steering Group, if endorsed by the Wairarapa Committee, would be submitted directly to Council for approval without the need for consideration by the Environment Committee.

3.2.2 Steering Group – membership

The following membership is proposed:

- Two members, being elected members of the Carterton District Council
- Two members, being elected members of the South Wairarapa District Council
- Two members, being elected members of the Wellington Regional Council
- Two members to represent the Waiōhine Action Group (one of whom will be the Waiōhine Project Team chair)
- One member to represent Kahungunu ki Wairarapa
- One member to represent Rangitane o Wairarapa

3.2.3 Steering Group - Role/Responsibilities

The final decision on the adoption or otherwise of a draft or final Waiōhine FMP is retained by the Wellington Regional Council.

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Proposed Waiohine River Plan

To deliver on its purpose, the range of suggested responsibilities to be assumed by the Steering Group includes the following:

- Guide and support the Project Team and its Facilitator to deliver on its Terms of Reference as adopted by the public meeting of 7th July of the ratepayers of the Waiōhine valley
- Familiarisation with the work that has been undertaken on the Waiōhine
- FMP to date as well as the views of community, including IWI, conservation authorities, CDC and SWDC
- Oversee the scoping of viable options for the project and ensure strong support within the affected communities for recommendations
- Review recommendations received from the Project Team, and set and oversee the three guiding rules for the Project Team
- Ensure the work of the Project Team delivers a comprehensive, long term and sustainable solution for the Waiōhine River and the people who occupy its floodplain
- Develop and implement a communication strategy to facilitate effective engagement with WAG, the wider Greytown/ Carterton communities and the general public in the work of the Project Team and its oversight
- Identify and manage potential and relevant project risks.

4. Waiōhine FMP Project Team

Ratifying a Project Team is a matter for the Steering Group. **Attachment 2** to this report contains Terms of Reference for this team. At its public meeting of 7th July, the ratepayers of the Waiōhine valley adopted these TORs and appointed five members of the community as its Core Team members, with one being chosen as its Facilitator/Chair. The Steering Group will select and appoint one or more core team members from GWRC. The Project Team will bring in members from time to time with skills appropriate to the aspects of the FMP being worked on.

5. Wairarapa Committee's functions

The terms of reference for this Committee set out that it may consider and make recommendations to Council on any issues relevant to the Wairarapa, including but not limited to flood protection.

The terms of reference for the Council's Environment Committee sets out that one of its responsibilities is to monitor/oversee the development and implementation of floodplain management plans, including the Waiōhine River Plan, Incorporating Floodplain Management Plan.

As both Committees have responsibility for flood protection matters, it is considered appropriate at this stage in the process that this matter being presented to the Wairarapa Committee is also presented to the Environment Committee for information before being sent to Council for decision.

6. Communication

The Committee's decisions will be presented to the Environment Committee and Council.

7. Recommendations

That the Committee

1. **Receives** the report.
2. **Notes** the content of the report.

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Proposed Waiohine River Plan

3. **Notes** that a report advising the Environment Committee on the proposed establishment of a Waiōhine FMP Steering Group and Project Team will be presented to the Environment Committee on 9 August 2017.

4. **Recommends to Council:**

- a. that it establishes a Waiōhine FMP Steering Group; and
- b. that it adopts terms of reference for the Waiōhine FMP Steering Group as set out in Attachment 1 of this Report.

How the Project Team Work Together – “Housekeeping”

- One out, all out – the entire team must be in the room in order to be familiar with all material and make sound decisions by consensus.
- Write up, not down – in this way there is immediate consensus about every word that is recorded from conclusions regarding data and analysis and from interviews of subject matter experts and stakeholders. These cannot be misconstrued or misinterpreted and become a permanent record at source.
- One conversation – to avoid missing information and ensure consensus
- All opinions are equal – ensuring equal input and weight in decision making
- Play the ball, not the person – making it possible to build consensus
- Park it – if the team do not know the answer to any question asked by any party, do not lose the question, save it in the parking lot to ensure it is addressed and not lost.
- Does it make a better flood management plan? – of course, this is now, does it make a better river plan?
- tests – test all decisions against the three tests set by the Steering Group to guide the Project Team:
- Can we get resource consent?
- Can our community afford it?
- Will it work?
- Silent – setting for mobile phones etc.
- GWRC values –recognizing the cultural values set by GWRC as being pertinent to the River Plan
- **For People By People** - ensures we are thinking about the community and stakeholders and can walk a mile in their shoes
- **No sacred cows** - we should not be afraid to challenge anything within the law if it doesn't make common sense anymore.
- **Own it** - if there's something that needs doing, we shouldn't just wait for someone else to do it.
- **All on same side** - everyone wants a River Plan that works and therefore we are on the same side.

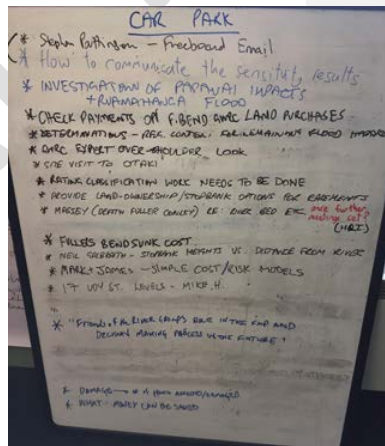


Figure 75: The Parking Lot or Car Park in use

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Attachment 1 to Report 20.90

Proposed Waiohine River Plan

Declarations of Interest

A register of interests for the Project Team and people who worked closely with the Project Team was created at the outset and maintained throughout the project.

How Were the Community and Other Stakeholders Involved?

- To consult with and keep everyone informed and involved in decision making in an open and transparent way, a range of channels were used:
- Via Facebook, as each working day or other event concluded, outputs (mainly the flip charts that reflect the structure of the mind map above and underpin this plan) were photographed and those photos posted, together with links to maps etc. on Facebook,
- Links to this material and a commentary were distributed by email to all interested people,
- Project Team members met with and briefed Waiōhine Action Group members of the community whenever anything of significance needed to be shared and to gain advice, feedback, guidance and major decisions,
- Public drop-in sessions, group and sometimes one-on-one briefings and input to decisions were conducted at key points, usually in the project room, where there was best access to project materials,
- At other key times public meetings were called, information shared, and key decisions made, and important motions put to the vote,
- Feedback received from all these channels was either addressed straight away, or captured on a "Parking Lot" to be addressed once the relevant piece of analysis had been completed,
- A Steering Group met regularly, chaired by a GWRC Councillor and attended by representatives of Iwi, CDC, SWDC and the Project Team. The job of the Steering Group was to challenge and test the Facilitation and Project Management, give guidance and direction to the project and assure probity and good governance within the process. The Facilitator/Project Manager presented a simple progress report to each meeting, which was also shared publicly via Facebook (an example can be found at Appendix A)
- An example of an action by the Project Steering Group is the decision to take a recommendation to the Wairarapa Committee of GWRC to take the unique step of GWRC publishing an Interim Flood Map for the Greytown side of the Waiōhine, this offered an effective interim solution to many planning issues and largely correcting flaws in the extant flood maps. Here is the record of this:

Steering Group Recommendation of 2nd February 2018

"Release for use, the Interim Flood Map approved by the Project Team and satisfying the outcome of the peer review" to the Wairarapa Committee. All agreed and happy that concerns will be addressed by doing this.

Why an Interim Flood Map Was Developed?

Early on the project team identified better data and had access to better tools to create a more accurate base model and set of flood maps. As a result of this a far more useful interim flood map was able to be developed. At this point a simple set of questions were posed to decide what needed to be done with the new, more accurate map:

Question: Does it benefit the community to recommend it be promulgated?

Answer: Yes

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Question: If so, then what notes, and caveats would be necessary to ensure that it is used wisely?

Answer: Explain context of overall process

Question: How long before we get a set of final flood maps? What's our best guess?

Answer: Possibly by end of April 2018

Question: Are there any other intermediate steps?

Answer: No"

Appendix C: Intent of the Living Plan and it's Terms of Reference

The Living Plan model is predicated on the concept of what has come to be called co-governance

Ra Smith of Ngati Kahungunu ki Wairarapa proposed the idea that, to be useful, this plan needed to be a living plan. If the river is a living entity, so must it's plan be.

- A traditional, static plan is characterised by being useful as a:
- Point in time analysis,
- A level set that offers a chance to think about everything once,
- A fixed flood defence that enables a short-term programme of building structures but cannot adapt to constant change.

A living plan is characterised by adaptability and learning that enables:

- Long term vision – setting horizons out to 2050 and 2090,
- Interdependency – being able to keep on adjusting for climate change, better flood and map data, improved cultural understanding and much more,
- Triggers – that enable adaptive management and updating of the plan cooperatively between the community and GWRC,
- Iwi and Community partnership in gradually restoring the river to a more "naturalistic" state.
- River Management that respects the changing needs of the land, mana whenua, ratepayers, users and landowners,
- River Projects that everyone can get behind.

A living plan allows flexibility in the year by year operational management of the river in partnership with iwi and the community. This could lead to better on the ground decisions about cultural aspects, pest and weed control, restoration, gravel extraction, setting up a meaningful bed level envelope (once sufficient data becomes available to identify high and low points), flood mapping, safety and emergency management as technology evolves, water quality measurement and goal setting and many other valuable improvements.

A living plan allows the River Plan to avoid having to fix everything at one point in time, only to immediately be overtaken by events.

A living plan allows improvements to measures, goals, additions to scope to, for example, adapt to legislative change, technology, better science or the addition of other important aspects of the catchment's needs.

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So, having settled on the need for the plan to be a living Waiōhine River Plan (Incorporating Flood Plain Management Plan), the question then was, how would the Living Plan continue to bring together everyone to make the best decisions, in the way the Project Team, iwi, community and stakeholders have throughout the project itself. The project team developed a simple, pragmatic working model and then sought the advice of the community.

To adapt the flood plain management plan to become a whole of river plan and a living plan, the mana whenua, community and stakeholders of the Waiohine valley adopted Ra's concept and resolved to: "Approve the continuation of The Project Team, embracing Iwi, Friends of the Waiōhine, Ratepayers, Landowners and all other stakeholders, to engage constructively with GWRC to prepare and implement the Waiōhine River Plan, represent our interests and continue to keep everyone openly and transparently, informed of progress." This was passed unanimously at a public meeting, at a Waiōhine Action Group meeting and subsequently added to the Terms of Reference for the project by the Steering Group and thence the Wairarapa Committee.

Relationship Model for Living Plan

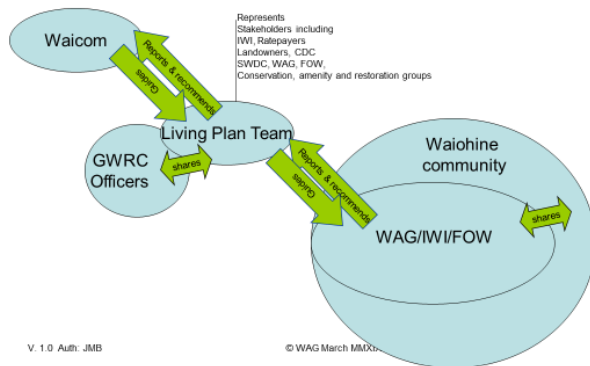


Figure 76: Living Plan Relationship Model

The Project Team will continue to meet and work as needed to support the Living plan process. It is envisaged that this would be far less often than for the development of the initial plan but would synchronise with GWRC planning cycles. At the start of each annual planning cycle or other planning cycle e.g. three year review of the Long Term Plan.

The Living Plan comes into effect as soon as the Waiōhine River Plan (incorporating Floodplain Management Plan) is enacted. At this point the Terms of Reference below is combined with the Project Team Terms of Reference so that it carries on in an operational mode under the revised Relationship model. See above.

The process will ensure that there is joint planning and management of the river and opportunities are taken to gradually implement the [Vision for The River](#). It will ensure principles of adaptive management are followed, that there is governance and buy-in by iwi, community and all other stakeholders, that there is good understanding of what GWRC need to do to manage the river on their behalf and in return, GWRC can engage the help and resources of the community to deliver the vision and make good decisions together.

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Proposed Waiohine River Plan

Terms of Reference (TORs) Extensions for the whole of River Plan and Living Plan Process

The ongoing Role of the Community (WAG) in Partnering GWRC to Oversee Implementation and Operation of the Waiōhine River Plan, both through the building of the proposed new stop banks and flood defences and until the plan expires in 2100. This allows time for the vision to be realised for our river and to adapt and improve this plan as new data, science and events make possible, a fuller explanation of the intent process of the Living Plan can be found [here](#).

Slide from Presentation to Combined Councils – 26th Sep

What Partnership Looks Like



1. GWRC will share in good time, with the WAG Project Team and **community**, all relevant trigger data, events and findings that might inform planning inputs or actions that might need to be taken in between GWRC annual planning cycles, or that fall within the aegis of this Waiōhine River Plan (Incorporating Floodplain Management Plan), or that generally relate to the river and floodplain.
2. With that in hand, everything provided will be shared to and reviewed by the community, including tangata whenua and all other interested stakeholders, prior to each GWRC planning cycle (annual, operational or long term) commencing. New items and topics may be added to this with the agreement of the Wairarapa Committee.
3. GWRC and the community will share all planning inputs that might affect the river and environs for discussion, as needed prior to the start of each formal GWRC planning cycle.
4. GWRC will produce their draft plans and budgets that relate in some way to the Waiohine and share this with the WAG Project Team and community in good time for the community to communicate with all stakeholders, meet, seek additional information if necessary, review it, identify differing views or endorsements and present these along with any proposed community initiatives to the Wairarapa Committee at which the GWRC plan is also presented.
5. GWRC will support the day to day running costs budgeted annually.

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Proposed Waiohine River Plan

- 6. GWRC Wairarapa Committee will decide what steps, if any, need to be taken where there are significant differences between what the community and GWRC wishes for the river.

Above is the model for how the relationship between the community (including stakeholders) and GWRC will operate once the River Plan is ratified and the project moves into an operational mode to implement the plan, keep it relevant and oversee maintenance of the river in partnership with GWRC. The principle is to create a collaborative partnership in which the community remains in a leadership position as keeper of the vision and overall plan for the river, with GWRC and there are checks and balances to make sure rifts cannot happen again, between the community and GWRC. The process incorporates the current planning cycles of GWRC: annual and Long-Term Plan, incorporated data sharing and shared decision making for significant aspects of river management and development to eventually realise the vision and plan. This process is to be overseen by the Wairarapa Committee of GWRC who will also act as a “circuit breaker” in the event the Community Position presented to them differs from that of GWRC in some regard.

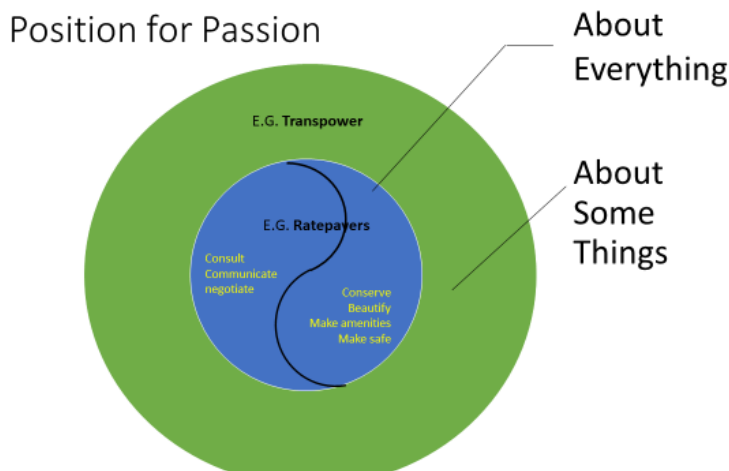


Figure 77: Some stakeholders are interested in all topics and some in specific topics

The assumption at this stage is that folks in the middle need to participate in every cycle of input into GWRC, caused by either GWRC planning cycles, or event triggers ([see list](#)). Whereas the stakeholders outside the middle are probably only interested in some topics, relating to the river, and should elect which those topics are, and be always invited to participate when those topics come up. This model will be refined by WAG as a foundation task under the Living Plan Process.

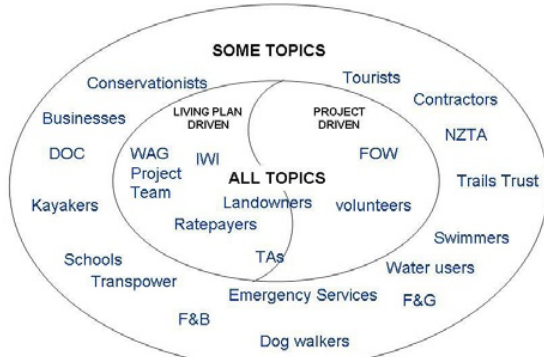
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Slide from Presentation to Combined Councils – 26th Sep

POSITION FOR PASSION



The Waiōhine catchment has roughly:

1. 2,200 ratepayers
2. 1,800 urban ratepayers
3. 400 rural ratepayers

Ideally the ongoing team should represent all types of stakeholders as much as possible by optimising the number of “hats” people wear at the table.

Optimum team size is no more than nine regular members, ideally with a similar distribution amongst stakeholders as the following example of representative ‘Hats’ (or stakeholder groupings):

Figure 78: More detailed version of the stakeholder model

- current project team)
- IWI (1 “hat” on current project team)
- Urban ratepayers (1 “hat” on Project Team)
- Rural landowners (5 “hats” on current project team)
- FOW/sustainability advocates (1 “hat” on current project team)
- River expertise (5 “hats” on current project team)
- District Councils (2 “hats” on current project team)
- GWRC (2 “hats” on current project team)
- Conservation and restoration friends of the Waiōhine (WAG) (2 “hats”)

Much of the input data needed from GWRC would be as prepared for annual operations reporting, to be collected for Whaitua, from a joint walkover and as currently used in the delivery against conditions of river management consents.

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Proposed Waiohine River Plan

Appendix D: Relevant Standards and Guidelines

The Waiōhine River Plan considers the following laws, policies and regulations:

1. Relevant GWRC Flood Management Policies include:
2. Where practical avoid flood risk (See GWRC policies 50 & 51),
3. Protect existing flood protection assets,
4. Incorporate allowances for [climate change](#),
5. New stop bank heights should be designed for:
 - a. Urban areas: 100-year flood plus climate change,
 - b. Rural areas: 20-year flood plus climate change.
6. It is necessary to distinguish strategy between existing versus new development
7. Legislation that must be complied with includes:
 - a. The Building Act 2004 about land and buildings
 - b. The Resource Management Act 2017 about consents for work and district plans
 - c. NZS4404 2010 about land development and subdivision infrastructure. E.g. rural subdivisions will affect all flood defence works
8. Public Works Act 1981 Soils, Conservation, & River Control Act 1941

Relevant legislation regarding Climate Change

The two main pieces of legislation relevant to climate change and flood risk management are the Resource Management Act 1991 (RMA) and the Civil Defence Emergency Management Act (CDEM) 2002.

The RMA requires regional authorities to control the use of land for the avoidance or mitigation of natural hazards. Territorial authorities are required to control the actual or potential effects of the use, development or protection of land, including for the purpose of avoiding or remedying natural hazards. The Resource Management (Energy and Climate Change) Amendment Act 2004 further requires local authorities to have regard to the effects of climate change.

The CDEM Act is another key piece of legislation for flood risk management. The Act primarily focuses on the sustainable management of hazards, resilient communities and on ensuring the safety of people, property and infrastructure in an emergency. The CDEM Act recommends an approach based on risk reduction, readiness, response and recovery.

Although risk reduction is primarily achieved through proactive planning as required by the RMA and the CDEM Act, other relevant legislation for climate change and flood risk management includes the Building Act 2004, the Local Government Act 2002 and the Soil Conservation and Rivers Control Act 1941.

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Proposed Waiohine River Plan

Appendix E: Example of Easement Agreement

Easement instrument to grant easement or *profit à prendre*

Section 109 Land Transfer Act 2017

Land registration district

Wellington

Grantor

Surname(s) must be underlined.

Grantee

Surname(s) must be underlined.

WELLINGTON REGIONAL COUNCIL

Grant* of easement or *profit à prendre* or creation of covenant

The Grantor, being the registered owner of the burdened land set out in Schedule A, grants to the Grantee (and, if so stated, in gross) the easement(s) or *profit(s) à prendre* set out in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s).

Schedule A

Continue in additional Annexure Schedule if required.

Purpose of easement, or <i>profit</i>	Shown (plan reference)	Burdened land (Record of Title)	Benefited land (Record of Title) or in gross
Stopbank Easement	?? on Deposited ??	Insert CT reference	Wellington Regional Council in gross

Easements or *profits à prendre* rights and powers (including covenants, and conditions) *Delete phrases in [] and insert memorandum number as required.*

Continue in additional Annexure Schedule if required.

Unless otherwise provided below, the rights and powers implied in specific classes of easement are those prescribed by the Land Transfer Regulations 2018 and/or Schedule 5 of the Property Law Act 2007.

The implied rights and powers are ~~varied/negated/added to~~ or substituted by:

Memorandum number _____, registered under section 209 of the Land Transfer Act 2017.

The provisions set out in the Annexure Schedule.

Covenant provisions

Delete phrases in [] and insert memorandum number as required.

Continue in additional Annexure Schedule if required.

The provisions applying to the specified covenants are those set out in:

Memorandum number _____, registered under section 209 of the Land Transfer Act 2017.

Annexure Schedule 2.

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Proposed Waiohine River Plan

Appendix F: Original Diagrams and Flip Charts

These are images of the flip charts and white board photographs from the Project Team Working Days which are the direct source of everything within this river plan. All these charts and photos were shared with the community within days – ensuring complete openness and transparency of every aspect of every decision (“Professor RAG” or final) and any subsequent revision as new expertise or data came to hand. By including these here we ensure probity and auditability between the agreed positions of the community, including GWRC and this complete river plan. It also serves as a complete record of discovery and decision making, sometimes involving the direct decision making by the wisdom of the crowd i.e. community.

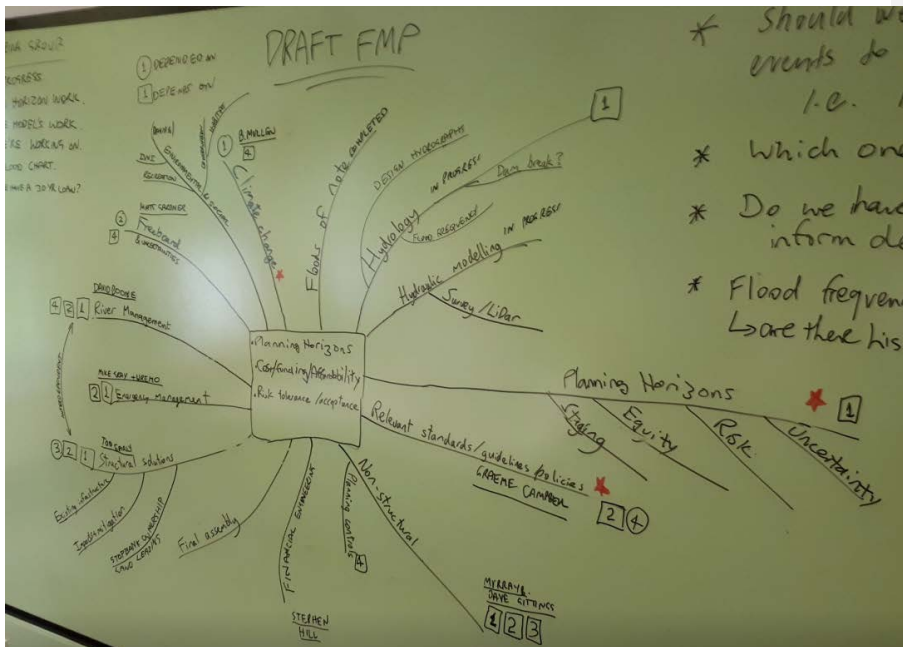


Figure 79: The Mind Map with linkages – an example of techniques used.

A directory of flip chart photographs, showing the day to day work of the Project Team, as published on [Facebook](#) with links and summaries of progress emailed to a wide range of interested people – can [be found here](#).

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Proposed Waiohine River Plan

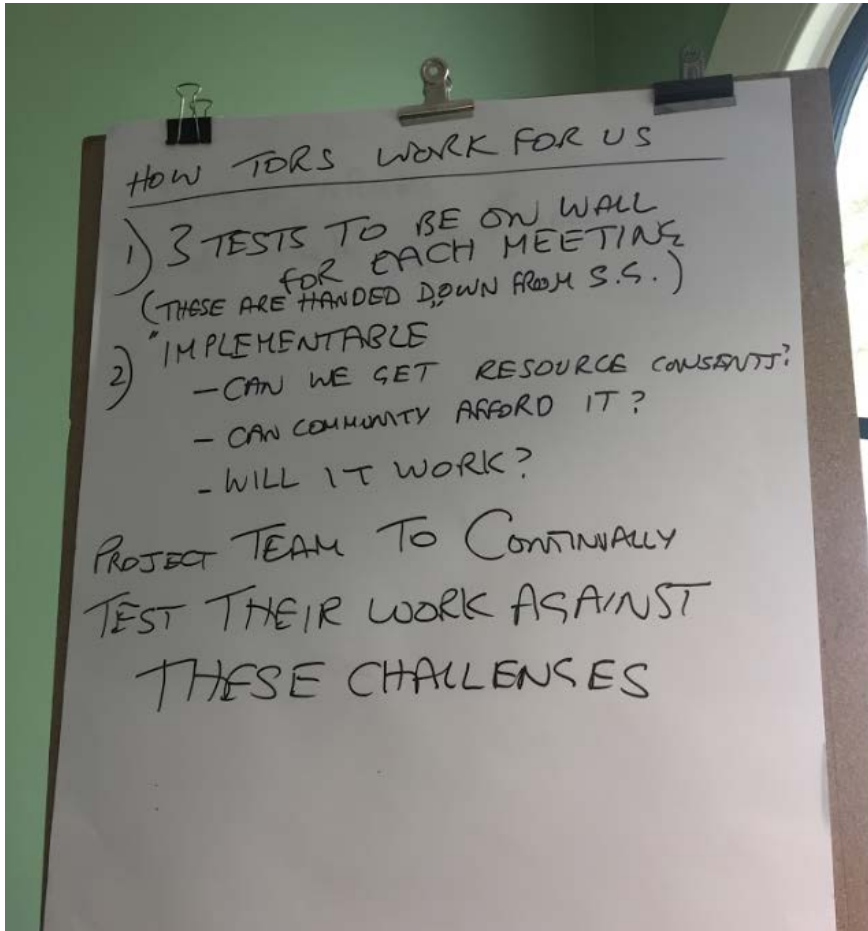


Figure 80: Setting up the project team and relating work practices to the Terms of Reference and community drivers

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Attachment 1 to Report 20.90

Proposed Waiohine River Plan

Appendix G: Maps

Notes on the Approach to Mapping

“National flood risk maps are essential because we need accurate and comprehensive information about the impact and costs of flooding today and under different climate change scenarios so everyone can plan and adapt.” [NIWA](#)

Maps were prepared by Land, Sea River Consulting Limited to requirements developed by the Project Team. The approach of analysis until it was reasonably believed that all known facts were revealed led to a larger than usual number of models and maps but perhaps a higher degree of confidence as a result and more opportunity to refine and test alternative solutions.

It was identified that the following Flood Maps would be needed For the River Plan as a minimum:

1. Land that could be flooded today (20 [5%]/50[2%]/100 year[1%] {old CCH, new CCH}) [DFL]
2. Land that could be flooded in future (climate change, etc...) [DFL]
3. Current structural assets (banks, bridges, culverts, etc...) [DFL]
4. Hazard (Low, Medium, High) risk to life [DFL]
5. Future non-structural assets [END]
6. Future structural assets (20/50/100) [END]
7. Emergency management map [END]
8. Time series map [END]
9. Planning Map (including residual hazard- same as 5.)

Notes:

Inevitably as the project progressed and new questions were raised, requiring deeper investigation, the list of models and maps needed expanded to include all the editions listed below.

Flood hazard maps were prepared using the Australian Rainfall and Run-off Method ([ARR](#)).

When Will These Be Needed?

[END] = Completion of FMP final maps

[DFL] = Draft flood map stage

As expected, this plan set was expanded as questions that arose during analysis and design tasks were undertaken. So, a far larger map set eventuated. We have catalogued these here and provided embedded links to online jpeg files of these maps.

All flood maps and models were prepared by Matthew Gardner – External Consultant. Chartered Professional Engineer with expertise in modelling flood risk, particularly in gravel river systems. Based in Christchurch with no ties in the Wairarapa, however, previously employed by GWRC in the Flood Protection department.

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Proposed Waiohine River Plan

Overview Maps Showing the Proposed Solution:

27. This map shows the proposed inland [stop banks as blue lines](#). This scenario shows a 1% (one in one-hundred-year flood, plus 16% extra volume of water to account for climate change, as at 2100), with depths in colour. It also shows [flood sensitivity](#) i.e. flood risk that is eliminated once the stop bank is built, as a pale pink “ghost”.
28. This map also shows the proposed inland [Eastern \(North Street\) and Western \(Kuratawhiti Street\) Stop Banks as blue lines](#). It differs from the one above in that it shows one in one-hundred-year flood (includes 10% climate change), as at 2050, with depths in colour. Again, it shows flood sensitivity that is eliminated by construction of the stop banks as a pale pink “ghost”.
29. This map shows the proposed inland Eastern (North Street) Stop Bank as a blue line. It shows 1% annual probability (one-in-one-hundred year flood), including an extra 10% floodwater volume for climate change, [as at 2050](#), with depths in colour. Again, this shows flood sensitivity that is eliminated by the proposed stop bank as a pale pink “ghost”.
30. [This map adds all the overlaid “sensitivity” run scenarios](#) on top of the base model (1% annual probability) to show, in various colours, how much farther a flood might possibly spread if one or more of these scenarios occurs. The proposed new stop banks are not shown, so it is possible to see the potential impact on the urban area too. It emphasizes the need for the proposed stop banks, not just to offer some protection from a 1% annual probability, plus climate change flood but to also defend against these possible but unlikely contingencies. The flood sensitivity area is the area that if these possible but improbable events occurred might be flood affected if no flood defences are built. This is intended to help, for instance, local planners to understand where there might be some benefit to property owners in requiring new building to be slightly higher to guard against the possibility, however remote, of flood damage.
31. This map shows the maximum extent of a flood in the same circumstances as the above map. It offers a [demarcation between the modelled flood and the extent of the flood sensitive area](#) beyond the modelled flood.
32. This scenario shows the peak depth of a 1% (one in one-hundred-year flood, plus 16% extra volume of water to account for climate change, as at 2100), with depths in colour. It also shows [flood sensitivity](#) i.e. flood risk that is eliminated once the stop bank is built, as a pale pink “ghost”.

River Maintenance Maps:

33. [Maintenance Reach A](#): Gooseneck to the Rail Bridge
34. [Maintenance Reach B](#): Rail Bridge to the Wire Shed
35. [Maintenance Reach C](#): Wire Shed to State Highway 2 Bridge
36. [Maintenance Reach D](#): State Highway 2 Bridge to Ruamahanga

Shear Stress Modelling Maps – used to see what risk might be posed by the power of flood waters at critical locations:

37. [Shear Stress modelling as at Saywells](#) – i.e. the end of Greytown Stop Bank and stretch below. This model was used to analyse risk to the Greytown Stop Bank to help determine whether the bank needed to be extended. No evidence that the bank would fail was found. No evidence that flooding around the end of the stop bank would cause significant additional issues inland. However, the use of tree planting along the toe of the Greytown

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Stop Bank (first choice – to be verified) or right angle groins at the toe of the stop bank (second choice if first choice fails because tree roots might not find adequate purchase in the stony ground), to prevent scouring that could undermine the bank are deemed a necessary precaution. A Trigger has been created in the [Living Plan](#) in the event that evidence does come to light that Greytown Stop Bank does in fact need to be extended.

38. [Sheer Stress modelling as at Fullers](#) – i.e. the stretch of both banks at and below Fullers Bend. This model was used to help determine whether the inside of Fullers Bend needs to be realigned in order to widen the river to remove pressure and stress on the outside of Fullers Bend. The study showed that there is presently no evidence that the True Right Bank would fail was found. Modelling of the sheer stress on the True Right Bank (Greytown side) of Fullers Bend would not cause significant additional flooding. In fact, modelling indicates that widening Fullers Bend would create higher sheer stress on the True Right Bank further downstream from the existing flood defences on the outside of the bend and therefore actually create a new flood risk there.

Hazard Maps – Designed to help the community and District Council Planning Officers make informed decisions about future development and maintenance of the flood plain:

39. [Hazard Map](#) for proposed solution. This map divides the flood plain into degrees of hazard – to help to identify where District Council (S.W.D.C. and C.D.C.) planners may decide to allow certain activities – e.g. construction of dwellings, access drives etc..
40. [Hazard Map for Base Scenario](#) (i.e. is we do nothing and a one-in-one-hundred-year flood plus 16% extra volume of water for climate change as at 2090/2100 occurs) – this shows relative risk by location and highlights ponded water versus fast moving water in the flood zone. This technique relies on GWRCs normal method.
41. [Hazard Map for Base Scenario](#) (i.e. is we do nothing and a one-in-one-hundred-year flood plus 16% extra volume of water for climate change as at 2090/2100 occurs) – this shows relative risk by location and highlights ponded water versus fast moving water in the flood zone. This technique relies on the Australian Rainfall Runoff Guidelines method – which is preferred as being more informative for this plan.

Modelled Scenarios – these maps reflect the many “what-if” questions that were asked about what a flood might do if something unusual happened, over and above the base model (1% annual probability) flood. For example, what if river maintenance is neglected and gravel builds up the riverbed by a half metre?

42. [Scenario 1](#) – Base scenario – Q1700 (cubic metres per second flow) TP2 + 16% (for climate change) – showing depth
43. [Scenario 2](#) – 20% increase of [Mannings ‘n’](#) (a measure of bed “roughness” or friction)
44. [Scenario 3](#) – 20% decrease of Mannings ‘n’
45. [Scenario 4](#) – IPCC climate change scenario [RCP 8.5](#)
46. [Scenario 5](#) – IPCC climate change scenario RCP 2.6
47. [Scenario 6](#) – Bed levels near Kuratawhiti St raised 0.5 metre
48. [Scenario 7](#) – Bed levels near Kuratawhiti St lowered 0.5m
49. [Scenario 8](#) – Blockage at bridges and Apple Barrell floodway
50. [Scenario 9](#) – Small banks removed
51. [Scenario 10](#) – 1% Flood @ 1500 cumecs (cubic metres per second of water) single peak plus climate change up to 2100
52. [Scenario 11](#) – 1500 cumecs double peak plus climate change up to 2100

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53. [Scenario 12](#) – 1700 cumecs double peak plus climate change up to 2100
54. [Scenario 12b](#) – 1700 cumecs double peak plus climate change up to 2100 – showing change in depth
55. [Scenario 13](#) – 1900 cumecs single peak plus climate change up to 2100
56. [Scenario 14](#) – 1900 cumecs double peak plus climate change up to 2100
57. [Scenario 15](#) – 20-year (5% probability in any year) event temporal pattern 1 (current climate)
58. [Scenario 16](#) – 20-year event temporal pattern 2 (current climate)
59. [Scenario 17](#) – 50-year event temporal pattern 1 (current climate)
60. [Scenario 18](#) – 50-year event temporal pattern 2 (current climate)
61. [Scenario 19](#) – Bank erosion 1
62. [Scenario 20](#) – Bank erosion 2
63. [Scenario 21](#) – 1700 cumecs single peak (current climate)
64. [Scenario 22](#) – 50-year event temporal pattern 1 plus climate change up to 2100
65. [Scenario 23](#) – 20-year event temporal pattern 1 plus climate change up to 2050
66. [Scenario 24](#) – 20-year event temporal pattern 2 plus climate change up to 2050
67. [Scenario 25](#) – 20-year event temporal pattern 2 plus climate change up to 2100
68. [Scenario 26](#) – 50-year event temporal pattern 2 plus climate change up to 2050
69. [Scenario 27](#) – 50-year event temporal pattern 2 plus climate change up to 2100
70. [Scenario 28](#) – Base Scenario + Increase in Manning's 'n' by 20% between XS33 to XS3812
71. [Scenario 29](#) – 20-year event temporal pattern 2 plus climate change up to 2050 + Increase in Manning's
72. 'n' by 20% between XS33 to XS38
73. [Scenario 30](#) – 50-year event temporal pattern 2 plus climate change up to 2050 + Increase in Manning's
74. 'n' by 20% between XS33 to XS38
75. [Scenario 31](#) – Base Scenario + Increase in Bed LEVELS by 1m between XS27 and XS28 13
76. [Scenario 32](#) – Base Scenario + Increase in Bed LEVELS by 0.5m between XS25 and XS1814 – showing depth
77. [Scenario 32 Version 2](#) – Base Scenario + Increase in Bed LEVELS by 0.5m between XS25 and XS1814 – Showing difference in depth

Stop Bank Option Runs – these are the maps for the six flood defence options and their variations. These were the scenarios shared with the community at public meetings and drop-in sessions from which they and subsequently the project team, selected the best (recommended) solution:

78. [Scenario SB01](#) – Stop bank base scenario – 1700 cubic metres per second volume + 10% climate change (as at 2050) – showing speed
79. [Scenario SB02](#) – Continuous stop bank – blue stop bank without Fullers Bend works – showing speed
80. [Scenario SB02 Version 2](#) – Continuous stop bank – blue stop bank without Fullers Bend works – showing speed change
81. [Scenario SB02 Version 2.2](#) – Continuous stop bank – blue stop bank without Fullers Bend works – showing depth change
82. [Scenario SB03](#) – Continuous stop bank with Fullers Bend realignment -Blue stop bank with Fullers Bend works – showing speed
83. [Scenario SB03 Version 3.2](#) – Continuous stop bank with Fullers Bend realignment -Blue stop bank with Fullers Bend works – showing speed change

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84. [Scenario SB03 Version 3.3](#) –Blue stop bank with Fullers Bend works showing depth change
85. [Scenario SB04](#) – Black stop bank without Fullers Bend works – showing speed change
86. Scenario SB05 – Black stop bank with Fullers Bend realignment
87. [Scenario SB05 Version 2](#) – Black stop bank with Fullers Bend realignment – showing speed
88. [Scenario SB05 Version 2.2](#) – Black stop bank with Fullers Bend realignment – showing speed change
89. [Scenario SB05 Version 2.3](#) – Black stop bank with Fullers Bend realignment – showing depth change
90. [Scenario SB06](#) – Fullers Bend realignment shown in isolation from other works – showing depth
91. [Scenario SB06 Version 2](#) – Fullers Bend realignment shown in isolation from other works – showing speed
92. [Scenario SB06 Version 3](#) – Fullers Bend realignment shown in isolation from other works – showing change of speed
93. [Scenario SB07](#) – Inland stop bank + North St stop bank – Small bunds and guide bank Beef Creek bridge removed – showing depth change
94. [Scenario SB08](#) – Beban stop bank + North St stop bank – orange stop bank with bund 2 and left guide banks removed – showing depth change
95. [Scenario SB09](#) – Vines (XS 28-30) stop bank + North St stop bank – yellow stop bank with bund 2 and left guide banks removed – showing speed change
96. [Scenario SB10](#) – Beban stop bank + North St stop bank with Fullers Bend realignment
97. Scenario SB11 – Vines (XS 28-30) stop bank + North St stop bank with Fullers Bend realignment
98. [Scenario SB12](#) – Continuous stop bank with Fullers Bend realignment (2100) – showing change in depth overview
99. [Scenario SB13](#) – Beban stop bank + North St stop bank (2100) showing depth change
100. Scenario SB14 – Vines(XS 28-30) stop bank + North St stop bank with Fullers Bend realignment (2100)
101. [Scenario SB15](#) – Inland stop bank + North St stop bank (2100) – change in depth
102. Scenario SB16 – Beban stop bank + North St stop bank with Fullers Bend realignment (2100)
103. Scenario SB17 – Extended Greytown Stop bank
104. Scenario SB18 – Extended Greytown Stop bank with 20% increase in Manning’s ‘n’ between XS (river cross section) 33 and XS38
105. [SH2 Crown Lowering](#) – shows locations where we recommend that NZTA consider lowering the height of the crown of SH2 by 100mm in order to reduce the damming effect of the road increasing flood risk to adjacent properties on the Western side.
106. [Scenario SB10](#) – Depth Change Map for Beban stop bank + North St stop bank with Fullers Bend realignment

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Appendix H: Glossary and Other Explanatory Notes

Looking for a term to do with rivers not covered in the glossary below? [Try here](#).

Active Bed or Riverbed - The part of a river channel which gets wet, always or sometimes. Apart from flood events, the active bed of a gravel bed river is normally only partially covered by flowing water.

Aggradation – or a rising riverbed – The increase in the general level of the riverbed as stuff accumulates on it: stones, gravel, grit (a.k.a. “fines”) and other detritus. This may arise because a lot of bed material has moved through a reach or due to changes in river processes affecting the carrying of bed material.

ARR – Australian Rainfall and Runoff Guidelines - Australian Rainfall and Runoff (ARR) is a national guideline document, data and software suite that can be used for the estimation of design flood characteristics. [More information can be found here](#).

Asset – an important structure or material, that is valued by the community & GWRC, such as stop banks, rock lining material, bridges, roads, debris fences, natural or manmade features that help to manage flooding etc.

Avulsion – When the river leaves its existing river channel and the forms a new river channel

Bank or Stop Bank – A shaped earth and gravel formation generally parallel to the river channel to confine floodwaters.

Beach - general term for an area of deposited material within the active bed or riverbed, that is relatively clear of vegetation, often lying between the wet channel and the riverbanks.

Berm - An area of relatively low-lying land within a waterway beyond the active bed, and generally from a bank landwards to a higher natural feature or stop bank. Berms usually have some vegetative cover. They flood easily and so help manage floods but allow some erosion and the bed to change naturally.

Buffer – [An identified area, along the margin of the river](#), that may be prone to some erosion for river management purposes. Buffers planted with vegetation to control bank erosion are called [“riparian planting”](#) of buffers.

Catchment - The land area bounded by watersheds, draining through tributaries, into a river – comprising an **FMU**.

Code of Practice - The Code of Practice is a document developed by GWRC that guides all river management activities undertaken by GWRC for the purposes of flood and erosion protection across the Wellington Region. It is subordinate to this River Plan.

Community – In the context of this plan, “community” includes Iwi and other statutory bodies, mana whenua and other urban and rural dwellers in the Waiōhine catchment and all [stakeholders](#), including but not limited to those [identified](#). By definition: “community” *n*. A group of people living in the same locality and under the same government. *n*. The district or locality in which such a group lives. The community of the Waiōhine catchment is represented by the Waiōhine Living Plan Project Team (elected by public meeting of the community, as an advisory committee to the Wairarapa Committee of GWRC), representing WAG (Waiōhine Action Group) or organisations that may succeed it or their equivalent acting through the Waiōhine River Living Plan Project Team that

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may reasonably attempt to represent the whole rate paying community and other stakeholders interests.

Degradation - A lowering of the level of the riverbed, through removal of bed material such as stones and gravel. This happens from human extraction or naturally. It happens more when the river runs faster and higher. Vastly more material is moved down the river, and deposited, when a major flood occurs – such as a once-in-fifty-year (2%) or once-in-a-hundred year (1% flood).

Designation - This is an ability to reserve land under the District Plan, either to note a hazard or to note the location of a structure to provide protection from that hazard. There are generally strict rules which control [what may happen in these areas](#) and they can be used to reserve land for construction in the future.

ENSO - [El Niño and La Niña \(collectively known as El Niño-Southern Oscillation\)](#).

Flood Hazard Map – a map showing flood hazard in terms of depth of inundation, flow velocities or combinations of these for different types of events. [The maps](#) are produced based on computer modelling

Freeboard - <https://www.fema.gov/freeboard> *"Freeboard is a factor of safety usually expressed in feet (or metric equivalent) above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed."*

Freshwater Management Unit (FMU) This is an important concept for the understanding of where a river starts and stops for the purposes of guardianship, management, cultural consideration and catchment management. https://www.mfe.govt.nz/sites/default/files/media/Fresh%20water/guide-to-freshwater-management-units_0.pdf

In-Stream means the wet river stream running between its banks.

In Stream Works: means anything done in the wet part of the river

IPO - [Interdecadal Pacific Oscillation](#)

Kaitiakitanga - Guardian or steward or to have guardianship or stewardship.

Key Native Ecosystems <http://www.gw.govt.nz/kne>

Level of service - Another important part of the risk evaluation stage is reaching agreement through community consultation and engagement on the minimum levels of service that you and your community want from your infrastructure. Many local authorities define minimum levels of service for new development, and some define intervention levels for existing development. The flood risk assessment process will enable local authorities to decide whether they will be able to maintain these levels of service under climate change, or whether it will be acceptable to reduce minimum levels of service over time. When considering whether the levels of service should be allowed to be reduced in the future, inter-generational equity should be considered. This will help ensure that decision-making is not unfairly burdening future generations with flood risk that will be unacceptable to them.

[LIDAR](#)

Mauri - The life essence present in things. Beyond just quality and quantity - it's more than that - it's a respect and reverence for the water, it's natural behaviours, surrounds and ecosystems within its natural setting, context and time. It's how the "catchment" should naturally be or as close as you can restore it to be, were it not damaged or altered by man.

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MCI: Macroinvertebrate Index see <https://www.lawa.org.nz/learn/glossary/m/macroinvertebrate-community-index-mci/>

Natural Character: Natural character is the natural condition of the river before any modification has occurred. Natural character is referenced within [section 6 of the Resource Management Act](#).

Non-Structural Flood Defences – keep people away from floods

One in One Hundred Year Flood: sometimes we say it's a "1%" or "1% Annual Exceedance Probability" this is a flood event that has a one percent or one-in-100 chance of being equalled or exceeded in any one year. On average, this is expected to occur once in 100 years, based on past flood records and best estimations, though in reality it could happen at any time. This is far from an exact science but the best we can do until we collect more data to analyse.

Operational Management Plan – Operational Management Plans are developed by GWRC in partnership with the community, through the [Living Plan Process](#). It will provide specific and detailed guidance on the short-term view of implementation of the River Plan, at a task by task, year by year, reach by reach, scale. The OMP identifies the management objectives and reach specific values that must be considered in the selection of the most appropriate river management methods to be used for each reach. It is subordinate to the living plan that is the Waiōhine River Plan (Incorporating Floodplain Management Plan).

Overflow Path or just Flow Path - Overflow paths (also known as flow paths) include areas in the river corridor and its adjacent floodplain, where a large volume of water could flow during a big flood. They are often areas of land which lead fast-flowing water away from the river corridor and over the floodplain. The depth and speed of flood waters are such that development could sustain major damage, and there may be danger to life. The rise of flood water may be rapid. Evacuation of people and their possessions would be dangerous and difficult, and social disruption and financial loss could be high. [A blocked overflow path](#) could potentially cause a significant change in flood flows to other areas of the floodplain. Due to water depths and velocities, overflow paths are generally unsuitable for development, unless adequate flood avoidance and/or mitigation provisions are made.

Pool, Riffle, Run - These are the areas in the river channel characterised by a diverse mix of flows and depths.

'Pool' is an area of low flow channel where depth is relatively greater, and velocity of the flow is lower, than in the surrounding parts of the river.

'Riffle' is an area of the low flow channel that is shallow and steep, with higher flow velocities and unbroken standing waves over the bed material.

'Run' is an area of the low flow channel with relatively fast consistent flow and shallow depths. Runs form downstream of riffles or between pools.

Residual Risk - Residual risk is the risk remaining after risk reduction measures have been put in place. Residual risk may be related to failure of the risk reduction measures proposed, parts of the community that do not benefit from the risk reduction measures proposed, or risks from events that exceed the design standards of the structural risk-reduction options. Climate change may increase the amount of residual risk you need to manage over time. Examples of options for managing residual risk include insurance, emergency management planning, warning systems and community education.

Riparian - The border between land and a river or stream.

Riverbed - [The Resource Management Act](#) defines a river bed as '*The space of land which the waters of the river cover at its fullest flow without overtopping its banks*'. Often the horizontal extent of a riverbed defined thus corresponds to the extent of the active bed.

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Riverbed Level Envelope - A term referring to a theoretical area between defined limits that relate to the known natural highest and lowest levels the bed reaches, based upon historical evidence. This "[envelope](#)" can be used as a guideline that helps decide whether or not the riverbed is rising (aggrading) or lowering (degrading) too much. This in turn helps in deciding whether gravel (stone) needs to be, or can safely be, extracted or moved in such a way to reduce risk of flood or change of direction by the river (avulsion); or whether this is in fact necessary and can be avoided or delayed, allowing the river, flora and fauna, to behave more naturalistically.

River Corridor – The river corridor includes land immediately next to the river channel. It is the minimum area able to contain a major flood and allow the water to pass safely downstream. The extents are identified based on modelled depth and velocities of a one-in-one-hundred year or 1% annual risk, flood event. The depth and speed of flood waters in the river corridor are such that they represent [a potential danger to people and structures](#).

Sill bank – provide a slightly higher edge to ground, or in many cases, reinstate a higher edge that had been lost by erosion. Not a stop bank.

Stop bank or stopbank – A shaped earth and gravel formation generally parallel to the river channel to confine floodwaters

Structural Flood Defences – keep floods away from people

Sustainable Management - As defined by Section 5 of the [Resource Management Act](#): "*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 well-being and for their health and safety while:*

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

Taonga: <https://www.google.com/search?safe=active&q=Dictionary#dobs=taonga>

Training bank – A training bank is used to direct the flow and speed of floodwater to a better path during a minor flood. A training bank may be used to protect low risk assets, such as open farmland, from high frequency events, but will allow the area to be flooded in a large flood event to alleviate pressure on higher risk assets.

Whaitua <http://www.gw.govt.nz/whaitua-committee-background/http://www.gw.govt.nz/whaitua-committee-background/>

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Appendix I: Links to Supporting, Reference and Background Documents

Floods: Things to Know

[Climate Change Reference Impacts Assessment - MBE](#)

[Preparing For Climate Change for Local Government](#)

<https://www.mfe.govt.nz/publications/land/meeting-challenges-future-flooding-new-zealand/executive-summary>

[New Reports Highlight Flood Risk Under Climate Change](#)

[Matauranga Maori](#) - can be defined as 'the knowledge, comprehension, or understanding of everything visible and invisible existing in the universe' and is often used synonymously with wisdom. In the contemporary world, the definition is usually extended to include present-day, historic, local, and traditional knowledge; systems of knowledge transfer and storage; and the goals, aspirations and issues from an indigenous perspective

[Independent Peer Review – Ian Heslop – Chartered Professional Engineer](#)

[Geomorphic Trends Assessment Report - Tonkin and Taylor](#)

[Waiōhine River – Hydraulic Modelling Summary of Sensitivity and Stopbank Runs](#)

[Conceptual Design – Cameron Fauvel Projects](#)

[Waiohine FMP – Flood Modelling and Mapping Audit – February 2018 Update BECA](#)

Ecological effects of flood management activities in Wairarapa rivers – Professor Russell Death and Amanda Death

<https://drive.google.com/open?id=0B5cvTbc5hxKSOGVaM01oMUN0WXBrlpEVGZYZml0Wkxl0kVZ>

Extreme Rain – NIWA Presentation Slides

<https://drive.google.com/open?id=0B5cvTbc5hxKSb3hHQ1ZpemFjWDI2WnVXZEJJBVISVjITakIV>

NIWA – Climate Change Effects on Upper Ruamahanga Catchments – 2017

<https://drive.google.com/open?id=0B5cvTbc5hxKSLXUwdnNyclVkdXZ2LXN3QWgxVXBld3dDdk84>

[Aerial photographs of 1990 flood](#), which was used for developing the base model for this plan

[Proposed Natural Resources Plan](#)

2013 Boffa Miskell report on [stop bank assessment](#).

GWRC Consent [application form](#).

GWRC Partnership with Tangata Whenua [agreement](#).

[Fish Communities of Wairarapa Rivers](#) – Russell Death – Massey University [WRC doc 1136937]

[Impact of Climate Change on Inflows to the Ruamahanga Groundwater Management Zone](#) – NIWA for GWRC – February 2017

[High Intensity Rainfall and Climate Change](#) - Doctor Trevor Carey Smith – NIWA March 2016

[Assessment of Kahikatea for Dendrochronology](#) – Rob Kennedy

[Buffer Management](#) – Benefits and Risks - Russell Death – Massey university

[Waiwhetu Stream – House Raising Options Review](#) (provided as background to the concept of house raising – GWRC April 2014

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Appendix J: Which Cross Section is Where.

Figure 81: Reach A

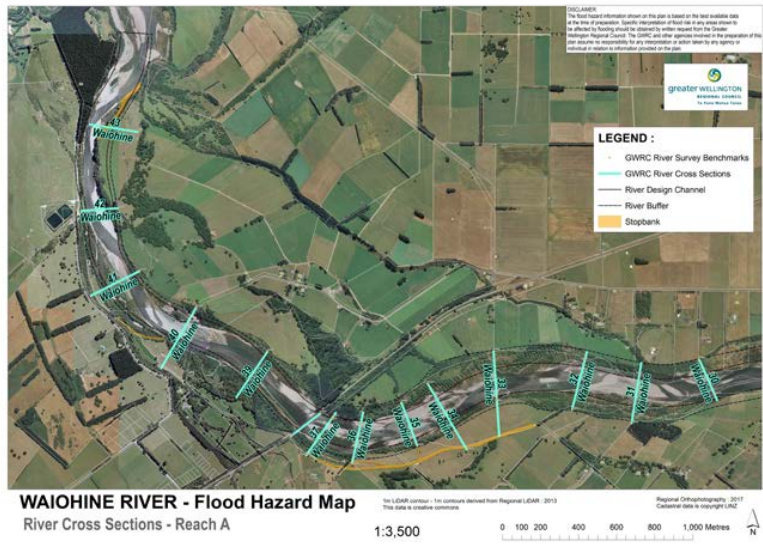
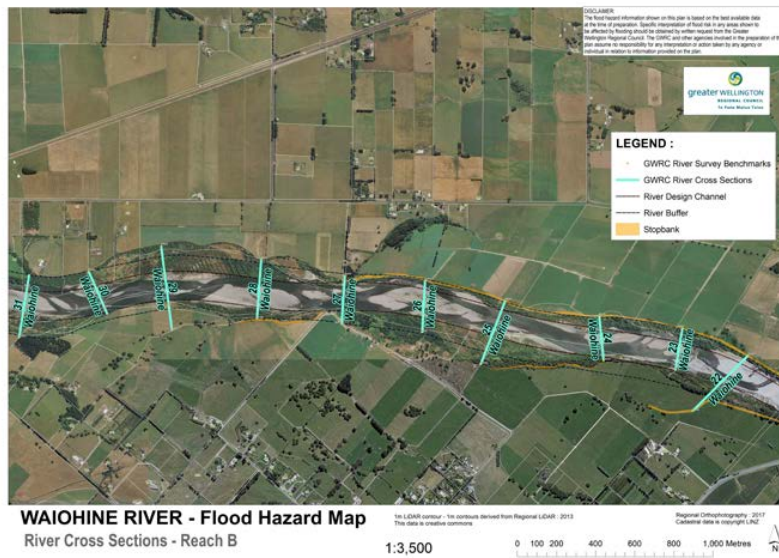


Figure 82: Reach B



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Figure 83:
Reach C
house raising

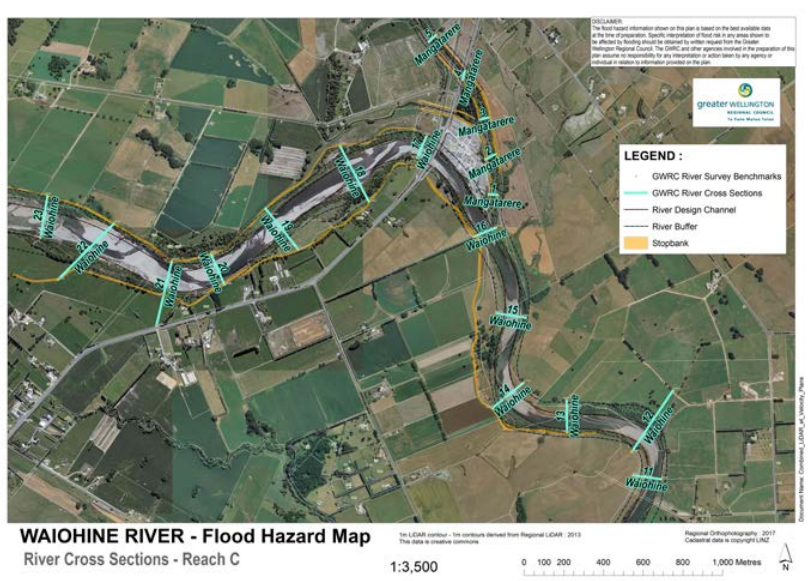


Figure 84:
Reach D



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Proposed Waiohine River Plan Communications and Engagement Strategy

Communications and Engagement Strategy
Waiohine River Plan

Attachment 2 to Report 20.90

Proposed Waiohine River Plan Communications and Engagement Strategy

PURPOSE

The purpose of this Communications and Engagement strategy (the Strategy) is to describe the proposed steps for the proposed Waiohine River Plan (the River Plan) formal consultation procedure leading up to the adoption of the Plan.

The timeline and proposed activities leading up to the adoption of the proposed River Plan by Council have been affected by the Government's COVID-19 pandemic response. The Strategy outlines the key communications and engagement activities and the sequence of activities, proposed to occur as soon as permitted under COVID-19 policy and regulations, as set out by Ministry of Health (MOH) and subsequently Greater Wellington.

At this stage it is assumed that all activities will be able to proceed as the current situation with COVID-19 ameliorates. If the situation does not improve, then the Strategy may have to be altered to allow for communication and engagement activities that are suitable, where face to face activities are reduced or suspended, and online and virtual activities are promoted.

BACKGROUND

Greater Wellington developed the Draft Waiohine Floodplain Management Plan (FMP) in 2016. The FMP did not get the support of the Greytown community and was subsequently withdrawn. The local community initiated a process to develop the Waiohine River Plan, encompassing a traditional FMP as well as having a broader scope on all aspects of the river.

The Waiohine Action Group held a public meeting in July 2017, where they appointed a project team to draft the River Plan. The project team is made up a mixture of different representatives including local community members and councillors. The project team have drafted a plan setting out the preferred combination of options to mitigate current and future flood risks to the Waiohine River catchment, as well as the direction for environmental, recreational and cultural enhancements of the Waiohine River.

Consideration of options has been heavily consulted on with the local community throughout the development of the River Plan. The preferred structural option was determined by a voting process at a community meeting, for which an overwhelming majority vote was evident.

CONSULTATION TO DATE:

Consultation to date has included, but is not limited to:

- Regular progress and event updates emailed to the Waiohine Action Group
- Photographs of all work uploaded to the Waiohine Action Group Facebook's page after each project meeting
- Invitation to key stakeholders to attend project working days
- Invitation to key stakeholders to comment on the working version of the proposed River Plan
- Updates on work progress and requests for feedback/input at fire station meetings
- Stalls set up at weekend community group events.

Attachment 2 to Report 20.90**Proposed Waiohine River Plan Communications and Engagement Strategy****SUBMISSIONS AND HEARINGS PROCESS****PURPOSE AND OBJECTIVES**

The purpose of this engagement is to seek feedback on the proposed Waiohine River Plan.

This process will have the following objectives:

- Inform the community and raise awareness about the proposed River Plan
- Answer questions and concerns that the community may have
- Ensure that the community, that the River Plan is serving, is supportive of the content.

These objectives are broken down in detail with the corresponding success measures in Table 1.

Table 1: Consultation objectives and measurements

Objective	Measurement
Seek submissions from the community on the proposed River Plan.	Number of submissions received via all forms of submissions.
Informing and raising the awareness of the community about the current and future flood risks.	Number of people with whom we engage face-to-face, comments and views of social media posts on events and feedback through Have Your Say.
Informing the community on the approach to mitigate flood risks and the options that were chosen.	Reaction through traditional media (letters to the editor), comments we received from face-to-face interactions at events and coffee group meetings, social media comments, feedback on Have Your Say.
Informing the community of the cost implications of the proposed options for mitigation and the impact on rates, as well as the potential need for a District Plan change.	Feedback at face-to-face meetings and from feedback forms to indicate how well we have been able to explain the River Plan to the community and how well we have clarified their questions and concerns
Encouraging the community to participate with ongoing involvement in the management of the Waiohine River, through mediums such as the Waiohine Action Group (formerly Friends of the Waiohine) and the River Plan Process.	People interested in joining the Waiohine Action Group or assisting with further development of other parts of the River Plan, such as planting moving forward.

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Proposed Waiohine River Plan Communications and Engagement Strategy

RISKS

The Project Team has identified the following risks (Table 2) and will implement the following mitigation measures.

Table 2: Risks

Risk	Likelihood	Impact	Mitigation
Some community members and stakeholders may raise technical questions and doubts about the project on technical grounds	Medium	Medium/Low	Share technical reports on the project when specifically asked; identify and organise separate meetings with community members and stakeholders to address concerns that are based on technical aspects.
Critical media reports	Low	Medium/Low	Back-pocket communications to help mitigate risks from adverse media reporting.
Community and stakeholders to ask questions on costs, credibility of data and suggest alternative mitigation measures at lower cost.	Medium	Medium/Low	Back pocket communications on costs of alternative options that were found to be unviable. Also, as a community led process, we are conservative in our approach of developing options and we want to make the best use of ratepayer money.
Prolonged disruptions to consultation due to Government's and Greater Wellington's responses to the COVID-19 pandemic.	Low/Medium	Medium/High	Provide alternative mediums for consultation/engagement that do not provide a health risk to public and/or staff. Adhere to any COVID-19 pandemic-related guidelines/policies provided by Greater Wellington and the Ministry of Health.

KEY MESSAGES/CALL TO ACTION

To achieve the objectives described above the communications associated with the consultation procedure will put across the following key messages and seek to achieve the following call to action.

Key messages

- We have a proposed River Plan for the Waiohine catchment
- We would like your feedback.

Attachment 2 to Report 20.90

Proposed Waiohine River Plan Communications and Engagement Strategy

Call to action

- We are seeking submissions from the Waiohine catchment community and the broader public on the proposed River Plan.
- We are inviting the public to meet members of the Waiohine Action Group and the Project Team to understand the proposed approach to managing the Waiohine River.

PROPOSED PROGRESSION

The consultation phase on the proposed River Plan will be completed in two parts:

- A. Awareness raising activities and receiving feedback
- B. The hearings process.

Part A: Will run for a minimum of six weeks. The formal submissions process will run for a minimum of four weeks following two weeks of awareness raising activities. This will involve a number of different activities outlined below. Submissions will be open via a number of medium including email, hard copies, and a dedicated Have Your Say website.

Part B: The hearings process will run for two weeks. The hearings are to be held at the Papawai Marae, Greytown.

Following the hearings process, the draft plan is to be updated with any changes that are required. The updated draft River Plan is then proposed to be presented to the Wairarapa Committee, followed by Council approval.

PROPOSED ACTIVITIES

To achieve the objectives and deliver the key messages the following activities are proposed for Part A:

- 1200 Flyers mail dropped to urban Greytown and riverside properties in rural Carterton/Greytown
- Drop in session at library
- Wednesday evening Workermans Club - Flyers and brief talk
- Follow up drop in session at Library
- Sharpening day at 'Menzshed' - members of the Waiohine Action Group handing out flyers and speaking to public
- Mornings at the train station - members of the Waiohine Action Group handing out flyers and speaking to public
- Outside the Greytown supermarket - members of the Waiohine Action Group handing out flyers and speaking to public
- Make contact with people who submitted on the original proposed Flood Plain Management Plan
- Radio advert - Recorded interview with member/s of the Waiohine Action Group
- Facebook sharing and paid adverts.
- Grapevine (Greytown) and Cryer (Carterton) monthly news
- Wairarapa midweek and Times Age newspaper
- Neighbourly
- Posters in local businesses
- Proposed River Plan to be available online at commencement date of consultation period on third party webpage. Links will be available through various publically accessible mediums including the Have Your Say website

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Proposed Waiohine River Plan Communications and Engagement Strategy

- Hard copies of the proposed River Plan will be available to collect at various public locations in Greytown.

This list indicates the preferred activities of the project team. Should the Government's pandemic response not permit these activities, then alternatives will be considered including a staggered engagement process where the website and plan are available on line for the public to read and provide feedback on.

PROPOSED RESOURCES

- Hard copies of the proposed River Plan AND an online version
- FAQs
- Flyer for mail drop & handouts
- Feedback/submission forms
- Posters/boards for drop-in sessions
- Posters for putting around the community
- A4 advertisements on the train
- Have Your Say website
- Social media messaging – including encouraging influencers to spread the word
- Print advertising – Wairarapa Times Age, Wairarapa Midweek, Carterton Cryer, Greytown Grapevine
- Radio (pre-recorded interviews)
- Greater Wellington Staff Personnel
- Waiohine Action Group Personnel.

Draft Terms of Reference for the Waiohine River Plan Hearing Panel

**Terms of Reference for the Waiohine
River Plan Hearing Panel**

April 2020

DRAFT

Attachment 3 to Report 20.90

Draft Terms of Reference for the Waiohine River Plan Hearing Panel

1. Membership

The membership of the Waiohine River Plan Hearing Panel (Hearing Panel) comprises:

- Cr Adrienne Staples, Greater Wellington Regional Council
- Cr Prue Lamason, Greater Wellington Regional Council
- Mike Hewison (Community)
- Bruce Slater (Community)
- Ra Smith, Ngāti Kahungunu ki Wairarapa
- Horipo Rimene, Rangitāne o Wairarapa
- Brian Deller, Carterton District Council
- Colin Wright – Waiohine Action Group and South Wairarapa District Council delegate.

Adrienne Staples is the Chairperson of the Hearing Panel.

The quorum is four members.

2. Meeting procedures

All members have equal speaking rights and a deliberative vote. In addition, the Chairperson has a casting vote in the case of an equality of votes.

Members must be present for the substantial part of the hearing and deliberations in order to participate in the decision-making of the Hearing Panel.

3. Powers

The Hearing Panel has the power to:

- Consider written and oral submissions on the proposed Waiohine River Plan;
- Seek clarification from Greater Wellington officers or the Waiohine Project Team on any technical matters; and
- Develop recommendations in relation to the proposed Waiohine River Plan for consideration by the Wairarapa Committee and the Greater Wellington Regional Council.

4. Responsibilities

The Hearing Panel shall ensure that:

- The hearing and consideration process is carried out in a way that is effective and timely
- Submitters are provided with the best possible opportunity to be heard in support of their submission

Attachment 3 to Report 20.90

Draft Terms of Reference for the Waiohine River Plan Hearing Panel

- Hearing Panel members receive submissions with an open mind and give due consideration to each submission
- The decision-making process is robust and transparent.

5. Remuneration

The expenses of members of the Hearing Panel who are elected members of the Greater Wellington Regional Council, Carterton District Council and South Wairarapa District Council shall be met by the council they represent.

Hearing Panel members who are not otherwise being remunerated may claim Greater Wellington's standard daily meeting attendance allowances and expenses.

6. Duration of Hearing Panel

The Hearing Panel is deemed to be dissolved at the end of the decision-making process on the Waiohine River Plan.

The Hearing Panel will report to the Wairarapa Committee.

Council
30 April 2020
Report 20.89



For Decision

DRAFT PARKS NETWORK PLAN 2020-30 — STRATEGIC DIRECTIONS

Te take mō te pūrongo

Purpose

1. To inform Council about the proposed strategic directions section of the Draft Parks Network Plan 2020-30 (the Draft Plan) for Greater Wellington parks, and to seek Council's approval of this section.

He tūtohu

Recommendations

That the Council:

1. **Endorses** the preliminary draft 'All Park Directions' (Attachment 1), being the strategic directions section for the Draft Parks Network Plan.
2. **Notes** that the Draft Parks Network Plan will be presented to Council or the Environment Committee at a later date for approval for public consultation.
3. **Notes** that the full costs of implementing the overall Draft Plan, once publicly consulted on and completed at a later date, will be subject to the long term planning process and the prioritisation of activities by Council.

Te tāhū kōrero

Background

2. The 2011 Parks Network Plan (the 2011 Plan) is a statutory management plan (under the Reserves Act 1977 (the Act)) for eight Greater Wellington parks. The Act requires that management plans are kept current, adapting to changing public needs and circumstances. The 2011 Plan provides a long-term strategic approach for management of core park recreation and conservation values.
3. The process to review the 2011 Plan and develop a new one commenced in 2017 with park ranger, Council and Ara Tahī workshops. A two month public consultation in 2018 gathered feedback about issues and opportunities for parks to inform development of a new Draft Plan. In August 2018, a report summarising public feedback was presented to the Environment Committee (Parks Network Plan review initial consultation feedback - Report 18.307). Following this, a series of officer workshops were held to explore issues and opportunities and develop key directions. In December 2018, a report proposing preliminary directions for the Draft Plan was endorsed by the Committee (Parks Network Plan review update - Report 18.530).

4. This report outlines the preliminary draft 'All Park Directions', being the strategic directions section of the Draft Plan, ([Attachment 1](#)). We propose that Council approves this section, in advance of the overall Draft Plan, to assist us in further developing the Draft Plan. The remainder of the Draft Plan includes introductory discussion, park specific sections, maps and rules.

Te tātaritanga Analysis

Draft Plan's proposed strategic directions

5. The overall Draft Plan follows a similar structure to the 2011 Plan, but overarching directions are simplified from eighteen principles to six focused goals. The strategic directions section encompasses policies and actions for implementation applicable across the park network. Approval of these strategic directions is sought from the Council.
6. Policy changes were made to ensure that the strategic directions section reflects National Policy Statement directions and is consistent with other Greater Wellington policy and strategic directions for land management. Key policy changes include:
 - a Strengthening of the application of environmental impact assessment processes for Greater Wellington and external party work in parks because protecting important park values from impacts is a key component of good stewardship and kaitiakitanga of parks
 - b Adoption of a catchment-wide approach to reflect joined up planning and ecosystem management with others, including whitua planning and implementation
 - c Land use change policy to limit future stock grazing licences unless conservation or recreation benefits can be demonstrated through environmental impact assessment processes
 - d Revised policy to identify the primacy of maintaining public access to parks, including to accord with the reserve classification status
 - e Minor policy changes to ensure that National Policy Statements and other Greater Wellington plans such as the Proposed Natural Resources Plan are incorporated
 - f Development of new policy which support dark skies and minimise light pollution.

Draft Goals

7. Draft goals, which set overall strategic directions for managing the park network over the next ten years, were presented to the Environment Committee at a workshop on 13 February 2020. The draft goals relate to natural heritage, visitor experience, historic heritage and landscape, mana whenua partnerships, the 'way we work' and climate change. The three latter goals reflect the need to focus on and improve our work in responding to climate change, working alongside our mana whenua and community partners so that their aspirations for parks and māramatanga are more

fully integrated into our day-to-day park management approach. The ‘way we work’ goal is about supporting and enabling others in conservation and recreation work on shared goals in a consistent manner across the park network. Supporting natural heritage, landscape and recreation values in Greater Wellington parks is enshrined in governing statues for parks; then Draft Plan identifies way to further enhance these values.

8. Core goals are delivered by a range of specific actions, some applicable to work across all parks, and others identified for implementation in particular parks. For example, in all parks more use of Te reo Māori is proposed through signs and other media and, for those that don’t have them yet, dual Te reo Māori/English names are proposed, along with creating consistency in naming of ‘parks’ (from ‘forest’ or ‘recreation area’)
9. Initial public consultation feedback indicated that transparency and accountability were important in the way Greater Wellington works in parks to deliver conservation and recreation benefits. As an action applicable in all parks, we propose monitoring and reporting to Council on progress towards the outcomes identified in the strategic directions section. This includes an initial baseline ‘State of the Parks’ type report and then periodic reporting over the life of the new management plan.
10. A key opportunity to enhance visitor experiences has been identified as the development of ‘key destinations’ within parks. Key destinations are intended to be places which attract visitors, spread visitor load, and focus Greater Wellington’s investment in high quality experiences which are interesting and memorable. The development and enhancement of key destinations in parks will support the regional economy through tourism visits and help Greater Wellington promote places within parks as ‘must see’ places. Focusing investment in key destinations will guide asset planning and maintenance and support the preservation and appreciation of historic heritage and landscape features. Development and enhancement of key destinations will provide opportunities for community participation and Council’s delivery of the four well beings for communities identified in the Local Government Act. Development of some key destinations may be able to be led by community e.g. following the Friends of Baring Head example with the light keeper cottages in East Harbour Regional Park. Proposed key destinations include the Wainuiomata dark sky park and interpretation centre, Belmont bunkers short walk, future Queen Elizabeth Park (QEP) wetlands and more storytelling trails.
11. To support changes and enhancements to the trail network, the overall Draft Plan will provide guidance about key considerations for trails. This will help ensure a consistent, transparent and minimal impact approach to changes in the park trail network, whilst supporting and enabling key recreation group partners to improve trails.

Stock grazing licence opportunities

12. The strategic directions section identifies the intention to phase out stock grazing in parks (except Battle Hill), unless there are demonstrable conservation and recreation benefits from the activity continuing. This will be a significant land use change in several parks. There are four significant grazing licences. Two expire in the short term (2020 and 2021) and the other two in the medium term (2025 and 2026). Public feedback received in the preliminary consultation supported general land use change to restoration and conservation from grazing activities.

13. There are a number of benefits of ceasing major grazing activities in the shorter term. These include the opportunity to commence restoration work, financial savings from costs associated with grazing licence activities and maintenance of infrastructure (which offers little public benefit), the ability to realise recreation use benefits from full recreation access to park land and reputation benefits associated with a renewed focus on conservation and recreation in parks for health and wellbeing. Land and water quality impacts can also be reduced, particularly in priority whitua catchments. In the short term, significant public access benefits can be realised from opening areas of park closed in QEP and Belmont to allow farming activities to take place without public visitor interruptions. For example, approximately fifty percent of QEP at the Raumati South end of the park and the direct park entry point into western Belmont Park in Cannons Creek / Waitangarua.
14. Grazing licence details are as follows:

Park	Area (hectares)	Grazing licence expiry date and notes
East Harbour, Baring Head/ Ōrua-pouanui	186.18	Expiry 31 December 2021. No right or renewal or first refusal
Belmont – east	1,239	Licence fee review 1 July 2021. Licence expiry 31 January 2026. Termination clause in licence
Belmont – west	116.27	Expiry 31 December 2020 no right or renewal or first refusal
QEP	354.5	Review 31 August 2020 with right of renewal. Expiry 31 August 2025
Kaitoke: Licence 1 Licence 2	25 25	28 Feb 2021 - no right of renewal 31 May 2021 - no right of renewal

15. Whilst it is not recommended at this point, legal advice indicates that if Council wishes to cease commercial stock grazing at QEP before licence expiry date it can do so with progressive reduction in licence area for the purposes of conservation or recreation development.
16. The Belmont east grazing licence, which concludes in January 2026, also has similar conservation and recreation use clauses as well as an overall 'out clause' which enables the licence agreement to be terminated with three months written notice. In the event that termination 'reduces the area of land available to the Licensee for grazing purposes, then the Annual Licence Fee shall be reduced in proportion to the area of grazing reduced but no other compensation shall be payable'.
17. It may be appropriate to consider timeframes for ceasing commercial stock grazing use of Greater Wellington park land at the time that detailed masterplans are prepared for the key parks with grazing. However restoration and recreation priorities

have been identified by environmental science officers and others and will be mapped in the overall Draft Plan to guide park development and land use change and progressive restoration and reduction of grazing licence areas. Master planning for QEP is proposed immediately after completion of the overall Draft Plan, followed by Belmont then Wainuiomata parks.

Ngā hua ahumoni

Financial implications

18. The overall Draft Plan presents a focus on core park values of conservation, recreation and closer collaboration with communities in order to realise more environmental (ecosystem services) and social (health and wellbeing) benefits from parks. Progressive land use change to restore native vegetation can occur in a range of ways with different cost implications.
19. Passive restoration, allowing nature to restore itself with weed management support, has been an effective and low cost method of restoration at Parangarahu Lakes in East Harbour Regional Park, where stock grazing ceased over fifteen years ago. Community groups actively support the restoration work.
20. Active methods of restoration, such as bulk planting, cost more but see native vegetation return faster with benefits for carbon accounting and emission reduction as well as habitat and other ecosystem service benefits. At a minimum, passive restoration with pocket plantings, woody weed and fire threat minimisation will require additional resources until ecosystem health reaches self-sustaining levels. Work on the scale of the 2,000 hectares currently grazed is beyond the current capacity of community groups active in parks.
21. Strategic planning for restoration work is required to guide land use change before large scale restoration work commences. The development of park-wide master plans are proposed for Belmont and QEP (and later other parks) so that detailed consideration is given to place specific values, recreation activity and community needs. Recreation activities are a key consideration in parks which are classified as 'recreation reserves' under the Act (Belmont, QEP and East Harbour). Master planning processes will draw on the high level restoration priorities which have been identified, involve extensive community consultation and provide a level of detail that guides site specific changes for implementation over the life of the Plan and beyond. For complex areas, such as restoration of QEP's drained peat wetlands, hydrological and other studies are likely to be required.
22. Funding for restoration work and proposed recreation facilities identified in the overall Draft Plan (and later through master planning processes) could be funded from a range of sources. Significant funding will be sought as part of the 2021-31 Long Term Plan process (which includes the prioritisation of activities by Council), but can be supported by other sources of funding. These include grant funding from Government initiatives, sponsorship, philanthropic donations, community-led funding initiatives, concessionaire opportunities, partnerships with other agencies and mitigation planting from other developments. This has been achieved elsewhere in the country with great success.

23. Benchmarking with other park agencies indicates that adaptive re-use of residential cottages currently used for farming purposes as 'cottages on the park' for park visitor overnight stays can deliver revenue streams. Other similar agencies offer a range of overnight stay experiences for visitors from historic cottages to basic bach-style accommodation, and derive significant revenue from them. The strategic directions section identifies the opportunity to explore a range of re-uses of park cottages which could also include 'green hub' conservation/recreation or education type community bases or concessionaire services. Proposed master planning processes for the Belmont and Queen Elizabeth parks will help identify options and any initial capital costs that may be required and potential partners.
24. The strategic directions section identifies a renewed focus on community collaboration; enabling and empowering mana whenua partners, volunteers and others across parks to work alongside Greater Wellington with emphasis on conservation and recreation work. There have been noticeable community expressed expectations of contribution and participation. To achieve a consistent step change, changes in resourcing and development support may also be required. This includes building capability and capacity in areas such as storytelling and community partnerships.

Te huritao ki te huringa o te āhuarangi Consideration of climate change

25. The matter for decision in this report was considered by officers in accordance with the process set out in Greater Wellington's *Climate Change Consideration Guide*.

Mitigation assessment

26. Addressing climate change-related impacts is one of the six overarching goals for parks in the strategic directions section. The overall Draft Plan will outline a number of actions for Greater Wellington to reduce overall greenhouse gas emissions including native vegetation and wetland restoration in parks. This includes progressively restoring the approximate two thousand hectares of park land currently managed through commercial grazing activities, passively or actively in native vegetation. Restoring and enhancing high levels of ecosystem health across parks will also build their resilience in the face of more severe weather events.

Adaptation assessment

27. Restoration work will provide the opportunity for carbon sequestration and future credits. The detail of these opportunities and emissions accounting from stock grazing activities will be presented through reports to Council's Climate Committee. The overall Draft Plan will also encompass a range of actions relating to sustainability enhancements across parks.

Ngā tikanga whakatau Decision-making process

28. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

**Te hiranga
Significance**

29. This matter is considered to be of low significance because it is a preliminary step in a planning process. It will still be of interest to conservation and recreation advocates. The overall Draft Plan, once completed and presented to the Environment Committee or Council for approval for public consultation (see Next Steps), is likely to be of high interest to park stakeholders and other agencies.

**Te whakatūtakitaki
Engagement**

30. A Communications and Engagement Plan has been prepared to guide public consultation activities over the two month consultation period required for the overall Draft Plan under the Act.

**Ngā tūāoma e whai ake nei
Next steps**

31. Greater Wellington would appreciate any feedback Council has at the meeting on the proposed strategic directions section.
32. The overall Draft Plan will be presented to Council or the Environment Committee at a later date to seek approval for a two-month period of public consultation.

**Ngā āpitihanga
Attachment**

Number	Title
1	Preliminary draft 'All Park Directions'

**Ngā kaiwaitohu
Signatories**

Writers	Fiona Colquhoun, Parks Planner Kyn Drake, Project Officer
Approvers	Tracy Plane, Manager Corporate and Strategic Planning Luke Troy, General Manager Strategy

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>Council’s approval of the proposed strategic priorities section fits with its specific responsibility to “oversee the development and review of Council’s... environmental strategies, policies, plans, programmes and initiatives”.</p>
<p><i>Implications for Māori</i></p> <p>Working alongside mana whenua partners as manaaki whenua custodians is identified as a core goal in the strategic directions section of the Draft Plan.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>The matter for decision is a key contributor to further development of the new Parks Network Plan 2020, which is a core statutory plan for Greater Wellington.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation included nine officer workshops exploring issues raised by the public; co-working groups to develop each overarching goal, followed by numerous meetings, workshops and rounds of peer review on each section of the overall Draft Plan. Specific input and advice was provided by Park Rangers; maintenance officers and managers; and the Biodiversity, Environmental Science, Customer and Engagement, Strategy, Biosecurity, Legal, Land Management, Sustainable Transport, Land Management, Finance and Flood Protection departments. External expert peer review of the strategic directions section is also taking place.</p>
<p><i>Risks and impacts</i></p> <p>A number of judicious shifts in direction are signalled in the strategic directions section. This includes working more with community, undertaking large scale restoration work with grazing phasing out and developing ‘key destinations’ in parks. There are financial and organisational implications for these shifts which are discussed in this report. The overall Draft Plan will include a range of actions for implementation over the next ten years and beyond for long-term work. Proposed consultation for the overall draft Plan will determine if it meets community needs as proposed.</p>

*Preliminary Draft 'All Park Directions' for the Parks Network Plan 2020-30***All Park Directions***Looking ahead long term****Tē tōia, tē haumatia -******Nothing can be achieved without a plan, a workforce and a way of doing things***

Drawing on the vision for parks, *'Everything is connected – Restoring healthy environments for the benefit of nature and people'*, overarching goals for parks are identified here to provide strategic directions for work across the park network over the next ten years and beyond. These goals are intended to reflect community and partner aspirations for Greater Wellington's parks, as expressed through public feedback. They are based on core conservation, recreation and cultural heritage values (refer [section xx](#)).

'All Park Directions' provide common ground for collaborative work by Greater Wellington, partners and community in addressing conservation and recreation challenges and opportunities. Goals are supported by objectives and actions for work. More detailed park-specific actions are identified in the individual park sections of this plan. How will we track our progress towards goals? *'State of the Parks'* (environmental and social) periodic monitoring and reporting is identified as an action of this plan so we can track progress and adapt our approach along the way if needed. Things change and unforeseen events appear, such as the Covid-19 pandemic. With a mahi tahi partnership approach we will work together. He waka eke noa, working collaboratively, moving forward together.



Te wai te ora, water is life. Volunteers help in kaitiaki and manaki whenua, land care and education activities throughout the park network. Restoration activities and working more with communities are core focus of this draft new Plan because 'he waka eke noa, were all in this moving forward together'.

ALL PARK GOALS

Conservation, recreation, health and wellbeing are primary values for Greater Wellington parks based on governing legislation; the Reserves and Conservation Acts, Wellington Regional Water Board Act and the Local Government Act. Conservation, recreation, landscape and heritage are day to day core business and reflected in the first three goals below. The other three goals relate to mana whenua partnerships, climate change and sustainability and ‘the way we work- mahi tahi’, doing more together. They are defined as goals so we can focus in these areas to support nature, people and community more.

NATURAL HERITAGE	
1	Protect and restore high levels of terrestrial and freshwater ecosystem health to enhance indigenous biodiversity and ecosystem services
VISITOR EXPERIENCE	
2	Parks are highly accessible places for many visitors to enjoy; they offer a variety of interesting experiences, enhancing the health and wellbeing of local communities and broader regional economy
CULTURAL HERITAGE FEATURES AND LANDSCAPE	
3	A variety of landscape settings are preserved and enhanced reflecting social values; historic heritage features are protected and interpreted for visitors
MANA WHENUA PARTNERSHIPS	
4	Collectively we work together in mahi tahi partnerships, as kaitiaki guardians, nurturing strong mauri and enhancing parks for current and future generations
THE WAY WE WORK	
5	Working collaboratively and consistently with others, we enable learning and build strong partnerships to deliver more conservation and recreation benefits for parks, people and communities
CLIMATE CHANGE AND SUSTAINABILITY	
6	Parks are managed in highly sustainable ways, building environmental resilience as part of the natural solution to climate change

Natural Heritage

Core value: We value the protection and enhancement of the natural environment of parks for future generations

He tina ki runga, he tāmore ki raro

In order to flourish above, one must be firmly rooted below

SUMMARY

Greater Wellington parks provide ecosystem services including freshwater, air purification, wind and noise reduction, carbon sequestration, microclimate regulation, wildlife habitat, social and psychological well-being of people and economic benefits. Parks and intrinsic biodiversity values are important natural capital for the Wellington region.

Whilst much of the 33,000 hectares of the Greater Wellington park network has vegetation cover, natural heritage is highly variable. There are large areas of rich native forest with high indigenous biodiversity values, many areas in the early stages of native vegetation regeneration and some highly prominent degraded areas, largely devoid of vegetation. Greater Wellington acknowledges that there is still much work to do in parks before high levels of natural heritage are restored across all parks. Restoring and enhancing wetlands and waterways and working alongside mana whenua and community partners is a key part of this work.

Outside parks, working with others to support good connecting 'biolinks' of native vegetation is an important part of a holistic approach to catchment management and part of broader Greater Wellington objectives for biodiversity and freshwater quality and biosecurity. Climate change accelerated changes such as pest plant competition and pest animal species distribution present ongoing challenges.

Work to restore natural heritage and improve natural environment resilience is a priority in this plan. Restoring vegetation in denuded areas offers the benefit of sequestering additional carbon from the atmosphere. Broad-scale restoration of the areas of park currently grazed by stock is proposed in this Draft Plan. This key shift will help Greater Wellington visibly demonstrate good land care practice and deliver multiple ecosystem health, climate change mitigation and recreation benefits.

NGĀ KAUPAPA HERE / POLICIES

- 1P To protect, restore and/or maintain healthy ecosystems across parks for ecosystem service benefits taking a landscape, catchment wide approach encompassing:
 - Mana whenua values, mātauranga Māori knowledge and kaitiakitanga priorities
 - Innovation in restoration and eco-sourcing of seeds for restoration activities wherever possible
 - Greater Wellington and other biosecurity programmes
 - Engagement with stakeholders and the wider community
- 2P To carefully consider the indigenous biodiversity impacts of requests to translocate species into or out of parks
- 3P To take a catchment wide approach to support enhancement of ecological connections between natural areas within park catchments
- 4P To utilise environmental science knowledge in the restoration of natural heritage. Restoration opportunities are identified strategically, prioritising:
 - a. Benefits to overall natural heritage and the reduction of threats and impacts
 - b. Contribution to biodiversity, freshwater quality and Greater Wellington's carbon neutrality targets

- c. Mana whenua values and kaitiakitanga priorities including sustainable customary use and mahinga kai
 - d. Areas previously grazed by stock for restoration and erosion prone land
 - e. Threatened forest ecosystems and ecological corridor opportunities within and beyond park boundaries
 - f. Community lead and resourced initiatives where appropriate
- 5P To demonstrate highly sustainable practice in land management following Greater Wellington and Territorial Authority policies and rules, including District Plans, Greater Wellington Proposed Natural Resources Plan, Biosecurity Strategy and the Biodiversity Strategy and other relevant plans and strategies are complied with and exceeded. This includes vegetation clearance, earthworks, discharges and nutrient impacts to land and water, works in and around waterbodies and wetlands and activities in the coastal environment
- 6P To protect and restore soil health include minimising impacts to wetland soil types:
- a. Using appropriate methods to minimise erosion
 - b. Soil quality restoration activities such as indigenous vegetation restoration
 - c. Restoring peat formation processes
 - d. Compatible land use

FLORA

- 7P To protect and promote the health and extent of all indigenous flora
- 8P To protect notable and significant heritage trees in parks; identified using standardised methodologies

FAUNA

- 9P To minimise the use of pesticides and herbicides which have negative impacts on indigenous biodiversity including invertebrates (Also refer [policy 13P](#))
- 10P To protect and enhance habitat and extent for all native fauna

THREAT AND IMPACT MANAGEMENT



Restoration opportunities and challenges are significant in Belmont Park. As grazing licence areas are reduced restoration of the large northern and western areas of the park will be able to get underway. Master planning is proposed for the park to create a blueprint for new facilities and to guide restoration work. Five park cottages could potentially be used as 'voluntourism' bases for community conservation work or other purposes such as park stay. Proposed master planning processes will provide opportunities for iwi, community, corporate sponsorship and other support.

- 11P To support a precautionary approach to minimising impacts on natural, cultural, landscape and recreation values, also considering possible benefits, by incorporating the Assessment of Environmental Effects (AEE) into decision making processes (Refer AEE Guide, [Appendix xx](#))
- 12P To apply the management effects hierarchy prioritising the avoidance of impacts, then minimising, then remedying informed by an AEE
- 13P To apply AEE process to review of all proposed annual grazing licence plans
- 14P To remove, redesign, upgrade or relocate existing facilities where they contribute to significant impacts on indigenous biodiversity and ecosystem services
- 15P To minimise biosecurity threats through introduced materials
- 16P To ensure that the scale of new facility developments are appropriate and sympathetic to the setting:
- a. Minimising the intrusion of built structures on the landscape unless it is appropriate to the setting e.g. art work or sculpture
 - b. Maximising multiple use facilities
 - c. Prioritising bridges for all new road and major track stream crossings where practicable, and where bridges are not practicable, prioritise stream simulation culvert design following the New Zealand Fish Passage Guidelines
- 17P To limit livestock grazing (except Battle Hill) unless it can be demonstrated that there are significant nett recreation, conservation or community benefits, with full public access maintained, through AEE process.
- 18P To minimise the impacts of grazing at Battle Hill and where the activity is small scale and has demonstrable conservation, recreation or education purposes through AEE processes and impact management plans which include:
- Protection of significant ecosystems or historical and cultural heritage features
 - Best practice in minimal impact land and water management practices and animal husbandry
 - Sediment and nutrient discharge and downstream effect minimisation
 - Stock exclusion from all wetlands and streams including ephemeral areas; minimum 40 metre setback
 - Application of a 'right stock for the right place' approach (appropriate stock for land)
- 19P To prohibit agricultural grazing related operational activities deemed (through annual grazing licence plan AEE assessment) to be high impact or in sensitive sites
- 20P To avoid and reduce farming infrastructure investment unless there is a direct benefit for conservation, recreation or community activities:
- Avoid any additional investment in stock fences, shelter, or stock water facilities and services
 - Progressively remove fences not required for recreation or conservation purposes
 - Minimise impacts during phasing out of grazing licences
 - Adaptively reuse and recycle farming related infrastructure for conservation, recreation and community purposes

PLANTATION FORESTRY

- 21P To Minimise the impacts of forestry, prioritise the following per site for GW forestry management to be exemplar for waterway and soil protection :
- a. Use setbacks when replanting riparian areas with plantation forestry (minimum 40 metres from the bank of waterways wider than 1 metre)
 - b. Utilise existing access arrangements through plantation forestry areas
 - c. Restore areas with native vegetation when current forestry agreements expire
 - d. Progressively restore plantation areas with native vegetation, where they exist outside forestry agreements
 - e. Minimise sediment discharges and erosion contributing activities

GOAL 1 .Protect and restore high levels of terrestrial and freshwater ecosystem health to enhance indigenous biodiversity and ecosystem services

NATURAL HERITAGE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: KNE - Key Native Ecosystem AEE - Assessment of Environmental Effects CCIS - Climate Change Implementation Strategy DOC - Department of conservation PNRP - Proposed Natural Resource Plan		RPS - Regional Policy Statement TA's – Territorial Authorities WIP- Whaitua Implementation Programme WRTF- Wellington Regional Trails Framework WREDA- Wellington Region Economic Development Agency	
OBJECTIVE 1. Support a range of programmes and works to remove or minimise threats to indigenous species and ecosystems			
ACTIONS			
A1	Develop and implement a strategy to control pest plants, animals and disease that threaten indigenous biodiversity and ecosystem services in parks in conjunction with the KNE programme and community groups	Medium	Mana whenua
A2	Apply the effects management hierarchy to avoid, minimise and remedy the impacts of developments on biodiversity and ecosystem services by: <ul style="list-style-type: none"> • Undertake assessments of Environmental Effects (AEE) for all new and redeveloped facility and service proposals in parks • Review, develop and update standard operating procedures as required to ensure appropriate impact management, water sensitive design and effects management guidance • Retrospective apply the hierarchy to remove, redesign, upgrade or relocate existing facilities where they threaten indigenous biodiversity or ecosystem services e.g. erosion from tracks or roads 	Short - Long	Refer AEE Guide Appendix XX Mana whenua, PNRP, Biodiversity Strategy
A3	Within parks identify and remove or remediate fish passage barriers with structures that meet the <i>New Zealand Fish Passage Guidelines</i> ¹	Medium	Mana whenua
A4	Prioritise the installation of bridges first and then stream simulation culverts where practicable to minimise impacts on freshwater ecosystems where new road and major track stream crossings are required	Medium - Long	AEE process
A5	Develop and implement a planned approach to removing livestock and non-recreation related horse grazing from parks (except Battle Hill) to support conservation and recreation objectives	Short - Medium	Grazing licence holders, community, AEE process
A6	Incorporate Whaitua Implementation Programme (WIP) priorities and actions into park plans and work programmes, update the PNP and parks operational plans as appropriate	Short - Long	WIP
OBJECTIVE 2. Plan <u>restoration</u> activities in a holistic way considering scientific research, innovation, best management practice and recreation use needs			
ACTIONS			

NATURAL HERITAGE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
A7	Through master planning, identify biodiversity and ecosystem service restoration priorities to restore resilient, representative natural ecosystems (refer master planning action xx)	Short	PNRP, NZ Biodiversity Strategy, mana whenua
A8	Identify indigenous biodiversity and ecosystem services requiring restoration that will not be covered by master planning and develop site specific plans where required	Medium	Mana whenua
A9	Develop and implement habitat restoration plans to give effect to the restoration priorities	Short – Long	PNRP, Mana whenua
A10	Restore all wetlands and waterways where possible following identified priorities	Short-Long	PNRP, Mana whenua
A11	Develop species reintroduction plans to return species which are no longer able to disperse by natural processes	Short - Medium	GW Translocation policy, DOC, Mana whenua, stakeholders
A12	Improve ecological connections to parks where appropriate by working with neighbours and others within and across catchments, supporting the protection of areas of significant habitat wherever possible	Short-Long	Mana whenua, TA's, private landowners
A13	Develop a fire management plan for all parks in line with their restoration plans, cultural heritage and visitor use	Short	Mana whenua, park neighbours, Emergency services
A14	Engage with neighbours, Territorial Authorities and others to ensure that activities around parks support their natural heritage values	Short-Long	TA, DOC, park neighbours, Mana whenua

OUTCOMES:

- A.** Natural heritage values are enhanced:
- i. Biodiversity values are improved, ecosystem resilience and mauri is strengthened
 - ii. All wetlands and waterways are protected with their riparian vegetation progressively restored, supporting mahinga kai species
 - iii. Human-induced sediment and nutrient loss are significantly reduced as formerly grazed areas are restored
 - iv. Activities in parks are appropriate for their natural heritage values
 - v. Pest plants, animals and disease are controlled to promote healthy natural ecosystems
 - vi. Neighbours are engaged to ensure that activities around parks support their natural heritage values

Visitor Experience

Core value: We value having a diversity of satisfying and memorable recreation experiences, and support full and easy access to parks for health and wellbeing benefits

Mauri tū mauri ora An active soul is a healthy soul

SUMMARY

What makes a Greater Wellington park, and a 'regional' park, different to other parks? Governing statutes for parks define core values and legal names. The main focus is conserving natural heritage and providing for recreation activities. Many parks are further defined for purposes of recreation or scenery; places of enjoyment, fun, fitness, health, wellbeing and community involvement for the people of the region and visitors. Four parks in Greater Wellington's network are 'regional' by their gazetted name, others are 'forests', but all are referred to in this Draft Plan as 'parks'. Greater Wellington's parks are larger than 'local' parks and smaller than most of the 'forest' and 'national' parks managed by the Department of Conservation.

In other parts of New Zealand, parks have been under pressure from high levels of visitation resulting in periods of diminished visitor experiences through crowding and other impacts. Some areas of Greater Wellington's parks have short periods of high visitation, such as campgrounds or popular tracks. However many parks have very few visitors a lot of the time. To realise more health and wellbeing benefits from investment in parks, the development and enhancement of 'key destinations' is proposed. Key destinations will support more park visits and offer a variety of interesting and memorable park experiences. They will help focus resources and support tourism visits, concessionaire activities and the regional economy. Development of key destinations may be lead be Greater Wellington or others, such as mana whenua, community or other partners.

If parks are to be better used and attractive as repeat visit destinations, good accessibility is critical. A range of actions to improve access to and within parks is proposed, along with development of a number of highly accessible destinations. Focusing now on accessibility and reducing barriers to access and participation, such as closed areas of parks, will mean use of parks by the region's ageing population is supported, and parks can deliver more benefits for people.

Trails are arguably the most loved recreation facility in parks. They support and enable so many recreation activities and deliver huge benefits for the investment required in development and maintenance. With huge growth in cycling and mountain biking, and hill climbing made easier by e-biking, some adjustments in the trail network are proposed. Actions and maps in park specific sections of this Draft Plan identify proposals for change based on feedback received during initial public consultation.

In parks where land use change to focus on recreation and restoration is signalled (instead of stock grazing), the process of more detailed master plan blue print development is proposed. The master planning process will involve extensive mana whenua, stakeholder and public input and seek to address the inequalities in recreation facility provision identified in initial public consultation and provide detailed guidance for restoration work. Initial parks proposed for master planning are Queen Elizabeth, Belmont and Wainuiomata.



Developing and enhancing key destinations such as the gums picnic area at Wainuiomata, Belmont bunkers and low level trail connection at Parangarahu Lakes will encourage and enable more people to discover currently 'hidden gems' within parks. Developing destinations with good signs, storytelling and other facilities will help make experiences memorable and support participation in healthy outdoor recreation activities.

NGĀ KAUPAPA HERE / POLICIES

PUBLIC ACCESS

- 22P To maintain and prioritise public access for recreation and conservation activity use in parks unless:
- There are significant health and safety hazards which cannot be minimised or managed
 - The activity is managed via a concession or lease agreement which limits general public access
 - Restricting access is an obligation under a specific Act, such as the Biosecurity Act 1993, Fire and Emergency New Zealand Act 2017 or the Public Health Act 1956.
 - Continued access to an area of a park poses a threat to indigenous biodiversity, ecosystem services or cultural heritage
- 23P To work within mana whenua communication frameworks where rahui are in place, support clear public communication about access restrictions and undertake education activities where appropriate
- 24P To maintain free of charge entrance to all parks (charges for facilities and services may be applied)
- 25P To limit motor vehicle access from after dusk to before dawn to protect core facilities and values
- 26P To ensure that the public are adequately informed about temporary closures, including an explanation of reasons and the length of time an area will be closed, using signs and other media

VISITOR INFORMATION, EDUCATION AND INTERPRETATION

- 27P To provide accurate, up to date and easily accessible recreation information including:
- Places and activities, key destinations and landscape settings for recreation
 - Hazards and safety
 - 'Share with care' for the environment and others

- Temporary closures
 - Events
- 28P To provide and encourage high quality storytelling via a range of methods to reveal interesting, relevant and educational stories to visitors
- 29P To educate and encourage visitors to behave in ways which minimise their impacts on the environment, cultural values and other visitors enjoyment
- 30P To promote parks as places to learn about the environment, Mātauranga Māori, cultural heritage, native ecosystems and best practice in the sustainable management of land

PUBLIC ART AND NATURE PLAY

- 31P To encourage and support the development of temporary and permanent art and sculpture in parks for visitor enjoyment
- 32P To support and enable mana whenua partners in public art activities to contribute to the visibility and celebration of their histories and stories
- 33P To provide a range of fun, interesting and challenging nature play opportunities to support children and adult adventures in parks

RECREATION ACTIVITIES, VISITOR ENJOYMENT AND SAFETY

- 34P To provide multi-use shared facilities wherever practicable that foster friendly sharing behaviour to minimise visitor conflicts
- 35P To maintain a variety of recreation opportunities across the parks network for people of all abilities and provide appropriate supporting facilities
- 36P To utilise 'key destination' development as a way to promote, encourage and support park visits and high quality visitor experiences
- 37P To support the development of creative approaches and innovation in facility design and service provision, incorporating cultural heritage interpretation, art where appropriate, nature play and overnight experiences for visitor enjoyment and education
- 38P To monitor visitor and non-visitor needs and preferences and changes over time in social values relating to parks
- 39P To provide opportunities for park visitors with dogs and horses in a manner that minimises impacts on natural, cultural and recreation values
- 40P To support good access and facilities for horse riding and implement appropriate access management systems
- 41P To promote 'smoke free' parks and discourage smoking in parks following an educational approach

FACILITIES

- 42P To plan for new facilities and adaptive reuse follow AEE process, involve mana whenua and park partners and:
- Best practice lighting design (following dark skies **Policy xx**)
 - Universal design (for access), allowing for multiple use and supporting broader community use wherever possible
 - Water sensitive design
 - Sustainable design and procurement
 - Climate change impact accounting and minimisation
 - Crime Prevention Through Environmental Design (CPTED)
 - Landscape architecture and design
 - Heritage preservation including guidelines and UNESCO protocol
 - Siting and urban design principles
 - Partner and community engagement processes
 - Science based data
- 43P To ensure all parks have highly accessible trail opportunities which are barrier free including associated facilities

- 44P To prioritise the development and enhancement of shared trails, circuit trails, closing gaps in networks in parks and creating trail connections
- 45P To encourage others and support the development and maintenance of off-road trails to parks, prioritising the connection of areas of public open space and to public transport

Goal 2. Parks are highly accessible places for many visitors to enjoy; they offer a variety of interesting experiences, enhancing the health and wellbeing of local communities and the broader regional economy

VISITOR EXPERIENCE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: DOC: Department of conservation TA's: Territorial Authority RLTP: Regional Land Transport Plan		WRTF: Wellington Regional Trails Framework WREDA: Wellington Regional Economic Development Agency)	
Objective 3. To enable a variety of visitor experiences a range of <u>facilities</u> and services are provided to support enjoyment, mental and physical health and wellbeing			
ACTIONS			
A15	Develop park-wide master plans to provide spatial blueprints for recreation and conservation facilities and activities in collaboration with mana whenua partners, stakeholders and community <ul style="list-style-type: none"> Prioritise plans for QEP and Belmont to support land use change and development of new visitor facilities and natural heritage improvements Develop a master plan for Wainuiomata to guide enhancement of the entry area, connection to the Lower Dam hub and natural and historic heritage features 	Short-Medium	Mana whenua
A16	Ensure facility and other relevant data is readily available for others to use (external) via open data initiatives	Medium	Open data
A17	Undertake ongoing (longitudinal) visitor monitoring and research to inform facility and service planning and identify changes over time	Short-Long	Mana whenua, Community
A18	Develop and implement a facility and furniture design guide considering 'Universal Design' principles. Incorporate universal design practice into parks asset management work	Medium	Asset Management Strategy
A19	Finalise and implement a Parks Sign Standard: <ul style="list-style-type: none"> Develop and implement a sign plan for each park Address visitor confusion with trap line tracks Undertake periodic audits and seek public feedback to identify signage related issues Consider the development of an emergency location marker system for visitor safety purposes Implement effective tikanga reo rua bilingual signage by following the te reo Māori and Tikanga Policy 	Short	Mana whenua
A20	Investigate the development of a casual horse riding permit system such as 'parks horse riding pass' to help improve cross-country trail riding experiences for horse riders e.g. <i>Auckland Council's free of charge 12</i>	Short	Horse riders

VISITOR EXPERIENCE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<i>month pass which enables riders to have streamlined access and receive information updates on temporary closures or biosecurity issues</i>		
Objective 4. Provide comprehensive, easily available and high quality <u>information</u> to support enjoyable and safe park visits			
ACTIONS			
A21	Undertake education activities to raise awareness of minimal impact recreation activity practice park-wide	Short-long	
A22	Inform visitors about the smoke-free policy through a range of media including signage, website and other information channels	Short	
A23	Ensure visitors have readily available feedback mechanisms and information is used to inform improvements where appropriate	Short-long	
Objective 5. Provide a variety of interesting and memorable visitor experiences in parks			
ACTIONS			
ART			
A24	Develop an operational policy to guide art and sculpture in parks	Short	
A25	Engage with mana whenua and mata waka in development of art in parks for cultural visibility, education and enjoyment	Medium	Mana whenua
A26	Encourage art in parks to attract visitors and support local talent:		
	a. Work with others to develop a wide range of temporary and/or permanent art in park features including sculpture, art classes, opportunities for artist in residence, facilities with creative attributes	Medium	Community
	b. Explore opportunities to introduce art that promotes nature play	Medium	Community
	c. Work with others to develop landmark features in sight of the Transmission Gully motorway to create attractions to parks such as Belmont and Battle Hill	Short-Medium	Mana whenua, community, stakeholders
A27	Develop educational or interpretive murals on park buildings including prominent utility structures and buildings	Short-Medium	Wellington Water, utility service providers
STORYTELLING			
A28	Develop interpretation plans for parks, places or key story themes as appropriate to guide work <ul style="list-style-type: none"> Through storytelling, promote awareness and understanding of key topics such as climate change, sustainability, revegetation, freshwater, dark skies, natural quiet, land care and sustainable farming practices 	Medium	Wellington Water, Mana whenua
MENTAL HEALTH			
A29	Identify, develop or support through master planning and other processes experiences to support mental health and wellbeing such as: quiet contemplative spaces e.g. labyrinth, dedicated natural quiet spaces, sensory spaces e.g. through identification and promotion or development	Medium	Man whenua, community, stakeholders

VISITOR EXPERIENCE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	of new places, social places to support social connections or come and try type events or volunteering opportunities		Parks marketing plan
NATURE PLAY, HEALTH AND FITNESS			
A30	Identify and develop a register of nature play and socially significant trees and other features in parks to support preservation, emotional capital for treasured places and future fun and enjoyment	Short	Mana whenua
A31	Investigate and develop simple and creative nature play spaces in liaison with others to attract and support family visits in parks	Short - Medium	Mana whenua, community
A32	Develop an operational policy to support the development of nature play spaces drawing on national and international guidelines and best practice	Short	Community, Mana whenua
A33	Investigate and develop outdoor fitness stations in easily accessible locations to support visits and encourage health, fitness and fun	Medium	Mana whenua, community
A34	Investigate and develop or enhance existing mountain bike skills tracks to support participation and enjoyment where locally appropriate	Medium	Mountain biking clubs, community
PARK STAYS			
A35	Identify new 'Approved site'* overnight stay opportunities to support greater diversity of park experiences, use and enjoyment e.g. scout/ adventurer opportunities, campervan/ tent, fully self-contained or limited facilities camping. *Refer section xx Rules for Use and Development	Medium	Mana whenua, community, stakeholders
A36	Identify possible adaptive reuses of structures in parks for a range of accommodation options such as 'cottages on the park'/ 'green hub' conservation bases or education centres, event related stays or pop-up overnight opportunities Refer policy xx	Medium - Long	Mana whenua, community, stakeholders
TRAILS			
A37	Work with others to identify gaps in the trail network and connect trails to parks	Medium - Long	TA's RLTP private land owners
A38	Enhance trail experiences to support implementation of the Wellington Regional Trails Framework	Short-Medium	WRTF, WREDA
A39	Investigate and adapt the trail network to suit current needs through: <ul style="list-style-type: none"> • Analysis of trail supply and demand • Planning for proposals as identified in this Plan • Consideration of the trail selection criteria in this Plan • AEE and community liaison processes 	Short- Long	Mana whenua, community, stakeholders
Objective 5. Apply principles of universal design to park facilities and ensure a wide range of accessible recreation opportunities are provided			
ACTIONS			
A40	Investigate options to open vehicle access further into parks to enable more visitors to experience and enjoy use of parks <ul style="list-style-type: none"> • Open public access to areas of park closed for stock grazing licences in Belmont and Queen Elizabeth Parks 	Short	Farming licence holders, park neighbours, utilities, community, stakeholders

VISITOR EXPERIENCE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<ul style="list-style-type: none"> Open daylight hour vehicle access to the top car park, Hill Road, Belmont and investigate Belmont access improvement opportunities 		
A41	Investigate the establishment of an 'all abilities' user group or other peer review mechanisms to guide planning and development of barrier free sites and facilities	Short	Mana whenua, community, stakeholders
A42	Undertake an access audit to identify key issues and improvements to enable easier park access and more visits: <ul style="list-style-type: none"> Prioritise removal of barriers to access such as styles, gates, narrow obstacles restricting primary users Adopt a whole of visitor experience approach Follow universal design practice with new and adapted facilities 	Short-Medium	All abilities user groups, Mana whenua, stakeholders
A43	In each park, develop at least one wheelchair accessible key destination experience (including associated facilities) e.g. view point, heritage feature, nature play space, nature trail, museum	Short-Long	All abilities user groups
A44	Reduce barriers and minimise the use of internal fencing in parks to support natural open landscapes amenity: <ul style="list-style-type: none"> Where barriers are required, use less visually intrusive barriers such as vegetation, haha walls or bollards 	Short-medium	Master Planning
Objective 6. Follow a strategic, planned and benefits based approach to new or enhanced visitor facilities			
ACTIONS			
A45	Identify and develop or enhance a range of 'Key Destinations' in parks to attract visitors, enhance enjoyment and reduce pressures at popular sites Key destinations include: <ul style="list-style-type: none"> Different types of experiences such as night sky viewing, short and long walks and rides, heritage features, museums, highly accessible places, storytelling places, views etc Event and concession and tourism opportunities Adaptively reused park facilities, buildings e.g. park cottages for overnight stays, restoration project /community bases In developing key destinations: <ul style="list-style-type: none"> Develop business cases Encompass AEE process where appropriate Work with others following placemaking type methods Look for opportunities for external funding or partnerships 	Short - Long	Mana whenua, community, stakeholders, private enterprise
A46	Through the development of a parks marketing plan, identify complimentary attractions and services for tourism packaging in conjunction with others: <ul style="list-style-type: none"> Provide a depth of information about parks and recreation experiences available such as landscape settings, recreation club/concession activities, barrier free facilities and experiences, key destinations, family friendly and nature play opportunities, mātauranga Māori knowledge, cultural and natural heritage values and sustainable land management 	Short	Mana whenua, DOC, WREDA, TA's

VISITOR EXPERIENCE		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<ul style="list-style-type: none"> Promote Key Destinations as they are developed and enhanced through a variety of media and methods 		
A47	<p>In liaison with other agencies investigate the development of the greater Wellington area as a 'national park city' encompassing regional and other parks</p> <p><i>National Park cities are 'a place, a vision and a city-wide community that is acting together to make life better for the people, wildlife and nature'</i></p> <p><i>National Park City Foundation</i></p>	Short	World Urban Parks, National Park City Foundation, WREDA, TA's, DOC

OUTCOMES:

- B. Park picnic and amenity areas are highly accessible for most people and trails meet a wide variety of visitor needs
- C. Key destinations within parks attract visitors and support the local and regional economy through tourism opportunities
- D. Park visitors report high levels of satisfaction with their experiences

PRELIMINARY DRAFT SECTION

Landscape Values and Cultural Heritage Features

Core value: We value the maintenance and enhancement of a diversity of landscape settings for different experiences in nature

Ki te kotahi te kakaho ka whati, Ki te kapuia e kore e whati

Alone we can be broken. Standing together, we are invincible

INTRODUCTION

Greater Wellington's Regional Policy Statement 2013 recognises the importance of landscape to the people of Wellington; *'Landscapes influence our sense of identity and our experiences of the places in which we live. Landscapes also influence how visitors and people from other countries perceive us. We attribute different values to these landscapes, depending on their characteristics and our own culture, personal history, relationship with the land and notions about what is significant. While all landscapes have value, the significance of those values differs. It is important that this is recognised in the way the values of landscapes are assessed and managed. Landscapes are dynamic and change is inevitable; even without human activity or intervention'*

Before human settlement the Wellington region had extensive indigenous vegetation cover and many areas of wetland. Progressive human arrivals accelerated landscape change. From the earliest arrivals trading, cultivating and modifying the land for food and shelter supported life. Trail routes were formed, territory defended, taiao (nature) harvested and produce grown. Whanaungatanga (kinships) and whakapapa links to the land were formed and remain strong today. The regional landscape as we see it now is highly modified and urbanised through use and development. Vegetation cover varies from original forest, wetland and coastal dunes remnants to pine plantations, pockets of other exotic forest and large heavily grazed areas denuded of vegetation. Landscape change continues. In many areas deemed 'unproductive' for agriculture the land has been left to restore itself. Regeneration is often led by non-native species such as gorse which provides shelter for indigenous species to grow through. In less than a human generation, native bush and birds come back.

Greater Wellington parks offer a diversity of landscape settings for recreation activities. Public feedback in 2018 indicated that this is a highly valued feature for many people. Feedback also indicate that public perceptions of good land care, manaaki whenua, in parks has changed over the past ten years. Restoring vegetated landscapes, supporting freshwater quality, habitat for native species, pest plant and animal reduction and mahinga kai gathering opportunities were important to many people.

Built features are an important part of the regions cultural heritage and park landscapes. Enhancement of historic heritage features through restoration, adaptive reuses and more on-site storytelling is proposed in this plan. As light pollution increases and activities change, preserving natural heritage features such as dark night skies and natural quiet experiences are values we seeking to preserve in parks. New policies have been developed and actions identify ways we can minimise light pollution and noise impacts for visitor enjoyment and wildlife conservation.



Minimising light pollution and preserving dark night skies through lighting modifications is proposed in parks. Night visits to parks and overnight stays in parks make for memorable experiences. The Baring Head/ Orua pouanui lighthouse is a key destination for day time visits. When the two lighthouse keeper's cottages are restored it will become a popular place for overnight stays. Greater Wellington has been working with the Friends of Baring Head to restore the historic lighthouse complex and indigenous biodiversity in the park. Supporting and enabling groups to lead conservation and recreation work is key direction of this plan.

NGĀ KAUPAPA HERE / POLICIES

- 46P To preserve and protect a diversity of landscapes across Greater Wellington parks including dark skies and those identified as having significant natural or cultural (encompassing recreation) values. Refer Schedule **Appendix xx**
- 47P To identify, protect and preserve information and knowledge related to significant heritage sites and values of the parks according to national standards and mana whenua tikanga while having regard to privacy
- 48P To allow planting of non-indigenous flora species, where:
- They support long term restoration efforts (e.g. nursery species) or minimise impacts in the shorter term such as erosion
 - They have specific purposes that native species cannot readily fulfil e.g. nitrogen fixing/ nursery species, flood protection, rapid wind break, winter food source for birds and animals, amenity value, education, recreation, landscape protection or commemorative planting in designated areas
 - They pose a low threat to the surrounding indigenous natural heritage
 - They may be key destinations or attractions for visitors and have social amenity value for local communities including display plantings, arboretums, gardens, orchards, maze or labyrinths, or are part of art or sculpture works
 - They support restoration of native flora or fauna by providing habitat/food or shelter
 - They are part of community horticultural activities
- 49P To preserve the natural night sky where practical and avoid light pollution. Where exterior lighting is required for recreation or conservation activity use and safety/security purposes, it must:
- Follow the principles of 'Crime Prevention through Environmental Design' (CPTED) and safety considerations
 - Take active measures through procurement, retrofitting or modifying existing lighting where appropriate to minimise light pollution impacts. Consider removing lighting if appropriate
 - Use lighting only when needed, e.g. sensors or timers should be used where appropriate. In the case of road lighting utilise smart circuits/controls to automatically dim (50-30%) at 10pm
 - Only light the areas that require it and ensure spill light is controlled where possible
 - Use the minimum amount of light needed for safety and security
 - To help reduce blue light emission, luminaires with a nominal correlated colour temperature (CCT) of 3000k or less are preferred for all exterior lighting by installing 2200k road lighting as a first option. Up to 4k is allowable but only in high speed areas 80km/h
 - Select and install luminaires so that they emit zero upward light

- h. Floodlighting must follow international standards for dark sky and identify park zones for different types of acceptable artificial light. Refer: www.darksky.org
 - i. Work with city councils to help ensure that retrofitted road lighting in parks meets these standards.
- 50P To consider when acquiring a lease, acquisition, right-of-way, caveat, exchange, purchase or gifting of land and associated infrastructure under public and private ownership:
- a. Assessment of Environmental Effects (including social, cultural and recreation values)
 - b. Recreation and public access and benefits, current or potential
 - c. Conservation benefits and protection of ecosystem services
 - d. Ecological values including enhancement of biolinks or aquatic ecosystems
 - e. Trail and sustainable transport connections
 - f. Cultural heritage values
 - g. Mana whenua and community needs and aspirations, co-management opportunities
 - h. Access and equity values
 - i. Landscape character and significance
 - j. Multi-use and broader community use as a priority
 - k. Tourism and economic benefits
 - l. Open space provision – quality and quantity
 - m. Property related benefits such as boundaries, continuity of open space
 - n. Other land management or planning mechanisms e.g. management by others, conservation covenant
 - o. Quantum and quality of open space for recreation and conservation
 - p. Climate change effects minimisation
 - q. Projected population and demographic changes
 - r. Local, regional and national significance
 - s. Offer sustainability benefits or reduction of impacts on land, freshwater and heritage values
 - t. Hazard minimisation benefits
 - u. Ongoing resourcing, asset maintenance requirements
 - v. Community perceptions, interests, advocacy and capital
 - w. Concessionaires feedback of proposals
- 51P To undertake *before* park land is deemed to be surplus and disposal processes commence:
- a. Detailed investigation and analysis of land status with respect to original acquisition, potential costs, benefits, opportunities for adaptive reuse, environmental role, community use or transfer to other government agencies
 - b. Assessment of regional open space priorities
 - c. Liaison with mana whenua and agencies including DOC, TA's and relevant NGO's
 - d. Public consultation and engagement processes following the Significance and Engagement Policy, noting that public land disposal is considered to be of significant public interest
 - e. AEE impact and benefit assessment process (refer [Appendix xx](#))
- 52P To consider the upgrade or development of new service utilities via PNP 'Restricted Activity' and AEE processes
- 53P To comply with legislation and regulations for the ongoing operation and maintenance of existing utilities as 'Allowed' activities with a focus on core value impact minimisation
- 54P To support memorial plaques and facilities where they offer demonstrable conservation, recreation or community benefits. Remove memorials, including plaques, deemed no longer appropriate and record their previous presence
- 55P To allow for the sustainable removal of natural materials for scientific research, education, conservation and ecological restoration projects authorised by Greater Wellington. Also refer *Rules for use and development*, [section xx](#).

Goal 3. A variety of landscape settings are preserved and enhanced reflecting social values; historic heritage features are protected and interpreted for visitors

CULTURAL HERITAGE FEATURES & LANDSCAPE VALUES		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: DOC: Department of conservation PNRP: proposed Natural Resources Plan		RPS: Regional Policy Statement TA's: Territorial Authority	
Objective 7. To protect, and where appropriate enhance, a diversity of park landscapes and settings for enjoyable recreation experiences			
ACTIONS			
A48	Through master planning, identify long term spatial blue prints to preserve, enhance and restore natural landscapes and valued landscape features: <ul style="list-style-type: none"> Work alongside mana whenua to encompass māramatanga and aspirations and environmental management plans Identify areas where minimal development will take place Areas for restoration are based on original landscapes Amenity plantings for diversity and visitor enjoyment e.g. arboretum, avenues, preservation of existing trees/ plants Consider sustainable transport and ecological connections to and beyond park boundaries Consider adjoining residential and urban growth and development areas 	Short - Medium	Mana whenua, community
A49	Undertake a park-wide landscape study to inform conservation and management of them. Identify landscapes and features of regional and local significance including 'outstanding natural features and landscapes', 'special amenity landscapes' and District Plan areas as being identified as significant (e.g. Significant Natural Areas), areas of significance to mana whenua. Include dark skies; maintenance, enhancement and identification lighting zones within parks if appropriate (<i>refer Model Lighting Ordinance, International Dark Sky Association</i>)	Medium	RPS PNRP, mana whenua Refer Appendix xx
A50	Identify ways to minimise light pollution in parks and enhance dark skies: <ul style="list-style-type: none"> As a priority review all park flood lighting to identify and remedy those with high light pollution impact Follow exterior lighting policy in procurement decisions Develop an operational policy and guidance for external lighting in parks to minimise light pollution impacts Raise awareness of light pollution issues through education activities e.g. through community events, ranger talks, guided night walks, storytelling Collaborate with TA's, utilities other agencies and community groups to help minimise lighting impacts Provide guidance to applicants for concession and event permits for ways to minimise light pollution 	Short	Refer policy XX Refer Rules Procurement policy, TA's
A51	Identify ways to maximise natural quiet for visitor enjoyment in parks and to reduce impacts on wildlife. Consider: <ul style="list-style-type: none"> Zonation of quiet areas in parks and consideration of the needs of others for quiet enjoyment of the outdoors e.g. via master planning 	Medium	

CULTURAL HERITAGE FEATURES & LANDSCAPE VALUES		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<ul style="list-style-type: none"> Through procurement processes consider opportunities to reduce noisy activities e.g. battery powered tools instead fossil fuel powered machinery 		
A52	<p>For other land owned by Greater Wellington consider opportunities to connect and manage, to support and enhance settings for recreation and conservation:</p> <ul style="list-style-type: none"> Where appropriate, develop Resource Statements and identify other planning and management support <p><i>For example consider:</i></p> <ul style="list-style-type: none"> Forests and river corridors managed by Greater Wellington 	Medium	Mana whenua
A53	<p>Through open space planning and other processes consider:</p> <p>a. Opportunities for enhancing protection of significant wetlands and landscapes adjoining parks as well as recreation connections. Refer policy xx</p> <p>b. Undertake reserve status checks for all parcels of land and identify classification changes/ additional classifications where appropriate</p>	Short-Long	
	c. Regional open space planning priorities and opportunities for the Greater Wellington park network	Medium	
		Short-medium	
Objective 8. A range of protection mechanisms are in place to protect significant historic heritage values from impacts			
ACTIONS			
A54	Develop conservation management plans for built heritage sites and assets where appropriate prioritising New Zealand Heritage List/Rārangi Kōrero and PNRP listed sites	Medium	PNRP, mana whenua
A55	Through asset management planning, improve the resilience of identified built heritage assets to withstand the effects of climate change, increased use and significant natural events	Short - Medium	RPS

OUTCOMES:

- E. Significant landscapes, heritage features and assets are protected from inappropriate use and development (**refer Appendix xx**)
- F. A diverse range of landscape settings are preserved across the Greater Wellington park network for current and future generations and significant cultural heritage features interpreted for park visitor appreciation and understanding

Mana Whenua Partnerships

We value protecting and preserving our cultural heritage and working in partnership with mana whenua/ mātauranga

Ko tō hoe, ko taku hoe, ka tere te waka e

With your paddle and my paddle, the waka will travel quickly

Greater Wellington parks contain important natural ecosystems and rich mana whenua cultural heritage. The importance of taking a holistic approach to kaitiakitanga and the management of resources within parks has been stressed by local iwi. This is reflected in the plan theme *‘Everything is connected’*. Mana whenua have rich and significant historical and present connections to parks and places within them and key roles in preserving valued taonga such as park landscapes, waterways and kāinga and pa sites.

Despite the modifications to landscapes and streams of many parks, significant mahinga kai species remain which continue to be accessed by mana whenua and mata waka such as watercress, tuna/eel, inanga/ whitebait, kokopū, koura, kākahi and pātiki. In some parks pa harakeke support cultural harvest of plants used for weaving and other customary purposes. Historic walking routes and trails and many archaeological sites exist within parks. Protecting, preserving and interpreting these sites through storytelling is important for maintaining cultural connections.

Te Ao Tūroa, mana, māramatanga, wairua and whakapapa are values identified as being important. Of these values the concept of mauri recognises the interconnection between the various elements of the natural world, with the health of one element connected to the health of another. This is also the ‘healthy parks, healthy people’ approach to sustainable management of parks. Healthy mauri is often described as having the qualities of clean fresh water, abundant fish and bird life, kaitiakitanga practices to sustainably harvest and nurture nature. Greater Wellington’s Proposed Natural Resources Plan (PNRP) and mana whenua environmental management plans (as developed) identify core values. As identified below these are connectedness, identity, judgement based on knowledge and partnerships with mana whenua.



A voyage is shaped by relationships. The route and destination may change as relationships evolve.



Improving freshwater quality to support mahinga kai gathering is important for many iwi. Kaitiaki monitoring activities help identify issues and highlight when changes in land use is making a difference to stream health.

NGĀ KAUPAPA HERE / POLICIES

- 56P To follow a mahi tahi partnership approach to working alongside mana whenua supporting:
- Their expressed values and environmental management plans
 - Sites of significance and other taonga taking into account nationally and locally established protocols
 - Kaitiakitanga, traditional guardianship roles, maintenance of mauri and management and protection of wāhi tapu
 - Customary use of natural resources within the context of sustainable management
 - Planning in ways that enable mana whenua to articulate their tikanga and kawa
 - Early and ongoing engagement in the planning, development and day to day management of parks
 - Other opportunities for co-management as they arise
- 55P To fulfil co-management obligations under mana whenua partners’ Treaty of Waitangi settlement redress including co-management at Parangarahu Lakes via rōpu tiaki processes
- 56P To adhere to national established procedures where historic and cultural heritage features or artefacts are unearthed considering the Heritage New Zealand Pouhere Taonga Act 2014 and Protected Objects Act 1975
- 57P To cease work in the vicinity of a discovery and follow the ‘Greater Wellington Accidental Discovery Protocol’, informing mana whenua of discoveries of Māori artefacts
- 58P To allow for the sustainable removal of natural materials for mana whenua customary purposes. Also refer *Rules for use and development*, section xx.
- 59P To promote use and understanding of te reo Māori through information, storytelling, events and other media and mechanisms
- 60P To follow the Greater Wellington te reo Māori and Tikanga Policy 2019-2022 and LINZ Geographic Place Name Board directions when naming places, areas, tracks or features, giving preference to names that reflect:
- Te reo Māori as identified by mana whenua
 - Natural and physical features
 - Local history and heritage
 - Cultural and community interests
 - An individual or organisation contributing significantly through gifting, sponsorship, personal commitment of time and energy or conservation, recreation or cultural heritage value advocacy
- 61P To consult when seeking new names, dual names or when renaming places or significant features, with mana whenua, stakeholder groups and the public where appropriate, considering the level of significance or interest in the name change

Goal 4. Collectively we work together in mahi tahi partnerships, as kaitiaki guardians, nurturing strong mauri and enhancing parks for current and future generations

IWI PARTNERSHIPS		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: PNRP: proposed Natural Resources Plan		WIP: Waitua implementation plan	
Objective 9. Catchment-wide considerations are taken into account in planning and decision making about changes in land use, facilities and services			
ACTIONS			

IWI PARTNERSHIPS		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
A56	Encompass iwi Environmental Plans and Whaitua Implementation Programme Statements (or equivalent) in planning and operational work as they are developed <ul style="list-style-type: none"> Update plans when necessary 	On-going	Māori Partnerships / Framework
A57	In collaboration with mana whenua and Mata Waka, identify and enable opportunities for iwi lead conservation, recreation or community health and wellbeing activities (supporting park values)	Short	Mana whenua, Mata Waka
A58	Recognise and provide for Kaitiakitanga at sites with significant mana whenua values (identified in PNRP and by mana whenua) in accordance with tikanga and kaupapa Māori as exercised by mana whenua and supported by Te Roopu Tiaki and other mahi tahi partnership arrangements	Medium	Mana whenua, PNRP
A59	Preserve, protect and where appropriate interpret, historic heritage values, sites or geological features (refer Appendix xx) <ul style="list-style-type: none"> Work with mana whenua and community groups to identify, assess and interpret heritage sites or stories to park visitors Develop heritage management plans where appropriate to guide maintenance and protection works 	Medium	Mana whenua, PNRP
Objective 10. Mātauranga Māori knowledge is utilised to support planning and management to achieve shared goals			
ACTIONS			
A60	Apply Mātauranga Māori knowledge and methods to Nga Kaupapa restoration activities and monitoring: <ul style="list-style-type: none"> Support rekindling of traditional knowledge alongside modern research, connecting people with nature and care for papatūānuku, mother earth Utilise science and research to inform and support, recognising interconnectedness of ecosystem services Commission site-specific studies and/or cultural studies to support <i>knowledge/ to matou whakapono</i> and management custodian practices where appropriate Utilise the Mahi waiora approach to assist in operational decision making where appropriate 	Short-Long	Mana whenua
A61	Establish which sites with significant mana whenua values need restoration and develop programmes for implementation with iwi	Medium	Mana whenua
Objective 11. To share knowledge and understanding access is enhanced and storytelling and maramatanga education activities support expression of cultural values			
ACTIONS			

IWI PARTNERSHIPS		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
A62	Make mana whenua cultural heritage visible in parks and support cultural understanding through: <ul style="list-style-type: none"> • Te reo names • Māori designs and artwork to foster awareness and appreciation of cultural values • Mana whenua lead storytelling/ heritage interpretation and maramatanga education activities including interpretation plans • Events 	Medium - Long	Mana whenua, GW Te reo Māori policy
A63	Support Māori customary use, harvest / Matariki and education activities considering sustainability of the resource, environmental and cultural benefits such as pa harakeke and other gardens for sustainable harvest	Short - Medium	Mana whenua, PNRP
A64	Develop cultural harvest plans/ operational policy to ensure the long term sustainability of traditional uses of resources from parks	Short - Medium	Mana whenua
Objective 12. Work in mahi tahi partnership enabling ways, suiting local relationships and shared goals			
ACTIONS			
A65	Embed mahi tahi in the way we work with enabling activities such as: <ul style="list-style-type: none"> • Co-design a mahi tahi mutually beneficial approach to enable work on shared goals • Mana whenua leadership in community collaboration groups or equivalent for parks • Proposals to foster mana whenua connectedness and sense of place; wairua, spiritual health • Utilising a mahi waiora approach for decision making 	Medium	Mana whenua, PNRP
A66	Work with mana whenua to identify local features, opportunities for storytelling and cultural visibility within parks	Short-Long	Mana whenua

OUTCOMES:

- G. Mana whenua tūrangawaewae is enhanced and visible; kaitiakitanga and connection to place is reported for parks
- H. Mana whenua kaitiakitanga/environmental plans and values are incorporated into park management and planning with a catchment wide and Ki uta ki tai/connected approach
- I. Mahi tahi partnerships and kaitiaki guardianship are evident as we work together towards shared goals and maintain and enhance the mauri of land and people

The Way We Work – Mahi Tahī

Core value: *We value collaboration and empowerment in the way we work with others, sharing common goals based on access and equity*

He rau ringa e oti ai Many hands make light work

The way we work, mahi tahī is identified as a goal in this Draft Plan to enable Greater Wellington to focus effort on consistent collaborative ways of working with others. Working collaboratively we can build relationships, health and wellbeing and achieve more together. The way we work goal is about supporting and enabling the work of volunteers, park partners and other stakeholders to be successful in recreation, conservation activities and work in parks.

Parks reside within communities and the broader economy. In times of crisis parks are shown over and over again to be places of day to day refuge and respite and in some places, food security. More benefits from parks (healthy parks, healthy people) can be realised with better connections with our communities and an approach that supports and enables participation. Supporting and enabling recreation, conservation and community groups, finding easy pathways to participation, working creatively and pooling resources is critical to the success of Greater Wellington’s custodianship of parks.

A range of actions below identify work to investigate and develop processes of change to support consistent approaches to collaboration with others across parks. In public feedback to develop the Draft Plan inconsistencies in the way Greater Wellington works with others were highlighted and questioned. Building on processes and approaches which have been identified as working well is proposed; doing more of what works well and recognising and rewarding these efforts.

Accountability, transparency and reporting is important in the way we work. It helps identify inconsistencies, enables others to challenge assumptions and keep focus on core conservation and recreation values. ‘State of the parks’ type monitoring and reporting is identified as an action in this Draft Plan so we can monitor progress towards achieving goals, report progress and adjust our approach where required.



Supporting and enabling others in conservation and recreation work in parks supports overall community health and wellbeing and delivers multiple benefits for parks and people. The Way We Work section of the plan is about working together in conservation, recreation and community.

NGĀ KAUPAPA HERE / POLICIES

- 77P To adopt and maintain a consistent, open and collaborative approach across parks to support and enable mana whenua partners, stakeholders, local communities and others to work towards shared goals
- 78P To adopt and maintain a learning approach, monitoring public and partner needs and aspirations and adapting management approaches based on science and research, being flexible to allow innovation
- 79P To build capacity and capability in supporting and enabling partnerships; empowering the community to achieve common goals based on access and equity principles
- 80P To support local leadership and innovation by enabling park partners where core values and goals are supported and appropriate management agreements are in place e.g. memorandum of understanding or partnership
- 81P To work beyond park boundaries with others to achieve a catchment and ecosystem wide approach based on shared values and goals
- 82P To ensure domestic animals (including cats) are not effected by pest animal management activities by:
- Notifying the public of pest animal control operations through a range of media
 - Prohibiting all unaccompanied domestic animals from all parks (except where they are expressly permitted in the *Rules for use and development*. Refer [section xx](#)). Domestic animal control methods are used to remove unaccompanied domestic animals
 - Educating local residents about the impact on native wildlife from unaccompanied and off-leash domestic animals in parks

PLANNING PROCESSES

- 83P To utilise master planning processes, working collaboratively with mana whenua partners, stakeholders and the community, to provide park-wide and place specific spatial blueprints for recreation and conservation facilities and activities in parks and to guide broader scale landscape restoration.
- 84P To follow current guidelines and standard operating procedures including, but not exclusive to:
- New Zealand Fish Passage Guidelines
 - Environmental Impact Assessment guidelines such as 'A Guide to Preparing a Basic Assessment of Environmental Effects' Ministry for Environment
 - SNZ8630 Track and outdoor visitor structures
 - SNZ8603:2005 Design and application of outdoor recreation symbols
 - Accepted NZ MTB track development and maintenance standards
 - Best practice in 'Crime Prevention through Environmental Design' (CPTED)
 - Best practice in Water Sensitive Urban Design (WSUD)
 - NZS 5828:2015 Playground equipment and surfacing for nature play
 - International standards for minimising external light pollution
 - Resource Management Act related guidelines
 - Relevant Territorial Authority, Department of Conservation and other Central Government best practice guidelines
- 85P To meet, and exceed wherever practicable, the requirements of relevant statutes, National Policy Statements, other national policies and strategies and Greater Wellington policies, plans and strategies and consider network utilities and emergency service needs
- 86P To maintain the currency of the Parks Network Plan through periodic updates and undertake an overall review at least once every 10 years

CREATIVITY AND INNOVATION

87P To encourage and support new, creative and innovative approaches to conservation and recreation challenges and opportunities

TRANSPARENCY AND REPORTING

88P To periodically and transparently report change against Parks Network Plan goals and outcomes to Council and the public through annual reporting processes

Goal 5. Working collaboratively and consistently with others, following best practices, we enable learning and build strong partnerships to deliver more conservation and recreation benefits for parks, people and communities

THE WAY WE WORK – MAHI TAHI Constructive partnerships, enabling in a catchment-wide context		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: DOC: Department of conservation PAMG: Parks agency managers group		TA: Territorial authority	
Objective 13. To achieve shared goals we have a consistent, open and collaborative approach in working with others			
ACTIONS			
A67	Enhance support mechanisms for consistent collaborative approaches for working with others such as: <ul style="list-style-type: none"> • A customer relationship management system or work flow models to support engagement activities • Engagement planning activities 	Short	DOC, TA, Wellington Water, PAMG
A68	Investigate establishing community collaboration groups for parks to support cooperative working on plan goals. Consider: <ul style="list-style-type: none"> • Co-design processes and inclusivity with mana whenua, park stakeholders, general community representatives, and other agency representatives (e.g. TA's) with support from park rangers • Establishment prior to the commencement of master planning processes and/ or major restoration projects • Temporary working groups to address key challenges, issues or projects as needed 	Short	Mana whenua, GW Māori Partnerships Framework
Objective 14. Support and enable the work of volunteers and park partners so that they can be successful in achieving shared conservation and recreation goals			
ACTIONS			
A69	Investigate ways Greater Wellington can improve support to foster new, creative and innovative approaches to conservation and recreation challenges with volunteers and partners including: <ul style="list-style-type: none"> • Capacity and capability in community partnerships • Park-wide programme approach options • Volunteer training and skill development opportunities to support free sharing of experiences and ways of working e.g. seminars, mentoring, project management • Facility and services to support others in leading conservation, recreation and education work in parks e.g. citizen science, environmental knowledge sharing, storytelling education hubs 	Short – Long	Volunteers, friends groups, stakeholders, clubs, schools, universities

THE WAY WE WORK – MAHI TAHI Constructive partnerships, enabling in a catchment-wide context		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<ul style="list-style-type: none"> Collaborative working group options 		
A70	<p>Make a variety of volunteering opportunities available across parks and grow participation so it is easy for people to assist in conservation and recreation work such as:</p> <ul style="list-style-type: none"> Events and 'come and try' activities Promotion of volunteer opportunities Easily accessible, current and useable information on the Greater Wellington website or associated electronic media Clearly identified opportunities for philanthropic donations, sponsorship or in kind contributions 	Medium	Volunteer Strategy
A71	Identify ways to recognise and reward volunteer efforts e.g. promotion of volunteers achievements, learning opportunities, workshops, social gatherings, seminars	Short-medium	
Objective 15. Support recreation and conservation clubs, concessionaires and licence holders so they can be successful in providing enjoyable recreation experiences and undertaking conservation work			
ACTIONS			
A72	Support with activities e.g. participation in park collaboration groups where these are formed, training, resourcing, regular communication and liaison, grass mowing services where appropriate	Short-long	
A73	Work to improve sustainability practices and build resilience of facilities in response to climate change	Short - Long	Concessionaires, clubs, lease and licence holders, Climate Change Strategy, Asset Management Strategy
Objective 16. To bring together a range of work programmes and initiatives into a cohesive and coordinated approach to achieving conservation and recreation goals in parks, connected with broader Greater Wellington priorities			
ACTIONS			
A74	<p>Implement Plan priorities through Greater Wellington business planning, annual planning and long term planning processes considering:</p> <ul style="list-style-type: none"> Key destination development and enhancement Asset management planning Opportunities for contributions from others including community partners, corporate sponsors, Central Government grants, tourism concessions, urban renewal projects e.g. Porirua Project Draw on master planning directions for particular parks 	Short - Long	Wellington Regional Growth Framework
A75	<p>Monitor and report relationship health and satisfaction about the way we work with others:</p> <ul style="list-style-type: none"> Incorporate review of relationship health into existing feedback mechanisms and/ or establish new measures with key partners 	Medium	

THE WAY WE WORK – MAHI TAHI Constructive partnerships, enabling in a catchment-wide context		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Objective 17. To monitor progress on achieving Parks Network Plan goals and adapt our approach where required to ensure efforts are achieving key outcomes			
ACTIONS			
A76	Establish a social and environmental science-led 'state of the parks' monitoring and reporting programme: a. Identify monitoring and reporting methodology including identification of indicators of success, training requirements, existing data sets, opportunities for citizen science monitoring, reporting intervals and mechanisms, including Annual Report b. Undertake baseline monitoring for each of the All Park Direction goals c. Develop the programme in liaison with mana whenua and other park partners d. Through regular monitoring identify where issues are apparent and adaptation is required to achieve Plan goals e. Transparently report issues and progress to the public via Council	Short Short Medium Medium Medium - Long	
A77	For the benefit of future generations, visually record park landscape and cultural heritage features change over time (longitudinal) through photography: a. Identify monitoring methodology including data points in landscape, opportunities for citizen/ community monitoring, monitoring intervals and reporting opportunities b. Utilise educational opportunities to promote conservation understanding through the monitoring project c. Promote land change as restoration efforts progress	Short Medium Long	

OUTCOMES:

- J. Collaborative ways of working are embedded in the way we work with mana whenua, stakeholders and the broader community consistently across the Greater Wellington park network
- K. Volunteer numbers, the diversity of volunteering work experiences and volunteer levels of satisfaction are measured and grown
- L. Progress towards PNP goals and outcomes is monitored and periodically reported to Council and the public
- M. Neighbours are engaged to ensure activities around parks support their natural heritage values

Climate Change and Sustainability

Core value: *We value and utilise parks as a natural solution in helping to reduce the effects of climate change*

Whaowhia te kete mātauranga

Fill the basket of knowledge

Climate change is causing a wide range of impacts that affect virtually everyone and everything on Earth in increasingly detrimental ways. These range from more violent storms to severe flooding and longer lasting periods of drought. Extreme weather events are more frequent and widespread.

Greater Wellington parks are a vital and significant contributors towards helping us combat the effects of climate change in the region. Healthy parks can both minimise our contribution to climate change and increase resilience to its effects. A planned response is required for restoring habitats, adapting park facilities and modifying management practices to accommodate climate change impacts and minimise the risks. These efforts will also protect neighbouring communities and our precious freshwater and coastal ecosystems by reducing fire and flood risk, soil erosion and sediment flows. Parks also provide an opportunity for learning through storytelling and holding events that promote 'natural solutions' to climate change.

By restoring and protecting our parks ecosystems, we will be making a significant contribution towards reducing our region's carbon footprint. Some habitats can help remove carbon dioxide from the atmosphere and sequester it away, and in doing so become a 'carbon sink'. Where degraded and deforested land is restored, parks can help grow our regional carbon sinks. Forests are perhaps the best known ecosystem for performing this function, but wetlands also play a significant role. The protection and restoration of peatlands, which are a particular type of wetland, is especially important. These ecosystems act as substantial carbon sinks and will sequester carbon dioxide that would otherwise be released to the atmosphere for as long as they are kept in a healthy state. When these ecosystems are damaged and drained, they release carbon dioxide back to the atmosphere. This can continue for thousands of years until no organic material remains in the soil, so essentially they become a permanent 'carbon source'.

The concept that our parks are a 'natural solution' to reducing the impacts of climate change lies in the provisioning services of the whenua. Healthy, functioning ecosystems such as forests and wetlands increase the resilience of the land and soil to extreme weather. Strong, diverse and healthy ecosystems are resilient and better able to withstand the impacts of climate change such as increased flooding. Parks provide areas for flooding, reducing the impact on nearby settlements, properties and sensitive environments.

Greater Wellington has active climate change and natural hazards work programmes, and has been implementing its Climate Change Strategy since 2015. In 2019, Greater Wellington declared a 'climate emergency' and formally established a target for the organisation to become 'carbon neutral' by 2030. These announcements are backed by two action plans, a Corporate Carbon Neutrality Action Plan and a Regional Climate Emergency Action Plan. These are collectively referred to here as Greater Wellington's Climate Emergency Response. These decisions signal a step change in how Greater Wellington addresses climate change. Several actions have implications for how we manage our parks.

Actions from the 'Corporate Carbon Neutrality Action Plan' and the 'Regional Climate Emergency Action Plan' directly influence the day to day management and future states of Greater Wellington parks.

Procurement

Procurement is in essence the process a business undertakes to choose between different suppliers of goods and services. Choices in procurement of goods and services offers a significant opportunity to reduce greenhouse gas emissions. Reducing all forms of pollution, cleaning water ways, increasing indigenous biodiversity and providing equitable opportunities for all people are outcomes we all need to contribute to.

Greater Wellington strongly encourages all businesses involved in parks to thoroughly consider the sustainability impact over the lifetime of all goods and services they use. Greater Wellington supports procurement processes that increase sustainability outcomes over the goods or service lifetime, and/ or select suppliers of goods or services based on improved environmental and or social outcomes.

The following goal and its outcomes, objectives and actions reflect the important role of parks in supporting climate change response in the region. Achieving this will require some change in land use and park management. Restoring wetlands, phasing out stock grazing activities and progressively restoring natural heritage are key activities for the next ten years and well beyond.



Minimising waste, collecting rubbish and educating visitors about sustainability is constant and ongoing work in parks. At Battle Hill farming education activities are part of the park purpose, however carbon emissions from farming activities must be reduced in accordance with Greater Wellington policy and Corporate Neutrality Action Plan.

NGĀ KAUPAPA HERE / POLICIES

- 89P To utilise the latest research and climate change modelling to inform planning of all activities and facilities in parks
- 90P To build resilience of existing infrastructure and services (or remove or relocate it) to better withstand the impacts of climate change and natural hazards
- 91P To ensure new long term park infrastructure is highly sustainable, considers projected long term climate induced changes as well as other changes and natural hazards
- 92P To support Greater Wellington’s organisational carbon neutrality targets and delivery of its climate emergency response
- 93P To prioritise restoration of natural heritage values particularly forests and peatland to increase natural carbon sinks
- 94P To display leadership in waste management and recycling through environmental education, procurement processes and waste handling

Goal 6. Parks are managed in highly sustainable ways, building environmental resilience as part of the natural solution to climate change

CLIMATE CHANGE AND SUSTAINABILITY		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
Abbreviations: CCIS: Climate Change Implementation Strategy 2019 DOC: Department of Conservation		PNRP: Proposed Natural Resources Plan	
Objective 18. To reduce greenhouse gas emissions associated with park activities aiming for carbon neutrality and carbon sink growth in the longer term			
ACTIONS			
A78	Support the implementation of Greater Wellingtons Corporate Carbon Neutrality Action Plan by: <ul style="list-style-type: none"> a. Identifying ways to reduce carbon emissions across Greater Wellington parks in accordance with Greater Wellington policy b. Considering impacts on the carbon target(s), with a strong bias towards those options that will avoid, reduce or absorb emissions. c. Restoring native vegetation in the grazed areas of parks as grazing licences are phased out, considering opportunities to earn carbon credits d. Allocating resources to accelerate reforestation planting, based on a planned approach, considering master planning directions. Refer action xx. e. Working collaboratively with park partners 	Short Short Short Medium-Long Short-long	CCIS, DOC, Mana whenua, TA’s
A79	Support the implementation of Greater Wellingtons Regional Climate Emergency Action Plan by actively promoting native vegetation restoration, building partnerships which capitalise on the Billion Trees programme and expand permanent native forest habitat areas	Short-Long	Billion Trees programme
A80	Quantify and fully offset embodied carbon and emissions from all park activities and new infrastructure considering Greater Wellington procurement policies	Short - Long	CCIS

CLIMATE CHANGE AND SUSTAINABILITY		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
A81	At Battle Hill and in other areas where grazing may continue, adopt further agricultural and land care sustainability measures and follow peer reviewed AEE process for annual grazing operational plans	Medium	Licence holders, AEE process
A82	Develop science lead restoration plans and restore former plantation pine forest areas (not under long term harvesting agreements) in native forest e.g. extending the Battle Hill bush	Long	Biodiversity Strategy
A83	Explore opportunities to accelerate restoration programmes for priority areas such as wetlands via sponsorship/funding and community-lead efforts	Short - Long	Mana whenua, Community, stakeholders
A84	Maintain native forest areas of park land in covenant for at least 50 years as part of the 'Permanent Forest Sink Initiative'	Short - Long	CCIS
A85	Identify property parcels within parks where additional protection mechanisms are appropriate and proceed with protection	Medium	CCIS
A86	Protect and enhance existing forest carbon stores through biosecurity work to minimise threats to forest canopy and indigenous biodiversity	Short	Biodiversity Strategy
Objective 19. To improve resilience, risks from climate change-related impacts are identified and adaptation planning is integrated into 'business as usual'			
ACTIONS			
A87	Integrate climate change response into all planning and operational work: <ul style="list-style-type: none"> Identify, regularly monitor and certify overall stocks and flows of carbon of all parks/ecosystems to ensure maximum sequestering 	Medium	CCIS
A88	Integrate climate change threat minimisation into asset management planning and management	Short-long	CCIS, Asset Management Strategy
A89	Implement the Queen Elizabeth Park 'Coastal retreat plan' 2019 to remove and relocate visitor facility and park operational infrastructure, accommodating coastal erosion and flood inundation processes	Short - Medium	Mana whenua, PNRP, Community, Stakeholders
Objective 20. To support climate change mitigation and adaptation efforts, park visitor education opportunities are provided			
ACTIONS			
A90	Provide information, interpretation and education activities about climate change, ecosystem health and resilience and sustainability in parks	Short	CCIS
A91	Local climate change action is enabled via participation in conservation and recreation activities in parks <ul style="list-style-type: none"> Community connectedness is built using the multiple benefits of parks as a natural solution to climate change Community collaboration groups or other methods of bringing user groups together are utilised to expand and strengthen individual group efforts 	Short - Long	CCIS, mana whenua

CLIMATE CHANGE AND SUSTAINABILITY		TIME (Years) Short 1-3 Medium 4-7 Long 8+	Notes
	<ul style="list-style-type: none"> Organisations and individuals have opportunities to participate in improving the long term resilience and sustainability of the region through conservation work Mana whenua mātauranga Māori knowledge sharing is enabled and shared wherever appropriate 		
A92	<p>Visitors are supported and encouraged to visit parks using low emission and carbon-free transport options</p> <ul style="list-style-type: none"> Advocate for improved public transport to parks e.g. Seasonal electric shuttles within parks, train platform for seasonal access at MacKays Crossing, Paekākāriki for Queen Elizabeth Park Support innovative approaches to sustainable transport to parks 	Short - Long	Metlink, Kiwirail, NZTA, other transport services
Objective 21. Demonstrate innovative and best practices in sustainable park management practices			
ACTIONS			
A93	<p>Adaptively and creatively re-use park buildings including former grazing related infrastructure and other assets considering:</p> <ul style="list-style-type: none"> Cultural heritage values Local community needs for facilities and recreation activities Master planning processes Education opportunities Innovative approaches to remove and recycle redundant grazing licence area fences and other infrastructure Art and culture opportunities Key destination development opportunities Park values and community health and wellbeing, in particular access and equity 	Short - Medium	Mana whenua, community, stakeholders, private enterprise
A94	<p>Identify a range of options for improving sustainability practices in parks and showcasing sustainability to park visitors such as:</p> <ul style="list-style-type: none"> Renewable energy generation Recycling and energy efficiency measures School education opportunities and informal story telling Sustainable land management practices, erosion reduction measures, restoration work Mana whenua kaitiakitanga activities 	Shot - Long	Mana whenua

OUTCOMES:

- M. Park environment and facilities have increased resilience to climate change effects
- N. Visitors to parks are more aware of the impacts of climate change and the importance of sustainable practices
- O. The resilience of natural heritage is improved across parks catchment-wide in liaison with mana whenua and others to reduce the threats presented by climate change and contribute to achieving Greater Wellington's defined emission reduction targets

**Council
30 April 2020
Report 20.135**



For Information

POST IMPLEMENTATION REVIEW – *BETTER METLINK FARES*

Te take mō te pūrongo

Purpose

1. To inform Council about the outcomes of the Post Implementation Review on the *Better Metlink Fares* package introduced on 15 July 2018.

Te horopaki

Context

2. The *Better Metlink Fares* package was introduced in July 2018 across the Metlink public transport network, with the new bus network and Snapper ticketing roll-out in Wellington City.
3. The package was developed through a comprehensive review process that included wide-spread public consultation and detailed analysis to provide some insight into the likely impacts of the changes.
4. The package was given effect through a variation to the Wellington Regional Public Transport Plan (RPTP) and the introduction of two new policies:
 - a *Concession fares policy*, to improve access to affordable public transport for those most dependent on public transport
 - b *Policy to reward target behaviours*, to encourage more frequent use of public transport, more off-peak travel and greater use of electronic ticketing.
5. This report provides the findings of the Post Implementation Review of the *Better Metlink Fares* package.

Te tātaritanga

Analysis

6. The Post Implementation Review covers both the 'fares and ticketing' components of the *Better Metlink Fares* package and was guided by the following questions:
 - a How well did the fares package perform against expectations for patronage and travel behaviour?
 - b How well did the fares package perform against expectations for fare revenue and share of funding?

- c How successful for customers was the roll-out of ticketing across bus, rail and ferry?
 - d How well did the fares and ticketing changes perform against the new policies in the PT Plan (concession fares policy and policy to reward target behaviours)?
 - e What lessons can we learn for future changes to fares and ticketing?
7. The analysis and findings of the review are set out in the *Better Metlink Fares Post Implementation Review. Summary Findings Report* ([Attachment 1](#)).
8. In summary, the report confirms that the changes to fares and ticketing performed well against expectations. In particular:
- a Affordability has improved generally (lower average fare) and for those who are most dependent on public transport or can travel during the off-peak period
 - b Actual patronage growth (4.6 percent) was slightly higher than expected (4 percent). While much of this growth can be attributed to fares, natural growth, network changes and improved customer experience would have also influenced passenger numbers
 - c Actual revenue impact (a decrease of \$5.4 million) was lower than expected (a decrease of \$7.8 million) due to high peak passenger growth on rail and greater uptake of monthly rail passes than was expected
 - d For the customer, the rollout of Snapper on bus and new paper ticketing products on rail went smoothly. The fares and ticketing changes resulted in a significant uplift in use of electronic ticketing on bus
 - e Overall, bus passengers benefited most from the fares package, highlighting the importance of electronic ticketing to deliver on policy outcomes.
9. The report, and associated background technical information, have been independently peer reviewed to ensure the findings are sound and based on appropriate logic and data.

**Ngā āpitihanga
Attachment**

Number	Title
1	<i>Better Metlink Fares Post Implementation Review. Summary Findings Report</i>

**Ngā kaiwaitohu
Signatories**

Writer	Paul Kos, Manager Public Transport Policy
Approver	Wayne Hastie, General Manager Strategic Programmes

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council or Committee’s Terms of Reference</i></p> <p>The Terms of Reference for the Post Implementation Review provide that reports will be provided to the Transport Committee. As the Transport Committee is not meeting during April 2020, Council is exercising that responsibility.</p>
<p><i>Implications for Māori</i></p> <p>The changes to fares put forward in the <i>Better Metlink Fares</i> package extended free fares for Māori wardens for bus and train services in the Metlink public transport network.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The proposals in this report contribute to the delivery of public transport aspects of the Long Term Plan 2018—28.</p>
<p><i>Internal consultation</i></p> <p>There was consultation within the Public Transport group and with the Finance department.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>There are no identified legal or health and safety risks arising from the matters in this report.</p>



Better Metlink fares
Post implementation review
Summary findings

metlink on our way

March 2020

Purpose and scope

March 2020

- This report presents summary findings of the Post Implementation Review of the *Better Metlink Fares* changes
- The Review covers both the ‘fares and ticketing’ components of the *Better Metlink Fares* changes and was guided by the following questions:
 - How well did the fares package perform against expectations for patronage and travel behaviour?
 - How well did the fares package perform against expectations for fare revenue and share of funding?
 - How successful for customers was the roll-out of ticketing across bus, rail and ferry?
 - How well did the fares and ticketing changes perform against the new policies in the PT Plan (*concession fares policy* and *policy to reward target behaviours*)?
 - What lessons can we learn for future changes to fares and ticketing?



Background

March 2020

- The *Better Metlink Fares* package was introduced in July 2018 across the Metlink public transport network, with the new bus network and Snapper ticketing roll-out in Wellington city.
- The package was developed through a comprehensive review process that included wide-spread public consultation and detailed analysis to provide some insight into the likely impacts of the changes.
- The package was given effect through a variation to the Wellington Regional Public Transport Plan (PT Plan) and the introduction of two new policies:
 - *Concession fares policy*, to improve access to affordable public transport for those most dependent on public transport
 - *Policy to reward target behaviours*, to encourage more frequent use of public transport, more off-peak travel and greater use of electronic ticketing



Description of key *Better Metlink Fare* changes

March 2020



- General **3%** fare increase
- **25%** discount for full-time students
- **50%** accessible discount
- **50%** discount for all school children
- **25%** premium for all cash fares



- New zone-based tickets
- Discontinue old day passes



- **25%** off-peak discount
- Free bus connections to trains with MonthlyPlus pass
- Metlink Explorer day pass, replaces other day passes
- Discontinue school term passes



- Free bus transfers
- Snapper on all Metlink buses



Expected outcomes – combined fares package

March 2020

- The fare changes represent the first major change to fares in Wellington since 2006. Many legacy tickets and fares offered by previous operators needed to be discontinued or replaced with Metlink equivalents. The new PT Plan policies needed to be given effect. Fares needed to be simplified in readiness for integrated electronic ticketing.
- In response, the fares package aimed to:
 - Create simpler and more consistent fares, concessions and products across all modes
 - Improve affordability for those most dependent on public transport
 - Encourage more off-peak travel to spread the load
 - Encourage greater use of electronic ticketing and less use of cash
 - Enable ‘journey-based’ fares via free bus to bus transfers and a new rail/bus Monthly pass



Expected outcomes – patronage and revenue

March 2020

- The *Better Metlink Fares* package introduced a wide range of new and cheaper fare products, as well as a 3% increase to the base (electronic) fare.
- A 4% increase in patronage (about 1.5m passenger trips) was expected after a year of the changes coming into effect. The 25% off-peak discount was expected to account for about two thirds of that increase (about 1m passenger trips).
- The combined cost of these changes was expected to be about \$7.8m per annum, with expectation that the 3% fare increase would re-coup about \$2.1m. The 3% fare increase was also expected to keep fares share of public transport funding within the target ranges.
- We expected that about half of all passengers would face a fare increase, less than a quarter of passengers would face no change, and the remaining would enjoy a fare decrease.



Summary findings

March 2020

- The changes appear to have delivered well against the new policy expectations (affordability, more frequent use of public transport, more off-peak travel and greater use of electronic ticketing).
- Actual patronage growth (4.6%) was slightly higher than expected (4%). While much of this growth can be attributed to fares - natural growth, network changes and improved customer experience would have also influenced passenger numbers.
- Actual revenue impact (-\$5.4m) was lower than expected (-\$7.8m) due to high peak passenger growth on rail and greater uptake of monthly rail passes.
- Overall, bus passengers benefited most from the fares package, highlighting the importance of electronic ticketing to deliver on policy outcomes.
- For the customer, the rollout of Snapper on bus and new paper ticketing products on rail went smoothly.

Lessons

March 2020

- **Modelling is effective if done well.** The methods and modelling tools used to predict the effects of the fares changes on patronage and travel behaviour proved to be effective, as evidenced by the close correlation between modelling expectations and high level results.
- **Prioritise integrated electronic ticketing.** While rail customers were offered fare products and discounts priced the same as for bus, the benefits were much easier to realise for bus customers due to electronic ticketing. This is particularly true for off-peak travel and transfers between bus services.
- **Take a customers-first approach, engage and communicate!** Overall there seemed to be good public acceptance of the fares changes, including the 3% fare increase. This was likely due to the timing and comprehensiveness of the Better Metlink Fares public engagement process prior to the changes coming into effect, and the fares component of the 'On Our Way' customer communications campaign.

Data and methodology

March 2020

- Expectations for patronage and revenue for *Better Metlink Fares* were based on a comprehensive modelling framework, which included detailed elasticity modelling and other modelling approaches. The modelling framework was recorded and peer reviewed.
- Actual figures for patronage and revenue for the 2018/19 year were derived primarily from Snapper data on bus, and ticketing sales data on rail (cross-checked with rail on-board passenger counts and GWRC financial reports).
- The level and quality of data generated by Snapper ticketing has resulted in a greater level of surety for planning and performance monitoring, than in the past (with multiple ticketing systems and limited GWRC access to data). Rail patronage data is limited by paper ticketing and more reliant on assumptions.
- The move to the new Public Transport Operating Model (PTOM) resulted in some structural and definitional inconsistencies between the current and past data. Adjustments were required to enable better comparison between data sets - for example, removing exempt services from old data and aligning definition of time periods.



Better Metlink fares
Post implementation review
Additional information

metlink on our way

March 2020

Expected vs Actual Patronage and revenue

March 2020

Key changes	Modelled patronage change (%)	Actual patronage change (%)	Modelled net revenue impact (\$m)	Actual net revenue impact (\$m)
Free bus transfers	+0.4%	-	-\$2.4m	-\$2.3m
25% off-peak discount	+2.6%	-	-\$3.1m	-\$3.2m
25% tertiary discount	+0.2%	-	-\$0.7m	-\$0.8m
50% accessible discount	-	-	-\$0.2m	-\$0.1m
50% school student discount	+1.0%	-	-\$0.7m	-\$1.4m
25% cash premium	-0.6%	-	+\$0.3m	+\$0.4m
Metlink Monthly Plus	+0.9%	-	-\$0.4m	+\$1.1m
Porirua zone boundary	+0.2%	-	-\$0.4m	-\$0.2m
Other (bus 30 Day pass, penalty revenue)	+0.1%	-	-\$0.2m	+\$0.7m
A general 3% fare increase	-0.8%	-	\$2.1m	+\$2.9m
Net revenue gain from additional boardings	-	-	-	+\$0.5m
Totals	+4.0%	+4.6%	-\$5.7m	-\$2.5m

Notes:

- Actual change to patronage and travel behaviour appear to have been a combined effect of the fare package and external factors, rather than the individual fare initiatives.
- We know that total patronage has grown by 4.6% and how various payment methods have driven the growth (see next pages). We cannot, however, identify with certainty how each initiative contributed to growth. For example, growth in off-peak bus boardings may have been a combined effect of extending Snapper card, off-peak and tertiary discounts and free transfers plus other factors (e.g. additional off-peak bus services, parking policy or fuel price)
- The actual net revenue impacts for individual initiatives slightly overstate the amounts of fare revenue actually lost or gained. This has been due to the method used for estimating the revenue loss. The sum of understated amounts is \$0.5m as in the last row “Net revenue gain from additional boardings” in the table.

Bus transfers and off-peak

March 2020

Initiative	Policy intent	Achieved yes/no
<p>Bus to bus transfers (journey-based fare calculation)</p>	<ul style="list-style-type: none"> • Avoid penalising passengers required to transfer by the new bus network • Provide consistent user experience across the Metlink network • Provide an interim step to enable fare integration within mode • Support transition to integrated fares and ticketing by providing a viable interim alternative for some discontinued legacy passes (e.g. Hutt Commuter 30 Day Pass) 	<ul style="list-style-type: none"> • Yes – policy intent and outcomes achieved. • Higher than expected patronage growth (estimate 750k) • Revenue in line with expectations • Use of electronic ticketing has increased by 18%, with approximately 78% of bus boardings now using a Snapper card • Note – estimated that only about 0.6% (150k) transfers required as a result of the new bus network
<p>25% off-peak discount</p>	<ul style="list-style-type: none"> • Primary: Encourage a shift from peak to off-peak or shoulder-peak times to spread peak demand and better utilise off-peak capacity • Supporting: Provide affordable travel option for transport disadvantaged who are more likely able to adjust their travel to benefit from discounted fare out of peak hours 	<ul style="list-style-type: none"> • Yes – policy intent and outcomes achieved • Revenue in line with expectations • Off-peak bus boardings is higher than expected (approx 5.3%) – likely driven by greater demand for off-peak transfers • Travelling on an off-peak discount on average costs about \$2 for adult bus users compared with the \$2.65 in the past

Tertiary and Accessible concession

March 2020

Initiative	Policy intent	Achieved yes/no
25% discount for full-time tertiary students	<ul style="list-style-type: none"> Responding to the sector’s demand for affordable travel option for tertiary students Potential to attract students and grow the regional economy 	<ul style="list-style-type: none"> Yes – policy for more affordable fares and outcomes achieved Revenue in line with expectations Patronage in line with expectations - use of tertiary and accessible concession continues to grow, accounting for about 8% of total bus boardings Average fare has reduced from \$2.35 to \$1.96, largely due to off-peak fare and concessions
50% discount for blind or disabled passengers, and free travel for accompanying carers	<ul style="list-style-type: none"> Provide access to affordable travel for those who are most in need and highly dependent on public transport Improve consistency of targeted concessions across the network 	<ul style="list-style-type: none"> Yes – policy intent and outcomes achieved. Revenue in line with expectations. Patronage in line with expectations - and use of tertiary and accessible concession continues to grow, accounting for about 8% of total bus boardings. Average fare has reduced from \$2.35 to \$1.96, largely due to off-peak fare and concessions

School student concession & cash premium

March 2020

Initiative	Policy intent	Achieved yes/no
50% discount for school students	<ul style="list-style-type: none"> • Ensure the discount applies consistently to base fares across all number of zones travel • Simplify eligibility assessment, validation and administration of the concession • Provide more affordable and convenient travel and payment option for children • Facilitate the transition to new fares and network 	<ul style="list-style-type: none"> • Yes – policy intent and general alignment with expected outcomes achieved. • School fares and products are consistently priced and applied. Eligibility is clear • At \$1.4m, revenue loss is about double what was expected, likely due to the increasing number of school students switching from the discontinued exempt services and legacy school term passes to the Metlink services and paying using a Snapper card or the new 10-trip tickets or MonthlyPlus passes
25% premium for all cash fares	<ul style="list-style-type: none"> • Ensure that cash fares are priced at a premium over base fares to encourage greater use of electronic ticketing, while taking into account the needs of the people on low income • Ensure cash premium applies consistently to base fares across all numbers of zones travel 	<ul style="list-style-type: none"> • Yes – policy intent and outcomes achieved • Cash premium applied consistently across all zones • Patronage and revenue in line with expectations • Use of electronic ticketing has increased by 18%, with approximately 78% of bus boardings now using a Snapper card – a significant improvement • Number of cash tickets on rail and bus has significantly reduced

MonthlyPlus and 30-day passes

March 2020

Initiative	Policy intent	Achieved yes/no
Rail monthly passes with regional bus connection (MonthlyPlus)	<ul style="list-style-type: none"> • Manage demand for park and ride by encouraging commuters to use bus to connect to train instead of driving to stations • Improve consistency by making the product available to all across the network • Provide a viable interim solution while transitioning to fare capping 	<ul style="list-style-type: none"> • Yes – MonthlyPlus is consistently applied to all lines, and provides a journey based product for rail commuters • Likely to have resulted in some relief for 'Park and Ride' as there is evidence of increased use of passes on bus (1.5% now vs 0.5% in past) • Revenue (+\$1.1m) significantly higher than expectations, but includes revenue gain from rail component
30 Day passes for Wellington and Eastbourne bus commuters	<ul style="list-style-type: none"> • Provide an interim bus pass to commuters in Wellington City and Eastbourne, where the rail MonthlyPlus passes are not available. 	<ul style="list-style-type: none"> • Yes – 30 Day passes provide alternative period pass • As expected, the use of 30-passes has declined considerably due to the better value and convenience of using standard Snapper with free bus to bus transfers

Ticketing - Snapper electronic and rail paper

March 2020

Initiative	Policy intent	Achieved yes/no
Extension of Snapper as an Interim Bus Ticketing Solution	<ul style="list-style-type: none"> • Enable the new bus network in Wellington City to operate without penalising those who will need to transfer • Provide consistent user experience across the Metlink network • Provide the type and level of data desirable for managing fare revenue, monitoring performance, accurate planning of services, and the design of future ticketing features • Support transition to integrated fares and ticketing 	<ul style="list-style-type: none"> • Yes – policy intent and alignment with outcomes achieved • Free transfers have ensured customers not penalised for additional transfers required from network changes in Wellington city • Note – estimated that only about 0.6% (150k) additional required transfers as a result of the new bus network • Free transfers have enabled concept of ‘journey-based’ fares to become the norm for customers • Quality and extent of data is significantly enhanced ability to analyse performance of the bus network
Rail paper ticketing	<ul style="list-style-type: none"> • Simplify and standardise Metlink fares and products in the lead-up to integrated ticketing and fare capping 	<ul style="list-style-type: none"> • Yes - number of rail tickets in circulation (240) now is significantly less than the 309 tickets in the past • All period passes and 10-trip tickets now zone-based, allowing use across all lines • One further adjustment was required to enable Accessible Concession customers to purchase 50% single cash tickets for rail and ferry travel.

Key Metrics : patronage growth (1)

March 2020

Between July 2018 and January 2020 :

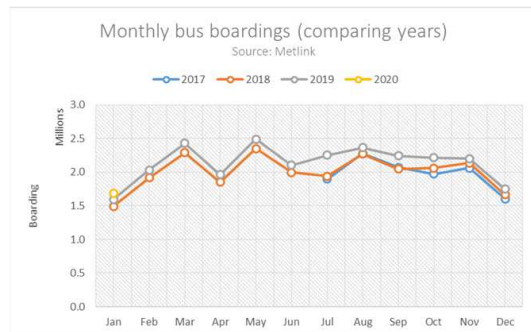
3 million more boardings (8% growth over 19 months): **1 million rail** + **2 million bus**



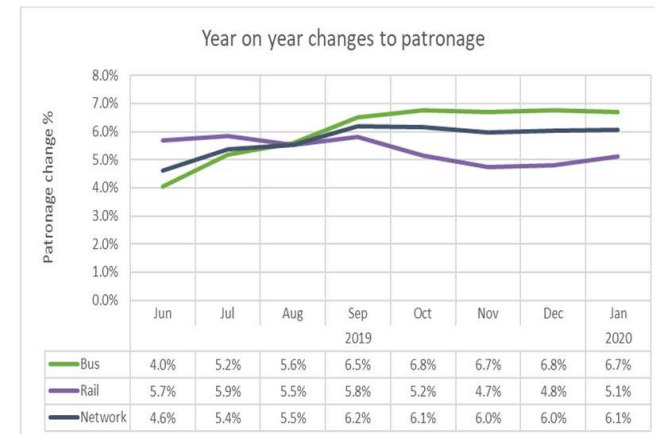
Key Metrics : patronage growth (2)

March 2020

- Patronage growth has increased year on year following the fare changes introduced in July 2018
- Patronage reached 40 million in the first quarter of current financial year, with steady growth over the four months prior to March 2020
- Bus patronage has been growing faster than rail and remained steady between October 2019 and January 2020
- Rail patronage growth remains strong with a slight levelling off over the last quarter of 2019



Patronage showing similar seasonal variations and build up with a growing trend at start of each year

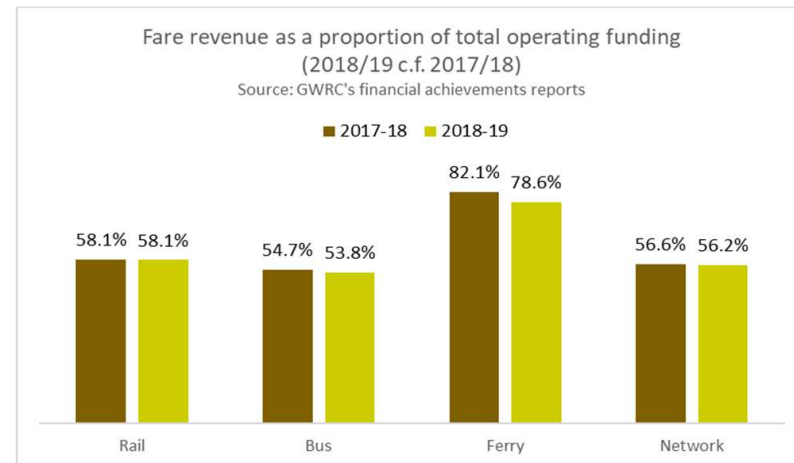
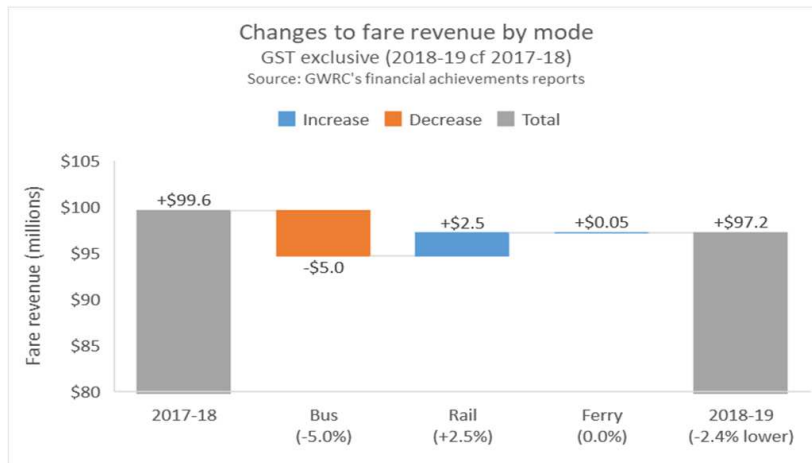


Changes to fare revenue and share of funding

March 2020

- Bus passengers benefited most from reduced fares. Bus fare revenue reduced by about (\$5m)
- Rail generated an additional revenue of about \$2.5m, offsetting the \$5m revenue loss on bus network
- No significant change to ferry fare revenue
- Overall, fare package reduced fare revenue by about \$2.5m (\$3m less than the budget of \$5.5m allocated for 2018/19)

- Fares share of funding required to deliver services (excluding network-wide and capital costs) remains above 50% for all modes and network after the fare and network changes
- Fares share of funding reduced by less than 1% for bus due to lower bus fare revenue, remained relatively unchanged for rail and lowered by about 3.5% for ferry
- Fares share of funding reduced by 0.4% for Metlink network but remained within the expected target range of 55% - 60%



Key Metrics: drivers of patronage growth

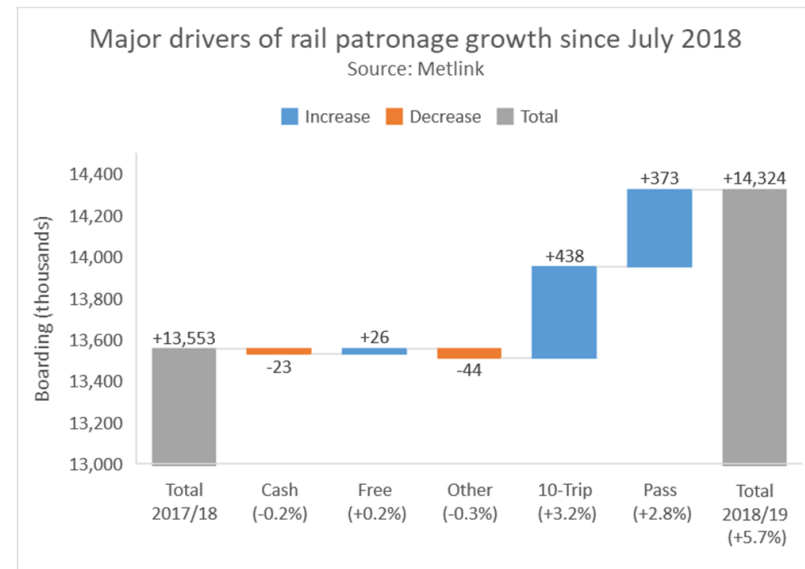
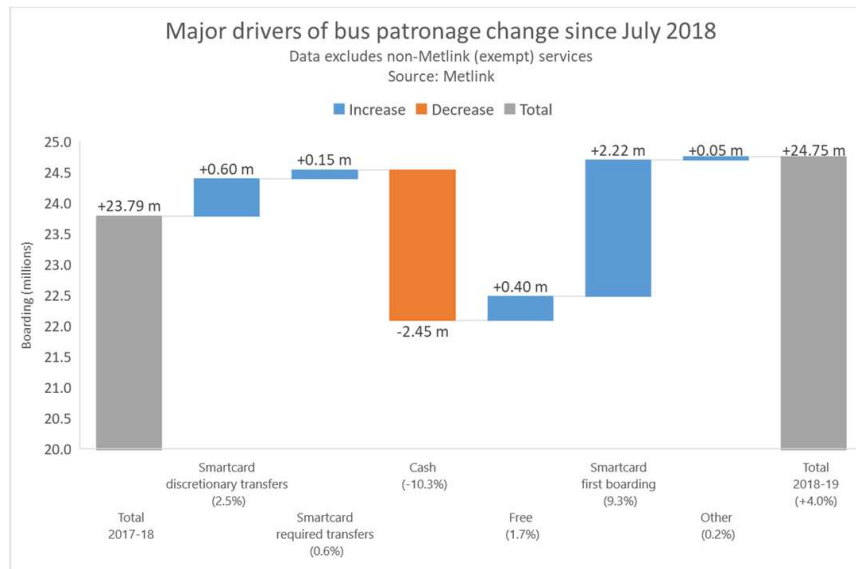
March 2020

Bus patronage growth between 2017/18 and 2018/19

- 4% (0.96m) growth largely driven by more users making free transfers
- Shift from cash to smartcard was about 10% across the bus network
- Only 0.6% of total bus boardings are transfers required by network

Rail patronage growth between 2017/18 and 2018/19

- 5.7% (0.77m) growth largely driven by greater use of prepaid tickets
- 10-trip tickets grew rail boardings by 3.2%
- Monthly passes grew rail boardings by 2.8%

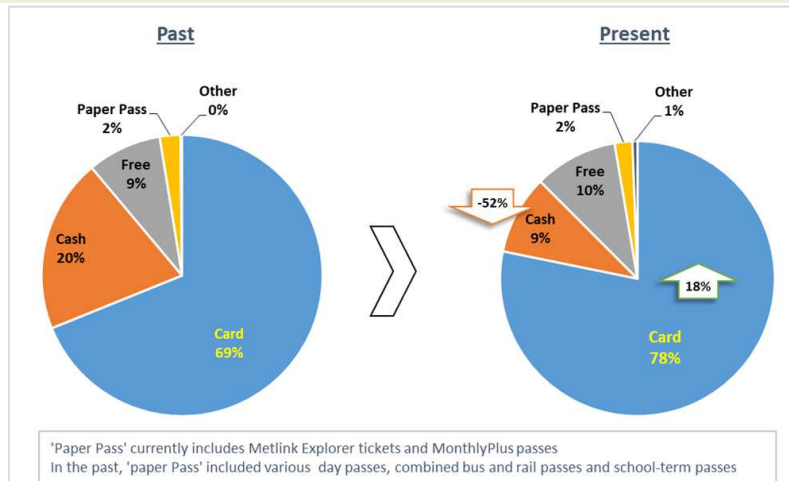


Key Metrics : changes to methods of payment

March 2020

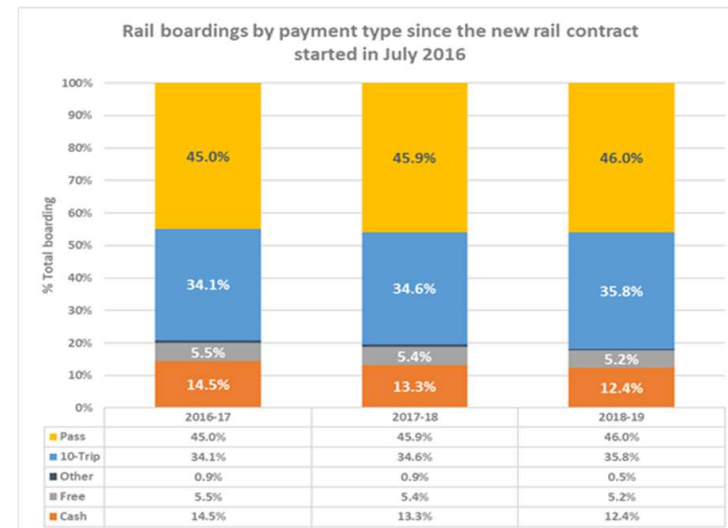
Bus

- Growing number of passengers using Snapper card since July 2018
- Use of cash has been halved in 2018/19
- Free travel (SuperGold, Child under 5, Parking wardens, Maori Wardens, Police, Metlink staff) has increased slightly
- Improved access to affordable travel has been realised with growing number of bus users benefiting from reduced fares on Snapper card



Rail

- Rail network shows declining cash use while growing number of pre-paid 10-trip tickets and monthly passes
- Growth likely encouraged by new products and concessions

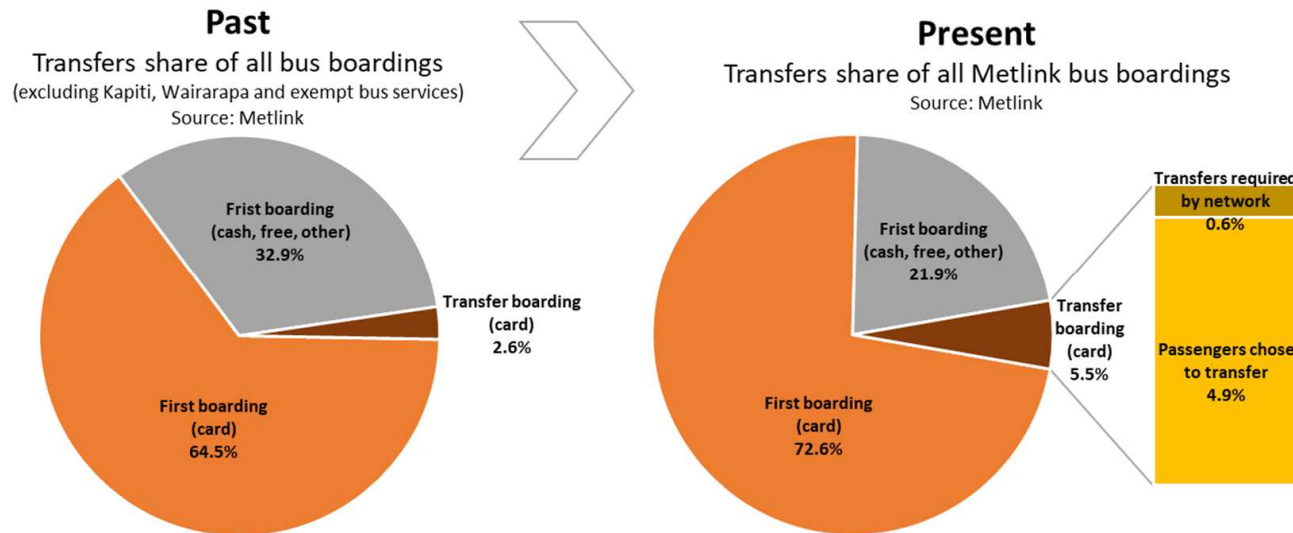


Key Metrics : bus to bus transfers (1)

March 2020

- In 2018/19 about 5.5% (1.4m) of all bus boardings were transfers to a next bus within 30 minutes (0.75m growth compared with past)
- The growth in transfer boardings (0.75m) accounted for about 78% of the 0.96m (or 4.6%) growth in total bus boardings
- Only 0.6% (0.15m) of total bus boardings were transfers made by passengers required by the new bus network to change buses
- The remaining 4.9% (or 1.2m) were transfers made by passengers who chose to transfer to pay less for their journey

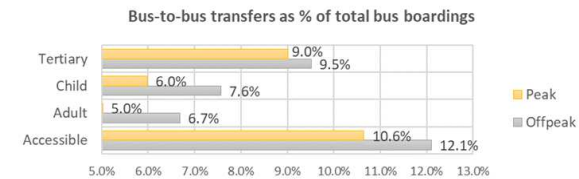
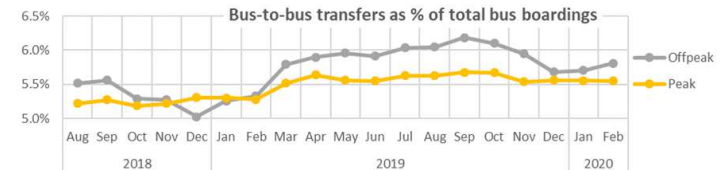
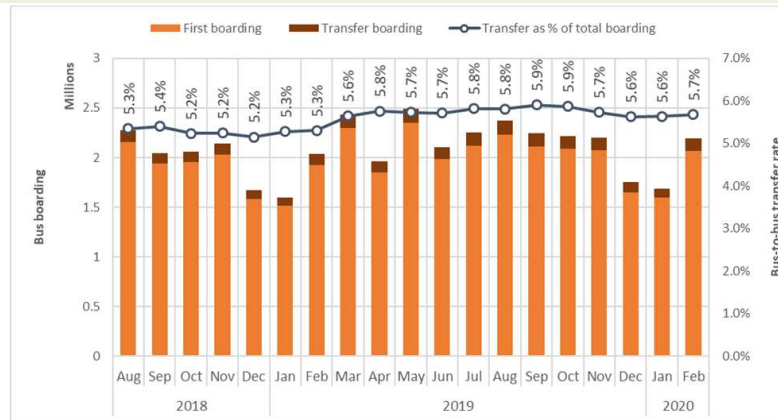
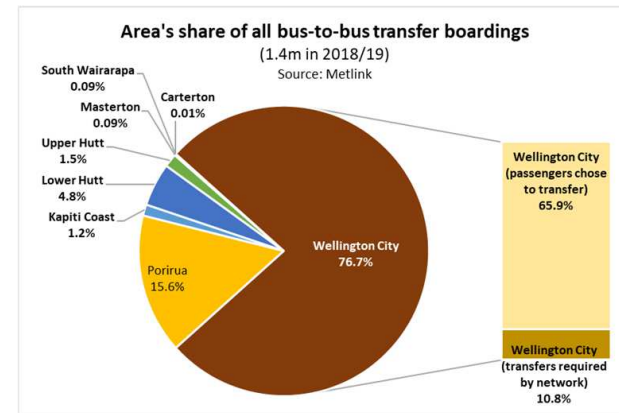
Transfers as a proportion of all bus boardings in the past (2014-15) vs present (2018-19)



Key Metrics : bus to bus transfers (2)

March 2020

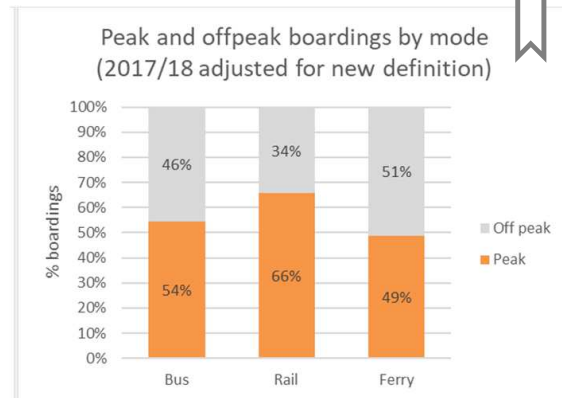
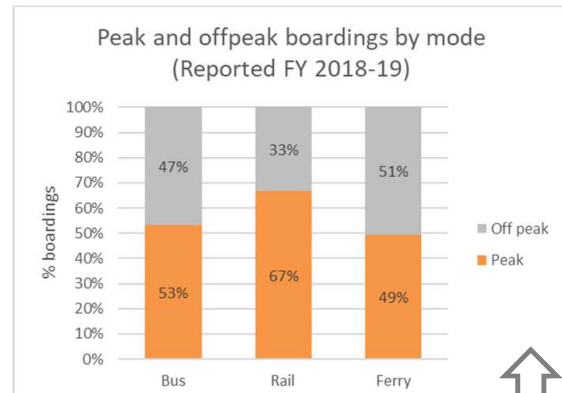
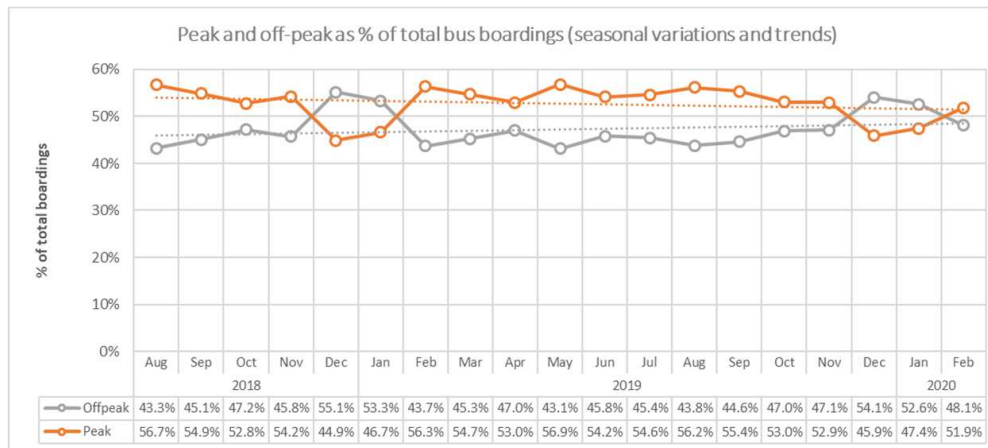
- In 2018/19, majority of bus-to-bus transfers (76.7%) were in Wellington City followed by Porirua (15.6%)
- Most of the total bus-to-bus transfers in Wellington City (about 1m) were made by passengers who chose to transfer
- The remaining bus-to-bus transfers in Wellington City (about 0.15m) were transfers required by the network
- Bus-to-bus transfers continue to grow – showing 8% growth between July 2019 and February 2020 (average 1% per month)
- Off-peak has higher number of transfers than peak
- People on Accessible Concession make more transfers than others



Key Metrics : peak vs off-peak travel (1)

March 2020

- Definition of off-peak was changed to align with SuperGold off-peak times – improving consistency and ease of administration of fares and tickets across the network
- In 2018/19, about 47% of all bus boardings and 33% of rail boardings were off-peak
- The share of off-peak share of boardings (Feb 19 to Feb 20) has grown from 43.7% to 48.1% while peak share of boardings has declined proportionally from 56.3% to 51.9%
- Trend suggests off-peak capacity is now better utilised with growing off-peak travel, while peak growth has most likely been constrained by ongoing capacity issues

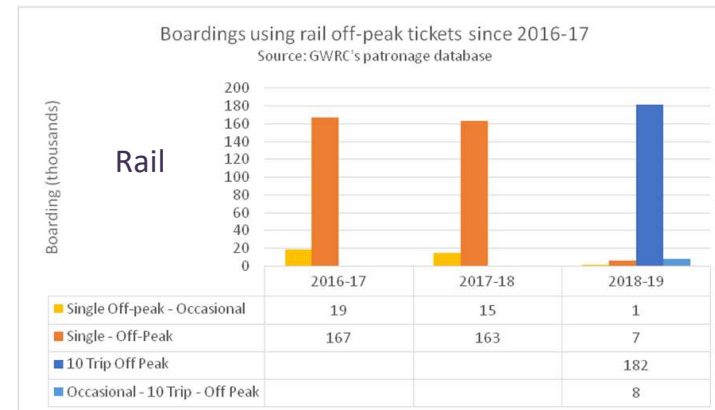
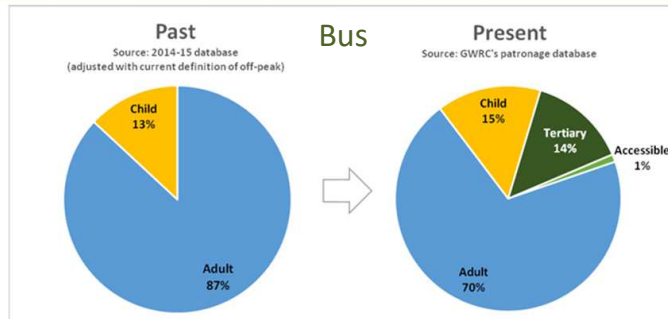
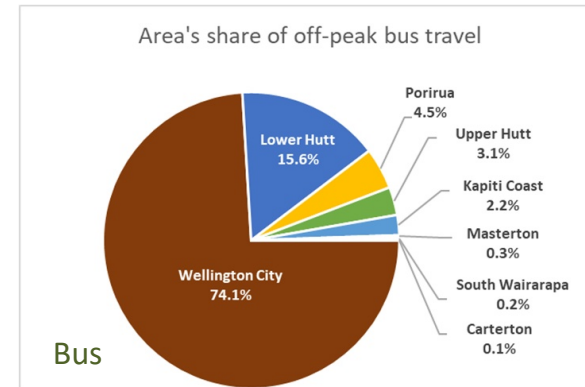


Key Metrics : peak vs off-peak travel (2)

March 2020

- Network-wide growth in off-peak travel (5.3%) was higher than peak (4.1%)
- By mode, growth in off-peak travel was higher for bus (6.6%) than rail (2.6%)
- Rail network shows more peak growth (7.3%) than off-peak
- 74% of off-peak bus boardings are in Wellington City and largely made by adults
- The new rail Off-peak 10-trip tickets have been used more than the single-trip off-peak tickets in the past showing more off-peak train travel

Mode	2017/18 Bus adjusted using 2014/15 data			2018/19 Reported 1 Jul 2018 – 30 June 2019			Change 2018/19 vs 2017/18			% Change 2018/19 vs 2017/18		
	Peak	Off peak	Total	Peak	Off peak	Total	Peak	Off peak	Total	Peak	Off peak	Total
Bus	13.0	10.8	23.8	13.2	11.5	24.7	0.2	0.7	1.0	1.9%	6.6%	4.0%
Rail	8.9	4.7	13.6	9.5	4.8	14.3	0.7	0.1	0.8	7.3%	2.6%	5.7%
Ferry	0.1	0.1	0.2	0.1	0.1	0.2	0.0	-0.0	-0.0	0.5%	-2.4%	-1.0%
Network	21.9	15.6	37.5	22.8	16.4	39.3	0.9	0.8	1.7	4.1%	5.3%	4.6%

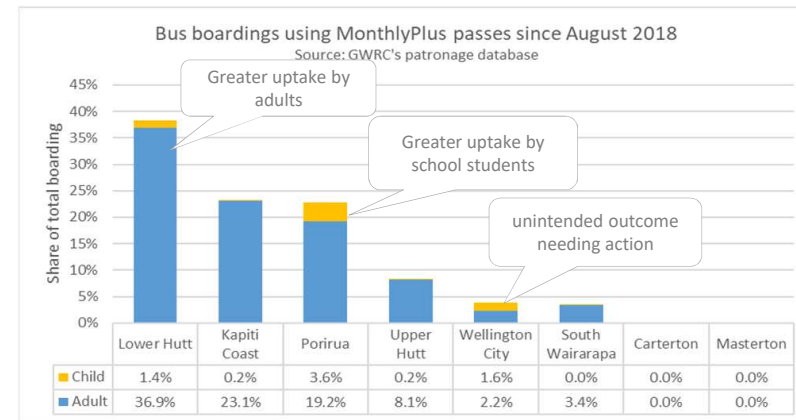
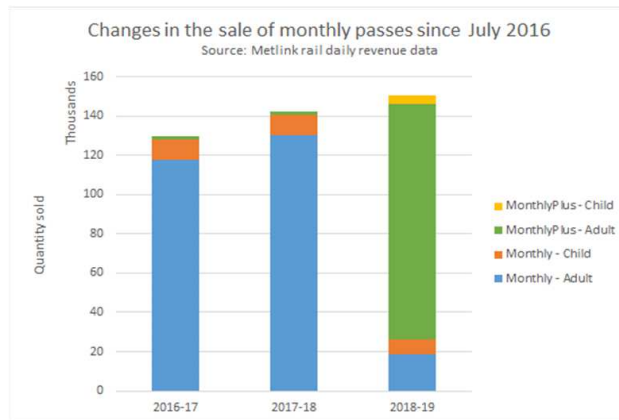


Key Metrics : Use of MonthlyPlus pass (bus and rail)

March 2020

MonthlyPlus pass:

- A new monthly pass was introduced providing rail travel with free bus connections between zone 4 and outer zone on the pass. Can be used on any rail line. Adult and child versions available.
- Mostly used by adult commuters in Lower Hutt. Child version had a big uptake by school students in Porirua, where no combined bus and rail pass was available in the past.
- Mostly used on rail (about 38% of all rail boardings) but also accounts for about 1.5% of total bus boardings, an increase compared to past estimate (about 0.5% of total boardings).
- Compared with 2017/18, demand for monthly passes has grown by about 6%.

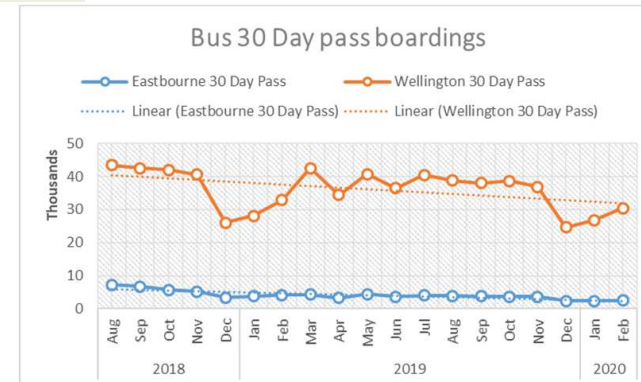
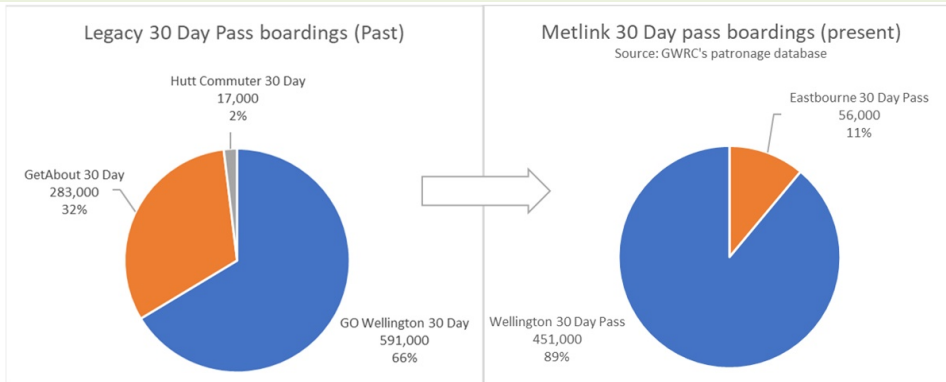
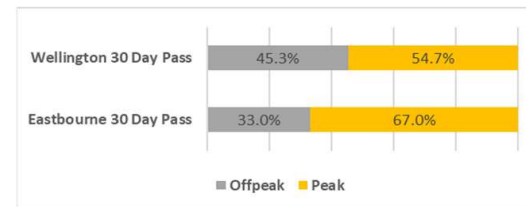
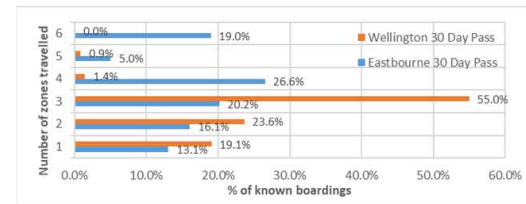


Key Metrics : Use of 30-day bus pass

March 2020

30-day bus pass (Wellington City and Eastbourne):

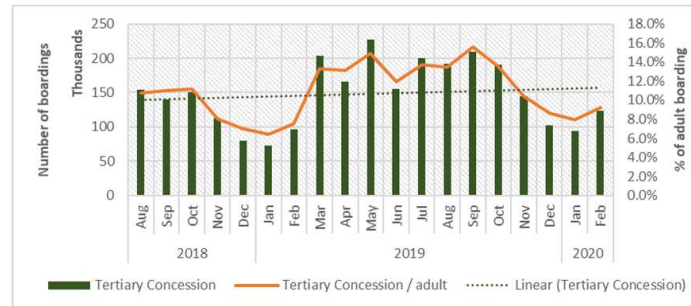
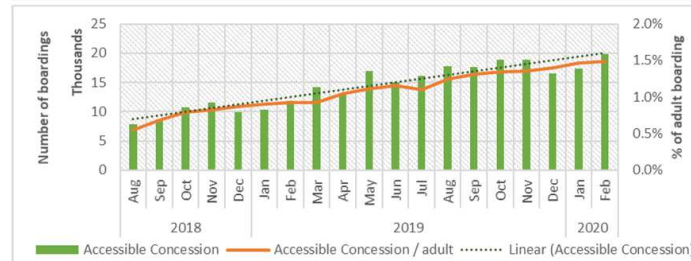
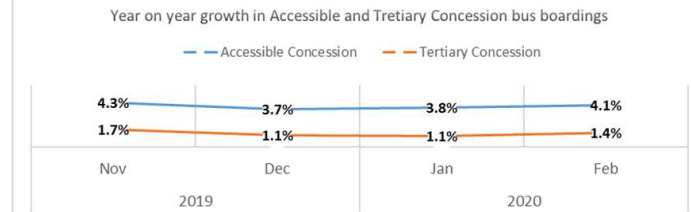
- Two 30 Day passes were retained in response to concerns by bus commuters and Wellington City Council about equity between bus and rail during consultation on “Better Metlink Fares”.
- As expected, the use of 30-day passes has declined significantly (about 45%). The decline is due to the improved value and convenience that free bus-to-bus transfers provide when using the standard stored value Snapper product. Use is continuing to decline.
- The pass is used mostly in Wellington City (90% are Wellington City 30-day passes) and for longer distance travel involving 3 or 2 zones (79%).
- Wellington 30-day pass is used slightly less during off-peak (45%) than peak (55%), while Eastbourne commuters have used their pass largely during peak hours (67%)



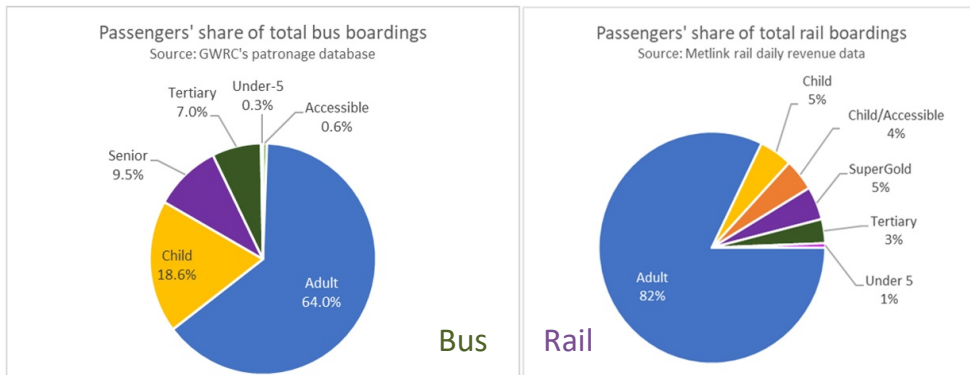
Key Metrics : impact of new concessions

March 2020

- New concessions included:
 - an all-time 25% discount for full-time tertiary students
 - a 50% discount for Total Mobility card holders and members of the Blind Foundation with free travel for an accompanying carer
 - a standard 50% discount for school students (was variable in the past)
- 36% of bus boardings benefited from a concession compared with 18% on rail
- Boardings on Accessible Concession is growing faster than tertiary concession
- Child concession has been mostly used during peak than off-peak, while other concessions are largely used during off-peak than peak



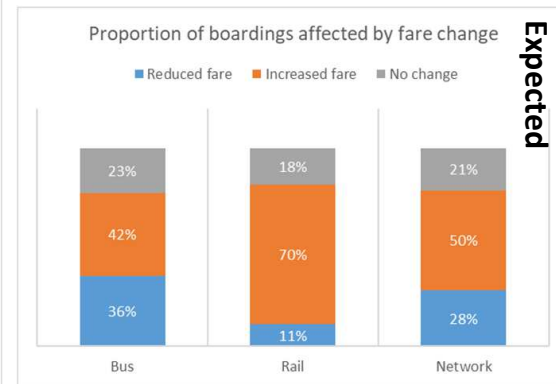
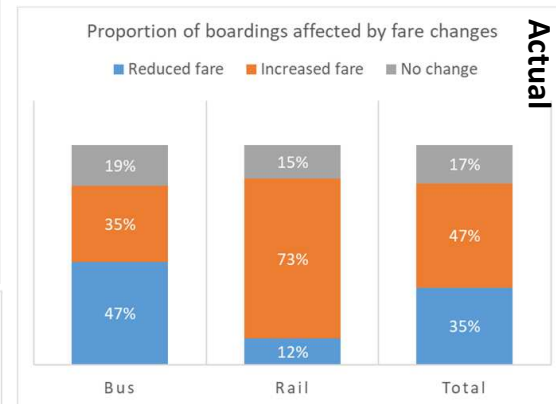
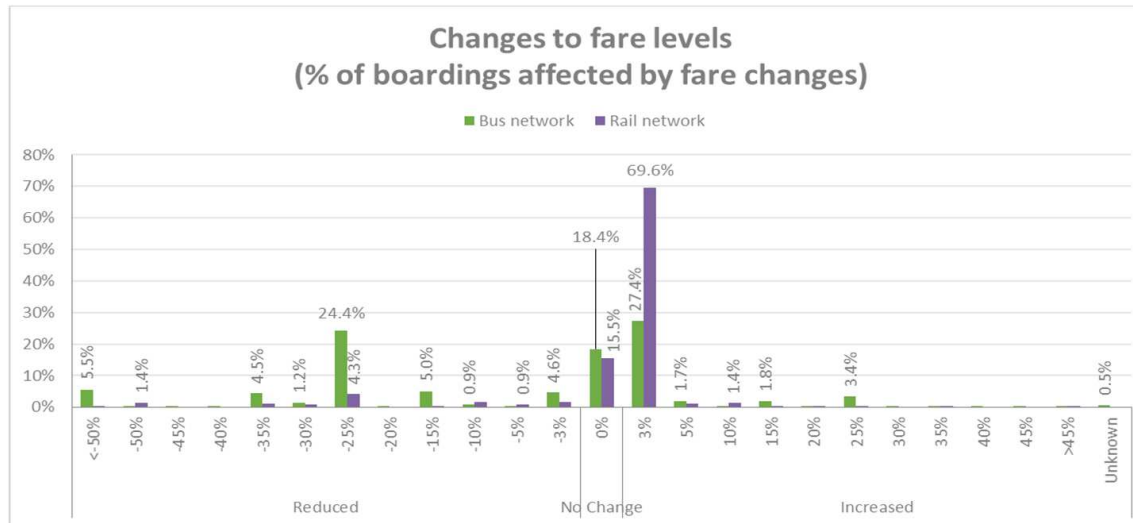
Bus and rail users' share of total boardings



Key Metrics : changes to fare levels

March 2020

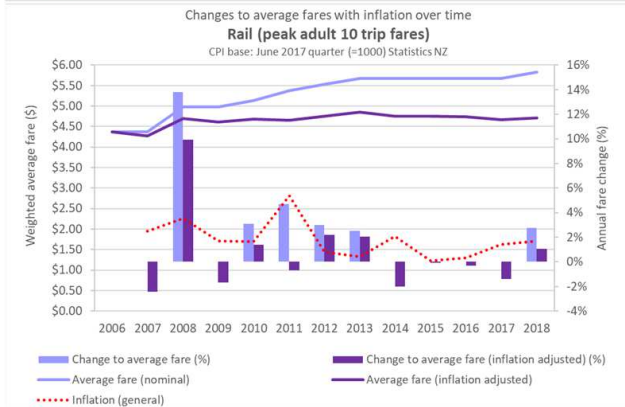
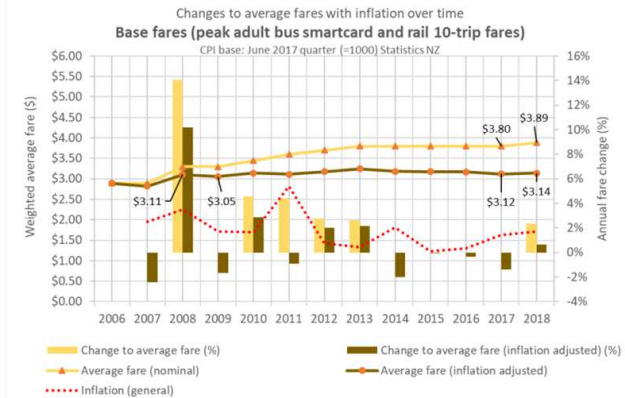
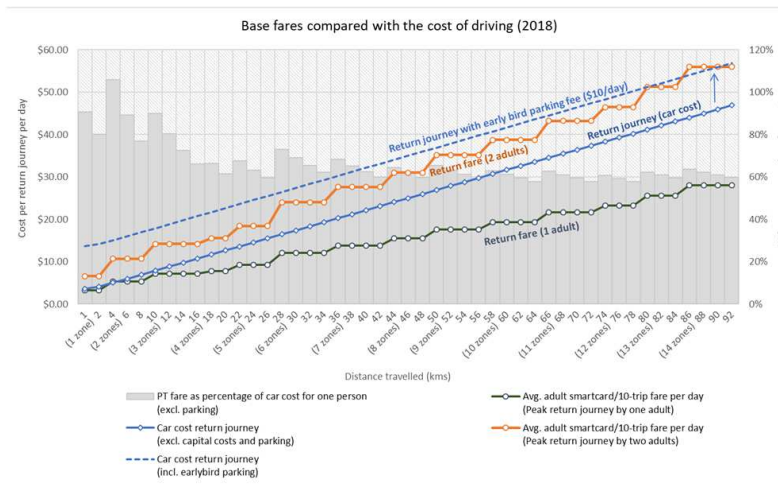
- 35% of bus and rail boardings have experienced a reduced fare (higher than expected 28%)
- 47% of bus and rail boardings have experienced a fare increase (less than expected 50%)
- 17% of bus and rail boardings have remained unchanged (less than the expected 21%)
- 70% of rail boardings and less than 30% of bus boardings have been affected by 3% fare increase (less than expected)
- The significant difference between bus and rail highlights importance of integrated electronic ticketing for equitable distribution of benefits



Key Metrics : affordability

March 2020

- Comparing the changes to fares over time relative to the changes to general consumer price index (CPI) shows average base fare has been flat since the fare zone system was introduced in 2006
- The growth in average base fare over five years has been about half of the growth in general cost of living and income
- Excluding parking fees, base fares are on average 60% cheaper than driving a car for longer distance journeys. Including an average early bird parking cost of \$10/day makes public transport a more cost-effective alternative for private car



User experience

March 2020

Rollout of Snapper provided improved user experience and operational outcomes:

- Users have benefited more from the concessions and reduced fares, highlighting importance of electronic ticketing to deliver policy outcomes (nearly half of bus passengers experienced a fare reduction)
- Growing uptake of cards indicates an improved user experience and provides more flexibility to change fares, respond to operational disruptions and offer occasional promotional fares
- Taking inflation into account, users now have access to more affordable travel options

The transition to new fares and ticketing was relatively seamless for customers despite wider operating issues at the time:

- Low levels of enquiries and complaints relating to fares and ticketing to Metlink, its operators and Snapper
- Achieved by strong support from ticketing providers and operators and a major communications campaign
- Concerns raised by users and operators relate mostly to paper-based ticketing on rail, which cannot be fully resolved until the integrated electronic ticketing is in place

Transition and communications

March 2020

Transition requires a complex public communications campaign with a large amount of change happening at the same time:

- Overall there were approx. 250 separate communications (includes bus and rail)
- Messages about where to catch, where it goes, costs of tickets across three rollouts
- Customer segmentation campaign with strong focus on pushing people to Metlink website and app

Significant development and implementation was required from the ticketing provider:

- New on-board devices required with lead times at same time new operators were setting up new fleets
- Snapper rollout and conversion was smooth and issues such as refunds fixed quickly
- Successfully built and managed the portal for tertiary concessions
- Snapper provides flexibility to change fares, respond to operational disruptions and offer occasional promotional fares

Council
30 April 2020
Report 20.111



For Decision

ADVERTISING ON BUSES – FURTHER EXTENSION OF TRIAL

Te take mō te pūrongo

Purpose

1. To seek Council's agreement to further extend the current trial of advertising on bus windows to enable a full assessment of the trial following the restrictions caused by the Government's and Greater Wellington's response to the COVID-19 pandemic.

He tūtohu

Recommendations

That the Council:

- 1 **Notes** that, on 2 October 2019, Council agreed to a trial to assess the viability of introducing advertising on bus windows during the November 2019 to February 2020 period (Advertising on buses – opportunity to generate additional revenue (Report 19.455)).
- 2 **Notes** that, on 20 February 2020, Council agreed to extend the trial to assess the viability of introducing advertising on bus windows from 29 February 2020 until 30 April 2020 (Advertising on buses – extension of trial (Report 20.50)).
- 3 **Notes** that as a result of the declaration of the Government's Alert Level 4 status in response to the COVID-19 pandemic, Greater Wellington will not have the ability to fully assess the trial against all agreed criteria before the trial is due to conclude on 30 April 2020.
- 4 **Notes** that Greater Wellington is unable to consider undertaking the full assessment of the trial (which includes in-person testing) until the Government moves Wellington Region to Alert Level 1 status.
- 5 **Notes** that there is no set timeframe for Wellington Region to move to Alert Level 1 status.
- 6 **Agrees** that the trial to assess the viability of introducing advertising on bus windows be extended from concluding on 30 April 2020 until two months following Wellington Region moving to Alert Level 1 status.

Te tāhū kōrero

Background

2. On 2 October 2019, Council agreed to a trial to assess the viability of introducing advertising on bus windows (Advertising on buses – opportunity to generate additional revenue (Report 19.455) - [Attachment 1](#)).
3. On 20 February 2020, Council agreed to extend the trial to assess the viability of introducing advertising on bus windows to allow for Greater Wellington Regional Council (Greater Wellington) to undertake targeted in-person testing with the disability community, including people with visual impairments and anxiety disorders (Advertising on buses – extension of trial (Report 20.50) - [Attachment 2](#)).
4. In January 2020, the World Health Organisation (WHO) declared a world-wide novel coronavirus (COVID-19) pandemic. The New Zealand Government responded with a range of measures, including the 21 March 2020 announcement of a COVID-19 alert level system. At 11.59pm on Wednesday 25 March 2020 moved to Alert Level 4. This alert level resulted in New Zealand being put into lockdown for a four week period, including the requirement for two metres of physical distancing.
5. In-person testing with the disability community was scheduled to occur on 1 April 2020. This testing cannot take place until restrictions and advice on physical distancing are relaxed.
6. Greater Wellington considers that in-person testing would not be possible under Alert Levels 2 to 4 and such testing will need to be considered at Alert Level 1, subject to any Greater Wellington policies at this time about in-person engagement.

Te tātaritanga

Analysis

Proposal to continue trial

7. Greater Wellington has not yet concluded a full assessment of the trial.
8. In order to complete the assessment of the trial against all the agreed criteria, we recommend extending the trial end date to two months following a move to Alert Level 1.
9. Two months should provide sufficient time for Greater Wellington to arrange and conduct face-to-face testing.

Ngā hua ahumoni

Financial implications

10. There are no financial implications in further extending the trial end date to two months following a move to Alert Level 1.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

11. The matter requiring decision in this report has been considered by officers in accordance with the process set out in the Greater Wellington’s *Climate Change Consideration Guide*.

Mitigation and adaptation assessments

12. There is no need to conduct climate change assessments.

Ngā tikanga whakatau
Decision-making process

13. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

14. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of this matter, taking into account Council’s *Significance and Engagement Policy* and Greater Wellington’s *Decision-making Guidelines*. Officers recommend that this matter is of low significance, as it relates to an extension to a trial.

Te whakatūtakitaki
Engagement

15. Due to the low significance of this matter for decision, no external engagement was considered necessary.

Ngā tūāoma e whai ake nei
Next steps

16. A report on the outcome of the extended trial will be brought to the Transport Committee.

Ngā āpitihanga
Attachments

Number	Title
1	Advertising on buses – opportunity to generate additional revenue (Report 19.455)
2	Advertising on buses – extension of trial (Report 20.54)

**Ngā kaiwaitohu
Signatories**

Writers	Alard Russell – Commercial Manager (Acting), Metlink David Boyd – Manager, Customer Experience, Metlink
Approver	Scott Gallacher – General Manager, Metlink

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>Council has delegated to the Transport Committee the responsibility to “review periodically the performance and effectiveness of transport strategies, policies, plans, programmes and initiatives.” As the Transport Committee is not meeting during April 2020, Council (as the delegator) is exercising that responsibility.</p>
<p><i>Implications for Māori</i></p> <p>There are no implications for Māori.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>This decision relates to an extension of a trial.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation was undertaken within the Public Transport group.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>There are no risks arising from the matter for decision.</p>



Report	19.455
Date	26 September 2019
File	CCAB-8-2506
Committee	Council
Author	Catherine Jones, Commercial Manager, Public Transport

Advertising on buses – opportunity to generate additional revenue

1. Purpose

To consider an opportunity to generate additional revenue from expanding the advertising GWRC sells on buses by trialling a new product that advertisers are requesting.

2. Background

As a result of the new PTOM contracts, Metlink now manages advertising on the bus fleet.

Selling advertising on Metlink buses generates revenue that can be used to pay for Public Transport initiatives that are not funded from other sources.

Metlink's Branding Guidelines (2017) provide for advertisements to be placed on the back of buses. It also sets out that in some situations external advertising may also include the sides or even the whole bus. The Guidelines provide that all internal and external advertising policies will be provided by GWRC.

On 20 June 2018, the Sustainable Transport Committee (the Committee) endorsed the Metlink Advertising Policy (see Report 18.200). A copy of the Metlink Advertising Policy is attached as **Attachment 1** to this report.

Advertising is currently placed on bus backs, bus lower side position (below windows), and on double-decker buses the roadside position (located behind and above the driver's side window).



In addition, on 20 February 2019, following a successful trial to fully wrap a double decker bus (excluding windows), the Committee noted:

- That officers will develop and implement further commercial double-decker wrap promotions as a premium and limited product.
- That a bus wrapping product will need to be developed and tested with the market prior to the creation of an organisational approach to bus wrapping.

3. Advertising on windows

The Metlink Advertising Policy does not address the placement of advertising. The Council has previously requested that the advertising on windows be avoided due to perceptions that the visual impact for passengers was too great.

3.1 Visual impact

Advances in window covering technology now mean that the visual impact is minimal.

The over window material now used in the market is called Contra-Vision. It has a crystal clear laminate applied to the perforated (50% holes and 50% solid) material that the advertisement is printed on. This laminate keeps rain water from pooling in the holes resulting in greater visibility for passengers. This material is used in Auckland. Photo 4 below shows that no water has pooled on the window after a rain event.

Previously, the material that was used on bus windows in Wellington was not laminated. Consequently, water would pool in the holes and visibility was somewhat restricted. This is what passengers in the past would have experienced.

Below are photographs that demonstrate the visual impact of windows which contain advertising on both passengers and those outside the bus.

1. Sydney bus at night



2. Auckland bus on a sunny day



3. Inside view from Auckland bus on overcast, rainy day



4. Inside view from Auckland bus on overcast, rainy day



3.2 Auckland Transport's use of bus window space for advertising

Like Metlink, Auckland Transport has control of on-bus advertising. Auckland Transport allows advertising on windows for a portion of its fleet.

In late 2018 it was reported that Auckland Transport estimates advertising on buses and other transport facilities to be worth \$4.3 million a year, equivalent to a 2.5 per cent fare rise.

Auckland Transport surveyed 912 passengers on their thoughts relating to advertising on buses (including windows). Seventy-one per cent (71%) of respondents thought advertising "on and around public transport" was acceptable. The survey highlighted the views of those in central Auckland, which is considered a key advertising market. Those who travel within central Auckland gave 87% backing to advertising as the money helped improve the transport system.

3.3 Revenue – ability to increase

Selling advertising on Metlink buses generates revenue that can be used to pay for Public Transport initiatives that are not funded from other sources.

Metlink's services are funded by a combination of fares (paying passengers), rates (regional residents) and national funding (government subsidy sourced from road user taxes). Advertising revenue can be used to offset requests for additional funding when new initiatives are required.

Officers estimate that allowing this new advertising format could lift current bus advertising revenue by 50% based on current commercial demand.

4. Proposed trial

Officers propose to conduct a trial to assess the viability of introducing advertising on bus windows. Details of the trial are set out below:

- The trial would be conducted on Interim buses.
- Advertising would be placed over the windows between the wheels (see photo 2 above) on the road side of the bus only.
- The trial would be held during November 2019 – February 2020.

Interim buses (which are not branded in Metlink livery) have been identified as vehicles to be used in the trial. Officers consider that introducing advertising on these buses will not distract from the distinctive Metlink livery on the remainder of the fleet.

As the proposed window coverage will only be on the road side of the selected buses, passengers will be able to choose to sit away from the advertising if they do not like the visual impact.



4.1 Trial assessment

The trial will be assessed in the following ways:

- Passengers will be surveyed on their experiences
- Targeted consultation will be conducted with the disability community including people with visual impairments
- The commercial response to this new product will be measured.

4.2 Considering results of trial

Officers intend to present Council with the results of the trial in February/March 2020.

5. Consideration of climate change

The matters requiring decision in this report have been considered by officers in accordance with the process set out in the GWRC Climate Change Consideration Guide.

Officers have considered the effect of the matter on the climate. Officers recommend that the matter will have no effect.

6. The decision-making process and significance

Officers recognise that the matters referenced in this report have a high degree of importance to affected or interested parties.

The matter requiring decision in this report has been considered by officers against the requirements of Part 6 of the Local Government Act 2002 (the Act). Part 6 sets out the obligations of local authorities in relation to the making of decisions.

6.1 Significance of the decision

Part 6 requires Greater Wellington Regional Council to consider the significance of the decision. The term ‘significance’ has a statutory definition set out in the Act.

Officers have considered the significance of the matter, taking the Council's significance and engagement policy and decision-making guidelines into account. Officers recommend that the matter be considered to have low significance.

This decision relates to Council approving a trial by Metlink to increase advertising on buses. While advertising on bus windows has generated negative public reaction in the past in relation to visual impact, officers consider that advances in technology mean that the visual impact on passengers should be greatly reduced. In addition, it is proposed that one side of a bus with window advertising remain clear.

Officers do not consider that a formal record outlining consideration of the decision-making process is required in this instance.

6.2 Engagement

As set out above, a survey of affected stakeholders will be undertaken as part of the trial.

7. Recommendations

That the Council:

- 1. Receives the report.*

2. *Notes the content of the report.*
3. *Agrees to conduct a trial of advertising on selected buses as set out at section 4 of this report*

Report prepared by:

Catherine Jones
Commercial Manager, Public
Transport

Report approved by:

Greg Pollock
General Manager, Public
Transport

Attachment 1: Metlink Advertising Policy

Transport Committee
20 February 2020
Report 20.54



For Decision

ADVERTISING ON BUSES – EXTENSION OF TRIAL

Te take mō te pūrongo

Purpose

1. To seek the Transport Committee's agreement to extend the current trial of advertising on bus windows to enable full assessment of the trial.

He tūtohu

Recommendations

That the Committee:

- 1 **Notes** that, on 2 October 2019, Council agreed to a trial to assess the viability of introducing advertising on bus windows during November 2019 to February 2020.
- 2 **Notes** that officers will not have the ability to assess the trial against all agreed criteria before the trial is due to conclude on 29 February 2020.
- 3 **Notes** that market research undertaken to help assess the trial indicates general public support for advertising on bus windows and that there has been a positive response from advertisers who had previously not considered bus advertising.
- 4 **Notes** that preparations are in place for targeted consultation with the disability community, including people with visual impairments and that a full assessment of the trial will be undertaken following those consultations.
- 5 **Agrees** that the trial to assess the viability of introducing advertising on bus windows be extended from concluding on 29 February 2020 until 30 April 2020.

Te tāhū kōrero

Background

2. On 2 October 2019, Council agreed to a trial to assess the viability of introducing advertising on bus windows. The related report (**Attachment 1 – Advertising on buses – opportunity to generate additional revenue (Report 19.455)**) indicates:
 - a Metlink's advertising policy and branding guidelines
 - b Council's approach to advertising on bus windows
 - c The visual impact that could be caused by advertising on windows

- d The additional revenue that could be generated by allowing advertising on bus windows.
3. Details of the trial are set out below:
- a The trial would be conducted on interim buses
 - b Advertising would be placed over the windows between the wheels on the road side of the bus only
 - c The trial would be held during November 2019 to February 2020.
4. Council agreed that the trial would be assessed in the following ways:
- a Passengers would be surveyed on their experiences
 - b Targeted consultation would be conducted with the disability community, including people with visual impairments
 - c The commercial response to this new product would be measured.

Te tātaritanga Analysis

Assessments conducted to date

5. Between 4 and 24 November 2019, Gravitas Research and Strategy Ltd conducted the November 2019 Public Transport Customer Satisfaction Survey of passengers in Wellington City. Part of the survey included determining attitudes to advertisements being placed over bus windows. This survey found that 73 percent of respondents advised that they either supported, did not mind or were not affected by advertising on bus windows.
6. As set out in **Attachment 1**, officers estimated that allowing the new advertising format (advertising on windows) could lift current bus advertising revenue by 50 percent based on current commercial demand. The commercial result of this new product trial has been a very positive acknowledgement from agencies and additional revenue to Metlink of approximately \$23,000 for current and forecast orders after costs and revenue share with Go Media. Officers are seeking a forecast of how this revenue may grow over time once advertisers can include it in their media planning.
7. Advertisers who have previously placed their business with the Airport Flyer (which offers a full advertising wrap) have stated willingness to redirect their advertising to Metlink for this new format.

Assessments yet to be conducted

8. Preparations are in place for targeted consultation with the disability community, including people with visual impairments. It is envisaged that consultation on the trial will be concluded by the end of March 2020.

Proposal to continue trial

9. Officers have not yet concluded a full assessment of the trial. In order to complete the assessment, we consider that it is beneficial for the trial to be assessed while campaigns are active.
10. In addition, due to the planning lead times for advertisers to consider new formats, it would be disruptive for the trial to cease, temporarily or otherwise, before the Committee is able to make a decision informed by all of the required inputs.
11. In order to complete the assessment of the trial against all agreed criteria, a further 2 months is requested extending the trial end date to 30 April 2020.

Ngā hua ahumoni Financial implications

12. In the event the Committee agrees to extend the trial, Go Media currently has visibility of \$23,000 of orders over the two months of the extension period. This is in addition to the \$32,000 of orders for the seven campaigns booked to date in the trial.

Te huritao ki te huringa o te āhuarangi Consideration of climate change

13. The matter requiring decision in this report has been considered by officers in accordance with the process set out in the Greater Wellington's *Climate Change Consideration Guide*.

Mitigation and adaptation assessments

14. Officers have considered the effect of the matter on the climate. Officers recommend that the matter will have no effect.

Ngā tikanga whakatau Decision-making process

15. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga Significance

16. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of this matter, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers recommend that this matter is of low significance, as it relates to an extension to a trial.

Te whakatūtakitaki Engagement

17. Due to the low significance of this matter for decision, no external engagement was considered necessary.

Ngā tūāoma e whai ake nei

Next steps

18. A report on the outcome of the extended trial will be brought to the Committee.

Ngā āpitihanga

Attachment

Number	Title
1	Advertising on buses – opportunity to generate additional revenue (Report 19.455)

Ngā kaiwaitohu

Signatories

Writer	Alard Russell – Commercial Manager (Acting)
Approver	Greg Pollock – General Manager, Metlink

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> Decisions on the trial of advertising on bus windows fit within the Committee's responsibilities to "approve transport strategies, policies, plans, programmes and initiatives".
<i>Implications for Māori</i> There are no implications for Māori.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> This decision relates to an extension of a trail.
<i>Internal consultation</i> Internal consultation undertaken in the Public Transport Group.
<i>Risks and impacts: legal / health and safety etc.</i> There are no risks arising from the matter for decision.

Council
30 April 2020
Report 20.139



For Decision

LOCAL GOVERNMENT FUNDING AGENCY (LGFA) AMENDING DOCUMENTATION

Te take mō te pūrongo
Purpose

- 1 For Council to approve the amendments to the LGFA borrower programme.

He tūtohu
Recommendation

That the Council:

1. **Approves** the Amendment and restatement deed in relation to the Multi-Issuer Deed, circulated separately and noted as Attachment 1, and the amendments contemplated by it.
2. **Approves** the Amendment and restatement deed in relation to the Notes Subscription Agreement, circulated separately and noted as Attachment 2, and the amendments contemplated by it.
3. **Approves** the Amendment and restatement deed in relation to the Guarantee and Indemnity Deed, circulated separately and noted as Attachment 3, and the amendments contemplated by it.
4. **Authorises** execution of each deed by two elected representatives, being Cr ... and Cr ...

Te horopaki
Context

- 2 In 2018 at its AGM, shareholders of the LGFA agreed to amend its borrowing programme. The purpose of the proposed amendments is to :
 - a. Enable approved Council-controlled organisations (CCOs) to borrow directly through the LGFA
 - b. Allow a local authority to apply to the LGFA to be tested at a group level rather than a parent level for compliance with covenants
 - c. Increase the amount of borrower notes that must be issued to a local authority when it is borrowing; and

- d. Certain technical provisions around the borrowing programme.
- 3 To give effect to these changes, the amendment of several documents relating the borrowing programme is required. These are the Multi-issuer Deed, the Guarantee and Indemnity Deed and the Notes Subscription Agreement.
- 4 As these documents are sizeable they will be circulated under separate cover to Councillors.
- 5 The LGFA is targeting execution of the deeds by 30 April 2020.

Te tātaritanga

Analysis

- 6 The Deeds of Amendment have been reviewed and approved by LGFA (with the assistance of LGFA's legal counsel, Russell McVeagh) and by the LGFA Shareholders' Council (with the assistance of Simpson Grierson). Simpson Grierson has acted on behalf of (and under the instructions of) the Shareholders' Council, and therefore in the Council's interests in this matter, as Council is required to execute the deeds in its capacity as shareholder.
- 7 As the amendments need to be effected by deeds, execution by two elected representatives is required for each Deed of Amendment. Please note that execution of the Deeds of Amendment by Chief Executives or other council officers will not be accepted by LGFA. (The Chief Executive will be required to sign the applicable form of s 118 certificate, noting the documents have been approved).
- 8 As restrictions on meetings under COVID-19 Level 3 are in place it is not possible for the two elected members to be in the same location and so each signatory will need to sign electronically, this has been acknowledged by LGFA and a process for receiving the documents has been issued.

Ngā hua ahumoni

Financial implications

- 9 The amendments to the borrower programme raise no financial implications to Council.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

- 10 The matter requiring decision in this report was considered by officers in accordance with the process set out in Greater Wellington's Climate Change Consideration Guide.

Mitigation assessment

- 11 The matter addressed in this report is of a procedural nature, and there is no need to conduct climate change assessments.

Ngā tikanga whakatau
Decision-making process

- 12 The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

- 13 Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter, taking into account Council's Significance and Engagement Policy and Greater Wellington's Decision-making Guidelines. Officers recommend that the matter is of low significance due to its procedural nature.

Te whakatūtakitaki
Engagement

- 14 The engagement processes for these amendments were conducted prior to the 2018 LGFA Annual General Meeting and also by the shareholder council.

Ngā tūāoma e whai ake nei
Next steps

- 15 The deeds will be signed and returned to LGFA.

Ngā āpitihanga
Attachments (provided separately)

1. Amendment and restatement deed in relation to the Multi-Issuer Deed
2. Amendment and restatement deed in relation to the Notes Subscription Agreement
3. Amendment and restatement deed in relation to the Guarantee and Indemnity Deed.

**Ngā kaiwaitohu
Signatories**

Writer	Seán Mahoney – Company Portfolio Manager
Approver	Samantha Gain – General Manager, Corporate Services

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> Council can not delegate the responsibility of approving these deeds.
<i>Implications for Māori</i> NO implications for Maori were identified.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> The amendments to the deeds have no implications to statutory plans.
<i>Internal consultation</i> This was undertaken prior to the 2018 LGFA AGM
<i>Risks and impacts: legal / health and safety etc.</i> The documents have been reviewed by legal counsel and no risks identified to the shareholder.

Council
30 April 2020
Report 20.3



For Decision

REVISED SENSITIVE EXPENDITURE (ELECTED MEMBERS) POLICY

Te take mō te pūrongo

Purpose

1. To advise Council on proposed changes to its *Sensitive Expenditure (Elected Members) Policy* and to seek approval of a revised policy.

He tūtohu

Recommendation

That the Council **adopts** the revised Sensitive Expenditure (Elected Members) Policy (Attachment 1).

Te tāhū kōrero

Background

2. Sensitive expenditure is:
Expenditure by Greater Wellington Regional Council (Greater Wellington) where an elected member either directly benefits, or is perceived to benefit personally, from the expenditure that elected member has incurred during the course of Council business.
3. It is appropriate that Council adopts a policy on sensitive expenditure by elected members to ensure transparent approvals, consistency practices, and accountability for this expenditure.
4. Council first adopted a sensitive expenditure policy applying to elected members in 2007. This policy is reviewed and approved by Council early in each triennium.

Te tātaritanga

Analysis

5. Officers have reviewed the policy and revised it to:
 - a Improve the clarity and readability of the document (e.g. by adding definitions, reformatting to the new Council style, and using more consistent wording)
 - b Align with the 2019 update to Council's *Policy on Elected Members Allowances and Expenses*

- c Clarify the intent of the sections on:
 - i Events, travel, accommodation, and meals and refreshments
 - ii Communications, travel time and childcare allowances
 - d Add a new subsection on the use of ride share operators.
6. A copy of the revised Sensitive Expenditure (Elected Members) Policy is attached as **Attachment 1**.
7. The policy was developed with reference to the Office of the Auditor-General's *Controlling Sensitive Expenditure: Guidelines for Public Entities*. It should be read together with Council's *Policy on Elected Members Allowances and Expenses* (2019) and Council's *Code of Conduct for Elected Members* (2011).

Ride sharing transport

8. Expenditure on ride share transport (such as Uber, Ola and Zoomy) is a new option in the transport landscape. This option has a similar role and model to taxis. Greater Wellington recognises that ride sharing could have a public interest and falls within the scope of sensitive expenditure.

Cross-references to other Council policies

9. Previously, there was some duplication of provisions between this policy and Council's *Policy on Elected Members' Allowances and Expenses*. To avoid inconsistencies and confusion, we have removed these provisions from this policy and included cross-references (e.g. for public transport and communications, travel time and childcare allowances (respectively paragraphs 43 and 72 of **Attachment 1**).

Events, travel, accommodation and meals and refreshments

10. We do not propose substantive changes to these sections. Rather, there are a number of revisions to clarify the intent and wording (e.g. that the approval of overnight accommodation is for 'overnight commercial accommodation in Wellington' (paragraph 22 of **Attachment 1**).

Ngā hua ahumoni

Financial implications

11. There are no financial implications arising from the proposed revisions.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

12. The matter requiring decision in this report was considered by officers in accordance with the process set out in Council's *Climate Change Consideration Guide*.

Mitigation and adaptation assessments

13. There is no need to conduct climate change assessments.

Ngā tikanga whakataau
Decision-making process

14. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

15. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that the matter is of low significance, given its procedural nature.

Te whakatūtakitaki
Engagement

16. Due to its procedural nature and low significance, no engagement on this matter is necessary.

Ngā tūāoma e whai ake nei
Next steps

17. A copy of the adopted policy will be made available on Diligent for Councillors' reference.

Ngā āpitihanga
Attachment

Number	Title
1	Revised Sensitive Expenditure (Elected Members) Policy

Ngā kaiwaitohu
Signatories

Writers	Lucas Stevenson – Kaitohutohu/Advisor, Democratic Services Will Ogier – Senior Democratic Services Advisor,
Approvers	Francis Ryan – Kaiwhakahaere Matua/Manager, Democratic Services Luke Troy – Kaiwhakahaere Matua Rakai/ General Manager, Strategy

He whakarāpopoto i ngā huritaonga Summary of Considerations
<i>Fit with Council or Committee's Terms of Reference</i> Council's roles include updating core policies that align with statutory requirements and best practice.
<i>Implications for Māori</i> There are no known implications for Māori.
<i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> The revised policy aligns with Council's <i>Code of Conduct for Elected Members</i> (2011) and <i>Policy on Elected Members' Allowances and Expenses</i> (2019).
<i>Internal consultation</i> The Strategy Group and the Chief Financial Officer were consulted.
<i>Risks and impacts: legal / health and safety etc.</i> There are no known risks and impacts.

Attachment 1 to Report 20.3

Draft Sensitive Expenditure (Elected Members) Policy



Sensitive Expenditure (Elected Members) Policy

A policy to ensure that sensitive expenditure by elected members of the Greater Wellington Regional Council is appropriate and justifiable.

Policy owner	Council
Date policy comes into effect	The first working day following the date of adoption by Council.
Related policies, legislation and documents	<p>Council’s <i>Code of Conduct for Elected Members</i> (2011)</p> <p>Council’s <i>Policy on Elected Members’ Allowances and Expenses</i> (2019)</p> <p>Annual Local Government Members Determinations issued by the Remuneration Authority</p>
Policy review date	By 31 December 2022.
Policy history	This policy was first established in 2007 and has been revised at the start of each subsequent Council triennium.

Date of Council adoption:

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DRAFT

Introduction

1. While it is necessary for Council to commit to the expenditure of public money in order to achieve its objectives, there is heightened public interest when sensitive expenditure is involved. In particular, the public expects that:
 - a Any decisions Council commits to, and any goods and services Greater Wellington makes payment for in relation to elected members, should be subject to proper authorisation and controls
 - b Any such expenditure must meet standards of probity that can withstand Parliamentary and public scrutiny.
2. This policy has been developed with reference to the Office of the Auditor-General's *Controlling Sensitive Expenditure: Guidelines for Public Entities* (February 2007).

Definitions

3. The following definitions are used throughout this policy:
 - a "Chair" refers to the Council Chair
 - b "Council" refers to the governing body of the Greater Wellington Regional Council
 - c "Council's business" includes the matters covered by the same definition in Council's *Policy on Elected Members' Allowances and Expenses* and in section 2.1 of Council's *Code of Conduct for Elected Members*. It does not include an event, function or meeting where the primary focus is on social activity
 - d "Elected member" means a member of the Council elected under the Local Electoral Act 2001, and includes the Chair
 - e "Event" includes a conference, course, seminar, event, function or meeting that an elected member is attending on Council business
 - f "Greater Wellington" refers to the organisation, the Chief Executive appointed by Council, and officers appointed under the authority of the Chief Executive
 - g "Official travel" means travel by an elected member on Council business
 - h "Overseas travel" means travel from, outside of, and to New Zealand (and includes local travel at any overseas destinations)
 - i "Sensitive expenditure" is expenditure by Greater Wellington where an elected member either directly benefits, or is perceived to benefit personally, from the expenditure that elected member has incurred whilst on Council business.

Scope

4. This policy covers the following areas where sensitive expenditure may occur during the course of Council business:
 - a Entertainment and hospitality
 - b Travel, accommodation, and meals and refreshments
 - c Goods and services
 - d Sponsorship, gifts, and koha
 - e Communications, travel time and childcare allowances.
5. This policy should be read together with the following documents:
 - a *Council's Policy on Elected Members' Allowances and Expenses* (2019)
 - b *Council's Code of Conduct for Elected Members* (2011) (with regard to gifts and opportunities to build relationships)
 - c Annual Local Government Members Determinations (the Determinations) issued by the Remuneration Authority.

Legislative requirements

6. This policy is designed to be consistent with the Determinations. To the extent that this policy and the Determinations may differ, the Determinations take precedence.

Guiding principles

7. Council takes a principles-based approach to controlling sensitive expenditure in relation to elected members. The principles are that these expenditure decisions must:
 - a Relate to an elected member's expenditure whilst on Council business
 - b Have Council business as the dominant purpose for the expenditure
 - c Preserve impartiality
 - d Be properly authorised
 - e Be made with integrity
 - f Be for expenditure that is moderate and conservative in the circumstances
 - g Be transparent
 - h Be for expenditure that is both actually, and perceived to be, appropriate (taking into account both the individual transaction and the total amount of sensitive expenditure in that area).

Payment for sensitive expenditure

Chair's credit card

8. The Chief Executive may approve issuing the Chair with a credit card. The Chief Executive will determine the credit limit which shall be the minimum amount necessary for the Chair to undertake the Chair's duties.
9. The Chair's credit card may be used only by the Chair for expenditure relating to Council business that:
 - a Is moderate and appropriate in the circumstances
 - b Has acceptable original documentation to explain and corroborate the transaction (credit card statements are not acceptable)
 - c Is within the credit limit determined for the credit card.
10. Use of the credit card for personal expenditure or credit is not permitted. Unintended use of the credit card for personal expenditure must be immediately reimbursed by the Chair to Greater Wellington.
11. The Chair must keep all original documentation recording expenditure using the credit card (including all itemised credit card receipts, GST invoices, or online order forms) to explain and corroborate each transaction. Within one week of receiving the credit card statement, the Chair must process each item of expenditure in Greater Wellington's Flexipurchase system. All credit card expenses must be supported by itemised credit card receipts, GST invoices, or online order forms.
12. Cash advances on the Chair's credit card are not permitted unless, in the rare circumstance, cash is required for an emergency related to Council business. If the credit card is used for a cash advance in such an emergency, when processing the items of expenditure the Chair must attach:
 - a The original receipt or other documentation recording the cash advance
 - b A detailed account of what the cash was used for, including:
 - i The date, amount, and description of the expenditure
 - ii The related Council business
 - iii Any relevant GST invoices.
13. Credit card purchases made by the Chair are approved in Greater Wellington's Flexipurchase system by the Chief Executive and the Chief Financial Officer. These approvers must validate that all expenses are in line with Council policies relating to the appropriateness of the scope of expenditure and relevant dollar limits.

Entertainment and hospitality

14. All sensitive expenditure decisions relating to entertainment and hospitality must, where relevant, be consistent with the guiding principles set out in paragraph 7.

Events, travel, accommodation, and meals and refreshments

15. Elected members may need to incur expenditure on events, travel, accommodation, and meals and refreshments while on Council business elsewhere in New Zealand or overseas. Such expenditure must be economical and efficient, having regard to the purpose, distance, time, and urgency for the travel as well as any personal health, security and safety considerations arising from the circumstances of the particular case.
16. Decisions on expenditure for events, travel, accommodation, and meals and refreshments shall be made in accordance with the guiding principles set out in paragraph 7 above, Council's *Policy on Elected Members' Allowances and Expenses* and this policy.

Overseas events

17. Participation by an elected member at an overseas event involves expenditure on overseas travel and related expenditure on accommodation, meals and refreshments.
18. The elected member's participation at the overseas event and any related expenditure must have prior authorisation by Council resolution in a public session. The report seeking approval for this participation and expenditure must outline:
 - a The overseas event, the purpose of this event and how this purpose relates to Council business
 - b When and where the overseas event is being held
 - c Who is proposed to attend
 - d The estimated expenditure involved (appropriately itemised)
 - e The benefits to Council of the elected member's participation in the overseas event.

New Zealand events

19. Except for the situation in paragraph 22, the Council Chair's prior written approval is required for an elected member's:
 - a Participation at an event in New Zealand on Council business that requires expenditure by Greater Wellington
 - b Related expenditure on event fees, travel (including the use of a rental vehicle), accommodation, and meals and refreshments.
20. The prior written approval of the Chief Executive and Chief Financial Officer is required for the Chair's:
 - a Participation at an event in New Zealand on Council business that requires expenditure by Greater Wellington
 - b Related expenditure on event fees, travel (including the use of a rental vehicle), accommodation, and meals and refreshments.

Bookings

21. All event, travel, accommodation, and rental vehicle bookings by elected members on Council business should:
 - a Occur as far in advance as possible to ensure the related expenditure is cost-effective
 - b Be arranged through Democratic Services (unless determined otherwise by the Chief Executive).

Overnight commercial accommodation in Wellington

22. The Chief Executive may approve expenditure for an elected member's overnight commercial accommodation in Wellington only when the following criteria have been met:
 - a The elected member is attending an event in Wellington, and
Either
 - b The event finishes at an unsociable hour
 - c The elected member is required to represent the Council early (before 9.00am) the next morning in a geographic location near to where the commercial accommodation is located
Or
 - d It is unsafe for the elected member to travel home in the circumstances.
23. All commercial accommodation must be of a standard that is moderate and conservative, having regard to:
 - a The geographic location of the accommodation relative to where the elected member will be representing Council the next morning
 - b The standard of accommodation reasonably available
 - c Any safety and security issues.
24. The Chief Executive will not approve or reimburse any accommodation expenditure where:
 - a Any of the above criteria was not met
 - b The elected member chooses to stay privately (e.g. with friends, relatives or colleagues).

Air travel

Class of air travel

25. Economy class travel must be booked for all air travel on Council business with the following exceptions:
 - a The elected member agrees to meet the additional expenditure for a higher class of travel
 - b The flight is of more than six hours duration and business class air travel for the elected member was authorised by Council when considering the related report under paragraph 18.

Airline club membership

26. Greater Wellington, following the Chief Executive's approval of this expenditure, may arrange an airline club membership for the Chair.
27. The Chair's airline club membership is entitled to accrue rewards and airpoints for air travel on Council business. All such accrued rewards and airpoints shall be used only for further travel by the Chair on Council business.
28. When the Chair leaves the Council, Greater Wellington will cancel the Chair's airline club membership and any unused rewards and airpoints must be left to lapse.
29. The Chair must disclose any gifts derived through the membership in accordance with Council's *Code of Conduct for Elected Members*.

Vehicle travel

Rental vehicles

30. Rental vehicles used by elected members on Council business shall be of the most economical type and size available given the distance to be travelled and the number of people travelling.
31. Any rental vehicle shall only be used for the intended Council business. Personal use of the rental vehicle is not permitted unless the elected member is away from home and on Council business before and after a weekend. In these circumstances, the elected member is permitted reasonable weekend use of the rental vehicle provided the elected member reimburses Greater Wellington for any additional expenditure incurred.
32. Greater Wellington shall not be liable for any parking fines or traffic offences incurred whilst the elected member is responsible for the rental vehicle.

Private vehicle use

33. Greater Wellington shall not be liable for any parking fines or traffic offences incurred by an elected member whilst using a private vehicle on Council business.

34. Any travel costs that Greater Wellington will reimburse for an elected member's use of a private vehicle on Council business shall be in accordance with the mileage and travel time rates determined by Council (consistent with the Determinations and referred to in Council's *Policy on Elected Members' Allowances and Expenses*) and dependent upon the elected member providing a signed claim form detailing the distance travelled, and the Council business requiring the use of the private vehicle.

Chair's vehicle

35. The Chair will be eligible to be provided with a vehicle for the Chair's business and personal use as part of the Chair's remuneration adopted by Council and confirmed in the Determinations. Greater Wellington shall not be liable for any parking fines or traffic offences incurred whilst using the vehicle.

Taxis

36. Greater Wellington may provide taxi chits to elected members for travel on Council business when other transport options, such as public transport or an elected member's use of their private vehicle, are unavailable or impractical.
37. Elected members may not use Greater Wellington taxi chits for personal travel.
38. Greater Wellington may provide the Chair with a taxi card, to be used for travel on Council business when use of the Chair's vehicle or public transport is unavailable or impractical. Use of this taxi card for personal travel is not permitted. Unintended use of this taxi card for personal travel must be immediately reimbursed by the Chair to Greater Wellington.
39. All use of taxi chits by elected members, and of a taxi card by the Chair, must be moderate and cost-effective relative to the other forms of transport available.

Ride sharing

40. Ride sharing includes expenditure on the use of ride share transport operators like Uber, Ola and Zoomy.
41. Elected members may use ride sharing for travel on Council business when other options, such as public transport or an elected member's use of their private vehicle, are unavailable or impractical. All use of ride sharing by elected members must be moderate and cost-effective, relative to the other forms of transport available.
42. Greater Wellington will reimburse expenditure on an elected member's ride sharing where the following criteria have been met:
 - a The expenditure is for travel on Council business
 - b A receipt recording the payment is provided to support the reimbursement claim.

Public transport

43. The related policy is stated in Council's *Policy on Elected Members' Allowances and Expenses*.

Personal travel linked with official travel

44. "Personal travel" includes the elected member travelling with a partner or spouse, and/or:
- a Extending a stopover; or
 - b Extending a stay out of town
- for an additional period of time before, during or after the official travel, including for a weekend.
45. An elected member may combine personal travel and accommodation with official travel and accommodation where the following criteria have been met:
- a The primary reason for the travel is official travel
 - b Greater Wellington incurs no additional expenditure from the personal travel, accommodation, and any other travel-related matters
 - c Arrangements for the personal travel and accommodation are made by the elected member in their private capacity (i.e. Greater Wellington's resources may not be used)
 - d The elected member provides a written proposal to the Chair (or the Chair provides to the Chief Executive if the Chair is the traveller) of the elected member's (or Chair's) intention to add personal travel and accommodation to their official travel
 - e The Chair (or the Chief Executive if the Chair is the traveller) provides written approval of this proposal prior to the personal travel.

Meals and refreshments during official travel

46. Greater Wellington will reimburse an elected member's meals and refreshments (excluding alcohol) expenditure whilst on official travel where the following criteria are met:
- a The value of the meals and refreshments is reasonable¹
 - b No refreshment is sourced from the accommodation's mini-bar
 - c The meal is not in addition to, or as an alternative to, a meal that was provided as part of a package paid for by Greater Wellington
 - d Meals and refreshment are not bought for others
 - e Original documentation and GST invoices are provided to support the reimbursement claim.

¹ While on official travel in New Zealand, the recommended maximum amounts for meals and refreshments for each elected member are \$30 for lunch and \$80 for dinner. Both amounts are GST inclusive.

47. Greater Wellington will not approve or reimburse expenditure on alcohol purchased by an elected member whilst on official travel.

Miscellaneous expenses

Tipping

48. Greater Wellington will not reimburse an elected member for any tipping in New Zealand.
49. Greater Wellington will reimburse an elected member for tipping during overseas travel where the following criteria are met:
- a The tip is in accordance with local practice
 - b The tip is not extravagant (i.e., does not exceed 10 to 15 percent of the total bill)
 - c The tip occurred whilst the elected member was conducting Council business
 - d Where possible, a receipt or tax invoice recording the tip is provided to support the reimbursement claim.

Other services relating to official travel

50. Greater Wellington may reimburse an elected member's expenditure during official travel for the following services:
- a Dry cleaning and laundry (if the accommodation is for three nights or more)
 - b Wi-Fi
 - c Valet parking
- where the elected member:
- d Demonstrates that the expenditure was reasonable and related to Council business
 - e Provides all relevant original documentation detailing the expenditure.
51. In no circumstances will Greater Wellington reimburse an elected member for use of services such as:
- a Mini-bar
 - b In-room pay movies
 - c Spa treatments.

Goods and services

Use of Greater Wellington purchase orders

52. Elected members are not permitted to purchase goods or services for personal use through a Greater Wellington purchase order. All purchase orders related to Council business shall be made in the name of Greater Wellington and not an individual elected member.

Loyalty reward scheme benefits and prizes

53. Any loyalty rewards or prizes received by an elected member during the course of Council business shall, to the greatest extent practicable, be the property of Greater Wellington and/or be applied for the benefit of Greater Wellington only.
54. Where receiving a prize or loyalty reward could be perceived as inappropriate, even if Greater Wellington rather than the elected member would benefit from it, the prize or reward should be declined in accordance with the policy on accepting gifts below.

Sponsorship of elected members

55. Greater Wellington is not permitted to provide sponsorship of an elected member's personal activities.

Gifts

56. To accept or give gifts, certain entertainment or any material benefits could be seen by the community as a means of seeking to influence the decision of the recipient (whether or not the recipient is a member or an organisation with which the Council has a relationship).

Giving gifts

57. Elected members may give gifts to promote international relations when gift-giving is customary, or when the Chair has assessed the specific purpose or occasion warrants gift-giving.
58. The expenditure on the proposed gift must not be inappropriate or excessive to the occasion or reason for the gift-giving.
59. The nature of the proposed gift must not be inappropriate or excessive to the occasion or reason for it being given. The gift must be a tangible object.
60. Greater Wellington, following the Chief Executive's approval of the expenditure, will purchase the gift.

Accepting gifts

61. An elected member may accept a gift, except when acceptance could be perceived as a means of influencing a Council or Greater Wellington decision-making process.
62. All accepted gifts are the property of Greater Wellington. The elected member accepting the gift must advise the Chief Executive of the gift (except where the elected member is given infrequent, inexpensive gifts such as pens, badges, or calendars).
63. An accepted gift with an estimated value over \$150 (GST inclusive) must be recorded in Council's Gifts and Invitations Register held by the Chief Executive, and forwarded to the Chief Executive who will determine how the gift should be used or distributed.
64. Where it is necessary, in the circumstances, to decline a gift, the elected member must preserve the relevant working relationships of Council and the person or organisation giving the gift by:
 - a Thanking the person or organisation for the gesture of the gift and acknowledge Council's appreciation
 - b Explaining that, due to Council's policy, the gift cannot be accepted
 - c Advising that the elected member is not the only person who has to respectfully decline a gift as a result of this policy. Other elected members are in the same situation.
65. Elected members are prohibited from accepting cash, or from soliciting, demanding or requesting a gift by virtue of their position.
66. Note that these requirements are also reflected in the 'Gifts' section of Council's *Code of Conduct for Elected Members*.

Invitations to a social function or event

67. Elected members will be invited by external parties to social functions or events so the elected member can "network" and build appropriate business relationships.
68. Elected members make their own decisions on whether to accept invitations. In making these decisions, elected members must be aware of the line between appropriate relationship building and external parties seeking to influence a Council or Greater Wellington decision-making process; and should consult the Chief Executive in cases of doubt about whether to accept an invitation to a function or event.
69. The elected member's decision to accept an invitation requires consideration of whether attendance would *either*:
 - a Benefit a business relationship of Greater Wellington, *or*
 - b Maintain impartiality and integrity (i.e. not be perceived as a means of influencing a Council or Greater Wellington decision-making process).

70. Elected members should record the invitation, and its acceptance or otherwise, in the Council's Gifts and Invitations Register held by the Chief Executive.

Koha

71. The giving of koha at an event attended by an elected member will be arranged by the Chief Executive or an appropriately delegated officer.

Communications, travel time and childcare allowances

72. Allowances paid to elected members for:

- a Communications
- b Travel time and mileage
- c Childcare

are within the scope of this policy. Council sets these allowances within the framework prescribed by the Determinations. The details of these allowances, including the eligibility criteria, are stated in Council's *Policy on Elected Members' Allowances and Expenses*.

DRAFT

**Council
30 April 2020
Report 20.133**



For Information

REPORT ON THE CIVIL DEFENCE EMERGENCY MANAGEMENT GROUP JOINT COMMITTEE MEETING OF 24 APRIL 2020

**Te take mō te pūrongo
Purpose**

1. To inform Council of the deliberations of the Civil Defence Emergency Management Group Joint Committee (the Joint Committee) meeting on 24 April 2020.

**Te horopaki
Context**

2. The Joint Committee held a meeting on 24 April 2020 to approve a number of statutory appointments to the positions of Group Controllers, and Local Recovery Managers, including alternates. The current list is set out in **Attachment 1** – Civil Defence Emergency Management Group appointments – April 2020.

**Ngā āpitihanga
Attachment**

Number	Title
1	Civil Defence Emergency Management Group appointments – April 2020

**Ngā kaiwaitohu
Signatories**

Writer	Lucas Stevenson – Kaitohutohu/Advisor, Democratic Services
Approvers	Francis Ryan – Kaiwhakahaere Matua/Manager, Democratic Services Luke Troy – Kaiwhakahaere Matua Rautaki/General Manager Strategy Cr Daran Ponter – Council representative, Civil Defence Emergency Management Group Joint Committee

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> It is appropriate for Council, as a member of the Joint Committee, to be kept informed of the business of that committee.
<i>Implications for Māori</i> There are no known implications for Māori.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> The report contains updates relevant to business continuity planning and emergency management.
<i>Internal consultation</i> There was no internal consultation required.
<i>Risks and impacts: legal / health and safety etc.</i> There are no known risks or impacts.

Attachment 1 to Report 20.115**Civil Defence Emergency Management Group appointments –April 2020**

The following table provides the current list of statutory appointees as Group Controllers, Local Controllers, and alternates.

Area to which appointed	Appointee (designation)
CDEM Group	David Russell (Group Controller) Davor Bejakovich (alternate) Bruce Pepperell (alternate) Jeremy Holmes (alternate) Derek Baxter (alternate) Scott Martin (alternate) Richard Harbord (alternate) Lester Piggott (alternate) Phil Becker (alternate) Andrew Dalziel (alternate) Mark Duncan (alternate) Adrian Glen (supplementary) Dan Neely (supplementary)
Wellington City Council	Derek Baxter (primary) David Chick (alternate) Phil Becker (alternate) Sarah Murray (alternate) Stephen McArthur (alternate) Michelle Riwai (alternate) Moana Mackey (alternate) Mike Mendonca (alternate) Karl Maddaford (alternate) Adrian Glen (supplementary) Kane McCollum (supplementary)
Porirua City Council	Jerry Wrenn (primary) Brian Anderson (alternate) Scott Martin (alternate) Andrew Dalziel (alternate) Trevor Farmer (alternate) Bruce Pepperell (alternate) Karen Stillwell (alternate) Mike Scott (alternate) Ken Bailey (alternate) Alison Wiley (alternate)
Kāpiti Coast District Council	James Jefferson (primary) Janice McDougall (alternate) Bruce Johnston (alternate)

Attachment 1 to Report 20.115

Civil Defence Emergency Management Group appointments –April 2020

Area to which appointed	Appointee (designation)
	Kevin Currie (alternate) Glen O’Connor (alternate) Rian van Schalkwyk (alternate) Adrian Glen (supplementary) Scott Dray (supplementary)
Hutt City Council	Lester Piggott (primary) Geoff Stuart (alternate) Craig Cottrill (alternate) Damon Simons (alternate) Simon Fleisher (alternate) Jay Houppapa (alternate)
Upper Hutt City Council	Geoff Swainson (primary) Richard Harbord (alternate) Jonnette Adams (alternate) Craig Cottrill (alternate) Vibhuti Chopra (alternate) Liezel Jahnke (alternate) Chris Costley (alternate) Dirk Botha (alternate) Jessica Hare (supplementary)
Wairarapa district councils	David Hopman (primary) Jonathan Hooker (alternate) Tim Langley (alternate) Carolyn McKenzie (alternate) Richard Harbord (alternate) Murray Johnson (alternate) Darryl McCurdy (supplementary)

Attachment 1 to Report 20.115**Civil Defence Emergency Management Group appointments –April 2020**

The following table provides a list of statutory appointees as Group and Local Recovery Managers, and alternates.

Area to which appointed	Appointee name (and designation)
CDEM Group	Dan Neely (Recovery Manager) Nigel Corry (alternate) Luke Troy (alternate)
Wellington City Council	Mike Mendonca (Recovery Manager) Paul Andrews (alternate) Danny McComb (alternate) David Chick (alternate)
Porirua City Council	Steven Perdia (Recovery Manager)
Kāpiti Coast District Council	Natasha Tod (Recovery Manager)
Hutt City Council	Geoff Stuart (alternate) Andrea Bradshaw (alternate) Helen Oram (alternate)
Upper Hutt City Council	Liezel Jahnke (Recovery Manager) Geoff Swainson (alternate) Jonnette Adams (alternate)
Wairarapa district councils	Dave Gittings (Carterton) Kim Rudman (South Wairarapa) Kate Conroy (Masterton)

Attachment 1 to Report 20.115

Civil Defence Emergency Management Group appointments –April 2020

The following table lists the appointment to Lifelines Co-ordination.

Area to which appointed	Appointee name (and designation)
CDEM Group	Richard Mowll

Council
30 April 2020
Report 20.137



For Decision

RESOLUTION TO EXCLUDE THE PUBLIC

That the Council excludes the public from the following parts of the proceedings of this meeting, namely:—

Confirmation of the public excluded minutes of the Council meeting 9 April 2020

Appointments to the Public Transport Advisory Group.

The general subject of each matter to be considered while the public is excluded, the reasons for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 (the Act) for the passing of this resolution are as follows:

Confirmation of the public excluded minutes of the Council meeting 9 April 2020 – Report PE20.124	
<i>Reason for passing this resolution in relation to each matter</i>	<i>Ground(s) under section 48(1) for the passing of this resolution</i>
<p>The information contained in these minutes includes commercially sensitive information about the likely business impacts of the site options for a Multi User Ferry Terminal (MUFT). Withholding this information is necessary to avoid unreasonably prejudicing the commercial position of CentrePort and its commercial partners as holding this part of the meeting in public would release information that is detrimental to their commercial activities.</p> <p>Council has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	<p>The public conduct of this part of the meeting is excluded as per section 7(2)(b)(ii) of the Act, (to protect information where making available of the information would be likely to unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information).</p>
Appointments to the Public Transport Advisory Group – Report PE20.136	
<i>Reason for passing this resolution in relation to each matter</i>	<i>Ground(s) under section 48(1) for the passing of this resolution</i>

<p>Information contained in this report includes personal and identifying information about proposed candidates for appointment. Withholding this information prior to Council's decision is necessary to protect the privacy of those natural persons, as releasing the information would disclose their consideration for appointment as members of the Public Transport Advisory Group.</p> <p>Council has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	<p>The public conduct of this part of the meeting is excluded as per section 7(2)(a) of the Act (to protect the privacy of natural persons, including that of deceased natural persons).</p>
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This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by section 6 or section 7 of that Act or section 6 or section 7 or section 9 of the Official Information Act 1982, as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public.