



If calling, please ask for Democratic Services

Hutt Valley Flood Management Subcommittee

Thursday 15 October, 4.30pm

Council Chamber, Hutt City Council, 30 Laings Road, Lower Hutt 5010

Members

Greater Wellington Regional Council

Cr Lamason (Chair)

Cr van Lier (Deputy Chair)

Cr Connelly

Cr Laban

Hutt City Council

Deputy Mayor Lewis

Cr Edwards

Upper Hutt City Council

Mayor Guppy

Cr Wheeler

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

Hutt Valley Flood Management Subcommittee

Thursday 15 October, 4.30pm

Council Chamber, Hutt City Council, 30 Laings Road, Lower Hutt 5010

Public Business

No.	Item	Report	Page
1.	Apologies		
2.	Conflict of interest declarations		
3.	Public participation		
4.	Confirmation of the Public minutes of the Hutt Valley Flood Management Subcommittee meeting on 6 August 2020	20.280	3
5.	RiverLink Project Update- September 2020	20.320	6
6.	Hutt Valley Flood Management Projects Report (September 2020)	20.319	18
7.	Hutt and Pinehaven Floodplain Management Plan implementation annual report to June 2020	20.324	23



Please note these minutes remain unconfirmed until the Hutt Valley Flood Management Subcommittee meeting on 15 October 2020

Report 20.280

Public minutes of the Hutt Valley Flood Management Subcommittee meeting on Thursday 6 August 2020

Council Chamber, Hutt City Council
30 Laings Road, Lower Hutt at 4:31pm.

Members Present

Greater Wellington Regional Council

Councillor Lamason (Chair)
Councillor van Lier (Deputy Chair)
Councillor Connelly

Hutt City Council

Deputy Mayor Lewis
Councillor Edwards (from 4 :35pm)

Upper Hutt City Council

Mayor Guppy
Councillor Wheeler

Public Business

1 Apologies

Moved: Cr van Lier / Cr Wheeler

That the Subcommittee accepts the apology for lateness from Councillor Edwards.

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 Hutt Valley Flood Management Subcommittee meeting on Thursday 20 February 2020 – Report 20.84.

Moved: Cr van Lier / Cr Wheeler

That the Subcommittee confirms the Public minutes of the Hutt Valley Flood Management Subcommittee meeting on Thursday 20 February 2020 – Report 20.84.

The motion was **carried**.

5 2018/20 asset management report for Te Awa Kairangi / Hutt and Wainuiomata floodplains – Report 20.251

Colin Munn, Team Leader, Operations, Delivery and Planning, spoke to the report.

Moved: Cr van Lier / Mayor Guppy

That the Subcommittee recommends to the Environment Committee that it is satisfied that flood protection and erosion control infrastructure assets have been satisfactorily assessed and that identified issues are being addressed through maintenance and improvement work programmes.

The motion was **carried**.

6 RiverLink Project update – July 2020 – Report 20.253 [For Information]

Graeme Campbell, Manager, Flood Protection, David Irwin, Isthmus and Martin White, Project Director, RiverLink, all spoke to the report.

Noted: The Subcommittee endorsed the report.

7 Hutt Valley Flood Management projects report (30 June 2020) – Report 20.252

Graeme Campbell, Manager, Flood Protection, and Tracy Berghan, Principal Planning Advisor, spoke to the report.

Moved: Mayor Guppy / Deputy Mayor Lewis

That the Subcommittee:

- 1 Acknowledges the update on project progress for the Hutt Valley Flood Management Project.
- 2 Endorses commencement of edge protection works on eight sites on the Hutt River ahead of Council's Long Term Plan programme at a cost of \$10 million, subject to confirmation of Government grant funding being approved.

The motion was **carried**.

The meeting closed at 5:45pm.

Councillor P Lamason
Chair

Date:

**Hutt Valley Flood Management Subcommittee
30 September 2020
Report 20.320**



For Information

RIVERLINK PROJECT UPDATE – SEPTEMBER 2020

Te take mō te pūrongo

Purpose

1. To advise the Hutt Valley Flood Management Subcommittee (the Subcommittee) of the items raised in the RiverLink Project Director's Report – 15 October 2020 ([Attachment 1](#)).

Te tāhū kōreroi

Background

2. RiverLink is a partnership project between Greater Wellington Regional Council (Greater Wellington), Hutt City Council, Waka Kotahi NZ Transport Agency (Waka Kotahi), Ngāti Toa Rangitira and Taranaki Whānui.
3. Greater Wellington's interest in RiverLink relates to Greater Wellington's strategic priority of regional resilience and implementation of the Hutt River Floodplain Management Plan. As such, the flood protection benefits derived from the project are Greater Wellington's focus. Greater Wellington funding primarily relates to delivery of those project outcomes.
4. Greater Wellington's strategic priorities of freshwater quality and biodiversity, and Public Transport are supported by the successful completion of the RiverLink project.

Highlighted items included in the Project Director's Report

5. The RiverLink Project Director's Report to September 2020 is included as [Attachment 1](#).

RiverLink Project Update

6. An outcome of the August 2020 RiverLink Board meeting was an agreement to establish a Project Steering Group (PSG). A Terms of Reference for this group has been completed and the PSG has started weekly meetings. The steering group was established to be able to more quickly resolve technical issues to allow the project to progress rather than needing to elevate them all to the RiverLink Board.
7. A two dimensional hydraulic model has been developed for the Te Awa Kairangi /Hutt River from Silverstream to the river mouth and is being used for the consenting design work. As part of this work the Project partners have agreed to progress designs based on the assumption of adopting a medium roughness level for the in-channel design; this will be reviewed as the project progresses. Allowing for a medium roughness has

increased flood levels (and stopbank heights) but will allow more scope for environmental aspects to be incorporated into the design such as vegetation and recreational features. Several of the pressure points now require an assessment of alternatives to help develop the preliminary design and manage consenting risk. This has been narrowed down to the following areas:

- Marsden Street
 - South Daly Street
 - North Daly Street
 - New Melling Bridge/Rutherford Street
 - In river channel design upstream of Melling Bridge.
8. Meetings with Greater Wellington Metlink, Waka Kotahi, Hutt City Council and KiwiRail have further developed the design requirements for the proposed Melling Train Station, which is now largely agreed, until further engineering design detail is available. Walking and cycling outcomes have also been discussed with options agreed to be consulted on with external cycling and walking groups.
 9. Hutt City Council has undertaken meetings with property developers to understand market requirements and conditions. The city edge geotechnical investigation programme has been completed, with the contractors leaving site on 20 August 2020, one week ahead of schedule. The factual report was issued on 3 September 2020.
 10. Key milestone dates of the overall programme (subject to amendment) are:
 - Completion of the Assessment of Alternatives for areas requiring further investigation – end of November 2020
 - Complete traffic modelling by - beginning of November 2020
 - Commence drafting the assessment of environmental effects – end of November 2020
 - Design interchange - beginning of November 2020
 - Design amended rail configuration/station – start of October 2020
 - Engagement with the community – end of November 2020 and February 2021
 - Lodgement of designation orders/consents – April 2021

This is a draft programme and the consultants and project team are currently looking at options as to how the programme can be shortened.

Greater Wellington

11. The 2D modelling of the river has resulted in an increase in stopbank heights from those used in the 2017 preliminary designs. This has resulted in a need to relook at the location and centre lines of the stop banks and the distance between the stop banks along the sections of the river between the Melling and Ewen bridges. Changes in the height and locations of the stopbanks impact across the RiverLink partner organisations, hence the need to revisit some of the 2017 preliminary design assumptions. Of the thirteen pressure points identified and reported previously, this has been revised to the five identified under number 6 above. A process is underway for resolving these as soon as possible.

12. The integration of the river works with the urban park and other connections has progressed to four options which will be refined at a workshop in mid-October 2020. Further discussion with project partners will continue with the preferred river works design to be agreed as soon as possible after this.
13. Resource Management Act 1991 project objectives have been finalised and adopted by the RiverLink Board in September 2020.

Waka Kotahi

14. Waka Kotahi are integrating the interchange design with the riverworks and urban development designs. This is requiring some iterations to ensure the 'best for project outcomes' are achieved and this will impact on the designs for all project partners.
15. Waka Kotahi are leading the procurement approach in collaboration with the project partners. This work needs to progress in tandem with the consenting work to ensure construction can start as soon as possible after statutory approvals are obtained.

Hutt City Council design programme

16. Hutt City Council is leading a work-stream on the integration of urban development which will be facilitated by the above infrastructure (resilience/access) works. The geotechnical information, COVID-19 and the economic environment are all influencing the consenting design of the city edge and stopbank interface. The staging of the achievement of the promenade design as envisaged in the preliminary designs needs to be reconsidered.

Kaitiaki statement

17. Taranaki Whānui and Ngāti Toa Rangitira worked together to develop a kaitiaki statement. This has been received and is being incorporated into the consent development.

Programme acceleration options

18. The inclusion of Waka Kotahi into the project programme has pushed back the consent lodgement date into the first quarter of 2021, which will impact Greater Wellington's ability to meet the commencement of construction timeframe of 2021.
19. On balance, the benefits of the joined-up programme outweigh the risks of delaying commencement of the flood protection component due to the increased value of incorporating the transport improvements, and in particular replacing Melling Bridge.
20. The project board are mindful that following lodgement of the resource consents and Notice of Requirements (phase 1), that arrangements need to be agreed to transition into Phases 2 and 3, in terms of delivery. Workshops are being arranged for the project board to be briefed on suitable delivery models and procurement.

The indicative/high level timeline for Phases 2 and 3 (delivery) are:

Phase 2 Delivery

- Late 2021 – resource consents approved.
- Early 2022 – works start on the river channel/stop banks - completion is expected to be 2026.

- 2022 – work starts on the Melling transport improvements, which includes the relocation of Melling Railway Station.
- 2024 – work starts on the new pedestrian bridge roughly opposite Chamber of Commerce Building
- 2026 – Melling transport improvements completed.

Phase 3 Delivery

- 2026 onwards – urban development progresses.

Community Engagement

21. An updated community engagement plan has been prepared and released by the RiverLink project.
22. The RiverLink video, website and social media presence have been refreshed and newsletter updates sent out to subscribed community members.

Impacts of climate change on the RiverLink Project

26. The Greater Wellington components of the RiverLink Project are subject to Greater Wellington's initiatives designed to minimise greenhouse gas emissions and enhance sequestration capacity. We will work with our project partners to develop a joint procurement approach that supports Greater Wellington's mitigation objectives once we have entered that stage of the design process. The current basis of reference for this includes the Code of Practice for River Management (Te Awa Kairangi 2020). This guides all river management activities undertaken by Greater Wellington for the purposes of flood and erosion protection across the Wellington Region. The Greater Wellington corporate sustainability programme and Greater Wellington's procurement process will encourage suppliers and contractors to minimise emissions.
27. The design development for RiverLink acknowledges the need to adapt to a changing climate and aims to address these predicted impacts. Greater Wellington has included allowances for climate change impacts within the RiverLink Preliminary Design.
28. The RiverLink project provides flood protection upgrade to safely convey a 2,800 cumec flood past Hutt City Centre. Greater Wellington assessed this size of flood event at this location against a 2°C stabilization scenario and against the A2 emissions scenario. The 2,800 cumec event being close to the target 1-in-440 year return period (or greater) when these scenarios are assessed.

Ngā hua ahumoni

Financial implications

23. Greater Wellington has, through its Long Term Plan and annual planning processes, committed funding of \$125 million to delivery of the flood protection benefits of RiverLink. The current forecast for delivery of the flood protection benefits aligns with the existing budget.
24. These budgets do not include allowances for improvements to facilities related to public transport associated with the relocation of Melling Train Station, as Waka Kotahi are responsible for its relocation.

**Ngā āpitihanga
Attachments**

Number	Title
1	RiverLink Project Director’s Report – 15 October 2020

**Ngā kaiwaitohu
Signatories**

Writer	Tracy Berghan – RiverLink Lead, Greater Wellington
Approvers	Graeme Campbell – Manager, Flood Protection Wayne O’Donnell – General Manager, Catchment Management Group

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>The Subcommittee’s specific responsibilities include to “review periodically the effectiveness of implementation and delivery of floodplain management plans for the Te Awa Kairangi/Hutt River floodplain”, of which the RiverLink project is a part.</p>
<p><i>Implications for Māori</i></p> <p>Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Project Management Board.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>RiverLink contributes to the delivery of Greater Wellington’s strategic priorities of Regional Resilience, Freshwater Quality and Biodiversity, and Public Transport.</p>
<p><i>Internal consultation</i></p> <p>There was no additional internal consultation in preparing this report.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>The programme leading to commencement of construction is currently impacted by the:</p> <ul style="list-style-type: none"> • Complexity of integrating Waka Kotahi into the consenting work stream, including agreeing a variation to contract and signing of the deed of accession to the project partner agreement; • Additional design work required for the Hutt City urban edge that forms the interface between Te Awa Kairangi/Hutt River and the city to enable commencement of the assessment of environmental effects work-streams.

Attachment 1 to Report 20.320

Date: 15 October, 2020

Report of the Project Director - RiverLink

RiverLink – Project Update Report

1. Purpose

This report builds on regular reports the Subcommittee has received which provides an update on the RiverLink project.

At the last meeting, the Subcommittee was informed of emerging issues and opportunities. This report provides an update on these matters, and on the overall programme.

This report will also provide an update on governance matters and on communications and engagement.

A workshop will be held after the meeting, where the project partners and the lead consultant will provide an update from their perspectives, and the workshop will focus on areas where there are options to consider.

COVID-19

Business continuity plans have been instigated by the partner organisations and the RiverLink Project Office following the lockdown. Staff have been working remotely from home and momentum on the project has been maintained. Project meetings with staff and consultants have been via video conferencing and the pandemic has not adversely affected progress for this phase of the project.

Aspects which have been impacted are site investigations and surveys, such as ecological surveys and geo technical investigations. The delays in obtaining the results of these surveys will be incorporated into a reprofiled programme.

2. Background

Throughout the year Members have received reports which have provided a high level overview of the RiverLink project. The vision and strategic objectives have been outlined, as has the partnership approach and supporting governance structure. The partners have agreed to work collaboratively in an integrated, joined-up manner. The benefits of which were outlined in the February report. The partners work on the basis of achieving a “best for programme” outcome.

The Subcommittee has received regular updates on the main workstreams, with the main priority being integrating Melling transport improvements into the programme and phase 1. The integration is happening across all the workstreams and it has introduced a degree of complexity which the

appointed consultants are progressing. The inclusion of the Melling transport improvement and the government's expectation that the new interchange and bridge will be operational by the end of 2026 has led to greater focus on the planning of the true right bank (western side). Discussions with Kiwirail and Metlink are ongoing.

3. Areas requiring further investigation

As phase 1 of the project has progressed from preliminary design to consenting, a number of designs are being refined. This has focussed on five key areas, they are:

- **River modelling** has led to higher and wider stop banks in some areas and this is challenging where there is a constraint on land.
- Work on the **city edge** is being informed by a development strategy which in turn will be influenced by, for example, geo-technical investigations. This work will also inform the design of the stop banks.
- There is a design challenge to accommodate the **land uses at Pharazyn Street** driven by the space required by the new Melling interchange. The project partners are working collaboratively to resolve this challenge.
- There is a challenge to land the new Melling Bridge on **Rutherford Street** due to the height differential between the need to clear the stop bank and land at grade on the local highway network.
- There are design options to consider in the vicinity of **Marsden Street**.

These areas will be discussed further at the workshop following the meeting.

It is important to stress that the partners are working together constructively to achieve a best for programme outcome, and that an optimum design solution for all of the areas will be agreed upon.

The configuration of the river will inform the emerging Urban Design and Landscape Framework and other inter-dependencies which impact on the objectives of the partners. Whilst this is work in progress, and the Sub committee will be kept informed of progress, there is the possibility that further property **may** need to be acquired to achieve an optimal design solution.

This work will impact on the overall programme, please see section below on programme.

Programme

In light of the challenges outlined above, the consultants have revised and updated the project programme. Lodgement of the Notice of Requirement and consents will now be in the second quarter next year. (An illustration of the programme will be made available in the workshop.)

Additional time is required to carry out an exercise to assess alternative design options (an option appraisal exercise) for the areas requiring further investigation referred to above, which will then lead to a preferred option being identified. The preferred option will then in turn need to be considered and endorsed by the project board before any community engagement. This Assessment of Alternatives is required under the RMA, and it will have the effect of “fixing” various key elements.

The project board have received the revised programme and at the time of writing it is being reviewed by the project partners. The consultants have been asked to identify ways to bring the lodgement date forward, that is, to the first quarter next year.

Key milestone dates of the programme (subject to amendment) are:

- Completion of the Assessment of Alternatives for areas requiring further investigation – end of November.
- Complete traffic modelling by - beginning of November
- Start to draft the assessment of environmental effects – end of November
- Design interchange - beginning of November
- Design amended rail configuration/station – start of October
- Engagement with the community – end of 2020 and ongoing
- Lodgement of designation orders/consents – June, 2021.

It must be emphasised that this is a **draft programme** and the consultants and project team are looking at ways in which the programme may be shortened.

The challenges above and the consequential investigations will have an impact on both time (the programme as outlined above) and on approved budgets. However, it is anticipated that the additional work to resolve the challenges (costs) may be accommodated within the approved funding envelope for phase 1. The project board are informed of these issues and are monitoring the situation, via the project office.

Geo-technical investigations continue and the findings will inform and contribute to the emerging design solutions for various aspects of the programme.

The project board are mindful that following lodgement of the consents and Notice of Requirements (phase 1), that arrangements need to be agreed to transition into phases 2 and 3, - delivery. Workshops are being arranged for the board to be briefed on suitable delivery models and procurement.

The indicative/high level timeline for phases 2 and 3 (delivery) are:

- Late 2021 – resource consents approved.
- Early 2022 – works start on the river channel/stop banks, completion expected 2028.
- 2022 – work starts on the Melling transport improvements, which includes the relocation of Melling railway station.
- 2024 – work starts on the pedestrian bridge.
- 2026 – Melling transport improvements completed.

Hutt City Council is leading a workstream on the integration of urban development which will be facilitated by the above infrastructure (resilience/access) works.

4. Communications and engagement

Community Engagement Plan

We are engaging so the community feels a sense of ownership of Te Awakairanga in the long term. In the shorter term, we are engaging so the community and stakeholders contribute their feedback and ideas to the design of RiverLink, as part of our statutory obligations.

The RiverLink work is part of a long term process to bring the river to its rightful place in the central city, to connect the community to the river—and there is an ongoing commitment from the project partners to engage the community in a genuine discussion about proposals that are not yet finalised.

The communications team are working with Isthmus on the content and tactics for this engagement which includes an open day planned for late November.

RiverLink Website

The communications team have now selected a preferred website vendor and this has been endorsed by the RiverLink Steering Group. Work has now started on setting up our new stand-alone website.

Our project information and updates are currently available on Greater Wellington Regional Council's Have Your Say webpage.

Facebook

Our latest social media campaign continues to focus on how people use the river and some nostalgia showing historical photos of local landmarks and people. The campaign continues to get good reach.

Advertising and promotion

A regular RiverLink Neighbourly campaign and advertisements in the Hutt News and Dominion Post are continuing and we have placed updated posters in trains and in local libraries. All these activities are aimed at building momentum for our planned engagement with the community.

Wellington Business Expo

RiverLink are setting up a virtual stand at the Wellington Business Expo <https://www.wellingtonbusinessexpo.nz/riverlink/>. The Expo runs from 12 October for two weeks.

Media

The Project Director has completed a 10 minute interview with Ms Olivia Wannan from Stuff. Her planned feature is on regional climate resilience projects.

At the time of writing the feature had not been published, however, it will run pre-election. Her work is part of a wider feature on projects which are receiving government resilience funding, so RiverLink's profile in the story may be modest.

Stakeholders Management System

The Communications Team have set up "Consultation Manager" utilising Waka Kotahi's licence arrangements and have started recording all stakeholder engagement into this system.

5. Project governance

The project partner agreement signed by the two local authorities in 2018 has been amended to allow for the accession of Waka Kotahi, following the inclusion of Melling transport improvements in the New Zealand Upgrade Programme.

This development has led to the inclusion of Melling into the scope of works for phase 1, and all the workstreams referred to in previous reports have had to include Melling in their scope.

The board have endorsed a Kaitiaki Strategy and a communications and engagement strategy referred to earlier in this report.

The RiverLink Project Board now has a full complement, and it has welcomed new representatives from Hutt City Council and Waka Kotahi.

The project board has agreed to establish a **steering group**. The role of the steering group is to make technical and operational decisions on matters which do not need to be referred to the board – who have a strategic management role. The steering group has a representative from each of the funding partners and meets weekly; - it's agile and decisive and provides the ability to make decisions on technical and operational matters efficiently.

The Chief Executive's RiverLink Relationship Management meetings are now held monthly.

6. Conclusions

Future reports will continue to keep the Subcommittee informed of progress, issues and risks. As the project partner agreement is amended following the accession of NZTA the consequential financial impact of the cost sharing arrangement will be available to the subcommittee.

As more detailed design is undertaken this in turn will raise further issues, consequences and interdependencies which need to be resolved to ensure that the programme remains an integrated and coordinated programme of work. The partners are committed working together to realise the broad range of outcomes

Hutt Valley Flood Management Subcommittee
15 October 2020
Report 20.319



For Information

HUTT VALLEY FLOOD MANAGEMENT PROJECTS REPORT (SEPTEMBER 2020)

Te take mō te pūrongo

Purpose

1. To update the Hutt Valley Flood Management Subcommittee (the Subcommittee) on progress made in implementing general Hutt Valley Flood Management (HVFM) projects, and on other relevant matters.

Te horopaki

Context

2. Greater Wellington Regional Council (Greater Wellington) has an ongoing programme of projects within the catchments of Te Awa Kairangi/Hutt River and Wainuiomata River. The projects are included in or guided by the floodplain management plans and river management schemes for the rivers and streams within these catchments.
3. This report provides information on, and updates the Subcommittee about progress with current active projects.
4. This report also provides information relating to other matters that relate to the responsibilities of the Subcommittee.

Te tātaritanga

Analysis

Te Awa Kairangi/Hutt River

5. Projects being completed within the managed extent of Te Awa Kairangi/Hutt River are outlined in the Hutt River Floodplain Management Plan, and Te Awa Kairangi/Hutt River Environmental Strategy. Currently, the focus area for project delivery is RiverLink, the length of river between Kennedy Good Bridge and Ewen Bridge near to Hutt City Central Business District. The projects in this section have been combined into the RiverLink project. Other smaller scale projects are occurring in other parts of the river.
6. RiverLink is a multi-partner project to improve flood protection, regenerate Hutt City and improve transport choice. It is the major focus for implementation of the Hutt River Floodplain Management Plan. The project is forecast to complete implementation in 2028. Detail about the project is contained in separate RiverLink Project Director's reports.

7. Belmont Pilot Wetlands have now been constructed and planted and are creating a lot of interest. An example of the interest is that the local community (Pareraho Forest Trust), who live in the catchment, have been involved in some of the planting, have had a maintenance working bee and are now operating pest control trap lines in the area. Greater Wellington led this project as an example of how water quality improvements can be made to stormwater flowing from the adjacent urban development into the Te Awa Kairangi/Hutt River. While the design is essentially treatment at the end of the stormwater channel, the aim is for Hutt and Upper Hutt City Councils to also consider how to replicate this approach where other stormwater channels enter the river.
8. The following projects are currently being delivered for Te Awa Kairangi/Hutt River Environmental Strategy.

Safety and Trail improvements at Pomare/Taita

9. This project includes new parking bays, barrier gates, and a planting plan, with poplar poles having been planted this winter. Once the poplars are established, native tree planting will follow.

Design for river trail connections at Hulls Creek and Whakatikei River confluences with Te Awa Kairangi/Hutt River

10. Concept landscape design is currently underway. Whakatikei footbridge tenders are being considered by Upper Hutt City Council (UHCC). No progress has been made on developing a design for another crossing at Hulls Creek, additional to the road bridge clip-on.

Publication of planting and revegetation guidelines for river edges

11. A draft has been developed and is currently being reviewed.

Development of a pocket edition of the Environmental Strategy document

12. Completion of the pocket edition is in the process of being published.

Working with partner organisations to create a trail connection through Manor Park and across the Te Awa Kairangi/Hutt River at the Silverstream Bridge

13. Good progress has been made in discussions between Hutt City Council, Greater Wellington and Waka Kotahi New Zealand Transport Agency (Waka Kotahi) with a substantial contribution from Waka Kotahi towards construction to achieve completion by 30 June 2021.
14. Government funding has been offered for the eight Te Awa Kairangi/Hutt River erosion protection projects through Government's stimulus package focusing on infrastructure development to help rebuild the economy following COVID-19 alert levels lockdown periods. Officers are progressing with planning for these projects and have engaged external project management resource to assist with this work.

Waiwhetu Stream

15. Greater Wellington is continuing to work with Hutt City Council to support the activities of the Friends of Waiwhetu Stream. This has included a trial and monitoring of a selection of non-plastic weedmat types installed for community planting projects along the stream. Monitoring of these weedmats continues and further trials may be carried out with other potentially biodegradable materials.
16. 'Friends of the Waiwhetu Stream' is a finalist in the 2020 Biosecurity Awards in the Department of Conservation community category for the project on successful removal of Cape Pondweed.

Pinehaven Stream

17. Greater Wellington and UHCC are working together to implement the Pinehaven Stream Floodplain Management Plan. The development of this plan was led by Greater Wellington and completed in 2016. The implementation of the plan is being led by UHCC. It has appointed Wellington Water as its agent to complete the physical work on behalf of both councils.
18. Pinehaven is a flood prone community with flooding of homes occurring regularly with the last flood being in December 2019. The objective of the planned Pinehaven Stormwater Improvements project is to improve flood level protection by increasing the capacity of the watercourse and drainage to provide a one percent Annual Exceedance Probability (AEP) level of protection.
19. The project has been split into three distinct sections:
 - a Upgrading culverts (this is a UHCC roading renewal project)
 - b Stream capacity and environmental improvement works – widening the stream, planting, bank stabilisation, retaining walls, earthworks and replacement of bridges.
 - c Enabling works – includes house removal, service relocation and stormwater drain construction.
20. This programme will result in clear public benefits in the areas of property protection, reducing damage to community infrastructure such as roads, and reduction in the disruption from flood events.
21. The resource consent has been granted by Greater Wellington, and a recommendation on the notice of requirement for the designation made to UHCC (decision still to be made and relevant appeal period to be passed) for completing channel and culvert improvements. The first stages (culvert upgrades) of work are programmed to commence in September 2020.

Operational works (River management schemes)

22. Willow planting is now complete for the 2020 winter season. This work is ongoing to rejuvenate vegetative buffers along the length of Te Awa Kairangi/Hutt River. Approximately 1300 willow poles, four to six metres in length, have been trench planted by machine at Moonshine, Whakatikei, Totara Park, and Gibbons Street. In the lower section of the river, 800 smaller willow poles three metres in length have been trench planted at Taita rock, Belmont and Fraser Park.

- 23. Native plant maintenance and planting is also occurring at selected sites along the length of Te Awa Kairangi/Hutt River, and a very successful planting day was held at Pomare with students from Taita College. A total of 12,500 native trees were planted this year.
- 24. Future native planting sites are being prepared by machine clearing and spraying at Wakefield Street, Poets, Moonshine, and Totara Park and Maoribank.

Implications of climate change

- 25. Each project within the catchment considers and responds to the predicted impacts of climate change when considering the appropriate response to the issue the project seeks to address.
- 26. Greater Wellington currently assesses options to address flood risk based on the predicted impacts of climate change over the next 100 years. Unless specified differently for specific projects, these values are an increase in rainfall intensity of twenty percent, and a sea level rise of 0.8 metres.

**Ngā hua ahumoni
Financial implications**

- 27. Other than the erosion sites, the above projects are within the current flood protection budgets. The erosion sites funding is through the Crown Infrastructure Partners initiative. Part funding is required from Greater Wellington, and officers are currently working through the implications of bringing the Long Term Plan funding forward.

**Ngā kaiwaitohu
Signatories**

Writer	Sharyn Westlake – Team Leader, Floodplain Management Plan Implementation
Approvers	Graeme Campbell – Manager, Flood Protection Wayne O’Donnell – General Manager, Catchment Management

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>The Subcommittee’s specific responsibilities include “reviewing periodically the effectiveness of implementation and delivery of Floodplain Management Plans for the Te Awa Kairangi/Hutt River floodplain”.</p>
<p><i>Implications for Māori</i></p> <p>Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Project Management Board.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>The projects contained within this report deliver on Greater Wellington’s strategic priority area of te tū pakari a te rohe/regional resilience, and support delivery of Greater Wellington’s strategic priority area of te oranga o te wai māori me te rerenga rauropi/freshwater quality and biodiversity.</p>
<p><i>Internal consultation</i></p> <p>Specific projects consult with groups and departments across Greater Wellington where relevant to that project.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>This report raises no risks.</p>

Hutt Valley Flood Management Subcommittee
10 September 2020
Report 20.324



For Information

HUTT AND PINEHAVEN FLOODPLAIN MANAGEMENT PLAN IMPLEMENTATION ANNUAL REPORT TO JUNE 2020

Te take mō te pūrongo

Purpose

1. To advise the Hutt Valley Flood Management Subcommittee (the Subcommittee) of progress made to June 2020 in implementing the Hutt and Pinehaven Floodplain Management Plans.

Te tāhū kōrero

Background

Western Floodplain Management Plans – implementation

2. The Hutt River and Pinehaven Stream Floodplain Management Plans were completed in 2001 and 2016 respectively. They recommend structural, non-structural and environmental measures to reduce the flood risk to the respective floodplains and improve the environment. Greater Wellington Regional Council (Greater Wellington) has adopted a 40-year time frame to fully implement the Flood Management Plans (FMP). Implementation of the FMPs commenced in 2000.

Te Awa Kairangi/Hutt River Flood Management Plsn

3. Projects being completed within the managed extent of Te Awa Kairangi/Hutt River are outlined in the Hutt River Flood Management Plan, and Te Awa/Kairangi Hutt River Environmental Strategy.
4. An Environmental Strategy Action Plan update was completed in August 2018, superseding the 2001 version. The Action Plan component was included to more clearly prioritise environmental and community outcomes.
5. Currently, the focus area for project delivery is RiverLink, the length of river between Kennedy Good Bridge and Ewen Bridge near to the Hutt City Central Business District. Three separate but interdependent projects comprising Flood Protection, Making Places, and Melling Transport Improvements have been combined into the RiverLink Project. The RiverLink project is a collaboration between Greater Wellington, Hutt City Council (HCC) and Waka Kotahi NZ Transport Agency (Waka Kotahi). Waka Kotahi joining the RiverLink partnership was a major milestone for the project, as their joining significantly enhances the transport and resilience benefits of the combined project.

6. The project supports the Long Term Plan (LTP) priority outcome of Regional Resilience, and also supports or has positioned itself to be able to support delivery across several of Greater Wellington’s other LTP priorities, Freshwater Quality and Biodiversity, Regional Leadership and Public Transport.
7. The construction phase of this project is currently forecast for commencement in late 2021. However, programme alignment with HCC and Waka Kotahi will determine the final construction programme. Land purchase for the RiverLink project and strategic land purchase at other critical locations in the Te Awa/Kairangi Hutt River are continuing.
8. The benefits in terms of flood damages saved are estimated at 35 percent of the total benefits the Hutt River Flood Management Plan (HRFMP) will deliver. The benefits on the basis of flood damages saved will be 66 percent when the flood protection upgrade and Melling Bridge replacement components of the RiverLink project are completed.

Pinehaven Stream Flood Management Plan

9. The Pinehave Stream Flood Management Plan (PSFMP) was completed in 2016 with a range of structural and non- structural flood risk management measures proposed. These measures will guide the long term management of the catchment. The implementation of the plan is being led by Upper Hutt City Council (UHCC). Wellington Water Limited has been appointed to act as the agent to complete the physical work. Funding for the PSFMP has been established through a Memorandum of Understanding with a 50/50 allocation between Greater Wellington and UHCC being confirmed.

Summary of progress

Implementation progress

10. Table 1 shows the FMP structural measures implemented as a percentage of progress of the recommendations within the respective FMP. These figures for the Hutt FMP are shown in more detail in the Hutt FMP Summary Progress Table in [Attachment 1](#).

Table 1: Implementation progress

FMP Scheme	or	Actual % Complete to June 2019	Target % Complete 2019/2020	Actual % Complete to June 2020	Outcome
Hutt		33%	33%	33%	Achieved
Pinehaven		0%	33%	0%	Not achieved

11. Table 2 outlines the financial summary of the implementation of the FMPs.

Table 2: Financial summary

FMP or Scheme	Original FMP Total 40 year estimate (\$M) - Adjusted for Inflation	Expenditure to June 2020(\$M)²	Total Budgeted to 2028 (\$M)²	Total expenditure forecast to 2028 (\$M)²
Hutt	120.3	99.0	91.7	190.8
Pinehaven	5.4	2.5	4.2	6.7

Key deliverables 2019-2020

Te Awa Kairangi/Hutt River FMP

12. Progress on the key deliverables for the Hutt River FMP are listed in Table 3.

Table 3: Hutt River FMP key deliverables and other work

Item	Progress	Forecast
Strengthening our relationships with mana whenua partners through our implementation projects	RiverLink Project Management Board established inclusive of membership Taranaki Whānui and Ngati Toa Rangitira as board members with full voting powers.	Achieved
RiverLink - Full commitment of Waka Kotahi as a project partner	Funding secured, project partnership agreement signed and Waka Kotahi actively involved in discussions	Achieved
RiverLink - Continue property acquisition (willing buyer/willing seller approach) for project in alignment with property strategy	86 of 118 properties acquired	Achieved
Other work		
RiverLink - Establishment of Project Office	The RiverLink Project board recruited a project director to deliver RiverLink. The project director recruited two project managers and a communications	Achieved

Item	Progress	Forecast
	manager for project delivery.	
RiverLink - Geotechnical Ground Investigations	Investigations of subsurface geology have been carried out to inform the design and consenting stage. This is a contract that delivers information required for Waka Kotahi, HCC and Greater Wellington design components	Completed
Summer Engagement Programme 19/20	The engagement programme aims to connect RiverLink with the communities of Lower Hutt and to showcase Te Awa Kairangi as a treasure at the heart of Lower Hutt. It covered everything from toxic algae to the riverbank market to transport linkages and city growth in a fun, family friendly environment. The summer programme was curtailed due to COVID-19.	Completed
Hutt River Erosion Sites	<p>During the COVID-19 alert levels lockdown periods, work was undertaken to obtain funding from the Crown Infrastructure Partnership (CIP) for COVID-19-recovery projects.</p> <p>Greater Wellington was successful in obtaining funding from CIP for a total of \$9.83 million over two years with a 36 percent contribution expected from Greater Wellington. This funding will be used to bring forward work on eight Hutt River erosion sites and the Port Road Erosion protection work below.</p>	In progress
Port Road Erosion Protection	<p>Greater Wellington and HCC have together worked towards addressing erosion concerns of businesses and property owners in the Seaview area near Port Road, Lower Hutt. In the 2018/19 year, HCC completed temporary (10 year estimated life) repair work to a section of the erosion protection at this location.</p> <p>Further protection work, which is the responsibility of Greater Wellington, is</p>	In progress

Item	Progress	Forecast
	currently forecast to commence in 2031. However this work is included in the CIP funded projects above, so is likely to be bought forward.	
Te Awa Kairangi – Hutt River Environmental Strategy Action Plan	Design work has commenced to address trail connection improvements at identified points along the Hutt River Trail. This includes consideration of stream crossings at Hulls Creek, Whakatikei Stream (in conjunction with UHCC), and at Manor Park.	In progress

Pinehaven Stream Flood Management Plan

13. The objective of the planned Pinehaven Stormwater Improvements project is to improve flood level protection by increasing the capacity of the watercourse and drainage to provide a one percent Annual Exceedance Probability (AEP) level of protection.
14. The project has been split into three distinct sections:
 - a Upgrading culverts (this is an UHCC roading renewal project)
 - b Stream capacity and environmental improvement works – widening the stream, planting, bank stabilisation, retaining walls, earthworks and replacement of bridges
 - c Enabling works – includes house removal, service relocation and stormwater drain construction.
15. This programme will result in clear public benefits in the areas of property protection, reduced damage to community infrastructure such as roads, and reduction in the disruption from flood events.
16. Progress on the key deliverables for the PSFMP is listed in Table 4.

Table 4: Pinehaven FMP key deliverables

Item	Progress	Forecast
Stream capacity and environmental improvement works	The estimated budget for the channel works to allow for more stream capacity increased to a figure that was not viable for the project. On 4 June 2020 a Value Engineering workshop was undertaken to review the budget. The outcomes from this workshop are still being processed.	Progressing

Item	Progress	Forecast
Upgrading culverts	<p>Culvert upgrades at two points – Sunbrae Drive and Pinehaven Road were consented in March 2020, and work is to proceed later in 2020.</p> <p>Consents have been lodged for completing remaining channel and culvert improvements and the first stages (culvert upgrades) of work are programmed to commence in September 2020.</p>	Progressing
Enabling works	The enabling works fall within the Value Engineering process, which is continuing.	Progressing

Long Term Plan Priorities

17. The following are priorities for the Long Term Plan:

- Construction of the RiverLink project.
- Implement outcomes of the Hutt and Pinehaven Flood Management Plans.
- Implement outcomes of the Hutt, Ōtaki, Waikanae, and Pinehaven Environmental Strategies and support community groups to enhance river environments.

Specific planned work for 2020/21

18. The following table includes key work planned for 2020/21. It is not a complete listing of all work being carried out across the region, and does not include work that may be required to address storm and flood damage.

River/FMP	Details
Te Awa Kairangi/Hutt River FMP	<ul style="list-style-type: none"> • RiverLink consenting design and consent preparation. • Lodge RiverLink resource consent and designation application. • Progress RiverLink property purchase and increase efforts with remaining owners • Maintain planting and monitoring of Belmont wetland. • Complete pocket edition of Hutt River Environmental Strategy Action Plan • Complete Taita area safety improvements. • Procurement and construction of Hulls Creek Crossing and trail connection

River/FMP	Details
	<ul style="list-style-type: none"> • Complete publication of planting and revegetation guidelines for river edges for Region. • Work with partner organisations to create a trail connection through Manor Park and across the Hutt River at the Silverstream Bridge. • Gauging and monitoring improvements • Progress CIP-funded work on n eight Hutt River erosion sites and the Port Road Erosion protection work.
Pinehaven Stream FMP	<ul style="list-style-type: none"> • Stream capacity and environmental improvement works • Culvert upgrades
Other Related Matters	<ul style="list-style-type: none"> • Preparation for LTP 2021-2031 • Procurement process improvements • Programme and project management process improvements • Integrated Catchment, Environment and Te Hunga Whiriwhiri outcomes support

Implications of climate change

19. Each project within the catchment considers and responds to the predicted impacts of climate change when considering the appropriate response to the issue the project seeks to address.
20. Greater Wellington currently assesses options to address flood risk based on the predicted impacts of climate change over the next 100 years. Unless specified differently for specific projects, these values are an increase in rainfall intensity of twenty per cent, and a sea level rise of 0.8 metres.

Ngā hua ahumoni Financial implications

21. For this reporting period, projects are within the current flood protection budgets.
22. CIP projects require part funding from Greater Wellington, and Officers are currently working through the implications of bringing the LTP funding forward.

Ngā āpitihanga Attachment

Number	Title
1	Hutt Flood Management Plan Summary Progress Table

**Ngā kaiwaitohu
Signatories**

Writer	Sharyn Westlake – Team Leader, Floodplain Management Implementation	Plan
Approvers	Graeme Campbell – Manager, Flood Protection Wayne O’Donnell – General Manager, Catchment Management	

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or Committee's terms of reference</i> The Subcommittee's specific responsibilities include "reviewing periodically the effectiveness of implementation and delivery of Floodplain Management Plans for the Te Awa Kairangi/Hutt River floodplain".
<i>Implications for Māori</i> Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Project Management Board.
<i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i> The projects contained within this report deliver on Greater Wellington's strategic priority area of te tū pakari a te rohe/regional resilience, and support delivery of Greater Wellington's strategic priority area of te oranga o te wai māori me te rerenga rauropi/freshwater quality and biodiversity.
<i>Internal consultation</i> Specific projects consult with groups and departments across Greater Wellington where relevant to a project.
<i>Risks and impacts: legal / health and safety etc.</i> The purpose of implementation floodplain management plans is to reduce the risk to communities and improve the region's resilience.

Hutt Flood Management Plan Summary Progress Table

Updated 28 August 2020

TOTALS IMPLEMENTATION HUTT FMP					COST \$M 2001 FMP	Target % at completion			Percent Complete to date
				Date AMP					
				2000-2051	\$77.76	100.00%			33.01%

REACH 1 : River Mouth to Estuary Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	4.69%	STAGE	% Complete (0 = not complete, 0.5 Part complete, 1 = complete)	0.00%	HRFMP (Page #)
River Mouth Channel Works	1	6	after 2010	2032-2035	\$3.65	4.69%			0.00%	52

REACH 2 : Estuary Bridge to Ava Rail Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	17.16%	STAGE		6.71%	HRFMP (Page #)
Shandon golf course (RB) stopbank	2	2	after 2010	Ava Woolen Mills [2028-2034]	\$1.72	2.21%			0.00%	54
Light rock protection works (Estuary to Ava rail bridge)	2	2	after 2010	Ava Woolen Mills [2028-2034]	\$0.43	0.55%	Partial Work	0.5	0.28%	54
Woolen mills (Estuary to Ava LB) stopbank	2	6	after 2010	Ava Woolen Mills [2028-2034]	\$3.99	5.13%			0.00%	54
Relocation and rock lining (Estuary to Ava LB)	2	6	after 2010	Ava Woolen Mills [2028-2034]	\$2.20	2.83%			0.00%	54
Ava rail bridge investigations	2	1	2000-2002	Alicetown Strand Project [2000-2010]	\$0.23	0.30%	Complete	1	0.30%	54
Ava rail bridge waterway improvements	2	1	2003-2008	Alicetown Strand Project [2000-2010]	\$4.77	6.13%	Complete	1	6.13%	54

REACH 3 : Ava Rail Bridge to Ewen Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	38.14%	STAGE		12.35%	HRFMP (Page #)
Strand park (Ava to Ewen RB) river realignment and land purchase	3	3	2000-2005	Alicetown Strand Project [2000-2010]	\$4.48	5.76%	Complete	1	5.76%	56
Strand park stopbank upgrade (Ava to Ewen LB)	3	1	2000-2010	Alicetown Strand Project [2000-2010]	\$2.64	3.40%	Complete	1	3.40%	56
Tama Street stopbank upgrade (Ava to Ewen RB)	3	3	2000-2010	Alicetown Strand Project [2000-2010]	\$2.48	3.19%	Complete	1	3.19%	56
Melling Bridge investigations	3	3	2001-2002	RiverLink [2015-2028]	\$0.06	0.08%	In Design		0.00%	56
Daly Street (Ewen to Melling RB) stopbank upgrade and land purchase	3	1	2008+	RiverLink [2015-2028]	\$4.61	5.93%	In Design		0.00%	56
Marsden Bend (RB) channel works	3	3	after 2010	RiverLink [2015-2028]	\$1.91	2.46%	In Design		0.00%	56
Pharazyn St (Ewen to Melling RB) stopbank	3	3	after 2010	RiverLink [2015-2028]	\$3.70	4.76%	In Design		0.00%	56
Riverside car park channel works (LB) and light protection works (Ewen to Melling LB)	3	1	after 2010	RiverLink [2015-2028]	\$1.78	2.29%	In Design		0.00%	56
Land for Melling Bridge Upgrade	3	14	after 2010	RiverLink [2015-2028]	\$8.00	10.29%	In Design		0.00%	56

REACH 4 : Melling Bridge to Kennedy Good Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	11.75%	STAGE		9.99%	HRFMP (Page #)
Melling to Kennedy Good Bridge channel works	4	1	after 2010	RiverLink [2015-2028]	\$1.11	1.43%	In Design		0.00%	58
Melling Bridge (RB) stopbank upgrade	4	3	after 2010	RiverLink [2015-2028]	\$0.26	0.33%	In Design		0.00%	58
Boulcott Golf Course (LB) stopbank upgrade and land compensation	4	1	after 2005	Boulcott [2010-2013]	\$5.44	7.00%	Complete	1	7.00%	58
Connolly Street (LB) stopbank and land purchase	4	1	after 2010	Boulcott [2010-2013]	\$2.33	3.00%	Complete	1	3.00%	58

REACH 5 : Kennedy Good Bridge to Pomare Rail Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	5.61%	STAGE		0.91%	HRFMP (Page #)
Kennedy Good Bridge to Pomare (LB) stopbank upgrade	5	4	after 2010	KGB Pomare [2037-2042]	\$0.86	1.11%			0.00%	60
Vegetation at Kennedy Good Bridge to Pomare rail bridge (LB/RB)	5	14	after 2010	KGB Pomare [2037-2042]	\$1.63	2.10%			0.00%	60
House Raising at Belmont to 1900	5	8	after 2010	KGB Pomare [2037-2042]	\$0.45	0.58%			0.00%	60
Rock protection at Belmont, Nash St. and Pomare Rail Bridge (LB/RB)	5	4	after 2010	KGB Pomare [2037-2042]	\$1.42	1.83%	Partial Work	0.5	0.91%	60

REACH 6 : Pomare Rail Bridge to Silverstream Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	2.98%	STAGE		0.00%	HRFMP (Page #)
Pomare rail bridge to Silverstream Bridge channel works (LB/RB)	6	13	after 2010	Manor Park Pomare [2041-2051]	\$1.34	1.72%			0.00%	62
Manor Park stopbanks to 2300	6	13	after 2010	Manor Park Pomare [2041-2051]	\$0.98	1.26%			0.00%	62

REACH 7 : Silverstream Bridges to Moonshine Bridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	5.85%	STAGE		0.60%	HRFMP (Page #)
Moonshine Bridge investigations	7	10	2001-2002	Trentham to Whakatikei [2032-2036]	\$0.06	0.08%			0.00%	64
Moonshine bridge waterway upgrade	7	10	after 2010	Trentham to Whakatikei [2032-2036]	\$3.31	4.26%			0.00%	64
Whirinaki Crescent stopbank to 2300	7	5	2004-2006	Trentham to Whakatikei [2032-2036]	\$0.47	0.60%	Complete	1	0.60%	64
Trentham to Whakatikei stopbank (part)	7	8	after 2010	Trentham to Whakatikei [2032-2036]	\$0.71	0.91%			0.00%	64

REACH 8 : Moonshine Bridge to Whakatikei River

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	2.89%	STAGE		0.00%	HRFMP (Page #)
Trentham to Whakatikei (LB) stopbank (part)	8	8	after 2010	Trentham to Whakatikei [2032-2036]	\$2.00	2.57%			0.00%	66
Moonshine to Maoribank (LB) channel works (part)	8	10	after 2010	Trentham to Whakatikei [2032-2036]	\$0.25	0.32%			0.00%	66

REACH 9 : Whakatikei River to Norbert St. Footbridge

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	8.31%	STAGE		0.00%	HRFMP (Page #)
Totara park stopbanks to 2300	9	10	after 2010	NOT IN AMP	\$1.42	1.83%			0.00%	68
Elbow park channel upgrade	9	10	after 2010	NOT IN AMP	\$1.41	1.81%			0.00%	68
Whakatikei to Maoribank (LB) stopbank	9	10	after 2010	NOT IN AMP	\$0.28	0.36%			0.00%	68
Moonshine to Maoribank channel works (part)	9	10	after 2010	NOT IN AMP	\$3.35	4.31%			0.00%	68

REACH 10 : Norbert St. Footbridge to Gemstone Drive

WORK REQUIREMENT	REACH	PRIORITY	DATE 2001 FMP	DATE AMP	COST \$M 2001 FMP	2.61%	STAGE		2.45%	HRFMP (Page #)
Norbert Street footbridge to Akatarawa Channel works	10	14	2004-2005	2037-2042	\$0.34	0.44%	Complete	1	0.44%	70
Akatarawa Road (LB) floodwall at 1900	10	12	2004-2005	2037-2042	\$0.72	0.93%	Complete	1	0.93%	70
Gemstone Drive channel works to 1900	10	12	2005-2006	2037-2042	\$0.64	0.82%	Complete	1	0.82%	70
Gemstone Drive (LB) stopbank to 1900	10	12	2005-2006	2037-2042	\$0.15	0.19%	Complete	1	0.19%	70
Bridge Road House Raising to 1900	10	7	2003-2007	NOT IN AMP	\$0.18	0.23%	Partial Work	0.3	0.07%	70