



If calling, please ask for Democratic Services

Hutt Valley Flood Management Subcommittee

Thursday 20 February 2020 at 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

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Public Business

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**Hutt Valley Flood Management Subcommittee
20 February 2020
Report 20.30**



For Information

PROJECTS REPORT (FEBRUARY 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 rivers. 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 currently active projects.
4. This report also provides information relating to other matters that relate to the responsibilities of the Subcommittee.

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 the length of river between Kennedy Good Bridge and Ewen Bridge near to Hutt City CBD. 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. Te Awa Kairangi/Hutt River Environmental strategy projects currently being delivered include:
 - a Safety and Trail improvements at Pomare/Taita
 - b Design for river trail connections at Hulls Creek and Whakatikei River confluences with Hutt River
 - c Publication of planting and revegetation guidelines for river edges
 - d Development of a pocket edition of the Environmental Strategy document
 - e Working with partner organisations to create a trail connection through Manor Park and across the Hutt River at the Silverstream Bridge.
8. Greater Wellington completes each year a number of smaller scale projects addressing erosion issues or damage to flood protection assets, which vary in scale and scope. In 2019/20 this included:
 - a Erosion protection adjacent to Gibbons St on SH2
 - b Erosion protection structure repair near to Belmont
 - c Stopbank repair and reinstatement work at various locations along the stopbank network.
9. A joint councils' field trip is planned for Te Awa Kairangi/Hutt River. This field trip will look at the area between Kennedy Good Bridge and Ewen Bridge. This will, follow Council's next meeting, which is being held at Fraser Park on the morning of 27 February 2020. The Upper Hutt and Hutt City Councillors have been invited to a lunch briefing at 12.30pm, following the Council meeting, and then the field trip from 1.15pm through to 3.15pm. The field trip will provide an opportunity to discuss flood management on the Hutt River and to look at the RiverLink site.

Waiwhetu Stream

10. Greater Wellington is working with Hutt City Council to support the activities of the Friends of Waiwhetu Stream. Most recently, this included a trial and monitoring of a selection of non-plastic weedmat types installed for community planting projects along the stream.

Pinehaven Stream

11. Greater Wellington and Upper Hutt City Council 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 Upper Hutt City Council (UHCC), it has appointed Wellington Water as its agents to complete this work on behalf of both councils.
12. The first stage of implementation was completion of a district plan change relating to flooding hazards. UHCC Plan Change 42, which relates to Pinehaven Stream Catchment and Mangaroa River Catchment, became operative in 2019.
13. The implementation of the stream channel upgrade works will upgrade the channel capacity of the stream to contain a 1-in-25 year return period event and protect floor levels of habitable property to a one per cent Annual Exceedance Probability (1-in-

100 year return period event) flood level including climate change. The project is funded equally by the two councils. Consents have been lodged for completing these channel and culvert improvements and the first stages of work are programmed to commence in 2020.

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

14. The matters addressed in this report were considered by officers in accordance with the process set out in Greater Wellington’s *Climate Change Consideration Guide*.

Mitigation assessment

15. Construction projects apply the mitigation approach contained with Greater Wellington’s procurement policies when procuring services.

Adaptation assessment

16. Each project within the catchment considers the responds to the predicted impacts of climate change when considering the appropriate response to the issue the project seeks to address.
17. 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 Increase in rainfall intensity of 20 per cent, and a sea level rise of 0.8 metres.

Ngā kaiwaitohu
Signatories

Writer	Alistair Allan – Team Leader, Floodplain Management Plan Implementation
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 and appointees to the Hutt Valley Flood Management Subcommittee.
<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 that project.
<i>Risks and impacts: legal / health and safety etc.</i> This report raises no risks.

**Hutt Valley Flood Management Subcommittee
20 February 2020
Report 20.29**



For Information

RIVERLINK PROJECT UPDATE (FEBRUARY 2020)

Te take mō te pūrongo

Purpose

1. To highlight to the Hutt Valley Flood Management Subcommittee (the Subcommittee) the items raised in the RiverLink Project Director's Report - February 2020 ([Attachment 1](#)).

Te tāhū kōreroi

Background

2. RiverLink is a partnership project between Greater Wellington, Hutt City Council, Waka Kotahi NZ Transport Agency, Ngāti Toa Rangitira and Taranaki Whanui.
3. Greater Wellington interest in RiverLink relates to Greater Wellington's strategic priority of Regional Resilience. 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 RiverLink.

Highlighted items included in Project Directors Report

5. A summary of the RiverLink project is included in [Attachment 1](#). This information has been included to assist new members of the Subcommittee develop knowledge about RiverLink.

Waka Kotahi NZ Transport Agency announcement

6. Waka Kotahi NZ Transport Agency announced on 29 January 2020 that the NZ Upgrade Programme - Transport provides \$258 million to build a new intersection to improve safety, replace the road bridge over the river, and improve access to walking, cycling and public transport. The January 2020 announcement by Waka Kotahi NZ Transport Agency to provide \$258 million follows an earlier announcement by the Government in November 2019, to provide \$6 million for the designation and consenting of the project.
7. The January 2020 funding announcement, including funding to deliver the intersection and new bridge over Te Awa Kairangi/Hutt River (which will be a replacement for the existing Melling Bridge at a location south of the current bridge alignment), enables delivery of the agreed design capacity for RiverLink as defined in

the Hutt River Floodplain Management Plan of 1-in-440 year return period level of flood protection including an allowance for climate change.

8. The end of 2022 is the target date for commencement of construction included in the January 2020 press release. This date aligns well with the intended first stage of the flood protection upgrade of the Mills Street to Melling Bridge section of stopbank, which RiverLink in its draft programme has targeted for commencement in 2021.
9. The RiverLink Project Management Board is seeking confirmation from the NZ Transport Agency about how their programme will meet the target construction date included in its January 2020 press release. Amendments to the RiverLink programme will be made once that agency has provided this confirmation.

Project partner agreement

10. The project partner agreement, signed by both Hutt City Council and Greater Wellington, has been sent to Waka Kotahi NZ Transport Agency. Waka Kotahi NZ Transport Agency is in the process of reviewing and considering the agreement.

Hutt City Council design programme

11. Hutt City Council is completing work required to enable commencement of the Assessment of Effects studies needed to apply for consents. This work relates to the interface of the urban and river spaces in the city centre section of the project. The requirement for this work has delayed the overall project programme but within the adjustment of time required to accommodate incorporation NZ Transport Agency.

Kaitiaki statement

12. Taranaki Whanui and Ngāti Toa Rangitira are working together to develop a kaitiaki statement which will articulate their position and aspirations for Te Awa Kairangi/Hutt River, with particular reference to the area of the river in the vicinity of RiverLink. This statement will assist both design development and assessment of the design.

Programme

13. The current programme includes an indicative date in October 2020 for lodgement of consents for the RiverLink components led by Hutt City Council and Greater Wellington. This date is being reviewed as part of the work underway to integrate the Melling transport components of the project into the overall RiverLink programme.
14. This change in the programme is likely to push back the consent lodgement date into 2021, which would impact Greater Wellington's ability to meet its commencement of construction timeframe of 2021.
15. 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.

Ngā hua ahumoni
Financial implications

- 16. 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. Our current forecast for delivery of the flood protection benefits aligns with the existing budget.
- 17. These budgets do not include allowances for improvements to facilities related to public transport associated with the relocation of Melling Train Station.

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

- 18. The matters addressed in this report were considered by officers in accordance with the process set out in Greater Wellington’s *Climate Change Consideration Guide*.

Mitigation assessment

- 19. 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 (which 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 and will encourage suppliers and contractors to minimise emissions.

Adaptation assessment

- 20. 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.
- 21. 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 (see Hutt River Flood Frequency Update (Final 2017)).

Ngā āpitihanga
Attachment

Number	Title
1	RiverLink Project Director’s Report - February 2020

**Ngā kaiwaitohu
Signatories**

Writer	Alistair Allan – Kaitaki-a-tīma Team leader
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 and appointees to the subcommittee</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 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/NZ Transport Agency 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.

RiverLink Project Director's Report – February 2020

20 February, 2020

RiverLink – Project Update Report

1. Purpose

This report provides the Sub Committee with the background, the vision, current status, and key issues of the RiverLink programme.

As this is the first report on RiverLink to the new sub committee, it outlines at a relatively high level what the project is, what it seeks to achieve and progress to date. Further detailed information on key aspects will be provided in future reports.

A powerpoint presentation will be provided to the sub committee.

This report will also be presented to Hutt City Council.

2. Background

Strategic context

RiverLink is a multi-faceted strategic regeneration program of works and forms part of the long term plans of Greater Wellington Regional Council, Hutt City Council and the New Zealand Transport Agency's NZ Road Upgrade Programme. The project aims to:

- provide better flood protection,
- improved accessibility
- Enhanced lifestyle opportunities.

for Hutt city centre and neighbouring areas.

The focus of the project is the Te Awa Kairangi/Hutt River, and within the broad aims outlined above the project seeks to work with and respect the river from a cultural, environmental, social and economic perspective. The project will invest significant sums of monies in the project area which extends from the Kennedy-Good Bridge to Ewen Bridge, and it represents an opportunity to redefine the city's relationship with the river and to reshape land adjoining it so that the built environment respects the river and its setting.

Attachment 1

RiverLink Project Director's Report – February 2020

RiverLink is a partnership project which is being led by:

- Greater Wellington Regional Council (GWRC)
- Hutt City Council (HCC)
- New Zealand Transport Agency (NZTA)
- Mana Whenua

(Referred to as “the partners” in this report).

The partnership approach

A fundamental principle underlying the RiverLink programme is that it is a partnership project. Central government is working with mana whenua and the regional and city councils to improve resilience and wellbeing of residents in the Hutt Valley.

The partners intend to invest significant funds on specific projects which are on neighbouring land in and around the river. They have sensibly agreed to work together because of the additional benefits which may be gained in terms of efficiencies, savings and better use of resources. For example, the partners have agreed to work together on a joint consenting strategy which will result in better – joined up project outcomes but also savings in terms of consenting fees, and time, etc. Presenting a single coordinated project to the community will potentially reduce confusion and engender greater interest.

The partnership approach and what it entails is outlined in a partner agreement (contract) which sets out the governance arrangements for managing the joint working and delivering the outcomes the partners seek for this stage of the project. It sets out how the partners will work together, and it proposes the establishment of a small project office – staff contracted to drive the project forward.

The two local authorities are signatories to the agreement which allows for the NZTA to accede at any time.

The project is overseen and managed by a project board which comprises representatives (senior officers) of the partner agencies and mana whenua.

Policy context

There is a strong plenary context, rationale and body of evidence from the partner organisations to support the project.

Attachment 1

RiverLink Project Director's Report – February 2020

Provide better flood protection

GWRC have adopted the Hutt Valley Flood Management Plan (2001) which sets out a programme of works to improve the resilience of the Hutt Valley from flooding, and the RiverLink element remains one of the last sections to be implemented.

Improved accessibility

Providing a grade separated intersection on state highway 2 at Melling, along with a new road bridge across the river has been assessed by the Agency via a detailed business case. These improvements will provide for the smooth, uninterrupted flow of traffic along the state highway, a grade separated on/off ramps and a new road bridge over the river. Melling railway station will be relocated along with the park and ride facility.

Enhanced lifestyles opportunities

Hutt City Council has adopted a number of plans to improve and enhance the CBD. A document called "Making Places" sets out a strategic framework for the regeneration of the CBD, and this plan has been superseded by the City Transformation Plan (2019). It identifies RiverLink as one of a number of distinct areas identified for improvements, along the frontage of the river. The enhanced lifestyle opportunities will be realised by improving the design of the "edge" between the city centre and the stop bank, and realising regeneration benefits to neighbouring land and property, which should lead to a more appropriate mix of riverside land uses such as residential development, office, cafes and restaurants. Investment in this section of the CBD will encourage further investment in other parts of the city centre, and generally boost investor confidence in Hutt City.

Funding

Funding is in place via the council's long terms plans to implement the strategic corporate objectives outlined above.

On 29 January 2020, the government announced that funding will be available for a number of nationally significant strategic infrastructure projects which included Melling Transport Improvements. The statement said that the works will be built by 2026.

The funding for phase 1 of the project is set out in the project partner agreement and further information is provided in the accompanying presentation.

Attachment 1

RiverLink Project Director's Report – February 2020

Phasing/timeline

Following the government's recent announcement, officers are now working to re-profile the project implementation plan.

There will be two phases:

- Phase 1 – Pre design and consenting phase (2019 – 2021)
- Phase 2 – Implementation phase (2022 – 2026). Detailed Design and construction of the flood protection works, city centre improvements and the Melling transport improvements.

Work on phase 1 is currently underway and the main aim of this phase is to secure the necessary consents and designations to enable construction of the project. Further information on phase 1 is provided below.

Phase 1 Pre design and consenting

The aim of this phase is to lodge and secure the necessary consents and designations under the Resource Management Act 1991 to enable the project to be constructed.

A consortium of consultants has been appointed to progress this phase, and they are led by a design team, which underlies the approach the partners sought – an urban design led approach. The key elements of this work stream are:

Urban Design and Landscape Framework

This overarching framework will set out the rationale and design objectives for the whole project, to ensure that the outcomes across all three project elements (flood protection, Melling Improvements and city development) are integrated and coordinated. It will guide the partners as they design and plan their sections of the overall project, and they will be required to adhere to its principles. This should ensure that the separate elements work and complement each other and are seen by the community as one coherent "place making" regeneration programme.

Work has begun on the framework and it will be updated with additional information to include the Melling transport improvements. It will provide an outline for the riverside park, with improved design to include paths, planting, active space for recreation and designated areas for wetlands.

Consenting strategy

RiverLink is a complex project which seeks to deliver a number of linked outcomes by different partner organisations, at different times, all of which require resource consents. A strategy has been prepared to coordinate this activity to ensure that all the required consents are obtained in order to allow

Attachment 1

RiverLink Project Director's Report – February 2020

the project to progress in a timely fashion, and that the community is engaged on the whole project and not just the individual elements.

It is anticipated that the consents and designations will be lodged in December this year. However, this may change in view of the re-profiling required in view of the government announcement.

Hutt city edge

Hutt city edge refers to the area of land which forms “the edge” between the river and the Hutt City CBD. The project represents an opportunity to redesign this area and to consider how it may assist the City Council regenerate the western part of the city centre, in line with its Central City Transformation Plan¹.

A new pedestrian/cycle bridge will also be built to provide a more direct connection between the CBD from Margaret Street, over the Hutt River to the relocated Melling train station.

Community engagement

A key element of the project will be community engagement. This will be considered on two levels, firstly informing the community on what the project seeks to achieve and keeping them informed of progress, and secondly best practice engagement as part of the RMA process. Both will be managed in tandem.

A Communications Manager has been appointed to oversee communications, marketing and engagement activity, and a communications and engagement strategy is being developed.

A summer programme of engagement has been planned which focuses on activity at the river edge in a converted shipping container. RiverLink will also have a presence in a number of other activities organised by a wide range of community groups.

Hydraulic engineering

A number of detailed modelling scenarios are being developed to assist with the planning for resilience and stop bank/river channel designs.

Geotechnical ground investigation works are on-going along the entire length of the river corridor, to inform the design process.

An extensive programme of property acquisition has been undertaken by GWRC to facilitate the strengthening of the stop bank, particularly along the western bank.

¹ <http://www.huttcity.govt.nz/Your-Council/Projects/central-city-transformation-plan/>

Attachment 1

RiverLink Project Director's Report – February 2020

Melling Transport Improvements

The Melling transport elements comprises of a grade separated intersection on state highway 2, a new road bridge connecting the intersection with the CBD, (the dismantling of the existing Melling bridge) and the relocation of the Melling train station and park and ride facilities.

The New Zealand Transport Agency has carried out a detailed business case of the options, decided on a preferred option, and will now need to carry out further detailed design work and work with the two local authorities on the land requirements of the new intersection and road bridge. A grade separated intersection will improve safety and the flow of traffic on state highway 2, and the location of the proposed new bridge will improve connectivity with the CBD.

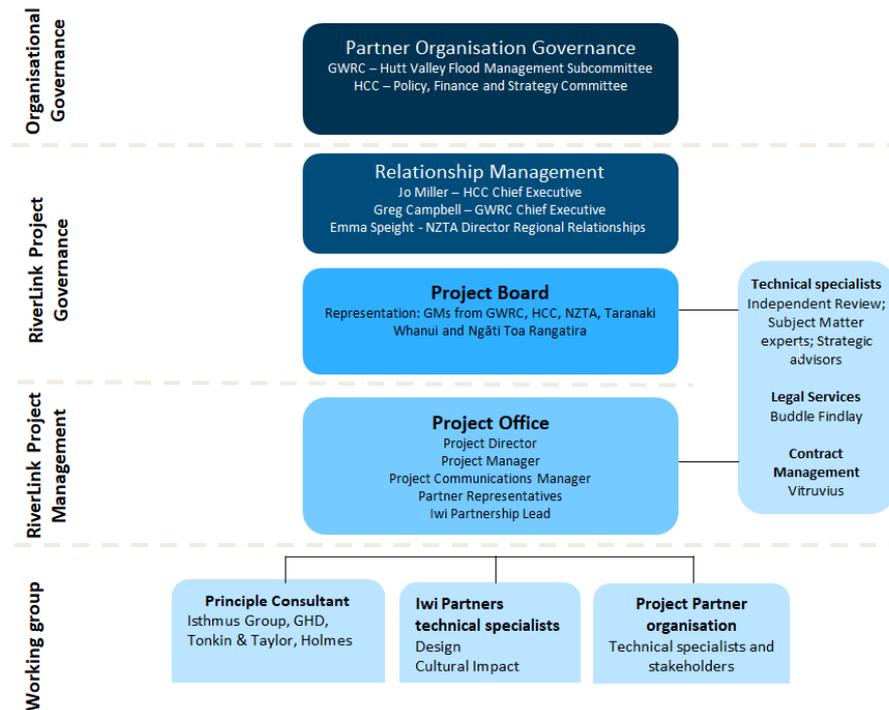
Project governance – an outline

The partners have agreed to work together and a project partner agreement has been signed. The agreement sets out how the partners will work together, the overall aims and objectives of the project, the resources they will commit, and the establishment of a project office to drive the project forward. The project office comprises of a small number of contracted staff, - a Project Director, Project Manager, Communications Manager and Project Coordinator.

The project office works closely with staff from the partner organisation and report to the RiverLink project board on a monthly basis. The project board receives reports on progress, budget, risks and contractual matters. The project board comprises of senior staff from the partner organisations, and mana whenua. The Chief Executives of the two local authorities and the Regional Director, Lower North Island, NZTA, meet on a quarterly basis.

The following diagrams sets out the RiverLink Governance hierarchy:

RiverLink Project Director’s Report – February 2020



Current issues

There are a number of issues which the partners need to be resolve as the programme progresses, they include:

- To gain a detailed understanding of the implications of the Government’s announcement for RiverLink and its integration within the programme.
- To re profile the programme timeline and understand any risks to individual partners.
- The integration of Melling into the programme may have an effect on the anticipated date for the lodgement of the designations and consents.
- To work through the financial implications of the announcement on the partners budgets, and agree where the costs lie.
- The project’s governance arrangements and resourcing will be kept under review to ensure that they are fit for purpose, and sufficient to deliver a high quality infrastructure programme.
- A communication strategy is being finalised which will provide a framework for the partners to work from in terms of promoting the key messages and engagement with the community.

Attachment 1

RiverLink Project Director's Report – February 2020

The next steps

During the next few months the following workstreams will be progressed:

- The technical strategic documents which comprise the phase 1, pre design and consenting workstreams will be completed, and they will need to be endorsed by the individual project partners, e.g. the Urban and Landscape Design Framework.
- Melling Transport Improvements will be integrated into the RiverLink project, and the project programme will be re baselined for the remainder of phase 1. Planning will start for phase 2.
- NZTA will be invited to become a partner and sign up to the project partner agreement. This represents an opportunity for the project partners to re-evaluate the governance arrangements and test them in terms of being fit for purpose.
- To work with the project board on planning for phase 2 of the RiverLink Programme.

**Hutt Valley Flood Management Subcommittee
20 February 2020
Report 20.9**



For Information

WAIWHETU STREAM FLOODPLAIN MANAGEMENT PLAN

Te take mō te pūrongo

Purpose

1. To inform the Hutt Valley Flood Management Subcommittee of the status and next steps of the Waiwhetu Stream Floodplain Management Plan.

Te horopaki

Context

2. The Waiwhetu Stream has had a long history of flooding. The most recent major floods occurred in 1976 and 2004. The 2004 flood, a 2.3% Annual Exceedance Probability (AEP) (or 1 in 44 year event), caused 74 houses to be flooded, and a further 15 to be evacuated due to flooding of the section or garage.
3. Development of a floodplain management plan to consider how to address this flood risk was started in 2005. In 2010, work was undertaken in the stream to remove contaminated material from the banks of the stream and help address the flood risk through channel improvements in the lower reaches of the Waiwhetu Stream. This work increased the flood protection to an approximately 2.5% AEP (1-in-40 year return period) flood event between Whites Line East and the confluence with the Hutt River.
4. Further development of a floodplain management plan for the Waiwhetu Stream was then put 'on-hold' due to other priorities within Greater Wellington Regional Council (Greater Wellington), such as the completion of the Te Kāuru Upper Ruamāhanga and Waiohine Floodplain Management Plans. With both of these floodplain management plans at or near completion, development of the Waiwhetu Stream Floodplain Management Plan can be re-started later in 2020. The first aspect of this is updated flood hazard modelling.
5. In 2019, Wellington Water Limited (WWL) approached Greater Wellington indicating that it was going to undertake stormwater modelling in the Waiwhetu Stream urban catchment. Greater Wellington and WWL agreed to undertake a joint venture to update the existing Waiwhetu Stream model and combine it with a stormwater model for the urban catchment.
6. This modelling will inform the completion of the Waiwhetu Stream Floodplain Management Plan, and particularly how to manage the remaining risk for events above the 2.5% AEP (1 in 40 year return period level).

7. From previous work undertaken, it is clear that there will not be an easy solution or quick-fix for this issue. The Hutt Valley Flood Management Subcommittee should expect ongoing reports and workshops later this year regarding this project.

**Te tātaritanga
Analysis**

8. Combining an urban stormwater model with a river/stream model is not commonly done in New Zealand. There can be difficulties in calibrating the model and determining the most appropriate design rainfall that is suitable for both stormwater and river environments. There are, however, some significant benefits to having a combined model including:
 - a One set of maps to incorporate into the district plan, including one set of information for Building Control and Floor Levels, rather than two separate levels
 - b Suitable for floodplain management as well as detailed development analysis at property level
 - c Information on the interactions between the stormwater and river flood waters
 - d A combined understanding of flood hazard
9. A governance group has been established for this project, with members from Greater Wellington (officers), WWL, and a project manager from Stantec. Hutt City Council is kept informed of the meetings and will attend as the project progresses. A memorandum of understanding between Greater Wellington and WWL was signed in September 2019.
10. Stage 1 of the modelling contract has been awarded to Stantec and initial work is underway to build the model. Workshops regarding the hydrology and hydraulic modelling methodology were held in September 2019. Surveying of key infrastructure has also been undertaken in December 2019 to incorporate into the model.
11. Table 1 lists the key milestones for flood hazard modelling.

Table 1: Key milestones

What	When
<i>Memorandum of understanding between Greater Wellington and WWL signed</i>	<i>September 2019</i>
<i>Agreement on hydrology , hydraulic modelling methodology</i>	<i>September 2019</i>
<i>Survey of stream completed</i>	<i>December 2019</i>
Model build	June 2020
Model validation (urban)	August 2020
Model calibration (river)	August 2020
Freeboard (river and urban)	November 2020
Peer review	November 2020
Flood mapping	December 2020
Community consultation	To be confirmed

Ngā hua ahumoni
Financial implications

12. The financial implications for undertaking the Waiwhetu Stream Floodplain Management Plan, including the flood hazard modelling, have been budgeted for within Council's Long Term Plan 2018-2028.

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

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

Mitigation assessment

14. The matters addressed in this report are of a procedural nature, and there is no need to conduct a mitigation assessment.

Adaptation assessment

15. Greater Wellington plans for climate change in assessing the degree of future flood hazard and in determining an appropriate response. There are only specific, limited situations in which climate change is not relevant (for example, planning for present-day emergency management).
16. In assessing flood hazard and determining appropriate structural and/or non-structural response in areas subject to flood risk, Council's policy is to apply a rainfall increase of 20% to the flood hydrology to account for climate change over the next 100 years and for a 0.8m rise in sea level. Climate change will be assessed during the development of the combined urban stormwater and Waiwhetu Stream flood model.
17. Guidance from the Ministry for the Environment will be updated from time to time and our approach will be revised in line with any updates.

Te whakatūtakitaki
Engagement

18. Engagement with the wider community will be undertaken over the course of this project. Engagement with Hutt City Council will be undertaken throughout the development of the combined urban stormwater and Waiwhetu Stream flood model. The first engagement will be at the completion of Stage 1. Engagement with the wider community will be undertaken over the course of this project.

Ngā tūāoma e whai ake nei
Next steps

19. Work on the hydraulic base model and hydrology inputs will continue through to mid-2020.

20. Once a base model has been built, engagement with iwi partners, Hutt City Council, the Friends of the Waiwhetu Stream, and the wider community will be undertaken to consider and seek input on the flood hazard and mitigation options.

Ngā kaiwaitohu

Signatories

Writers	Francie Morrow – Project Manager, Floodplain Management Plans Andy Brown – Team Leader, Investigations, Strategy and Planning
Approvers	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>The Hutt Valley Flood Management Subcommittee oversees development, implementation and review of floodplain management plans for the Te Awa Kairangi/Hutt River floodplain, which includes the Waiwhetu Stream.</p>
<p><i>Implications for Māori</i></p> <p>Greater Wellington’s iwi partners will be involved in the next stage of the project once draft flood maps have been produced.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>The delivery of the Waiwhetu Stream flood hazard modelling contributes to delivering on Greater Wellington’s Regional Resilience strategic priority. The flood hazard model is one of the steps required to develop a floodplain management plan for the catchment.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation involved Flood Protection Department members who are directly involved in this project.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>There are no known risks.</p>