

# CITY CENTRE SECTION SCOPING REPORT



HUTT RIVER FLOODPLAIN MANAGEMENT PLAN

JULY 2013



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## Images

All images supplied by Greater Wellington Regional Council except as follows:

photographs by Boffa Miskell Ltd  
figures 22a and 22b from Hutt City Council  
figures 25a - 25g from [www.sasaki.com](http://www.sasaki.com)

## Format

This report has been formatted to print at A3 to ensure clarity of text and images.

# Executive Summary

## The Project

The Greater Wellington Regional Council (GWRC) Hutt River (Te Awa Kairangi) flood protection project for the City Centre section is a combination of stopbank raising and widening on both banks of the river, as well as river channel widening. The project stretches some 3 kilometres from Kennedy Good Bridge to the Ewen Bridge downstream and completes an upgrade to the level of protection for the more intensively urbanised river plain contiguous with the Hutt City town centre.

This project's urban interface also gives rise to opportunities for additional 'layers' of public benefit to be realised over and above flood protection. These additional benefits can be gained from combining the projects of stakeholders, particularly Hutt City Council's (HCC) town centre improvements called Making Places, and the New Zealand Transport Agency's (NZTA) Melling Bridge and highway intersection improvements, with the flood protection project.

A collaborative design process and commitment to other public agency investment in parallel with that from GWRC will be required to secure those public benefits. There are substantial economic, social, cultural and environmental benefits to be gained by considering and implementing these public projects together.

## Project Purpose

The flood protection works, including those proposed for the City Centre section, have long been planned for in the Hutt River Floodplain Management Plan (2001) (HRFMP). The HRFMP establishes a strategy of both structural and non-structural measures to reduce the risk of the Hutt River flooding the urbanised area of the floodplain.

The design standard established for protection is that it is sufficient to protect the urban areas from a 2,300 cumec (cubic metres per second) river flow with stopbanks high enough to contain a 2,800 cumec flood in the Hutt River. On average a 2,300 cumec flood event can be expected to occur once in every 440 years, the equivalent of a 20 percent chance of occurring in the next 100 years.

Since flood protection works have been established there has not been a flood event of this magnitude in the Hutt Valley. In 1898 a flood in the order of 2,000 cumecs brought extensive flooding and damage to the valley. The level of protection provided by the existing stopbank is sufficient for approximately a 1 in 100 year event (1,900 cumecs). It has been previously estimated that a 2,300 cumec flood today would cause damage to property and assets in the valley in excess of \$1.7billion. The risk of these damages has been progressively reduced by upgrading of stopbanks, including those in Boulcott and Strand Park.

## Project Implementation Timing and Cost

GWRC's Long Term Plan (2012 -2022) allocates a budget of \$26 million to implement the flood protection works by 2022. The programme includes a planning, consultation, consenting and design process of 4 years and a construction period of 6 years. There is some potential for flexibility in the project timing if additional public benefits (such as infrastructure improvements or better public amenity) can be secured by an agreed alternative process for planning and construction. Implementation delays will extend the period that the urban area is at risk from flooding, but the benefits on balance of extending the timing in order that additional public benefits can be realised may be acceptable.

## Issues and Opportunities

Over time the Hutt River has been incrementally 'channelised' to a corridor, constricting the floodway, within the now mostly urbanised valley floodplain. The corridor is defined by stopbanks (or high ground) on either side. Urban development has come close to, and even sits up against, the stopbanks in some places and this in itself is an issue in terms of limiting options for stopbank changes. It also fails to recognise that despite flood protection, the risk of flooding remains.

Being within an urbanised area, the open space of the river corridor has a high level of public use as well as accommodating infrastructure and car parking. The river itself and the vegetation it supports on its edges are also habitat for wildlife including fish and birds. In the context of the valley the river corridor is a green spine that provides for bird movements between hills east to west as well as linking to other green spaces across the valley floor.

Because the project seeks to increase the stopbank's height and breadth, as well as to widen the river channel, the physical changes as well as the way in which people use and experience the river corridor will generate issues to be addressed in the planning and design process. Many of these issues can also be converted to opportunities to generate new or improved public benefits through deliberate consideration and collaboration with stakeholders.

The stopbank works will require the acquisition of residential property at Mills Street and commercial land upstream of the Melling Bridge. GWRC has contacted all the landowners directly affected. The sensitivity of this loss of property for directly affected owners as well as the changes for those adjacent will need consideration. Raising and widening the stopbanks, as currently proposed, will generate interface issues with properties close to the stopbank (such as Harvey Norman) and also the street edges in some places (such as at Daly Street). There could be some utilisation of the Daly Street road space to enable stopbank broadening. This would require changes to the street configuration in terms of parking, lanes, and services. Accesses across the stopbank (steps and ramps) and the existing car parking areas on the broader

open spaces will also be removed. These car parks prevent uses occurring that have broader open space public amenity, but the area is also used for a well patronised weekly market and for other informal purposes too (such as by learner drivers). The repositioning of any car parking will require consideration as to the future uses of the river corridor land and the optimum locations for access from the city centre.

In the area closest to the urban edge of the Hutt city centre there is an issue in how best to achieve the Making Places project in terms of the elements that interlock, or overlap, with the river and its corridor. One of the significant opportunities is to integrate the design and combine resources for implementation of both HCC and GWRC's projects together. This would enable the issues raised above in terms of uses of the floodplain, Daly Street edge, connections to the city centre, parking, event spaces, river access, and open space amenity to be addressed holistically. In this way a combination of flood protection and a great new asset for the city could be generated as one project. This may in turn assist to catalyse HCC's desire to see increased private investment in the city centre.

In the more upstream areas, river channel widening will reduce the width of some of the broader open grassed areas which are utilised for staged events, dog exercising and other informal activities. The river corridor as a whole offers a range of spaces which can be used for these purposes. The proposed stopbank works may require a change to the way the corridor is used and may redirect some users to different places.

The existing lower level walking and cycling tracks that run parallel to the river will also be subsumed by the channel widening in some areas. These paths have been established by volunteers to a large extent and although they will be replaced with new tracks, there are changes and some sensitivity about this loss. The design of new tracks will need to recognise the use patterns and should include the utilisation of the wealth of knowledge of the volunteers.

At the Melling Bridge, the river flow is restricted due to the narrower width of the river between banks/abutments and the height of the bridge above flood water levels. The HRFMP identifies replacement of the bridge as an element of the protection works to achieve the recommended standard and NZTA have investigated this recently in combination with a grade separated interchange at the highway. However, there is no progress on the bridge replacement and less substantial highway intersection upgrades are now proposed as an interim measure.

The issue is that because the bridge is not proposed to be replaced in the NZTA's current planning period, the best that can be achieved for flood protection is widening the banks at the bridge as far as possible.

There is some effect on the west side of the river in terms of Block Road and parking areas. As with the city centre Making Places project, there is an opportunity to work with NZTA to develop the opportunities for achieving intersection improvements and flood protection together.

The channel widening will also affect areas of the river and gravel beaches currently used for swimming, fishing, picnicking, and staged events. To some extent, if the changes are timed to avoid fish spawning/whitebaiting periods and with design consideration to providing fish habitat, then the issue of effects can be made to be positive. For activities such as swimming, the popular places have been identified and if unable to be retained can be replaced in different locations. With some design consideration groynes (like those used in Waikanae River for example) can improve the swimming amenity offered in the river. Maintaining access to the river will be important and with channel widening the current tracks down to the river will be lost. Access can be reinstated and consideration given to the optimum positioning and form of connections to meet various needs.

The loss of existing river edge vegetation will also be an issue in the sense of a visual change and the limited habitat value this provides. When complete, the channel widening will see reinstatement of some new river edge willow replanting and other areas of rock revetment in combination with native or exotic planting. If designed with biodiversity improvement in mind, rock areas can be excellent habitat for fish and a greater use of native vegetation can support bird and other wildlife. Vegetation can also be used to form discrete areas of open space. The willows themselves may be seen as an issue given the river views obstructed from public places (such as roads) and land adjacent. Related to habitat value are the existing stormwater discharges to the river. There is an opportunity for these to be improved in terms of capacity and water quality (through debris catching) as well as potential for those that relate to lateral streams to be reconfigured as more natural wetlands, or vegetated areas that can intercept and filter water prior to discharging to the river.

The Hutt River floodway is highly constricted in the CBD area, particularly at the Melling Bridge and the stretch of the river along Daly Street. Beyond the immediate project period, a longer term issue for consideration is how to address currently unknown future needs to change or increase flood protection. The effects on flood risk from changes in climatic conditions, or changes in expectations of urban area protection may influence the future need for further improvements in flood protection planning and design.

This project is an opportunity to consider what any future protection works might be. For example, the need to retreat stopbanks further away from the river may be a consideration for the future. It will also be an expectation of the consenting process under the RMA that alternatives and future hazard risk has been addressed.

## Stakeholders

The process of understanding the project stakeholders' interests (those with assets in the river corridor) has commenced and continues the relationships established in the development of the HRFMP. Meetings have been held with stakeholders to discuss the project specifics; these include HCC, NZTA, service providers (Transpower, Capacity, Wellington Electricity, Power Co) and GWRC officers including those with specific knowledge of use of the river corridor. The range of matters raised by stakeholders include those addressed in the summary discussion on issues and opportunities. Separate meetings were held with iwi representatives to discuss issues, opportunities and their potential involvement in the governance and management of the project. It is recognised that there are adjacent residential property owners and other people in the community that will also be affected by, or have an interest in, the project. A planned process of engagement and consultation will occur through the project's design, planning and implementation phases to ensure that these people's interests are well understood and provided for as appropriate.

## Governance and Project Management Process

It is intended that the current Hutt Valley Flood Management Subcommittee that governs the implementation of the HRFMP will continue to do so for the city section protection improvements project. This Subcommittee has representation from asset stakeholders and has an understanding and overview of the HRFMP context.

In order to progress an understanding of, and preferably gain essential commitment towards, a combined project that incorporates the public and private benefits of Making Places, Melling intersection improvements and flood protection works, it is proposed that a new Project Steering Group be established. That group, comprising senior officers, would have representatives from key stakeholders, primarily HCC and NZTA.

The initial brief for that group would be to manage a nine month process to investigate and develop an integrated project 'master plan' for the subject area that incorporates the known plans of stakeholders. This process would include public input. It is anticipated that a Design Team would be appointed by the Steering Group to lead and produce the master plan. At the conclusion of this process, decisions would be made by the respective stakeholders as to whether to commit to invest in a share of the integrated master plan, or not. If the decision is to proceed collectively, the Project Steering Group (or similar) would continue to steer the delivery of the whole project with appropriate programming, cost sharing and responsibility. If the decision of stakeholders is not to invest, then GWRC will continue with the flood protection works as currently planned with the Steering Group providing a narrower focus as a point

of reference only. To expediently advance this collective design process GWRC will lead the process beginning with formulating a project plan with stakeholders before advancing its implementation.

There is some risk that the time spent may be 'lost' if resolution cannot be reached over the integrated master plan, or the required investment confirmed by the respective stakeholders. However, the potential opportunity to deliver multilayered public benefits should be embraced because of the extensive collective benefits beyond just improving flood protection. If successful, an integrated project can reasonably be expected to deliver benefits for Hutt City and the region through increased flood protection, regionally significant open space with recreational improvements, river environment with habitat improvements, as well it being a catalyst for private investment in the city together with improved highway and local road performance.

The risk of 'lost time' could be reduced by carrying out some of the investigations required for flood protection works during this period such as additional modelling, geotechnical investigations and so on. However, the additional time for the master planning process is expected to be relatively short and any preemptive investigations may prove to be wasted if the master plan identifies new propositions for the project that the investigations are not attuned to.

# 1 Introduction

## 1.1 Project Outline

The Greater Wellington Regional Council (GWRC) proposes to undertake new flood protection works on the Hutt River (Te Awa Kairangi) (Figure 1 Location Plan). These works are within the stretch of river that extends some 3 kilometres from the Kennedy Good Bridge (KGB) downstream as far as the Ewen Bridge and is known as the 'City Centre' section of the package of flood protection measures being implemented by GWRC. The proposed works are a combination of river channel widening as well as stopbank broadening and raising which aim to improve the level of protection to the Hutt City urban area from floods.

## 1.2 Purpose of Scoping Report

The purpose of the Scoping Report is to:

- describe the City Centre section of the flood protection works project;
- identify the key issues and opportunities associated with the project;
- convey the interests of the other parties and the community in the project; and
- identify a management structure that will enable the project aims to be met whilst also addressing issues and securing opportunities.

## 1.3 Role of GWRC and HRFMP

Protection works have been carried out on the Hutt River floodplain since the early 1900s in response to increasing levels of urbanisation and the risks of damage from floods. The proposed works in the City Centre section are part of a series of improvements being undertaken by GWRC under the direction of the Hutt River Floodplain Management Plan (HRFMP). The Management Plan was prepared collaboratively between GWRC, Upper Hutt and Hutt City Council's, manuwhenua, and the people of the Hutt Valley. It was adopted in 2001 and continues to guide the management of the floodplain.

The Hutt Valley Flood Management Subcommittee was established to guide the preparation of the Management Plan. The Subcommittee has representatives of the Plan's collaborators and continues in an advisory role on the Plan's implementation.

## 1.4 Process for Scoping Report

The Scoping Report has been prepared by GWRC and Boffa Miskell Ltd and the process has included five asset stakeholder meetings to enable an understanding of the interests of these parties (summarised in Appendix 1). The Scoping Report has collated an understanding of the project and issues and opportunities from existing information and no new investigations have been undertaken in its preparation.

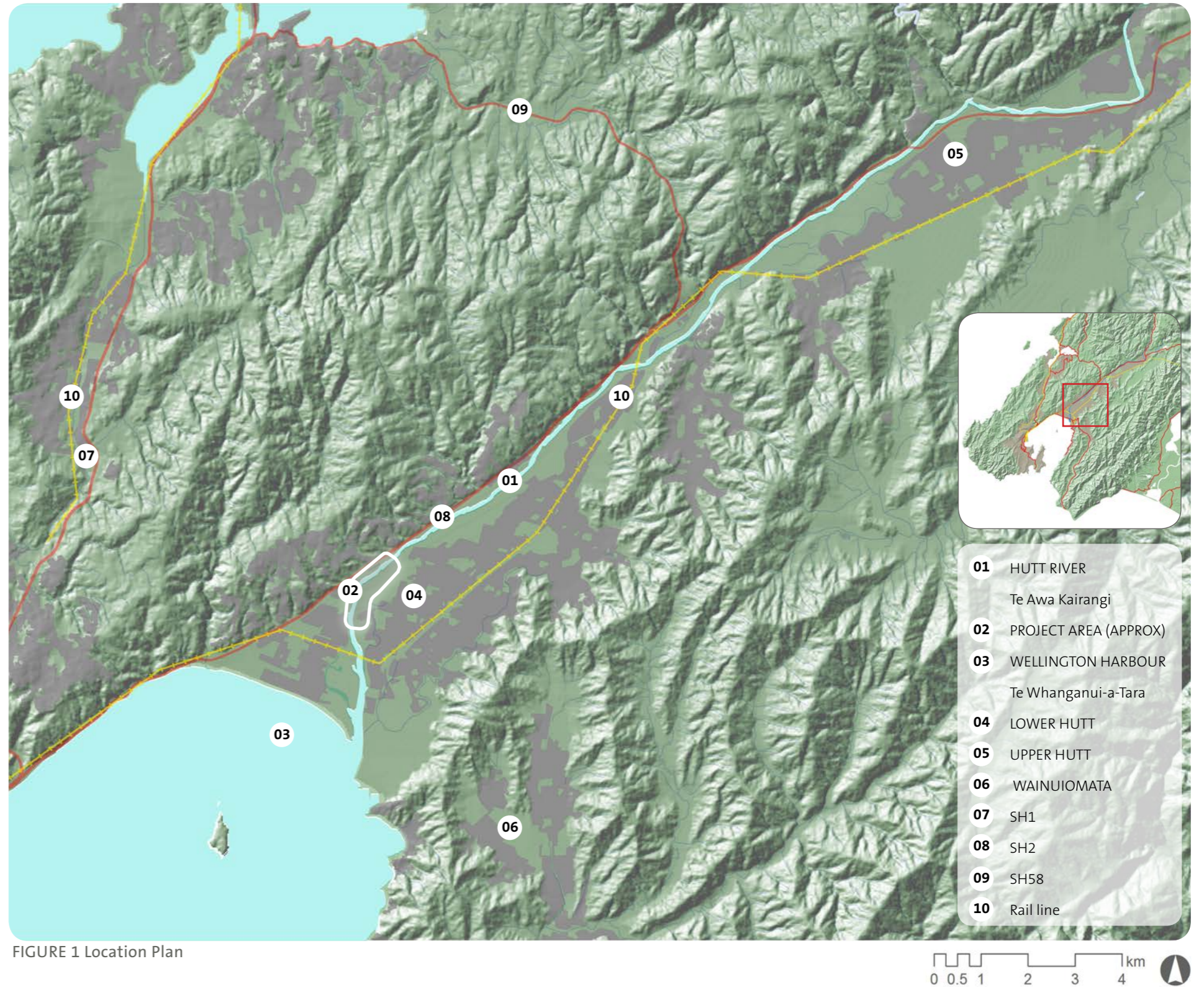


FIGURE 1 Location Plan

## 2 Background

### 2.1 Flood Management History and Future

For centuries the Hutt River floodplain has been a place occupied and used by people. Maori were first to have lived there and utilised the bountiful resource of Hutt River/Te Awa Kairangi and the opportunities it provided for movement (Figure 2).

With more intensive settlement during the latter part of the 1800s and the associated clearance of forest, flooding became more problematic as more people and their property became affected (Figure 3). As a consequence, investment began to be made in flood protection with the first flood defences installed in Petone in 1894 followed thereafter by progressively more protection over time (Figure 4).

There are now over 130,000 people resident in the valley and flood protection measures have continued to be installed since the earliest efforts (Figure 5). It is estimated that if a large flood occurred today, with the stopbanks as they currently stand overtopped, that damage to property and assets in the valley would be in excess of \$1.7 billion. Even with full protection as recommended in the HRFMP there would be some flooding that occurs in lower reaches, but the majority of the urban area would not be affected. The risk of these damages has been progressively reduced by upgrading of stopbanks, including those in Boulcott and Strand Park.

The flood protection measures that have been undertaken have radically changed the river landscape. The river has been realigned and confined to a relatively narrow corridor and stopbanks have been added and upgraded over time to generate a continuous and distinctive corridor of river and associated open space through the urbanised area of the Hutt valley (Figure 6).

The confinement of the corridor and the urban development that has occurred along its length limits the options for improving flood protection into the future. In many places development such as roads, houses and commercial buildings are in close proximity to the stopbanks and in some locations are abutting the banks directly (Figure 7).

There are likely to be additional demands made to locate development in close proximity to the river corridor. For example, any upgrades to State Highway 2 are more likely to extend east and impinge on the open space of the river corridor than west where the hillsides rises steeply and where there is existing urban development. Similarly, if the town centre improvements sought by Making Places (refer to section 4) are implemented there is the prospect of buildings adjacent to, or integrated with, stopbanks.

It is unreasonable to plan for any risk reductions in flood hazard to the Hutt Valley floodplain through any substantial and effective 'de-urbanisation'. However, there is a need, both statutorily under the Resource Management Act 2001 (RMA) as well as being sound resilience planning practice, to consider the future in the planning for protection today.

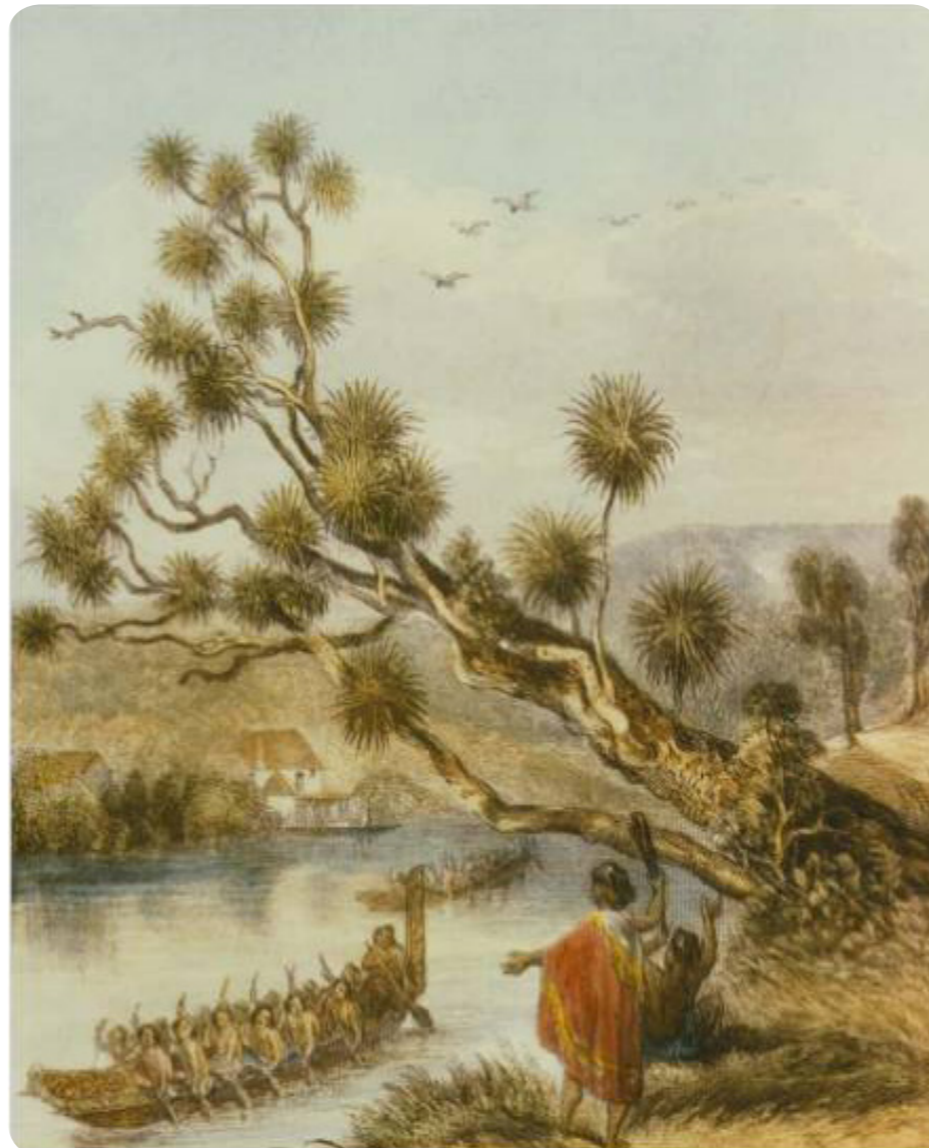


FIGURE 2 1847 Hutt River near Molesworth Farm



FIGURE 3 1898 flood

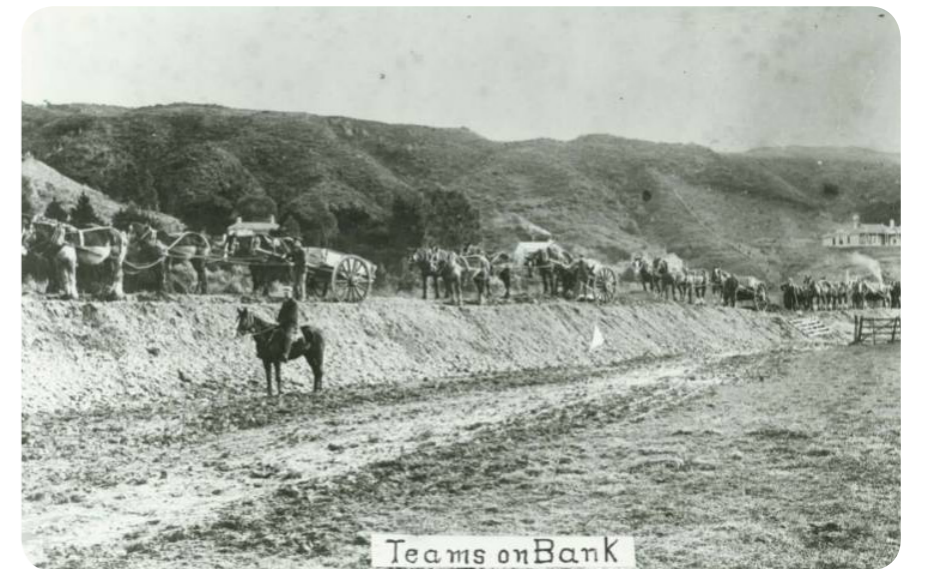


FIGURE 4 1902 Stopbank construction



The future is not easily quantifiable, but it is anticipated that as the Wellington region's climate changes, it is likely there will be more rainfall which will lead to increased risk of floods, landslides and erosion. Heavy rain is expected to be more frequent with increases in intensity of 17% by 2100. There is also some expectation that sea level could rise by 80-100cm by 2100 which may then cause ground water levels to rise, salt water intrusion and at the interface with the coast (eg Petone), there may be more impact on existing seawalls and effects in estuarine areas such as at the Hutt River mouth.

Considering these climatic influences and the risk changes they present suggests a need to think beyond the current upgrading projects and to what actions may be required in the future. If it is assumed that further increasing the heights or breadths of stopbanks as well as widening the river channel will be elements of future flood protection measures (others could be managing the catchment and retention of stormwater discharges), then these can be considered in the current project planning process.

Clearly there are potential implications from any statutory planning provision for future flood protection measures, such as changes to District Plan provisions. It may not be warranted to invest in the 'up-scaling' of the works to manage a risk in the longer term future or to implement statutory provisions at this time, but the investment that is made today can be made with a view to changes in the future. These future changes or alternatives methods for addressing flood risk will be given full consideration, even if these are outside or beyond the considerations of the HRFMP as part of this immediate project for the Hutt city section.

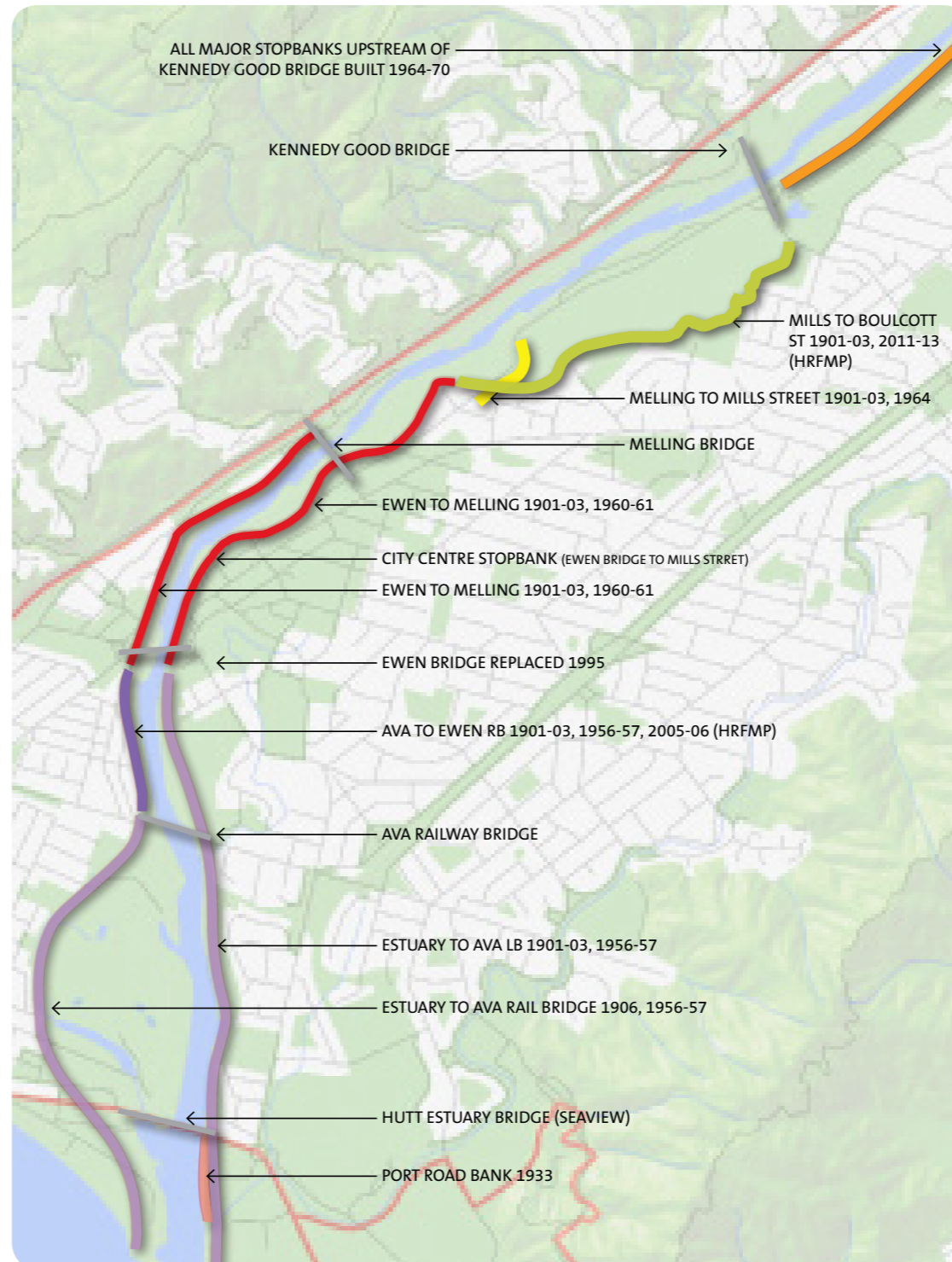


FIGURE 5 Chronology of stopbank upgrades



FIGURE 6 Shows the confined river corridor



FIGURE 7 Shows the proximity of development to the stopbank edges

## 2.2 Hutt River Floodplain Management Plan

The HRFMP was produced in 2001 and establishes a strategy of both structural as well as non-structural measures to manage the risk of flooding in the Hutt Valley. The Plan has adopted a standard for the design of the protection measures as being able to withstand a flood of 2,300 cubic metres per second (cumec) with stopbanks high enough to contain a 2,800 cumec flood in the Hutt River. The risk of a flood of this scale is measured as a probability of occurring once in every 440 years, the equivalent of a 20 percent chance of occurring in the next 100 years. The cost of implementing the measures is estimated at \$78 million (in 2001).

The process of deciding on the risk-based 2,300 cumec design standard included the consideration of environmental and social effects, effectiveness of limiting flood damage, and cost in development and maintenance over time. Lesser and higher levels of protection were also considered.

It is the structural actions of constructing protection works which are the focus of the City Centre section project. However, non-structural actions, such as those associated with District Plan policy and provisions, continue to apply.

A consequence of the City Centre section upgrade project may be the suggestion of parallel changes in policy and planning provisions to better reflect the issues and opportunities it presents. For example, there may be benefits in the District Plan being adjusted to enable or restrict different land uses in the vicinity of the City Centre section.

In respect of the City Centre section project the HRFMP identifies the improvements to be undertaken as a combination of gravel extraction, channel alignment changes and stopbank raising and strengthening. It also seeks investigations as to the replacement of the Melling Bridge and a budget has been made for property acquisitions in association with this. Various land purchases are provided for to facilitate the above.

The HRFMP also sets in place a series of policies in respect of the structural measures. These provide direction for the design of the proposed works and are appended (Appendix 2).

In combination with the HRFMP, the Hutt River Environmental Strategy identifies a vision, principles and proposals for each area of the river corridor. The vision is:

*The river and its corridor are developed as a linear park that provides a tranquil environment where people can go to escape the hustle and bustle of urban life, and enjoy the natural character of the river environment.*

The Environmental Strategy describes for the relevant area (5.4 Central Business District and 5.5 Taita) key proposals, which plans illustrate (Figure 8a and 8b) and bullet points describe conceptually:

- Replace willows with strong urban character river edge, backed by specimen trees and other planting on berms [CBD]
- Terrace river edge at strategic locations to give access to the river [CBD]
- Incorporate river-edge tracks and paths and create new walking/jogging loops between Ewen and Melling Bridges [CBD]
- Remove car parking spaces to allow a greater emphasis on recreational uses [CBD]
- Strengthen pedestrian access to and from the city [CBD]
- Improve the visual character of the eastern bank with eco-sourced native planting to provide variety and better spaces [Taita]
- Improve visual connections with the river by providing gaps in the willow plantings or by pruning [Taita]
- Improve connections between the local community and the river with the creation of walking loops incorporating the river berm and the existing open spaces within the Taita community [Taita]
- Control vehicle access to the eastern berm [Taita]
- Strategically plant the western bank and a backdrop for recreation on the eastern bank. View from the motorway should be maintained [Taita]

## 2.3 Recently Completed Works

In accordance with the HRFMP there is a sequence of flood protection structural works being undertaken. Following from the adoption of the Plan there have been stopbank and channel widening works in the section from Ava Rail Bridge up to Ewen Bridge (the bridge itself was replaced in 1995 to meet the 2300cumec design standard).

Stopbank works in the Boulcott section (Figure 9) which extends from Kennedy Good Bridge downstream to Mills Street are very recently complete and provide a heightened and broadened stopbank, including realigned road over the stopbank at Connolly Street. The Hutt and Boulcott golf courses were also affected and have merged to one and significant reshaping has occurred of the course. Channel widening works through this section will be undertaken as part of the City Centre project.



FIGURE 9 Boulcott area works

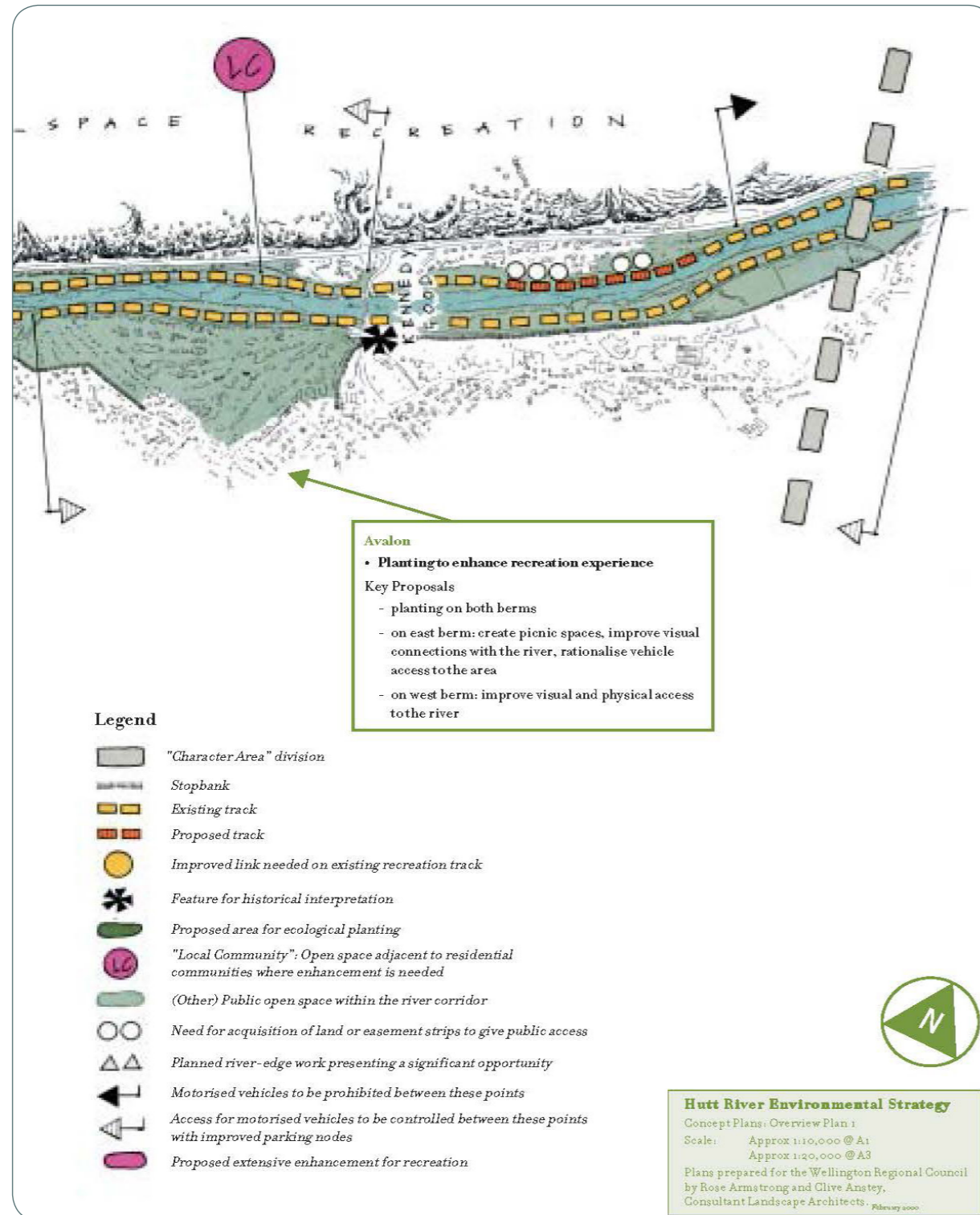


FIGURE 8a Hutt River Environmental Strategy

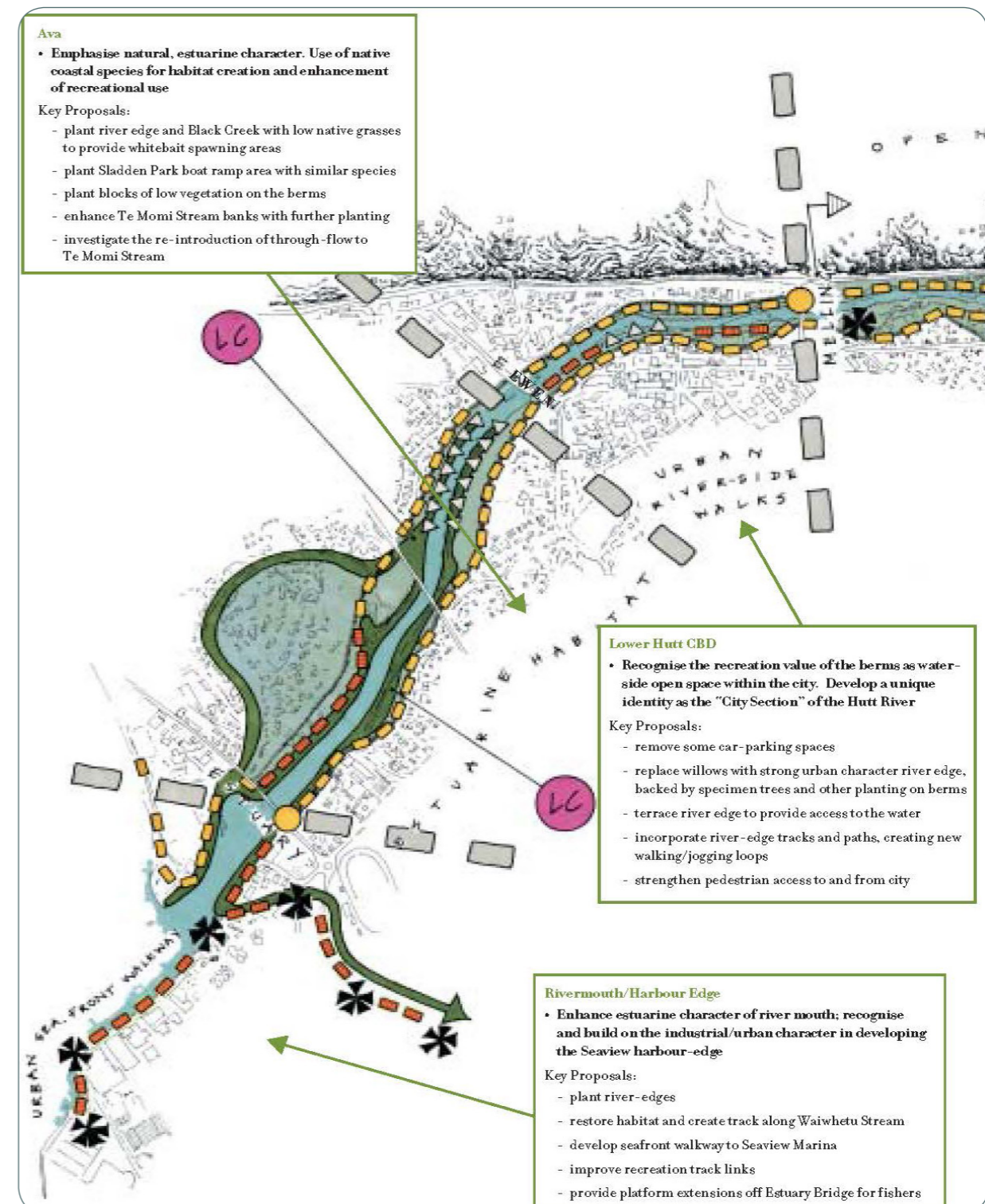


FIGURE 8b Hutt River Environmental Strategy

### 3 Project Description Detail

This section of the Scoping Report describes the elements of the City Centre flood protection works. This description assumes the 'base' works required to meet the HRFMP design standards, but there are significant opportunities for the project to incorporate other layers of improvements, such as those from Making Places or NZTA's Melling intersection upgrades. These opportunities are described and discussed in section 5 Issues and Opportunities

#### 3.1 Channel Widening

The channel is the area within which the river typically flows and is defined by banks which are stabilised by either willow trees, or rock 'riprap' (Figure 10). The trees or riprap stabilise the edge and reduce bank erosion. For the City Centre section project the objective is to widen the channel where it is currently constrained such that the alignment is 'smoothed' to match that of the wider sections up and downstream (Figure 11). Within the channel from Kennedy Good to Ewen Bridge there are different treatments as below:

- In the section downstream from Kennedy Good Bridge to the point of the Transpower substation the channel will be widened to 100m;
- From the substation downstream to Melling Bridge the channel will be widened to 90m, but throttles down to 70m wide below Melling Bridge which recognises the limited width of the corridor in the CBD section (Figure 12a);
- In the section between Melling Bridge and Ewen Bridge the channel will be widened to 70m with widening under Melling Bridge and along the city side edges. Parts of the channel edge on the west side of the river remain (Figure 12b); and
- Below the city area the channel widens back out to 100m as it transitions to the existing river channel, its having been widened as part of earlier Ava to Ewen Bridge works.

The channel widening design (Figure 13) involves widening the bed of the river to match that existing typically. The bank edges are then sloped back from the bed to the point the slope intersects with the open land of the floodplain. As noted above, the sloping part of the new bank edge will either be planted in willow or have rock protection. It is this combination of river bed widening, the sloping back, and in some places its reinstatement with willows that will reduce the width of the open spaces of the river berms.

This reduced width of currently open space berms along the river will require changes to existing paths and access to the river. It is noted that there are currently spaces in the planting at approximately 100m intervals along the river. These spaces are provided to carry out regular bed surveys of the river and also allow for flood waters to drain from the berms when the channel is overtopped by flood waters. These gaps will be reinstated to continue these functions.

In the city section the berm areas accommodate large areas of car parking and these will be reduced in their extent by the proposed channel widening works as well as stopbank changes (described below). The decision as to whether these parking areas are replaced or removed entirely from the floodplain will require consideration in the planning and design process.



FIGURE 10 River bank edge protection treatments - rock or willow protection

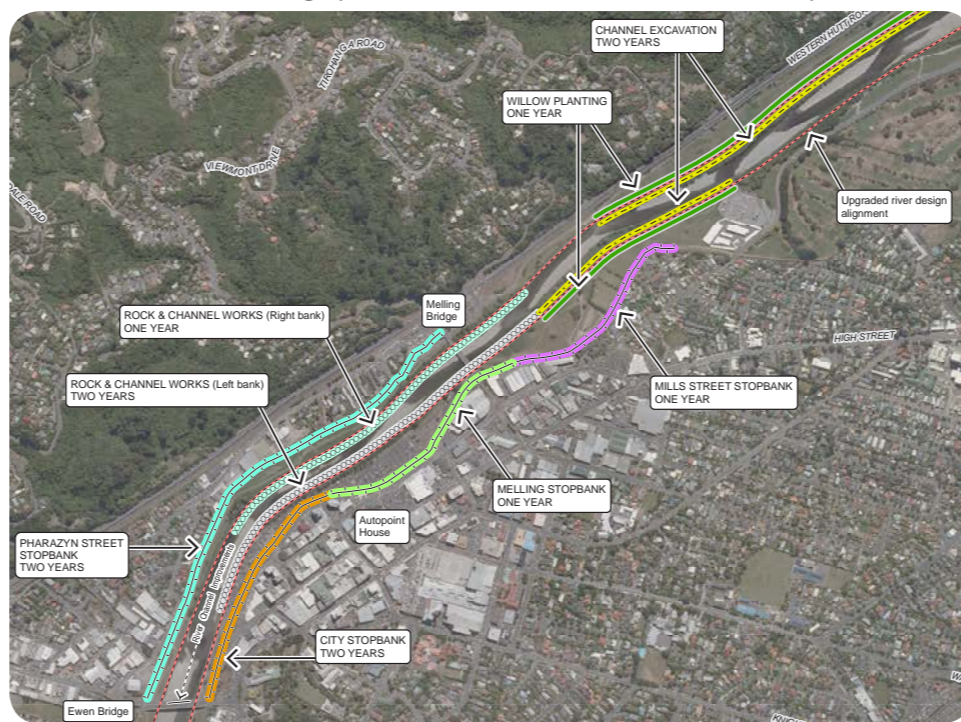


FIGURE 11 components of channel widening and stopbanks upgrades



FIGURE 12a Channel widening from upstream and past of Melling Bridge



FIGURE 12b Channel widening past the city centre area

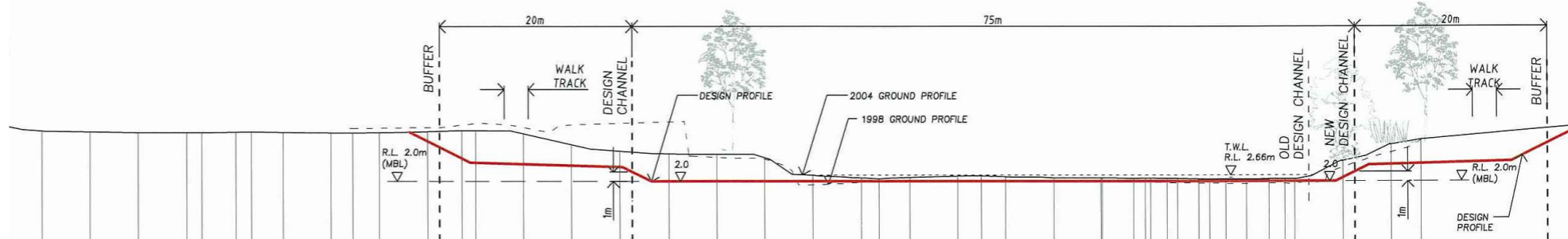


FIGURE 13 Indicative channel widening cross section

### 3.2 Stop Banks

The replacement of the existing stopbanks that run along the outside of the river berm involves both an increase in breadth and height of these structures (Figure 14a). The process will likely require reconstructing the existing stopbanks. They were typically last upgraded in the 1960s, but are unlikely to be constructed in a way that meets today's standards for engineering design.

Typically, the stopbanks are to be increased in height by 1.0m. This increases the typical stopbank height from approximately 3.0m to 4.0m - about the height of one storey of a commercial building.

The width of the stopbank will also be increased to allow the additional height and bank slope to sit naturally without retaining walls. The slopes will typically be at a 3.5:1 and will have a flat top with a width of 4m. There are some locations, such as through the city centre where there may be a need for a retaining wall edge to the street or private property if the stopbank width cannot be accommodated at its 'preferred' slope due to space constraints (Figure 14b). Treatment of these edges to the street will need to ensure that they do not generate poor quality visual outcomes, or further exacerbate the sense of barrier to the river from the town centre.

The landscape treatment of the stopbanks is that they will typically be grassed and mown as trees or larger forms of vegetation can affect the structural integrity of the bank. There is a pathway along the top which can be reinstated and the width and surfacing of this needs to be considered with HCC. The current steps or ramps that give access over stopbanks from the city will need to be replaced and also discussed with HCC as to the optimum location and form in relation to the uses of the river corridor.

The stopbanks will have a construction of imported impermeable materials (weathered greywacke) and river gravel compacted to provide the strength required. There are places where services will need to be incorporated into the stopbanks including a main trunk sewer on the west bank. Unless these can be removed, which is a preference given the effect on the integrity of the bank in a flood, they will remain and be incorporated. Where there are stormwater culverts or pipes that extend out through the stopbanks to the river, these will be rationalised if possible (ie reduced in number if possible) and upsized with the service provider (Capacity).

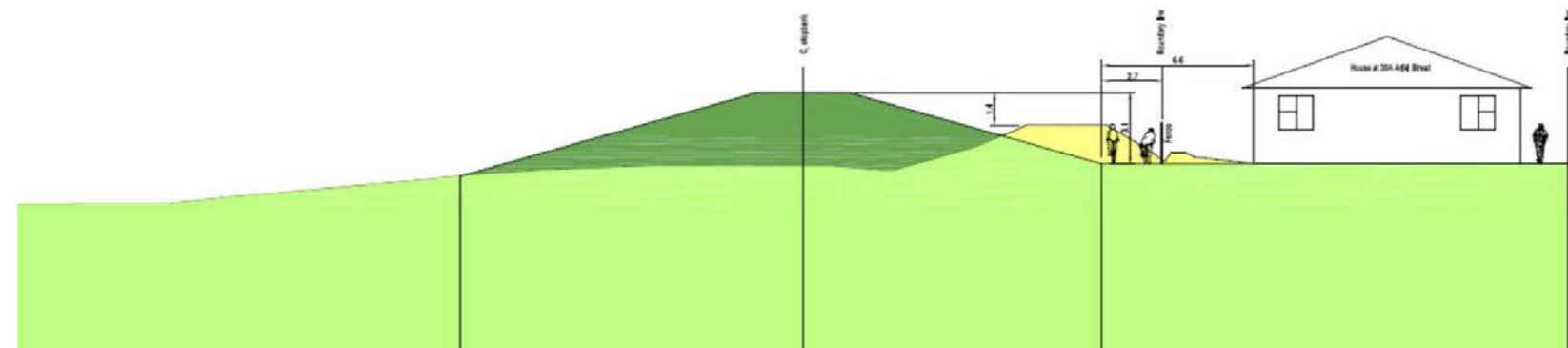


FIGURE 14a Indicative stop bank cross-section (new in green - old in yellow) at residential interface

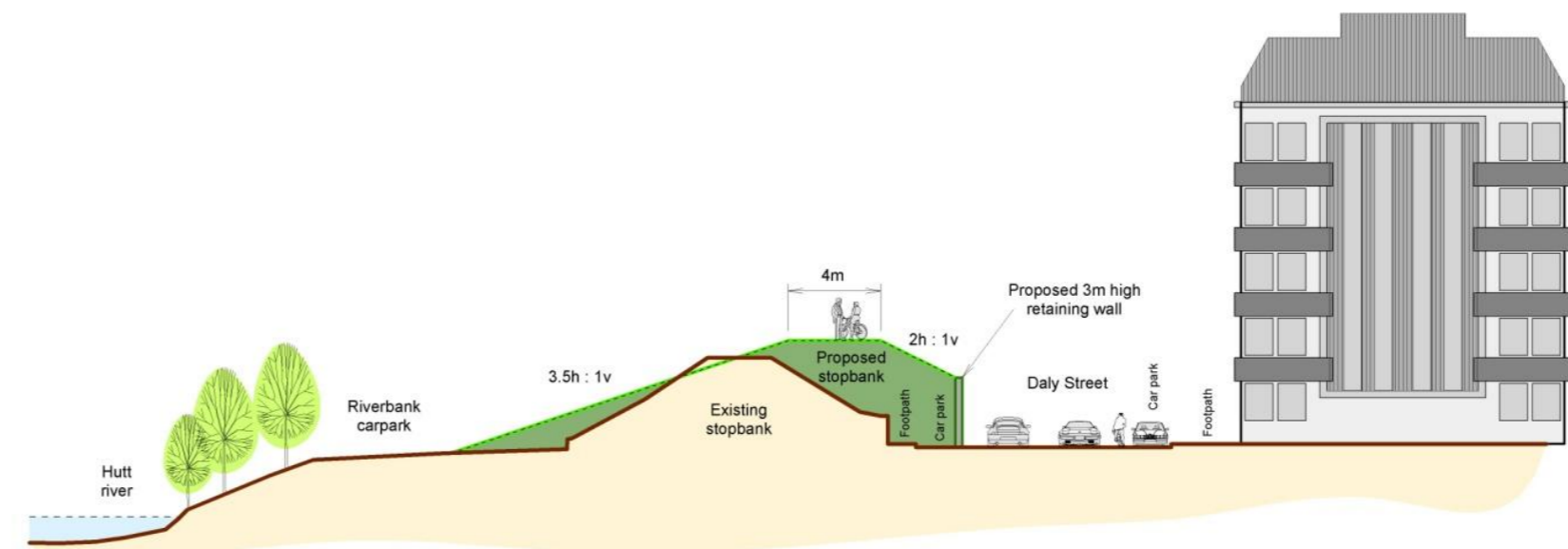


FIGURE 14b Indicative stop bank cross-section at Daly Street (new in green) which shows a retaining wall edge

### 3.3 Melling Bridge

The bridge (Figure 15) that connects across the Hutt River from State Highway 2 (SH2) to the top end of the Hutt central area via the Melling Link road is not at a design standard that allows for a 2,800 cumec flood event. The bridge restricts the flow of the river in flood because it has a limited width under the bridge as defined by the bridge piers and bank widths. It also restricts the river flow due to the bridge deck height above the flood flow water level. Floods typically bring debris and with the current bridge deck height that debris can be caught and block the flow raising upstream flood levels and putting additional strain on the bridge itself.

The bridge is an asset managed by HCC. Seismic strengthening work has been carried out on the superstructure of the bridge. However, it is not feasible that the bridge would withstand a Wellington Fault Line rupture event as the bridge straddles the fault. The earthfill approaches are also vulnerable to lateral spreading and consequently there remains the risk of failure of the abutments in a major earthquake. Some minor work has also already been undertaken to reduce the potential for scouring at the piers from river flow.

NZTA has undertaken a project in conjunction with HCC to investigate improvements to the intersection of the Melling Bridge and SH2 (Figure 16). Those investigations are described further in section 4 Context. Upgrading the intersection in any significant way is not in NZTA's 10 year project plan.

However, work is currently underway by NZTA and HCC to investigate a more modest set of intersection changes that maintain the at-grade intersection with some reconfiguration. There are potential opportunities to tie in with the flood protection stopbank works to lessen the risk of Block Road flooding and with respect to changes required to carparking areas and various associated works without further restricting the waterway capacity of the Melling Bridge.

Ultimately GWRC will continue to seek the Melling Bridge's replacement as will HCC. Whether this is in conjunction with a grade separated intersection is not a matter of concern to GWRC. If there was an opportunity to reconsider with NZTA and HCC, in conjunction with the flood protection works project and its budget allowances, bridge replacement in association with lesser intersection improvements, this would be welcomed by GWRC.



FIGURE 15 View of Melling Bridge

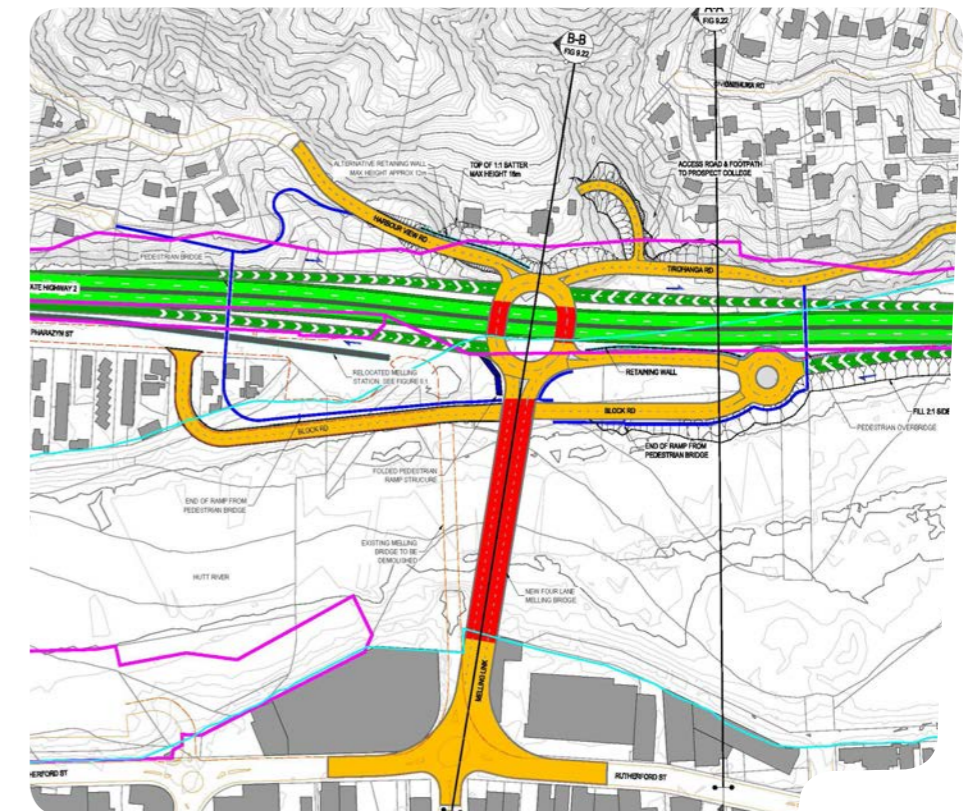


FIGURE 16 Melling intersection scheme design with grade separated highway and local road and replacement bridge

### 3.4 Property Requirements

The HRFMP noted the need for some property purchases on the left bank. This is required to enable the realignment of the stopbank at Mills Street and reduce the constriction of the flood channel at this point (Figure 17). There is also property upstream of the Melling Bridge that, if acquired, will enable the maximum flood channel width to be formed that can be achieved without replacement of the bridge itself. The process of acquiring property that GWRC follows is guided by the Public Works Act.

Discussions with property owners at Mills Street have been on-going for some time and meetings with residents and Flood Protection staff occurred recently (9 October 2012 and 12 February 2013). There are a mix of people wanting to leave quickly and others seeking to stay for as long as possible.

In terms of any existing uses of the public land, the Waimarie Croquet Club is relocating and has had some funding support to enable new facilities to be established elsewhere. The club's use of the land in the river corridor ceases by 2019 or before. Other uses of the public land are described in section 4 Context.

There is some potential to consider the use of public land outside the river corridor such as existing formed streets (for example Daly Street) as part of the work to broaden and heighten the stopbanks. This extension of the works to streets would potentially reduce the scale of retaining walls to the street edge. In this way a better interface could be realised between the public space of the stopbanks and the public space of streets and town centre.

The ownership of land which is currently public streets may need to transfer to GWRC and road stopping processes may also be required under the Local Government Act.

All options for enabling the current objectives for flood protection as set out in the HRFMP, as well as those that may be needed to meet future levels of protection, will be canvassed as part of the project investigations and planning. Any option that would provide for a widened corridor through the area will potentially require acquisition of other private land.

### 3.5 Funding and Programme

There is a budget allocation in GWRC's Long Term Council Plan (2012-2022) to undertake the planning, design and implementation of the City Centre section of the flood protection works. The cost budgeted for in the LTCP is \$26 million, which is double the cost of the recently completed Boulcott works of \$12.6 million.

The GWRC budget does not allow for any improvements to the open space within the floodplain beyond restoring paths and vegetation for edge

protection purposes. Any improvements beyond those associated with the needs for flood protection will need to be funded by other parties. GWRC welcomes those discussions and how these provisions could be integrated into the project.

The project programme is set out below, but is provisional only at this time as the design and planning process has not been completed.

The programme does not account for any issues encountered in the planning or design process generated by currently unknown factors, or 'voluntary' delays imposed by GWRC. Those voluntary delays may be, for example, to allow for mutual benefits from associated and supporting stakeholder (eg HCC or NZTA) funded projects that can usefully overlap with the flood protection work. GWRC will consider any implications of delay once more is known of the opportunities for mutually supporting projects to occur. It is noted that the existing flood risk to the central area of the Hutt City will continue until the stopbanks are upgraded.



FIGURE 17 Mills Street area

2012	2013	2014	2015	2016	2017	2018	2019	2020
SCOPE		PLAN		TENDER		CONSTRUCT		
Identify Issues opportunities		Prelim design inc construction sequence options		Appeals planning decision (if any)		Mills St stopbank (Mills St to Repco) – 1yr		
Scope with HCC, NZTA, iwi		Consultation		Detailed design		Melling stopbank (Repco to Autopoint House) – 1yr		
Scoping Report		Prepare planning applications		Tender		City stopbank (Autopoint House to Ewen Bridge) – 2yrs		
		Lodge planning applications		Award contract		Pharazyn St stopbank (Melling to Ewen west side) – 2yrs		
		Submissions, hearings and decision				Willow planting (KGB to Melling) – 1yr		
						Channel excavations (KGB to Repco) – 2yrs		
						Rock and Channel works (Repco to Ewen east side) – 2yrs		
						Rock and Channel works (Repco to Ewen west side) – 1yr		
						Note: The above work components can be constructed in any order		

# 4 Context

## 4.1 Cultural Values

There are well recognised cultural values for iwi associated with the Hutt River/Te Awa Kairangi and these are described along with vision actions in the HRFMP and Environmental Strategy. A long association with the river valley has left a legacy of both physical and non-tangible places and associations for Maori. There is a strong interest in improving the habitat values, articulating the cultural values associated with places, and an involvement by tangata whenua in management of the river.

## 4.2 Current Activities

The river corridor as a public open space itself accommodates a range of land-based as well as water-based activities (Figure 18). These range from informal individual activities (including fishing, walking, jogging, dog exercise) to organised events (such as raft races) with large groups of people in attendance.

GWRC undertakes counts of users on river paths (using a combination of automated counters and observation surveys) and for the year ended May 2012 this showed user numbers in the order (the numbers are variable due to the equipment limitations) of 129,000 movements in the section between the Melling and Kennedy Good Bridges. Across the whole river network there are more than 1 million user movements annually. There is a noticeable bias to the east (true left) bank being the busier side of the river network.

GWRC has also undertaken surveys of users and a report specifically on the section between Kennedy Good and Melling Bridges in 2010 highlights the following:

- The Hutt River Trail between Kennedy Good and Ewen Bridges attracts a high number of regular users with 29% of users visiting daily and a further 38% visiting 2-3 times per week
- The most popular primary activities are walking (33%), dog walking (26%), cycling (23%) and running (11%)
- The vast majority (86%) of users undertake two or more activities in the area
- The main reasons for using this section of the river trail were: easy access (59%), close to home (51%), for exercise (43%), dog exercise area (41%) and safety (31%)
- The majority (29%) of respondents surveyed were 40-49 years old, evenly split by gender and lived close by (Lower Hutt City 19%, Belmont 15%, and Kelson 8%).

In the part of the City Centre section that is closest to the Hutt city centre uses also include the car parking area, which doubles as the venue for a weekend market. The management and maintenance of this area is shared by GWRC and HCC.

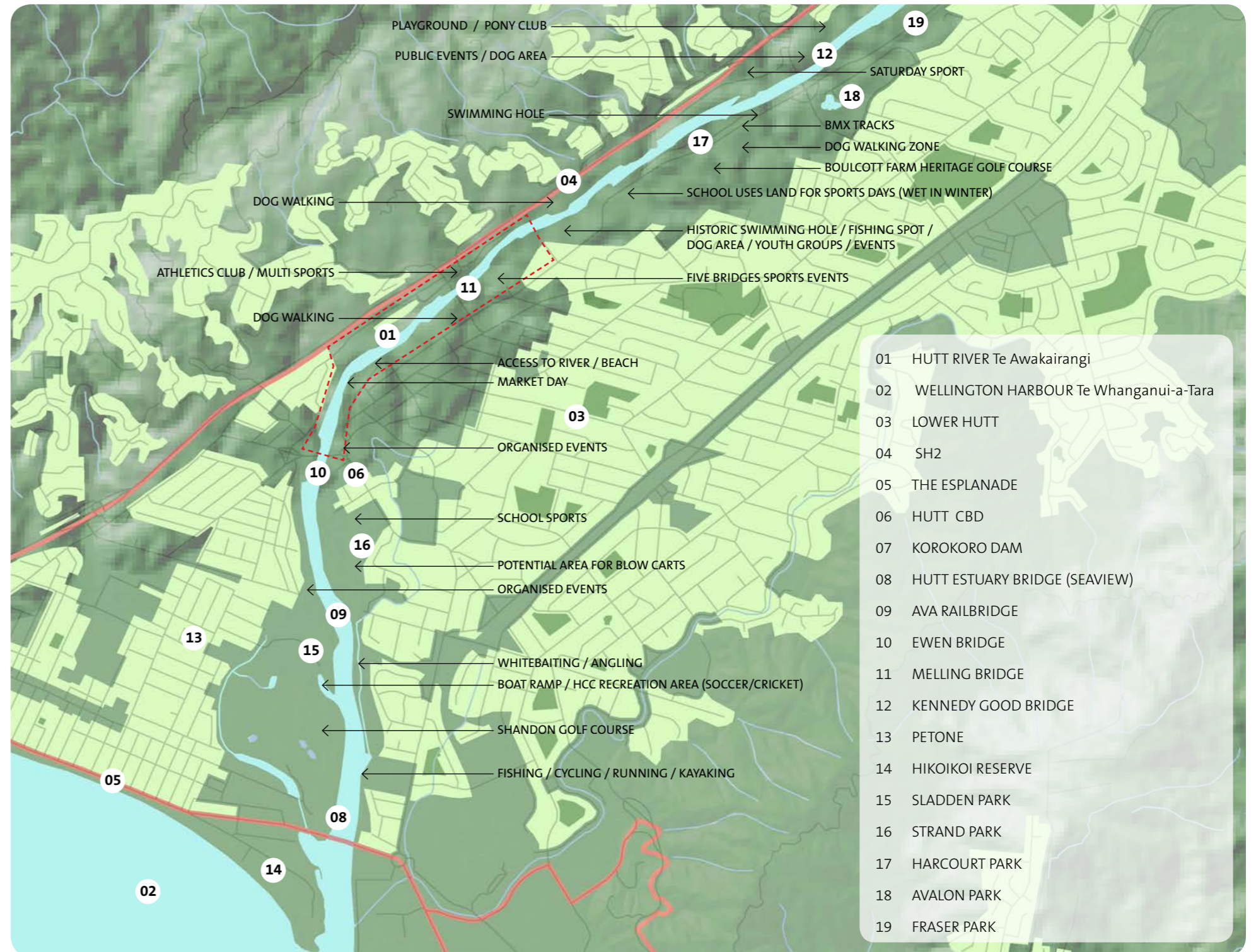


FIGURE 18 River corridor uses





FIGURE 19 Urban uses adjoining

### 4.3 Adjacent Activities

The uses adjacent to the project area are typically urban in nature (Figure 19). There are long stretches of urban roads, including SH2 which forms an extensive section on the west side. Local roads such as Daly Street adjoin on the east side of the river corridor. There are also commercial buildings that abut the corridor in places, such as along Pharazyn Street and Rutherford Street, or are across a local road, such as on Daly Street. There are residential edges on both the west and east side.

There are views that benefit taller buildings with an outlook over the river corridor, although these are typically limited for residential properties given the height of the stopbanks. The edge condition is typically solid high fences where properties immediately abut the river corridor. Where the street forms the edge then the interface is usually open. In the city area there are some short stretches of street that have retaining wall edges.

### 4.4 Infrastructure Services

The river corridor accommodates several infrastructure services (Figure 20) including the Transpower substation at Mills Street, Wellington Electricity lines along the east side stopbank, main trunk sewer on the west side stopbank as well as stormwater pipe connections across the stopbanks and berms that discharge to the river from local networks. PowerCo also operate gas lines within the corridor.

These services require access for maintenance and replacement. It is GWRC's preference that the services are not accommodated within the river corridor and not within the stopbanks as these generate issues for the stopbanks strength. It is recognised that the services are important public assets so there is an expectation that they will continue to be provided for, but the HRFMP is clearly expressive in its policies (refer to Appendix 2) that these will be located outside stopbank footprint.

For stormwater pipes and culverts that cross through the stopbanks GWRC will work with Capacity (service provider) to ensure consideration is given to rationalising and upsizing as required. There is an opportunity to improve the water quality discharges from stormwater pipes to the river by catching debris and/or more low impact design measures (LID). These LID measures can include wetland or swale areas that can intercept and filter and clean water to some extent before discharging to the river.

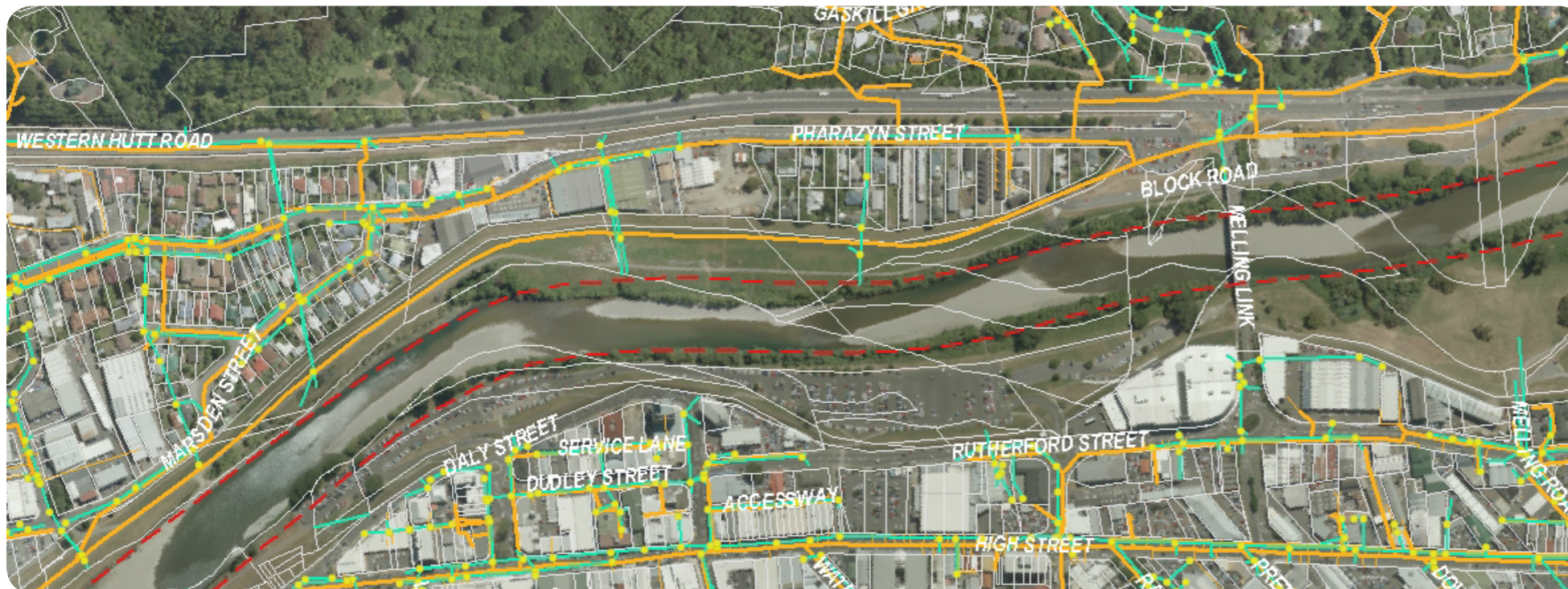


FIGURE 20 infrastructure services - showing stormwater network

### 4.5 Strategic Influences

Within the consideration of context are strategic influences, of which Making Places is of particular significance. Also important contextually are the NZTA Melling intersection upgrade plans.

#### 4.5.1 Making Places

Making Places is an initiative of the HCC which generated a 'vision' and strategic actions to improve the urban quality and long term future of the Hutt City central area or CBD. HCC adopted the Making Places strategy in 2009. There are a wide range of actions within the strategy (Figure 21) a fundamental one of which is the optimisation of the relationship of the city centre to the river and its corridor. The river is an important asset for the city in terms of its identity and potential to provide increased levels of amenity that can attract and stimulate use and investment in the city centre.

Specifically the actions as they relate to the river are focused on a riverside promenade and using this to support residential, social and economic activity on, or near, the stopbanks (Figures 22a and 22b). The Making Places development process has given consideration to the potential to connect the urban edge directly to the stopbanks through the re-purposing of Daly Street (Figure 23). This will require further consideration as to its feasibility or desirability including the implications for traffic movement, access to buildings, and the benefit of the spaces and economic opportunities created.

The opportunities presented by the integration of the Making Places actions with the GWRC flood protection works have not been fully investigated to understand the costs and benefits associated with the action, or the responsibilities defined for implementation, maintenance and management.



FIGURE 22a Visualisation of a future relationship of city centre to river corridor



FIGURE 22a Visualisation of a future relationship of city centre to river corridor

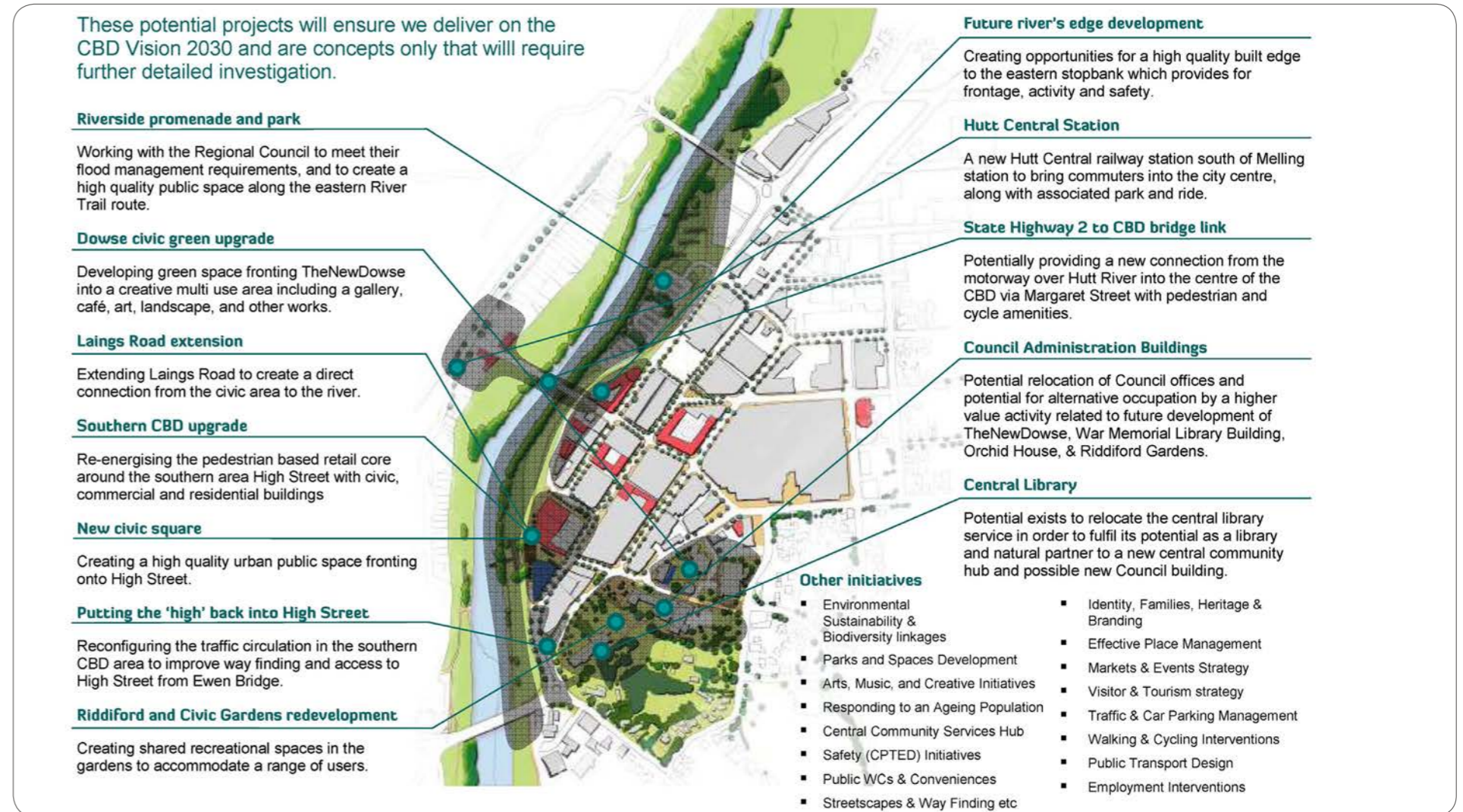


FIGURE 21 Making Places summary actions

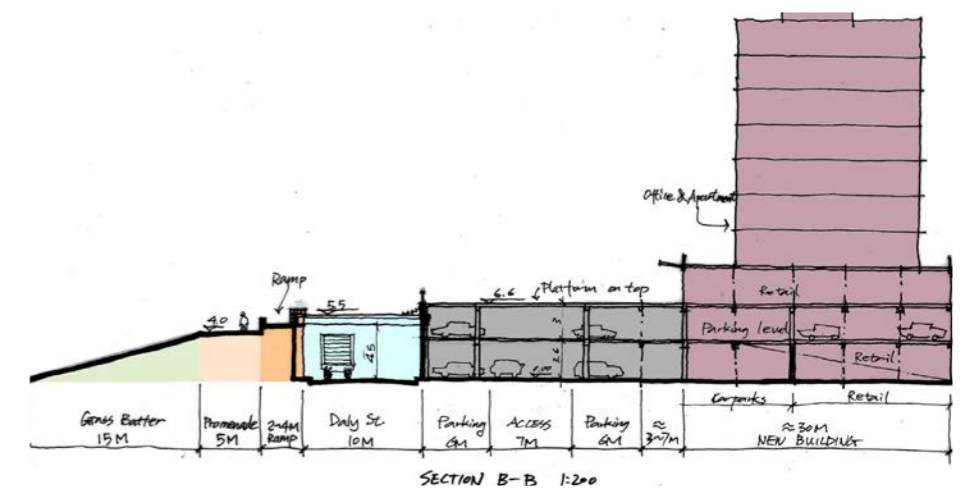


FIGURE 23 Indicative cross section - relationship of buildings to Daly Street



## 5 Issues and Opportunities

This section of the Scoping Report describes key issues and opportunities for the City Centre section flood protection project. Responses to issues can present opportunities and the discussion below is cast accordingly. The issues are only those that are known at this time. There are likely to be other issues identified in the process of developing design and proceeding through the planning process.

### 5.1 Public Land Changes

As described in section 4 Context, the river corridor is well used by a large number of people and many are regular users of the public open space it presents. The changes proposed, including the loss of wider sections of the corridor because of channel widening, will particularly affect those users taking advantage of the breadth of space for activities such as dog exercising or sports. The issues associated with the loss of the current amenity will need to be considered in terms of the alternate locations that could be used in the corridor for those same activities.

There will be reinstatement of paths and vegetation and it is an opportunity (as noted below under Urban Park concepts) to design strategically for the purposes intended for each section of the river. The utilisation of in-depth knowledge and voluntary support given to the Hutt River Trails by Rotary and others should be recognised and encouraged in the process of design and implementation if they are willing.

In the section of the river corridor closer to the city centre, the large expanses of car parking provide some utility to their users. Much of this parking will need to be removed to allow the channel widening and stopbank replacement. There is an issue as to whether this parking should be reinstated in some reduced form, or relocated elsewhere. The parking occupies an area that could otherwise be developed with higher and broader amenity values.

There are significant opportunities to connect from the city centre across the new stopbanks and river berm spaces to the river edge including the beach areas. It may be possible in association with rock edges to generate steps down to the river edge in places and possibly develop swimming spots also if groynes (such as at Waikanae River) are able to be installed.

As noted further below, an issue for the project is the appropriate way to enable the opportunities for the river corridor amenity to be scoped and determined in conjunction with the flood protection works. A process is proposed under section 8 Governance below.

### 5.2 Private Land Acquisition

As described in section 2, there is a need to acquire some private land to enable the stopbanks to be upgraded. There are four residential buildings on 3 sites directly affected at Mills Street, although the complex of four buildings on

one cross leased site may suggest the purchase of more is required. The value given to the purchase is \$2.4M. There is also commercial property immediately upstream of the Melling Bridge for which part is proposed to be purchased to allow widening of the stopbank in the constrained area around Melling Bridge. Discussions on purchase are still at initial stages with that owner.

The owners of the affected properties will be confronted with a series of issues and the GWRC will need to sensitively work through the challenging process of private property acquisition. The number of affected properties is relatively limited but that does not lessen the issues for the owners. GWRC's land acquisition is guided by the Public Works Act or similar. This process requires fair land values to be determined and sets a process for any disputes to be decided.

There are also issues for the properties that will remain that will sit adjacent to the new stopbank and the interface between the bank and the buildings and private land uses will require some sensitivity in design. New fences and walkways and the relative height and placement in relation to private properties will need to be carefully considered.

There are potentially some catalyst opportunities for the commercial area (as described in Making Places) for adjoining property to take advantage of the adjacency to the river and its public amenity, especially if this is improved.

### 5.3 Making Places – Flood Protection Project Integration

As described in section 4 Context above, the Making Places strategy for urban quality improvements that will catalyse new development and investment in the Hutt city centre is a significant initiative of HCC.

There are some obvious opportunities associated with an integrated approach to designing and implementing the flood protection works in conjunction with the Making Places proposals (or some derivative of these). However, the opportunity also presents issues at various levels.

There is the issue of what level of development is appropriate within and adjoining the floodplain and stopbanks. The river floodplain must be able to function for its flood containment and movement purpose so there will be a limit to the extent of development on the floodplain that is possible.

Any development within the floodplain will also need to be designed and managed to recognise that after a flood there may be significant clean up or repair and reinstatement of any landscape treatment or structural elements (walls, steps, paths, lighting, seats, plaza etc) if these are included. There will be a potentially significant on-going budget that needs to be provided for if the floodplain is to be developed to any extent beyond its being a large open grass space.

The responsibility for this investment over and above the basic flood protection function and the upkeep of that investment will be a matter that requires resolution between GWRC and HCC if this opportunity is to be satisfactorily realised and the opportunities taken. Section 8 Governance below suggests a process for resolution of this issue.

### 5.4 Urban Park Concepts

Interlinked with the Making Places concepts are the aspirations expressed in the HRFMP for the creation of a linear park. The proposed project presents an opportunity to understand the nature of that park through the City Centre section. Making Places addresses part of the section as it touches the edge of the CBD, but there are extensive lengths of the corridor that are not resolved as to their use and the landscape that will support that use.

There are multiple precedents for river parks and some excellent examples where these have been achieved (Figures 25a – 25g) and the process for determining the appropriate format for the subject area will require a carefully considered design process. The HRFMP provides some guidance but it is relatively high level. There is an opportunity for the river corridor in the subject section to be considered as series of spaces with different identities linked to uses, context, and cultural values. The process of understanding the linear park concept can also assist to resolve some of the issues described in the section including the changes to existing uses and adjacencies to existing uses.



FIGURE 25a



FIGURE 25a



FIGURE 25b



FIGURE 25d



FIGURE 25c

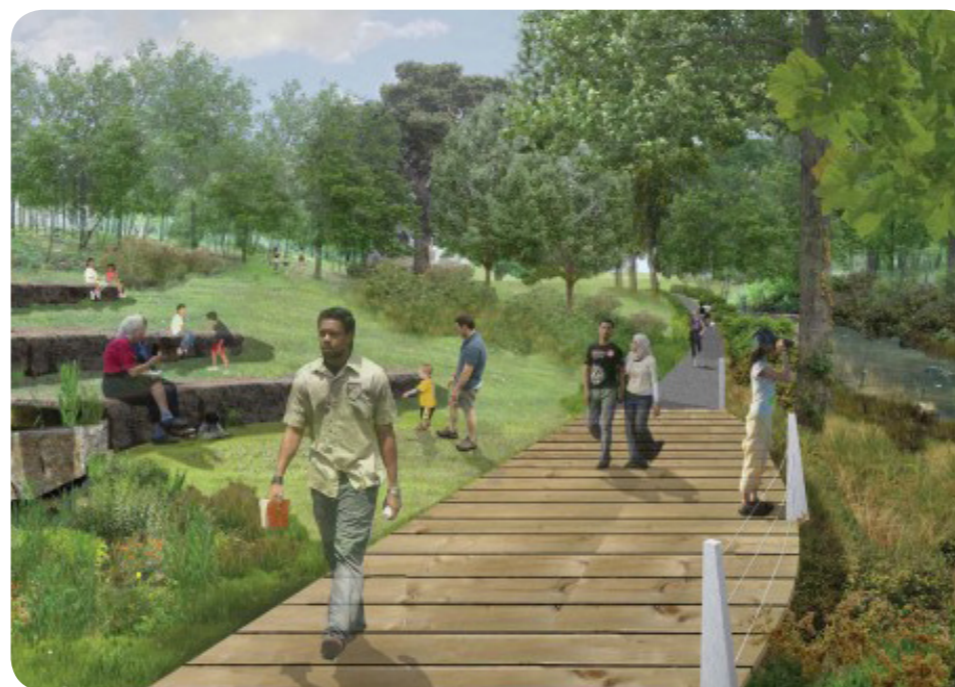


FIGURE 25c



FIGURE 25e



FIGURE 25f

### 5.5 Melling Intersection Upgrade

It has been discussed previously in this report in section 4 Context that at the Melling Bridge the river flow is restricted due to the narrower width of the river between banks/abutments and the height of the bridge above flood water levels. The HRFMP identifies replacement of the bridge as an element of the protection works to achieve the recommended standard and NZTA have investigated this recently in combination with a grade separated interchange at the highway. However, there is no progress on the bridge replacement and less substantial highway intersection upgrades are now proposed as an interim measure.

The issue is that because the bridge is not proposed to be replaced in the NZTA's current planning period, the best that can be achieved for flood protection is widening the banks at the bridge as far as possible. There is some effect on the west side of the river in terms of Block Road and parking areas. As with the city centre Making Places project, there is an opportunity to work with NZTA to develop the opportunities for achieving intersection improvements and flood protection together.

There may be an opportunity to reactivate the consideration of the bridge replacement as part of the flood protection works if NZTA is able to apply its recent move to the Better Business Case approach. This enables a broader qualitative and quantitative approach to be taken to determining the benefits of a project.

### 5.6 Ecological Considerations

The river and its margins is a habitat for birds, fish and other animals. The habitat values vary but there are issues associated with river works in that they can disturb or eliminate habitat. It is a significant opportunity from the project to enhance the ecological values of the river.

Those values are recognised statutorily as well as provide recreational opportunities (eg fishing) and are important for iwi. However, the value of the habitat depends largely on the composition of the vegetation. Currently willow planting dominates the river edge and native planting is not particularly widespread. Biodiversity would be improved through greater planting of local native species along the river edge, on the berms and adjoining areas.

To some extent if the changes are timed to avoid fish spawning/whitebaiting periods and with design consideration to providing fish habitat, then the issue of effects can be made to be positive. The loss of existing river edge vegetation will also be an issue in the sense of a visual change and the limited habitat value this provides. When complete, the channel widening will see reinstatement of some new river edge willow replanting and other areas of rock revetment in combination with native or exotic planting. If designed with biodiversity improvement in mind, rock areas can be excellent habitat for fish and a greater use of native vegetation can support bird and other wildlife.



FIGURE 25g

Related to habitat value are the existing stormwater discharges to the river. There is an opportunity for these to be improved in terms of capacity and water quality (through debris catching) as well as potential for those that relate to lateral streams to be reconfigured as more natural wetlands, or vegetated areas that can filter water prior to discharging to the river.

### 5.7 Construction Activities/Timing

Construction activities themselves can have adverse effects and the issues common to projects of this type include the disturbance created to residents and users of the public spaces by additional heavy vehicle movements, noise, dust and vibration. These issues can be managed with care as to the timing of the works to avoid times when those disturbances are most likely to be worst. Any project of this scale is expected to have a construction management plan and these matters can be well scoped and addressed through management and mitigation.

### 5.8 Long Range Provision for Flood Protection

The effects on flood risk from changes in climatic conditions, or changes in expectations of urban area protection may influence the future need for further improvements in flood protection planning and design.

It is prudent in planning for resilience that the project being designed at this time, takes into account the potential future demands for protection and does not foreclose the ability to address those demands. It will also be a requirement of securing planning consents under the RMA (refer to section 6 Planning Consents) that the future options are considered.

There are issues associated with trying to anticipate future needs for flood protection as the nature of those needs are unknown. If it is assumed as described in section 2 Background that flood risks will continue to exist and probably worsen, then it would be reasonable to plan for further increases being required in flood defences.

It is very unlikely that the commitment to continuing urban living and development of the floodplain would be abandoned so more channel widening, stopbank widening or heightening are likely protection measures. The proposed works can be designed to enable banks to be increased by ensuring they are well engineered as a base. The issue will be the extent of land required for any further stopbank work and this may necessitate additional land outside the current corridor to be acquired for the purpose. There may be a need to recognise this long range planning for future flood protection additionally in the District Plan.

## 6 Planning Consents

This section sets out the key Resource Management Act (RMA) approvals that would be required for the project as described in section 3 of this report. In addition this section outlines the potential issues, information and assessment requirements, and programme for an approvals process.

### 6.1 Works

Various works will be required, which may include:

- earthworks within the river corridor involving the excavation and import of fill to form the larger stopbanks, retaining walls and possibly floodwall;
- excavation within the bed of the river to enable the widening and removal of river bank edge and gravel;
- removal of vegetation (willows) along the river margin and subsequent replanting of willows to provide new edge protection;
- works within the bed of any tributary watercourses to the river
- reinstatement landscaping which may include changes to the stormwater system (eg treatment areas);
- construction of rock protection on the river channel edges of the widened river;
- a construction area including access roads and haul roads, any construction compounds and site office;
- discharges of sediment laden water to land or the river that may enter (either tributary or directly to the Hutt River) from the construction areas;
- relocation of services such as stormwater and potentially other service infrastructure such as power, gas and sewer; and
- other construction related activities (e.g. temporary site office, parking, storage and laydown areas, etc);

If the scope of the project broadens to include additional or integrated work such as projects associated with Making Places, NZTA, service providers, or to enable other currently unknown opportunities, then further analysis of the RMA requirements will be required.

### 6.2 Location and Planning Document Context

The river in the subject project section is within the Hutt City local authority area. Under the City of Lower Hutt District Plan, the majority of the project area is zoned “River Recreation” with overlays of “Primary River Corridor” (Figure 26). This zoning and overlay follows the full length of the Hutt River and immediately adjacent corridor between the existing stopbanks. The stopbanks are also shown on the District Plan maps as “Flood Protection Bank”. None of the existing stopbanks are designated, except for the new designation for the recently constructed Boulcott Stopbank (Ref. No. WRC 11), but all stopbanks are within the river corridor.

Within the river corridor and between the Melling Bridge and Ewen Bridge the riverside carpark is ‘designated’ by Hutt City Council (Ref. No. HCC 4). Immediately adjoining the river corridor are various zonings associated with the predominant land uses which are typically “Central Commercial” and “General Residential”.

There are no specific notations or requirements in the Regional Plans for the length of the Hutt River relating to this project.

### 6.3 RMA Approvals Required

Listed below is the primary RMA approvals anticipated to be required for the proposed flood protection project, including temporary construction works and permanent structures. Appendix 3 provides an evaluation and commentary against the key relevant provisions in the District Plan and Regional Plans. The specific consents required would need to be determined once the design process is completed. The key approvals required for the project would be as follows:

- A Notice of Requirement (lodged with HCC) to designate the stopbanks for the project including new, upgraded and extended stopbanks. The scope of the designation would be to provide for the construction, maintenance and upgrade (future) of the stopbanks. The location and extent of the designation could include any additional area required for construction purposes.
- Water Permit from GWRC to permanently divert Hutt River flood flows so as to contain flows in flood events of up to 2,800 cumecs (discretionary activity, Rule 16 of the Regional Freshwater Plan).
- Land Use Consent from GWRC for works within the bed of the Hutt River to widen the river channel and construct river bank protection works (rock and tree protection) and for works within the bed of any tributaries or drains associated with construction works (discretionary activity, Rule 49 of the Regional Freshwater Plan).
- Discharge Permit(s) and/or Water Permit(s) from GWRC for any activities associated with construction works, such as a water take and / or discharge of sediment laden water to land (discretionary activity, Rule 2 of the Regional Discharges to Land Plan).

As noted above, HCC has an existing designation for the riverbank carparks. It is likely the new designations for the upgraded/extended stopbanks would extend over part or all of this existing designation. The future of this existing designation will require discussion with HCC and may require its removal.

Section 177 of the RMA deals with the situation where designated land is already subject to an earlier designation. Under Section 177, the requiring authority responsible for the later designation may do anything in accordance with its designation if it has first obtained the written consent of the authority responsible for the earlier designation. The authority responsible for the earlier

designation may do anything that is in accordance with its designation, without needing the written consent of the later requiring authority. If HCC retain the existing designation, it is suggested protocols be developed between HCC and GWRC to manage works with the area of land jointly designated.

### 6.4 Information Requirements

All Notices of Requirement and Resource Consent applications must be accompanied by an Assessment of Environmental Effects (AEE). For a project of this nature and scale, a comprehensive AEE would be required. Many of the positive and adverse effects for this project are of a technical nature, therefore the AEE would need to be supported by a number of technical assessments.

Based on the current scope (outlined above) and the anticipated environmental effects, a list of technical assessments has been identified in the table following.

For designations, a key information statutory requirement is an assessment of alternatives (Section 171 of the RMA). This assessment needs to cover alternative sites, routes and methods considered for the project. With respect to the project, the assessment of alternatives could be considered at two levels. Firstly, a high-level evaluation drawing on the overall alternatives evaluation which informed the HRFMP (i.e. why this project was selected and other alternatives considered at that time). Secondly, a more detailed evaluation of alternatives in the design and construction of this project, such as alternative stopbank designs and construction techniques.

As noted in section 4, some assessment of the future options for flood protection should be undertaken.

### 6.5 Processes and Programme

Due to the requirement for a designation and Regional Council resource consents together with the scale of the project, it is considered the most efficient process is a single application package and process, where the designation and all consents are sought concurrently from HCC and GWRC. This approach would ensure that related matters are considered together under one combined assessment of environmental effects.

However, if some project details or components were not completed, or available to meet the information requirements for the resource consent application from GWRC, some maximum parameters may alternatively need to be specified. This approach to using maximum parameters would need to be discussed and confirmed with Environmental Regulation Department at GWRC. This consenting approach should be discussed with the relevant Council departments early in the process.

TECHNICAL ASSESSMENT	LIST OF POTENTIAL EFFECTS TO CONSIDER
Construction	Construction works – temporary effects management – access, traffic, safety
Culture	Effects on cultural values
Ecology	Terrestrial values of river bank vegetation and effects of its removal/replacement Aquatic values and effects from vegetation removal, river bed and bank disturbance, discharges (water quality) Avian values and effects from vegetation removal and disturbance to river bed
Hydrology	Flood risk assessment Options for flood risk including responses to climate change Effects on channel hydraulics and flood flows Effects on channel morphology and flood flows and river bed/bank erosion
Landscape and Visual	Visual impact from public view points Visual impact from key private viewpoints Impacts on landscape values and natural character of river and its margins
Infrastructure	Changes to services – eg stormwater, electricity, sewer
Recreation	Effects on recreational values, including river users, public access and river bank (corridor) use
Traffic and Parking	Loss of car parks within river corridor and any on-street parking Changes to streets (eg Daly Street if required) Construction traffic effects
Noise and Vibration	Construction works generated effects from noise and vibration
Urban Design	Relationship to context (CBD, residential and industrial area) Consistency with planning documents (eg Design Guides) Fit with strategic documents (eg Making Places)

In addition to the above, for a project of this scale, it is also probable that there may be other ancillary consents sought once the construction details have been more definitively established. These would include matters such as the exact location, diameter and length of individual culverts or changes to the infrastructure/ servicing, where there is insufficient design information available at the time of consenting the overall proposal. It is likely these consent applications can be processed on a non-notified basis. Therefore, once the specific consent requirements of the proposed works are fully defined, a review of the regional resource consents to be sought concurrently with the designation can be determined.

With a joint application for the Notice of Requirement and regional resource consents, a joint consenting process is considered the most efficient as well. At this stage, it is anticipated that the decision-making process for this project would be the “traditional” process, in that HCC and GWRC would jointly notify the Notice of

Requirement and resource consent applications. They would then hold a joint hearing to determine the applications for regional resource consents and make a recommendation on the Notice of Requirement. The hearing and decision would be by independent commissioners in order to recognise the consent authorities are also the applicant in this case.

If the decisions on the resource consents are appealed and/or the decision to confirm the Notice of Requirement is appealed, a subsequent hearing would be held in the Environment Court. If the decision was appealed, mediation through the Environment Court process may be able to resolve any appeals. In respect of timing it is programmed that the planning consent process would occur over a two year time frame (refer to section 3 in Funding and Programme).

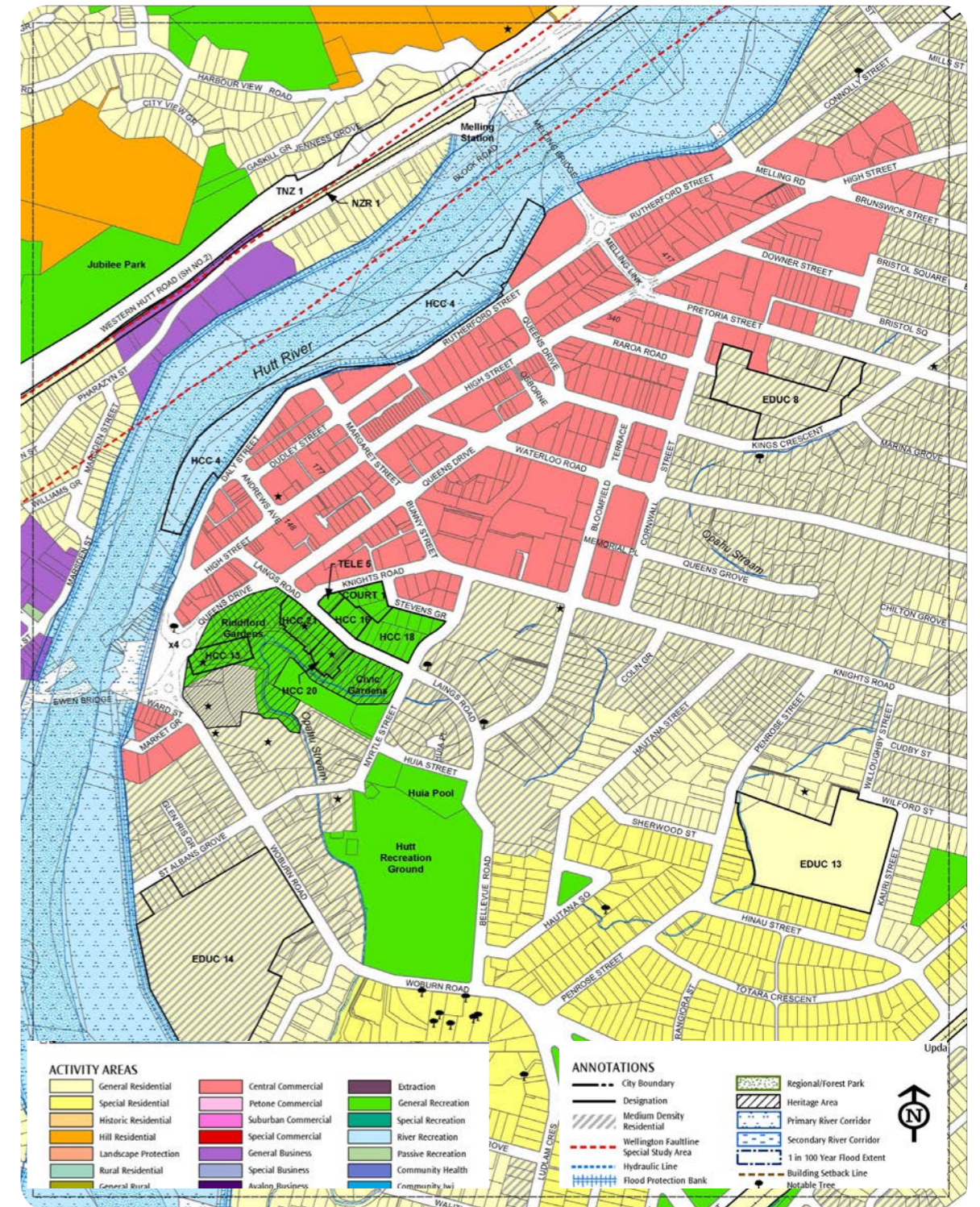


FIGURE 26 District Plan Map



## 7 Community Engagement

The City Centre section flood protection project will be of significant interest to a range of stakeholders, potentially affected parties, and the public generally. The HRFMP adopted in 2001 (Figure 27) has set the basis for protecting the Hutt Valley from floods and this was conducted through a collaborative process with Council, iwi and the public.

In progressing now to the specifics of developing the design and the process of securing planning approvals for the City Centre section through the RMA, GWRC intends to continue with the comprehensive community engagement precedent established in developing the HRFMP.

To date the preparation of this Scoping Report has included meetings with asset stakeholders including HCC, NZTA, service providers (Transpower, Capacity, Wellington Electricity, Power Co, Hutt River Trail Committee) and GWRC officers including those with specific knowledge of use of the river corridor. Councillors in both Councils have also been briefed.

Separate meetings were held with iwi representatives to discuss issues, opportunities and their potential involvement in the governance and management of the project.

The range of matters raised by stakeholders and iwi are summarised in Appendix 1 to this report. Typically the issues are captured in this report under section 5 Issues and Opportunities.

It is recognised that there are potentially affected parties that will have an interest beyond that of the public generally, particularly those people who have their property affected. Although no specific discussion has been undertaken with all of those parties in the preparation of this report, there have been other discussions held that have highlighted matters that will need to be sensitively worked through as part of the planning and design of the project.

It is anticipated that in terms of community engagement there will be asset stakeholder representation in some form of project group (refer to section 8 Governance below). That project group will connect to specific technical interests through its representatives. In terms of the wider community interest there will be information provided at the initiation of the design development process, review of design options in public forums and opportunities given throughout for feedback. The planning process itself will present opportunities for submissions and hearings with independent decision makers appointed to conduct this process.

A community engagement plan and communication plan will be prepared at the outset of the project for the approval of the Hutt Valley Flood Management Subcommittee to identify the objectives of the engagement process, key messages, the nature and timing of key actions (like meetings and open days), and the techniques used for engagement including electronic media.

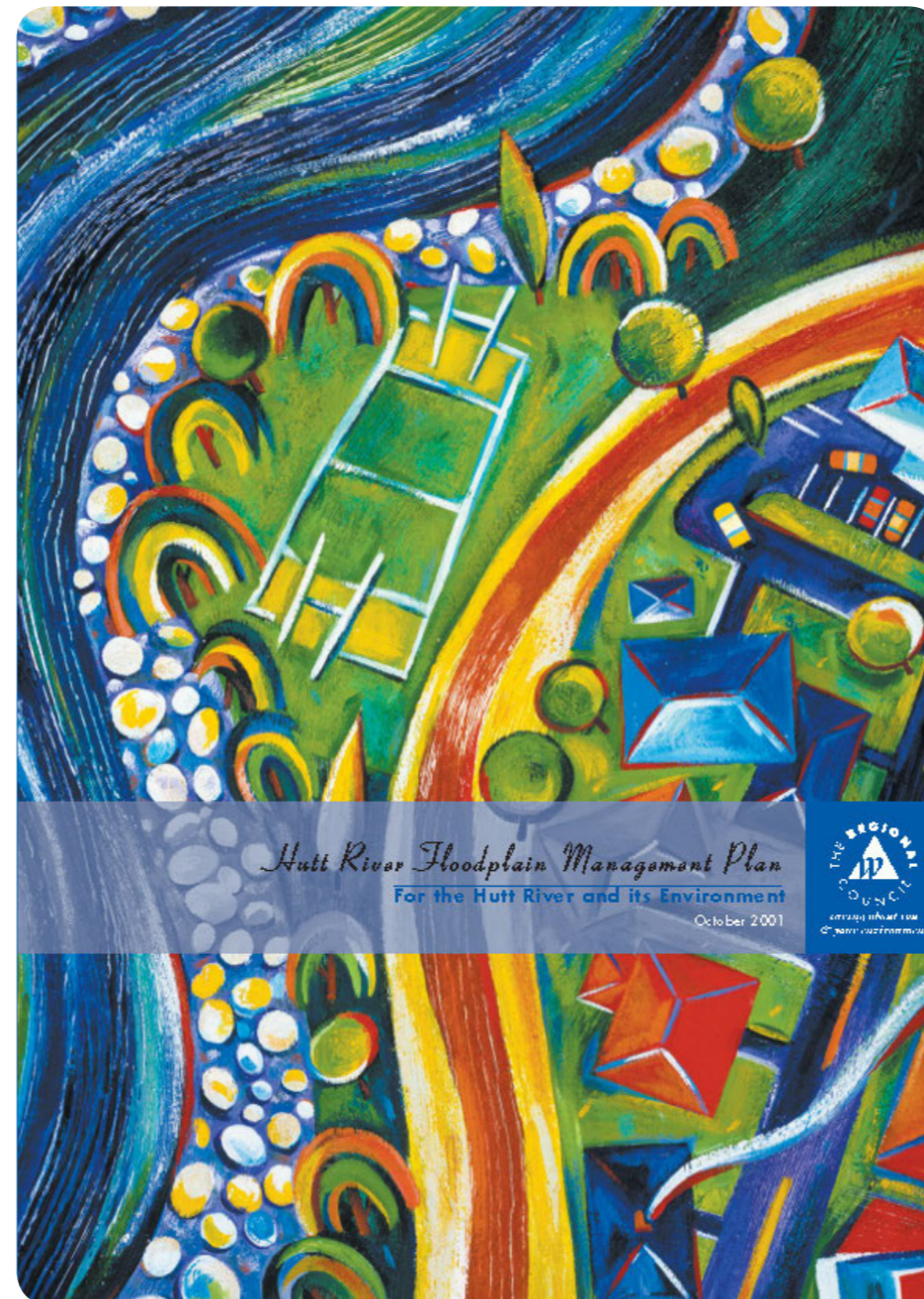


FIGURE 27 Hutt River Floodplain Management Plan

## 8 Governance

### 8.1 Hutt Valley Flood Management Subcommittee

The implementation of the HRFMP is governed by the Hutt Valley Flood Management Subcommittee (HVFMS) (previously known as the Hutt River Advisory Subcommittee and Hutt River Floodplain Management Advisory Committee). This Subcommittee was originally established in 1998 with an independent GWRC appointed chair and representatives of iwi, local councils (Upper Hutt and Hutt City), and GWRC at the time of the HRFMP's development. Since the HRFMP's adoption the terms of reference have been adjusted, and the purpose of the current subcommittee is to:

- A** Provide oversight of the development, implementation and review of Floodplain Management Plans (FMPs) of the Hutt River floodplain in a way which:
- recognises the need of the community to mitigate the effects of flooding to an acceptable level of risk and in a sustainable way
  - recognises that flood risk cannot be completely eliminated and that provisions must be implemented to handle residual risk
  - recognises that methods chosen to mitigate the effects of flooding must be affordable
  - balances the priorities of Council in funding flood mitigation methods with the aspirations and contribution of the local community for implementation of the methods and ensures that any flood management solutions chosen can be accommodated within the funding constraints of the Council's Long-term Council Community Plan
  - ensures that methods adopted through FMPs to mitigate the effects of flooding consider the river/stream environment, recognising the unique nature and the role that rivers/streams play in the lives of the community.
- B** Provide oversight of the public involvement process for FMPs within a framework recommended by this subcommittee which:
- ensures that the information base held by the community is made available to decision makers when appropriate
  - enhances community awareness of FMPs
  - develops public confidence in the process of FMPs
  - develops and maintains a network of contacts and mechanisms which can be used to provide community input required for FMPs and to obtain that input when appropriate.

The Subcommittee reports to the Environmental Wellbeing Committee of GWRC and is serviced by the Manager Flood Protection with the support of the Council Secretariat.

Since 2001, the HVFMS (and its predecessors) have overseen the implementation of the HRFMP. The City Centre upgrade project is part of the HRFMP and it is proposed that the HVFMS will continue to oversee the implementation of this project.

### 8.2 Project Steering Group

As noted previously in this report under section 5 Issues and Opportunities, there are significant opportunities that can be realised from integrating other public projects together with the proposed flood protection works. In particular the public projects associated with HCC's Making Places and NZTA's Melling intersection present potential opportunities to be integrated with the flood protection works.

In order to investigate and confirm those opportunities it is suggested that a Project Steering Group (or similar name) could be established. That group would include officer level representation from HCC, NZTA and iwi if they wish. It would be relatively small in size and tightly focussed. The group would not undertake planning or design work itself, but would appoint a design team to do so.

The HVFMS will remain as the governance body and the Project Steering Group will guide the design team on technical matters.

The Project Steering Group's brief, which would require some further development with the representatives and the HVFMS, would be aimed at guiding work towards the following outcomes:

1. The preparation of a master plan (commissioned from a design team) that integrates flood protection to the design standards set by the HRFMP with:
  - Making Places to the extent that these relate to the city-to-river connection and promenade
  - Melling intersection improvements to the extent that these relate to river interface and include the replacement of the Melling Bridge
  - Hutt River Floodplain Management Plan Environmental Strategy initiatives including improving cultural value references, stormwater quality, ecological and habitat values, recreational uses and movements in and connected to the river corridor
  - Service infrastructure network improvements, including stormwater, gas, sewer and power
  - Other opportunities to be defined

2. The preparation of a project plan including: (a) a strategy that identifies the critical connections between the component projects of the master plan and identifies those elements that can be undertaken independently, or that must be undertaken together; (b) a cost plan that estimates the costs of the project as a whole and the constituent elements, as well as any cost share arrangement ; and (c) a programme that describes the time frame over which the projects can be delivered.
3. The engagement with the constituent interests including public in determining a master plan that enables the optimum benefits for all those interests.

This approach will require the commissioning of a multidisciplinary design team to enable the three above objectives to be satisfied. It is envisaged that the design team would be commissioned by GWRC in consultation with HCC and NZTA and that a nine month time frame would be sufficient to deliver the outcomes sought.

The design team would be a specialist group including a project manager, river engineer, traffic and transportation engineer, landscape architect, ecologist, urban planner/designer and cost estimator. It is suggested the project design be led by an urban planner/designer to coordinate the various inputs, participate in consultation and document the concepts.

The design team would use the Project Steering Group as an interface with the interests of the key stakeholders.

At the conclusion of this process, the Project Steering Group would report through the HVFMS to the constituent agencies (HCC and NZTA and others as appropriate) and seek their confirmation of the plan, including any budgetary contribution. If the constituent agencies decide not to commit to the plan, then GWRC will revert to its base plan to achieve the required flood protection for Hutt City.

## 9 Risks and Responses

There are risks associated with any project of the scale of that proposed for the City Centre section flood protection improvements. The risks known at this stage are identified below along with responses to address these.

### 9.1 Planning Consents

There is a risk that the consents and designation required under the RMA are not approved by the delegated hearings panel. This may necessitate extra expense and time for an appeal to the Environment Court. If unsuccessful at appeal the project would be unable to proceed on the basis it is promulgated.

There is also a potential risk of conditions applied to a consent being untenable or directing a change in the scope of the work. This may necessitate changes to budgets or the on-going management of the project area for example.

To mitigate these planning approval risks, the project design (including development of an integrated project master plan as set out in section 8 Governance) is proposed to be developed in collaboration with stakeholders. It is also proposed that the technical inputs to the project will be provided by experts and that this will set a high quality platform for applications to the consent authorities.

### 9.2 Land Acquisition

There is land to be acquired to undertake the flood protection project. The process of land being acquired is guided by statute. Although a relatively linear process, there is risk that land required is delayed in its acquisition and this changes the project deliverables programme.

There is also the risk of the process becoming protracted which may adversely impact on the affected landowners and impact on GWRC's reputation.

The mitigation measure for the land acquisition risk is to remain in clear communications with affected landowners so that the risk of misunderstandings does not contribute to the issue. It will also be important that processes of the Public Works Act are followed as this in itself provides clarity as to the steps and support for landowners affected.

### 9.3 Integration with Other Agencies

As noted previously there are opportunities and, to some extent, expectations from HCC about the benefits of integrating Making Places with the flood protection works. These are reasonable expectations. However, there is the risk that the practicalities of project integration cannot be realised due to incompatibility between flood protection standards and the public amenity benefits sought by HCC. There is also the risk that even if the public benefits of both projects can be interwoven, that HCC does not commit to funding an appropriate and fair share of these costs.

The mitigation to this risk will be the process advocated in section 8 Governance whereby a nine month process seeks to establish the potential for an integrated project and seeks confirmation of the support for this from constituent agencies.

### 9.4 Construction Impacts

There will always be effects from construction of the scale proposed with the project. The process construction can generate issues in terms of noise, vibration and other disturbances. These are relatively well known effects given the work undertaken recently in the Boulcott area. The mitigation will be to apply the learnings from the recent Boulcott works and ensure that management plans and community liaison for the effects are in place prior to construction.

### 9.5 Costs and Programme

There is a risk that the costs of the project change from that budgeted or that the programme changes due to unforeseen issues. The proposal to undertake a master plan process will already extend the programme by some nine months. This may also generate changes to costs. The longer the project is delayed the greater the risk of a flood that will cause significant damage to the Hutt area. A mitigation to the costs and programme changes will be to undertake the master plan so that the costs of an integrated project are known. This will establish a clear basis for the work.

If this master plan is unable to be agreed by all the agencies, the work that is done will not have all been wasted as some will remain relevant to the flood protection works. Good project management will also address risks of costs and programme changes.

### 9.6 Personnel Changes

A project which has a long delivery time (some 10 years as proposed) has the risk that the people that start the process from all the agencies or parties involved will move on. There is a risk that with people changing that the understanding of the project is lost to some extent, or that key messages lose their clarity. The mitigation to this risk is to ensure that senior people involved in the project have intermediate level people working with them to ensure some continuity as far as possible. It is also important that communications and decisions are well recorded so new people can easily access the knowledge and understanding generated to that point.

### 9.7 Reputation

As a large scale public project it is inevitable that issues will arise. The risk is that those issues escalate to generate damage to GWRC or other agency reputation with stakeholders and the public. The mitigation to this risk is to ensure that the

communications with stakeholders remain open regardless of the issues encountered. Public information and communication is also required. On all levels the communications should be expedient, contextual and clear. A communications plan will be developed at the outset of the project to ensure that the appropriate basis for communications are in place.

### 9.8 Local Government

There are likely to be changes to local government in the Wellington region within the time frame of the project. The nature of those changes is not clear at this time. The risk is that with change in government that there is slippage in decision making or the commitments that affect the project delivery.

The mitigation to this risk is that the Project Steering Group remains as a conduit to whichever form of local government results and that, preferably with whatever structure ensues, that the relevant technical officer input is maintained. It will also mitigate the risk if there is an expedient process to determine the concept for the project and the requisite decisions are also expediently made so changes in government occur after the project is underway.

# 10 Concluding Actions

The summary actions that are proposed from the Scoping Report are set out in the table to the right. The actions are relatively simplistic, but aim to guide the immediate period from the conclusion of this Scoping Report towards activating a design process that examines and defines the nature of an integrated project design for the subject area. A more detailed project plan will need to be developed for this process as noted.

	SUMMARY ACTION	WHO	WHEN
A.	Hutt Valley Flood Management Subcommittee to accept the Scoping Report and endorse the actions	HVFMS	June 2013
B.	Report from HVFMS to HCC and GWRC recommending the approach proposed in Scoping Report of establishing a Project Definition phase in the project programme	HVFMS and GWRC (FP)	To GWRC and HCC agendas June/July 2013
C.	Assuming adoption by GWRC and HCC, then GWRC (FP) to develop a project plan including brief for design team, programme, key meeting dates, engagement plan, contact points and make up of Project Steering Group etc, and agree project plan with stakeholders and HVFMS	GWRC (FP) and HCC, NZTA	July
D.	Commission design team to prepare Project Concept Plan and commence work accordingly to project plan	GWRC (FP), HVFMS, Design Team and Project Steering Group	July – March 2014
E.	Report Project Concept Plan outcome to HVFMS and report HVFMS recommendations to HCC, GWRC and NZTA to confirm basis for on-going implementation or reverting to flood protection project	GWRC (FP) and HCC, NZTA, Design Team and Project Steering Group	March – June 2014
F.	Commence developed design and planning on basis of the above outcome	Dependant on action E	July 2014

# APPENDIX 1 stakeholder comment summary

## Strategic Planning Comments

- Recognise key purpose – flood protection for the Hutt Valley
- Desire for integrated project – now is chance to get it right
- Cross agency funding – coordinated investment - understand plans
- Need long range optioneering – 100 + years?
- Clarity of options – what considered + what tradeoffs?
- Need agreed ‘vision’ design objectives to test options

## Design – Environment Comments

- Aim for stormwater quality improvements – wetlands/streams
- Manage impact on the fish habitat
- Making Places – significant opportunities for the city
- Potential flexibility in Daly Street/stop bank connection
- Car parking on floodplain forecloses other options
- Linear park concept still relevant – urban character
- Balance investment in amenity structures/flood damage/obstacles
- Monitor before and after effects
- Cultural values assessment needed

## Design – Use

- Recreation use reasonably well understood
- Movement along corridor - transport and recreation
- Place – based activities in areas – dog exercise
- Access for fishing and swimming – place – based
- Lateral connections from city to river important

## APPENDIX 2 Hutt River Floodplain Management Plan Policies

### Policy 8: Requiring High Flood Protection Standards

#### Issue

By using high design and construction standards for new and upgraded flood protection structures, the threat to the safety and lives of Hutt Valley floodplain residents can be significantly diminished.

#### Policy

Flood protection structures must be built to the highest standards practicable, particularly in cases where the protected area cannot be evacuated and failure could lead to lives being lost. However, it needs to be recognised that failsafe structures are impossible to construct and there will always be a risk of failure.

### Policy 9: Acquiring Land for Structural Works

#### Issue

In some instances the Regional Council will need to acquire land for structural works.

#### Policy

The Regional Council will acquire management rights to all public land needed for structural works, preferably at no cost (other than conveyance costs). Some privately owned land will also be needed. Land may be gained through land exchange, and will be purchased only as the final option.

### Policy 10: Minimising the Adverse Effects of Physical Works

#### Issue

Constructing structural works can result in a range of short- to long-term adverse effects on the river environment. Physical construction works or the presence of completed structures may cause these effects. Effects can be managed using a number of tools.

#### Policy

Physical works will be appropriately managed to ensure that adverse environmental effects are minimised. Requirements for managing construction works will include:

- planning and employing sensible and environmentally responsible construction methods
- setting environmental performance standards from the resource consent process
- monitoring the effects of physical works to improve practices, where it is possible and practical to improve them.

Opportunities to enhance the river environment, to compensate for unavoidable negative effects, will be taken when the Regional Council carries out any structural works. This will largely be driven by the Environmental Strategy for the Hutt River.

### Policy 11: Managing the Channel to Protect River Alignments and Flood Defences

#### Issue

Flood defences can only be effective if the river channel edge is maintained.

#### Policy

Bank edge works must be constructed to provide:

- a river alignment that can be maintained to permit the safe passage of floods
- protection to flood defences, such as stopbanks, and to nearby development.

Where practicable, bank-edge works and adjoining berm areas should be designed to be reasonably secure from erosion where:

- they protect the flood defence foundations
- failure of the flood defences could lead to lives being lost.

At times it will be necessary to carry out work in the riverbed to protect the river edge.

### Policy 12: Maintaining the Flood Protection System Free from Encroachment

#### Issue

The Regional Council needs to be able to operate and maintain flood protection assets effectively, free from encroachment by unauthorised vegetation and structures.

#### Policy

The Regional Council will maintain the flood protection system free from encroachment by unauthorised activities. Practices and approaches to control encroachment include, but are not limited to:

- removing vegetation that affects stopbanks
- removing unauthorised structures from flood protection assets and river corridor land managed by the Regional Council.

### Policy 13: Dealing with Undesirable Activities

#### Issue

The Regional Council needs to be able to deal with ongoing undesirable or nuisance activities that can have a significant effect on public safety, the river environment, and the Council's assets. Until now the Regional Council has had mixed results trying to control these activities.

#### Policy

The Regional Council will promote a range of tools to help curb undesirable activities, including using a river ranger and producing new by-laws. Undesirable activities include, but are not limited to, adverse vehicle use, vandalism, rubbish dumping and uncontrolled animals.

#### Policy 14: Protecting Regional Council Assets

#### Issue

The Regional Council relies on certain tools to safeguard flood protection assets, including regional plan rules, notice boards, education, and owning land. Requirements set out in the Hutt River Asset Management Plan, and Utilities and Services policies contained in this Floodplain Management Plan, also reinforce the protection of assets. Regional rules are a particularly effective and enforceable way of protecting assets. A number of land-use rules to protect flood protection assets are contained in the Regional Council's Transitional Regional Plan. The Transitional Regional Plan will eventually be revoked because provisions in the Regional Freshwater and Soil Plans largely supersede it. However, revoking the Transitional Regional Plan could partly remove the Regional Council's ability to help prevent flood protection assets from being illegally interfered with, excavated and vandalised.

#### Policy

The Regional Council will:

- review the repealed rules
- determine the scope within existing legislation to protect flood protection assets, including producing by-laws
- develop new by-laws or other effective approaches to protect flood protection assets, where the need arises
- look at alternative ways to manage this issue, such as targeted education campaigns and employing a river ranger
- look at the supporting role that asset management plans and other Plan policies can play.

### Policy 15: Replacing Bridges

#### Issue

Some bridge crossings do not have the floodway capacity to pass the design standard flood, nor the ability to withstand high flood debris loads.

#### Policy

Bridges, and their associated floodways, must be improved to pass a 2800 cumec flood when the bridge owners decide to replace them. The early replacement of substandard bridge waterways will be actively encouraged through joint venture proposals, whereby the Regional Council facilitates the river works improvements in the vicinity of any bridge. This policy also applies to new bridge crossings, but excludes Akatarawa Bridge.

**Policy 16: Considering Flood Detention Dams****Issue**

Flood detention dams in the upper catchment would have the potential to reduce peak flood levels. However, dams also produce indirect flood protection costs and effects for the wider community downstream, which were considered during the development of structural measures for the Hutt Valley.

**Policy**

Detention dams will not be included as a flood mitigation measure in the Plan. Dams should be considered only if their net economic benefits are significantly greater than those for other measures that manage the flood risk within the affected community. Any benefit must also be weighed against the indirect costs

**Policy 17: Managing Riverbed Levels****Issue**

The Hutt Valley community has conflicting views on how the Hutt Riverbed levels should be managed. Opinions range from a belief that disturbing the riverbed should be minimised for environmental reasons, to a wish to see the return to wide-scale gravel extraction to increase the river's flood capacity. These views co-exist despite good riverbed monitoring information being made available to the public.

**Policy**

The Regional Council will produce riverbed level management guidelines for the Hutt River. The guidelines will influence how the Council manages bed levels on a day-to-day basis. The Regional Council will also seek to improve the public's understanding and awareness of:

- how gravel extraction and bed levels relate to river bank erosion
- how gravel extraction affects river ecology
- riverbed monitoring information, including regularly publicising monitoring results.

**Policy 18: Managing Gravel Extraction for Flood Protection****Issue**

Gravel extraction, including that done at the Hutt River mouth, remains an important method to reduce potential flooding effects on floodplain occupants.

**Policy**

The Regional Council will use gravel extraction as a flood management method where:

- continuing aggradation (gravel build-up) in the lower river mouth area is likely to cause significant increases in upstream river flooding levels
- significant localised riverbed aggradation is occurring.

Extraction can only be realistically considered where adverse effects on the community and environment will not be significant.

**Policy 19: Accounting for Stormwater Flooding****Issue**

Flooding from stormwater systems and small streams is a common occurrence in floodplain areas. Some areas can experience more significant and frequent stormwater flooding than others, and damages over time can be substantial.

Residents need to know more about stormwater and river flooding, in terms of both how they differ and how they are connected. There is also some confusion in the community regarding the roles of the regional and city councils in managing stormwater flooding. The behaviour of stormwater flooding can be very complex because of the urban environment's highly modified nature, and the councils are still improving their own understanding of stormwater floods.

**Policy**

The Regional Council will give technical assistance to the city councils, where requested, to help upgrade their understanding of stormwater flooding. The Regional Council will also continue to provide the public with information on stormwater and river flooding, including:

- the differences between river and stormwater flooding
- how storm events can simultaneously cause river and stormwater flooding
- how river and stormwater flooding can affect each other.

**Policy 20: Designing for Climate Change and Earthquakes****Issue**

The flood protection system will, on average, be designed to withstand floods that have a 1 in 440-year frequency. The system must also be designed to withstand natural hazards and other phenomena that occur on a similar time-scale, or even more frequently. Earthquakes and climate change are two phenomena that can significantly and dramatically affect the flood protection system. Climate change scenarios for the next 35 years, provided by the National Institute of Water and Atmospheric Research, predict that:

- flooding will occur more frequently
- equivalent flow return periods may halve (for example, a 1 in 100-year flood may become a 1 in 50-year event)
- the sea level will rise between 0 and 0.5 metres.

These changes could substantially lessen the flood protection system's effectiveness in the future. A major earthquake on the Wellington Fault, bordering the Hutt Valley, will occur on average once every 500 years. A major quake could cause wide-scale land subsidence or uplift throughout the Hutt

Valley, affecting the relative height of flood defences in relation to the river and sea levels. Ground shaking from such an earthquake could seriously damage stopbanks and other protection works. Both effects may render the flood protection system less effective. The last major earthquake to affect the Hutt Valley occurred on the Wairarapa Fault in 1855. It caused land in the lower valley to rise downstream of Taita Gorge, and shifted the Hutt River mouth about 2 kilometres east to its present position.

**Policy**

The Regional Council will account for climate change and the earthquake hazard by:

- supporting the Institute of Geological and Nuclear Sciences to investigate fault rupture on the Wellington and Wairarapa faults, and at the Pacific and Australian plate boundaries
- incorporating earthquake investigation outcomes into flood protection work designs, where appropriate
- incorporating climate change scenarios by designing major stopbanks to 2800 construction standards
- providing the city councils and the public with information about the potential effects of climate change and earthquakes on the flood protection system.

**Policy 21: Removing Existing Services****Issue**

Services in stopbanks or the river corridor can increase the chances of the stopbanks failing and river berms being eroded during floods.

**Policy**

Existing services will be removed from stopbanks and, where possible, relocated outside the river corridor during stopbank, river corridor or service upgrading.

**Policy 22: Locating New Services in the River Corridor****Issue**

Services in stopbanks or the river corridor can increase the chances of the stopbanks failing and river berms being eroded during floods.

**Policy**

New services will not be located in or under a stopbank. New services can be located in other areas of the river corridor (excluding stopbanks) only with the prior approval of the Regional Council.

**Policy 23: Rationalising Existing and New Stormwater Outlets**

Issue  
Stormwater outlets can initiate failure of stopbanks, berms and bank-edge protection works. The risk of failure needs to be minimised.

Policy  
The number, location and design of existing and new stormwater outlets should be rationalised during stopbank or stormwater service upgrading.

Issue  
Service crossing points produce a weakness in stopbanks, and can initiate their failure during floods.

Policy  
Services will only cross the river at approved or designated service crossings.

**Policy 24: Protection Benefits for Services**

Issue  
Service assets within the river corridor are at risk of damage from floods. The flood protection system does not directly provide for their protection.

Policy  
The structural measures are constructed to provide flood protection for the Hutt Valley community. Any protection this provides to utilities or services is secondary, unless individual agreements with service owners provide for a specific protection benefit.

**Policy 25: Protecting Key Network Facilities**

Issue  
Key utility network facilities within the river corridor could experience flood damage, which may put their ongoing functioning of related services in jeopardy during a flood.

Policy  
Key utility network facilities should be protected to a 1900 cumec standard and have contingency plans to cope with the loss of their services in a major flood.

**Policy 26: Upgrading the Melling Substation**

Issue  
The Melling Substation is located in the river corridor, which exposes it to a high risk of flooding and erosion.

Policy  
The Melling Substation is a special case, and a strategy for maintaining and upgrading this facility within the river corridor has been agreed with the owner.

Policy 27: Services Crossing the River Corridor



## APPENDIX 3 planning consent requirements

### District Plan – City of Lower Hutt

Rule Reference and Activity	Rule	Activity Status	Comment
<b>River Recreation Zone</b> – includes the Hutt River and land adjacent to this water body. Refer to District Plan Maps C3 and D4			
7C 2.1 Permitted Activities	<p>(a) Works necessary for the management of any river or stream by the Wellington Regional Council or the Hutt City Council and maintenance activities within reserves by Wellington Regional Council or Hutt City Council.</p> <p>(b) All recreation and leisure activities, but excluding motorised activities.</p> <p>(c) Landscape furniture.</p> <p>(d) On the land identified in DP 72284 but excluding that area identified as 'G' and shown on Appendix River Recreation 1, extraction activities limited to extraction, processing, storage, removal, ancillary earthworks, removal and deposition of overburden and rehabilitation works, and ancillary administrative activities</p>	Permitted	<p>The management of any river or stream by the Wellington Regional Council is permitted, subject to conditions on outdoor lighting and lux levels at neighbouring dwellings, and the 'General Rules set out in Section 14 of the District Plan. The General Rules provide for matters such as traffic, signs, noise, hazardous facilities, significant natural, cultural and archaeological resources, heritage buildings and structures, trees, natural hazards, earthworks and temporary activities. A detailed assessment of these matters would be required to ascertain compliance and whether land use consent under the District Plan was required.</p> <p>Gravel extraction activities are also permitted along the Hutt River, excluding the area shown as "G" which is situated closer and parallel to the Petone foreshore. All extraction activities are subject to conditions including the hours of operation and overall duration of activities, limits on the height of stockpiles and machinery, ensuring communication with neighbouring properties, managing dust nuisance and visual effects. A detailed assessment against these conditions would be required to ascertain compliance and whether land use consent under the District Plan was required for any river widening works that involved gravel extraction.</p>
7C2.2.1 Permitted Activity Conditions	<p>(a) Lighting: Any activity which requires outdoor areas to be lit must ensure that direct or indirect illuminance does not exceed 8 lux at the window of a dwelling on a neighbouring site.</p> <p>(b) General Rules: Compliance with all General Rules - see Chapter 14.</p> <p>(c) On the land identified in DP 72284 but excluding that area identified as 'G' and shown on Appendix River Recreation 1 the following Permitted Activity Conditions shall apply:</p> <p>(i) Any permitted extraction activity may only occur for a maximum of 21 days, but not necessarily consecutive, in a 90 day period. The operator shall maintain and make available to Council on request, records of the dates on which extraction</p>		See above

	<p>activities occur.</p> <p>(ii) Except for structures and equipment associated with processing activities, the maximum height shall be 8.0m. For structures and equipment associated with processing activities, the maximum height shall be 12.0m. Formed stockpiles shall not exceed a maximum height of 12.0m.</p> <p>(iii) Landowners and adjacent landowners shall be advised of the activity at least one week in advance of the commencement of the activity.</p> <p>(iv) All activities shall be undertaken in a way that avoids creation of a dust nuisance at or beyond the boundary of the area identified by DP 72284 but excluding that area identified as 'G'.</p> <p>(v) For all activities:</p> <ul style="list-style-type: none"> <li>• 6.00am – 6.00pm Monday to Friday (excl public holidays) and</li> <li>• 6.00am – 1.00pm Saturday (excl public holidays)</li> </ul> <p>(vi) Structures and equipment shall be removed from the area following the completion of each phase of the extraction activity.</p> <p>(vii) The area shall be managed and maintained in a tidy and safe manner at all times. Any accumulated non-alluvial materials associated with the extraction activity shall be removed from the area at least once every six month period.</p> <p>(viii) Waste alluvial material shall be spread over the extraction area at the completion of each phase of extraction activity.</p>		
<p>7C2.2.2 Discretionary Activities</p>	<p>(a) Motorised recreation activities on the surface of rivers.</p> <p>(b) Buildings and structures not associated with flood protection measures or river works.</p> <p>(c) Hutt River Mouth, Part Section 1 SO 36292 (identified in Appendix River Recreation 2), the processing (crushing, screening, washing and blending), storage, distribution and sale of aggregates, ancillary earthworks, rehabilitation works, and associated</p>	<p>Discretionary</p>	<p>A discretionary resource consent may be required, should the flood protection works and gravel extraction activities not comply with any of the permitted activity conditions.</p>

	buildings and structures. (d) Except where stated in the General Rules, any Permitted Activity which fails to comply with any of the relevant Permitted Activity Conditions, or relevant requirements of Chapter 14 - General Rules.		
7C 2.2.3 Non-Complying Activities	(a) All other activities not listed as a Permitted or Discretionary Activity.	Non-Complying	This category would only be relevant if there were works and activities proposed, that were not related or associated with the flood protection upgrade.
Rule Reference and Activity	Rule	Activity Status	Comment
<b>General Residential Zone – the western end of Mills Street</b>			
4A2.5	(a) All other activities not listed as a Permitted, Controlled, Restricted Discretionary, or Discretionary Activity	Non-Complying	The works and activities required to provide flood protection structures are not specifically provided for in the Residential Zone, therefore works and activities on land at the end of Mills Road would be a non-complying activity. It is noted that the General Residential Zone recognises and provides for flood hazard risk based on a 1:100 year flood. The provisions restrict building size and location, or require floor level heights based on properties located within the primary or secondary river corridors, and those not afforded protection by stopbanks.
Rule Reference and Activity	Rule	Activity Status	Comment
<b>Central Commercial Zone – the western end of Melling Link, Rutherford Street (Harvey Norman and Repco)</b>			
5A2.2	(b) The construction, alteration of, and addition to buildings and structures over 12 metres in height (except for those works permitted under Rules 5A 2.1(b) and (c)) and where any part of the building or structure fronts a street, pedestrian mall, pedestrian walkway, or other public space identified in Appendix Central Commercial 5 – Wind Protection.	Restricted Discretionary	The rules do not specifically provide for the construction, operation and maintenance of flood protection structures, but does provide for the generic construction, alteration of and additional to buildings and structures, as a Restricted Discretionary Activity and subject to conditions. A detailed assessment against these conditions would be required to ascertain compliance and whether a restricted discretionary or full discretionary consent under the District Plan would be required for any stopbank works within the Central Commercial Zone.  It is noted the Central Commercial Zone recognises the relationship to the Hutt River and seeks to managing activities and development along the river frontage in conjunction with flood protection works (Policy 5A 1.1.5(a)). Policy(b) seeks to ensure activities and development does not adversely affect the stability of the flood protection works, limit public access to the river to impact on the amenity, natural and recreational values of the area.
Rule Reference and Activity	Rule	Activity Status	Comment
<b>Designations</b>			

WRC 11 : The Boulcott Hutt Stopbank Project	Designation for: Flood protection purposes: To enable the construction, upgrading and maintenance of stopbanks and associated works necessary to support stopbanks.	n/a	The Boulcott Hutt Stopbank Project is a recently approved designation to the District Plan. The designation has 71 conditions covering a wide range of matters. No other existing Wellington Regional Council stopbank in the Hutt Valley is protected or enabled through use of designations.
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**Regional Freshwater Plan for the Wellington Region (December 1999, updated January 2012)**

Rule Reference and Activity	Rule	Activity Status	Comment
6.1 Water Quantity and the Taking, Use, Damming or Diversion of Fresh Water			
[Rule 9A Diversion of water from an artificial watercourse or drain	<p>The diversion of water from an artificial watercourse or drain, including any associated disturbance of the drain bed or deposition on the drain bed during construction of the diversion; is a permitted activity, provided that it complies with the conditions specified below:</p> <p>(1) All material used to construct the diversion but which is not part of any diversion structure shall be removed from the artificial watercourse or drain and disposed of in an appropriate manner.</p> <p>(2) All reasonable steps shall be taken to minimise the release of sediment to water during construction.</p> <p>(3) There shall be no adverse effects on the availability of water supply for upstream or downstream water users other than for a temporary period during construction of no more than 24 hours.</p> <p>(4) There shall be no flooding of land, including neighbouring land, on properties upstream or downstream of the diversion.</p> <p>(5) The ability of the artificial watercourse or drain to convey flood flows shall not be reduced.</p> <p>(6) There shall be no lowering of water levels in any river, lake, or wetland.</p> <p>(7) Fish passage shall not be impeded other than for a temporary period during construction of no more than 24 hours.</p> <p><i>Note: For the purpose of this rule, "drain" means a highly modified watercourse or river that is channelled to such an extent that it has the characteristics of a farm drainage</i></p>	Permitted Activity	This rule would be applicable if the project involved the diversion of any drain during the construction of the project.

	<i>canal (see section 3 of the Plan).</i>		
Rule 16 Taking, use, damming or diversion of water, or the transfer to another site of any water permit to take or use water	<p>The taking, use, damming, or diversion of any fresh water, or the transfer to another site of any water permit to take or use water:</p> <ul style="list-style-type: none"> <li>• that is not specifically provided for in any other rules in this Plan; and</li> <li>• which cannot meet the requirements of those rules; and</li> <li>• that, for takes of water from the Lower Hutt Groundwater Zone (Taita Alluvium/Waiwhetu aquifers), would not cause the maximum rate of takes authorised by resource consents to exceed 32.85 million cubic metres per year; and</li> <li>• which is not a non-complying activity in Rules 17, 18, [19, 19A or 19B]</li> </ul>	Discretionary	This rule provides for the water diversion during a flood event. Enquiry with the Regional Council's Regulatory team is advised to understand the relationship with the consented water take for the Boulcott stopbank project, as the flood water would be transferred down from Boulcott to the City Centre flood plain.
<b>7.1 Use of the Beds of Rivers and Lakes and Development on the Floodplain</b>			
Rule 22 Maintenance, repair, replacement, extensions, additions and alterations to structures (excluding extensions of linear rock protection and over head cables)	<p>The maintenance, repair, replacement, extension, addition to, or alteration of any existing lawful structure or any part of an existing lawful structure (excluding extensions of linear rock protection (Rule 23) and excluding the erection, use, maintenance, alteration, replacement, or addition of over-head cables (Rule 32)) that is fixed in, on, under, or over the bed of any river or lake, including any associated:</p> <ul style="list-style-type: none"> <li>• disturbance of river or lake bed; or</li> <li>• deposition on the river or lake bed; or</li> <li>• temporary diversion of water; which</li> </ul> <p>(1) is contained within the form of the existing structure; or</p> <p>(2) adds no more than whichever is the lesser of;</p> <ul style="list-style-type: none"> <li>• 5% to the plan or cross-sectional area of the structure; or</li> </ul> <p>Use of Beds of Rivers and Lakes and Development on the Floodplain 117</p> <ul style="list-style-type: none"> <li>• 1 metre in horizontal projection and 1 metre in vertical projection; measured from the structure as it was on 25 January 1997 (the date the Proposed Plan was publicly notified); and</li> <li>(3) disturbs sand, shingle, gravel, or other natural river or lake bed material over an area less than 2 square metres per lineal metre of structure measured along the length or breadth of the structure;</li> </ul>	Permitted	<p>This rule may be relevant should there be any minor works to structures within the Hutt River bed associated with the project. The rule specifically excludes works associated with linear rock protection and this work is provided in Rule 23 or 49.</p> <p>Note: The Hutt River from NZMS 260 R26 899 118 to R27 700 985 is identified as a Water Bodies with Important Trout Habitat (including spawning areas) - Water Quality to be Managed for Fishery and Fish Spawning Purposes. The project area is not within this identified section of the Hutt River.</p>

	<p>Conditions</p> <p>(1) No contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) shall be released to water from equipment being used for the operation, and no refuelling of equipment shall take place on any area of river or lake bed.</p> <p>(2) All material removed or demolished from the structure (or any part of the structure), and any excess material from the construction operation, shall be removed from the river or lake bed and disposed of in an appropriate manner.</p> <p>(3) Fish passage shall be maintained during any construction activities and all works shall be undertaken in a manner that will provide for fish passage.</p> <p>(4) In any part of the river or lake bed covered by water in any water body identified in Policy 4.2.14 (Appendix 4 - Water bodies with important trout habitat), the activity shall not take place between 31 May and 31 August.</p> <p>(5) All reasonable steps shall be taken to minimise the release of sediment to water during construction.</p> <p>(6) Car bodies or demolition rubble shall not be used as a structural material.</p> <p>(7) Water is only diverted for the period that is necessary to carry out the works.</p>		
<p>Rule 40 Removal of vegetation</p>	<p>The trimming and removal of vegetation[, including any associated;</p> <ul style="list-style-type: none"> <li>• disturbance of any lake or river bed; or</li> <li>• deposition on the river or lake bed; or</li> <li>• temporary diversion;]</li> <li>• from the bed of any river or lake:</li> <li>• to avoid or mitigate the adverse effects of flooding or erosion, or</li> <li>• for the purpose of protecting structures;</li> </ul> <p>which is not in a river or lake bed identified in Policy 4.2.10 (Appendix 2 – water bodies with a high degree of natural character) is a Permitted Activity provided it complies with the conditions listed below.</p> <p>Conditions</p> <p>(1) No contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) shall be released to the river bed from equipment being used for the operation, and no</p>	<p>Permitted</p>	<p>This rule is relevant for the proposed widening works to the Hutt River banks. If compliance with this rule and conditions cannot be achieved a discretionary activity consent under Rule 49 is required.</p> <p>Note: The Hutt River from NZMS 260 R26 899 118 to R27 700 985 is identified as a Water Bodies with Important Trout Habitat (including spawning areas) - Water Quality to be Managed for Fishery and Fish Spawning Purposes. The project area is not within this identified section of the Hutt River.</p>

	<p>refuelling of equipment shall take place on any area of river or lake bed.</p> <p>(2) All reasonable steps shall be taken to minimise the release of sediment to water during the activity.</p> <p>(3) In any part of the river or lake bed covered by water in any water body identified in Policy 4.2.14 (Appendix 4 - Water bodies with important trout habitat), the activity shall not take place between 31 May and 31 August.</p> <p>(4) There shall be no disturbance to nesting Banded Dotterels (<i>Charadrius bicinctus</i>), Black Fronted Dotterels (<i>Charadrius melanops</i>), Black Billed Gulls (<i>Larus bulleri</i>), Pied Stilts (<i>Himantopus leucocephalus</i>), or Variable Oystercatchers (<i>Haematopus unicolor</i>) South Island Pied Oystercatcher (<i>Haematopus ostralegus</i>), Caspian Terns (<i>Sterna caspia</i>), White-Fronted Terns (<i>Sterna striata</i>), and Spur-Winged Plover (<i>Vanellus miles</i>).</p> <p>(5) Public access shall not be restricted more than is necessary to complete the removal of vegetation.</p> <p>(6) No machinery shall be left overnight in an area of river or lake bed covered by water.</p> <p>(7) All equipment and materials used for the removal of vegetation shall be removed from the river or lake bed on completion of the operation.</p> <p>Note: The spray application of agrichemicals over water bodies or over river and lake beds is addressed in the Regional Air Quality Management Plan.</p>		
<p>Rule 41 Planting</p>	<p>The deliberate introduction or planting of any plant except:</p> <ul style="list-style-type: none"> <li>• crack willow (<i>Salix fragilis</i>); and grey willow (<i>Salix cinerea</i>); other than on the margins of rivers where they are already predominant; or</li> <li>• any introduced, submersed aquatic plant; or</li> <li>• any species listed in the Regional Pest Plant Management Strategy;</li> <li>• [including any associated;</li> <li>• disturbance of any lake or river bed; or</li> <li>• deposition on the river or lake bed; or</li> <li>• temporary diversion;]</li> <li>• in the bed of any river or lake to remedy or mitigate the</li> </ul>	<p>Permitted</p>	<p>This rule is relevant for the proposed tree protection on the Hutt River banks. If compliance with this rule and conditions cannot be achieved a discretionary activity consent under Rule 49 is required.</p> <p>Note: The Hutt River from NZMS 260 R26 899 118 to R27 700 985 is identified as a Water Bodies with Important Trout Habitat (including spawning areas) - Water Quality to be Managed for Fishery and Fish Spawning Purposes. The project area is not within this identified section of the Hutt River.</p>

	<p>adverse effects of flooding, erosion, or non-point source discharges of contaminants, or to restore habitat, is a Permitted Activity, provided it complies with the conditions below.</p> <p>Conditions</p> <p>(1) No contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) shall be released to the river bed from equipment being used for the operation, and no refuelling of equipment shall take place on any area of river or lake bed.</p> <p>(2) All reasonable steps shall be taken to minimise the release of sediment to water during the activity.</p> <p>(3) In any part of the river or lake bed covered by water in any water body identified in Policy 4.2.14 (Appendix 4 - Water bodies with important trout habitat), the activity shall not take place between 31 May and 31 August.</p> <p>(4) There shall be no disturbance to nesting Banded Dotterels (<i>Charadrius bicinctus</i>), Black Fronted Dotterels (<i>Charadrius melanops</i>), Black Billed Gulls (<i>Larus bulleri</i>), Pied Stilts (<i>Himantopus leucocephalus</i>), or Variable Oystercatchers (<i>Haematopus unicolor</i>) South Island Pied Oystercatcher (<i>Haematopus ostralegus</i>), Caspian Terns (<i>Sterna caspia</i>), White-Fronted Terns (<i>Sterna striata</i>), and Spur-Winged Plover (<i>Vanellus miles</i>).</p> <p>(5) Public access shall not be restricted more than is necessary to complete the planting.</p> <p>(6) No machinery shall be left overnight in an area of river or lake bed covered by water.</p> <p>(7) All equipment and materials used for the removal of vegetation shall be removed from the river or lake bed on completion of the operation.</p>		
<p>Rule 48 Placement of impermeable erosion protection structures</p>	<p>The placement of any impermeable rock groyne, rock rip rap, or gabion, which is an integral part of any Floodplain Management Plan or River Control Scheme that is fixed in, on, or under, the bed of any river or stream, including any associated:</p> <ul style="list-style-type: none"> <li>• disturbance of river bed; or</li> <li>• deposition on the river bed; or</li> <li>• diversion of water;</li> </ul>	<p>Controlled Activity</p>	<p>This rule is relevant for the proposed rock protection on the Hutt River banks and depending on how far the rock protection would extend into the river will determine the activity status. If compliance with this rule cannot be achieved, a discretionary activity consent under Rule 49 is required.</p> <p>Note: The Hutt River from NZMS 260 R26 899 118 to R27 700 985 is identified as a Water Bodies with Important Trout Habitat (including spawning areas) - Water Quality to be Managed for Fishery and Fish Spawning Purposes. The project area is not within this identified section of</p>



	<p>(1) which is not in a water body, identified by policy 4.2.10 (Appendix 2 – Water bodies with a high degree of natural character); and</p> <p>(2) which extends into the available river bed width from the bank no more than whichever is the lesser of:</p> <ul style="list-style-type: none"> <li>• 10% of the width of the water body; or</li> <li>• 10 metres;</li> </ul> <p>is a Controlled Activity provided that it complies with the standards and terms specified below.</p> <p>Standards</p> <p>(1) No contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) shall be released to water from equipment being used for the operation, and no refuelling of equipment shall take place on any area of river or lake bed.</p> <p>(2) Any excess material from the construction operation shall be removed from the river bed and disposed of in appropriate manner.</p> <p>(3) In any part of the river or lake bed covered by water in any water body identified in Policy 4.2.14 (Appendix 4 – Water bodies with important trout habitat), the activity shall not take place between 31 May and 31 August.</p>		<p>the Hutt River.</p>
<p>[Rule 48A Uses of land within the Waiohine River Floodway, the Lower Ruamahanga River Floodway, and the Hutt River Floodway</p>	<p>The use of land in a floodway, other than a use:</p> <ul style="list-style-type: none"> <li>• that is consistent with the purpose of flood protection that the floodway was designed for, or</li> <li>• that is for the maintenance or repair of an existing structure, which does not extend, or add to, the external dimensions of any structure; or</li> <li>• that was lawfully established by a resource consent prior to 9 February 2002 (the date Plan Change 1 to the Regional Freshwater Plan was notified); within:</li> </ul> <p>(2) the Hutt River Floodway<sup>2</sup>, which:</p>	<p>Restricted discretionary activity.</p>	<p>This rule permits the use of land within the Hutt River floodway for the purpose of flood protection, but most other uses require a Restricted Discretionary Activity consent.</p> <p>There was some discussion over the jurisdiction of this rule in the Boulcott decision, as a result of matters raised by submitters. However the decision makers concluded that no land use consent from the Regional Council was required in terms of Section 9 of the RMA.</p>

<sup>2</sup> For the purposes of the Regional Freshwater Plan, the river corridor for the Hutt River is:

- (1) the river bed; and
- (2) the land area between any river bed and the stop bank adjacent to the river bed; and
- (3) in the following places, where there is no stopbank adjacent to the river bed;

	(a) Erects, places, or extends any structure that obstructs the flow of water; (b) Deposits more than 20 cubic metres of any substance;		
Rule 49 All remaining uses of river and lake beds	The use, of any river or lake bed; • which is not specifically provided for in Rules 22 to 48; and • which cannot meet the requirements of Rules 22 to 48; and • which is not a non-complying or prohibited activity in Rules 50 and 51	Discretionary activity	Depending on compliance with the aforementioned rules, a discretionary consent would be required for all works within, on, under or over the bed of the Hutt River.

- (a) from Melling Bridge to Moonshine Bridge, the land area between the river bed and State Highway 2 (but not including State Highway 2), other than any residential activity area identified in the Proposed District Plan for Hutt City or the Operative District Plan for Hutt City; and
- (b) from Pomare Bridge to the Silverstream Road Bridge, the land area between the river bed and the Eastern Hutt Road (but not including the Eastern Hutt Road); and
- (c) from the Silverstream Road Bridge to the Stopbank at Trentham Memorial Park, a 200 metre wide area of land adjacent to the river.]

