

# 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.

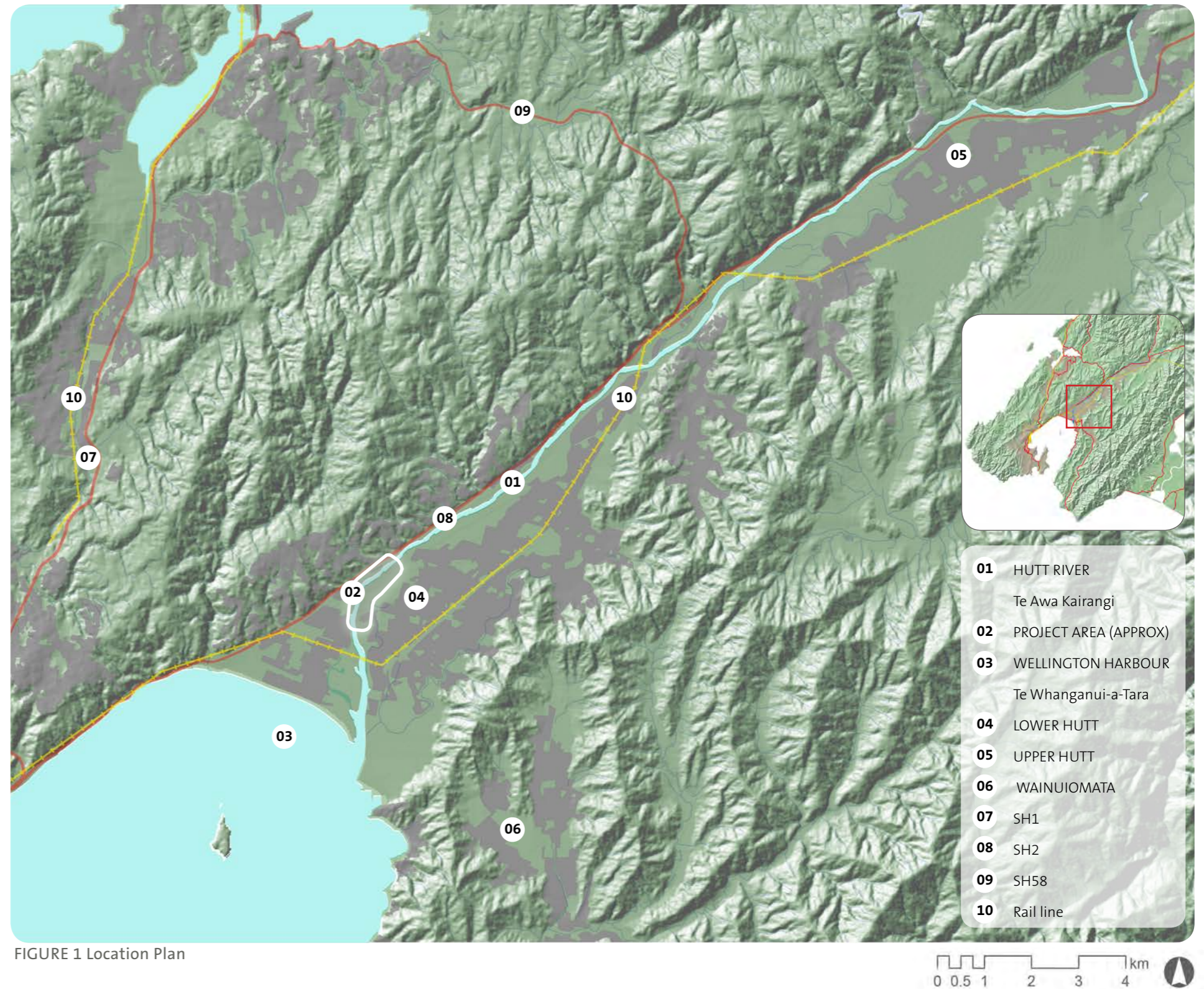


FIGURE 1 Location Plan

## 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.

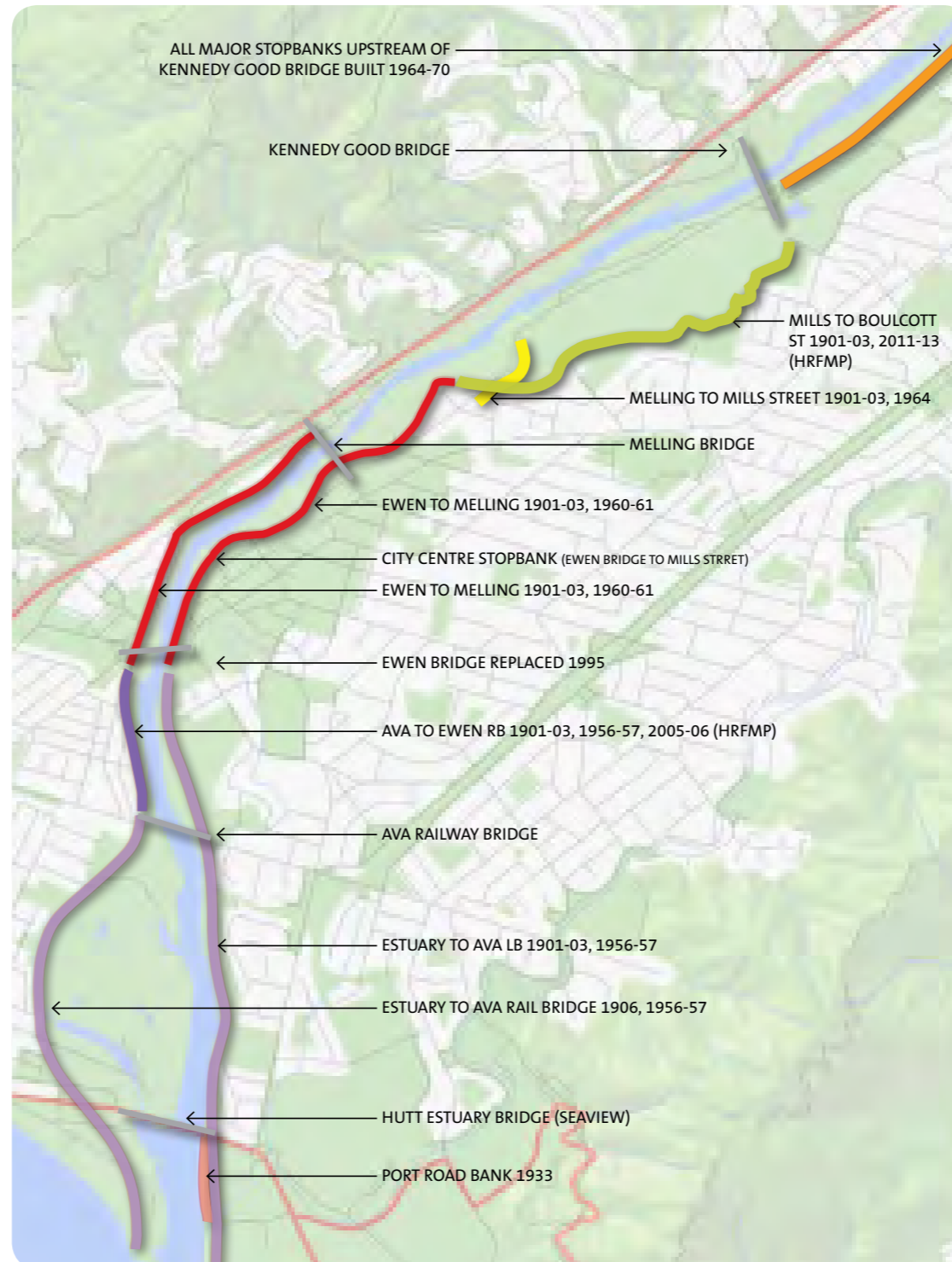


FIGURE 5 Chronology of stopbank upgrades



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 Connelly 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

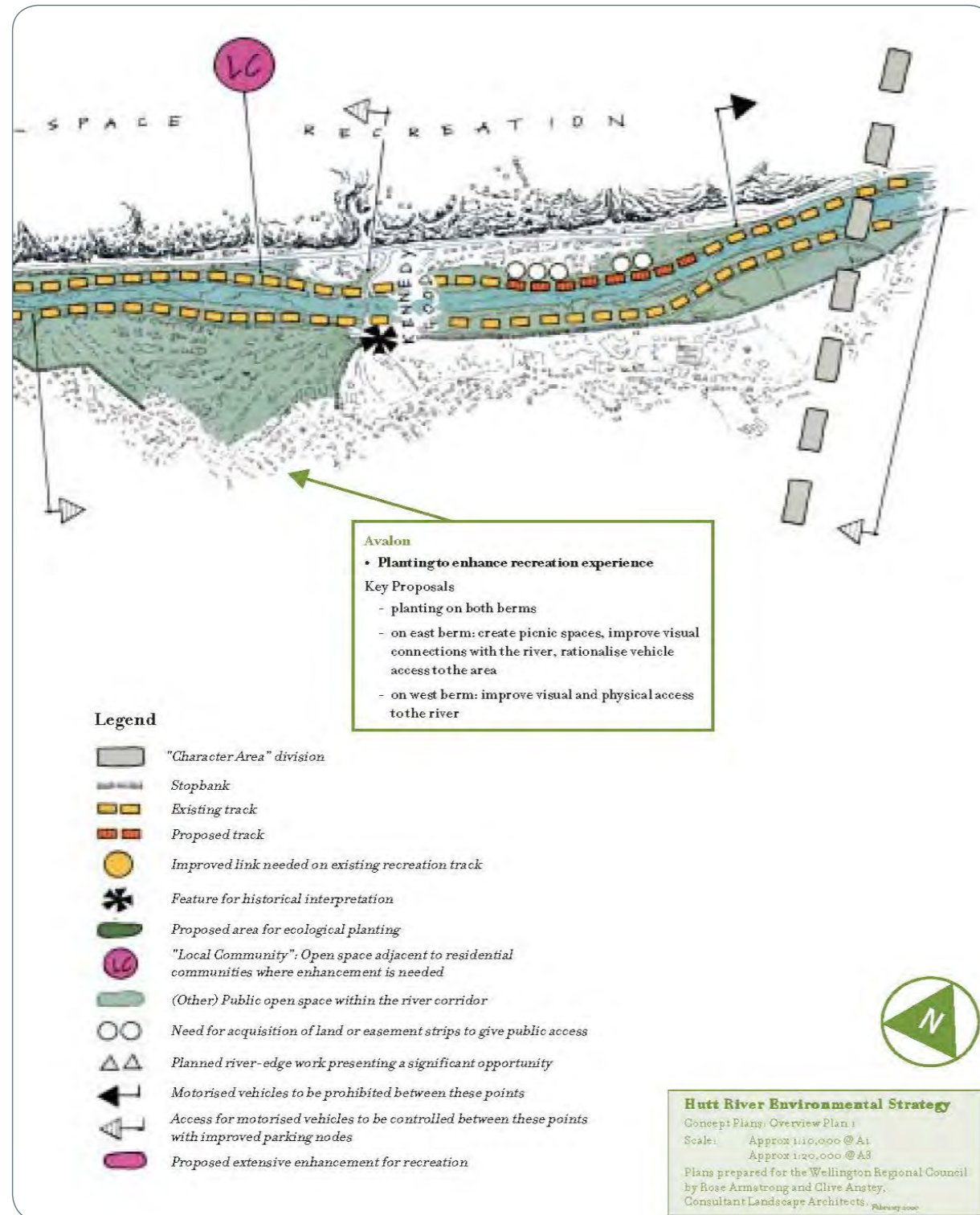


FIGURE 8a Hutt River Environmental Strategy

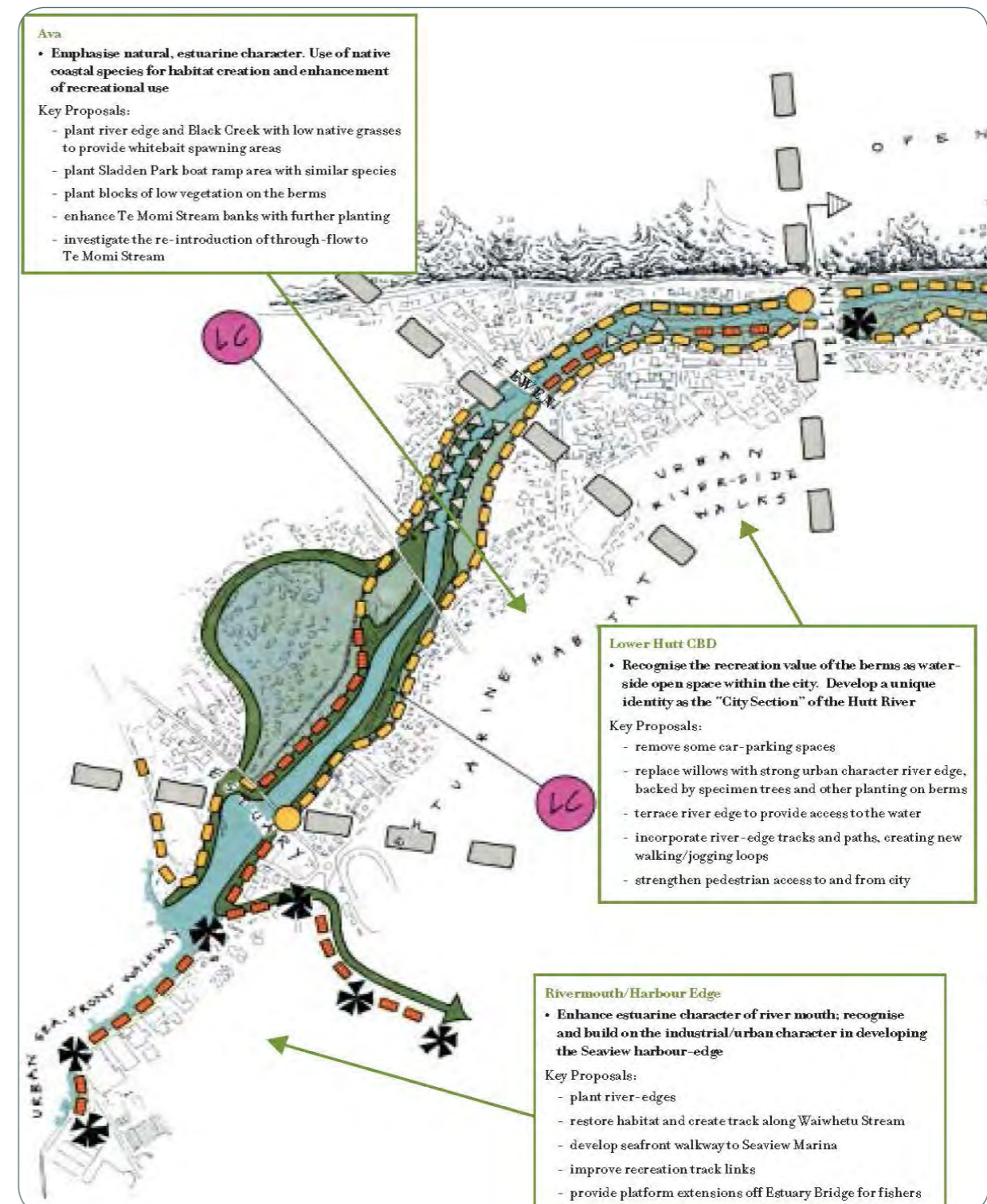


FIGURE 8b Hutt River Environmental Strategy