

**Te Awa Kairangi.**  
**Te Momi ki Maraenuku ki Motutawa.**  
**RiverLink.**  
Urban & Landscape Design Framework.

21 July  
2021

**Isthmus.**

# Consent Issue



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**Ngā puke kōrero**

**Ngā mounga tū tonu**

**Ngā puna e rere, wai puna mātao**

**E rere kau mai te awa kai i te rangi**

**Ngā puna mahara, te puna aroha**

**Maringi ngā roi i aku kamo**

**Ngā puna wai wera e**

The narrating hill tops

Shadowed by mountain sentinels

Flowing water sources of fresh, crisp, cold water

That meander to its own tune and into the river that feasts on the heavens

One remembers former springs of knowledge

Now transitioned to the spring of eternity

Cascading tears flow from thine eyes

Warm are the tears as is the heart

— Pekaira Rei



**1. Overview.  
The partnership.**

## 1.1 Te Awa Kairangi.

*Te Awa Kairangi is born from our tupua – Whātaimai and Ngake who sought to break through the land locked lake and out into Te Moana Nui a Kiwa. On their journey out, Ngake flicked up his tail and created Te Awa Kairangi. Ngake is the great creator of our harbour and Te Awa Kairangi, giving life, shape and form to life as we know it.*

*Let me take you back to in time immemorial well before man walked upon these islands - when the mountain clan were hauled from the great depths of Te Moananui a Kiwa (the great ocean of Kiwa) to be-calm the fish of Māui.*

*Following the procreation of the mountainous ranges of the central plateau the mountain clan were summoned to the head of the fish where they gathered on the summit of Pukeatua (Summit of Gods). Upon reaching Pukeatua, they were gifted the ritual incantations of invocations to summon from the depths of the freshwater lake two ancient phenomenon. Reciting the ancient incantations of invocations, they instructed the two tupua to prise open the great mouth of the fish of Māui.*

*Each responsible for their own freedom from their land locked imprisonment of the freshwater lake. Both tupua opting to take different pathways to freedom. One tupua commenced their journey on the eastern side of the lake, winding itself up and leaving behind a destructive pathway. Ngake hurled himself towards the distant barriers and bashed through escaping the freshwater lake to freedom, unto the great maiden ocean, Hine Moana. It was at this point the freshwater lake met the saltwater for the very first time. In this devastation, Ngake left behind geographical icons evident to this day.*

*The second tupua opted to take the western pathway, commencing from the throat of the fish of Māui (Korokoro o Te Ika, later to be named Te Korokoro o Te Mana), arriving at Ngā Ūranga where Whātaimai began*

*to wind itself into a coil. Before Whātaimai could ready itself for his escape, Whātaimai's companion had already broken through leaving a pathway of destruction and causing the water level to recede. In the ever-shallowing waters, the second tupua, still intent on escape was unable to generate enough speed and momentum and quickly became stuck on a sandbar. Unable to move any further Whātaimai remained there for some time as the water washed over its back.*

*Aeons passed by where a great land mass uplifted Whātaimai out of the water exposing its body to the open-air elements bringing its life to a sudden end. In passing Whātaimai's spirit took the formation of a spiritual bird – Te Keo, who to this day continues to pursue the pathway of enlightenment.*

*These two tupua were both tasked with prising open the mouth of the great fish of Māui and in doing so opting to take alternative pathways. One created the eastern inner Harbour pathway and in doing so left us with the geographical iconic formations of Te Awa Kairangi, Matiu, Makaro, Ngā Mokopuna, Te Au a Tāne and many more.*

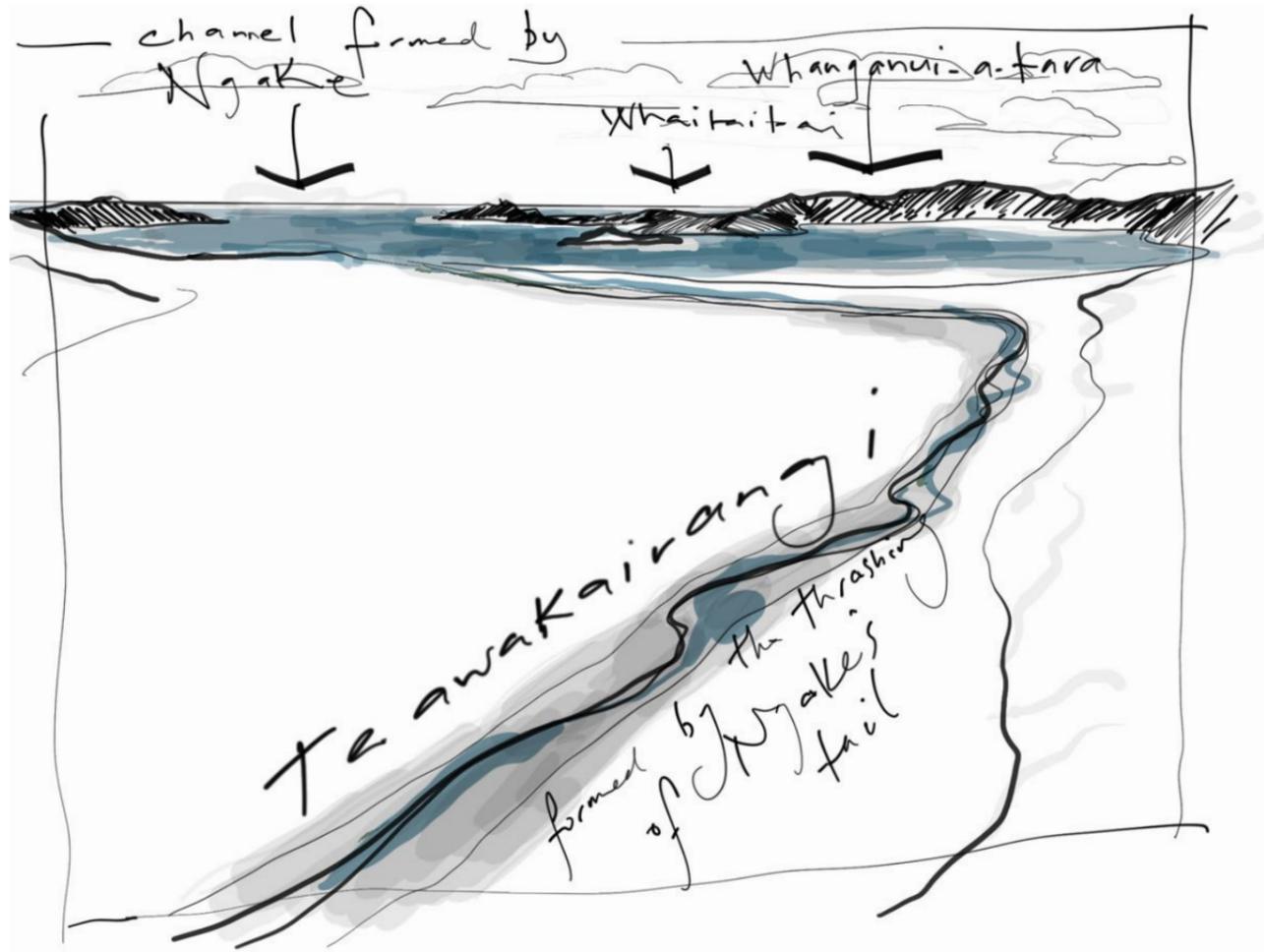
*The second, created the western inner Harbour pathway commencing from the throat of the great fist of Māui, leaving behind the icons of the eastern harbour Horokiwi, Waihinahina, Parikārangaranga, Paroro Rangī, Tahataharoa and Ngā Ūranga. Each pathway chosen by these tupua allows for our international visitors to come to Te Whanganui a Tara. The pathway created by Ngake allowed for the great Pacific navigator Kupe and larger vessels to frequent these shores. Whilst Ngake was able to break through, Whātaimai still remains and welcomes a many number of people, vessels, and air crafts which arrive daily from both national and international destinations to visit our harbour.*

*The name Te Ara Tupua (The Ancient Pathway) is an acknowledgement to the guardians of our Harbour,*

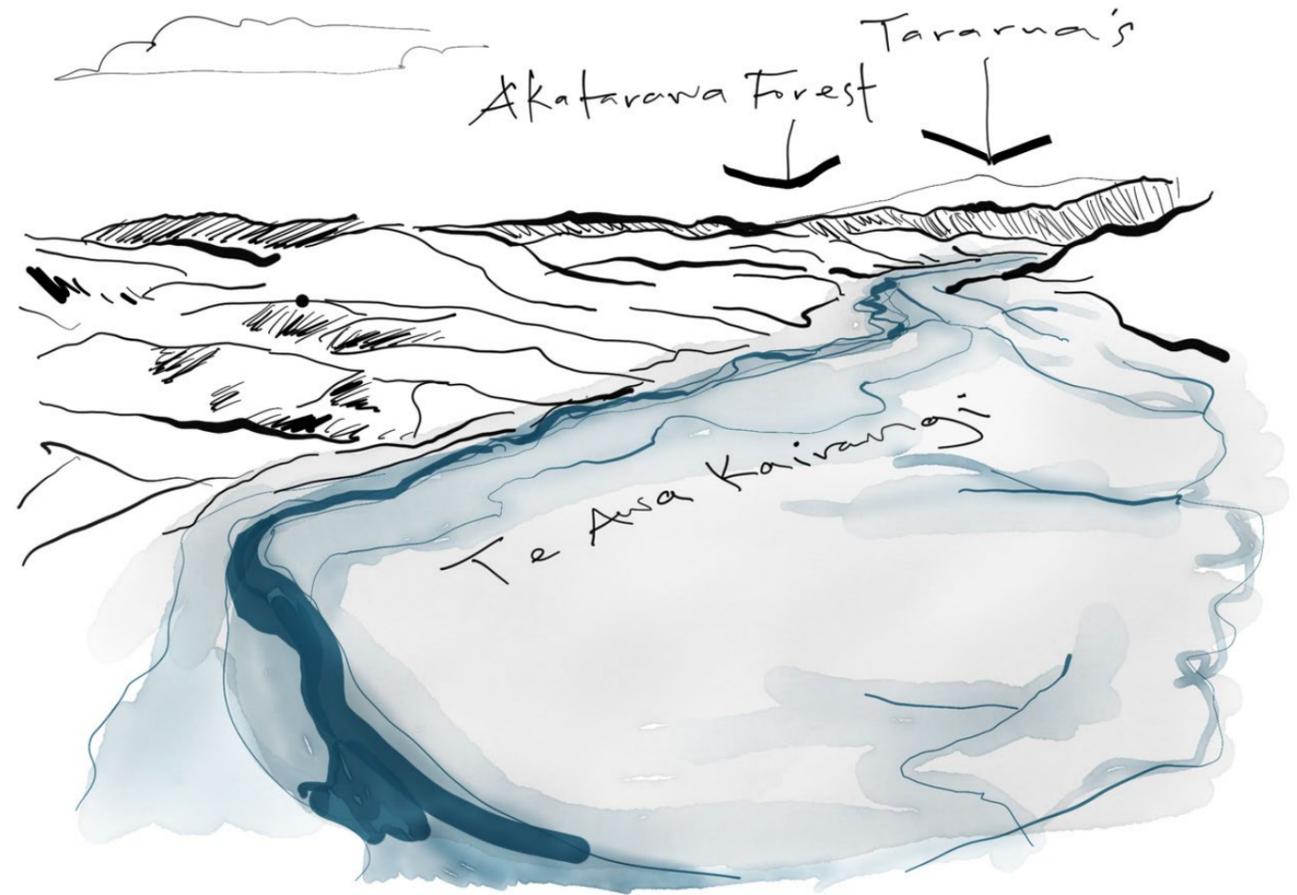
*Ngake and Whātaimai. They are both tupua in the own right and I have opted to use the word 'tupua' over the word 'taniwha'. Tupua is a term for a phenomenon, something that is unexplainable and a term that aligns itself the total story of Te Kāhui Maunga, namely:*

- Te Awa Tupua
- Te Kāhui Tupua
- Te Ara Tupua

**Kura Moeahu** (August 2019)



Above.  
Cultural landscape  
looking south.



Above.  
Cultural landscape  
looking north.

## 1.2 The RiverLink Project.

**RiverLink is a transformative project for Lower Hutt City, envisaged as a catalyst for the revitalisation of river and city, people and identity. With the aim of improving the mana and mouri of Te Awa Kairangi, creating a new relationship between river and city - that responds to both past and present.**

### Governance & Partners

The RiverLink project has been developed as a joint project between Taranaki Whānui ki te Upoko o te Ika a Maui / Te Ātiawa (Taranaki Whānui) and Ngāti Toa Rangitira (Ngāti Toa) as mana whenua, Greater Wellington Regional Council (GWRC), Hutt City Council (HCC), Waka Kotahi (WK), together referred to as the 'Project Partners'.

The RiverLink project is mandated by the clear aspirations of Lower Hutt communities for increased safety/protection from flooding, better environmental outcomes for Te Awa Kairangi, a better connection with State Highway 2, and increased vibrancy and liveability of Lower Hutt City.

The Project Partners have taken a strongly integrated approach to enable the benefits of the RiverLink project to be realised in support of community aspirations, and related regional and district strategic objectives.

Te Momi ki Maraenuku ki Motutawa describes from south to north the stretch of Te Awa Kairangi that the project area occupies. An area of river plain, now densely urbanised with the river highly engineered and constrained within flood protection stopbanks. The project site extends from State Highway 2 in the west across the river to the interface with the city centre to the east, and encompasses a four kilometre stretch of river from Kennedy Good Bridge in the north to Ewen Bridge to the south. This length of river is split into two reaches - the upper reach from approximately Transpower substation upstream, and the lower reach downstream. It

takes in areas of residential and business land uses (some acquired by GWRC for the project).

The RiverLink Project comprises three interrelated parts- Te Awa Kairangi; the City Edge; and the Melling Connections, necessitating an integrated approach across the Project Partners and design team. As an integrated project, RiverLink provides opportunities to create new and strengthened connections between city and river; to improve the natural character, habitat and biodiversity values; to strengthen connections into the city from State Highway 2; and deliver a network of walking and cycling access routes between the city and regional transport options.

Requirement for upgraded flood protection including realigned stopbanks, increased stopbank heights and river channel engineering works provides an opportunity to deliver on the project aims of improving the mana and mouri of Te Awa Kairangi, creating a new relationship between river, city and community.

Opportunities exist for cultural expression through the mana whenua endorsed narrative - He Korowai o Te Awa Kairangi; enhancement of the natural character; increased habitat and biodiversity values; stronger connections (physical, visual, cultural and perceptual) between river and city, and enhanced amenity to reflect on-going kaitiakitanga - a key responsibility for Taranaki Whānui and Ngāti Toa as mana whenua.

Informed by the Central City Transformation Plan (February 2019), the City Edge component addresses the interface between city and river, with a focus on the streets and public spaces that provide connections between the river environment and city centre, and connection across the river via the new pedestrian and cycle bridge to the new Melling station.

Opportunities exist to draw the natural character qualities of the river environment into the city to strengthen the identity of Lower Hutt as a 'river city', to enhance street based pedestrian-priority

connections to the river, and for at-source management and treatment of stormwater prior to discharge to the river to contribute to improved water quality, habitat and biodiversity values.

The city's built form, primarily in private ownership, has a role to play in strengthening identity and improving the mana and mouri of the river. Achieved through encouraging redevelopment of adjacent sites to positively address both city and river, improving access and amenity.

The Melling Connections component comprises the comprehensive upgrade of existing transportation facilities to create a new, safer and more resilient connection between State Highway 2 and the city centre. Including a new Melling Station; a new Melling Bridge, a grade separated Melling Interchange; two at-grade crossroad intersections of SH2 with local roads (Harbour View Road/Melling Link; Tirohanga Road/Block Road) and upgrades to local roads to integrate the bridge landings

### Project Partner Objectives.

The overarching project objectives are:

- A connected, resilient and secure floodplain while recognising Te Mana o te Wai – integrated and holistic wellbeing of the river;
- An integrated, resilient, safe and efficient transport network; and
- An attractive and vibrant city centre to businesses and residents, and enhanced economic growth.

For each partner these objectives tie back to key strategies and plans.

### Mana Whenua.

As mana whenua Taranaki Whānui and Ngāti Toa hold a kaitiaki role for Te Awa Kairangi. A project specific Kaitiaki Strategy has been prepared by Taranaki Whānui advisors and has been summarised

on the following pages. In addition, Mana whenua have previously identified important matters to be addressed for Te Awa Kairangi. These are set out in a range of statutory documents including the GWRC proposed Natural Resource Plan and Hutt River Floodplain Management Plan.

### Greater Wellington Regional Council (GWRC).

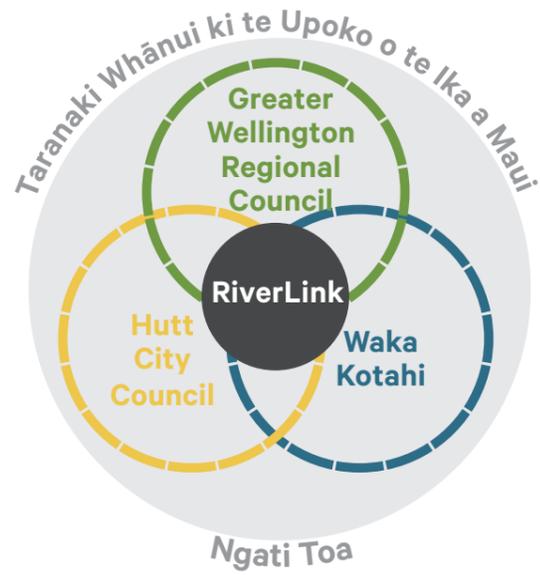
For the Regional Council, RiverLink will support the delivery of the Hutt River Floodplain Management Plan (2001) and Te Awa Kairangi/Hutt River Environmental Strategy, which aim to protect the city from flooding and provide for delivery of community aspirations for better ecological, amenity and recreational outcomes. RiverLink also delivers, to varying degrees, across three priority outcomes for GWRC Long Term Plan 2018-2028 of regional resilience, public transport, fresh-water quality and biodiversity.

### Hutt City Council (HCC).

For Hutt City Council, RiverLink will deliver key parts of the vision of the Making Places Strategy for the CBD, and the more recent City Transformation Plan - relating to enabling good development, growth and amenity, and repositioning the city for growth and a redefined contemporary identity. It will also provide upgrades sought by the Hutt City Infrastructure Strategy and Environmental Sustainability Strategy.

### Waka Kotahi.

For Waka Kotahi, RiverLink will deliver on its Melling Transport Improvements project, to provide safer journeys for road users, improved access between State Highway 2 and Lower Hutt CBD, better access to quality transport choices, and improved security and availability of the road network.



Above.  
Project Partner  
Collaboration  
structure..



Above.  
Project component  
areas..



Above.  
Location plan and  
project extents.

## 1.3 Kaitiaki Strategy.

**Developed specifically for Te Awa Kairangi, a Kaitiaki Strategy has been prepared by mana whenua advisors as a holistic guide for the RiverLink project to realise the mana and mouri of the river. It is a living document which will be used to guide future project stages.**

**The strategy's principles and associated responsibilities and resulting actions are embedded within the Urban and Landscape Design Framework as a guide to informing the RiverLink project vision, principles, approach and objectives.**

**A summary of the strategy is outlined here as an introduction.**

*Tenei ka tukuna atu ngā mihi kia koutou katoa.*

Everything that is here has a whakapapa which is long and deep – within that whakapapa lies our understanding of the world around us. When we re-build that connection we will come to realise that nature has its own way of doing things, of acting, responding and we the ira tangata are only one piece of that story. Our responsibility within that piece is to co-exist with our environment and deeply this strategy considers how that may be achieved as it relates to Te Awa Kairangi and River Link.

We are not above the environment - we are pieces of an interconnected and interdependent web of tupuna (ancestors) and uri (descendants).

This kaitiaki strategy seeks to correct the relationship we have with our environment through the articulation of our ways of being which are sourced from our mana whenua association with Te Awa Kairangi and in particular the creation of our new River Link project.

Mana whenua and the wider community have much to gain from re-connecting to our environment, learning its stories, feeling its vibrations of whakapapa and giving heed to its identity. These are the building blocks which will assist us as

*we respond to the changing needs surrounding climate change, resilience, connection to nature and place as it connects to Te Awa Kairangi.*

*This Kaitiaki Strategy will set out the principles of Te Awa Kairangi as it relates to the River Link project. More than that it will chart a path of innovation – a tupuna pathway that through its implementation it will see the change in our behaviours that ensure within this part of Te Awa Kairangi, we may be closer to a truer sense of co-existence.*

*Te Awa Kairangi is interlocked with Ngake and Whāitaitai the great Tupua summoned by the Mountain Clan to prise open the mouth of the fish of Maui. The River Link project seeks to excite people through seeing differently and to generate a natural relationship to our world – the world left behind by Ngake when he flicked his tail on his escape out the mouth of the great fish of Maui.*

*This Kaitiaki Strategy challenges us as mana whenua to do our piece, to conjure up our true understanding of who we are and apply that in manner consistent with our tikanga. With our partners and friends, we will re-create something that others may see as unique, but to us we will see a mirror of our not so distant past.*

*Informed by mana whenua, councils, partners and friends - priorities will be set which will inform our work, practice and application of resource.*

*River Link is only but one small piece of a wider whole – but a necessary piece because it will perform the role of unlearning how things may have happened in the past and create new ways of operating, thinking and doing. This is as much about relationships, true partnership and meaningful process as it is about creating something to be admired and celebrated for future generations.*

*We will start to prioritise things once forgotten, seek out new ideas and innovation, address issues at their source, affirm a greater sense of connection and above all we will ensure that the vibrations of whakapapa are afforded a place which is rightly theirs.*

### **Kaitiaki Strategy**

(Feb 2020, Kara Puketapu-Dentice)

**Right.**  
Kaitiaki Strategy  
Illustration.



**Principles**

**Ranginui.**

The connection to the various spiritual realms of the great and vast heavens, the source of light and understanding, growth and ultimate link to the celestial family.

**Mouri.**

The mouri of Te Awa Kairangi – the living relationship between the ngahere, the cliffs, the water ways, hinemoana and everything that lives within that environment have their own individual and interdependent vitality.

**Wai Tai, Wai Māori.**

Nga wai tuku kiri tai noa atu ki hinemoana – the connection between the springs, streams, aquifers, rivers and all waterways that bring with them their life, mouri and mana which eventually mingles together with Hinemoana.

**Ahua.**

The character of Te Awa Kairangi is seen, the beauty, the mystique, the wonder, the wild and rawness – the identity of Te Awa Kairangi endures beyond the present through capturing and captivating the hearts and minds of the few and the many.

**Tātai Whakapapa.**

The history, the connections, the relationships and friendships – they shape the land and the people.

**Whānau.**

The care of manuhiri and people is embedded in the identity of Te Awa Kairangi seeking to ensure a strong sense of connection imbuing a strong sense of responsibility towards Te Awa Kairangi.

**Mana Whenua.**

RiverLink is seen as a living piece of the identity of Mana Whenua who take pride in this space, taking on the obligation of care, responsibility and giving life to its history and story.

**Papatūānuku.**

The mountains, the cliffs, the landforms, the geology, ngahere, trees, birds, streams and waterways – they all need each other to exist.

**Responsibilities**

We acknowledge the connection to Ranginui as the source of knowledge and enlightenment. We are guided by the footsteps taken by Tane Mahuta in his journey to the many heavens of enlightenment. The RiverLink project provides a journey of learning which fosters a connection to the great spiritual and celestial powers.

We ensure that balance can be maintained and that the negative impacts caused by people and pre-existing activities is where possible appropriately addressed.

Wai is the centre of life and the ebbs and flows of our harbour were created by our great Tupua. We must ensure the potency of life given through both wai Māori and wai tai continues for generations to come.

The natural beauty created by our tupua are revered and identifies quite clearly our connection and sense of belonging to a space. We celebrate all of these component pieces which re-ignite our lived relationship with Te Awakairangi.

We respect that which has been done by our predecessors, our tupuna and others who have created a positive imprint in the identity of Te Awa Kairangi.

Friendships are developed with those who share a similar relationship and sense of responsibility for Te Awa Kairangi so that due care can be applied and that maybe new innovations may be developed.

Give life to the obligations and responsibilities mana whenua have to Te Awa Kairangi and the significant components left behind by our Tupua which are expressed through the RiverLink project.

We revere the beauty that is nature and with respect and humility we work with her. We seek to re-foster our connection which was once lost with Te Awa Kairangi and its encompassing and interconnected environment.

**Actions**

We are undertaking a process which enables learning and growth understanding that what we are seeking to achieve cannot be done simply.

We ensure that we connect directly to our celestial family as a source of identity and link to the wairua of our tupua.

We treasure the taonga that we have and ensure that our activities create limited pressure on the environment enabling in time the restoration of ecological balance.

We reconnect people to the healing and well-being properties of Te Awa Kairangi – being exposed to the rawness of life.

We create innovations and implement methods to reduce known and potential pressures on Te Awakairangi.

We actively seek the re-establishment of uri (human and non-human) who were once present and abundant in Te Awa Kairangi.

The potential pressure associated with the RiverLink project on wai Māori and wai tai are mitigated and improved.

We make clear the association and connection to the wai which links Te Awakairangi as a feeder of Te Whanganui a Tara.

We take every opportunity to improve te mana me te wai o Te Awa Kairangi and its catchment.

We do not cause harm to Te Awa Kairangi.

We seek to intensify the real lived experiences with Te Awa Kairangi so as people are inspired by the beauty of the numerous natural features.

The personality of Ngake is felt. The mystery of life the strength of tipuna are shared through narratives, design & story telling.

People see and feel the moods of life, the winds, the rain and the sun. Through this we develop shared connections, behaviours, attitudes and senses of responsibility.

Historical and cultural heritage is shared and celebrated.

Future contributions are sought so that the life and identity of Te Awa Kairangi may continue to grow and develop.

Providing opportunities for connection and shared actions and activities with friends.

Make visible and clear the story and progression of the RiverLink project as something built by the people and for the people.

Mana whenua are actively leading the care and construction of the RiverLink project.

Protections for Te Awa Kairangi are developed and applied.

We are telling the stories which foster our reconnection with a hope that attitudes and behaviours may change – breathing new life to the Tupua which created our harbour and in doing so ensuring our collective permanency.

We ensure no harmful impact on papatuanuku.

## 1.4 ULDF Approach & Process.

This Urban and Landscape Design Framework (ULDF) focuses on the intended design outcomes of the RiverLink project. It has been developed with three central purposes:

- To set out the environmental, cultural, and landscape and urban design context for the project, as these matters have set various design parameters, and provide the basis for the development of the ‘rationale’ behind the design response;
- To set out intended outcomes for urban and landscape design, including concepts and design guidance for subsequent project phases including detail design;
- To support the Assessment of Environmental Effects and Notices of Requirement for the project.

It is intended to inform all assessments and to help guide all aspects of the future design.

### Approach.

Key engineered components of the project (such as stopbanks, river-edge protection works, bridges, roads and related access connections) will generate urban and landscape outcomes, with related effects. This document is focused on guiding those outcomes, and minimising adverse urban design and landscape effects.

This ULDF will be used to help guide future design stages in the Project. It draws on technical feedback particularly in relation to the engineered components, as part of an iterative design process, while still providing enough flexibility to allow for appropriate future design solutions or options.

Design outcomes (not solutions) have been developed to address the project objectives and the constraints and opportunities resulting from its context. Outcomes to avoid adverse effects and provide for positive effects are prioritised including for natural character, landscape, habitats, public

access, relationships of mana whenua, heritage, hazards, kaitiakitanga and stewardship, amenity and the quality of the natural and built environment.

### Process.

The Urban and Landscape Design Framework has been prepared by an urban design and landscape architecture team, informed by inputs from the Project Partners, river hydraulic and traffic engineering and environmental specialist disciplines through a series of technical workshops, joint participation in multi-criteria assessment (MCA) of options, and through other meetings and discussions.

The ULDF provides a means of ensuring that the design concepts for RiverLink are appropriately defined and developed as the project has progressed to consenting - capturing and integrating the various project components, and ensuring that the designed response is integrated as a cohesive whole.

The framework has been prepared with particular cognisance of the Resource Management Act 1991 (RMA) requirements with regards to landscape/urban design and visual amenity matters. A separate Urban Design, Landscape, and Visual Effects Assessment has been prepared to address those specific RMA considerations in further detail.

Additional reporting from traffic, hydraulic and stopbank engineers addresses the technical aspects of the structural components, in relation to the overarching Project Objectives.

Post-consent the design will be developed through the Urban and Landscape Master Plan (ULMP). The certified ULMP must demonstrate how the RiverLink Kaitiaki Strategy principles and the urban and landscape design principles, themes, outcomes and opportunities in the ULDF have been taken into account in the development of the detailed design for the Project. The content and specific requirements for the ULMP are set out in the proposed conditions.

## 1.5 Background Documents Overview.

The following documents have informed the ULDF:

### Resource Management Act (1991).

The overarching framework of the RMA is set out in Part 2, including the purpose of the Act set out in section 5. Matters of national importance are set out in section 6. Those that are particularly relevant to landscape matters for the Project include:

- section 6(a): the preservation of the natural character of wetlands and rivers, and the protection of them from inappropriate subdivision, use and development;
- section 6(d): the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers;
- section 6(e): the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

Key relevant ‘other matters’ from section 7 of the RMA include sections 7(a): kaitiakitanga; 7(aa): the ethic of stewardship; 7(c): the maintenance and enhancement of amenity values; and 7(f): the maintenance and enhancement of the quality of the environment.

### Land Transport Management Act (2003).

Requires Waka Kotahi to ‘exhibit a sense of social and environmental responsibility’ in meeting the statutory objective of operating a transport network.

### Te Awa Kairangi Kaitiaki Strategy.

The Te Awa Kairangi Kaitiaki Strategy was developed by mana whenua appointed advisors. The Kaitiaki Strategy provides an articulation of aspirations and expectations of the Taranaki Whānui and Ngāti Toa project representatives. Within the Kaitiaki Strategy are a set of principles which act to ensure protection, re-instatement and reaffirmation of Taranaki Whānui connection to Te Awa Kairangi through design and the overall practice of constructing the RiverLink project within ecologically and culturally sensitive environment.

The primary intent of the Kaitiaki Strategy and its associated principles is to facilitate the deepening of the connection to the cultural significance of the landscape and to bring about new behaviours of protections and care for our environment.

### Greater Wellington Regional Council RPS and NRP.

The Regional Policy Statement (RPS) and the Natural Resources Plan (NRP, decision version) sets out the framework and priorities for resource management in the Wellington region. Relevant objectives and policies in the NRP (decisions version) are contained in chapters 3 and 4 and relate to Māori relationships with their ancestral lands, water, sites, waahi tapu, and other taonga; natural character, form and function; biodiversity; sites with significant values; and natural features and landscapes. Schedules and maps associated with these policies are also relevant.

### Hutt River Floodplain Management Plan; GWRC (HRFMP), 2001.

The HRFMP provides GW’s strategic blueprint for flood protection works on Te Awa Kairangi through to 2040, including both structural and non-structural measures to provide for flood protection.

### Te Awa Kairangi/Hutt River Environmental Strategy: Action Plan; GWRC, August 2018.

This recent document forms an updated part of Greater Wellington’s Hutt River Floodplain Management Plan (HRFMP). It identifies objectives and actions for the whole of Te Awa Kairangi, including the RiverLink project area.

### Bridging the Gap: NZ Transport Agency Urban Design Guidelines (2013).

The Guidelines set out 10 over-arching urban design principles, and guidance on specific elements of walking and cycling including pedestrian paths, pedestrian crossings, cycle lanes and paths, pedestrian and cycle bridges, underpass design, lighting and crime prevention.

### “Bridging the Gap Urban” and the Waka Kotahi Landscape Guidelines.

In particular are key Waka Kotahi policy documents that should be promoted by Waka Kotahi in all future stages of the Project, as a basis to cross check the developed / detailed design. There are ten over-arching principles in each, with some cross-over between them in terms of a collaborative, considered and holistic process that encourages place-sensitive design. Both documents deal with process as well as outcomes.

Further guidance relevant to detailed design and implementation of the ULDF is/ will be provided by Waka Kotahi:

- Pedestrian Planning and Design Guide; 2009;
- Cycling standards and guidance provided by Waka Kotahi online;
- Public Transport Design Guidelines (currently under development).
- Landscape Guidelines - Transport Agency, Final Draft 2014;
- Transport Agency: The Standard Specification for Highway Landscape Treatments: which sets out minimum standard on a variety of matters.
- Other Standards: such the ‘Safe System’ approach to highway design which forms part of the Transport Agency’s commitment to the ‘Safer Journeys Strategy’ including: Bridge Manual, 3rd edition, 2018.

### NZ Transport Agency Environmental Plan (2008).

Specifies how the Transport Agency’s staff and suppliers are expected to address key social and environmental effects. Relevant objectives include:

- Social responsibility: To enhance and contribute to community cohesion.
- Culture and heritage: To pro-actively limit the disturbance of significant cultural and heritage

features along state highways. To show respect for historic buildings we own to maintain their integrity.

- Visual quality: To incorporate multi-purpose landscaping as an integral part of all new state highway construction projects. To improve the visual quality of the existing state highway network.

### NZ Transport Agency Environmental & Social Management Standard (2010).

Requires consultants engaged on transport projects to consider social and environmental factors identified in legislation and the Transport Agency’s policies and guidelines.

### NZ Transport Agency Landscape Guidelines (Final Draft) (2014).

The Guidelines similarly set out 10 over-arching principles, and guidance on (1) design considerations (including safety and extent of landscaping), (2) landscape treatments (including topsoil, planting, and stormwater) and (3) maintenance requirements.

### NZ Transport Agency Guide to Traffic Engineering Practice - Bicycles.

Which sets out minimum standards, covering such matters as path width, gradients and provision at structures referencing Austroad standards AGRD06A-09: Guide to Road Design Part 6A: Pedestrian and Cyclist Paths (replacing Guide to Traffic Engineering Practice: Part 14).

### NZ Transport Agency pedestrian planning and design guidance.

Sets out ways to improve New Zealand’s walking environment. It outlines a process for deciding on the type of provision that should be made for pedestrians and provides design advice and standards.

### NZ Transport Agency Multi-modal Planning and Design Guidance.

Guides focused on walking, cycling and public transport. <https://www.nzta.govt.nz/>

roads-and-rail/highways-information-portal/ technical-disciplines/ multi-modal-transport/

### Lower Hutt District Plan.

The District Plan contains a number of objectives and policies relevant to the RiverLink ULDF. Chapter 2 contains provisions partnership with Māori, and the importance of Māori relationship with taonga such as Te Awa Kairangi.

Chapter 7C contains provisions recognising the paramount importance of flood protection for Lower Hutt communities, and the importance of the open space character and natural qualities of the river and margins for visual amenity. Provisions under 7C 1.1.3 and 1.2.1 seek to ensure that activities have no more than minor effects on flood protection, and to limit buildings and structures not associated with flood protection, inside the River Recreation Area.

Chapter 5A contains provisions relating to the urban design of Lower Hutt City central commercial area, in relation to the river corridor of Te Awa Kairangi. Most relevant are policies under 5A 1.1.5 and 1.2.4, focused on recognising and enhancing the amenity, natural and recreational values of Te Awa Kairangi, through encouragement of activities and appropriate building design along the river frontage.

Chapter 6A includes provisions relating to main entrance routes to the city, aimed at managing the design, scale and appearance of structures to enhance the image and visual appearance of main entrance routes of the City, where they pass through the General Business Activity Area. These provisions are contained in 6A 1.1.2 .

There are also a number of provisions contained in chapter 4A to avoid, remedy or mitigate adverse effects caused by building/structure height, scale and location on the amenity values of adjacent residential sites and the residential character of the surrounding residential area. Relevant policies are in 4A 1.2.1.

### Non-Statutory Documents.

*Hutt City Central City Transformation Plan.* The City Transformation Plan sets out a strategy, including a spatial framework and key spatial planning principles, for the coordinated development and design of Lower Hutt’s central city and immediate environs.

The Transformation Plan is recently developed (September 2019) and deals with city areas immediately adjacent to the RiverLink project area. As such, integration between the RiverLink ULDF and the Transformation Plan is required. The Transformation Plan updates Hutt CBD – Making Places 2030, a design framework developed in June 2009.

*Hutt City Urban Growth Strategy 2012-2032 (2014); CBD Making Places (2009); CBD Vision (2009).*

These documents provide earlier strategic guidance feeding into the more recent Transformation Plan, in relation to long-term management of growth and change; fostering development; community vision for Hutt City; and good place-making within the city.

*National Guidelines for Crime Prevention through Environmental Design in New Zealand; Ministry of Justice.* This document provides design guidance to create safer public spaces.



A black and white halftone photograph of a riverbank. In the foreground, there is a sandy or rocky shore with some sparse vegetation. In the middle ground, several people are standing near the water's edge, looking towards the river. The background is filled with dense trees and foliage. The overall image has a grainy, dotted texture characteristic of halftone printing.

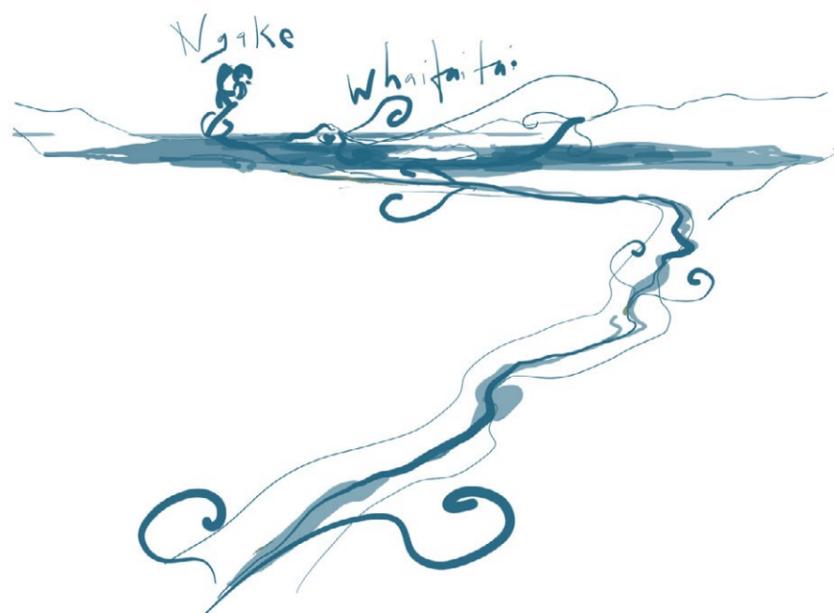
## 2. Design strategy.

This section of the ULDF sets out the Design Strategy for Te Awa Kairangi - Te Momi ki Maraenuku ki Motutawa. It includes the establishment of a project vision and design principles, and an overarching cultural and environmental strategy to inform the development of the design framework.

## 2.1 Te Awa Kairangi Vision.

# To lift the mana and mouri of Te Awa Kairangi, re-establishing Lower Hutt as a vital and connected river city.

The ancient Te Awa Kairangi, its many tributaries, aquifer and harbour, the surrounding hills and plains; and the people, flora and fauna that call this place home are drawn together with Te Awa Kairangi at the heart to regenerate river and city.



**Three key design themes underpin the project vision and in turn embed the Kaitiaki Strategy principles across the project.**

### Vitality—river first

- Prioritise the health and wellbeing of Te Awa Kairangi to create a healthy environment for all communities (people, flora, fauna) that live within.
- Improve habitat and biodiversity to breathe new life and vitality into the river and its tributaries
- Contribute to improved water quality by encouraging at-source treatment of stormwater prior to discharge to the receiving / river environment.
- Catalyse regeneration of the city centre as a vibrant place to live, work and play through delivery of a destination river environment, expressive of the identity of Te Awa Kairangi.
- Foster economic vitality through creating a river environment that is rich in social opportunities and cultural expression.
- Deliver a resilient river corridor, integrating engineering infrastructure and ecology opportunities through design, to provide natural hazard protection.
- Limit the pressure placed on the environment by the activities associated with the project.

### Connectivity—river to city

- Reconnect people and place - community and Te Awa Kairangi, welcoming people, flora and fauna to the river environment.
- Connect river and city with a focus on drawing the qualities and experience of the river into the city.
- Develop shared connections, behaviours, attitudes and sense of care and responsibility for the river and wider environment.
- Providing opportunities for social connection, shared actions and activities.
- Tell the stories which foster reconnection with the river and environment to facilitate positive change in attitudes and behaviours.

- Connect to wider landscape hills, valley, harbour and tributaries to strengthen connection between river corridor and wider environment.

### Identity—Te Awa Kairangi

- Celebrate Te Awa Kairangi, recognising the river as unique - a respected and valued part of the community.
- Express local culture, character and identity, enabling learning and growth.
- Breathe new life into the tupua which created the river and harbour, ensure the personality of Ngake is felt through narratives, design & story telling.
- Share and celebrate the historic and cultural heritage of the area.
- Promote kaitiakitanga - the process and practice of protection and care for the environment.
- Draw the identity and character of Te Awa Kairangi into the city, with a focus on the city edge, it's built form and spaces.
- Seek future contributions so that the life and identity of Te Awa Kairangi may continue to grow and develop.



**A ‘whole of environment’ approach.**

The RiverLink project has the potential to influence positive urban and landscape outcomes beyond the projects extents. Achieved through continued consideration of the wider cultural and landscape context through future stages of design and implementation, with positive outcomes for the river resulting in positive outcomes for the city and inhabitants.

Central to this approach is the He Korowai o Te Awa Kairangi narrative described in detail on the following pages, and an integrated approach to cultural expression. This means that the korowai (and the kaitiaki strategy that underpins this) is woven through all parts of the project (and is relevant to all of the outcomes set out in the ULDF) including the overall form, general arrangement, articulation of spaces and pathways and the palette of materials as well as specific elements, such as pedestrian bridge, naming, wayfinding and interpretation and the approach used for flood protection planting.

**Left.** Described by mana whenua as a ‘dead tree’, a measure of success would be the transformation of the Hutt River’ into Te Awa Kairangi, a ‘bountiful tree’ of life and vitality.

## 2.2 Cultural Design Strategy.

### Te Tupua Ngake

The Cultural Design process will draw from the Narrative “Te Ara Tupua” with a focus on Te Tupua named Ngake.

Te Tupua, Ngake, commenced his journey on the eastern side of the lake, winding himself up leaving behind a destructive pathway. Hurling himself towards the distant barriers he bashed through escaping the freshwater lake to freedom, unto the great maiden ocean, Hine-moana. It was at this point the freshwater lake met the salt water for the very first time. In his devastation to escape he left behind geographical icons evident to this day which we now know as Te Awa Kairangi the river and surrounding land masses and islands that were created by the unwinding of his great tail to generate such power that he broke free into the ocean.

He Korowai o Te Awa Kairangi,  
He Korowai ki te whenua

The cloak laid before us by the  
tupua Ngake.

The cloak that belongs to  
Te Awa Kairangi

The cloak that is of the land  
Papatuanuku and the tears of sky  
Ranginui

Let us lie within the protection  
and warmth

Fashioned to be worn as a mantle  
of prestige and honour,

A most prestigious cloak.

### Whatu Raranga

The weft, or horizontal, threads are called aho. The vertical, or warp, threads are called whenu. A single pair of aho are twined over and under each of the whenu to create a basic version of whatu. This technique creates the base or foundation for the korowai

### Design Translation

Aho connects the western land mass to the eastern land mass – The land masses that were created by Ngakes tail when building velocity to break through to Hine Moana (The Cook Strait)

Whenu is Te Awa Kairangi and its many connected waterways that run north to south

A korowai appears when aho (the land masses) and whenu (the waterways) are intertwined and expertly fashioned, a life force and spirit is created bringing life, energy and mana to the garment.

The idea that land that was created or woven by Ngake be the cloak he gifted to us as people of Te Awa Kairangi. That the weft be used to form the land masses and the taniko be used to border our river, bringing together the eastern and western sides of Te Awa Kairangi creating the sense of connection of people to the land and to the water, a connection of people to each other and a connection of our past, to the present and into the future.

Aurei were customarily used as a pin for fastening cloaks and are often passed down generationally.

The bridge design and function likens the concept of aurei connecting the eastern and western sides of the land masses together.

– **Len Hetet** (August 2020)

Tāniko (or taaniko) is a traditional Maori weaving technique related to “twining”. It may also refer to the resulting bands of weaving, or to the traditional designs. Often used to as intricate borders on cloaks.

### The meaning of the pattern

*Te Niho Tupua a Ngake*

*The Teeth of the Phenomenon Ngake*

The pattern created is based on the Niho Taniwha (teeth of the phenomenon). One of the meanings of this pattern symbolises family housing and communities).

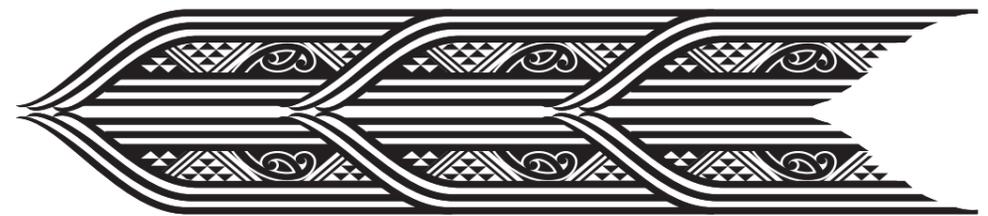
The koru pattern represents the embracing movement likened to nurturing of people.



**Left.**  
Korowai.  
Image supplied by  
Len Hetet.

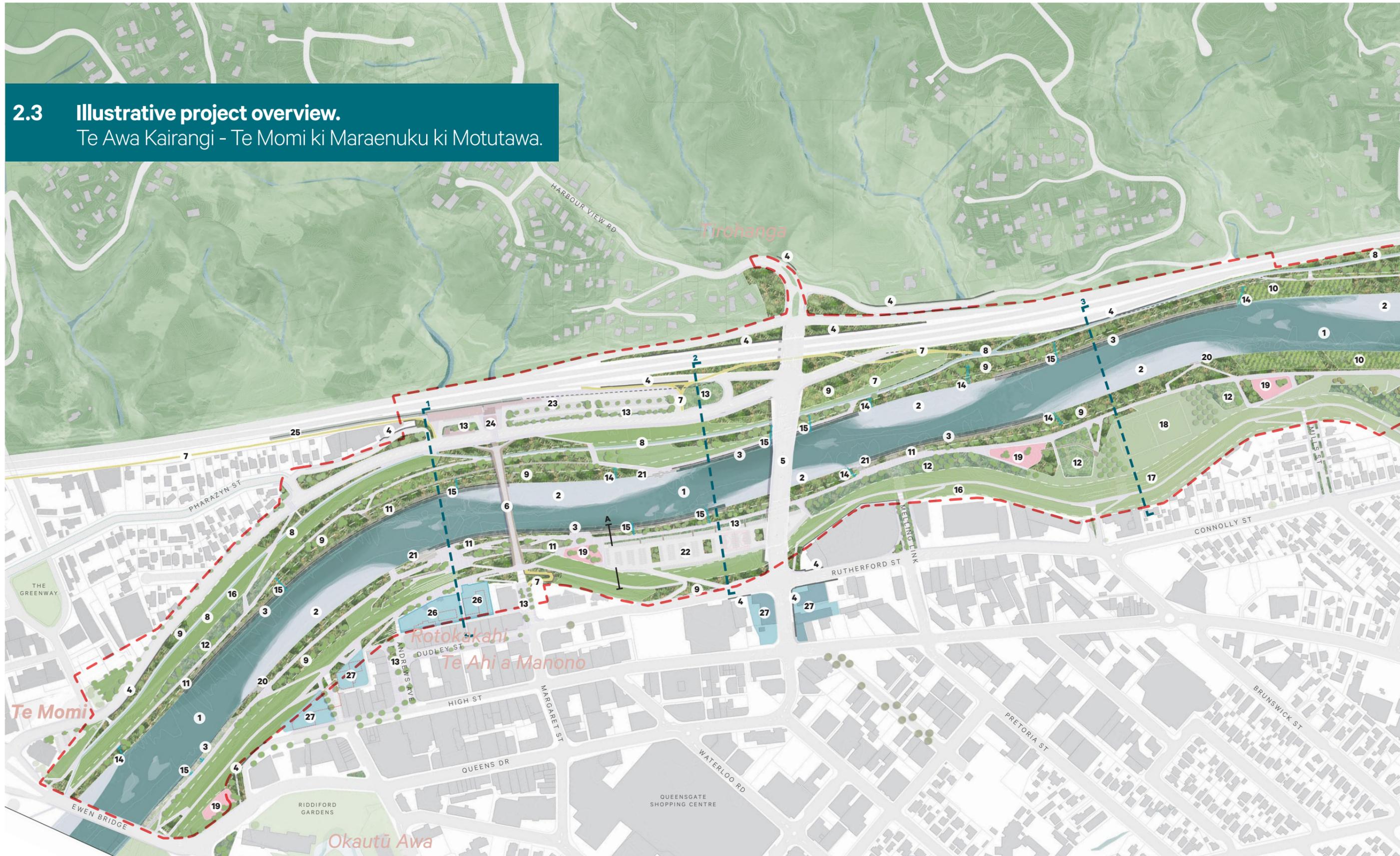


**Above.**  
Niho taniwha  
pattern.  
Image supplied by  
Len Hetet.



**Above.**  
Koru pattern.  
Image supplied by  
Len Hetet.

**2.3 Illustrative project overview.**  
Te Awa Kairangi - Te Momi ki Maraenuku ki Motutawa.





**Legend.**

1	River channel
2	Gravel beach
3	Rock lining
4	Retaining Walls
5	New Melling Bridge
6	Pedestrian & Cycle Bridge
7	Separated Cycle lane
8	Segregated Cycle lane
9	Native revegetation planting
10	Adaptive managed (bioengineered) lower berm (willow & native species) buffer
11	Rock, gravel & native edge planting
12	Biodiversity / mahinga gardens
13	Stormwater swale / raingarden
14	Naturalised stream / stormwater outlet
15	Piped stream / stormwater outlet
16	Stopbank 1:3.5 typ. gradient
17	Grass terraces 1:5.5 typ. gradient
18	Recreation Lawn
19	Play area
20	Beach access steps
21	Ūranga (water access terraces)
22	Market hub / car park
23	Park & ride car park
24	New Melling railway station
25	Rail realignment
26	Mixed use development
27	Future mixed use development

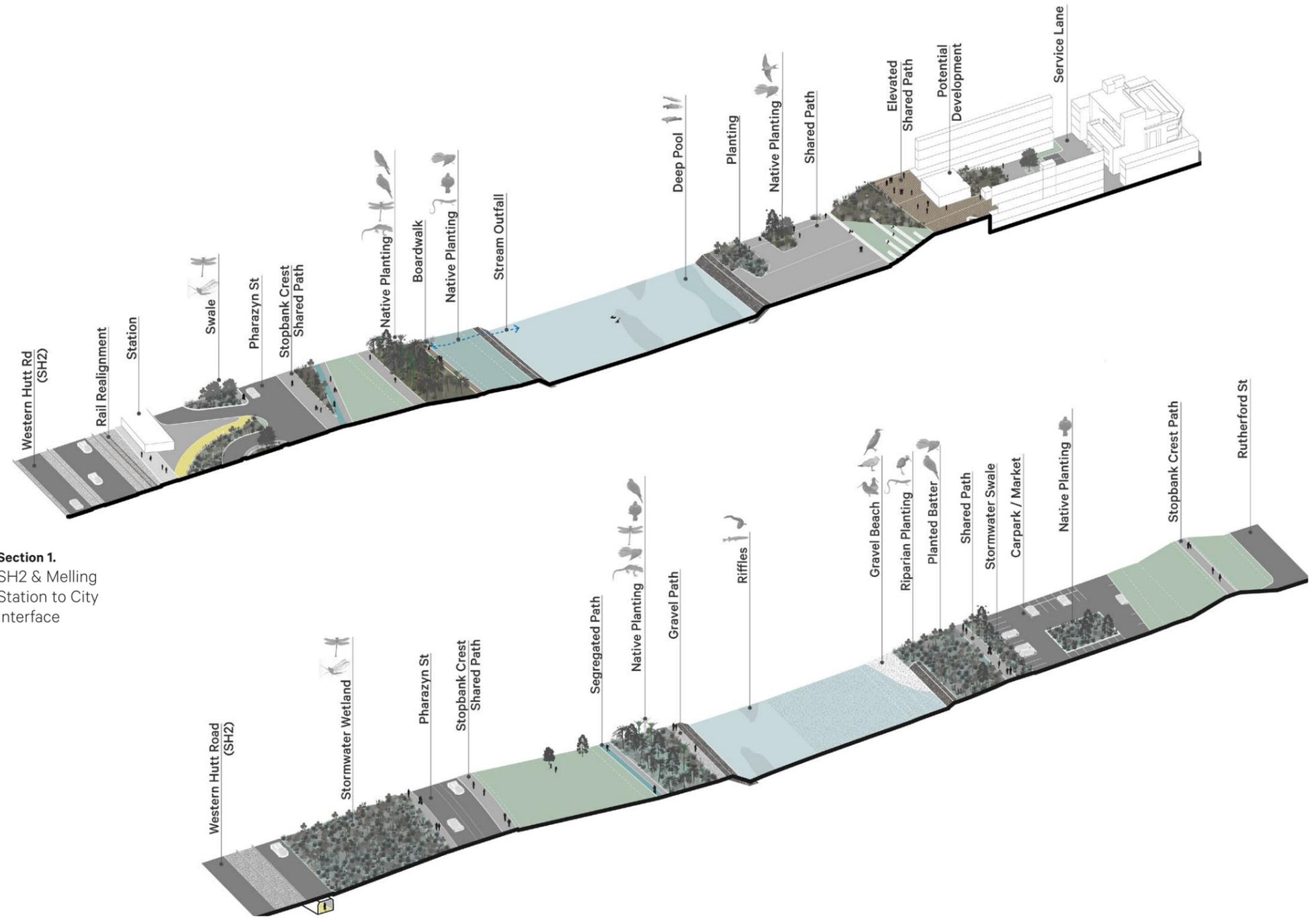
This illustrative project overview provides design direction for Te Awa Kairangi, City Edge and Melling Connections to deliver on the RiverLink project vision and principles.

The context within which the illustrative project overview has been developed is set out in the following section 3.0 Context. Design guidance and further detail on the conceptual approach to inform future design stages is provided within section 4.0. Design Framework.

 SCALE 1:5000

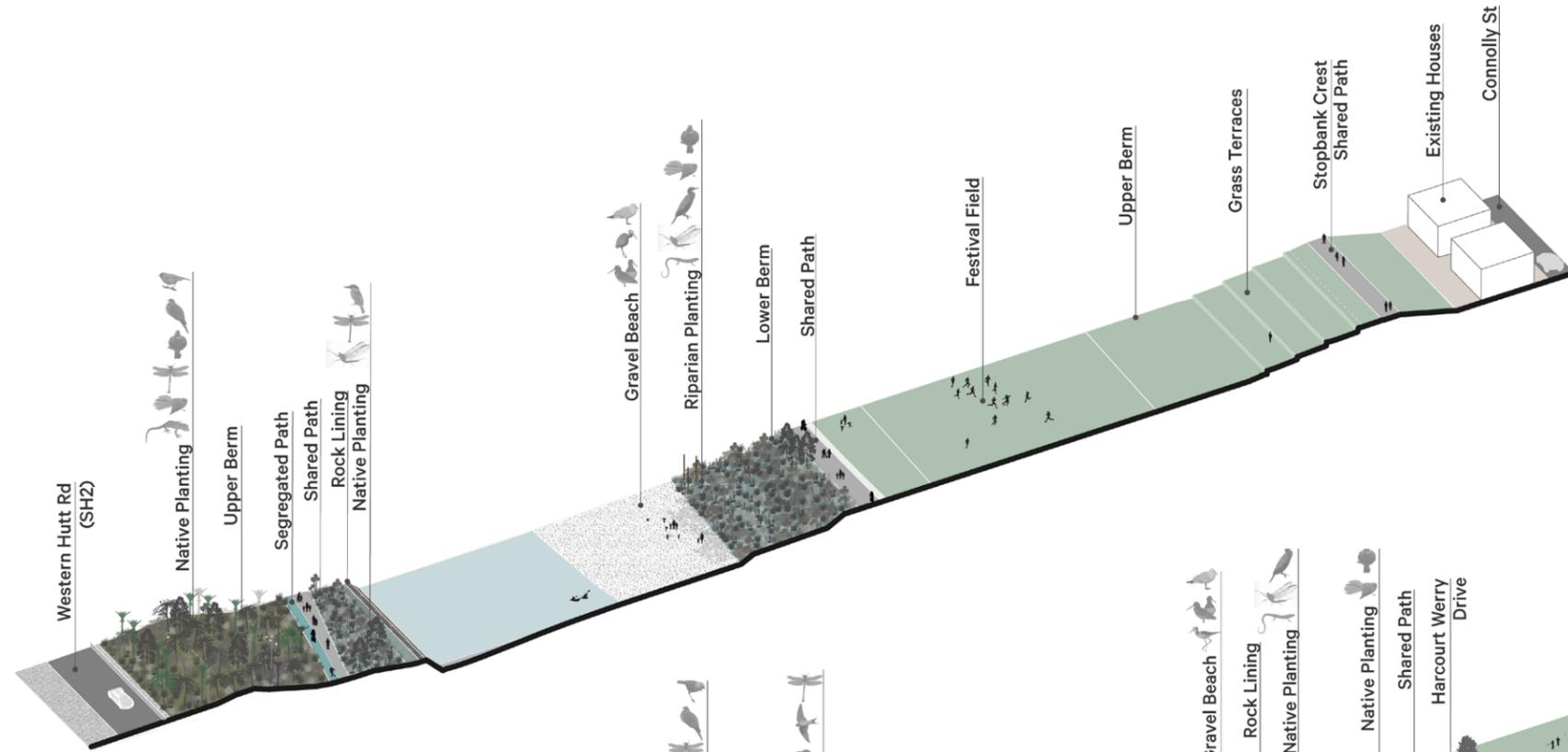
## 2.4 Illustrative cross sections.

Axonometric cross sections illustrate the varied environment along the four kilometre RiverLink project reach. An integrated approach to landscape and engineering design provides opportunities for delivery of the design principles of vitality, connectivity and identity.

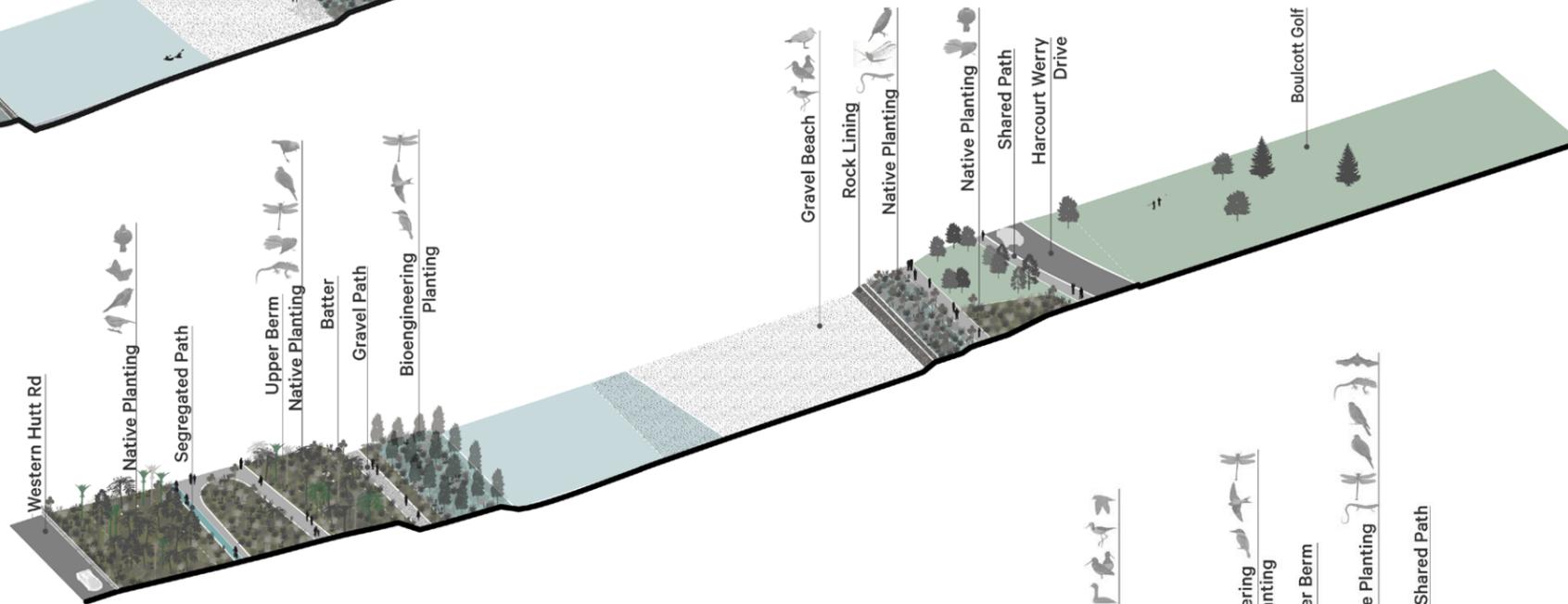


**Section 1.**  
SH2 & Melling  
Station to City  
Interface

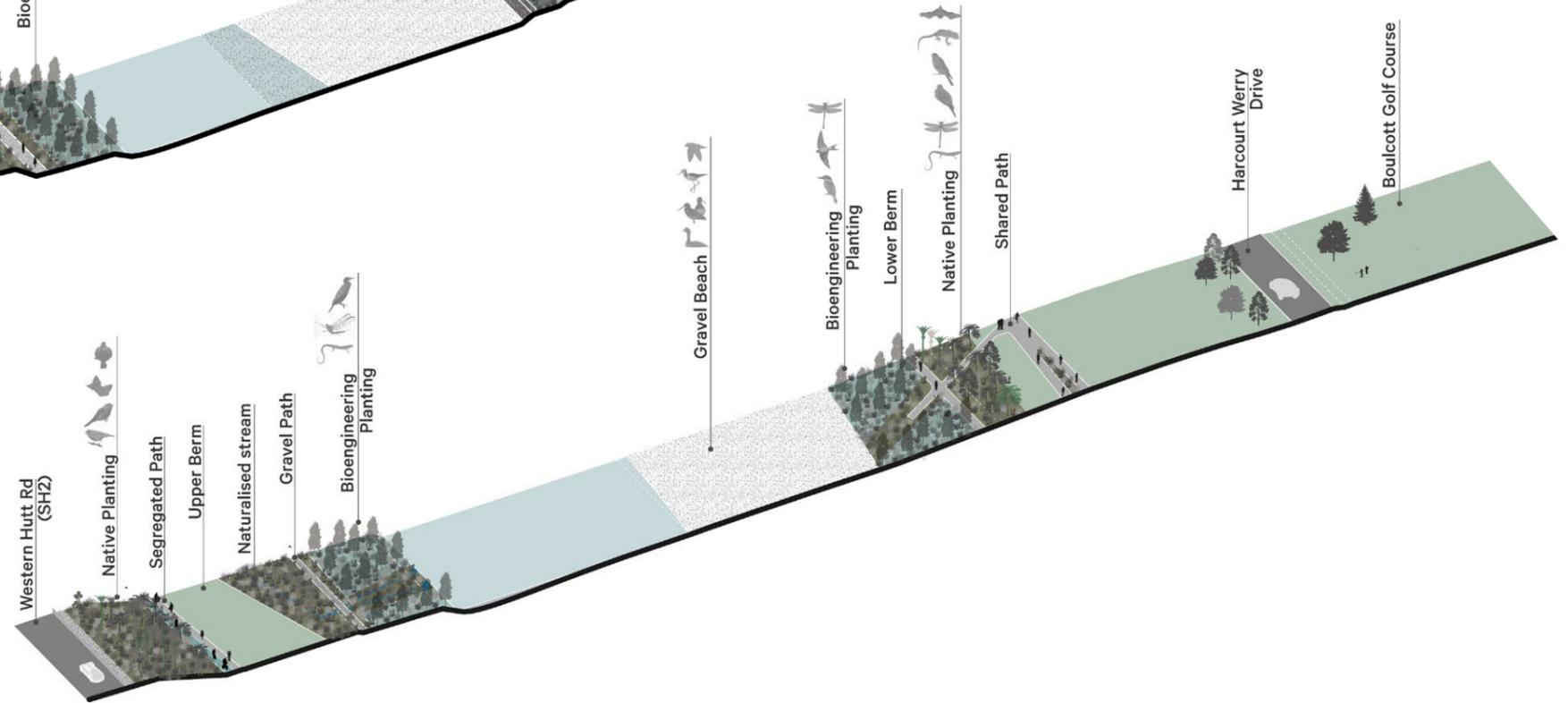
**Section 2.**  
SH2 & Melling to  
Riverbank  
Car Park



**Section 3.**  
SH2 & Right Bank  
to Festival Field &  
Residential Interface



**Section 4.**  
SH2 to Golf Course  
(South)



**Section 5.**  
SH2 to Golf Course  
(North)

## 2.5 Illustrative view 01.

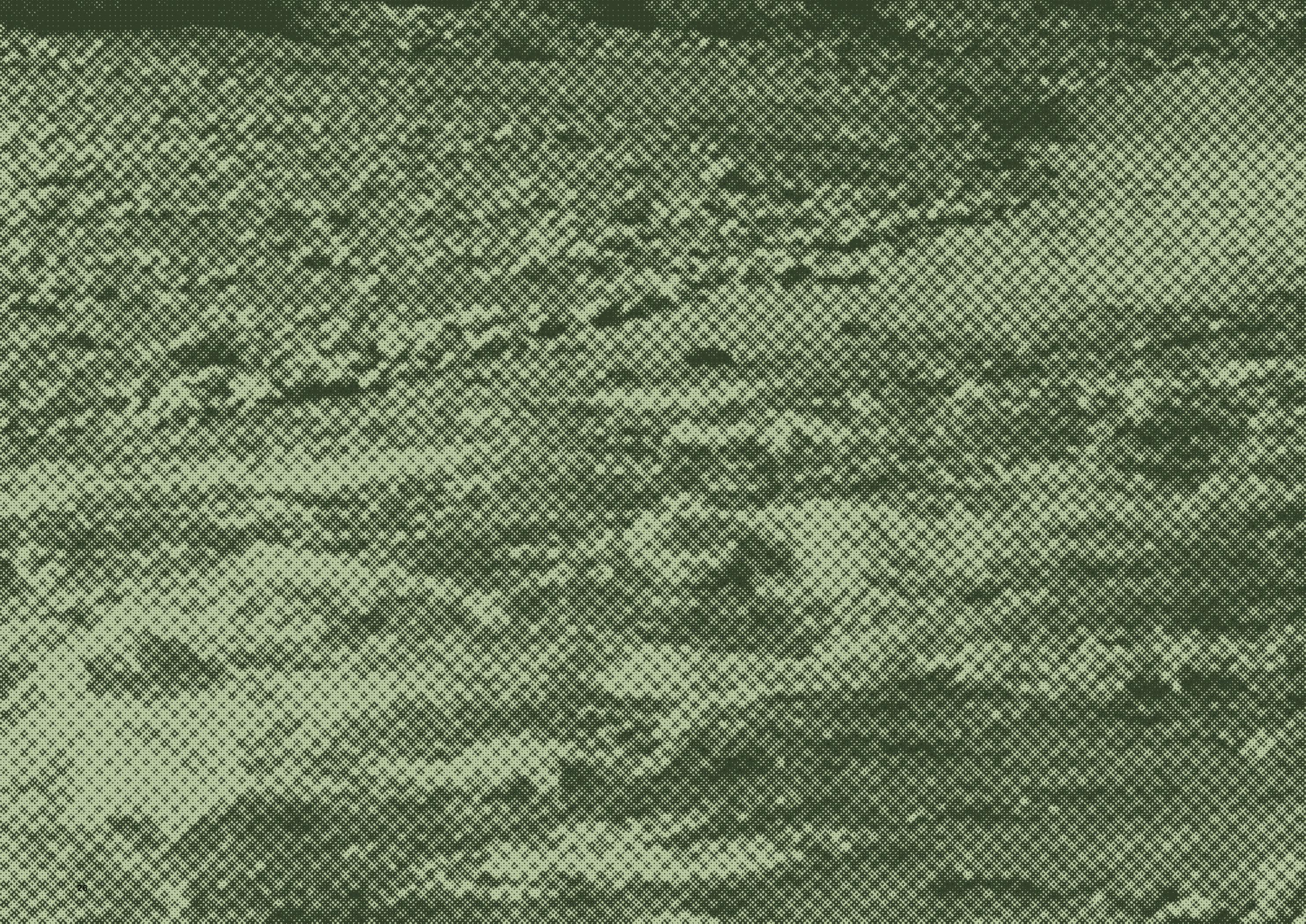


**Looking north.**  
Delivering a vital and connected river city. The project enables regeneration of Lower Hutt city centre.

## 2.6 Illustrative view 02.



**Looking south.**  
Placing the river at the heart of the city. Revegetation of the river corridor to deliver environmental, social and cultural benefits.





## 3. Context.

This section of the ULDF sets out the contextual analysis to enable an understanding of the project area within its broader setting – the complexities, and the key constraints and opportunities to inform the design framework.

### 3.1 Natural landscape.

#### Land formation.

The landforms along the project are dynamic, bold and highly modified. The natural landforms of the river valley are characterised by active faults, the Remutaka Ranges and the uplifted western escarpment. At the base of which runs the Te Awa Kairangi, a braided river now confined by past flood protection works and, across the valley and harbour, is the confined Waiwhetu aquifer.

The Hutt comprises a broad valley, formed within a wider landform system of steep and elevated ranges, hill country, valleys and basins, and lower coastal areas influenced by Wellington Harbour and coastal processes. The Tararua and Remutaka Ranges broadly enclose the Hutt Valley to the (distant) north and east. These relatively young ranges have been formed within the last 2-3 million years by dramatic geological uplift and faulting of the Wellington Region. Uplift in the ranges is ongoing, with the most significant event of recent times being the 1855 earthquake along the West Wairarapa fault, which tilted the entire Wellington Peninsula, raising the Remutaka Ranges and the Hutt Valley floor, and increasing the fall of Te Awa Kairangi<sup>1</sup>.

Landforms surrounding the Hutt Valley to the east and west comprise steep-rolling hill country – being the hills between Upper Hutt and Mangaroa, the Belmont/Haywards Hills, and the eastern hills between Hutt Valley and Wainuiomata. These are typically the remains of uplifted river terraces and old floodplains, with alluvial deposits weathered to form steeply dissected, rolling landforms.

To the immediately west of Te Awa Kairangi is the Wellington Fault – expressed as the prominent, steep eastern edge of the Belmont Hills. The southern Belmont Hills form a strong part of the contextual experience - being immediately adjacent to the river corridor, providing an elevated, vegetated back-drop to the project.

<sup>1</sup> [https://www.geotrips.org.nz/downloads/Ballance\\_NZ\\_Geology-V2.pdf](https://www.geotrips.org.nz/downloads/Ballance_NZ_Geology-V2.pdf); pg 212

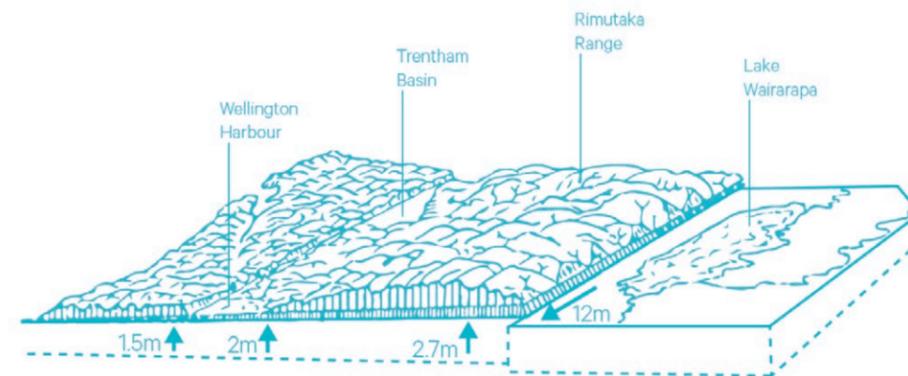
These hills are a remnant peneplain (an uplifted, gravel capped plain), with the rounded landforms expressive of this origin.

Te Awa Kairangi, in combination with the Wellington Fault, has been a fundamental influence in forming the central Hutt Valley. Prior to the earthquake in 1855, the river's primary path was on the north-west side of Gear Island. The significant uplift resulting from the 1855 earthquake altered the slope of the valley, causing the river to change course on the valley floor, and increasing its fall to the sea.

Originally far deeper, the Hutt Valley has been shallowed by the depositions of gravels and sands that have been carried into it by Te Awa Kairangi and its tributaries, as water rushed down from the vast catchment areas, across the plains to the sea<sup>2</sup>. Material derived in this way has formed the flat area on which Lower Hutt City has been built. These beds of sand percolate potable water from Te Awa Kairangi - the source of the artesian supply that is so valuable to the residents of the valley.

Within the RiverLink project area, Te Awa Kairangi follows the Belmont Hills escarpment/Wellington Fault, and starts to separate from the landform in the lower reaches, as it runs through to Te Whanganui-a-Tara/Wellington harbour and adapts to sea level.

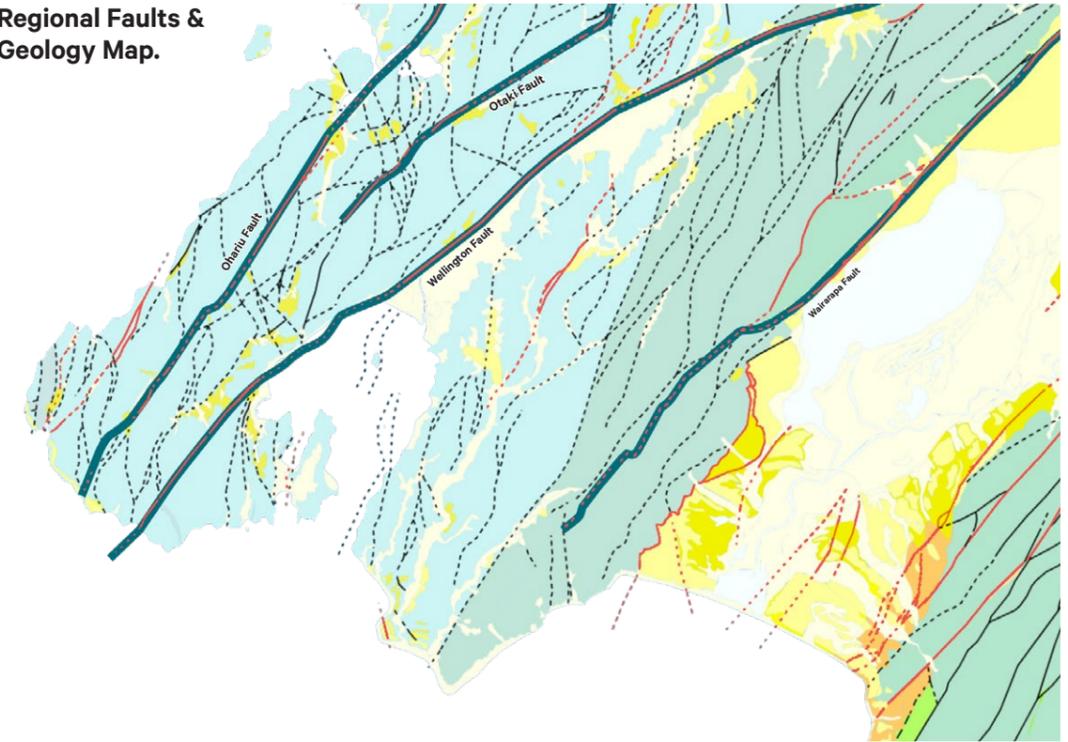
<sup>2</sup> <https://library.huttcity.mebooks.co.nz/text/LowHutt/t1-body-d2.html>



**Above**  
1855 Wairarapa earthquake alteration of the landscape.



**Regional Faults & Geology Map.**



**Above**  
New Zealand Geological Map 1:250K  
Source: <http://data.gns.cri.nz/geology/>

Legend.	
<b>Fault Activity (GNS)</b>	
	Active
	Inactive or Unknown
<b>Fault Accuracy (GNS)</b>	
	Accurate
	Approximate or Concealed
<b>Geological Units (GNS)</b>	
	Sandstone: Undifferentiated Rakaia terrane Triassic sandstone and mudstone
	Sandstone: Esk Head sandstone & mudstone
	Mudstone: Late Miocene mudstone
	Gravel: Early Pleistocene river deposits
	Gravel: Undifferentiated Pleistocene - Holocene river deposits
	Gravel: Holocene shoreline deposits

## Water.

Once part of a meandering river system, respected and of immense value to mana whenua for kaiawa and transportation, Te Awa Kairangi and its tributaries traversed the valley floor to the harbour. Beneath is the Waiwhetu aquifer - the freshwater supply to the Wellington region.

Te Awa Kairangi's catchment is spread over 655 square kilometres, nearly seven times the area of Wellington Harbour. At 56-kilometres long Te Awa Kairangi has four main tributaries (Akatarawa, Mangaroa, Pakuratahi and Whakatiki) - and a history of dramatic flooding. A storm in any part of the catchment could result in flooding, with heavy rain at the top of the catchment taking only seven hours to become floodwaters at the mouth of Te Awa Kairangi.<sup>1</sup>

As the river floodplain became urbanised, the path of Te Awa Kairangi has been increasingly confined and controlled by stopbanks, to provide the community with protection from flooding events.

Within the confines of the engineered channel, the river still manages a meander, forming small gravel beaches to either side. Patterns and relationships between beaches and in-water conditions change at times with the variable flows of Te Awa Kairangi, although these are largely determined by the water dynamics set by engineering, through stopbank alignment and edge-works design.

While beaches are considered relatively stable downstream of Melling Bridge, up-stream of Melling Bridge the river dynamics are more mobile, and beaches can be expected to continue shifting and re-shaping. In this way, and through the flooding which periodically occurs, natural patterns and processes continue within the river's engineered confines. Te Awa Kairangi displays a pattern typical of most rivers: erosion and transport of sediment in the upper catchment, conveyance through the mid reaches, and deposition in the lower reaches and at the mouth.



### 1460

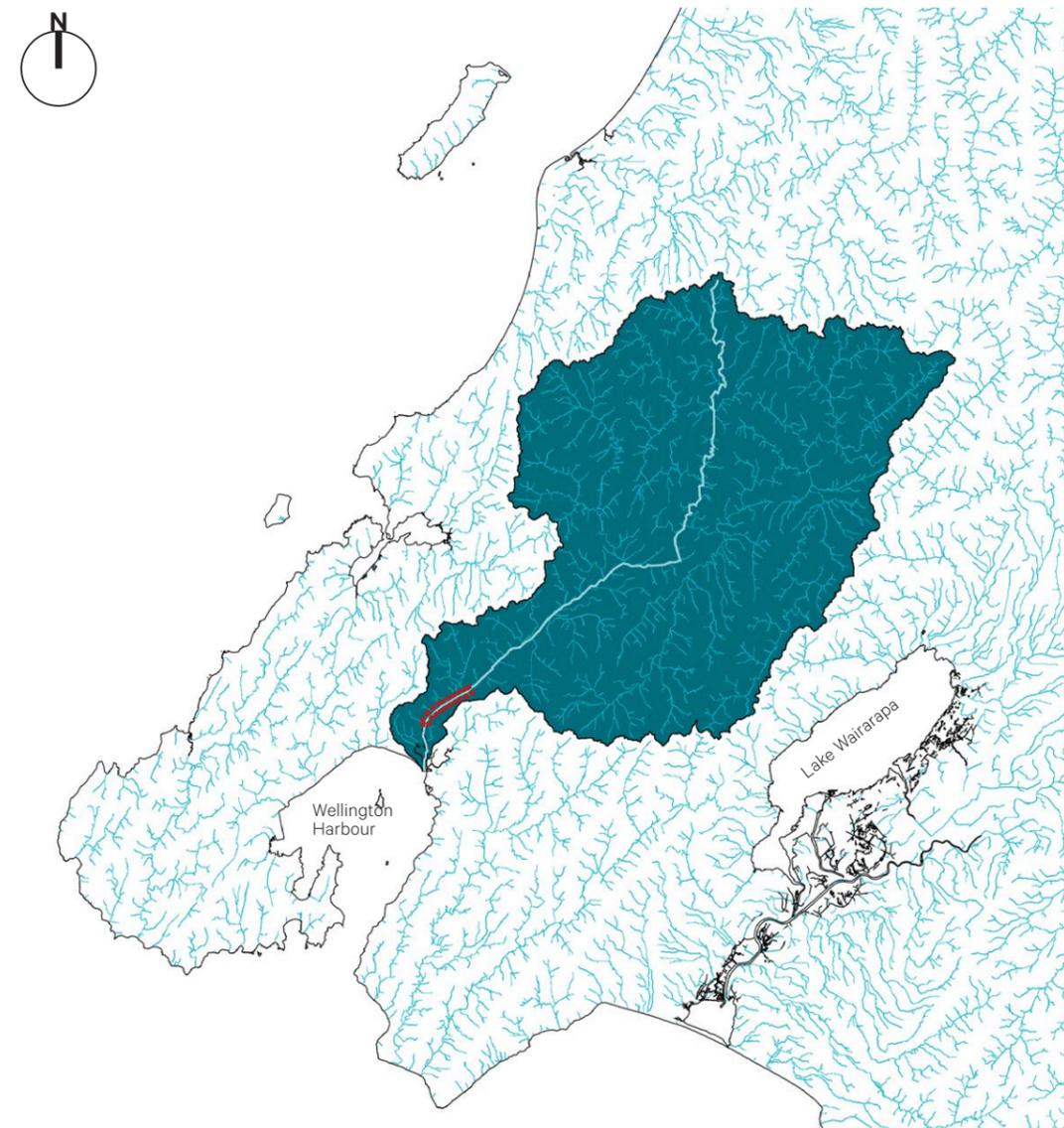
Material brought down the Hutt River moved the delta front southwards. Hao-whenua earthquake raised the harbour floor forming 'The Rise' in Cuba Street.

### 1840

The foreshore developed into a swamp with tidal inlets. Hutt River and Waiwhetu Stream were navigable. The 1855 earthquake raised the Hutt delta 1.8-2.1m, draining the swamps reducing the depth of the river and extending the shoreline southwards.

### Present day

The river has single channel form. The lower reaches have undergone channel straightening through gravel extraction and reshaping of beds following flood events. The Hutt Valley is fully urbanised. Land reclamation has taken place to form the Seaview/Gracefield industrial area.



### Streams and Hutt River catchment

#### Legend.

- RiverLink Scope
- Greater Wellington Streams
- Hutt River
- Hutt River Catchment

<sup>1</sup> <https://www.gw.govt.nz/huttriver/>.

**Habitat & Biodiversity.**

**The habitat and biodiversity values of the river have been profoundly impacted by historical clearance of wetlands and forests across the valley and in surrounding catchments – followed by urbanisation, the containment of the river for flood protection, and flood management practices such as gravel extraction and predominant use of willows. The RiverLink project offers the opportunity to positively contribute to the restoration of habitat and biodiversity values of the river environment.**

Prior to clearance, species such as raupo, flax and toetoe dominated the wetlands; kahikatea, matai, puketea and rimu forest grew extensively on the valley floor, with totara, tawa and beech on the hill slopes; and iwi knew Te Awa Kairangi as “the river of food from the sky”.<sup>1</sup>

Today, habitat within the constructed stopbanks is susceptible to the low-flow periods and flooding; stormwater inflows; and the periodic very high velocities of flood-waters, which can change the physical environment inside the river corridor – and the channel particularly.

In the upper catchment areas, beyond the project area, where the integrated relationship between indigenous terrestrial vegetation, streams, and fauna is more intact, with large areas of forest and regenerating areas providing protection to the tributaries of Te Awa Kairangi there are indications that in-water ecological conditions are excellent or near excellent. However, whitua monitoring of water quality and ecology in the lower reaches - including at Boulcott, has shown significantly degraded ecosystem health at times.<sup>2</sup>

The drivers of degraded macro-invertebrate community health in the Hutt River at Boulcott are not clear, but likely driven by a mixture of pastoral land-uses further upstream, urban land-use, water

<sup>1</sup> <http://eng.matauranga.govt.nz/Support-materials/Te-Reo-Maori/Maori-Myths-Legends-and-Contemporary-Stories/Ngake-and-Whataitai-the-taniwha-of-Wellington-harbour>.  
<sup>2</sup> Whitua Te Whanganui-a-Tara River and stream water quality and ecology; prepared for GWRC by Aquanet Consulting, 30 October 2018: Pg 74..

abstraction and river engineering works.<sup>3</sup> In the RiverLink area, over 40 stormwater outlets drain into the river, from the valley floor and western hills.

Despite that, Te Awa Kairangi continues to provide an important habitat for invertebrates and fish, with fish species such as short-finned eel (*Anguilla australis*), long-finned eel (*A. dieffenbachii*), common bully (*Gobiomorphus cotidianus*) and inanga (*Galaxias maculatus*) likely to be resident.<sup>4</sup> Inanga spawning habitat has been confirmed in the lower reaches around the Sladden Park Boat Ramp (Taylor and Marshall, 2016)<sup>5</sup>, and the presence of inanga, kokopu, and eels is confirmed by iwi, who have knowledge through traditional harvesting rights.

The lower reaches as far up-river as the Melling Bridge are tidally influenced, although saline conditions seldom penetrate further upstream than the Ewen Bridge (Montgomery Watson, 1998)<sup>6</sup>. Based on modelled tidal inundation data, inanga spawning could potentially occur as far as 200m upstream of the Ewen/Railway Avenue Bridge.<sup>7</sup>

Trout are found from the Melling Bridge up to the Pakuratahi River confluence, with the main fishery located between the Melling Bridge and Birchville. Overall, the highest numbers of trout are generally recorded at Melling, with numbers being lower in the upper reaches. The Akatarawa, Hutt, Mangaroa, Pakuratahi and Whakatikei rivers are all identified as important trout fishery rivers and spawning waters in Schedule I of the pNRP.

<sup>3</sup> Whitua Te Whanganui-a-Tara River and stream water quality and ecology; prepared for GWRC by Aquanet Consulting, 30 October 2018: Pg 74..  
<sup>4</sup> RiverLink Preliminary Design | Landscape Architecture + Urban Design + Ecological Design Technical Report; Boffa Miskell, pg 20.  
<sup>5</sup> Whitua Te Whanganui a Tara – River and stream water quality and ecology; prepared for GWRC by Aquanet Consulting, 30 October 2018: Pg 48.  
<sup>6</sup> Resource Consent Applications: River management activities in the Hutt River/Te Awa Kairangi; Tonkin & Taylor, Revised December 2016; Pg. 30  
<sup>7</sup> Whitua Te Whanganui a Tara – River and stream water quality and ecology; prepared for GWRC by Aquanet Consulting, 30 October 2018: Pg 48.

**Aquatic Species**



**Key Breeding River Birds - At Risk**



**Common Native Birds**



**Insects / Lizards**



**Terrestrial Connections**

Terrestrial links between Te Awa Kairangi and surrounding hills of the lower reaches, and the few remnants remaining across the valley floor, are largely interrupted by the extent of urbanisation, and the predominant culverting of streams to Te Awa Kairangi – which is strongly evident in the project area.

Speedy’s Stream (with its confluence just downstream of Kennedy Good Bridge) provides an example of one catchment connection where some natural character and habitat is retained. This stream drains a small, steep, forested catchment on the western side of the suburb of Kelson, and supports regenerating indigenous vegetation at the riparian margins, with good quality habitat for benthic macroinvertebrates and fish. Flood protection work in this stream is minimal, limited to maintenance of a debris arrester (400 m upstream of the confluence with the Te Awa Kairangi).<sup>8</sup> Greater Wellington is currently trialling wetland planting on the river-edge berm in this area.

While vegetation along Te Awa Kairangi is predominantly exotic and dominated by willows planted for flood protection (now largely sterile hybrids), the river continues to provide a green corridor between its upper catchment areas and Te Whanganui-a-Tara. Willows in the corridor provide perching space, as does the debris brought down with Te Awa Kairangi’s floods, and past consideration has been given as to how this can be incorporated and managed alongside public expectations on provision of high visual amenity, to provide for improved habitat.

**In-Corridor Designed Habitat**

Over the last 15 years GWRC has planted a large number of native plants in the river corridor. Species such as karamu (*Coprosma robusta*), flax (*Phormium tenax*), toetoe (*Austroderia* sp.) are now present, holding values for food and habitat, and planted areas provide “stepping stones” for some bird species such as Tui – along the length of Te Awa Kairangi, and in relation to indigenous vegetation outside the river corridor (such as in near-by reserves).

<sup>8</sup> Resource Consent Applications: River management activities in the Hutt River/Te Awa Kairangi; Tonkin & Taylor, Revised December 2016; Pg. 24

GWRC trials have indicated that active planting of indigenous species inside the river corridor is challenging, particularly on the front edge of the active river channel – where it has generally not been successful. This is for a variety of reasons, including poor soil and soil retention, harsh open conditions/wind; and the high-water velocities occurring on Te Awa Kairangi.

Planting indigenous species is more likely to be effective on tributaries, and pioneer species have also proven successful back from the edge of the river channel where soil conditions are better, and more protection is afforded by willows. Most successful establishment of indigenous species on the front edge of Te Awa Kairangi has to date been through natural regeneration, under willows and other vegetation.

There is an acknowledged that more research is needed on techniques and methods such as interplanting natives with willows along rip lines, (currently being trialled on the Hutt River by GWRC); planting after willows are established; or thinning and encouraging natural regeneration. The research trial, “Native Plants for River Edge Protection” in 2001 on the Hutt River was done by the Botanical Society and monitored for several years by Landcorp Research, providing a good source of information for future projects.<sup>9</sup>

Overall, notwithstanding constraints posed by flood protection needs (refer to Design Response – constraints), improved habitat on Te Awa Kairangi could include pools and riffles; more sheltered water-edge zones which can support ephemeral planting and catch woody debris; and edge-works to support overhanging vegetation or under-cut banks for cover and shade; as well as use of berm areas for planting, and staged and/or experimental integration of indigenous vegetation with (or in the lea of) willows.

<sup>9</sup> RiverLink internal team email; Ross Jackson GWRC; Planting for river bank edge protection Stage 1 report (review of existing information) for the project Good Practice Guidance on the use of Plantings for River Edge Protection in the Wellington Region, GWRC.

Source: Hutt City District Plan



**HCC Green Connections**

**Legend.**

- River Recreation
- General Recreation
- Significant Natural Resource Site
- Hutt River
- Gravel Beaches



There are likely to be constraints on creating optimal desirable in-water/river-bed conditions (e.g. ideally bed substrate types would provide cover), due to the flood protection needs and the force of natural processes within this engineered environment. While RiverLink provides more “breathing space” for habitat, constructed habitat may always be at risk along this stretch of Te Awa Kairangi.

## 3.2 Cultural landscape.

History tells of two taniwha, Ngake and Whāitaitai who lived in Te Whanganui-a-Tara when it was a lake. The lake became too small for the taniwha and they longed to escape into the ocean to the south. Ngake positioned himself on the northern edge and using his tail as a spring thrust himself towards the southern shores, smashing a passage through to what is today known as Cook Strait. The force of the release of Ngake's coiled tail carved Awa Kairangi –river of food from the sky.<sup>1</sup>

Te Awa Kairangi is Ngā Taonga a Nui<sup>2</sup> to tangata whenua, treasured by Māori for the abundant food resources it provided, and the access it gave to the vast forest across the valley floor.

### Taranaki Whānui ki Te Upoko o Te Ika connections

Taranaki ki te Upoko te Ika Maui/Te Ātiawa hold mana whenua over Te Awa Kairangi (and Te Whanganui-a-Tara/Wellington Harbour) – and derive cultural and spiritual identity from the river.

Te Awa Kairangi is the oldest name for the Hutt River attributed to the Polynesian explorer Kupe. The origins of the streams flowing to Awa Kairangi are high in the Tararua Range. The stream and rivers lead down through Pakuratahi at the head of the Hutt Valley. Taranaki Whānui ki Te Upoko o Te Ika had interests at Pakuratahi. The trail linking Te Whanganui-a-Tara and the Wairarapa came through Pakuratahi and over the Remutaka Range. Prior to the 1855 uplift Te Awa Kairangi was navigable by waka up to Pakuratahi.

Taranaki Whānui ki Te Upoko o Te Ika travelled in the Hutt Valley largely by waka. There were few trails through the heavy forest of the valley. Many kainga

<sup>1</sup> <http://eng.matauranga.govt.nz/Support-materials/Te-Reo-Maori/Maori-Myths-Legends-and-Contemporary-Stories/Ngake-and-Whaitaitai-the-taniwha-of-Wellington-harbour>.

<sup>2</sup> Defined in the Greater Wellington Proposed Natural Resources Plan (Chapter 2) as those large freshwater and coastal entities from which mana whenua derive cultural and spiritual identity, their status as mana whenua and the associated responsibilities that come with that including those of kaitiaki.

and pā were close to the river including at Haukaretu (Māoribank), Whakataka Pā (across from what is now Te Marua), Mawaihakona (Wallaceville), Whirinaki, Motutawa Pā (Avalon), Maraenuku Pā (Boulcott), Paetutu Pā and at the mouth of the river, Hikoikoi Pā to the west and Waiwhetu Pā (Owhiti) to the east.

Te Awa Kairangi linked the settlements as well as being a food supply for the pā and kainga along the river. Mahinga kai were found along the river such as Te Momi (Petone), which was a wetland that held abundant resources of birds, tuna and other food sources. The river ranged across the valley floor and changed course several times leaving rich garden sites. Waka were carved from forest trees felled for that purpose close to the river.<sup>3</sup>

Maraenuku and Motutawa pā sites are of particular relevance to the RiverLink project, due to their position within the project area on the left bank in the vicinity of the present site of the Lower Hutt sub-station.

### Ngāti Toa connections

Ngāti Toa Rangatira also have long-standing associations with Te Awa Kairangi. The iwi claim association with the river from the time of their participation in the invasion of the Hutt Valley during 1819 and 1820. During that campaign, the taua marched around the western side of Te Whanganui-a-Tara, defeating the local iwi as they went. When the war party reached Te Awa Kairangi, they constructed rafts which they used to aid them in their invasion of the Hutt Valley.

Although Ngāti Toa Rangatira did not remain in the area after this invasion, Te Awa Kairangi continued to be important to the iwi following their permanent migration and settlement in the lower North Island in the late 1820s and early 1830s. The relationship of Ngāti Toa Rangatira to the Hutt Valley and Te Awa Kairangi was not one defined by concentrated settlement and physical presence. Rather, the iwi

<sup>3</sup> Statement of Association (traditional, historical, cultural and spiritual associations) of Taranaki Whānui ki Te Upoko o Te Ika with Te Awa Kairangi; Greater Wellington Proposed Natural Resources Plan, Chapter 12 Schedules.

felt their claim to the land was strong based on the powerful leadership of Te Rauparaha and Te Rangihaeata and the relationship they had with iwi residing in the Hutt Valley who had been placed there by Ngāti Toa in the 1830s. For some years these iwi in the Hutt Valley paid tribute of goods such as canoes, eels and birds to Te Rauparaha and Te Rangihaeata.

For Ngāti Toa Te Awa Kairangi was traditionally an area for gathering piharau, or the freshwater blind eel, as well as tuna (eel) from its tributaries. Harataunga also supported flax plantations, which were used for trading with settlers. The river was also of great importance as the largest source of freshwater in the area. It was also an important transport route, and small waka were used along the length of Te Awa Kairangi.<sup>4</sup>

### Ongoing Kaitiakitanga

Mana whenua hold a kaitiaki role for Te Awa Kairangi. While the river is a fundamentally different environment from that known by Māori in past times, today that kaitiaki role is crucial in relation to issues such as mauri, water quality, and maintaining and increasing indigenous flora and fauna along the length of the river.

Tangata whenua have previously identified aspirations for Te Awa Kairangi, and these are included in the Hutt River Floodplain Management Plan.<sup>5</sup>

These are:

- stop the discharge of toxic and industrial wastes into the river, allowing flora and fauna to regenerate and be conserved (particularly watercress);
- re-establish swamps alongside the river to provide for flax and paru;
- propagate native forest and plant species alongside the river; and
- provide adequate pest management strategies to protect native species.

<sup>4</sup> Statement of Association of Ngāti Toa Rangatira with Te Awa Kairangi; Greater Wellington Proposed Natural Resources Plan, Chapter 12 Schedules.

<sup>5</sup> Hutt River Floodplain Management Plan; Greater Wellington 2001; pg 27.

Traditional uses of the river and its environment, and Maori history of the river, are also identified as important.

Tangata whenua consider re-establishing native flora and fauna, and swamp areas, to be priorities for the care of Te Awa Kairangi, as part of kaitiakitanga. Many of the native species that once grew on the Hutt floodplain have cultural and historical significance. Some of these species are still present, but in low numbers. Opportunities exist to use species that are traditionally harvested, such as flax (*Phormium tenax*) and watercress (*Rorippa microphylla*), increasing the number of these species.

Good management is required so that works on the river are not timed during critical periods of the year for indigenous fish species; and opportunities should be taken to provide for habitat improvements (such as allowing for overhanging vegetation on river edges, and dealing with sedimentation through increased wetland plantings).

These matters have been well documented by tangata whenua, including in detail within cultural impact reporting relating to management activities on Te Awa Kairangi. Work is likely to be ongoing on identifying key matters for kaitiakitanga and design, as mana whenua provides input to the RiverLink project.

Today the river is still regularly used in summer by waka (with up to the Ava Rail Bridge now usually being the limit), and for fishing, including for whitebait – juvenile of inanga, kokopu, and eeling. Indigenous fish species are seen as treasured parts of the environment.



Left.  
Cliff Whiting – Whanganui A Tara (Ngake and Whataitai) c.1990. Collection of the Dowse Art Museum.

**Māori sites of significance.**



Legend.	
●	Pā Site
▲	Land feature/Trig
■	Urupa
■	Marae
■	Campsites
■	Battle Grounds
■	Indicative Kainga/ Villages
—	Current Stream Natural Resources Plan
—	Significant Stream
—	Historic Streams
—	Natural Resources Plan + Current Streams
↔	Trade/Movement
*	District Plan Significant Site (Maori reference number may differ)
<b>M9</b>	Proposed Maori Site of significance
■	Taita Blockhouse
■	Fort Richmond



### 3.3 Urban Development.

**Lower Hutt has a complex history of settlement from early Māori habitation patterns to European settlement and the subsequent clearance of forests, confinement of the river and intense development of the valley floor. The urban development of the city centre in combination with the construction of stopbanks for flood protection have resulted in a city centre disconnected from the river.**

**The RiverLink project offers the opportunity to 'turn the city around' to reconnect with the river, to re-imagine Lower Hutt as a 'river city' with Te Awa Kairangi at the centre. Celebrating the city's modernist architecture while looking to the future and supporting mana whenua connections with the river.**

#### Settlement patterns

Lower Hutt has a complex history of settlement, Māori settlement tended to be along the length of Te Awa Kairangi, which provided a main means of transport via waka, as well as food. Settlement was particularly concentrated nearer to Te Whanganui-a-Tara, and the resources provided by the sea and coastal wetlands.<sup>1</sup>

As European settlement intensified, Te Awa Kairangi and its surrounds were particularly shaped by conflict - marked by the construction of the Taita Blockhouse near Motutawa Pa, Boulcott Stocade near Maraenuku Pa, and Fort Richmond near Te Ahi a Manono kainga.<sup>2</sup>

From the 1900s European settlement patterns on the valley floor began from the end of what is now Ewen Bridge - with large rural blocks set out east of High Street - roughly aligned with the western escarpment, and configured as diagonal parallelograms (rather

<sup>1</sup> Cultural Values Report, Te Awa Kairangi - Application for consents for river and stream maintenance in the Hutt Valley; Port Nicholson Block Settlement Trust & Wellington Tenth's Trust; Raukura Consultants;

<sup>2</sup> Cultural Values Report, Te Awa Kairangi - Application for consents for river and stream maintenance in the Hutt Valley; Port Nicholson Block Settlement Trust & Wellington Tenth's Trust; Raukura Consultants; pg. 19.

than squared grids). From the 1950s finer-grain street patterning occurred as rural blocks were subdivided for residential uses. By the 1970s Lower Hutt's settlement pattern was largely defined, centred along High Street and marked by a pattern of intersecting grid/parallelogram streets - adjacent to but largely unconnected to the river. The streets, blocks and buildings typically turn away from the river, presenting the 'back' of a site or building to the river corridor. Resulting in the perception of the river as 'over there', or 'out the back', rather than a valued part of the city.

Indigenous vegetation that once covered the flood plain has been cleared, with only fragments remaining, leaving little clue as to the forest system that occupied the valley prior to European arrival and settlement. The adjacent Western Hills remain predominantly in native forest, with road and residential development typically following the ridge lines. The Eastern Hills contain a mix of pasture-land and native forest cover.

In the late 1940s, 50s and early 60s Lower Hutt was at the forefront of architectural development in New Zealand. led by visionary Mayor, J W Andrews, who initiated a large-scale building programme and the first non-governmental town-planning scheme. This brought about a complete rejuvenation of the central city, including re-planning roads and the construction of a new civic centre.

A number of nationally significant Modern Movement buildings were constructed in the city centre during this time, including the Post Office on the corner of Andrews Ave and High Street (designed by the Government Architect JT Mai), and the Hutt Civic Centre, designed by Structon and King Cook and Dawson. The civic centre was deliberately set into a park setting (Riddiford Park), and at the time was seen as being symbolic of a highly developed sense of civic pride.

Railway stations in Lower Hutt, such as Melling, as well as signal cabins, substations and goods sheds were also all designed in the Modern Movement style.<sup>3</sup>

<sup>3</sup> Central City Transformation Plan McIndoe Urban Ltd; February 2019; Part 1.2 Urban and Spatial Structure

The Central City Transformation Plan (CCTP) includes recommendations to promote and celebrate Modern Movement architecture in Lower Hutt, including the retention/expansion of Riddiford Park (near the Memorial Library), and restoration of the park's landscape with a 1950's aesthetic.

#### Recent/current

In broad terms, the predominant existing pattern around the RiverLink project area is one of dense urban development to the east and south of Te Awa Kairangi, and berm areas bounded by arterial transport routes to the west, although this pattern is broken just north of Alicetown (on the true right / west side of Te Awa Kairangi), where urban development extends north of Ewen Bridge. In this area development becomes increasingly confined

between the river corridor and SH2/Melling line - until it reaches and stops at Melling Bridge.

This area of mixed residential/industrial/commercial development to the west between Ewen and Melling Bridges has been the focus for Greater Wellington for land acquisition, as a method of providing the levels of flood protection agreed with community in the 2001 Floodplain Management Plan. The existing density of settlement around Te Awa Kairangi in Lower Hutt has been provided for by increased flood protection to the valley floor over time. To the east of the river, dense urban patterning comes up to the stopbank edge - comprising the Lower Hutt city centre; residential areas to the north of the city at Boulcott; and predominantly residential development south of Ewen Bridge (at Alicetown and Woburn).



**Above.**  
Lower Hutt in 1880, showing a broader, meandering river and adjacent wetlands. Source National Library of New Zealand

Despite Te Awa Kairangi providing a strong 'edge' to, and context for, the city, development in Lower Hutt city consistently turns its back on the river. This problem has been well recognised and documented in recent times, including through the life of the RiverLink project, and in Lower Hutt City Centre Transformation Plan.

**Hut City: Central City Transformation Plan**  
 Hutt City Council's recent Central City Transformation Plan identifies Te Awa Kairangi as the strongest "edge" feature for the city's urban form<sup>4</sup> - although it is encountered from within the city predominantly as a grassed stopbank and, from more distant viewpoints, as a belt of trees that merges visually with the backdrop of the Western Hills.

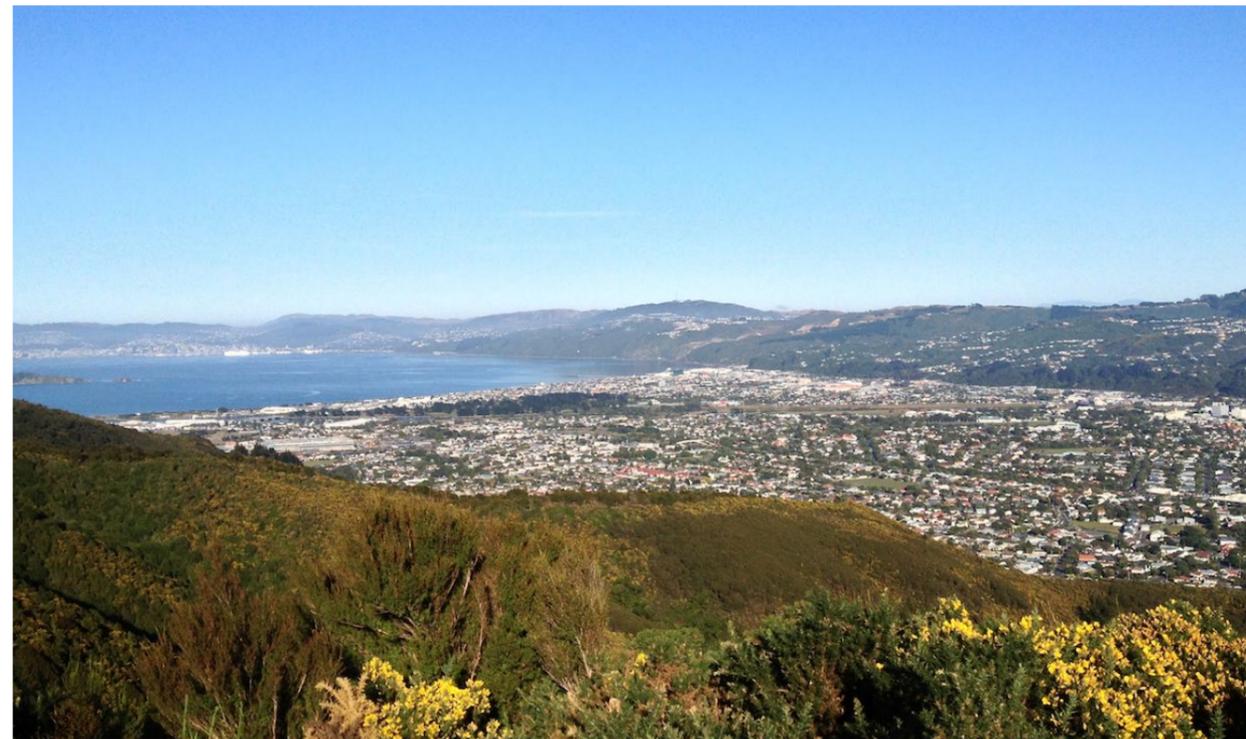
The Transformation Plan sets out strategies to change this patterning. Integration with the RiverLink project to achieve that is key, alongside providing for/encouraging mixed-use development and intensification within the city centre.

There are acknowledged economic complexities in achieving the best possible connection between new built development in the city and the river environment. Following a period of minimal housing growth in the late 20th century, more recently property prices and demand have risen suggesting a growing appetite for housing stock within the city, supporting the desire for a city for living, alongside work and play.

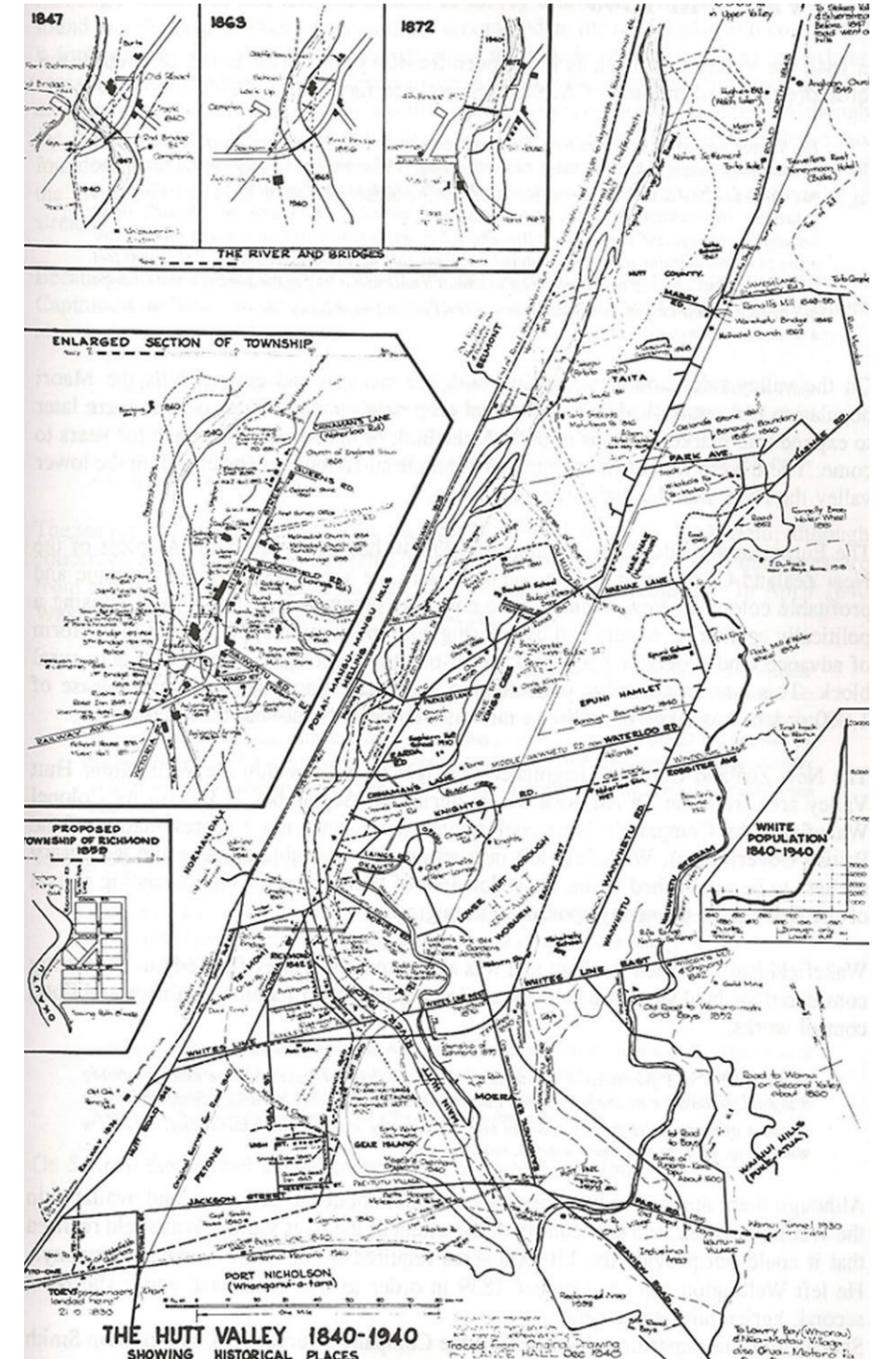
4 Central City Transformation Plan; Hutt City Council; February 2019; Part 1.2 Urban and Spatial Structure; pg. 22



Above.  
 Brees, Samuel Charles 1810-1865: Banks of the Hutt River near Molesworth Farm.



Above.  
 Looking south-west across Lower Hutt and the former river plain, from the Whiti Riser in the Eastern Hills.



Above.  
 Hutt Valley Historical Place Map 1840 - 1940.

### Transport patterns.

Transport patterns through Lower Hutt are strongly influenced by landform and river. Traditionally, Te Awa Kairangi was the main transport route through the valley by waka; providing access to resources across the forested valley. Past earthquake uplift, bridges and river management practices now limit the navigability of the river via waka. Today the main arterial routes connecting Lower Hutt to the north and south (State Highway 2 (SH2) and the Melling rail line, travel along the base of the western hills – confined between the landform escarpment and Te Awa Kairangi. The river provides a strong natural element separating these main transport routes from development on the Lower Hutt valley floor – being the city centre and its residential communities.

At Lower Hutt connections from SH2 across Te Awa Kairangi to Lower Hutt city and residential road networks, are provided via the Melling and Kennedy-Good Bridges (inside the project area). The Melling Bridge (Melling Link) gives access to the northern edge of the city centre; Kennedy-Good Bridge provides access to residential area north of the city – at Avalon and Boulcott. The intersections are currently at-grade at both the Melling and Kennedy Good Bridges, causing congestion, access and safety problems.

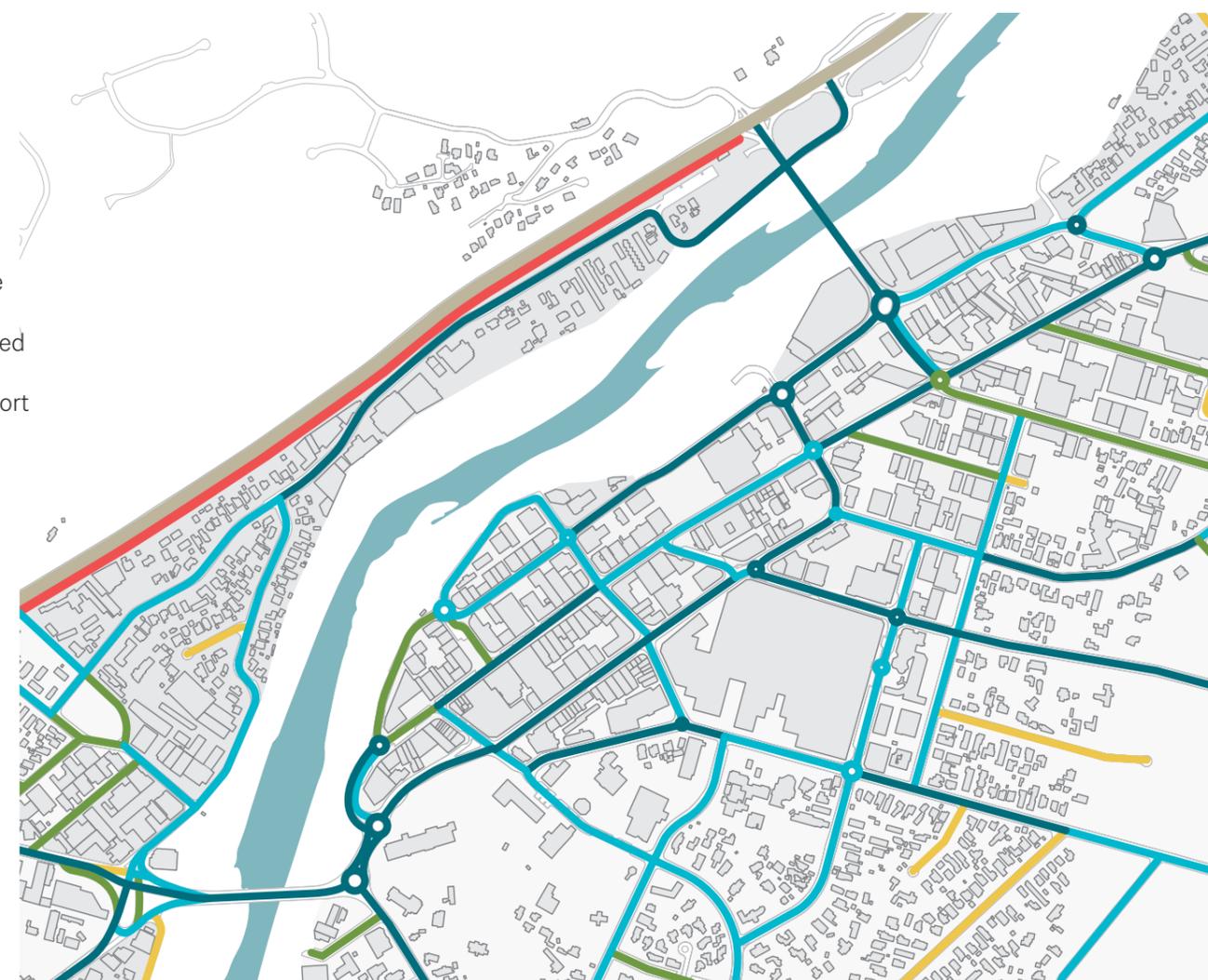
Roads from residential areas on the Belmont hills connect over SH2 into Lower Hutt centre – at Normandale Road and Melling, in the vicinity of the existing Melling Railway Station (at the Melling Bridge). The Melling rail line provides

Lower Hutt communities with a public transport link into Wellington City. The Melling station is located at the end of the line. A park-and-ride facility is located at the station, with additional on-street parking. Melling Bridge provides a pedestrian connection between the rail line and the city. Further parking is provided at the Riverbank Car Park, on the east side of the river – with this largely catering for workers in the central city.<sup>5</sup>

Historically the Melling line continued north as part of the main line to the Wairarapa. It became a branch line in the 1950s, when Upper Hutt and Wairarapa trains were diverted through the Hutt Valley, via Ava Rail Bridge, and through Taita.<sup>6</sup> Queens Drive is utilised as a key public bus transport connection into the CBD. Within the city itself, walking is the primary mode for access to workplaces, shops, cafés, and public amenities including various transport modes.

At the south end of the RiverLink area Ewen Bridge provides a third entrance over Te Awa Kairangi into Lower Hutt city centre, from Alicetown/Petone. Ewen Bridge is not connected to SH2. Historically Ewen Bridge provided the first, main connection from the south into Lower Hutt across Te Awa Kairangi – with the city’s settlement pattern evolving eastwards from the main road (High Street) coming off Ewen Bridge.

5 Central City Transformation Plan Hutt City Council; 2019; pg. 57.  
6 <http://www.valleysignals.org.nz/melling/melling.html>



### Transport network

#### Legend.

- State Highway
- Arterial Road
- Primary Collector Road
- Secondary Collector Road
- Access Road
- Rail Line

**River recreation.**

The RiverLink project area forms part of Greater Wellington’s “Linear Park” vision for Te Awa Kairangi<sup>7</sup>, which takes in the river corridor from Kaitoke Regional Park to Hikoikoi Reserve on Petone’s Marine Parade, and includes the hugely popular Hutt River Trail.

The Hutt River Trail runs the entire length of the eastern riverbank (29km) and is popular for recreational and commuter use. It has been formed progressively over many years with a large involvement from Rotary. Within the RiverLink project area the trail typically follows the top of stopbanks – where it is sealed; as well as on berms as an unsealed track. Te Awa Kairangi is also popular for its gravel beaches - which provide direct access to the water, and for recreational uses including basket ball courts.

**Life in the City.**

There is currently limited inner city living in the city centre, with day-to-day activities centred on work and commerce – with main areas of activity being on High Street, Queen Drive, and around the civic area – with the council buildings, the courthouse and the Dowse Art Museum forming a strong core to the city centre. Office and large format retail uses generally back on to the river, with car parking provided within the river corridor. At the weekend the Riverbank carpark comes to life - transforming into the Riverbank Market.

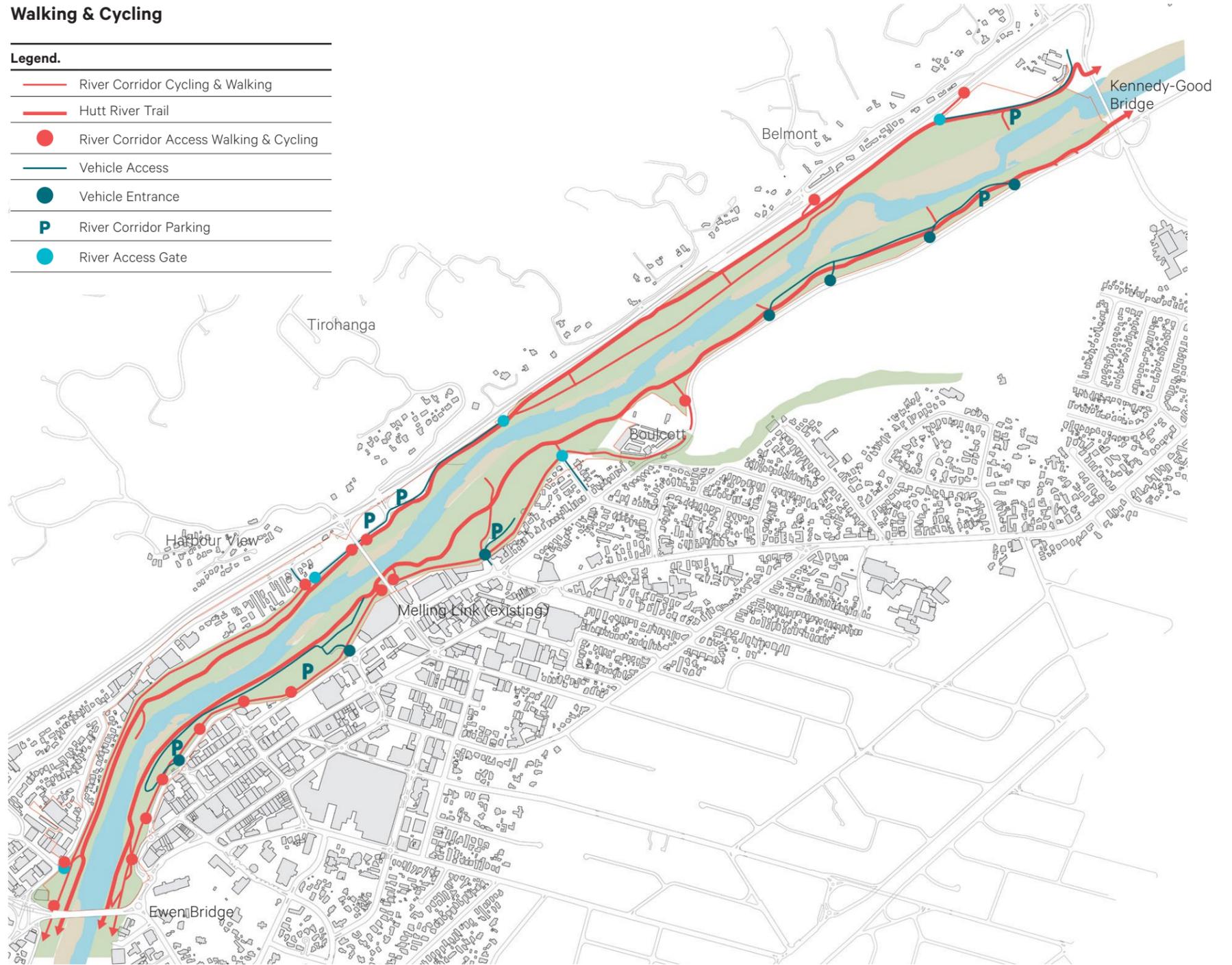
The Central City Transformation Plan (CCTP) describes the city as “a largely vehicular-based environment [with] a poorly defined, dispersed core” – an environment which “does not provide a setting that attracts people, investment or high levels of economic activity”.<sup>8</sup> The Transformation Plan notes that the close proximity of Petone’s heritage-oriented centre competes with Lower Hutt’s centre, and necessitates a strategy built on the central city’s point of difference. That point of difference is Te Awa Kairangi. Lower Hutt City occupies a river-front location but currently does not engage with this natural asset.

<sup>7</sup> As set out in the Hutt River Floodplain Management Plan 2001; Greater Wellington Regional Council.  
<sup>8</sup> Central City Transformation Plan Hutt City Council; 2019; pg. 4.



**Walking & Cycling**

Legend.	
	River Corridor Cycling & Walking
	Hutt River Trail
	River Corridor Access Walking & Cycling
	Vehicle Access
	Vehicle Entrance
	River Corridor Parking
	River Access Gate



## Stormwater Management.

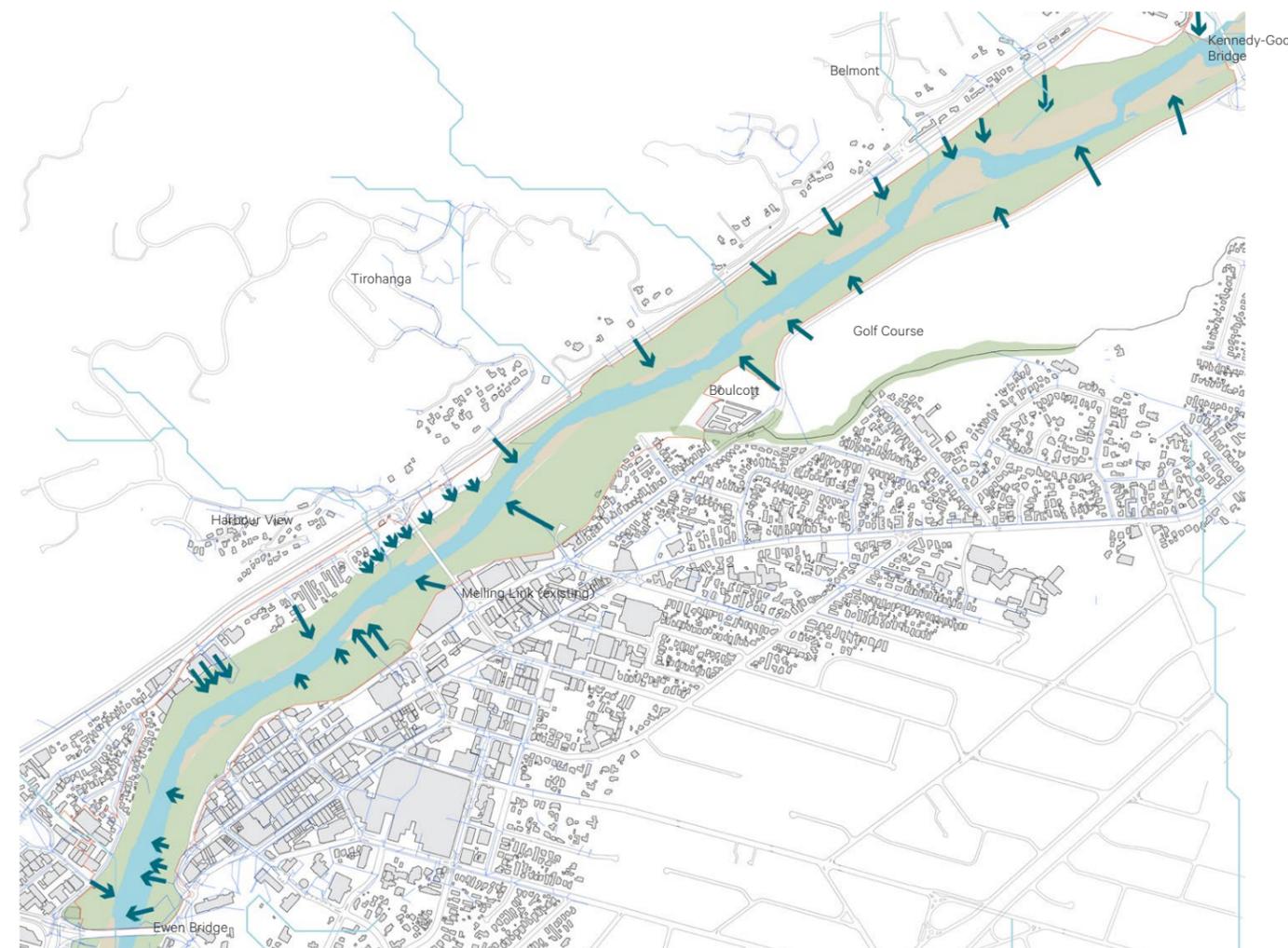
**Numerous tributaries flow into Te Awa Kairangi from the western hills and the urbanised area of Lower Hutt city via the piped stormwater network - with little treatment at-source. Water quality treatment within the receiving environment of the river corridor and floodway presents technical challenges, with at-source treatment identified as best practice.**

The recent trial at Belmont of constructed wetland areas for biodiversity purposes signals an opportunity for the RiverLink project to extend and create new areas of constructed wetlands. Daylighting of tributary stream and stormwater connections as they join the main channel for habitat and biodiversity purposes offers a further opportunity - reconnecting Te Awa Kairangi and its tributaries.

Nearly forty stormwater outfalls discharge into the river between Ewen and Kennedy-Good Bridges. Speedy's Stream confluence lies on the true right immediately downstream of the Kennedy-Good Bridge. This stream is partially open/partially culverted between State Highway 2 and Te Awa Kairangi, adjacent to Belmont Memorial Hall.

The Hutt River Floodplain Management Plan<sup>1</sup> has, in consultation with the community, established an agreed level of flood protection for the Hutt Valley. This has set the flood engineering design parameters within the RiverLink project, which in turn set parameters for the urban and landscape design components of RiverLink, including constraints on the design of hard-scape and planting inside the river corridor and near stopbanks. Engineering works provide opportunities to design for improved habitat and biodiversity, with channel design to create variety of habitat within the water-space; adaptive management of willow and indigenous species bio-engineering of channel buffers providing the required levels of flood protection.

Constructed wetland areas recently established on the western bank in the vicinity of Belmont provide for habitat and biodiversity rather than stormwater treatment. While treatment of stormwater from outside the project site presents technical challenges within the receiving environment of the river corridor, the introduction of further constructed wetland areas, back channels, and naturalised stream and stormwater outfalls - in particular those transporting natural tributaries to the main river channel would provide improved connectivity for flora and fauna, and for improved habitat and biodiversity.



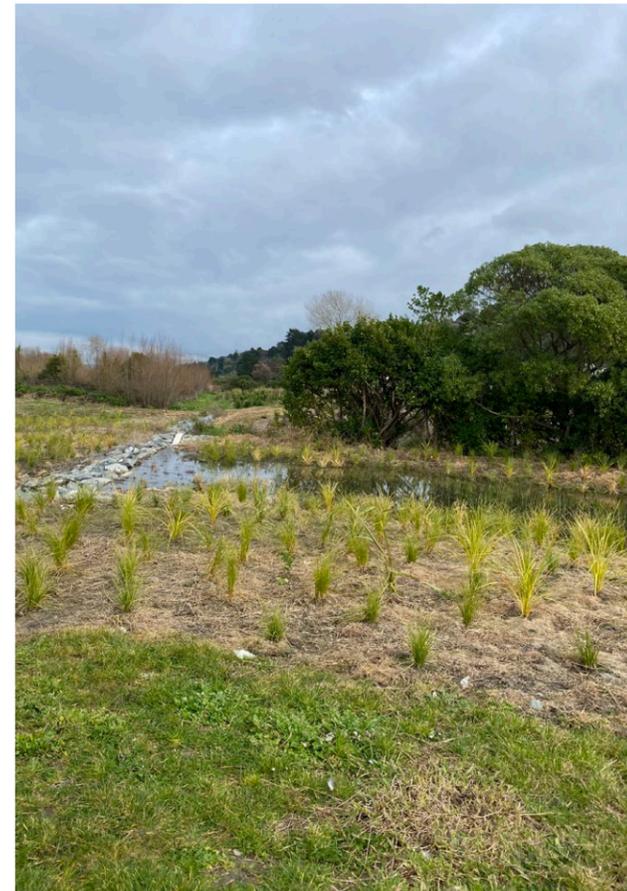
### Existing Stormwater Network & Outlets.

#### Legend.

→ Stormwater Outlets



<sup>1</sup> Hutt River Floodplain Management Plan- Greater Wellington Regional Council (2001)



**Above & left.** Images showing Lower Hutt flood in 2004.



**Above.** Existing willow bio-engineered river channel edge along the upper reach of the project area.

**Above.** Recent wetland construction at Belmont.

**Right.** Typical existing stormwater outfalls to the main river channel within the project site.





A halftone pattern of a landscape. The top part shows a dark, rounded hill against a lighter, dotted sky. Below the hill is a wide, flat field. The entire image is composed of a grid of small dots, with varying densities to create shades of gray and black.

## 4. Design Framework.

This section of the ULDF sets out the framework for urban and landscape design for Te Awa Kairangi - Te Momi ki Maraenuku ki Motutawa, underpinned by the project vision, principles and design strategy. A series of Design Outcomes are presented, supported by design studies providing illustrative examples of how these outcomes can be achieved.

## 4.1 Design Framework Approach.

**The purpose of this section is to translate the key findings of the context analysis, the Kaitiaki Strategy and principles, the vision and design themes of Vitality, Connectivity, Identity into key opportunities and outcomes that can be carried through into the next stages of the project.**

The overall maximum footprint for the proposed stopbanks and the interchange has been confirmed in the designation process, as has the approach to upper and lower reach river channel edge engineering; naturalisation of streams as they enter the river; significant revegetation of the river corridor; the provision of a pedestrian and cycle bridge on alignment with Margaret St connecting to a new Melling station; and a segregated commuter cycle route to the western (TRB) connecting to the Petone to Melling cycleway.

The framework embeds the Kaitiaki Strategy and Principles, and the resulting themes of Vitality, Connectivity & Identity. Setting out the approach and outcomes for delivering the project vision 'to lift the mana and mauri of Te Awa Kairangi, re-establishing Lower Hutt as a vital and connected river city'.

### Design framework structure.

The framework is structured according to the three overarching project components:

- **Te Awa Kairangi** The river corridor including flood protection works;
- **City Edge** The interface with the city centre including city streets, the pedestrian and cycle bridge, and new multi-modal Melling station;
- **Melling Connections** The new transport interchange and bridge, including connections into the existing street network.

Te Awa Kairangi encompasses topics / elements (including access; public art; signage & wayfinding and lighting) common to all three project components. The City Edge and Melling Connections

sections cover items specific to those locations / components. A Design Approach and Key Outcomes & Opportunities are outlined and illustrated through design studies, supporting diagrams and precedent imagery for each topic / element.

### Cultural expression

Te Awa Kairangi holds important cultural values - within the RiverLink project area Te Momi ki Maraenuku ki Motutawa there are a number of sites of significance, including pā sites and historical battle sites; and associations and connections with Te Awa Kairangi are on-going for tangata whenua - through spiritual connections, a kaitiaki role and responsibility, traditional rights, and day-to-day uses.

Cultural expression within Te Awa Kairangi requires expertise from tangata whenua with regard to cultural and historical values, and will support the continuation of long-standing iwi connections and associations with Te Awa Kairangi.

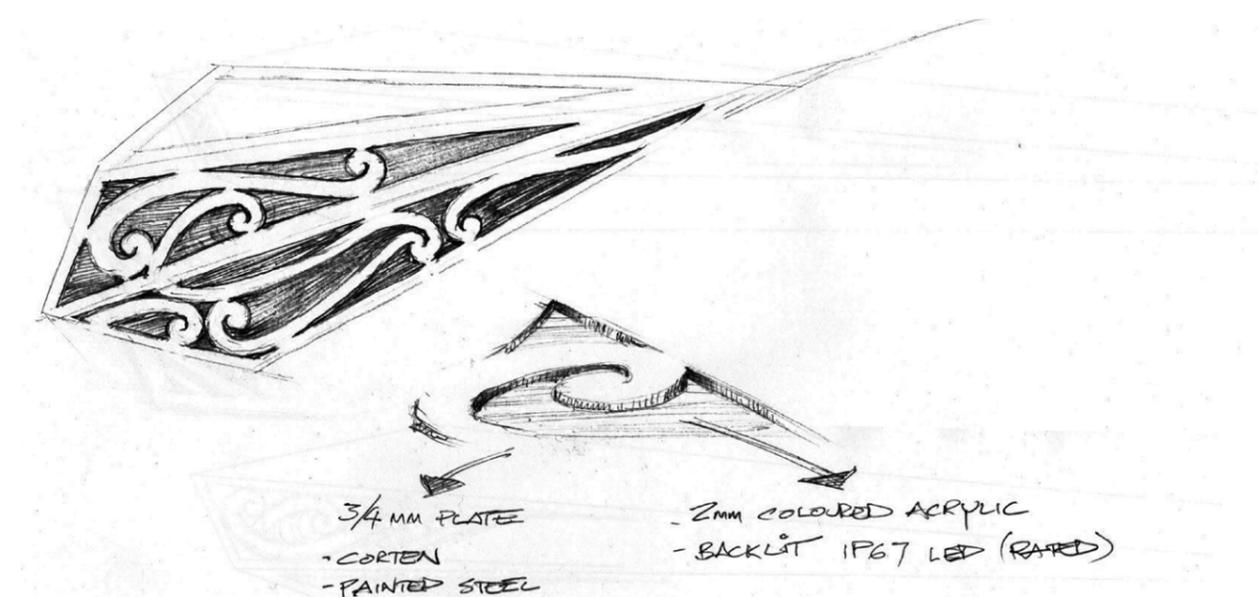
Work is on-going to incorporate the input of mana whenua into the Urban and Landscape Design Framework, reflecting the key role mana whenua hold within the RiverLink Partnership. Regular hui with mana whenua appointed representatives provide a forum to work in partnership to develop the vision and principles, design framework approach and principles and the illustrative project overview.

Cultural expression has been integrated into the design frameworks and illustrative design overview, with the intent that this be further developed and integrated through future design stages, built outcome, ongoing management and maintenance, through to the use and inhabitation of Te Awa Kairangi into the future.

Cultural expression is intended to be integrated - to be part of the underlying form of the project e.g. having guided key decision making processes, and a clear influence in the final design solution, both in terms of how people experience the

natural and urban landscape and in the detailing of specific element outcomes or features.

Rather than being covered as separately, cultural expression is integrated within each of the topics / elements covered as part of the design framework and draws on the established Te Korowai o Te Awa Kairangi narrative.



**Above.**  
Studies of the integration and application of He korowai o Te Awakairangi.  
**Len Hetet.**

## 4.2 Te Awa Kairangi Design Framework.



**Lifting the mana and mouri of Te Awa Kairangi, through delivery of a vital, connected river and city expressive of local identity and culture will be a transformational move for Lower Hutt.**

**The design framework provides an integrated approach to the delivery of flood protection works, multi-modal transport connections, and urban revitalisation that positively contributes to the river environment - viewing these as landscape infrastructure, within which sit programmes supporting the regeneration of natural ecosystems, biodiversity, community recreation and activities.**

This section of the Urban and Landscape Design Framework addresses the first of the three key project components - Te Awa Kairangi. Setting a framework that responds to the particular character of and connections to Te Awa Kairangi past and present, while acknowledging the scale of change the river has experienced through the latter half of the 20th century as Lower Hutt city developed.

Recognising the relationship and connections to the surrounding open space network including the river upstream and downstream of the project area and the harbour to the south. The adjacent golf course/ flood plain, Avalon Park and the forested Western Hills, encompassing a number of the river's tributaries - both natural streams and the urban stormwater network extending wider than the project site.

### Scope & background.

The framework scope extends beyond the river corridor (as now generally defined by the stopbanks) to include the City Edge and Melling Connections. These areas are covered in the section 4.3 City Edge Design Framework and 4.4 Melling Connections Design Framework.

Once part of a meandering river system, respected and of immense value to mana whenua for kaiawa and transportation, Te Awa Kairangi and its tributaries traversed the valley floor, hugging the Western Hills. While requirements for increased flood protection restrict the ability to return the river to a natural state, opportunity exists to significantly improve the mana and mouri, habitat and biodiversity, and

amenity values of the river. To turn the city to address the river, and in conjunction with increased flood protection measures, to draw people to the river through provision of a legible and accessible river access points, leading to a network of pathways, connecting a variety of lively green and social spaces suitable for a range of recreation, play and event activities. Set within a revegetated riparian landscape that integrates flood protection requirements while strengthening habitat and biodiversity values.

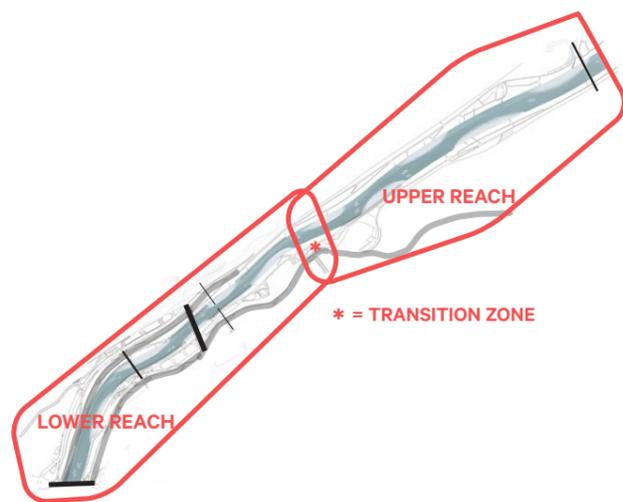
### Design elements.

Te Awa Kairangi design approach and key outcomes are provided for:

- Flood Protection.
- Mauri Tū. Habitat & Biodiversity.
- Tomokanga. Access.
- Hikoī. Movement.
- Ngahau. Life & Activity.
- Mahi Toi. Public Art.
- Whakapapa. Signage & Wayfinding.
- Rama. Lighting & Power Supply.
- Materials.
- Safety & Security.

### 4.2.1 Flood Protection.

**Increased flood protection is a key outcome of the RiverLink project. Delivering increased flood capacity and resilience necessitates change in alignment and increase in height of stopbanks; modification of the river channel and lower berm alignment, levels and edge protection - requiring a design-led approach to the integration of these structures as urban infrastructure.**



Within the RiverLink project extent the river has two distinct reaches - the upper reach and lower reach, with a transition zone between. The upper reach is an area of deposition - where gravels deposit and will continue to do so, and is managed through periodic extraction of gravels from the channel and beach areas. This reach has a broader flood plain extending across the adjacent golf course to the recently constructed stopbank (outside of the project extent). The channel edge is typically a vegetated 'flexible' berm of willow.

The lower reach is a zone of sediment transportation. It is narrower and constrained between stopbanks, with a mix of rock linings and vegetated (predominantly willow species) lower berms to the channel edge, resulting in relatively stable beach formations.

River engineering responses have been determined in response to the distinct geomorphological character of the two reaches. For the upper reach, a widened and deepened channel with a regular meander pattern, vegetated buffers and a rock lined edge at Transpower is proposed. For the lower reach a typically alternating pattern of rock linings and vegetated lower berms is proposed. With linings typically located against the channel edge and vegetated buffer at beach locations.

#### Design approach & key outcomes

An integrated approach to the design and delivery of flood protection elements (including rock linings, bio-engineered / vegetated edges, constructed batters separating lower and upper berms, and the stopbanks defining the edge of the river corridor) is required to deliver outcomes in addition to flood protection.

Consideration of how these structures can contribute to the overarching design themes of Vitality Connectivity and Identity, and the potential to improve river and community health and wellbeing, cultural identity and express the unique character of Te Awa Kairangi and the He Korowai o Te Awa Kairangi narrative through design.

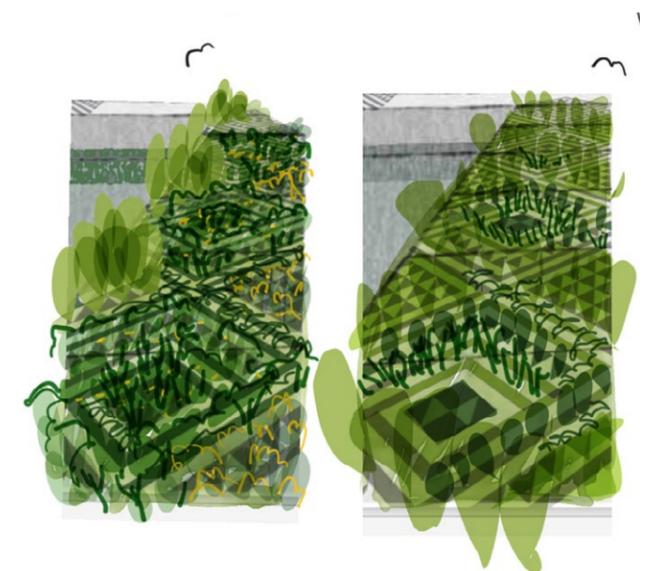
The key outcomes and opportunities for flood protection are:

- All engineered structures, including bioengineering are integrated as landscape infrastructure. Designed to deliver outcomes in addition to flood protection including cultural identity, access, habitat and biodiversity and amenity.
- Where rock lining is required consider rock type, colour and sizing to ensure integration with the existing environment, habitats and public access is enhanced, for active recreation users.
- Integrate lengths of required rock lining the river channel with adjacent landscape elements - in particular pathways and plantings.
- Incorporate elements within rock linings to create carved 'tohu', seating and landings for river and beach access, and rock spurs for habitat.

- Where bio-engineered vegetated edges are required, implement a programme of successional planting to replace exotic species with robust native species suited to the environment and conditions. Continue dialogue with mana whenua on referencing tāniko as a conceptual framework within the wider korowai narrative of for this strengthened edge approach.
- At key interfaces between the river bank and river channel where public access - physical and visual is of importance prioritise the use of native riparian low shrub and groundcover species.
- Restrict access as appropriate to specific beach areas, and other areas as identified by specialists, for the protection of native species habitat.
- Integrate banks between lower and upper berm areas into wider spatial arrangement of the river corridor. Formed as a constructed edge to a path, a planted or grass bank.
- Acknowledging the restriction on locating structures and planting within the stopbank extent, integration of these forms is key to creating an inviting landscape and to lessening the separation between river and city. Softening the stopbank profile &/ or incorporating seating terraces in key locations is an opportunity to deliver amenity benefits.
- Capitalise on the opportunity of bridge landings requiring a steepening of stopbank profile from the standard 3.5H:1V to integrate native plantings, providing improved integration of the stopbank form into the wider context.
- Utilise bio-degradable materials for debris fences (timber poles and fibre ropes), instead of the typical rail irons and cables, which are problematic as remnants from erosion.
- Access to beach areas within the upper reach for extraction is to be provided as part of the general pathway access network, coordinated with areas set aside for stockpiling.
- Where not part of a formed pathway, grass surfacing with suitable subgrade strengthening as the

preferable material for intermittent maintenance access to the land-side of vegetated buffers. Access for intermittent maintenance of rock lined channel edges is to be integrated into the adjacent pathway or a formed compacted gravel surface integrated into adjacent plantings.

In addition to the outcomes and opportunities described above the following pages provide illustrative examples of how opportunities and design outcomes for both reaches might be achieved.



**Tāniko.** Conceptualising the bio-engineered river edge as tāniko - the strong woven border of a cloak, has the potential to set it within a cultural design context.

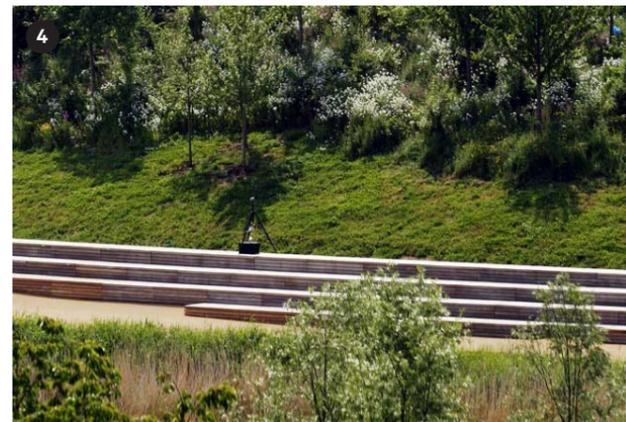
**Images.**

**1 & 2.** Integration of river access structures and pathways into rock lining.

**3 & 4.** Designed approach to the transition between upper and lower berm providing public amenity.

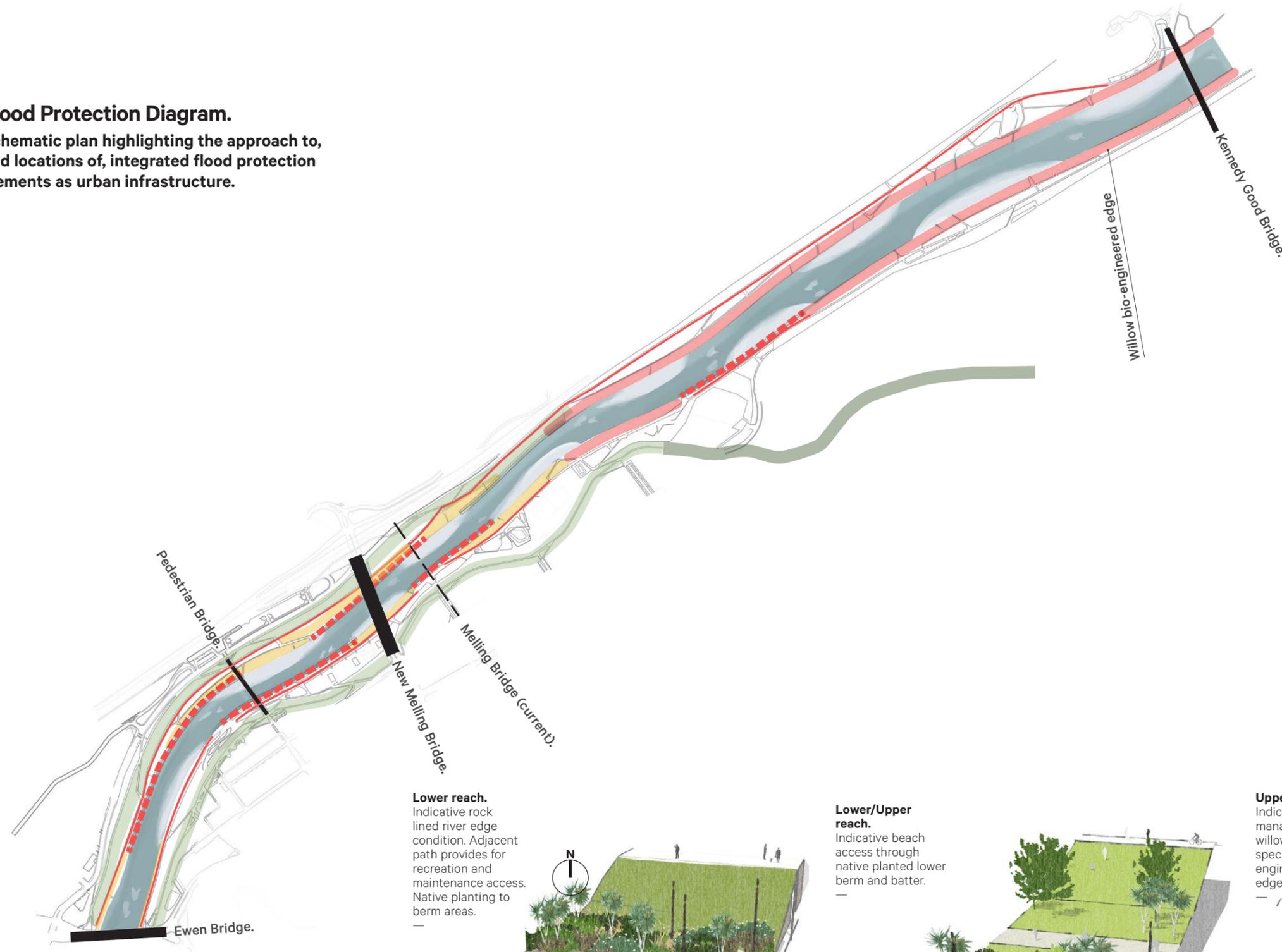
**5 & 6.** Seating amenity, access and pathway network integrated into flood protection stopbanks.

**7 & 8.** Native planted lower berm zone, extending to channel or rock lined edge.



**Flood Protection Diagram.**

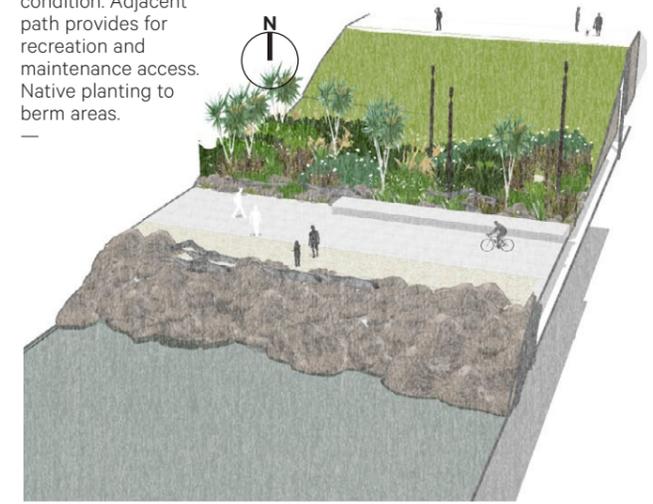
Schematic plan highlighting the approach to, and locations of, integrated flood protection elements as urban infrastructure.



**Legend.**

	Rock lined river edge
	Batter / transition between upper and lower berm
	Bio-engineered river edge
	Native planted riparian edge
	Stopbank
	Existing stopbank

**Lower reach.**  
Indicative rock lined river edge condition. Adjacent path provides for recreation and maintenance access. Native planting to berm areas.



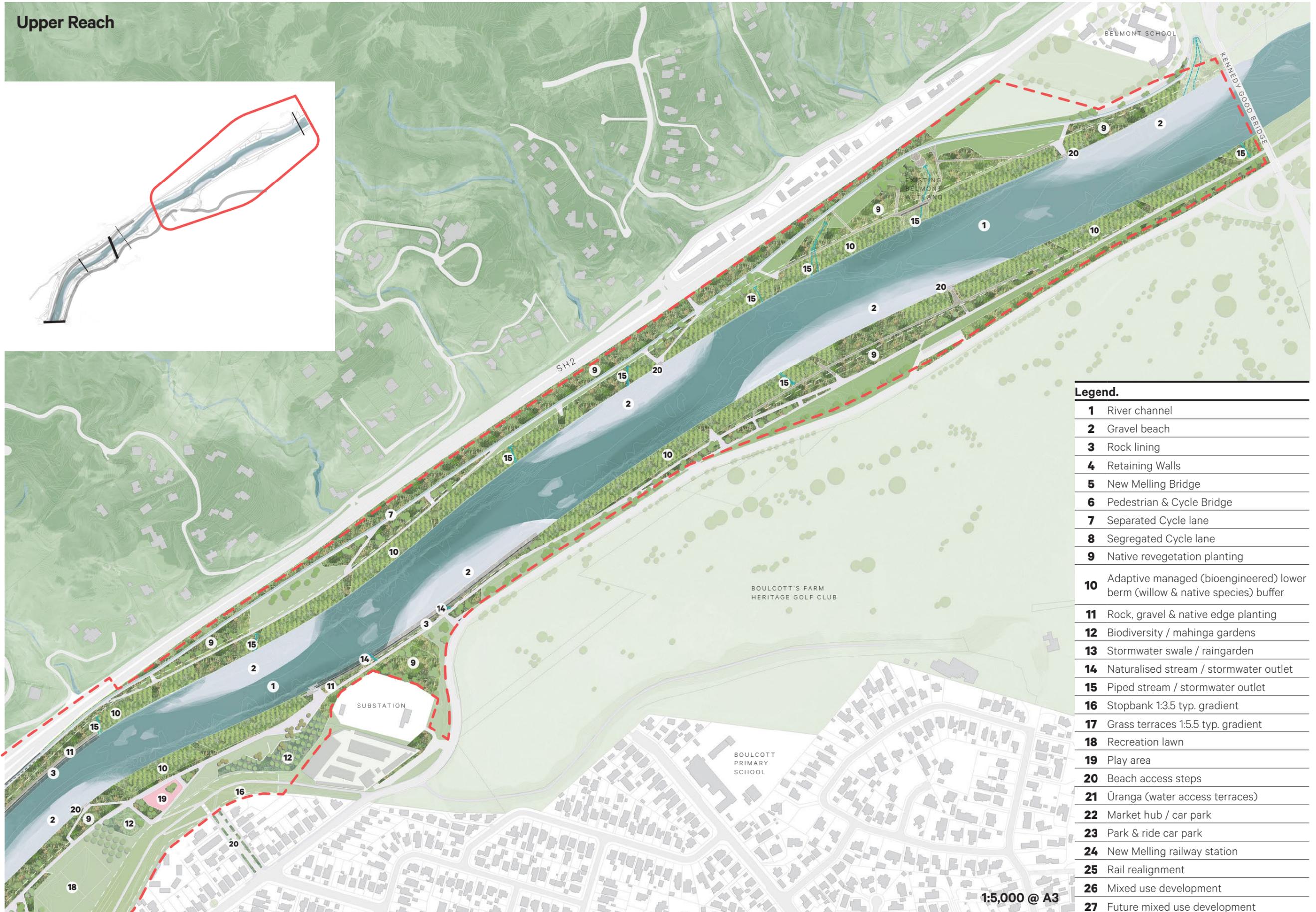
**Lower/Upper reach.**  
Indicative beach access through native planted lower berm and batter.



**Upper reach.**  
Indicative adaptive management of willow to native species bio-engineered river edge.



Upper Reach



Legend.	
1	River channel
2	Gravel beach
3	Rock lining
4	Retaining Walls
5	New Melling Bridge
6	Pedestrian & Cycle Bridge
7	Separated Cycle lane
8	Segregated Cycle lane
9	Native revegetation planting
10	Adaptive managed (bioengineered) lower berm (willow & native species) buffer
11	Rock, gravel & native edge planting
12	Biodiversity / mahinga gardens
13	Stormwater swale / raingarden
14	Naturalised stream / stormwater outlet
15	Piped stream / stormwater outlet
16	Stopbank 1:3.5 typ. gradient
17	Grass terraces 1:5.5 typ. gradient
18	Recreation lawn
19	Play area
20	Beach access steps
21	Uranga (water access terraces)
22	Market hub / car park
23	Park & ride car park
24	New Melling railway station
25	Rail realignment
26	Mixed use development
27	Future mixed use development

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## Upper Reach.

**Vegetated (bio-engineered) lower berm buffers are the upper reach river engineering response for flood protection.**

**An adaptive management approach initially utilises a combination of willow - for their speed in achieving a strengthened edge - and indigenous successional tree species, with indigenous species underplanting, with managed transition over time to indigenous species lower berm buffers.**

**This staged adaptive managed approach delivers a step-change in thinking - an expression of Te Awa Kairangi, improved mana and mouri, while providing opportunity to better connect - visually and physically to the river.**

### Upper Reach key outcomes

In addition to the approach and outcomes described in the previous pages key outcomes and opportunities specific to the upper reach are:

- To achieve a transition to indigenous species flexible vegetated buffer flood protection.
- Minimum required use of debris fences, constructed from natural materials (rather than steel irons and wire).

The outcomes sought - specifics that will support this principle - are:

- A staged approach - as described indicatively.
- Use of fast growing and successional species.
- Providing for diverse terrestrial and aquatic habitats.
- Consideration of the korowai narrative including the use of e.g. flowering kowhai to mark Maraenuku and species that will be a future mahinga kai and weaving resource.

Indicative adaptive management staging diagrams are shown opposite. Further consideration in future design stages should be given to further reducing the required willow plantings generally, and at specific sites and locations including areas where the berm is protected by beaches.

## Lower berm bio-engineering indicative plant lists:

### Stage 1:

Native successional tree species replacing willows:

- Kahikatea, *Dacrycarpus dacrydioides*
- Marie tawake, Swamp maire, *Syzygium maire*
- Pukatea, *Laurelia novae-zelandiae*
- Totara, *Podocarpus totara*
- Matai, *Prumnopitys taxifolia*

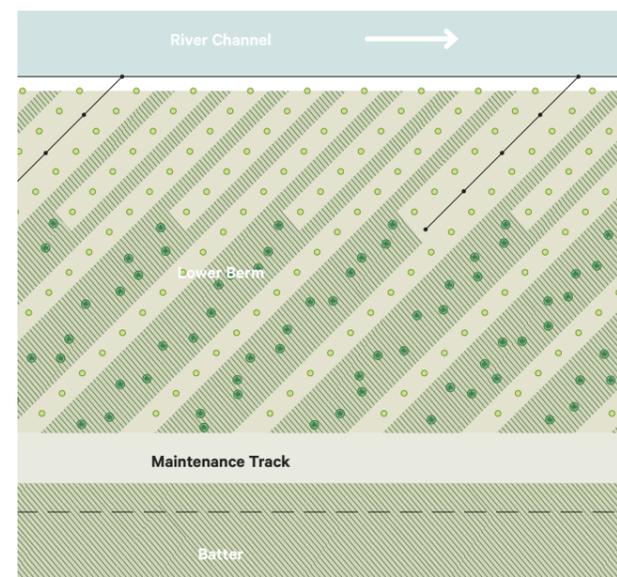
Fast growing, shade tolerant native tree and shrub species - underplanting and infill rows:

- Carex species incl. *C. secta*; *C. virgata*
- Harakeke, *Phormium tenax*
- Hangehange, *Geniostoma ligustrifolium*
- Karamu, *Coprosma robusta*
- Kowhai, *Sophora tenuifolium*
- Koromiko, *Hebe stricta*
- Mahoe, Whiteywood, *Melicytus ramiflorus*
- Makomako, Wineberry *Aristotelia serrata*
- Manatu, Ribbonwood, *Plagianthus regius*
- Mingimingi, *Coprosma propinqua*
- Ponga, Silver fern, *Alsophila dealbata*
- Poroporo, *Solanum aviculare*
- Tarata, *Pittosporum eugenioides*
- Taupata, *Coprosma repens*
- Ti kouka, *Cordyline australis*
- Toetoe, *Cortaderia spp*

### Stages 2-5:

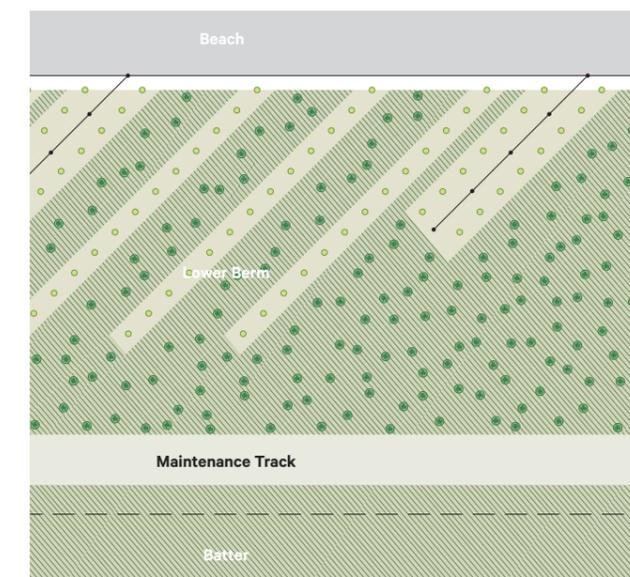
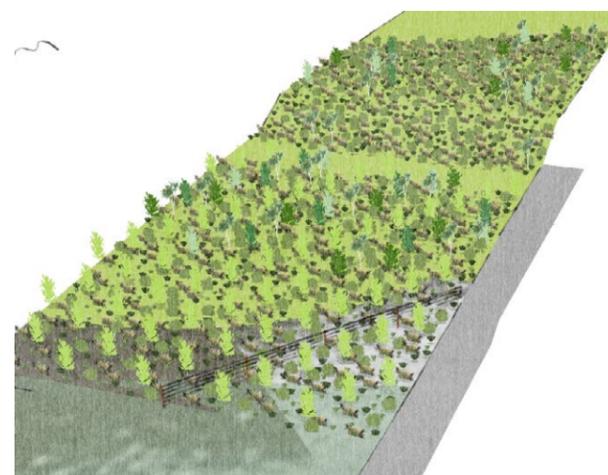
Additional native tree species replacing willows - includes less shade tolerant, successional species

- Kahikatea, *Dacrycarpus dacrydioides*
  - Marie tawake, Swamp maire, *Syzygium maire*
  - Pukatea, *Laurelia novae-zelandiae*
  - Totara, *Podocarpus totara*
  - Matai, *Prumnopitys taxifolia*
- plus:
- Mānuka, *Leptospermum scoparium*
  - Kānuka, *Kunzea ericoides*
  - Mahoe, *Melicytus ramiflorus*
  - Tawa, *Belischnia tawa*
  - Miro, *Prumnopitys ferruginea*



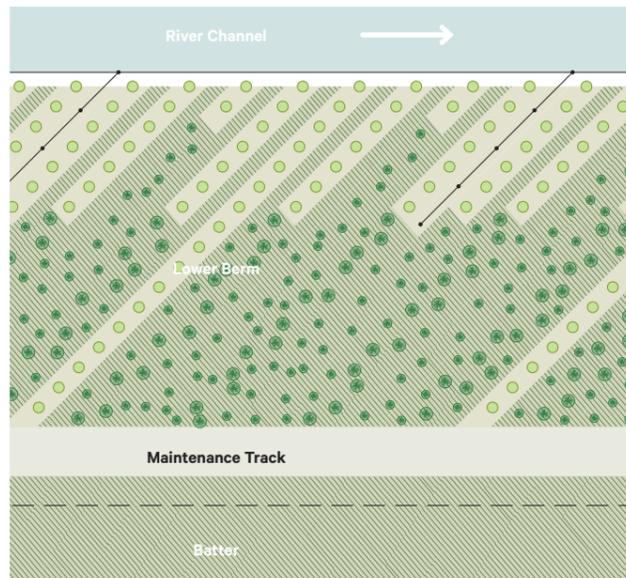
### Stage 1.

**For berm areas against the active channel edge** willow pole rows with native successional tree species in alternating rows to back half of berm. Mixed native species underplanting. Debris fences to front half of berm at regular spacings.



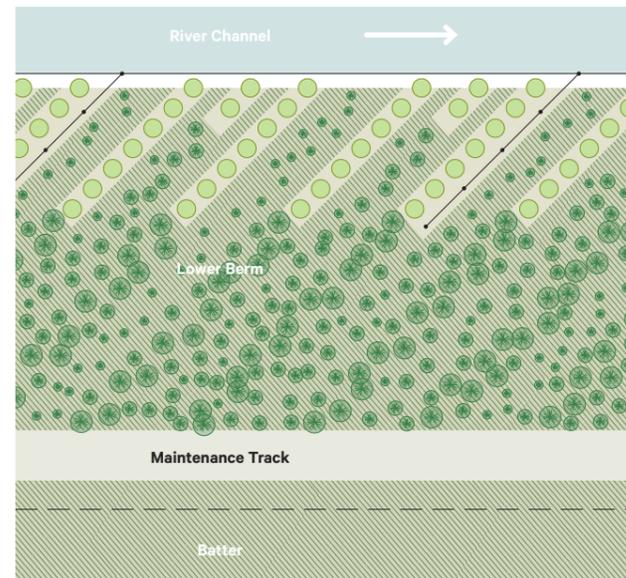
### Stage 1.

**For lower berm areas protected by gravel beaches** native successional tree species with mixed native underplanting (no willows) to the central 1/4 of the length of each beach, graduating out with alternating rows of willow and native trees to the active channel edge.



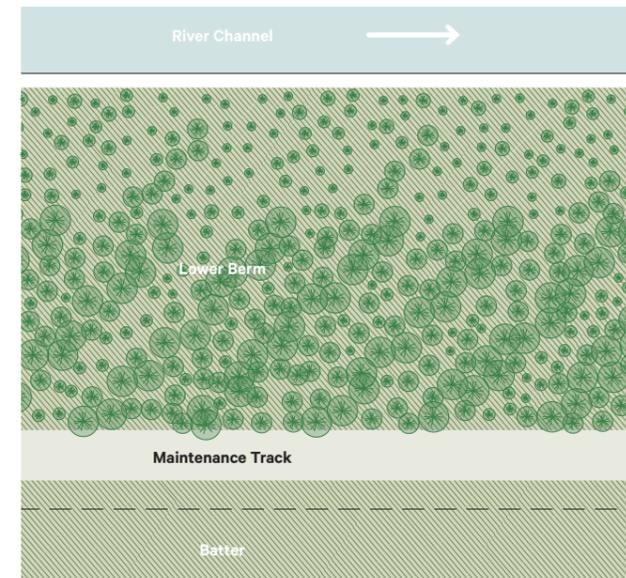
**Stage 2.**

Willow lines removed from full width of berm and replaced with native successional tree species. Native species underplanting supplemented with successional species. Debris fences retained.



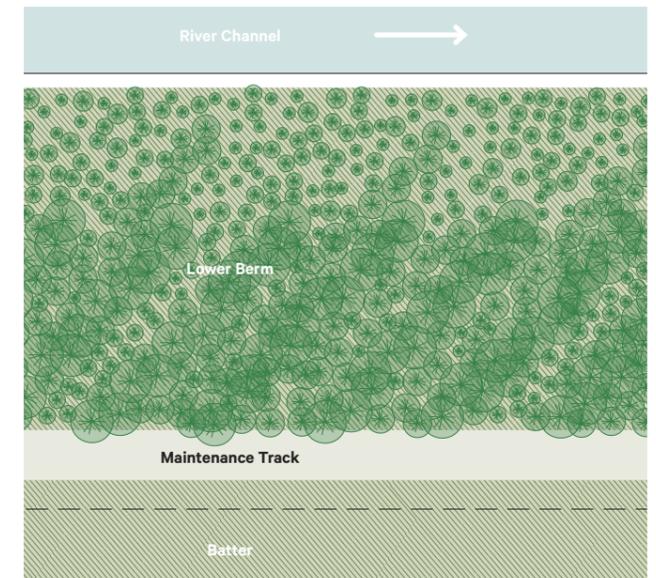
**Stage 3.**

Further willow lines removed and replaced with native successional tree species. Native species underplanting supplemented with successional species. Debris fences retained.



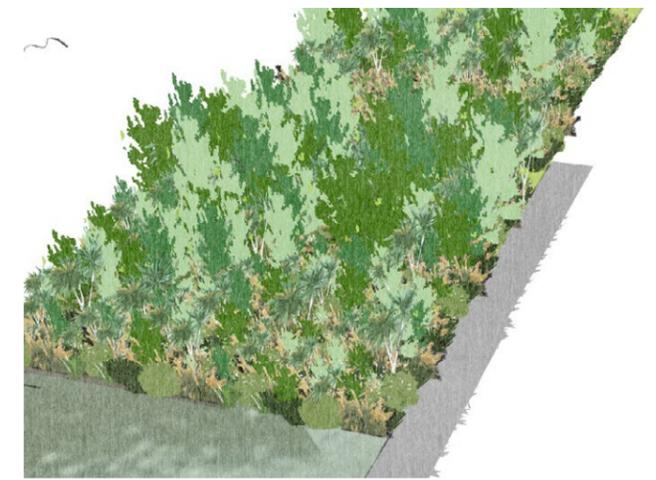
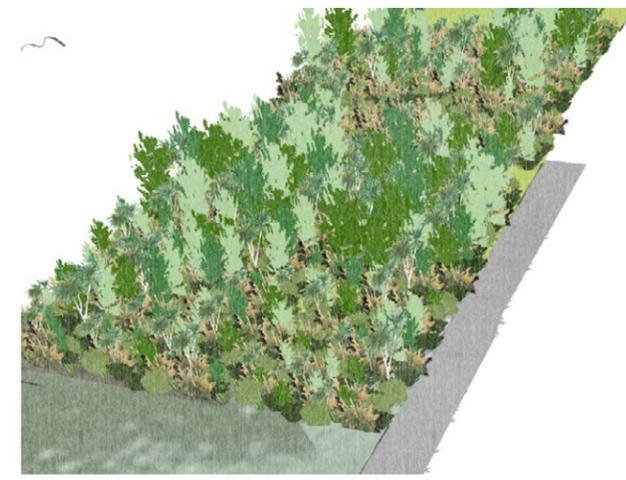
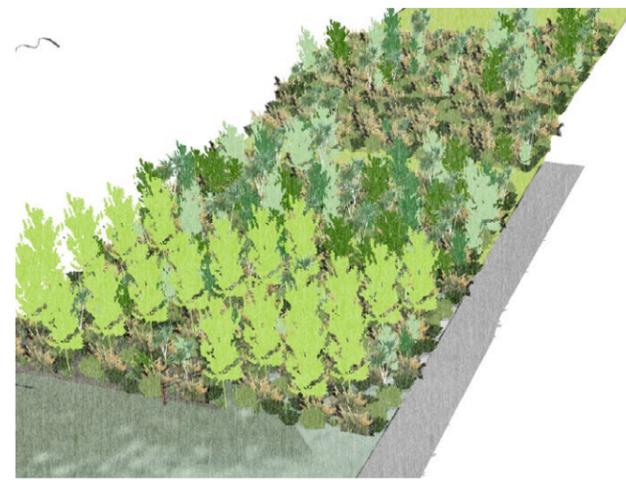
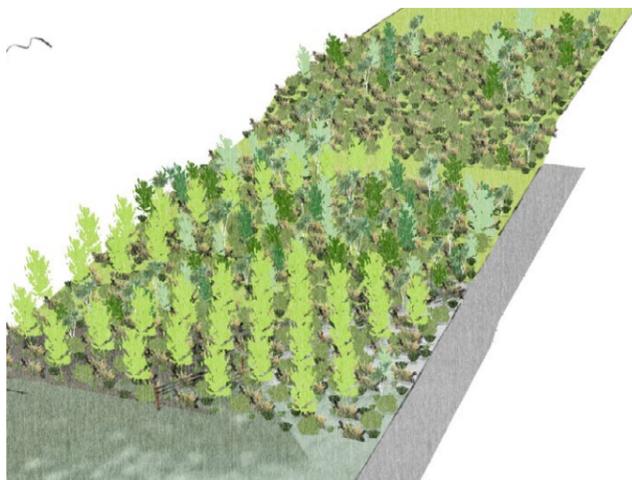
**Stage 4.**

Further willow lines removed and replaced with native successional tree species. Native species underplanting supplemented with successional species. Debris fences removed.

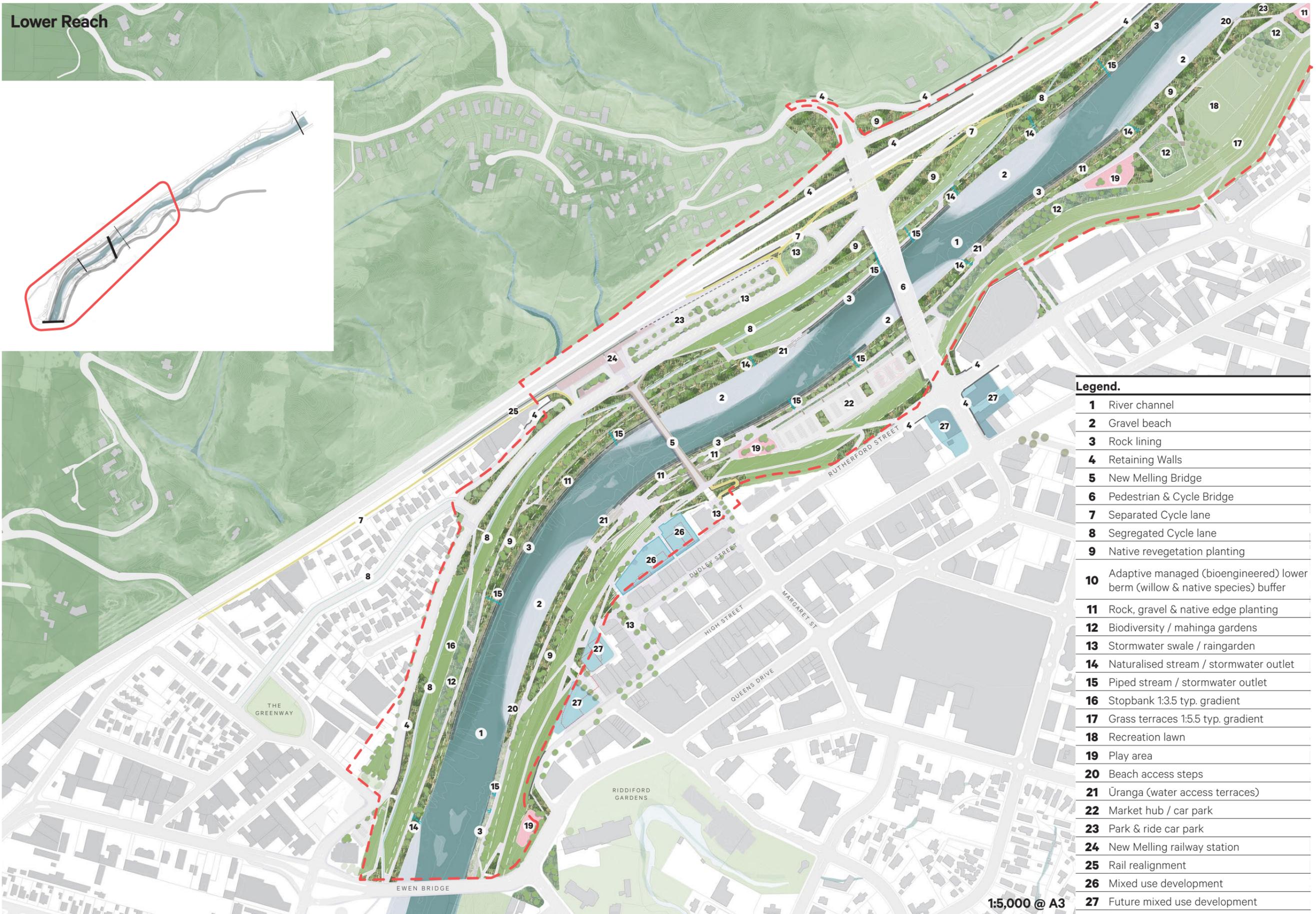


**Stage 5.**

Remainder of willow lines removed and replaced with native successional tree and groundcover species.



Lower Reach



**Legend.**

1	River channel
2	Gravel beach
3	Rock lining
4	Retaining Walls
5	New Melling Bridge
6	Pedestrian & Cycle Bridge
7	Separated Cycle lane
8	Segregated Cycle lane
9	Native revegetation planting
10	Adaptive managed (bioengineered) lower berm (willow & native species) buffer
11	Rock, gravel & native edge planting
12	Biodiversity / mahinga gardens
13	Stormwater swale / raingarden
14	Naturalised stream / stormwater outlet
15	Piped stream / stormwater outlet
16	Stopbank 1:3.5 typ. gradient
17	Grass terraces 1:5.5 typ. gradient
18	Recreation lawn
19	Play area
20	Beach access steps
21	Ūranga (water access terraces)
22	Market hub / car park
23	Park & ride car park
24	New Melling railway station
25	Rail realignment
26	Mixed use development
27	Future mixed use development

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## Lower Reach.

For the more fixed lower reach, an alternating pattern of rock lined and vegetated channel edges is proposed to deliver flood protection. Rock lined lengths offer the opportunity to align paths to follow the river edge in key locations, improving connection to the river. Native planted berms support habitat and biodiversity outcomes, with opportunities for access through to beach areas.

### Lower Reach key outcomes.

In addition to the design approach and outcomes described in the previous pages key outcomes and opportunities specific to the lower reach are:

- Paths aligned to follow rock lined river edges (which typically follow the active channel).
- Consider rock type, colour and sizing to ensure integration with the surrounding environment, habitats and public access is enhanced, for active recreation users.
- Integrate ūranga water access / landings at downstream end of specific rock linings for access to beach and active channel areas, in recognition of sites and locations of significance to mana whenua.
- Ūranga provide locations for seating, rest, fishing, launch and landing.
- Continue dialogue with mana whenua on the integration of korowai pattern and narrative into the ūranga.
- Other transitions between rock lining and vegetated channel edges are to be considered and integrated, keeping clarity of alignment.
- Planted berms are to have a species mix consistent with those utilised in the upper reach to give cohesiveness to the river edge condition.
- Consideration should be given to utilising rock and river gravels within the adjacent areas for continuity and use of materials.
- Layout, material and detail should provide for diverse terrestrial and aquatic habitats.

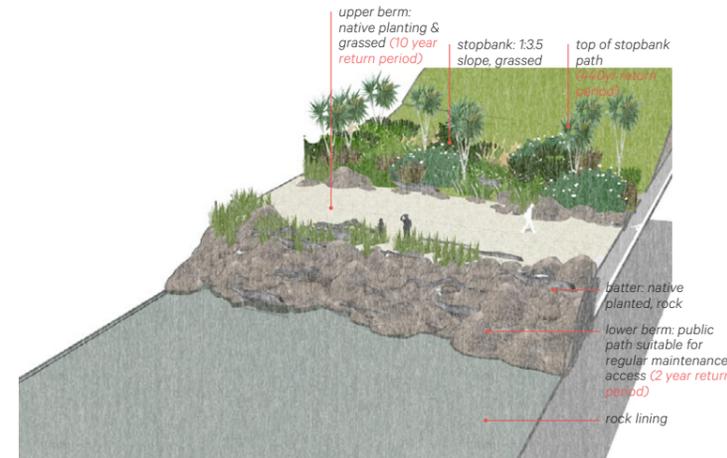
**LR01. Planted berm - urban river edge interface & beach access.**  
Native planted batter and lower berm, with path network behind and formed path through to gravel beach.



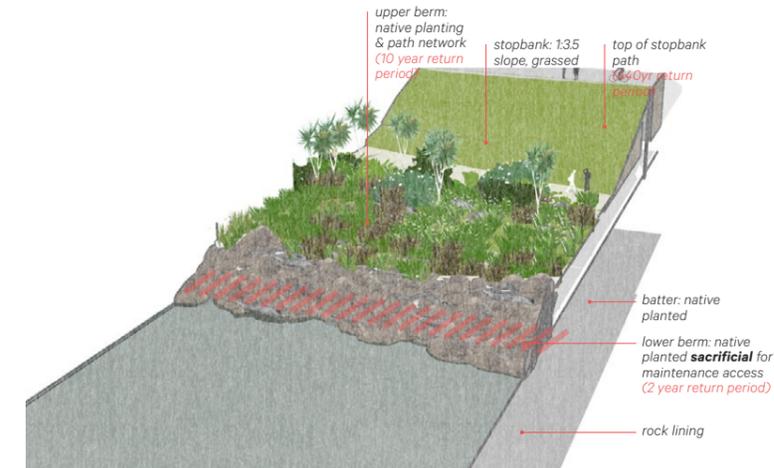
**LR02. Rock lined urban river edge condition.**  
Generous concrete path with compacted gravel edge to rock lining at lower berm level provides for recreational and maintenance access. Native planting to batter and upper berm areas.



**LR03. Rock lined river edge with access path.**  
Compacted aggregate / formed path at lower berm level provides for recreational and maintenance access. Native planting to remainder of lower berm, batter and upper berm areas.



**LR04. Rock lined and native planted river edge.**  
Native planted lower berm and batter. Planting at rock edge 'sacrificial' if / when maintenance access is required to rebuild / repair lining. Path located away from edge at lower / upper berm level.



The illustrations above provide examples of how these outcomes might be achieved, with a mix of path typologies depending on location, and a rich diversity of planting supporting the design themes of vitality, connectivity and identity.

### 4.2.2 Mauri Tū. Habitat & Biodiversity.

**The RiverLink project provides the opportunity to deliver integrated flood protection engineering and ecology - habitat and biodiversity outcomes as a key part of delivering the project vision.**

At the time of Pākehā arrival in the region the valley floor was home to extensive kahikatea and pukatea swamps, with marshlands dominated by raupo, harakeke and toetoe, with tōtara, matai and ribbonwood occupying dryer areas - extending several kilometres up the valley from the river mouth. The river meandered across the valley floor, with a network of natural stream tributaries.

Flanked by the western hills with mosaics of kohekohe, tawa, kāmahī and rewarewa, with podocarps rimu, tōtara and miro, and climbers northern rata, and to the east widespread beach forest, kāmahī and rātā species and podocarps. All home to a diverse range of bird, lizard, bat, fish and insect species.

The Hutt valley, is now mostly cleared, with the river occupying a confined channel contained between stopbanks to the western side of the valley. The western hills remain forested, with a network of tributaries - natural streams and the urban stormwater network outfall to the main river channel.

#### Design approach & key outcomes

Alongside the delivery of increased flood protection, is the principle of designing to improve habitat and biodiversity values throughout the river corridor, Melling Connections and City Edge environment. Increasing the variety of physical habitat within the meandering active channel, and revegetation of the river corridor are the primary in-river and terrestrial ecology opportunities.

The key outcomes and opportunities for mauri tū, improved habitat and biodiversity are:

- Integrated designed ecology elements to support natural ecological systems.

- Improved habitat and biodiversity is considered wider than river corridor - Te Awa Kairangi project component, and is a key outcome of the delivery of the City Edge and Melling Connections project components.

- Improved in-river habitat and biodiversity is an integral part of the design of engineered structures, including bio-engineered plantings and in-water structures, for example:

- rock lining required as part of the river channel engineering provides the opportunity to integrate rock spurs to create deep scour pools, and boulder clusters within the adjacent deeper channel areas to create habitat for macroinvertebrates and fish.
- large woody debris, including engineered logs, secured to river bank / bed for habitat and food source.
- the creation of riffles with varied depth and flow speed to provide variation in habitat for fish and bird species.
- formation of side channels / backwaters for improved in-river habitat variety.

- selection of bio-engineering vegetation species considers habitat and biodiversity values.
- Improved terrestrial habitat variety, including revegetation of significant areas of the river corridor to increase connectivity to the adjacent western hills, and across the valley floor between remnants of original vegetation and other re-vegetation sites. Enabling species to move through the landscape, providing habitat and food source for a variety of fauna including bird, lizard and insect species.
- Restrict access to identified gravel beaches for habitat diversity and refuge for key species.
- Naturalise stream tributaries and stormwater outfalls (where outfalls allow) entering the main channel for freshwater and habitat enhancement and experience.
- Incorporate overhanging vegetation and features to strengthen habitat for kakahi, tuna, kokopu and other native species habitat.
- Where streams outfall through rock lining areas, mark the path and location of the stream with interpretation and signage devices - refer Signage & Wayfinding section.

- Retention of the recently constructed Belmont wetland for education and biodiversity purposes. With further consideration of additional areas of 'wetland' plantings and habitat.
- Stormwater contaminants generated within the project vehicle trafficked areas is treated prior to discharge to the river channel to contribute to improve water quality.
- Encourage at-source treatment of stormwater outside of the project extent through example.
- Habitat and biodiversity is explored as part of interpretation, education and play theming opportunities with a view to fostering knowledge building, respect and care for the environment.
- Opportunity is created for kaitiakitanga / guardianship through the process of design, implementation, maintenance and management to deepen human and cultural connection with the river environment.

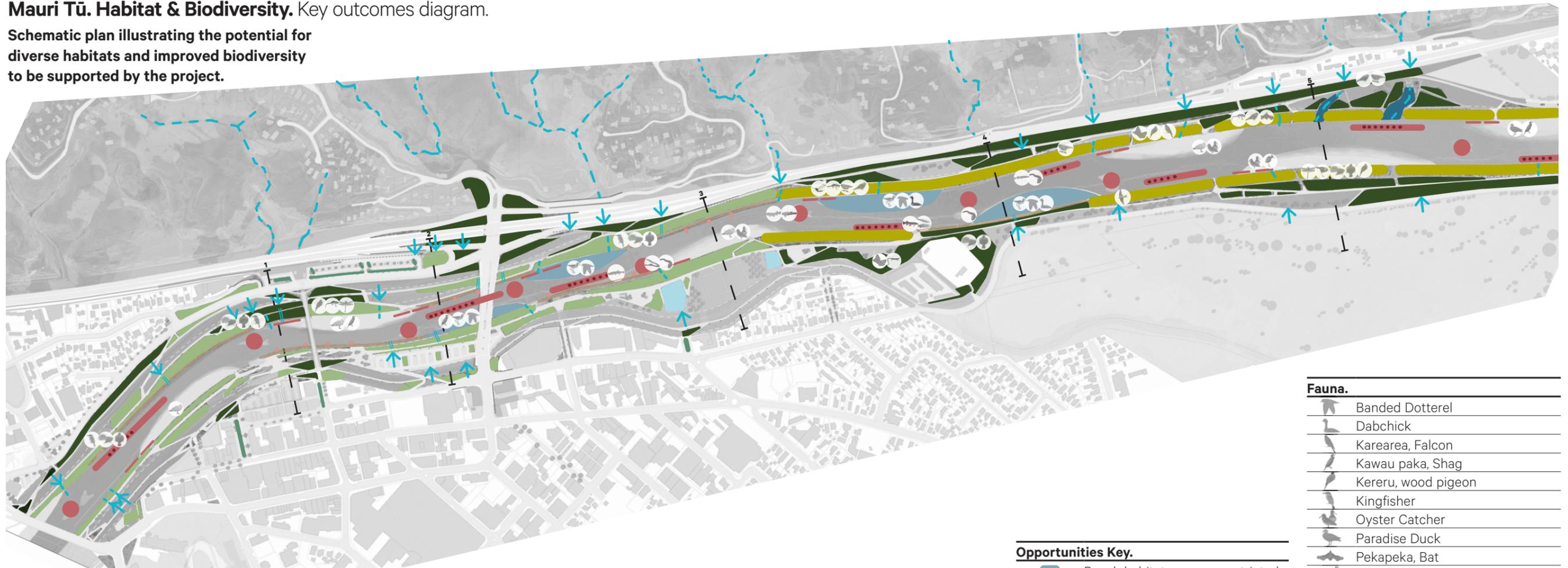
The diagram opposite illustrates the potential for diverse habitats to be supported by the project, as a starting point for development in future stages in collaboration with the ecologists and mana whenua.



**Images.**  
**1.** Design to support tuna habitat.  
**2.** Riffles providing diversity of habitat within river channel.  
**3.** Revegetation utilising signature successional species.  
**4.** Bird hides for environmental education.  
**5.** Rocks and gravels to support lizard species habitat  
**6.** Urban raingardens for stormwater quality improvement and habitat.  
**7&8.** Native vegetation to lower berms supporting habitat and biodiversity.

**Mauri Tū. Habitat & Biodiversity.** Key outcomes diagram.

Schematic plan illustrating the potential for diverse habitats and improved biodiversity to be supported by the project.



**Indicative plant species lists.**

Indigenous plant species suitable for the environment, to support the goal of comprehensive revegetation of the river corridor.

**Indigenous broadleaf forest and shrub revegetation mix:**

- Hinau, *Eleocharis dentatus*
- Titoki, *Alectryon excelsus*
- Pukatea, *Laurelia novae-zelandiae*
- Black Beach, *Fuscospira solandri*
- Northern Rata, *Metrosideros robusta*
- Totara, *Podocarpus totara*
- Kohekohe, *Dysoxylum spectabile*
- Rewarewa, *Knightia excelsa*
- Tawa, *Belischnia tawa*
- Matai, *Prumnopitys taxifolia*
- Miro, *Prumnopitys ferruginea*
- Red matipo, *Myrsine australis*
- Nikau, *Rhopalostylis sapida*
- + species selected from shrubland mix

**Indigenous shrubland revegetation mix:**

- Mānuka, *Leptospermum scoparium*
- Kānuka, *Kunzea ericoides*
- Karamū *Coprosma robusta*, *C. lucida*
- Taupata, *Coprosma repens*
- Tarata, *Pittosporum eugenioides*
- Kōhūhū, *Pittosporum tenuifolium*
- Koromiko, *Veronica stricta* var. *stricta*
- Hangehange, *Geniostoma ligustrifolium*
- Kowhai, *Sophora tenuifolium*, *S. microphylla*
- Mahoe, *Whiteywood*, *Melicactus ramiflorus*
- Makomako, *Wineberry*, *Aristolelia serrata*
- Manatu, *Ribbonwood*, *Plagianthus regius*
- Mingimingi, *Coprosma propinqua*
- Ponga, *Silver fern*, *Alsophila dealbata*
- Mamaku, *Cyathea medullaris*

- Poroporo, *Solanum aviculare*
  - Ti kouka, *Cordyline australis*
  - Toetoe, *Austroderia fulvida*, *A. toetoe*
  - Harakeke, *Swamp flax*, *Phormium tenax*
  - Kawakawa, *Piper excelsum* subsp. *Excelsum*
  - Pōhuehue, *Muehlenbeckia australis*
  - Akeake, *Dodonaea viscosa*
  - Whauwhaupaku, *Five finger*, *Pseudopanax arboreus*
  - Korokio, *Corokia cotoneaster*
  - Red matipo, *Myrsine australis*
  - Nikau, *Rhopalostylis sapida*
- Enriched with secondary species (from broadleaf forest mix above) including:
- Tōtara, *Podocarpus totara*
  - Miro, *Prumnopitys ferruginea*
  - Matai, *Prumnopitys taxifolia*
  - Hinau, *Eleocharis dentatus*

**Indigenous groundcover revegetation mix:**

- Toetoe, *Austroderia fulvida*, *A. toetoe*
  - Koromiko, *Veronica stricta* var. *stricta*
  - Harakeke, *Swamp flax*, *Phormium tenax*
  - Oioi, *Apodasmia similis*
  - Mingimingi, *Coprosma propinqua*
  - Korokio, *Corokia cotoneaster*
  - Pōhuehue, *Muehlenbeckia australis*
- Plus (on riparian margins):
- *Carex* species incl. *Pūrekireki*, *C. secta*; *Pukio*, *C. virgata*
  - *Sedge* species incl. *Puketangata*, *C. eragrostis*; *C. ustulatus*
  - *Rush* species incl. *Kuta*, *Eleocharis sphacelata*; *J. gregiflorus*, *J. pallidus*.
  - Kāpūngāwhā, *Schoenoplectus tabernaemontani*

**Opportunities Key.**

- Beach habitat—access restricted
- Rock clusters & woody debris above rock lining for terrestrial species habitat
- Boulder clusters within deep pool areas (associated with rock lining)
- Deep pools
- Integration of native vegetation into bio-engineered river edges
- Native species planting for habitat
- Native species riparian edge, including 'woody debris' for habitat
- Rain gardens for at-source stormwater treatment and habitat
- Riffles of varying complexity
- Rock spurs integrated into rock lining
- Side channels / backwaters
- Naturalised stream outfalls contoured and planted for habitat
- Piped stream / stormwater outlet
- Wetlands for stormwater management, habitat & refuge
- Biodiversity mahinga gardens

**Fauna.**

- Banded Dotterel
- Dabchick
- Karearea, Falcon
- Kawau paka, Shag
- Kereru, wood pigeon
- Kingfisher
- Oyster Catcher
- Paradise Duck
- Pekapeka, Bat
- Pied Stilt
- Pīpiwharau, Shining Cuckoo
- Piwakawaka, Fantail
- Silver Eye
- Swallow
- Tarapunga, Redbilled Gull
- Tui
- White-faced Heron
- Whitehead
- Dragonfly
- Mayfly
- Pepe Para Riki, Copper Butterfly
- Skink
- Wellington Green Gecko
- Brown Trout
- Giant Bully
- Inanga, whitebait
- Koaro
- Kokopu
- Piharau, lamprey
- Smelt
- Tuna, short fin eel

BIRDS/MAMMALS

INSECTS/LIZARDS

FISH

### 4.2.3 Tomokanga. Access.

**Improving active modes access while managing vehicular access to the river corridor and providing for impaired mobility access is a desired outcome of the RiverLink project. Access to the active river channel is to be balanced with ecology and biodiversity requirements to ensure existing habitat values are enhanced.**

#### Design approach & key outcomes

With national, regional and district planning focus moving to prioritising of active modes of transport - walking, cycling, scooting, and connectivity between public transport facilities and the city centre, a considered approach to balancing the requirements for maintenance and car parking access, while limiting general vehicles from the river corridor is required.

The required increase in height of flood protection stopbanks presents a challenge for facilitating easy access and connectivity between the adjacent city centre, suburban areas and Te Awa Kairangi. Careful consideration will need to be given to the provision of access to the river corridor from the city.

The key outcomes and opportunities for tomokanga, access (and car parking) are:

#### River corridor access

- Establish a hierarchy of river landscape access types that responds to the urban context and the position in relation to movement networks.
- Ensure access points over stopbanks of significant height take into consideration the needs of pedestrians, cyclists and wheel / pushchair users.
- Minimise conflict between modes by providing access specifically for cyclists in key locations.
- Ensure access and connectivity is clear, legible and direct between the city, river corridor and station.
- Primary access points, e.g. the City Edge, should be more generous and civic in character, with generous steps and ramps providing for strong connection to the river corridor.
- Secondary access points, e.g. in more residential areas where use levels will be less frequent, are to reflect the residential street context and comprise a smaller scale intervention.

- Ramps and steps are to be integrated within the landform of the stopbanks to minimise impacts on the functionality of adjacent streets.
  - Minimise general vehicle access to the river corridor, with access restricted to the car parking areas within the river corridor only.
  - Provide controlled maintenance and event access points to the river corridor.
  - Restrict general vehicle access to haul routes for maintenance required for maintenance purposes.
  - Design maintenance access points and haul routes to meet requirements for both light and heavy vehicles, e.g. diggers and trucks for managing gravel and post flood-event works.
- #### Car parking
- Where required, locate parking strategically so as not to dominate the river landscape, to facilitate public access, support recreation facilities and provide for impaired mobility users.
  - Design car parking as an integral part of the river corridor landscape, considering multi-purpose use of car parking areas for specific events including the Riverbank Market and other managed function uses.

- Ensure best-practice CPTED principles are followed in the design of parking areas, with legibility of layout, ease of access, multiple points of pedestrian egress, clear sight lines and opportunity for passive surveillance, and avoiding entrapment areas.
- Provide swales &/or rain gardens within car parking areas to deliver stormwater quality improvements.
- Incorporate tree (clear stemmed for sight lines) and low shrub planting areas to provide visual amenity.

#### River channel access

- Establish a hierarchy of river channel access types that responds to the context and edge condition.
- Enable access to the river channel through designed interventions - steps and terraces. Integrated within the river edge protection engineering works.
- Water access points offer the potential for cultural design expression, including the creation of ūranga (landings) at locations of particular connection to mana whenua, and an opportunity for carved 'tohu'.
- Restrict access to the rivers edge where ecology and biodiversity outcomes are prioritised (as confirmed through detailed design and in consultation with the project ecologists and mana whenua).



#### Stair & ramp access.

1. Civic scale stair access connecting city and river.
2. Smaller scale stair connection.
3. Informal access down stopbank riverside.
4. Legible and direct ramped access to city side of stopbank for cycle, pedestrian and mobility access.
5. Simply detailed, ramped access from top of stopbank to river corridor.
6. Ramped access integrated into wider landscape and amenity.



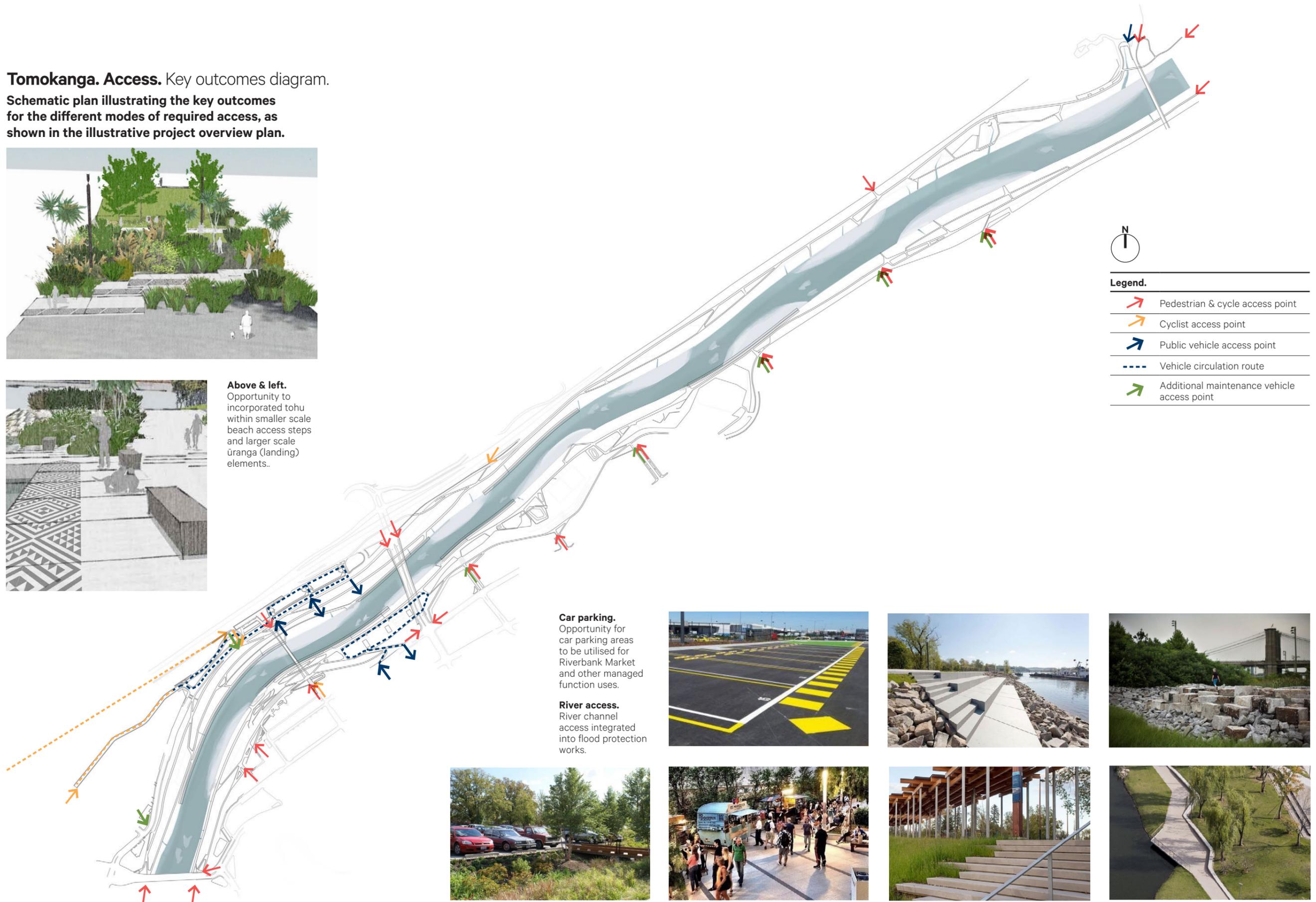
#### Access.

7. Legible, clear and direct access.
8. Integration of access and play.

**Tomokanga. Access.** Key outcomes diagram.  
Schematic plan illustrating the key outcomes for the different modes of required access, as shown in the illustrative project overview plan.



**Above & left.**  
Opportunity to incorporate tohu within smaller scale beach access steps and larger scale ūranga (landing) elements.



- Legend.**
- Pedestrian & cycle access point
  - Cyclist access point
  - Public vehicle access point
  - Vehicle circulation route
  - Additional maintenance vehicle access point

**Car parking.**  
Opportunity for car parking areas to be utilised for Riverbank Market and other managed function uses.

**River access.**  
River channel access integrated into flood protection works.



### 4.2.4 Hikoi. Circulation.

The movement network offers the opportunity to experience the landscape of Te Awa Kairangi as a curated hikoi or journey, enabling expression of the narrative Te Momi ki Maraenuku ki Motutawa, the aho and whenu of He korowai o Awakairangi - using deliberate path alignment and nodes to create a sequence of gathering spaces, destinations and vantage points.

#### Design approach & key outcomes

A key requirement of the RiverLink project is the establishment of a hierarchy of paths within a coordinated movement network, to facilitate required circulation for recreation and maintenance purposes, celebration of cultural connections and to avoid conflicts between active modes uses.

The key outcomes and opportunities for hikoi, circulation are:

- Create a network of paths that facilitate recreational walking and cycling, commuter cycling, and maintenance circulation through the river corridor.
- The new pedestrian and cycle bridge, the new vehicle bridge plus the existing road bridges

enable the network of paths to encompass both river banks improving recreational amenity.

- Within the path network establish a hierarchy of path typologies that provide for different speeds of movement and varied experiences, e.g. scale of path, surfacing of path, level of enclosure, and relationship to the river. The main path typologies are:
  - Shared paths (Hutt River Trail)
  - Segregated paths (delineated walking & cycling)
  - Separated cycleway
  - Pedestrian priority paths
  - Maintenance paths
- Express journey through a cultural and river landscape, rather than a sole focus on direct pathways from A-to-B.
- Align pathways and vantage points to key features, including those outside the site - i.e.. tributaries and bush remnants.
- Integration of paths with flood protection elements, e.g. aligned with river edge structures, following bank / transition between berms, and integrated as weirs within biodiversity constructed wetlands.

- Provide for maintenance vehicle access where required. Where appropriate combine maintenance and recreation uses to minimise movement corridors and maximise planted areas.
- Integrate informal pathways throughout the park landscapes (e.g. mown paths) that offer opportunities for exploration and play.
- Apply CPTED principles to ensure adequate lines of sight and passive surveillance are provided, refer 'Safety & Security' section.
- Provide for accessibility for push /wheelchair uses.
- Consider materiality of paths in conjunction with hierarchy and typology. Utilise concrete finishes for main (shared) movement networks, asphalt surfaces for separated and segregated cycle paths and compacted gravels for pedestrian priority paths.
- Utilise other low impact path surfaces - hardwood boardwalks, steel mesh platforms within lower berm areas and for access across swales and wetlands.
- Integrate seating amenity into the circulation network and within nodes.
- Ensure legibility through path alignment, hierarchy and typology, supported by signage and wayfinding, refer 'Signage & Wayfinding' section.



#### Images.

1. Network of paths providing for informal separation of modes.
2. Shared paths with graphics utilised to guide usage.
3. Pedestrian priority paths, catering also for low-speed cycle use.
4. Informal paths for amenity and maintenance access
- 5 - 6. Boardwalk type structures accessing across low-lying or wetland areas, with off-line spaces for seating and amenity.

Source: <https://www.Waka Kotahi.govt.nz/walking-cycling-and-public-transport/cycling/cycling-standards-and-guidance/cycling-network-guidance>



**Shared path.**  
A path, separate from a roadway, that may be used by some or all of the following persons at the same time: pedestrians, cyclists, riders of mobility devices and riders of wheeled recreational devices. With no formal separation or segregation of modes.



**Segregated (shared) path.**  
Segregation of modes within a shared path – by non-physical methods, eg a painted centreline, contrasting surface materials and pedestrian / cycle symbols.



**Separated cycleway.**  
Separated cycleways are exclusively for cycling. Generally situated on or adjacent to the roadway, with a form of physical separation from vehicles. Separated cycleways can be either:



- one-way ie cycling in the same direction as adjacent traffic
- two-way (bi-directional) ie both directions for cycling accommodated within one facility on one side of the road.

**Hikoī. Circulation.** Key outcomes diagram.  
**Schematic plan illustrating the key outcomes for the required different modes of circulation.**

Outline approach to selection of a suite of robust path paving materials selection and treatments for different use requirements - establishing a consistent look and feel throughout the river corridor.



**Insitu concrete paving** sawcut, with sandblast and exposed aggregate finishes providing a quality, robust, low-maintenance surface for shared paths and spaces.



Opportunity to inscribe pattern, text or detail to concrete surfaces.



**Asphalt paving** with concrete edging to commuter cycleways to provide an even and low-maintenance surface.



**Hardwood timber & galvanised mesh** boardwalks.



**Compacted aggregate** paths.



**Insitu concrete terraces, steps & low walls** integrated into berm & stopbank.



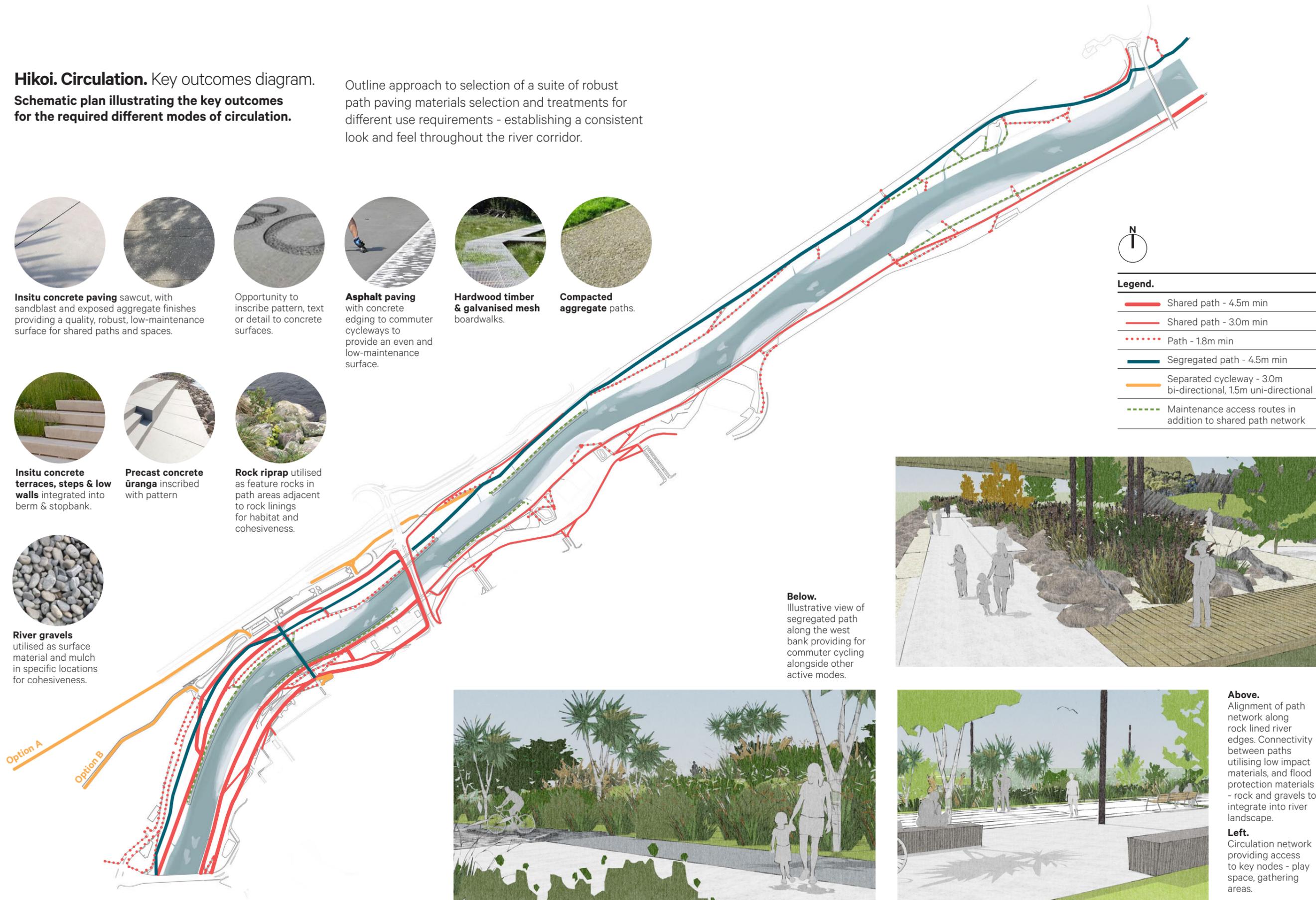
**Precast concrete ūranga** inscribed with pattern



**Rock riprap** utilised as feature rocks in path areas adjacent to rock linings for habitat and cohesiveness.



**River gravels** utilised as surface material and mulch in specific locations for cohesiveness.



**Legend.**

- Shared path - 4.5m min
- Shared path - 3.0m min
- ⋯ Path - 1.8m min
- Segregated path - 4.5m min
- Separated cycleway - 3.0m bi-directional, 1.5m uni-directional
- ⋯ Maintenance access routes in addition to shared path network

**Below.** Illustrative view of segregated path along the west bank providing for commuter cycling alongside other active modes.



**Above.** Alignment of path network along rock lined river edges. Connectivity between paths utilising low impact materials, and flood protection materials - rock and gravels to integrate into river landscape.

**Left.** Circulation network providing access to key nodes - play space, gathering areas.



### 4.2.5 Ngahau. Life & Activity.

**Inviting people to Te Awa Kairangi for specific activities - cultural practice and events, general recreation and play through the creation of spaces for the community to inhabit will bring life and vibrancy to the river, building social connection and kaitiakitanga.**

#### Design approach & key outcomes

A variety of programmed activity - play, market, sport, event and social enterprise spaces are concentrated to the left bank of the river adjacent to the city and residential areas, with the right bank retaining a movement and connectivity focus.

Within these programmed activity areas are a network of play and recreation spaces with the potential to provide a diversity of experience. Play offers opportunity for education through engagement with the physical and cultural landscape, an opportunity to engage with the varied river landscape and surroundings - from its urban interface, to the dynamic river areas to the more relaxed planted spaces

The key outcomes and opportunities for ngahau, life and activity are:

- Iwi/hapū have a living and enduring presence, with active kaitiaki role in the stewardship and care of the river environment. Extending to customary, cultural and commercial dimensions.
- Mana Whenua are involved in ongoing management, programming and occupation of the river and city edge environments through joint venture developments and access to natural resources.
- Provide a sequence of spaces of a range of scales for a variety of uses and types of occupation, inviting a diverse range of people to the river park for active and passive recreation.
- Provide for cultural use and practice - kaitiaki roles, space for manu aute, waka ama, mahinga kai and pā harakeke resources.
- While predominantly a soft landscape surfaced in grass and planting, within the river park provision is made for hard surface areas in addition to the path network, which will provide for programmed activities e.g.. ball court, market, seating, and play.
- Well connected spaces for all seasons inviting occupation throughout the year. Summer festival spaces, weekend and seasonal market spaces, summer and winter sports, swimming and winter walking and cycling.

- A mix of programmed and informal recreation spaces, flexible spaces to accommodate a variety of use including pop-up event spaces.
- Spaces for all ages and abilities, providing a suitable level of access to key spaces and features.
- Integrate the stopbank profile into adjacent community and recreation spaces, blending the interface between, and modifying the profile to utilise stopbank contour for play and activation opportunities, informal seating,
- Incorporate the engineered banks of the river into the adjacent recreation spaces, with attention to detail how the bank is integrated into the adjacent land and water space, and to the level of access provided to areas of the water space.

#### Play

- Provide for a river environment that is playful, fun and memorable, with a diverse range of play experiences for all ages that encourage exploration, discovery and connection to place.
- Consider designed playgrounds as destinations.
- Deliver playable landscape experiences are intentionally inclusive and non-age specific rather than solely structured play for younger children.



**Above & left.** Opportunity to re-establish sites for cultivation, preparation and weaving of harakeke and other plant based fibres.

- Consider play along the way. Journey along the path network is part of the play experience, safety and mobility are important to encourage exploration.
- Provide nature play spaces for learning and investigation, citizen science stations, access to explore river and wetland habitats, bird hides, lookouts, river rock jumping, and wild play lawns with long grass, flax and toetoe to explore.
- Consider the river landscape as a canvas for temporary activation through play and programming, creating an ever-changing play experience, e.g.. play installations, incidental objects and pop-up play.
- Provision of lock-up play pods, e.g.. shipping containers with loose parts play opened daily.
- Recognition of the water space as part of the sequence of community and recreation spaces.
- Active play is provided for through sports fields, walking, running and cycle routes, bike agility trails, exercise stations, spaces for kayak and waka ama launch.



#### Images.

1. Swimming and water based recreation opportunity.
2. Evening food truck market opportunity.
3. Citizen science education programmes.
4. Concert and event spaces opportunities within the urban and river landscape.
- 5&6. Waka ama and kayak launch.
7. Manu aute festival
8. Fishing spots and bird watching hides.

**Ngahau. Life & Activity.** Key outcomes diagram. Schematic plan illustrating potential locations of play and recreation spaces, as referenced in the key outcomes and shown in the illustrative project overview plan.



**Above.** Illustrative view of lora and fauna themed nature play space opportunity.



**Legend.**

- ..... Boardwalk
- Kiosks
- Water access
- Play spaces
- Grass recreation areas
- Market space
- Beach recreation

**Right.** 1. Active play precedents, with an urban and/or environmental focus - educating about the environment through play.



### 4.2.6 Mahi Toi. Public Art.

**Te Awa Kairangi, the City Edge and the multi-modal transport focused Melling Connections present a range of opportunities for public art and mahi toi as a tool to connect river and city, people and place.**

#### Design approach & key outcomes

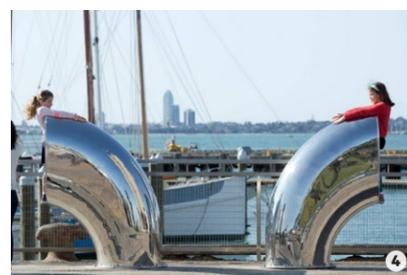
Works of art that are relevant to their context - social, cultural and physical; strategically sited and contributing to creating a sense of connection and respect from the local community, mana whenua and manuhiri. From integrated artworks and landform to ephemeral digital projections and temporary installations exploring cultural connections.

The key outcomes and opportunities for mahi toi, public art are:

- Develop a project wide mahi toi and public art strategy in consultation with mana whenua and E Tu Awakairangi Art Trust.
- Ensure iwi / hapū narratives are captured and expressed creatively and appropriately. With iwi / hapū mandated artists engaged.
- Include the strategic location of key pieces with a view to developing a hikoi mahi toi / art trail with the potential to connect and extend beyond the site.

- Ensure mahi toi and public art are site specific and culturally relevant to Te Awa Kairangi and Lower Hutt; adding to the understanding of the place, its history, connections and cultural fabric.
- Include opportunities for artwork that has a positive impact on the river environment.
- Include opportunities for works that express the project's environmental narratives and functions - the role of stormwater treatment swales and wetlands in provision of habitat.
- Art themes that are integrated within the design of a space and its materiality and provide an interpretive role in telling the site's history are encouraged.
- Explore a wide range of public art media to identify the most appropriate and responsive designs for each site. These spaces should also facilitate community events and performances.
- Temporary, including performance and installation, and permanent works are encouraged.
- Consider integration and siting of individual works within the wider landscape, to ensure a coordinated and curated response.

- In coordination with E Tu Awakairangi Art Trust and Hutt City Arts Advisory Group develop briefs for specific works, including selection process.



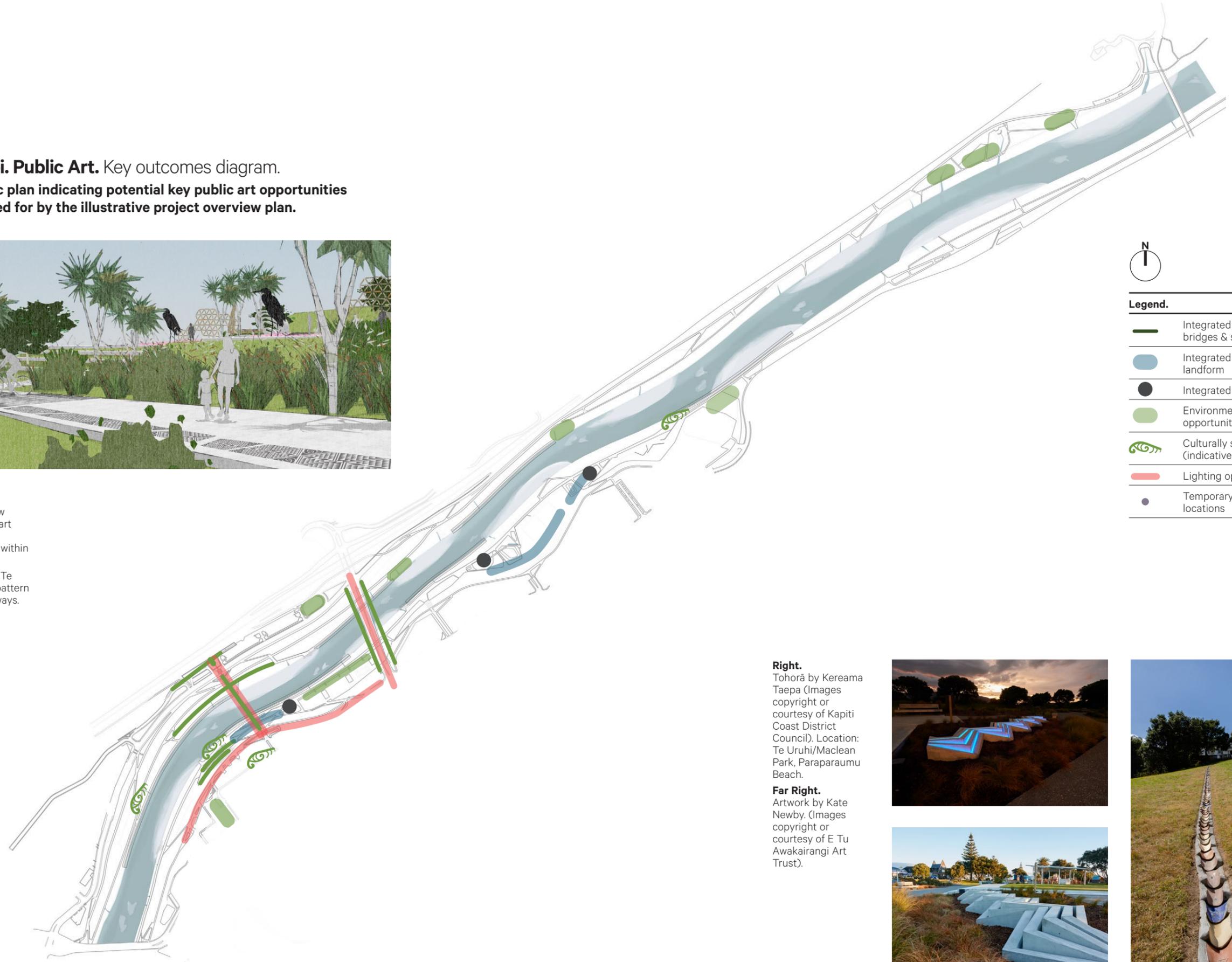
**Left.**  
**1 & 2.** Integrated art works - painted riprap, woven wetland weirs  
**3.** Pou Rama, Desna Whaanga-Schollum  
**4.** Interactive art works. Sounds of Sea, Johan Olin and Aamu Song.  
**5.** Life Mounds, Charles Jencks.  
**6.** Permanent and temporary art installations exploring native fauna.  
**7 & 8.** Significant works acting as gateways.

**Above left.**  
 Interactive, temporary art installations - Rainbow machine, Sarosh Mulla, Patrick Loo, Shahriar Asdollah-Zadeh  
 —  
**Mahi toi.**  
 Te Waka Taumata o Horotiu (Resting Waka), Fred Graham  
 Cultural Outcrops, Dion Hitchens (Tūhoe, Ngāti Porou) and Charles Koroneho (Ngā Puhi)

**Mahi Toi. Public Art.** Key outcomes diagram.  
 Schematic plan indicating potential key public art opportunities as provided for by the illustrative project overview plan.



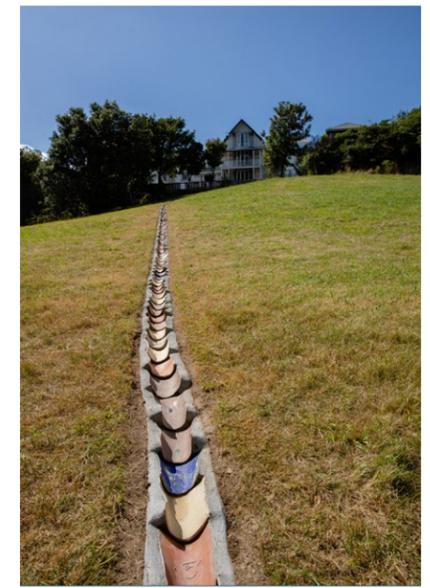
**Above.**  
 Illustrative view of Integrated art and sculpture opportunities within playspaces.  
 He Korowai o Te Awakairangi pattern work to pathways.  
 Len Hetet.



**Legend.**

	Integrated art opportunities - bridges & structures
	Integrated art opportunities - landform
	Integrated art opportunities - play
	Environmental focused opportunities
	Culturally significant site works (indicative)
	Lighting opportunities
	Temporary works potential locations

**Right.**  
 Tohorā by Kereama Taepa (Images copyright or courtesy of Kapiti Coast District Council). Location: Te Uruhi/Maclean Park, Paraparaumu Beach.  
**Far Right.**  
 Artwork by Kate Newby. (Images copyright or courtesy of E Tu Awakairangi Art Trust).



### 4.2.7 Whakapapa. Signage & Wayfinding.

**Te Awa Kairangi is a cultural landscape with diverse stories to tell through acknowledgement of cultural landmarks and sites significant to mana whenua. Effective wayfinding and signage will also assist in the use and navigation of the river environment, its paths and facilities as well as providing a means of communication and education.**

#### Design approach & key outcomes

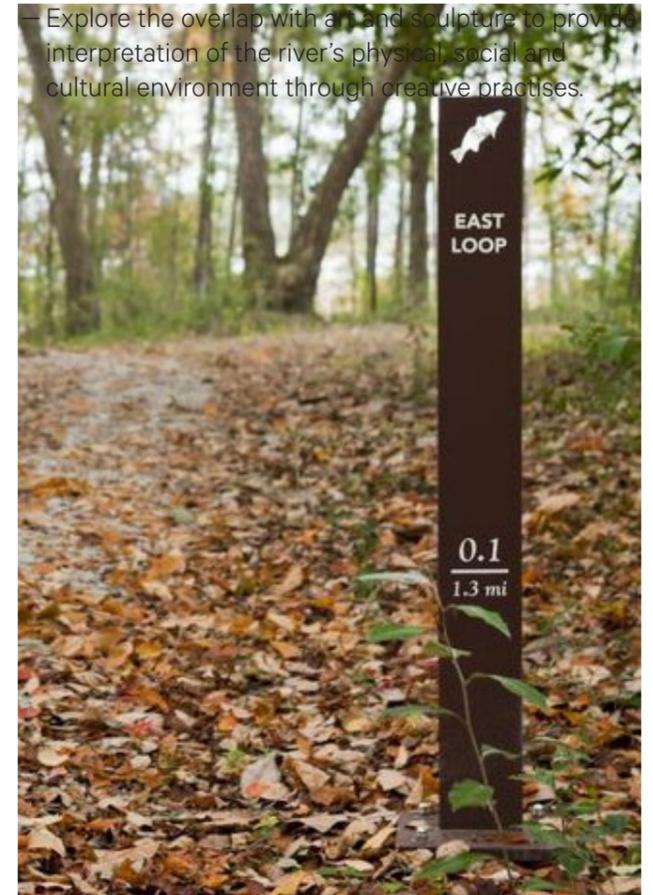
A wayfinding and signage strategy is recommended to clearly link key destinations and assist in the legibility of the proposed pathway network and the communication of cultural connections and histories.

The key outcomes and opportunities for whakapapa, signage and wayfinding are:

- Develop a project wide (Te Awa Kairangi, City Edge & Melling Connections) interpretation, signage and wayfinding strategy - including the strategic location and component design of a family of elements.
- Provide bi-lingual te reo Māori and English interpretation, signage and wayfinding.

- Build on the whakapapa Te Awa Kairangi - Te Momi ki Maraenuku ki Motutawa, with mana whenua develop site specific naming of locations and features.
- Recognition of tohu, including wāhi tapu, wāhi tūpuna, maunga, awa, puna, mahinga kai, mahinga mataitai and ancestral kāinga.
- Ensure the scale and composition of wayfinding and signage elements is sympathetic to the space or built element to which it relates, as well as the overall character of Te Awa Kairangi.
- Utilise robust materials, appropriate for the specific environment, located to minimise risk of flood damage by integrating within built elements, such as structures, steps and seating where appropriate.
- Include opportunities for interpretation devices that communicate ongoing river management practices and environmental education.
- Provide wayfinding for significant destinations and key routes. Include directional details, time and distance to key destinations (for pedestrians and cyclists).
- Use wayfinding devices to highlight the presence of the river within the city to encourage

- connectivity, including marking and naming of streams outfalling to the main river channel.
- Ensure wayfinding elements are legible and accessible to all through the use of clear and consistent graphics, with integrated lighting where appropriate. Refer to Lighting section.
- Wayfinding should not be exclusively text-based, but utilise various information systems including pattern, maps, braille and universally recognised iconography.
- Continue development of korowai pattern (illustrated opposite) with mana whenua appointed artist within signage and wayfinding suite.
- Interpretive signage to describe the cultural, historical, natural and built characteristics and stories of this dynamic river landscape is strongly encouraged; tell the stories of Te Awa Kairangi.
- Wayfinding and signage that incorporates interpretive elements which express the site's environmental narratives are strongly encouraged.
- Utilise signage and wayfinding to connect to wider cultural landmarks and associated narratives outside the site to build spatial orientation and connection.



**Above.** Steel signage pillar containing iconography, naming, time and distance markings.

**Far Left.** Signage and interpretation precedents utilising natural materials, colour, map graphics, text in te reo Māori and English.

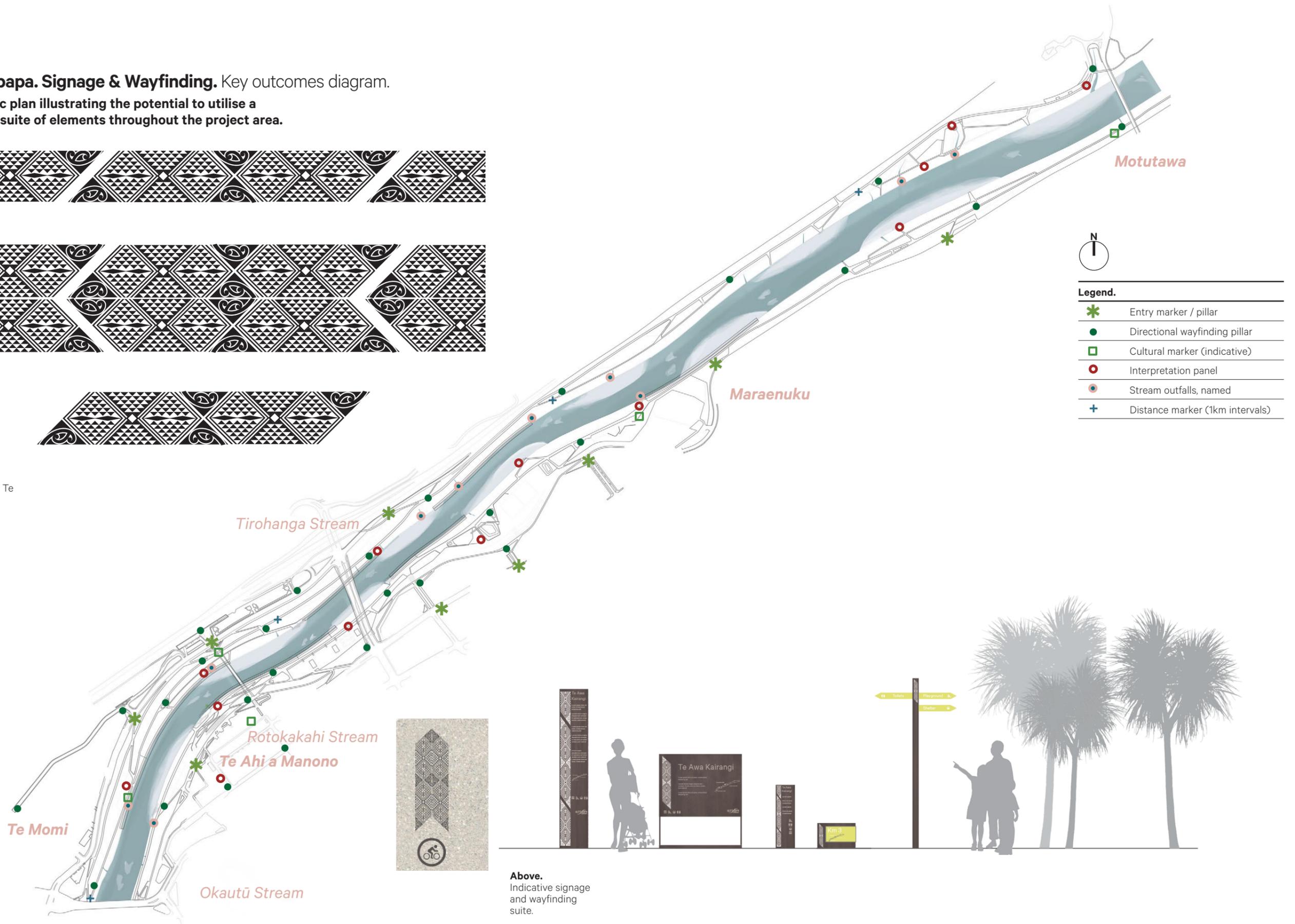
**Left.** History and connections to site explored through Inlaid traditional Māori gardening tools, shellfish gathered and text based graphics.

**Whakapapa. Signage & Wayfinding.** Key outcomes diagram.

Schematic plan illustrating the potential to utilise a coherent suite of elements throughout the project area.



Above.  
He korowai o Te Awakairangi.  
Len Hetet.



Above.  
Indicative signage and wayfinding suite.

### 4.2.8 Rama. Lighting & Power Supply.

Lighting offers the opportunity to connect the river landscape to the realm of Ranginui and the night sky. Creating the ability to safely inhabit the river and city edge environment during evening hours, while minimising impact on species habitats.

#### Design approach & key outcomes

Lighting is to be utilised to provide visual comfort and security while helping to create spaces that are functional and adaptable. A well-integrated lighting design will be crucial to providing safe places for pedestrians and cyclists while minimising unnecessary light pollution and negative effects on species habitat. Lighting can be utilised to celebrate particular structures and features.

The key outcomes and opportunities for rama, lighting are:

- Develop a project wide lighting strategy - including the strategic location and component design of a family of lighting elements to provide the functional lighting requirements.
- Lighting should be respectful of the environment and consider the natural river context.

- Functional lighting is to be restricted to areas identified as key movement routes and spaces for access and connection, and restricted from the wider site.
- Minimise the use of light poles within the river corridor to maintain the integrity of flood defences.
- Where light poles are required within the river corridor, design to minimise the risk of flood damage due to scouring or entrapment of debris.
- Light poles to the top of stopbanks are to be avoided. Where they are required in this location to achieve functional lighting levels ensure the stopbank is of sufficient width, and foundation is designed to prevent erosion.
- Integrate CPTED principles in the selection, specification and placement of lighting to ensure that spaces are safe for all users. Refer Safety & Security section for CPTED requirements.
- Provide wayfinding lighting along identified paths (as indicated opposite) which meets the requirements of the P3 lighting category under NZS1158.3.1:2005.
- Limit the use of lighting in ecological habitat zones (refer Planting & Habitat section) to areas where it is essential for safety and

- security. Continue dialogue with ecologist on lighting proposals in future design stages.
- Minimise visual clutter and risk of flood damage by integrating lighting within built elements, such as structures, steps and seating.
- If columns required within these areas, co-locate with other structures and design foundations to meet flood water velocities.
- Ensure path lighting has consistent levels of illumination.
- Lighting elements should have a sustainable life cycle and minimum impact on the environment. Consider the use of solar powered luminaires.
- Lighting to streets and road reserves forming part of the wider RiverLink project should give consideration to the selection of pole and luminaire to support a multi-modal transportation focus. With the selection / design of pedestrian scale, rather than typical transportation type, light poles.
- In addition to permanent functional lighting, feature lighting of key elements is encouraged, in particular within the pedestrian and cycle bridge, ūranga and city edge terrace spaces.

- In addition to functional and feature lighting - temporary lighting is to be considered for events, e.g. festivals. The use of temporary lighting and site-specific installations is encouraged to activate strategic areas of the river corridor during the evening.
- Provision for event power supply is to be made in the car park areas, city edge and recreation lawn locations at a minimum.
- Ensure lighting is an integrated consideration as part of a project-wide wayfinding strategy (refer Signage & Wayfinding section).
- Ensure lighting is an integrated consideration as part of a project-wide public art strategy (refer Public Art section).



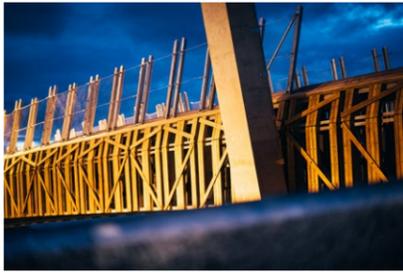
**Left.** Lighting as both art installation and wayfinding device. Fort Lane, Auckland.



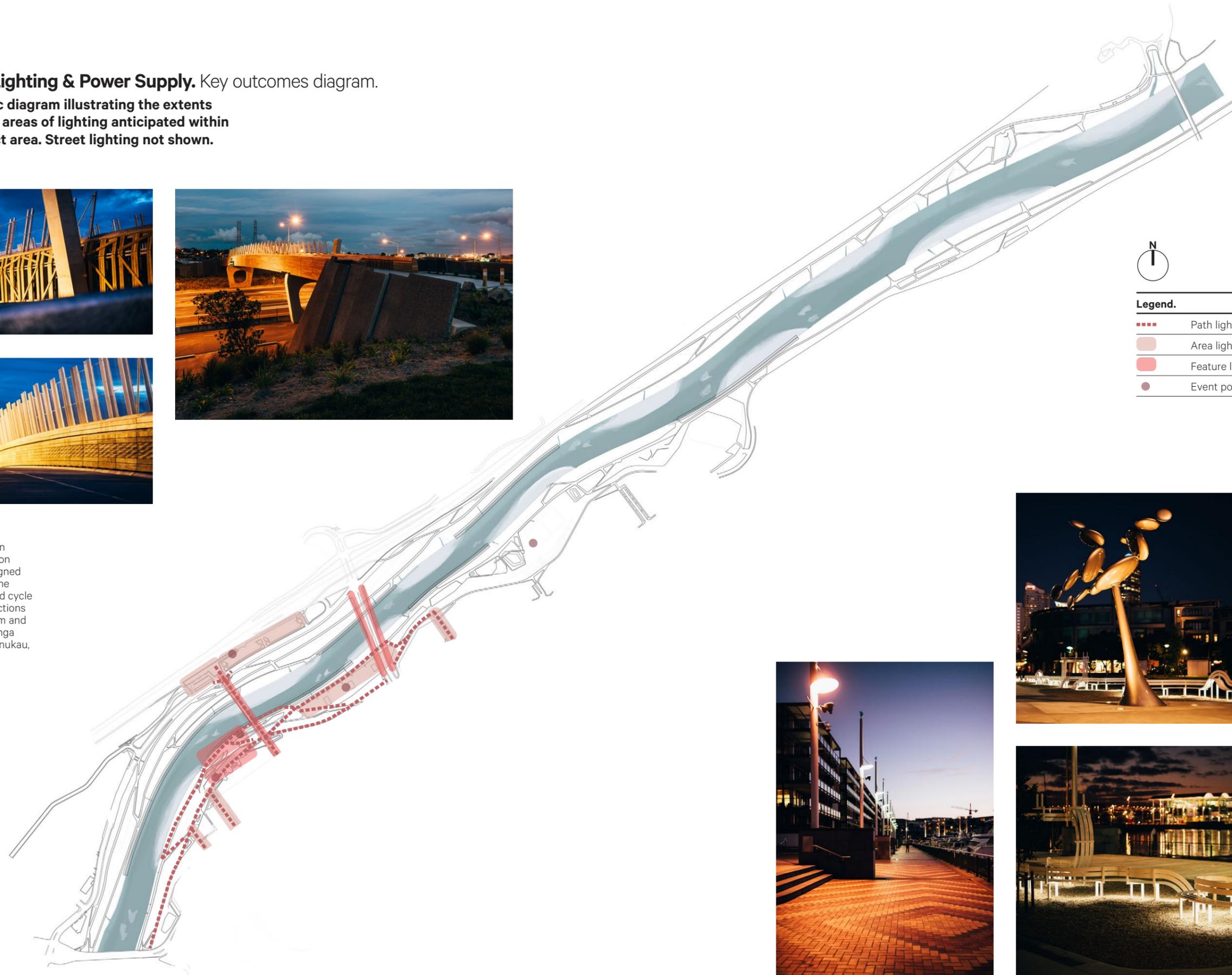
**Images.**  
**1.** Lighting elements that provide for wayfinding day and night.  
**2-3.** Constant level of path lighting to minimum requirements.  
**4&8.** Feature lighting integrated into path surface.  
**5.** Projected feature lighting.  
**6.** Lighting to facilitate evening use and activity.  
**7.** Terrace edge functional and feature lighting, highlighting a key area for occupation.

**Rama. Lighting & Power Supply.** Key outcomes diagram.

Schematic diagram illustrating the extents and focus areas of lighting anticipated within the project area. Street lighting not shown.

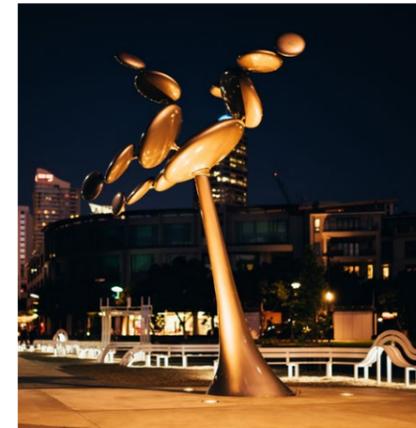


**Above.** Lighting within a transportation corridor. Designed to celebrate the pedestrian and cycle bridge connections sculptural form and detail. Onehunga foreshore, Manukau, Auckland.



**Legend.**

- Path lighting
- Area lighting
- Feature lighting
- Event power supply



**Images.** Lighting to celebrate various public realm art works at Waitemata Plaza, Auckland waterfront.



#### 4.2.9 Safety & Security.

**The linear nature of the open space environment of Te Awa Kairangi and the partial concealment of these spaces behind stopbanks require careful consideration of Crime Prevention Through Environmental Design (CPTED) principles for the safety and security of users, supported by emphasis on activation and use of the river environment.**

#### Design approach & key outcomes

While CPTED issues are more likely in the river landscape. These outcomes apply to all parts of the design. Emphasis is placed on activation; high levels of use are needed to provide safety and security (and perceptions thereof) within the river corridor. CPTED must be an overarching consideration in the development of all design solutions for all components of the RiverLink project. The environments we create, whether within the river landscape, city or transportation focused areas should be and feel safe.

The Ministry of Justice's National Guidance for Crime Prevention through Environmental Design and Waka Kotahi's Bridging the Gap provide guidance for addressing CPTED. The following project requirements build upon this:

#### Activation

- Provide attractive, high-quality spaces to promote high levels of use.
- Ensure the park is appealing to a diverse range of users, age groups and abilities. Pathways should be attractive to commuters and recreational users; walker, runners and cyclists; and cater to a range of age groups and ability levels.
- Provide pedestrian/cycling routes on alignments and to a detail that ensures they will be well used to prevent them becoming isolated and unsafe.
- Provide spaces and river edge treatments which encourage a range of uses along the river corridor, including by not limited to swimming, fishing, kayaking, small informal events, etc.

- Ensure the project-wide materials and treatments convey the message that Te Awa Kairangi is a valued, used and loved asset. Ensure the use of robust materials which will weather and age well and are easily maintained if damage were to occur.

#### Access

- Provide legible and inviting river access points between river and city that consider walkers, cyclists, and mobility impaired people.
- Provide safe movement paths and connections with clear and logical wayfinding and orientation.
- Ensure fencing, gates and walls are of appropriate scale, not to obstruct views and movement.
- Ensure structures are integrated landscape design considerations to ensure public safety and security, while also considering amenity.
- Provide legible and frequent 'exit' routes from the park in cases of emergency or natural disaster.
- Limit and manage vehicle access to the river corridor to minimise the risk of damage and undesirable behaviour.
- Ensure best-practice CPTED principles are followed in the design of parking areas, with legibility of layout, ease of access, multiple points of pedestrian egress, clear sight lines and opportunity for passive surveillance, and avoiding entrapment areas.

#### Sightlines & Surveillance

- Maintain sight lines along the length of the park, including to and from the bridges.
- Design paths and adjacent vegetation so that users have line of sight to another path or to adjacent land uses that provide passive surveillance.
- Where paths routes are more densely vegetated to achieve revegetation, habitat and biodiversity outcomes, ensure alternative, more open, paths are also available to users.
- Minimise opportunities for concealment.
- Minimise visual clutter.
- Ensure adjacent urban development actively fronts the river to provide passive surveillance



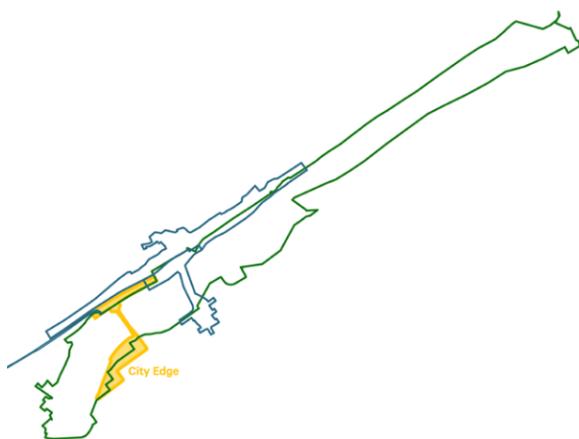
- from elevated vantage points. Refer City Edge - Adjacent Urban Revitalisation section.
- Encouraging a mix of uses so that space is used throughout the day and the evening.
- Provide suitable lighting for wayfinding and illumination of primary pathways, enabling key routes to be safely used during both day and night. Refer Lighting section.

#### Above.

Illustrative view at the interface of city, river and pedestrian and cycle bridge.

A network of paths and connections, with generous planting and ease of access to the river channel edge.

### 4.3 City Edge Design Framework.



#### Scope & background.

This section of the design framework addresses topics specific to the City Edge. The city edge includes the interface between the city centre and river corridor, typically between Ewen and the new Melling Bridge. It extends to encompass the new railway station precinct and the pedestrian and cycle bridge that forms a critical link between city and the new multi-modal transport facility.

This conceptualising of the city centre as spanning both sides of the river begins the process of placing the river at the centre - physically and metaphorically. Supporting the delivery of the project vision of 'lifting the mana and mauri of the river, re-establishing Lower Hutt as a vital and connected river city'.

The integrated infrastructure investment of the RiverLink project has been identified as a catalyst for the wider urban regeneration of Lower Hutt's city centre. For the last two decades the city has identified the potential to reforge its relationship with the river. Several urban design visions and plans have been developed; *Hutt CBD Making Places (2009)* has been supplemented by the *Central City*

*Transformation Plan (2017 - 2019)* which inform the City Edge component of the RiverLink project.

#### Central City Transformation Plan.

The Central City Transformation Plan (CCTP) is a strategic framework to guide future development. It aims to create a vibrant 24-hour city focused firmly on the river. The CCTP contains many references to RiverLink and was developed in parallel with the RiverLink preliminary design. The two programmes – RiverLink and the CCTP – overlap and interrelate to a large degree. Components of RiverLink will deliver many of the urban objectives within the CCTP, with the following elements of the CCTP sitting within the direct scope of the RiverLink programme:

- New cycle & pedestrian bridge
- New Melling railway station & associated multi-modal transport connections
- New Melling vehicle bridge and associated connections
- Recreational amenity within the river landscape
- Upgrade of adjacent city edge streets and lanes

Additional elements have a strong adjacency, but will not be delivered by the RiverLink project are:

- Urban regeneration / Development of city edge blocks.

The intent of the City Edge is to turn a potential negative (higher flood defences in close proximity to existing city streets and buildings that would further separate river from city) into a positive (integrated design that connects river and city).

Residential-led transformation is promoted within the CCTP. The establishment of a critical mass of residents being a key component in the future success of the central city to drive retail and commercial demand and generally lift vitality and viability. The CCTP sees RiverLink as a critical catalyst for change with significant infrastructure investment set to heighten levels of transport access, walking

connections and public amenity which will help shift market perception and create a compelling value proposition. Moreover, it is set to unlock the potential of Lower Hutt's greatest natural asset, the river, which the central city has historically turned its back on.



**Above.**  
Central City Transformation Plan. Illustrative Master Plan.

**Below.**  
Central City Transformation Plan. Transformation Vision.

<p><b>COMMUNITIES OF CULTURE:</b> Taranaki Whanui mārapono A story that transitions across time - Maori to European. An authentic response reflecting local community diversity. Local neighbourhoods who use the city support a vibrant centre.</p>	<p><b>AN ATTRACTIVE &amp; ACTIVE URBAN RIVERFRONT:</b> A river edge promenade that engages with the city centre street system. Easy access to recreational networks. A high quality visual setting. Publicly relevant activities - food &amp; beverage, retail, commercial.</p>	<p><b>A MID-CENTURY MODERN IDENTITY:</b> Hutt City - the NZ capital of mid-century modern architecture. The first town to plan complete city centre rejuvenation. A profusion of nationally significant Modern Movement buildings.</p>
<p><b>A LIVEABLE CENTRE:</b> A high amenity residential environment. Access to good schools. Excellent Public Transport in close walking distance A river corridor on the doorstep. A vibrant evening economy offering a range of food and beverage.</p>	<p><b>TRANSFORMATION VISION</b> The City Centre is a catalyst for new development offering sustained prosperity and a competitive investment location in the Wellington region. A transformed City Centre with a strong riverside identity that manifests Maori and subsequent settlement culture, and that reinforces the Hutt as a location of choice. An attractive, vibrant and liveable centre that embraces change through promoting new business, housing, recreation and enterprise opportunities.</p>	<p><b>A VIBRANT CENTRE:</b> A successful range of street-based retail leverage off an integrated Queensgate Mall. Local businesses offering a diversified employment base. Residential neighbourhoods with a sense of ownership of the city centre. A vibrant night time economy extending the activity period of the centre.</p>
<p><b>INVITING &amp; USABLE SPACES:</b> An enhanced and active river corridor. An interconnected system of open spaces. High amenity streets with mature tree planting. A range of open space types including play spaces for young children.</p>	<p><b>A COMPETITIVE &amp; DIVERSE ECONOMY:</b> The river as a new urban park and centrepiece to a redefined central city A wider and more dynamic range of business settings A new focus on a 24-hour economy and inner city living New east-west links within the city</p>	<p><b>A SUSTAINABLE CITY:</b> A resilient city capable of adapting to change. Walkable lifestyle patterns with reduced vehicle trips. City centre greening and street trees. Utilise latest building technologies. Low carbon buildings, energy efficient.</p>

Nested within the overarching project vision of 'lifting the mana and mouri of Te Awa Kairangi', and the design themes of Vitality, Connectivity and Identity are principles specific to the City Edge project component.

**Vitality** Encouraging a diverse range of use and activity, inviting the wider community to the city and river environment, and supporting economic vitality of Lower Hutt.

**Connectivity** Strengthening connection between river and city, by drawing the river environment into the city and creating an appropriate built interface with the river.

**Identity** Built infrastructure designed specifically in response to setting, reflecting Te Awa Kairangi and Lower Hutt character. Expressing Lower Hutt as a river city.

The aerial photographs on the opposite page illustrate the urban development of Lower Hutt through the middle of the 20th century, its incremental encroachment on the river environment, and concurrent 'turning away from the river'.

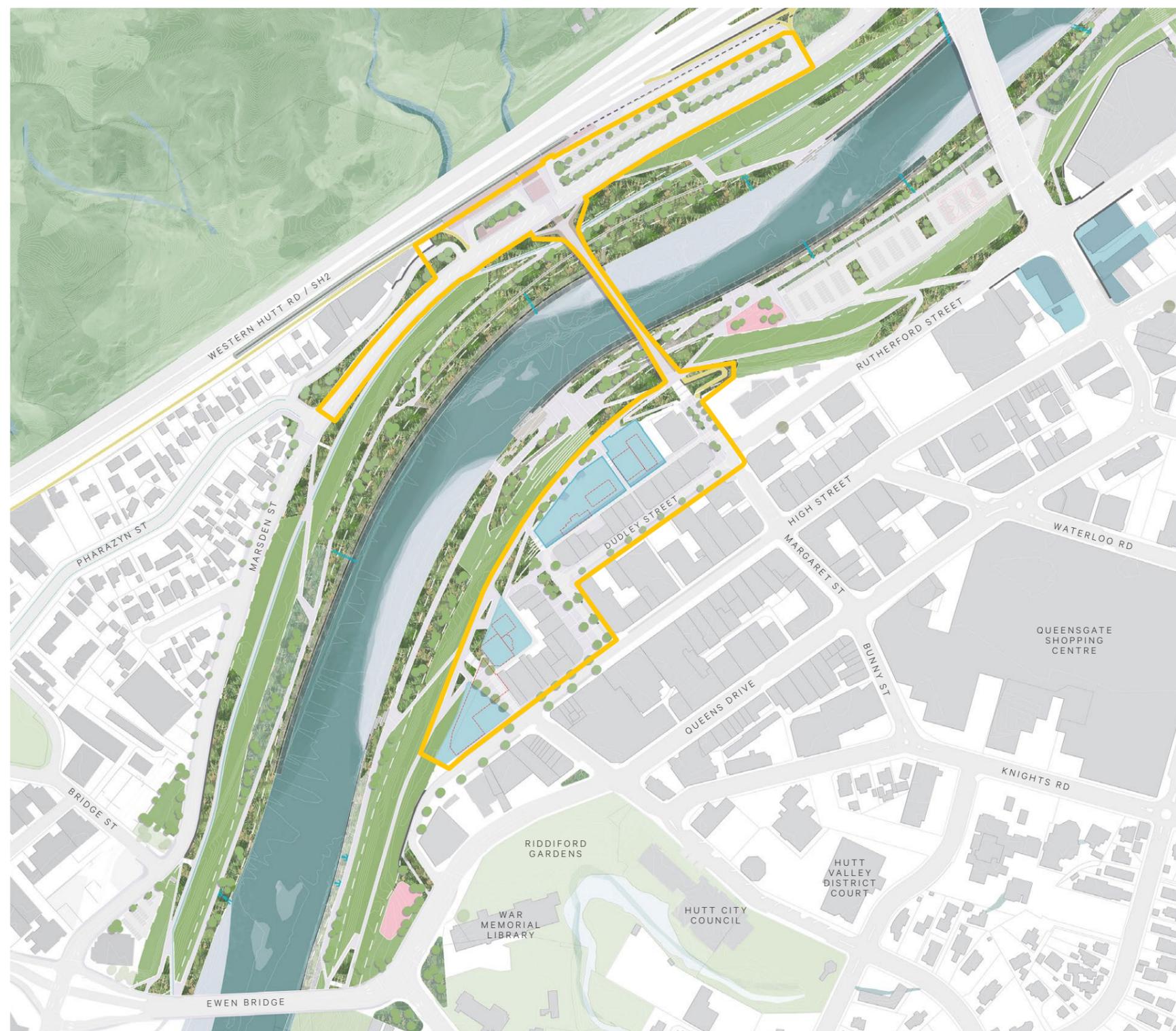
### Design elements.

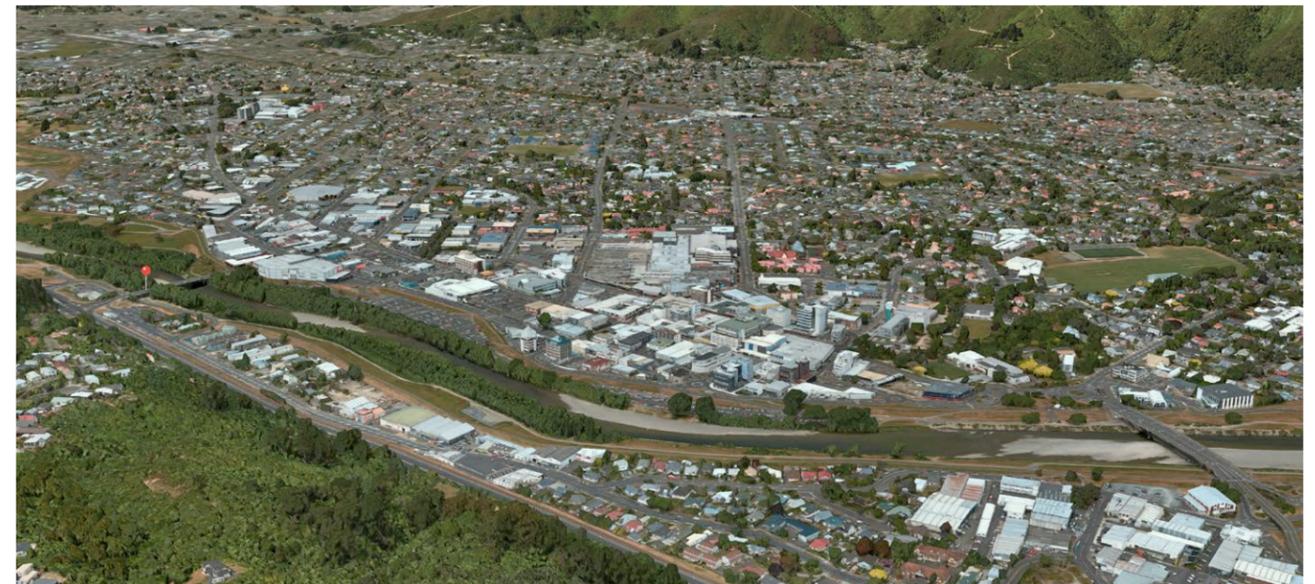
In addition to the design framework provided in the previous and following sections for Te Awa Kairangi and Melling Connections components, a framework of broad-scale design guidance is provided in the following pages for key elements of the City Edge.

Principles set out design approach and Outcomes provide guidance for future design stages of key areas including:

- Adjacent Urban Revitalisation
- RiverbankMarket
- City Edge Streets & Lanes
- Urban Interfaces & Access
- Pedestrian & Cycle Bridge
- Multi-modal Melling Station

**Right.**  
Riverlink City Edge  
focus area.





**Above.**  
c.1950's Lower Hutt  
city centre and river  
interface.

**Above.**  
Late 20th century  
Lower Hutt city  
centre and river  
interface.

### 4.3.1 Adjacent Urban Revitalisation.

**Connecting river and city are overlapping design philosophies and objectives within the CCTP and RiverLink project. Urban revitalisation enabled by the RiverLink project, that sits at the interface between river and city should be expressive of it's location within Te Awa Kairangi and honour the river. Recognising that well considered adjacent urban revitalisation holds a privileged position, uniquely placed to turn the city to face the river – reconnecting river and city.**

The CCTP proposes achieving this objective by focusing on bringing the city to the river; constructing complex hard infrastructure out and over the river corridor. Intensive urban development proposed at the interface with the river does come with significant challenges; in particular:

- Geotechnical constraints of river gravels and aquifer
- Proximity to the Wellington fault line.
- Regional Council requirements for stop bank repair and maintenance access

- River corridor future proofing (widening and raising of stop banks)
- Development economics in balancing the cost of development with market demand.

The RiverLink project takes a 'river first' approach - leveraging the river as the natural asset of greatest value. In bringing the river to the city, the illustrative project overview highlights opportunities for adaptive and resilient buildings as well as infrastructure that offers multiple connections between river and city.

Enabling urban intensification with smaller footprints and increased permeability to the river. In support of a city river edge with life and vitality, food and beverage as well as community uses at ground floor levels are earmarked. With opportunities at the upper levels for commercial and residential activity to support an active daytime and evening economy, enabling the delivery of new city centre living and working opportunities.

### Design approach & key outcomes

An integrated approach is required to deliver increased flood protection requirements in conjunction with the mixed-use development sites fronting the river and top of stopbank shared path transitioning to the city centre street network level. This requires careful consideration of urban development with multiple interfaces, for which the key outcomes are:

Strengthened connection between city centre and river environment that express the character and identity of Te Awa Kairangi and Lower Hutt.

- Strengthened connection between river, city centre and the revitalised civic precinct through the redevelopment of existing city edge buildings, streets and public spaces.
- Adaptive reuse of mid-century building stock - recognised as a point of difference of Lower Hutt, to strengthen the character and vitality of the city.
- Support the delivery of a network of street typologies within the wider Lower Hutt city centre.



- Support a laneways precinct through high-quality interfaces between new urban development, the services lane and Dudley Street, contributing to an intimate finer grain placemaking and vitality.
- Create a network of public pathways through the development areas to assist in increased permeability to and from the river edge.
- Legible, accessible connections between city centre streets across the stopbank to the river environment with steps and ramps integrated into the stopbank, see Urban Interfaces & Access section.
- Clear signage and wayfinding, consistent with that proposed for the river environment, refer Te Awa Kairangi - Signage & Wayfinding section.
- Delivery of a generous shared path along the top of stop bank with active public uses to and from the new buildings, ensuring the shared path is not 'privatised' through exclusive use and activation.
- Deliver 'green buildings' that meet or exceed best practice environment standards.
- Multiple active modes of transport - walking, cycling, scooting are catered for.
- Ensure activation and pedestrian priority in any potential temporary use of these sites.



**Above.** Schematic layout of potential river and city interface at south Daly Street. Permeable for ease of movement between city and river, while activating and inhabiting the urban river edge.

**Left.** Illustrative view of the potential new river city interface.

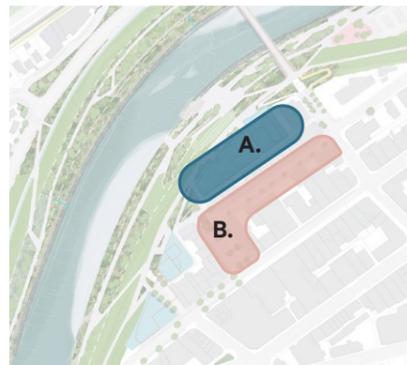
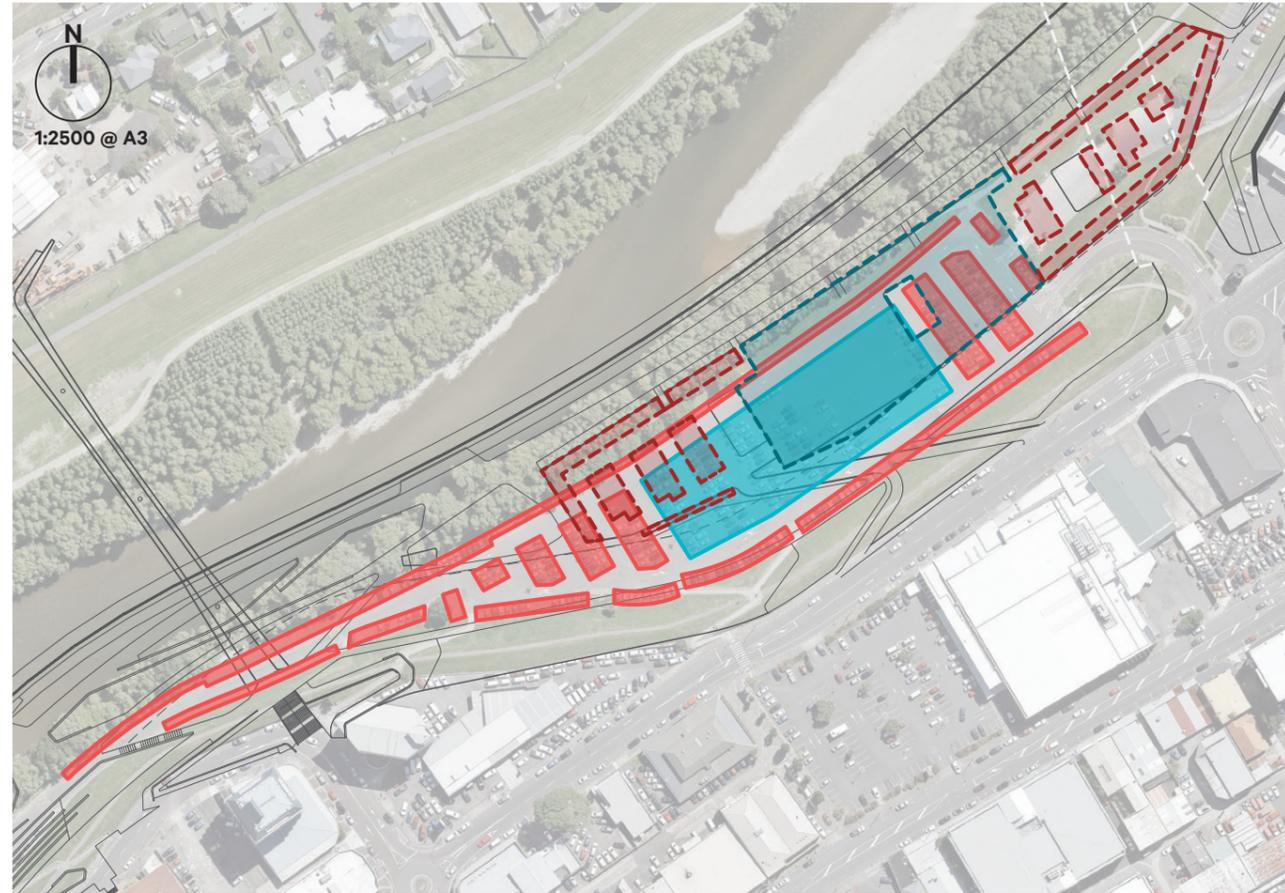
### 4.3.2 Riverbank Market.

Supporting activation and placemaking within the city centre through construction (and beyond) is a key project opportunity, to contribute to the vitality of the city centre as a place for live, work and play. The Riverbank Market is a popular weekly destination event, currently held in the river bank car park area. The project allows for continued use of the car park area for market and other event purposes post construction.

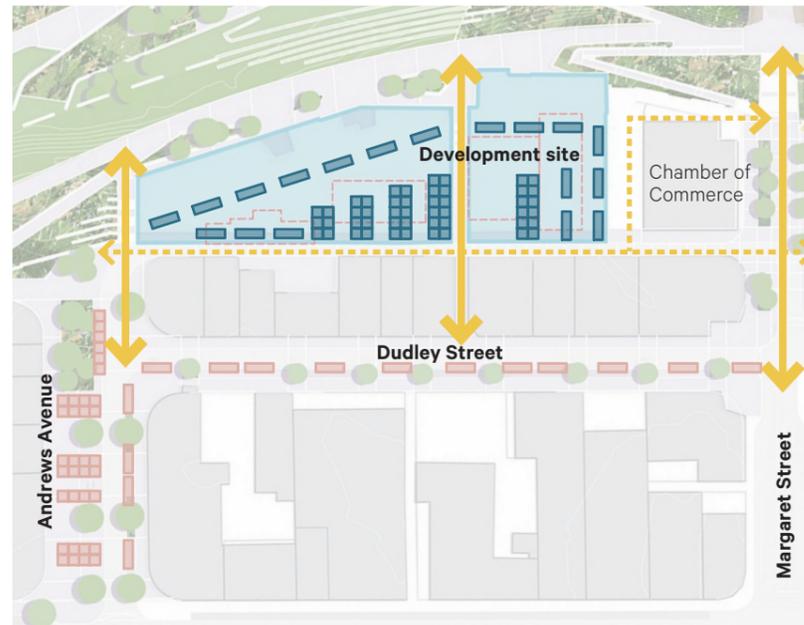
During construction there is potential to accommodate the market in locations within the wider site and or surroundings, subject to a detailed construction programme. Including the north Daly Street city edge development area prior to the staged delivery of the proposed adjacent development.

There is also the potential to relocate the market to the city edge area street and public space network, should that be the future desired outcome.

Noting that the current resource consent for the market allows for 18 large truck (fruit & vege) stalls, 13 medium size stalls with gazebos and 14 small caravan cart stalls with gazebos.



**Above & right.** Potential temporary market locations during construction. A. North Daly St development site. B. Andrews Ave & Dudley Street.



**Above Left.** An area comparison and indicative layout for the riverbank market within the new car parking area.

**Above.** The current Riverbank Market - a destination, activating both river and city.



### 4.3.3 City Edge Streets & Lanes.

The network of city centre streets have a key role to play in strengthening connection between river and city. They provide the main points and routes of access between the river and city. They are also where stormwater is collected before being piped to outfall to the river. Conceiving these streets and spaces as ‘urban tributaries’ elevates their role in contributing to improving water quality and drawing connections between city and Te Awa Kairangi.

#### Design approach & key outcomes

High Street forms the spine of the city centre street network, running parallel to the river, with Margaret Street, Andrews Avenue and Laings Road crossing perpendicular to the river. Within this street grid are pedestrian laneways that break down the city blocks, creating a good level of pedestrian connection between City Edge, High Street and the Civic Precinct.

The removal of Daly Street to facilitate increased stopbank footprints, catalyses both redevelopment of this edge and change to the street network. Finer grain streets and laneways, with increased pedestrian priority to deliver new and improved connections east-west

from Dudley/High Streets through or past new mixed-use development and up onto the new stopbanks.

The RiverLink project has the opportunity to address water quality at-source within upgraded streets and public spaces where stormwater from the roading network currently discharges directly to the river with no treatment.

Further opportunity exists to express the now hidden streams, piped beneath the city centre, where they outfall to the river and within the street network, e.g.. Rotokakahi Stream in the vicinity of Dudley Street.

The key outcomes and opportunities for city edge streets and lanes are:

- Delivery of a connected network of public streets and spaces, stitching seamlessly into the wider city street and open space network.
- Support the creation of a network of street typologies: ‘high’ / retail streets, shared space streets and lanes, ‘eat streets’, pedestrian lanes, and pocket parks offering variety in scale, character and use.
- Create low-speed, pedestrian priority streets for people. With generous footpaths, shade, shelter, seating and activation opportunities.

- Design intersections to promote the pedestrian and cycle use.
- Enhance te taiao / natural environment through expression of former waterways and establishment of urban ngahere utilising flora familiar and significant to mana whenua. Recognising the role street trees have in cooling, shade and shelter.
- Celebrate the use of indigenous species as part of streetscapes and urban spaces.
- Celebrate the existing character buildings that frame the city edge streets and spaces.
- Strengthen street based connections to public transport services, reducing the reliance on car ownership and encouraging mode shift.
- Utilise local and sustainable materials.

#### Water quality.

- Provide at-source treatment of stormwater within road reserves preferably through raingardens, or mechanical treatment devices where required due to spatial or technical constraints.
- Design raingardens to provide amenity to street users, expressing the water-based river to city connection.
- Communicate the role of raingardens in improving water quality to the public through interpretation.



#### Left.

1. Outdoor dining in Melbourne's narrow pedestrian laneways.
2. Street-based night market.
3. Innovating streets - eat street temporary public space transformation.
4. Busking and performance.
5. Public art providing wayfinding and character to pedestrian laneway.
6. Food truck market creating a destination urban street-based event.



**Right.**  
Urban tributaries - celebrating the river within the city centre environment through raingardens, ngahere and water play.



The following street typologies, as set out below, describe the required outcomes to achieve the principles of improved water quality and street life in an integrated network of urban tributaries.

**High Street. Pedestrian priority street.**  
The city centre retail spine. Reinstates the connection between High Street and Queens Drive along Fraser Street road reserve. Extending the high quality streetscape finishings north of Andrews to the length of street from Andrews Avenue to Laings Road, with a simpler streetscape from Laings Road to Queens Drive.

**Margaret Street. Shared space.**  
The key 'urban tributary' street connection between city centre, pedestrian and cycle bridge and the multi-modal station on the west bank of the river. Create a shared space connection that prioritises the movement of pedestrians and cyclists between Dudley / Rutherford Street and the river. Treat stormwater through raingardens that add to the street amenity.

**Andrews Avenue. High-amenity, slow street & square.**  
A 30m wide road reserve providing the space for a generous pedestrian connection between city and river, and the potential to create a civic street and public space suitable for events and activation. A place to pause in the city, with the carriageway and footpath set flush and incorporating raingardens to treat stormwater, and a generous stepped and terraced connection across the stopbank looks back to the city.

**Dudley Street. High-amenity, shared street.**  
A street with a strong 'gritty' existing character, framed by mid-century buildings. Extend the high-amenity shared street typology from Andrews Avenue, treating stormwater through raingardens separating discrete areas of car parking to one side. Combined with Andrews Ave a potential market and 'eat street'.

**Service Lane. Shared space lane.**  
An existing narrow back-of-house vehicle lane, converted to a shared space lane servicing adjacent buildings and activated by new and existing building uses spilling out onto the lane. Existing pedestrian lanes are strengthened and extended to form connections to the river environment.

**Laings Road Extension. Future shared space.**  
Currently terminating at High Street, Laings Road has the potential to be extended by way of a future shared space through to the stopbank and river. Creating a direct connection between river, city and the Civic Precinct.

**Queens Drive. Vehicle circulation focused street.**  
The eastern access route. Roundabouts are removed and replaced with signalised intersections to reduce road widths and provide better connectivity and amenity for pedestrians.

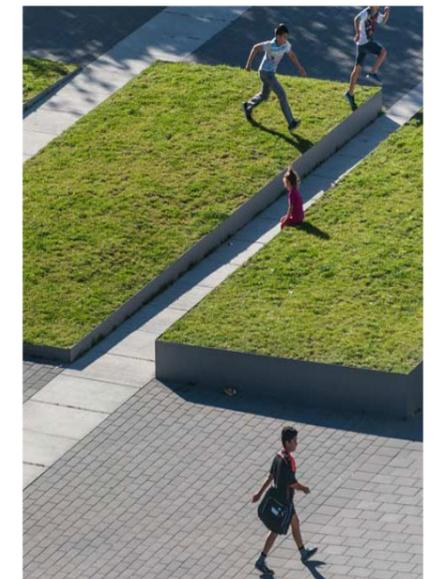
**Pharazyn / Marsden Street. Vehicle circulation focused street.**  
The western access route. Realigned and raised (in vicinity of rail station) Pharazyn and Marsden streets integrate the flood protection stopbank into the city fabric, creating an active street edge with pedestrian amenity to the city centre western bank of the river.

**Street Typologies.**

- Vehicle circulation focused street.
- Pedestrian priority street.
- High-amenity, slow street. (Flush carriageway & footpath)
- Shared space lane.
- Pedestrian lane.
- Pedestrian connections.



**Active streets for people.**



## 4.3.4 Urban Interface & Access.

**Increased height and footprint flood protection stopbanks to the full length of the city edge interface and north to the suburban areas of Boulcott create a challenge for establishing better connectivity between river and city. Requiring a suite of proposals to best integrate city, river and flood protection works to facilitate visual and physical connectivity, and to draw the river environment into the city to express Lower Hutt as a 'river city'.**

### Design approach & key outcomes

Due to the spatial implications of the required flood protection stopbanks, the interfaces between the river corridor and city demand careful consideration to ensure visual and physical connectivity from civic areas as well as privacy for residential properties.

Integration of the stopbank into surrounding landform and development to reduce its physical dominance and merge it into the urban setting is an optimal outcome - as illustrated with the raising of Pharaoh St in the vicinity of the new rail station area consistent with the top of stopbank height, and the proposals for sensitive urban development along the city interface. Provision of seating terraces as extension of stairs (as illustrated opposite) provide a way to occupy the stopbank and view it as city amenity.

Regular points of physical access are needed along the length of the flood protection stopbank for ease of public access. Generosity of these access-points to include for a variety of modes of access is key to inviting people to the river environment.

Utilising public art, signage and wayfinding devices to signal the presence of the river landscape within the city is another tool to strengthen connectivity.

Approach to stormwater management within the city streets and spaces also offers a way of expressing water - river tributaries, natural and constructed.

The key outcomes and opportunities for urban interfaces and access are:

- For maintenance purposes, a design slope ratio of 1:3.5 (1 vertical to 3.5 horizontal) is to be employed in the design of stopbanks where possible, refer Te Awa Kairangi - Flood Protection section.
- Where stopbank profiles exceed the standard 1:3.5 utilise low maintenance native planting, to also provide variety in the view from city to river, visually merging with river corridor vegetation beyond.
- Mitigate the impact of stopbanks on adjacent properties through the use of vegetation, landform and fencing where appropriate.
- Provide stopbank landforms that create variety in spatial experience and opportunities for play and recreation.
- Ensure interface treatments are designed to not adversely impact on the integrity of the stopbanks.
- Retaining walls are to be avoided where possible. Where required, walls are to be of a maximum height of 900mm to avoid fall from height risk and the need for balustrading. Utilise increased stopbank slopes, planted where appropriate to minimise retaining walls height requirements.
- Ensure retaining walls are of high quality design and appropriate to the context of the adjacent land use. Design retaining walls to provide for incidental seating opportunities.
- Access points are frequent and aligned with streets for visibility and connectivity.
- Ensure stairs and ramps are designed to meet accessibility requirements, generous in width dimension to invite access and utilise robust materials and detail.
- Ensure ramp level and alignment nestles into stopbank contour.
- Provide opportunities for steps and landings to extending into adjacent planting / grass areas as seating terraces for increased amenity.
- Locate signage and wayfinding devices at all points of access to improve legibility and connectivity - refer to Te Awa Kairangi, Signage & Wayfinding section.



### Primary civic scale river access.

Generous scale stair and pedestrian ramp connection between city and river / top of stopbank.

Located on axis of (Margaret) street, providing direct access to the pedestrian and cycle bridge.

Concrete surface steps and landings extending into adjacent plantings, with handrails to centre (stairs only) and sides.

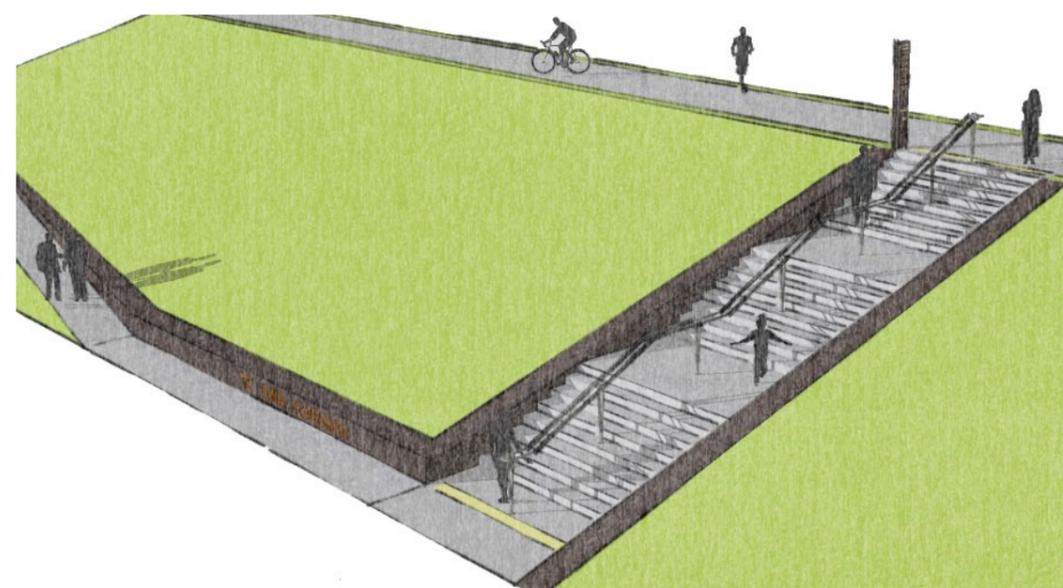
Planting of city side of stopbank to integrate structures.



### Secondary river access & amenity.

Generous scale stair and ramp connection able to take vehicular access for maintenance and events, connecting city and shared path along top of stopbank.

Concrete surface steps and landings extending to create integrated seating terraces looking back along the street (Andrews Avenue) provide extra amenity.



### Tertiary / suburban street river access.

A relatively modest scale stair and ramp connecting residential areas to the shared path along top of stopbank and river environment.

Provision for intermittent maintenance access up and over stopbank through modification of contour of adjacent grassed stopbank profile.

### 4.3.5 Pedestrian & Cycle Bridge.

**A transformational move within RiverLink project, the new pedestrian and cycle bridge will provide a direct east-west connection across Te Awa Kairangi between the multi-modal station and Lower Hutt city centre. The pedestrian and cycle bridge is viewed alongside the new Melling Bridge as a ‘family’ of bridges, as representations of aurei - cloak pins within the overarching He Korowai o Te Awa Kairangi cultural design narrative.**

Spanning from stopbank to stopbank, with a generous deck width to accommodate shared walking and cycling uses, the bridge is supported on three concrete piers extending into the river bed, creating a four span bridge on a straight alignment. The improved east-west movement offered by the bridge is vital to catalysing the repositioning of the central city, with the river at the centre.

The bridge also offers an opportunity to provide spaces for rest, recreation, and cultural expression. Contributing to sense of place, experience and cultural identity.

In partnership with mana whenua representatives and artist Len Hetet, narratives relating to He Korowai o Te Awa Kairangi, the river’s creation story of the ancient tupua Ngake, local flora and fauna have been explored within the illustrative pedestrian and cycle bridge design.

Sculptural in form, generous in scale, expressive of place and cultural identity, the bridge is an opportunity to deliver on the project vision and principles of vitality, connectivity and identity.

#### Constraints

The span of the bridge, from stopbank to stopbank, is approximately 180m, and the designed width of the widened active river channel at this point is approximately 70m.

The bridge design needs to provide clearance to the river flood level to allow large debris to pass during flood events. To achieve this the bridge soffit is at the top of stopbank crest level and rises up at a 1:20 grade for 20m on each side of the river, with a smooth vertical curve provided through these points.

The structural design will need to address the geotechnical site hazards listed below (Beca Technical Report GW/RiverLink-T-17/15 for RiverLink Pedestrian Bridge Design Statement, 2017):

- Weak fill and alluvial soils that are likely to liquefy during a large earthquake, resulting in large vertical and horizontal ground movement
- Rupture of the nearby active Wellington Fault, resulting in abrupt vertical and horizontal movements near the ground surface
- Temporary elevated ground water profiles associated with flood of Te Awa Kairangi/Hutt River
- The Waiwhetu Aquifer, a local water source, protected by Greater Wellington Regional Council

### Design approach & key outcomes

The bridge should be a visual and physical representation of the korowai narrative enabled through continued dialogue and design partnership with mana whenua appointed artists.

Grouped into themes, the key outcomes and opportunities for the pedestrian and cycle bridge are:

#### Connection & Experience

- The bridge should act as a functional linkage between the CBD and the multi-modal station area, catering for both pedestrians and cyclists.
- Inviting occupation as well as movement.
- Expression of the connection between the sky and river within the bridge design is encouraged.
- The bridge should facilitate various forms of engagement and consider secondary functions such as seating and lookout points.
- Crossing the bridge should be a sensory experience emphasising the natural features of the river and landscape. The bridge is not only a circulation route but an opportunity for people to come together and experience the river in meaningful ways.
- The design needs to consider how the bridge is experienced from above and below.

#### Identity

- Cultural expression and/or artwork within the bridge design which celebrates the site’s cultural

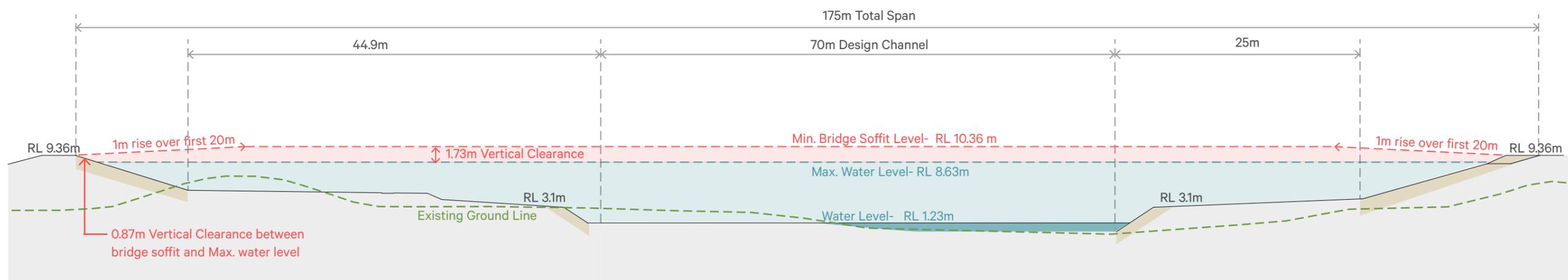
- significance is encouraged. With continued development of the He korowai o Te Awa Kairangi narrative as it relates to this bridge.
- The use of colour, pattern, texture and/or lighting is encouraged to emphasise the bridge’s landmark qualities and to celebrate the site’s natural context.
- The bridge should acknowledge the collective history of Lower Hutt and Te Awa Kairangi.

#### Balustrades

- The balustrade design should provide a great crossing experience; one that looks outwards to the river landscape.
- Safety rails should be integrated within the structure and maximise protection while maintaining views of the surrounding river environment and city.

#### Access

- Path surfacing to facilitate segregation of uses is recommended. A level surface with surface texture delineation to define walking and cycling routes.
- All bridge gradients should enable easy access by pedestrians, wheelchair users and cyclists.
- Gradients are to be limited to 5% (1:20).
- Ramps ends are to be designed/orientated so as to connect into the wider pedestrian and cycle network.
- Snag hazards are to be avoided.



**Lighting**

- The use of colour, pattern, texture and/ or lighting is encouraged to emphasise the bridge’s landmark qualities and to celebrate the site’s natural and cultural context.
- Lighting is to be integrated within the design of the bridge deck and or guardrail.
- Light columns are to be avoided.
- P2 category compliant lighting is to be achieved.

**Piers & Abutments**

- Bridge abutments should be designed as part of the bridge composition and integrated in the landform of the stopbanks.
- Piers should be recessive in aesthetic, in contrast to the sweeping / sculptural bridge form above.
- The bridge should land on either side of the stopbank so as not to obstruct the cycle/pedestrian paths running atop the stopbanks while providing sufficient clearance for the river edge paths beneath.
- The bridge curtilage should be designed to ensure continuity with the landscape character of the wider river park.
- The spaces under the bridge are to be designed to ensure they are not dark, degraded and unsafe.

- The bridge structure should minimise any impact on the waterway, aquifer and surrounding environment.
- Piers are permitted within the river corridor to reduce structural spans, however piers within the active river channel are to be avoided if possible.

**Maintenance & Durability**

- Select materials that contribute to the architectural intent, and are sustainable, durable with ease of maintenance. Consider whole of life costs.



**Far left.**  
Sculptural steel form bridge precedent: Martutene single span, box girder, pedestrian & cycle bridge, San Sebastian, Spain 2015.

**Left.**  
Sculptural steel form bridge precedent: Klingenweiherpark. Munich, Germany 2019. Footbridge clad in gilded copper aluminium chosen to reflect light and glimmer in the water.

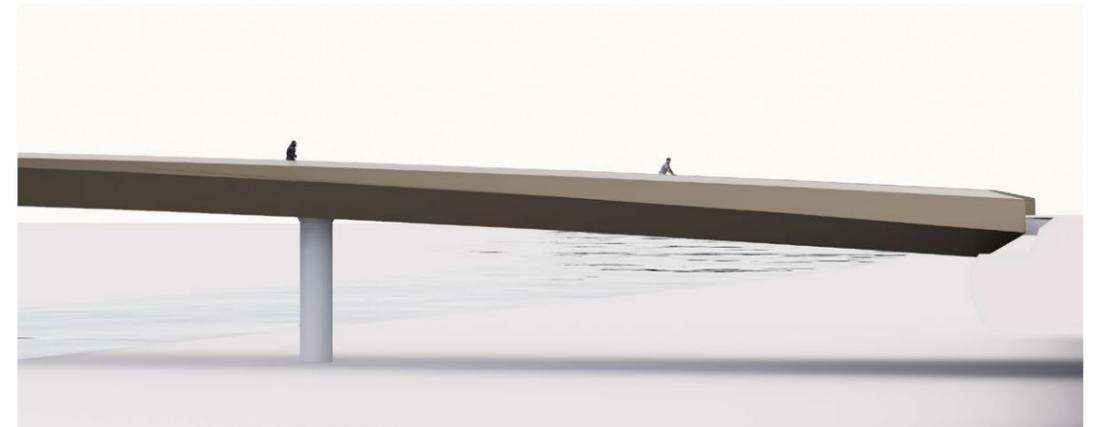
**Below left.**  
Attention to detail of bridge soffit.

**Right.**  
Form, materiality and lighting precedents. Inviting occupation as well as movement.





**Left.** Pedestrian and cycle bridge aligned to provide direct connectivity between city (Margaret Street) and new Melling station. With a focus on provision of easy walking and cycling access between bridge landing, street network and wider recreation amenity.



**Above.** Illustrative bridge form studies. End panels offer opportunity for interpretation signage.

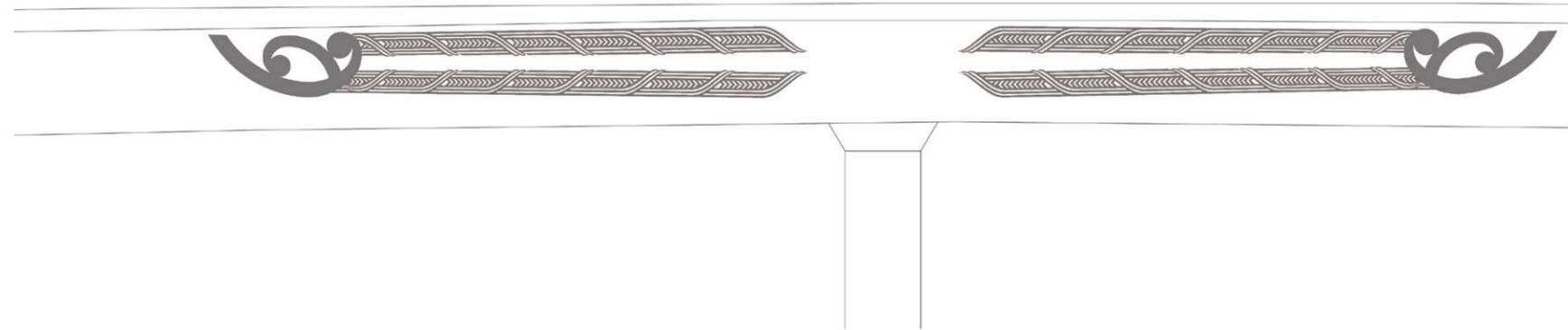


**Above.** Illustrative view of potential approach to He korowai o Te Awa Kairangi pattern application **Len Hetet.**

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**Aurei. Joining He Korowai o Te Awa Kairangi, the new pedestrian and cycle bridge is a generous connection across the river.**

The illustrative design shows a sculptural form of folded perforated steel balustrading arcing across the river bed, supported on three piers. The steel balustrading is perforated with the pattern expression of He Korowai o Te Awa Kairangi, highlighting the bridge form and an expression of cultural connection. Back-lit the patterning will be visible at night.



**Left.** Detail of the koruru near the centre, providing a subtle connection to the new Melling bridge nearby.  
Application of He Korowai o Te Awakairangi pattern to the illustrative bridge form.



**Above.** Illustrative bridge elevation.  
**Len Hetet.**

#### 4.3.6 Multi-modal Melling Station.

**Delivering public transport network improvements is at the heart of creating sustainable liveable urban environments. Providing connectivity between modes - train, bus, cycle and other active modes, and improved connectivity across the river between city centre and transport hub is a key outcome of the RiverLink project.**

##### Design approach & key outcomes

The location of the new Melling interchange requires the existing station facility to be relocated south. By strategically locating the new facility in alignment with the new pedestrian and cycle bridge, direct connection is made between public transport services and the city centre. Improved connectivity and the extension of the station to cater for additional modes of public transport, the RiverLink project delivers on the City Centre Transformation Plan vision of a liveable city.

The design framework and illustrative project overview facilitates replacement of existing car parking numbers within a park and ride carpark to the north of the new station. Subject to future demand, and the potential long-term plan to extend the rail line to the north, this car park area provides future redevelopment opportunity.

Delivering multi-modal transport outcomes and supporting mode shift is a key component of the project and illustrative design for the area. Well managed, co-location of bus and train offers optimal transfer between modes, with commuter cycle and passenger drop-off facilities strategically located clear of the public transport modes. Potential extension of the service into the evening hours and weekends would further support mode shift.

The illustrative project overview plan indicates how the existing Melling Station building could be relocated to this area subject to further investigation and feasibility study.

The key outcomes and opportunities for a multi-modal station precinct are:

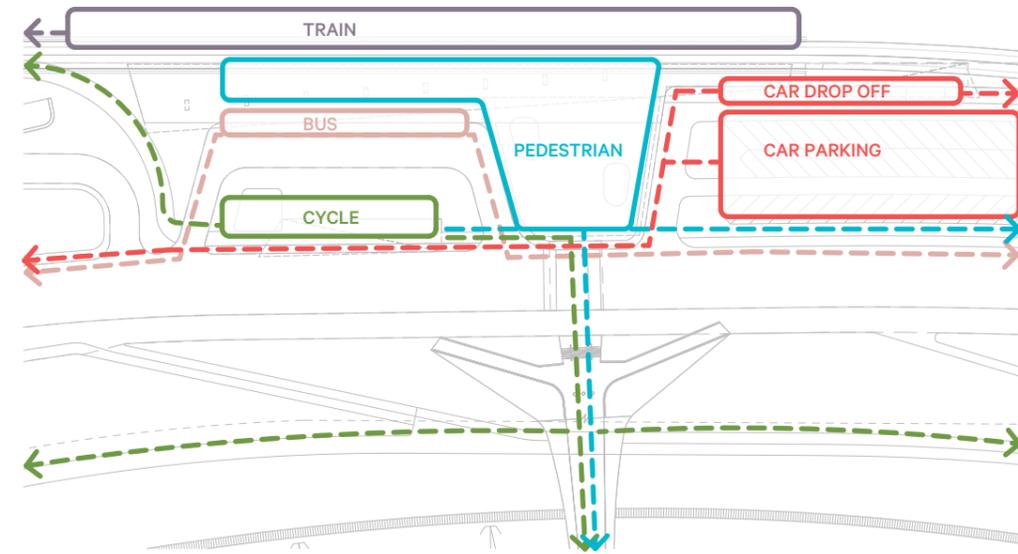
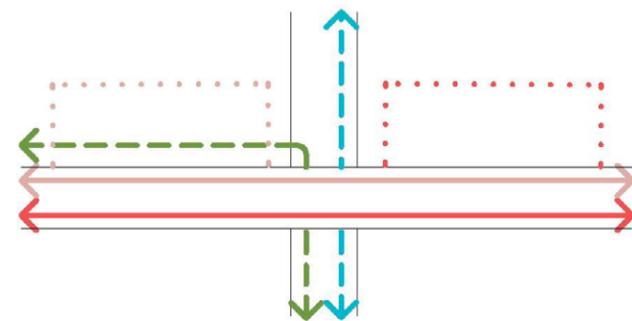
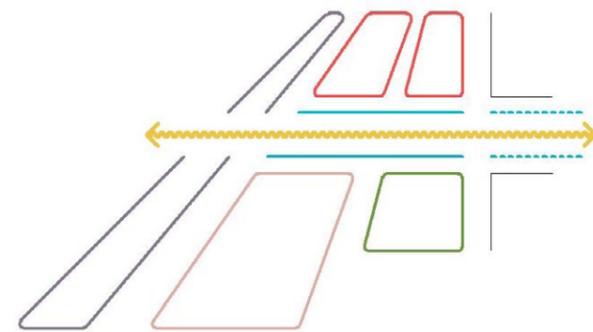


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**Above.** Draft masterplan layout for new Melling multi-modal rail station area. With facilities for rail, bus and cycle commuters. Including park and ride car parking area.

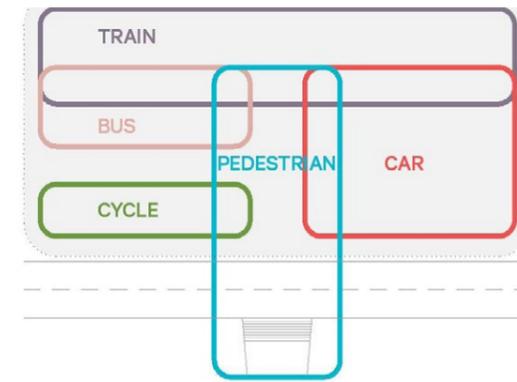
- A high degree of connectivity between city centre and transport hub to support the vision of ‘lifting of the mana and mouri of Te Awa Kairangi’ by placing the river central to the city, and deliver on the themes of vitality and connectivity.
- Relocating the existing Melling station building within a high-quality new rail station area and structures to support the themes of identity and connectivity. Recognising it’s role as a ‘front door’ to the city and river. Rail station area designed to promote connection between city, river and western hills.
- Co-design with mana whenua appointed design kaiarataki is strongly encouraged to enable expression of te ao Māori values and to continue the expression of Te Awa Kairangi and He Horowai o Te Awa Kairangi.
- Safe crossing of Pharazyn Street connecting to the pedestrian and cycle bridge.
- Well managed, co-location of bus and train facilities offers optimal transfer between modes.
- A sheltered train platform minimum length 120m with run off to the north.
- Minimum two bus parks with manoeuvring space between, able to be access from north and south direction off Pharazyn Street..
- Separation between bus hub facility and general vehicle circulation.
- Passenger drop-off in easy access of station building and platform.
- Minimising of conflicts between walking and cycling modes. Fostering a pedestrian station environment.
- Provision of car parking, minimum numbers to replace existing Melling station yield. Layout including circulation future proofed for potential extension of rail line to the north.
- Treatment of car park stormwater.
- Provision of public toilets within the station area, to service station and river users.
- Provision of a cafe - ‘hole in the wall’ or seated area type, within the station area.

- Provision of sheltered, not necessarily enclosed, passenger waiting area(s).
- Potential provision of retail unit (potentially cycle hire focused) within the station or wider station area.
- Provision of secure cycle parking facilities, plus general cycle parking within public open space.
- Lighting to meet required vehicle and pedestrian levels. Lighting to celebrate the station as a ‘beacon’ across the river from the city centre and support the welcoming of passengers arriving to the city and river at this point.
- Signage & wayfinding devices to be coordinated with wider Te Awa Kairangi approach and design, refer Te Awa Kairangi - Signage & Wayfinding section.
- Whakapapa, naming of station to be considered as part of wider interpretation, connection, and identity.



**1. City - Hills Connection.**

Visual connection and expression between the city, bridge, station and western hills. Vertical articulation to create presence and act as a wayfinding mechanism.

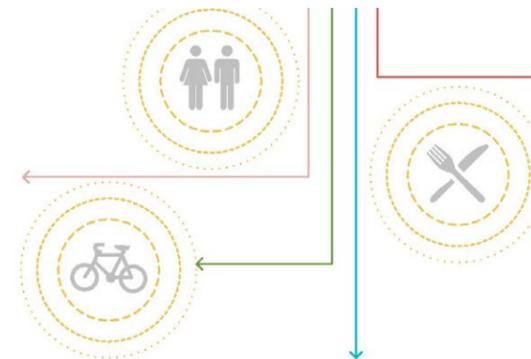


**2. Mode Separation.**

Separation of transport modes to enable a safe and user-friendly experience while simultaneously creating a seamless transition between modes.

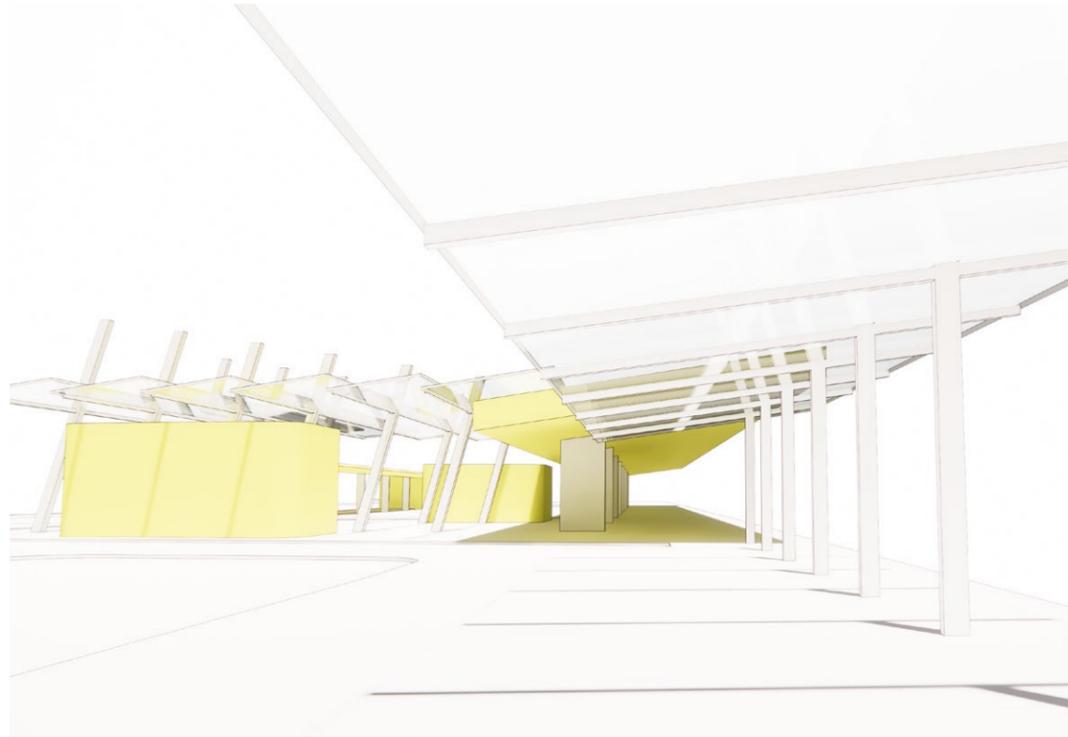
**3. Legible Streets & Circulation.**

Keeping key streets clear and efficient. Avoid putting drop off and waiting zones on street. Keeping a single clear controlled and generous crossing point - aligned with the bridge.



**4. Commuter Amenity.**

Provision of quality amenity for passengers including shelter, safety, ablutions, ticketing, notification, food and beverage, secure cycle storage and engineering infrastructure.



**Left.**  
Alternative new Melling station building and structures.

**Right.**  
Existing Melling station building, platform and ancillary structures.



**Relocation of Melling Station.**

Subject to further investigations on technical, financial and functional feasibility, the existing Melling station building has the potential to be incorporated into a new multi-modal station precinct. If the Project Partners find the relocation is achievable and desirable, this option locates the existing building on the new station site using the over-arching station design principles.

The building is located on the north end of the platform to maintain the immediate bus / train transfer to the south and help define the northern edge of the city to station axis. The building could house several key station amenities - cafe, toilets, drivers rest space and storage. This will require the building to be refurbished to meet code requirements and provide appropriate GWRC / Metlink customer experience including addressing any CPTED issues.

The design of the wider station requires consideration to integrate the relocated station building. Acknowledging the building's heritage value, the addition of canopies for shelter takes a lighter approach and allows the relocated building to be clearly visible on the approach to the station.

Required outcomes are:

- Adaptive reuse of the building to meet current and future transportation amenity requirements.
- A clear visual connection and axial relationship from the station that links the hills to the west, through the station and on to the bridge, the river and city to the east.

**Below.**  
Relocated existing Melling Station building and additional structures.



**Station precedents.**  
Use of canopies for shelter and wayfinding, lighting and natural materials.  
1. West End ferry pier, Queensland, Cox Raynor.  
2. Upper Hutt Station, HBO & EMTB.  
3. Manukau Bus Hub.  
4. Brisbane ferry pier.

## 4.4 Melling Connections Design Framework.

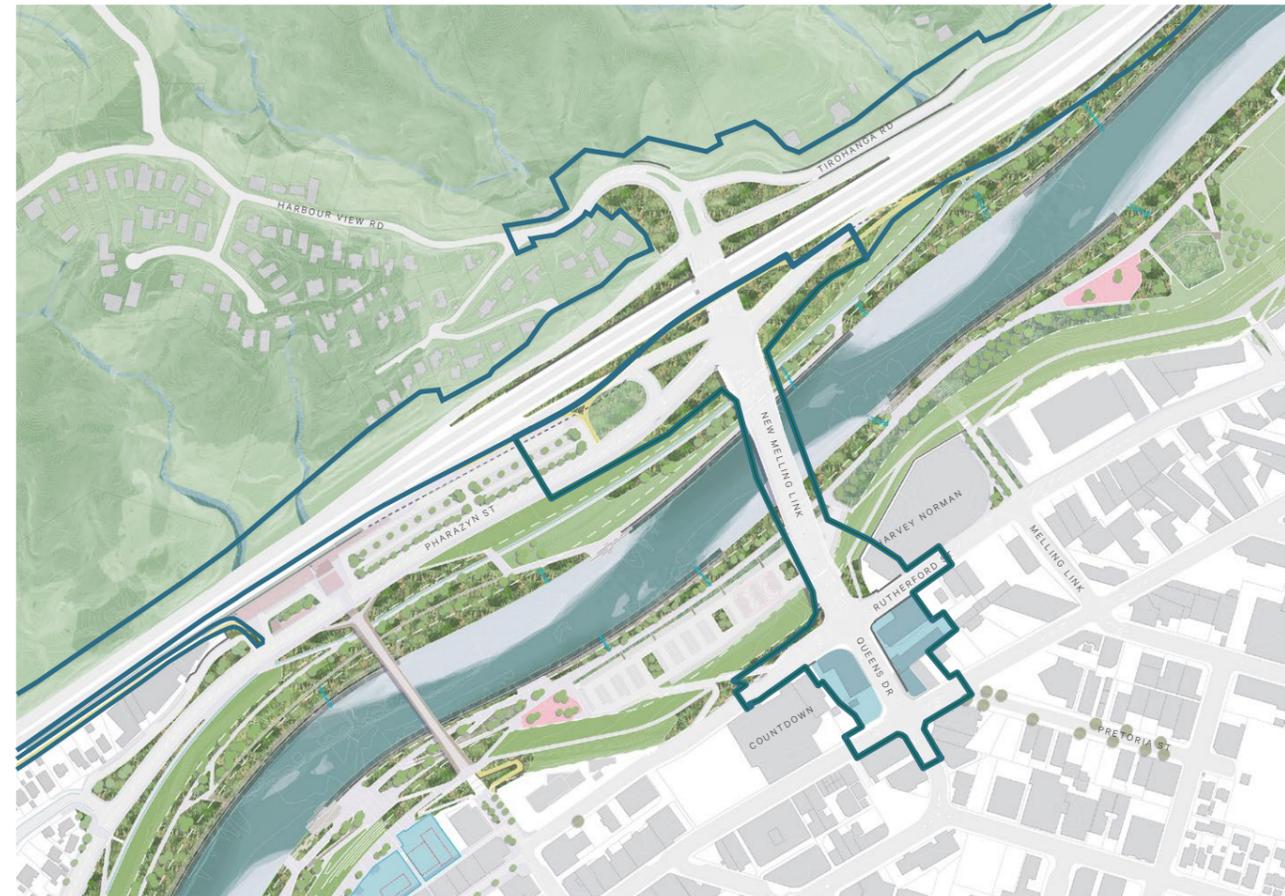


This section of the design framework addresses topics specific to Melling Connections project component, which represents a significant investment in transport infrastructure for the community. To provide safer journeys for road users, improved access between State Highway 2 and Lower Hutt city centre, better access to quality transport choices, and improved security and availability of the road network. Comprised of three parts - the interchange; the river bridge; and the city street connections, together creating a new arrival experience into Lower Hutt.

In a location of abrupt transition between the verticality of the western hills and the horizontality of the river corridor - the Wellington fault-line and path of the tupua Ngake, the new interchange and bridge are located downstream of the existing Melling Bridge. The interchange connects with Harbourview Road on the western hills, requiring modification of the existing landform to integrate the new structures. Modification to the city centre street network is also required to land the new bridge within the city context, at an increased height in comparison to the existing Melling Bridge.

### Melling connections principles.

Three principles, nested within the wider Te Awa Kairangi design themes of Vitality, Connectivity and



Left.  
Melling Connections  
draft masterplan  
scope.



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Identity, have been developed that overarch the approach to the design of Melling Connections.

**Vitality - River first.** Design to limit impact on the river and tributaries, to improve habitat and biodiversity, and treat stormwater prior to discharge.

**Connectivity - Integrated approach.** Deliver an integrated multi-modal transport corridor and network, integrated into the landscape of Te Awa Kairangi and the western hills.

**Identity - Quality experience.** Deliver a high quality arrival experience into Lower Hutt that celebrates Te Awa Kairangi and acknowledges the tupua Ngake.

### Key elements.

In addition to the design framework provided in the previous sections for Te Awa Kairangi and City Edge components, a framework of broad-scale design guidance is provided in the following pages for key areas / elements of the Melling Connections.

Principles set out design intent, and key outcomes provide guidance for future design stages of key elements including:

- City Street Connections
- Interchange & Structures
- New Melling Bridge

### 4.4.1 City Street Connections.

**Quality connection between bridge, bridge landing and the city street network is key to integrating into the urban fabric. Greater flood protection requirements, including increased height and footprint stopbanks require a higher bridge structure than the existing Melling Bridge. Creating complexity in integrating increased levels into the existing city street setting.**

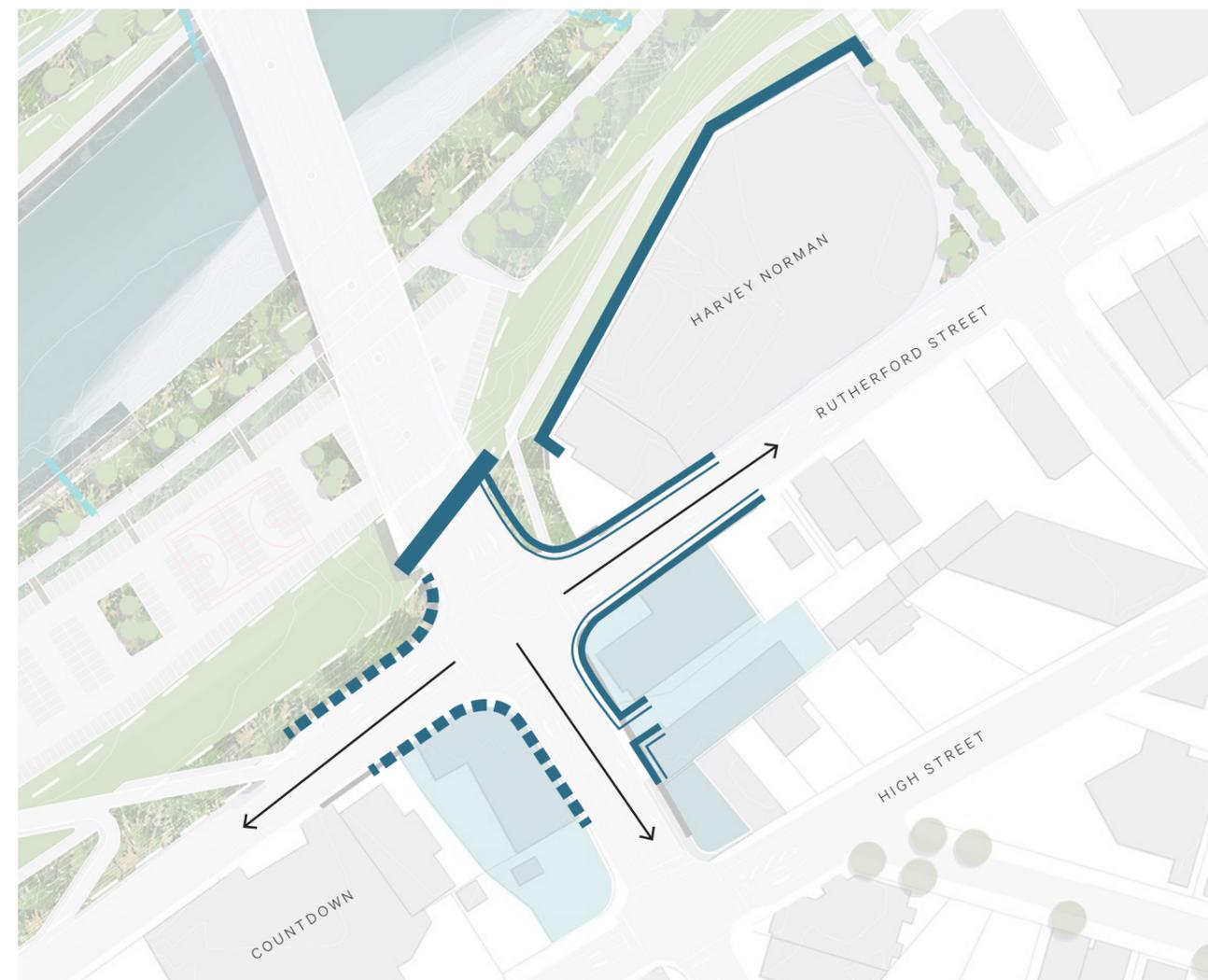
#### Design approach & key outcomes

A considered approach to stitching this structure into the city street network is key to delivering an integrated asset for the community that sits well within its urban context.

The key outcomes and opportunities for the city street connections are:

- Connectivity between recreational walking and cycling network within the river corridor and the city street network.
- Scale, alignment and detail of roading coherent with the existing city street network. Linear alignments rather than curved to better integrate with city roading grid. Minimising elevation of Queens Rutherford intersection through future design stages.
- Street connections visually reading as local city streets rather than motorway / highway roads.
- Utilise increased stopbank slopes, planted where appropriate to minimise retaining walls height requirements.
- Minimising property adjacent retaining wall height and length through future design stages.
- Treatment of stormwater through raingardens where space permits, and mechanical treatment devices in constrained locations.
- Where space and services allow, tree line streets to integrate into wider city street network. Provide appropriate growing conditions to enable trees to thrive into the future.
- Convert current Melling Link to pedestrian access, with provision for maintenance and emergency access to the river corridor.

- Enable future redevelopment of adjacent sites as 'gateway' to Lower Hutt city centre.
- Utilise a materials palette consistent with adjacent streets and spaces. Concrete kerb and footpath, precast / insitu retaining.
- Clean, simple alignment and detail of retaining structures.
- Safety considerations - clear line of sight for users, Avoid creating entrapment zones with new retaining structures.
- Lighting design to reflect city centre context rather than motorway.
- Signage and wayfinding consistent with proposed Te Awa Kairangi suite, and coordinated with existing Hutt City signage and wayfinding.



**Proposed Retaining Typologies.**

-  Abutment - precast concrete panel lined.
-  Retaining - precast / insitu concrete.
-  Retaining wall with balustrade above
-  Earth batter - planted / grassed.
-  Slope down to meet existing levels

  
**1:1,400 @ A3**

#### 4.4.2 Interchange & Structures.

Located at the foot of the western hills, the interchange and associated structures extend up to connect into the Harbour View and Tirohanga street network, and across to the river landscape. Achieving sympathetic fit within the built and natural environment with the provision of high-quality multi-modal connections for the community that support social and cultural connection is required.

##### Design approach & key outcomes

The design of the interchange and associated structures should recognise and be expressive of location at the abrupt transition between the vertical western hills and the horizontal river corridor, and the corresponding geology of 'static' rock formations of western hills, clothed in vegetation in contrast to the 'dynamic' landscape of river, river gravels and riparian vegetation.

The components should read as a unified architecture, integrated into landform and landscape. With emphasis placed on expression of the verticality of darker retaining forms horizontality of lighter bridge forms.

The key outcomes and opportunities for the Interchange and associated structures are:

##### Vitality - River first.

- The interchange design minimises any culverting of streams, provides for native fish passage where culverting is unavoidable.
- Stormwater from the interchange, bridge and connections is captured and treated prior to discharge to the river.
- Wetland, swale and raingarden stormwater treatment devices are prioritised over proprietary mechanical devices for their additional habitat and biodiversity benefits. With mechanical devices utilised where spatial constraints exist.
- Planting to motorway and interchange surrounds to support the mauri of Te Awa Kairangi, delivering improved habitat and biodiversity, while integrating the transport interchange into the environment.
- Planting as a continuation of the Belmont Hills forest cover and river corridor planting.

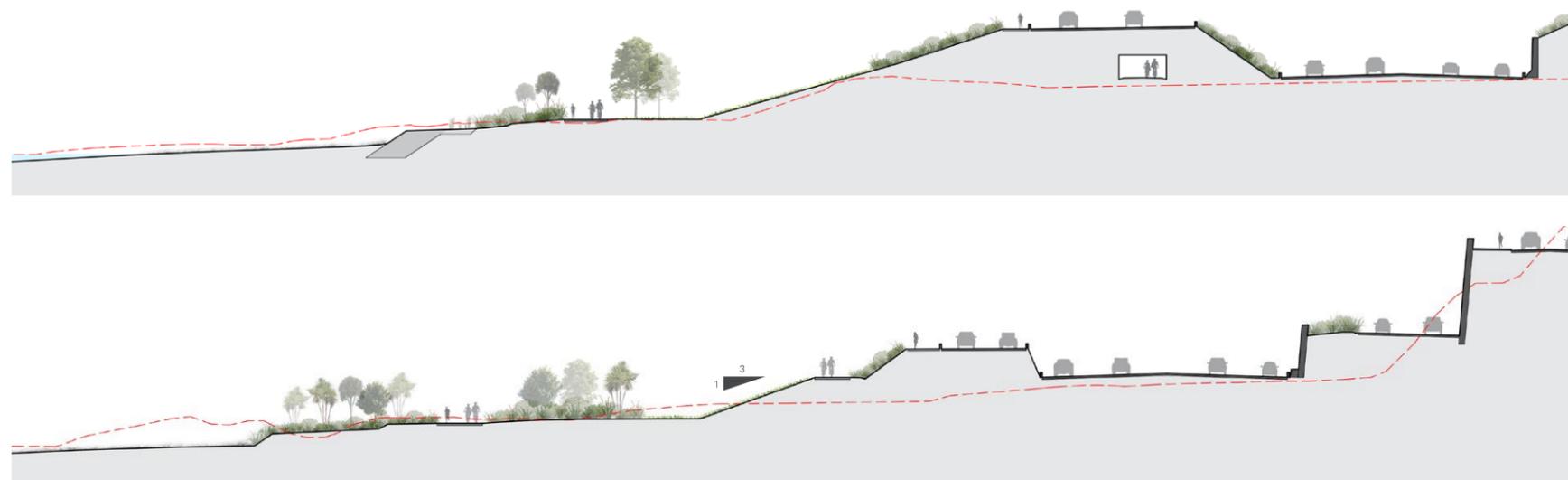
##### Connectivity - Integrated approach.

- An integrated, safe, high quality, accessible and connected transportation linkage between State Highway 2, the western hills and the city centre.
- Road, rail and cycle corridors are combined as a transport corridor set within the wider landscape.

- Connections are multi-modal - providing connected, legible, accessible and generous walking and cycle access alongside vehicle transportation outcomes.
- Bridge pathways and gradients should enable easy access by pedestrians and cyclists. With pedestrian and cycle ramp ends designed/orientated to connect seamlessly into the wider network.
- The interchange provides for good connectivity to the wider cycle network -commuter and recreational, connecting to the Hutt River Path and within the wider context to Te Ara Tupua to the south.
- The transport interchange and structures are well integrated into the Western / Belmont Hill landscape, with particular focus on form, alignment and features of the bridge, interchange and city connections.
- Cycle underpasses to be minimised in length, safe and with good visibility.
- Abutments designed as part of the bridge composition and integrated in the landform of the hills and stopbanks.
- Use of green engineering technologies where feasible, with associated ponga facing &/or native planting as a 'living wall' to integrate into western hills landscape.

##### Identity - Quality experience.

- Interchange structure components should read as a unified architecture, sensitive to context, integrated into landform and landscape.
- Express the horizontality of bridge forms, and the verticality of retaining forms. With a simple (low) profile bridge overpass, on a clear and legible alignment.
- Retaining walls required along SH2 and associated with the interchange and bridge ramps should be of considered purposeful alignment, avoiding irregular changes in direction, height and detail. Ensure these structures do not compete with the bridge design and are 'quiet' next to the escarpment.
- Design abutments to be consistent in form and alignment with adjacent retaining structures, and to visually anchor the structures into the landscape.
- Take a considered approach to materiality of abutments, retaining and overpass structures - utilise a palette of materials; concrete facing, rock, vegetation, timber to be expressive of the river corridor - 'horizontal', and western hills 'vertical'.
- Application of cultural design motifs to structures associated with the interchange should be 'quiet' so as not to distract from the bridge design focus.

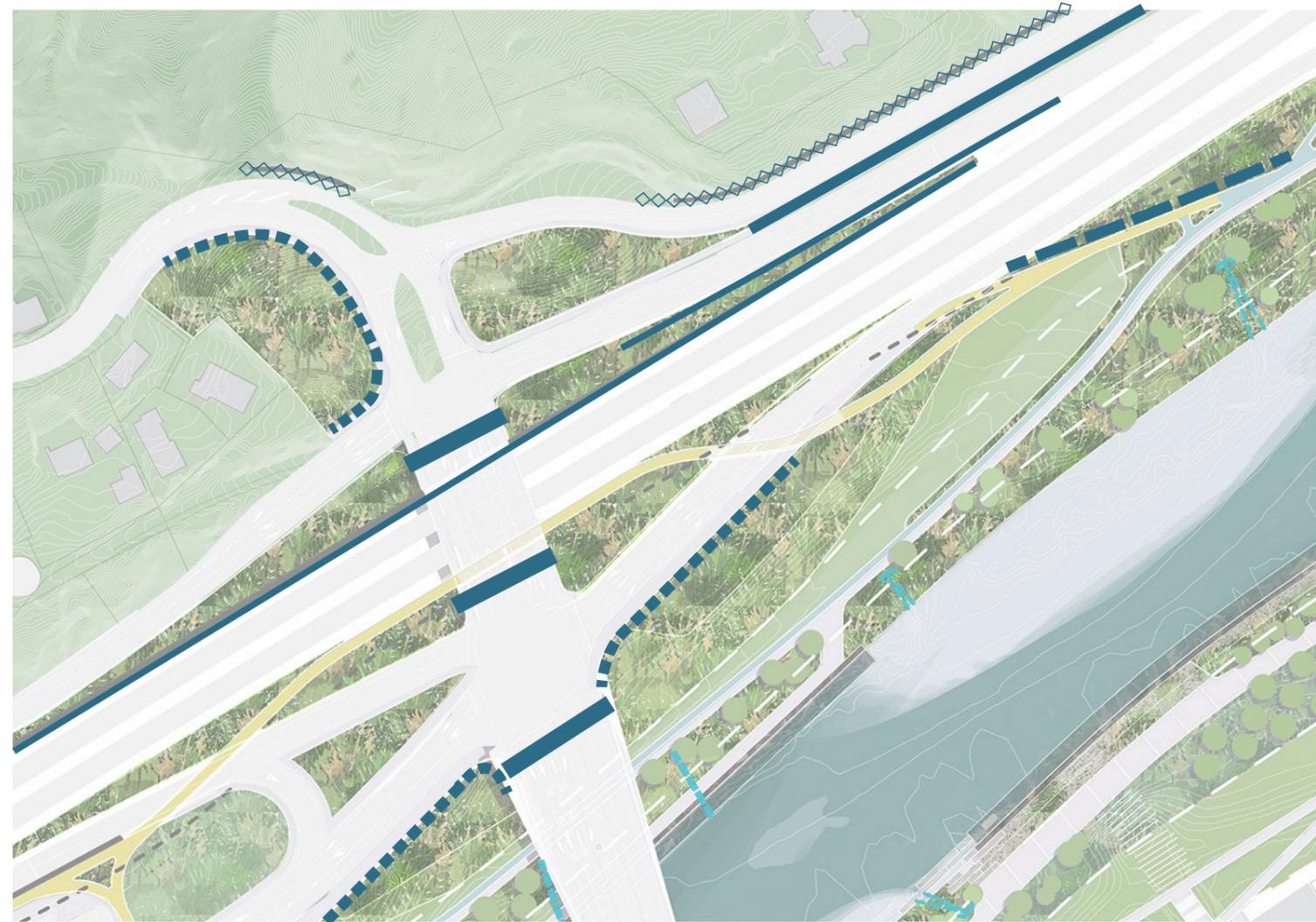


**Melling Interchange.** Illustrative sections showing composition of retaining structures between river channel and western hills.

**Planting.** Planting between motorway, on and off-ramps contiguous with adjacent natural landform integrates transport infrastructure into landscape context.



- Continue dialogue with by mana whenua appointed artists in future design stages.
- Utilise slope and profile to improve experience for cyclists on path adjacent. With on and off-ramps integrated into adjacent landform / stopbank.
- Where there is a requirement to have an underpass, ensure these are designed to best practice to provide the best quality experience and avoid CPTED issues.
- Provide for planting between motorway, on and off-ramps contiguous with adjacent natural landform reinforces character and identity.
- Restoration of indigenous vegetation over the fills is the better landscape and cultural expression outcome.



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**Left.**  
Indicative composition and extents of retaining wall typologies at Melling Interchange.

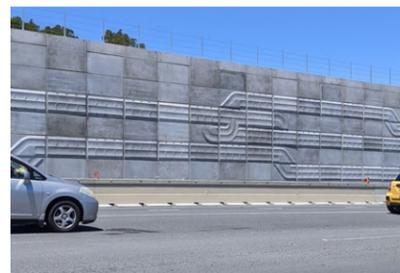
**Proposed Retaining Typologies.**

- Abutment - precast concrete panel lined.
- (higher) Retaining - precast concrete panel, with discrete areas of cultural design overlay.
- (lower) Retaining - precast concrete panel, with discrete areas of cultural design overlay.
- MSE retaining - planted & sustainably sourced ponga-lined.
- Reinforced earth batter - planted.
- Earth batter - planted / grassed.

**Retaining.**  
Green engineering structures - MSE walls planted or ponga lined to soften and integrate into context.



MSE prior to planting



**Patterning.**  
Application of patterning to retaining and overpass structures. Northern Corridor Improvements project, Auckland.



**Abutments.**  
Considered approach to form and integration of bridge and overpass abutments. Concrete finishes and colour utilised in lieu of surface patterning in ground and integrate engineering structures into landscape.



### 4.4.3 New Melling Bridge.

The new multi-modal crossing over Te Awa Kairangi offers the opportunity to deliver a high-quality arrival experience into Lower Hutt city centre. It is an opportunity to express the identity of Te Awa Kairangi while delivering improved safety and connectivity for a variety of users.

Potential expression of this bridge and the pedestrian and cycle bridge as aurei - cloak pins continues the He Korowai o Te Awa Kairangi narrative.

The new bridge is a key component in delivering a multi-modal transport system, improved connectivity, capacity and safety for vehicle passengers, cyclists and pedestrians. It is viewed alongside the pedestrian and cycle bridge as a 'family' of bridges, both being individual representations of aurei - cloak pins within the overarching He Korowai o Te Awa Kairangi cultural design narrative. The new Melling bridge, a more restrained quieter design response in comparison to the more sculptural in architectural expression of the pedestrian and cycle bridge.

Earlier Business Case project phases identified the preferred structural solution of a pier and span bridge, with a separate interchange and

bridge structure across State Highway 2 (SH2), and associated on and off-ramps connecting to the highway and street network to both sides.

Increased flood protection requirements necessitate a higher bridge structure than the existing Melling Bridge.

#### Design approach & key outcomes

A suite of design principles form the framework for the new Melling bridge design:

##### Refined structural design solution.

- With simplicity and coherency of form, with shallow structural depth and clean soffit.
- Coherent bridge elements - piers, cross heads, deck and barriers creating one sculptural form, with services concealed within structure.
- Continue the design language of the river bridge to the SH2 overpass structure in a simplified form.
- The bridge structure should minimise any impact on the waterway, aquifer and surrounding environment.
- Pier design complementary to the bridge design approach, while meeting required water dynamics.

- Piers designed to incorporate features supporting in-channel habitat.
- Complementary in aesthetic to the nearby new pedestrian and cycle bridge to create a family of bridges as representations of aurei - cloak pins.
- The underside was visually appealing, with considered junction between pier and beam, to recognise the primacy of the river path user experience in the design considerations.

##### Grounded bridge landing and abutments.

- Bridge abutments should be designed as part of the bridge composition. Visually integrated with the stopbank landform.
- Expressed abutment forms, with clean lines, to enable the bridge landing points to be visually legible.
- The bridge curtilage should be designed to ensure continuity with the landscape character of the wider river park.

##### Permeable to enable visual connection to the river.

- Design balustrading to enable visual connection to the river, with considered transition approaching the bridge landings.

- Safety rails should be integrated within the structure and maximise protection while maintaining views of the surrounding river environment and city.

- Snag hazards are to be avoided.

##### Authentic communication of cultural design narrative and use of materials.

- Identity is established through design and design process.
- Naming of the bridge to recognise mana whenua connections and associations is encouraged.
- The bridge should acknowledge the collective history of Lower Hutt and Te Awa Kairangi.
- Cultural expression within the bridge design which celebrates the site's cultural significance is encouraged.
- Select materials to deliver function and aesthetic considerations and convey cultural design narrative.

##### Experiential celebrating arrival and departure to and from the city, and experience of the bridge .

- Enable views to the river by vehicle passengers, cyclists and pedestrians.



**Refined.** Structural design solution with shallow depth, 'clean' soffit, and simplicity of form recognising the experience of moving along the river beneath the bridge. Piers designed as integral part of structure, complementary to the aesthetic of the whole.



**Authenticity.** Materials selected to deliver function and aesthetic considerations.



**Grounded.** Expressed abutments visually 'grounding' the bridge landings.



**Experiential.** light to celebrate the bridge form and experience.

- Give consideration to how the bridge is experienced from above and below.
- Design to express of cultural significance and mana whenua endorsed cultural design narratives.
- Design lighting to emphasise the bridge’s landmark qualities, its form and materiality, while supporting river first and dark-sky principles.
- The bridge should facilitate various forms of engagement and consider secondary functions such as pause and lookout points for cyclists and pedestrians.

**Multi-modal** linkage delivering a high-quality, legible and safe walking and cycling experience.

- A functional link between SH2 and the city for all modes of transport..
- While primarily a vehicle linkage and access point to the city, the bridge is a key part of a multi-modal transport network. Attention to creating a comfortable experience for cyclists and pedestrians.
- All bridge gradients should enable easy access by pedestrians, wheelchair users and cyclists.
- The bridge landings are to be coordinated with the pedestrian and cycle path network to provide optimal connectivity, legibility and safety.
- Ramps ends are to be designed/orientated so as to connect into the wider pedestrian and cycle network.

Further key outcomes and opportunities related to specific bridge elements:

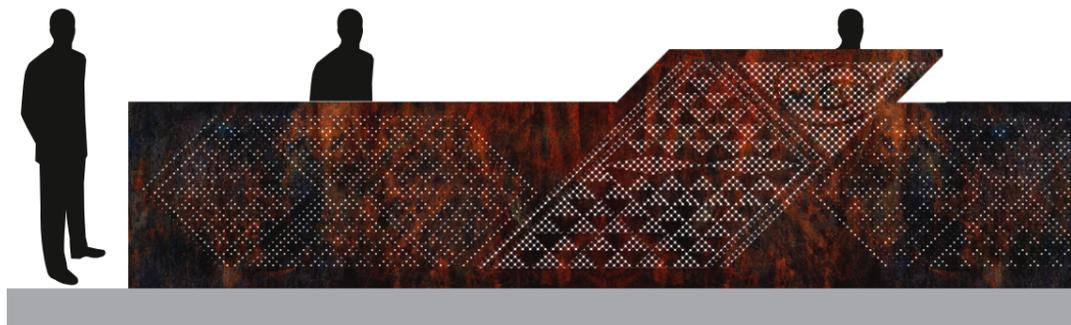
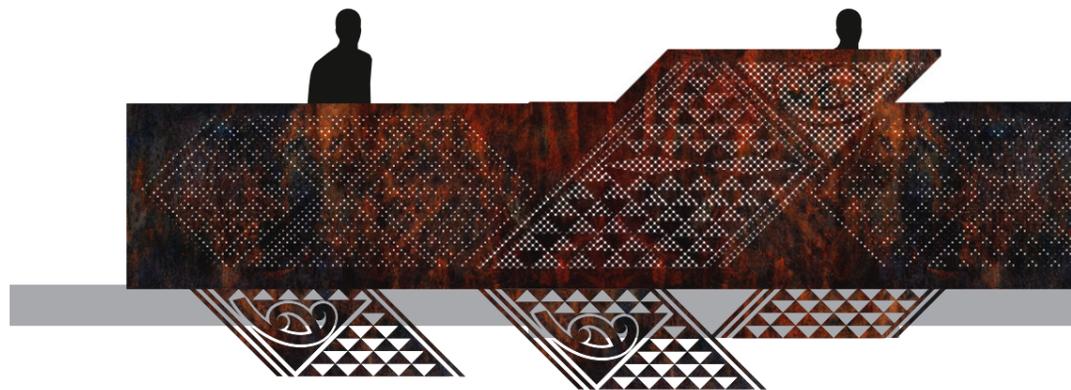
**Lighting**

- Lighting is to be a considered part of the bridge and overpass design.
- Central light columns for functional lighting purposes, located within the medial and out of the pedestrian and cycle movement routes are likely to be the most efficient.
- Uniform spacing and alignment will contribute to a refined approach to the overall bridge design.

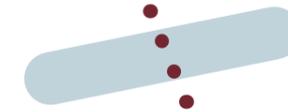
- Potential to supplement functional lighting with feature lighting to express / reinforce architectural and cultural design response.
- Designed to support the river first and dark-sky principles, and to support habitats below and above.

**Signage & Wayfinding**

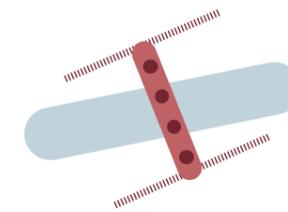
- Minimise visual clutter of road signage. Co-locate multiple signage elements onto single pole or structure.
- Ensure a legible path network for active modes, connection to the city, western hills and river corridor.
- The spaces under the bridge are to be designed to ensure they are not dark, degraded and unsafe.
- Utilise a consistent suite of wayfinding and signage elements for active modes - refer Te Awa Kairangi, Signage & Wayfinding section.



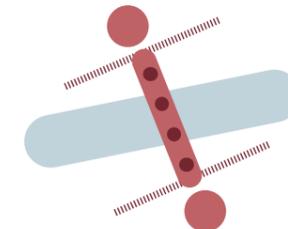
**Left.** He Korowai o Te Awakairangi pattern application studies. **Len Hetet.**



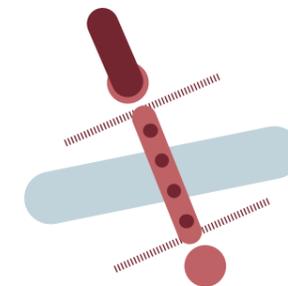
A minimum number of piers.



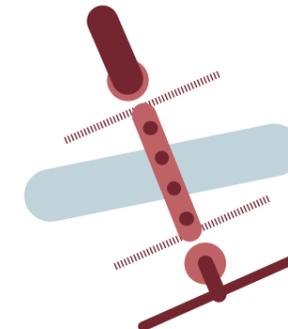
Bridge reading clearly as from stopbank to stopbank.



Abutments integrated into landform.



'Grounded' interchange at western bank.



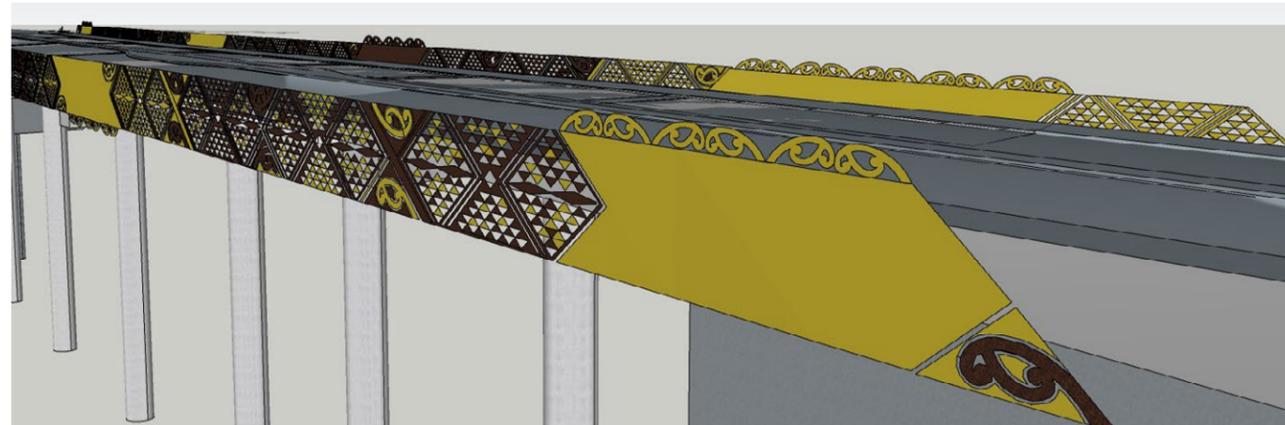
Seamless integration into city grid at eastern bank

**Aurei. Cloak pin.**

Expressive of the He Korowai o Te Awa Kairangi narrative, and the threads - aho and whenu woven together, the bridge form and articulation is an expression of an aurei - cloak pin.

A celebratory, while functional, steel balustrade utilising the korowai patterning at scale is applied to the bridge structure, along with the application of colour to further express cultural narrative. Enclosing and giving architectural form to the bridge, providing filtered views through to the river below.

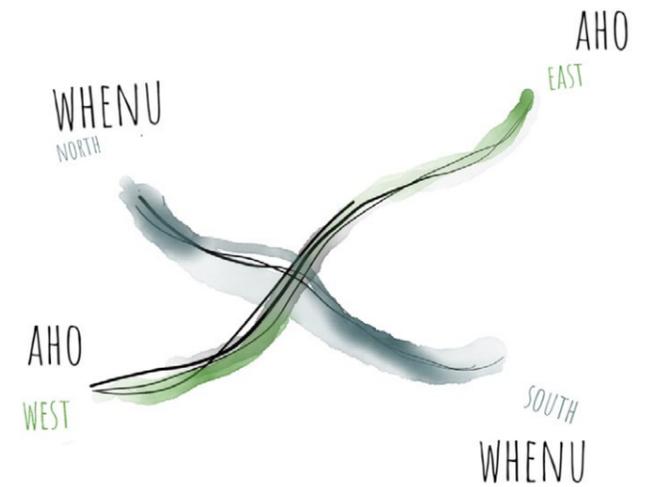
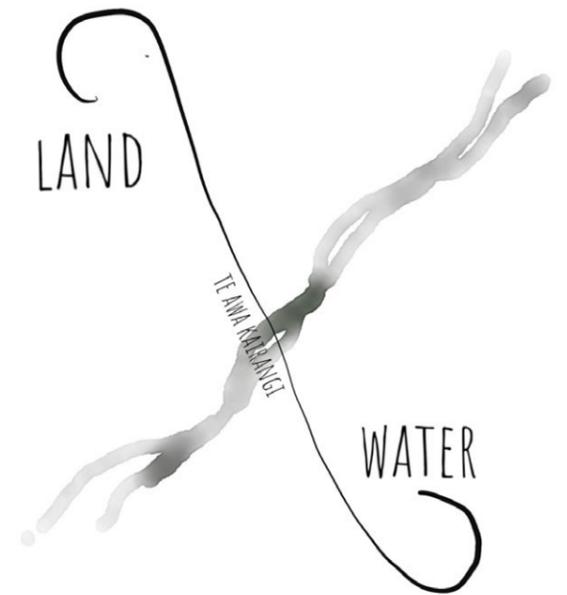
One of a pair of aurei bridges.

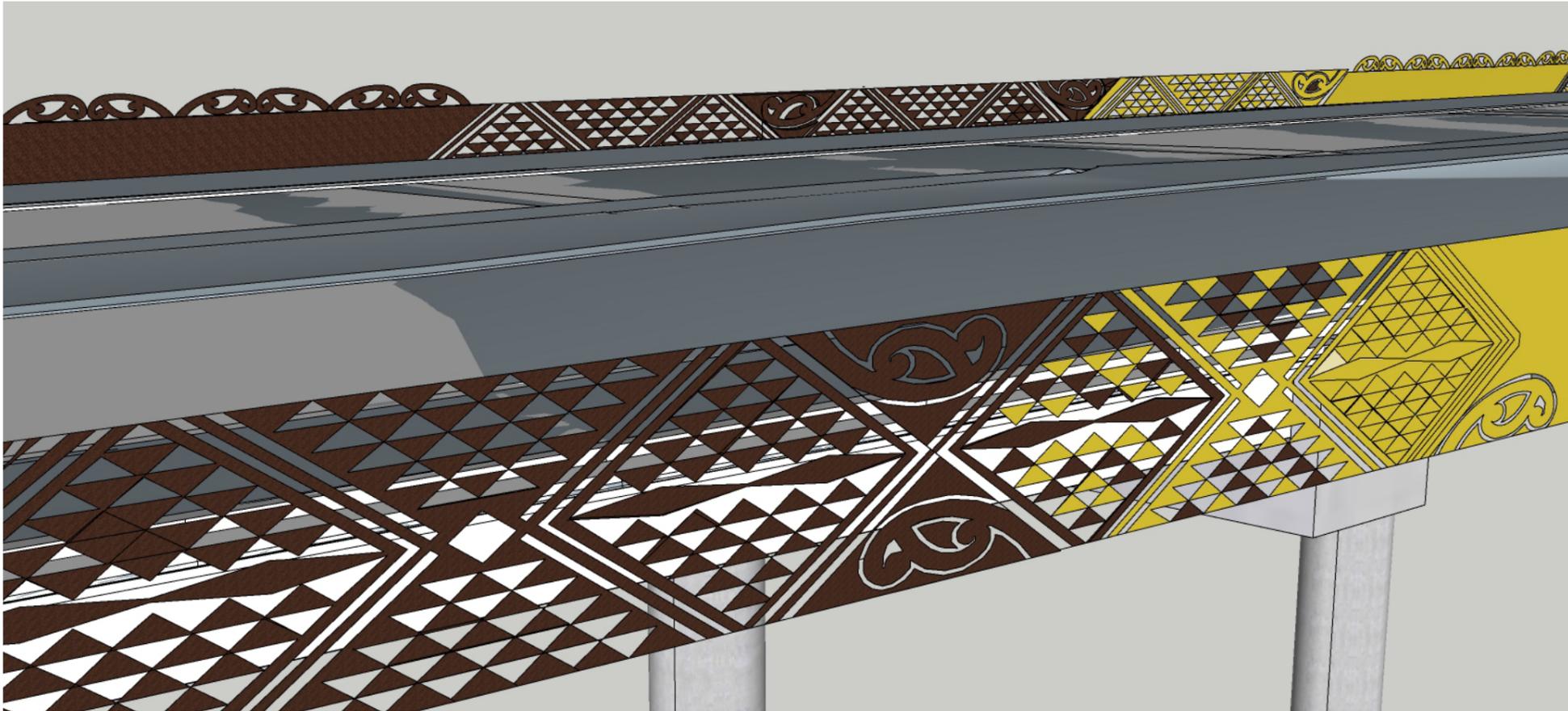


**Balustrade studies.** Illustrative development of He Korowai o Te Awa Kairangi pattern application to bridge balustrade.

Balustrade extends down to screen the super-T bridge structure, leaving the headstocks partly exposed.

**Developed in collaboration with Len Hetet.**





**Materiality.**  
Illustrating a combination of corten and painted steel on steel frame to meet the technical design requirements. Indicated colours reference processing of flax for weaving.

**Land.  
People.  
Culture.  
Isthmus.**

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