

Whaitua te Whanganui-a-Tara

Flood Risk Management for Te Awa Kairangi/Hutt

July 2019

Flood Risk Management for Te Awa Kairangi/Hutt

- Operating Framework
- What do we do?
 - Flood protection
 - Open space management

What do we do?

Contribute to regional resilience – protection of life and property from flood risk

- Maintain waterways and river management assets e.g. channels, stopbanks and floodgates
- Advise the community about flood hazards
- Investigate flood risk and help the community decide on appropriate risk management
- Prepare and implement floodplain management plans

What else do we do?

Open space management - environmental and amenity improvement

- Management of valued public space
- Enhance the river environment through restoration planting and walkways etc

Who is responsible?

- Maintenance of watercourses is the responsibility of the land owner
- Soil Conservation & Rivers Control Act 1941 empowers GWRC to develop flood & erosion measures if it chooses
- District Councils have similar empowerment under other legislation

What are our drivers?

- Floodplain management planning approach
- Agreed FMP Principles
- Good Asset Management Practice
- Policies and plans – both external and internal
- Legislation

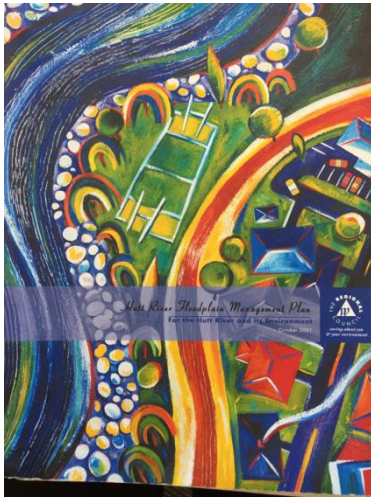
Relevant Legislation

- SCRCA 1941 & Rivers Board Act 1908
- Land Drainage Act 1908
- Local Government Act 2002
- Resource Management Act 1991
- Building Act 2004 (and Building Code 1992)

Levels of Service

Activity	Rivers & Streams	Activities	Funding
River Schemes	Te Awa Kairangi/Hutt (Urban)	Full range of river and flood risk management services	50% regional rates 50% GW targeted river rates
Urban Watercourses	Wainuiomata (Urban Scheme), Waiwhetu, Stokes Valley, Korokoro, Te Mome, Speedys Creek Akatarawa (urban), Mangaroa (urban), Collins, Pinehaven, Heretaunga, Hulls Creek	Maintaining channel capacity Infrastructural Improvements Advisory & regulatory services	Varies 50% - 100% regional/targeted rates 50% - 0% district council (local council invoiced)
Other Watercourses	Rural reaches Wainuiomata, Mangaroa, Pakuratahi, other watercourses	Advisory & regulatory services Isolated works	100% regional rates 30% regional contribution where criteria is met

Floodplain Management Approach



Phase 1: Establish the Context

- Define and agree the flood problem

Phase 2 Understand Risk and Treatment Options

- Look at all solutions
- The selection process

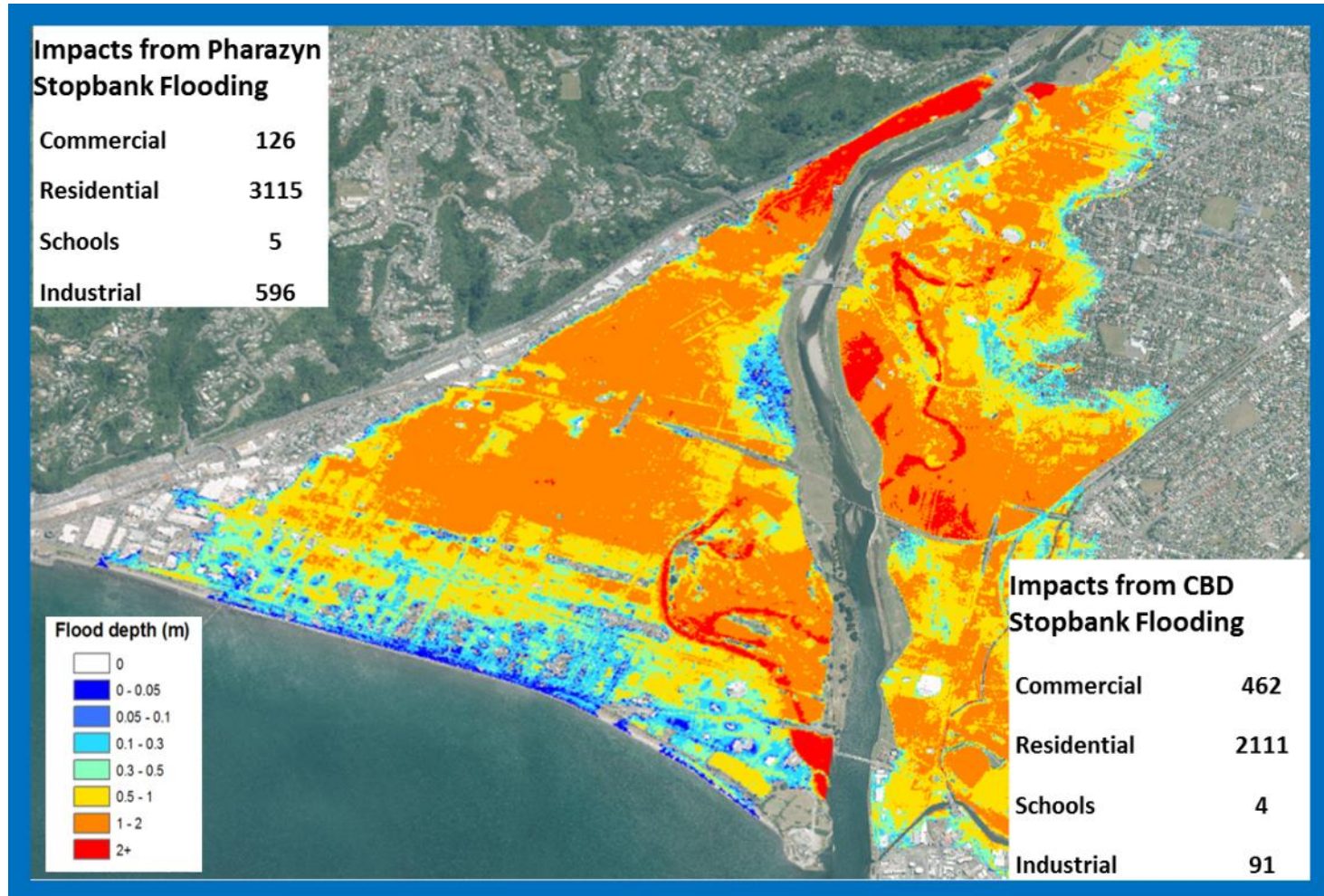
Phase 3 Implement the Outcomes

- Priority and Timeframes

Hutt City Centre Jan 2005 (25 yr event) Design event 440 year return period



Flood Vulnerability 2015



Asset management

- Flood Protection Asset Value \$100m
 - 30 km stopbanks
 - 250,000 tonnes rock
 - Floodgates/Floodwalls
- Annual maintenance costs \$2.6m

River Management Activities

- Channel management
- Asset management
- Amenity & Enhancement

Channel Management

- Maintain channel conveyance
- Manage river alignment
- Monitor and maintain bed levels



Hutt River Mouth

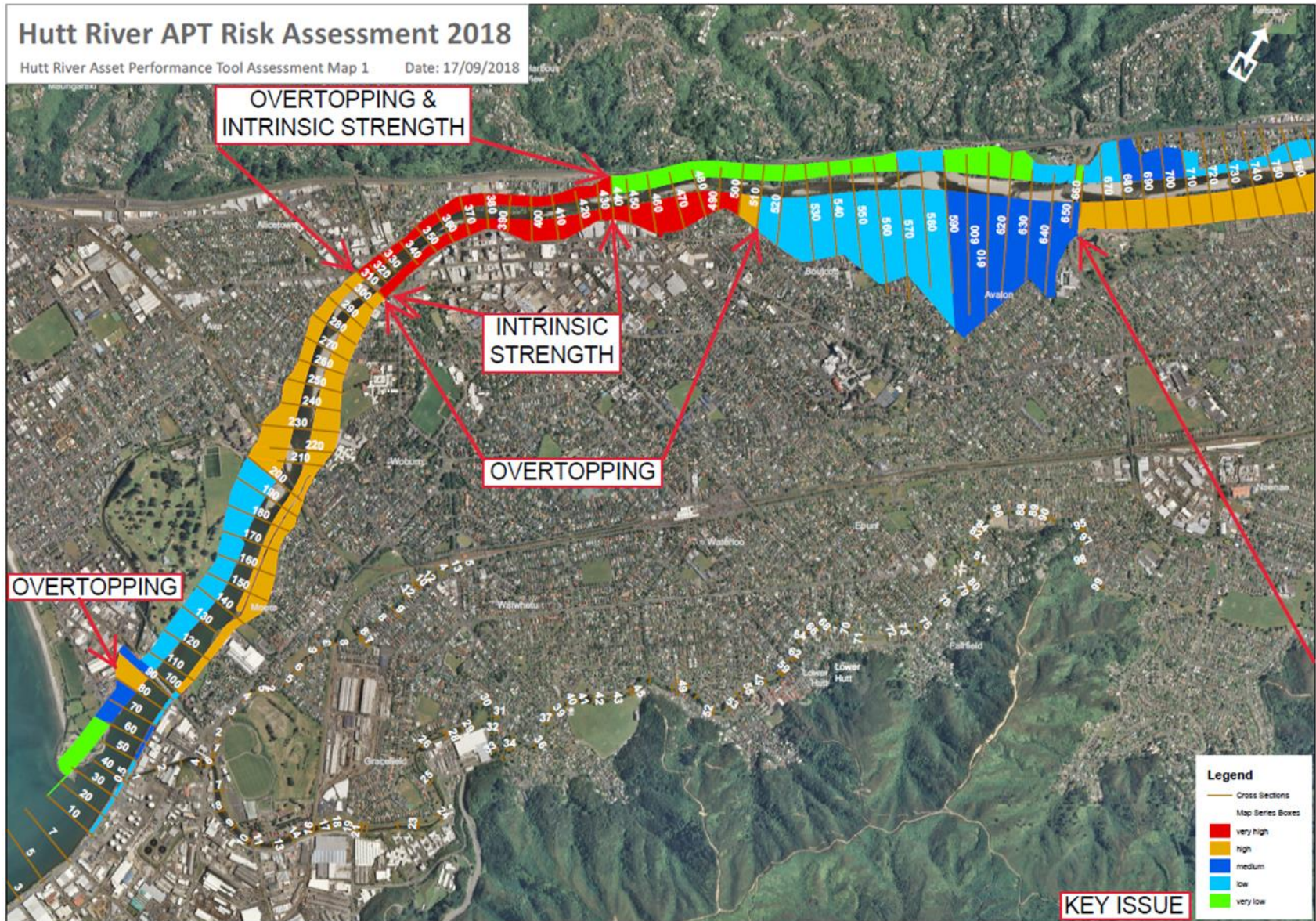


Asset Management

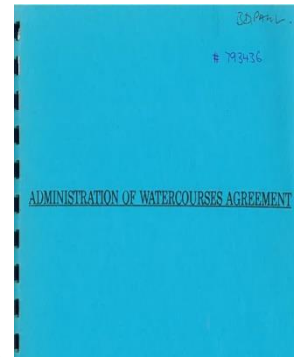
- Stopbanks and floodwalls
- Culverts and floodgates
- Bank protection works
- Vegetative planting
- Berm management

Hutt River APT Risk Assessment 2018

Hutt River Asset Performance Tool Assessment Map 1 Date: 17/09/2018



Watercourses Agreement



- Agreement between the TLA's in the western part of the region for watercourse management
- Established following the 1976 floods and the damage that occurred to urban properties as a result of poorly maintained streams
- GWRC accepted responsibility for the major rivers and streams that are part of a scheme or flowed through more than one TLA

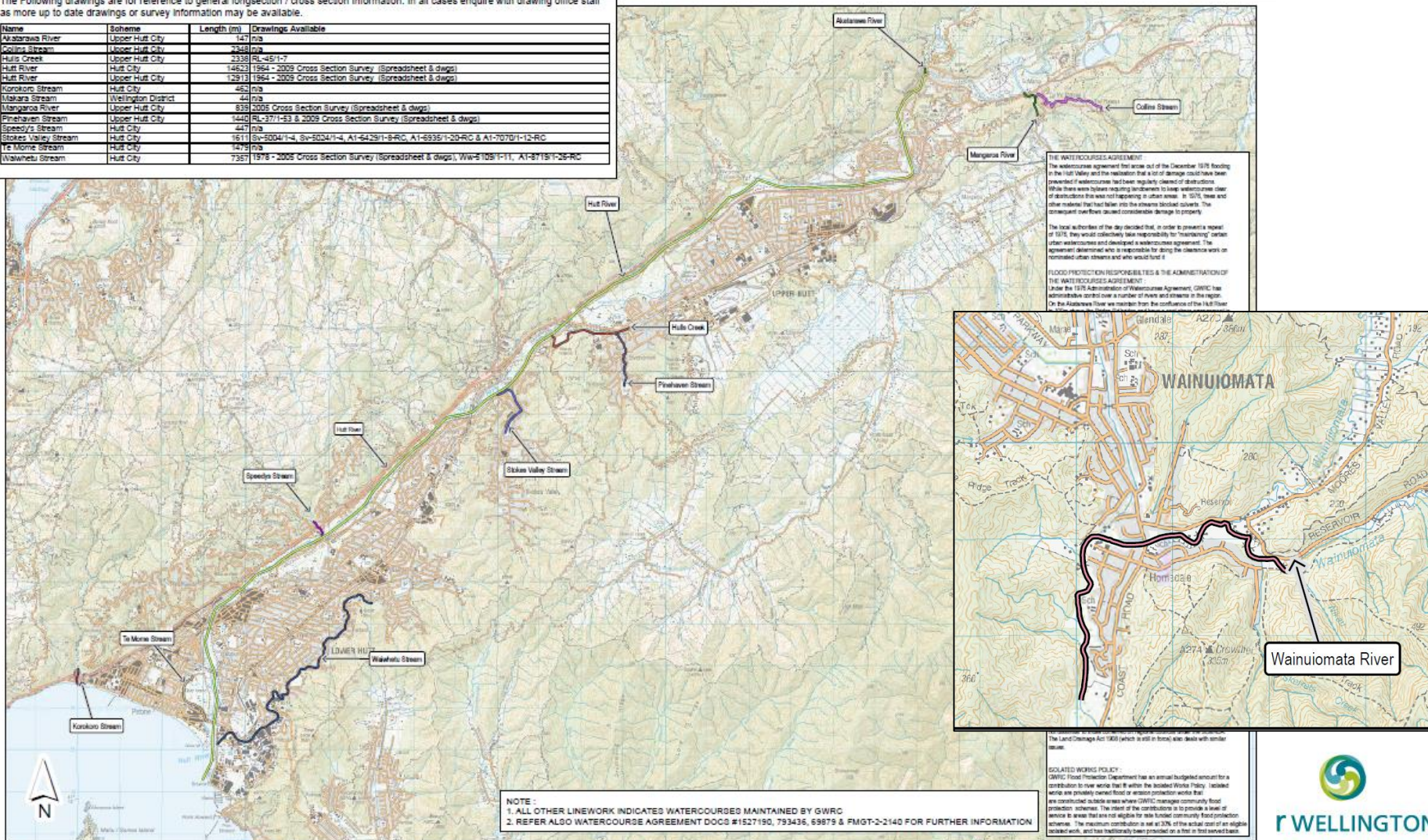
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Other Watercourses	Rural reaches Wainuiomata, Mangaroa, Pakuratahi, other watercourses	<p>Advisory & regulatory services</p> <p>Isolated works</p>	<p>100% regional rates</p> <p>30% regional contribution where criteria is met</p>

What Watercourses GW maintains

The Following drawings are for reference to general longsection / cross section information. In all cases enquire with drawing office staff as more up to date drawings or survey information may be available.

Name	Scheme	Length (m)	Drawings Available
Ataharua River	Upper Hutt City	147	n/a
Collins Stream	Upper Hutt City	238	n/a
Hutt Creek	Upper Hutt City	838	RL-451-7
Hutt River	Hutt City	1462	1964 - 2009 Cross Section Survey (Spreadsheet & dwgs)
Hutt River	Upper Hutt City	1291	1964 - 2009 Cross Section Survey (Spreadsheet & dwgs)
Korokoro Stream	Hutt City	462	n/a
Manara Stream	Wellington District	44	n/a
Mangaroa River	Upper Hutt City	838	2009 Cross Section Survey (spreadsheet & dwgs)
Pinhaven Stream	Upper Hutt City	1440	RL-3711-53 & 2009 Cross Section Survey (Spreadsheet & dwgs)
Speedy's Stream	Hutt City	447	n/a
Stokes Valley Stream	Hutt City	161	Sv-5004/1-4, Sv-5034/1-4, A1-6429/1-8-RC, A1-6935/1-20-RC & A1-7070/1-12-RC
Te Mone Stream	Hutt City	1416	n/a
Walwhetu Stream	Hutt City	7357	1978 - 2009 Cross Section Survey (spreadsheet & dwgs), Ww-5109/1-11, A1-8715/1-25-RC



THE WATERCOURSES AGREEMENT
 The watercourses agreement first came out of the December 1976 flooding in the Hutt Valley and the realization that a total drainage catchment had been prevented if watercourses had been regularly cleared of obstructions. While there were tributary recycling schemes to keep watercourses clear of obstructions this was not happening in urban areas. In 1976, trees and other material that had fallen into the streams blocked culverts. The consequent overflows caused considerable damage to property.

The local authorities of the day decided that, in order to prevent a repeat of 1976, they would collectively take responsibility for "maintaining" certain urban watercourses and developed a watercourses agreement. The agreement determined who is responsible for doing the clearance work on nominated urban streams and who would fund it.

FLOOD PROTECTION RESPONSIBILITIES & THE ADMINISTRATION OF THE WATERCOURSES AGREEMENT
 Under the 1976 Administration of Watercourses Agreement, GWRC has administrative control over a number of rivers and streams in the region. On the Ataharua River we maintain from the confluence of the I&B River to the Hutt River.

NOTE:
 1. ALL OTHER LINWORK INDICATES WATERCOURSES MAINTAINED BY GWRC
 2. REFER ALSO WATERCOURSE AGREEMENT DOCS #1527190, 793436, 69879 & FMGT-2140 FOR FURTHER INFORMATION

The Land Drainage Act 1960 (which is still in force) also deals with similar issues.

ISOLATED WORKS POLICY
 GWRC Flood Protection Department has an annual budgeted amount for a contribution to river works that is within the Isolated Works Policy. Isolated works are primarily owned flood or erosion protection works that are constructed outside areas where GWRC manages community flood protection schemes. The extent of the contribution is to provide a level of service to areas that are not eligible for main funded community flood protection schemes. The maximum contribution is 50% of the total cost of an eligible isolated work, and has traditionally been provided on a first in first served basis.



Amenity & Enhancement

Environmental Strategy

Purpose: to guide management of Te Awa Kairangi /Hutt River corridor in a way that:

- a) maintains and enhances the river environment.
- b) provides for a range of recreational uses.
- c) contributes positively to the community's cultural, spiritual, mental and physical wellbeing.





Rough sleeping at the river - Lower Hutt



River management

- River Management resource consents
- Conditions
 - Operational Management Plans
 - Annual Works Plan
- Code of Practice
- Environmental monitoring plan

Upper Hutt Bank Protection Works



Asset Management Approach

- Level of service and performance monitoring;
- Lifecycle approach to meet level of service;
- Identify, assess and control risks; and
- Long-term financial planning.

