

**From Spatial Planning
to Built Projects
a Landscape Architects
View on Water**

Rachel de Lambert
Director Design
Boffa Miskell





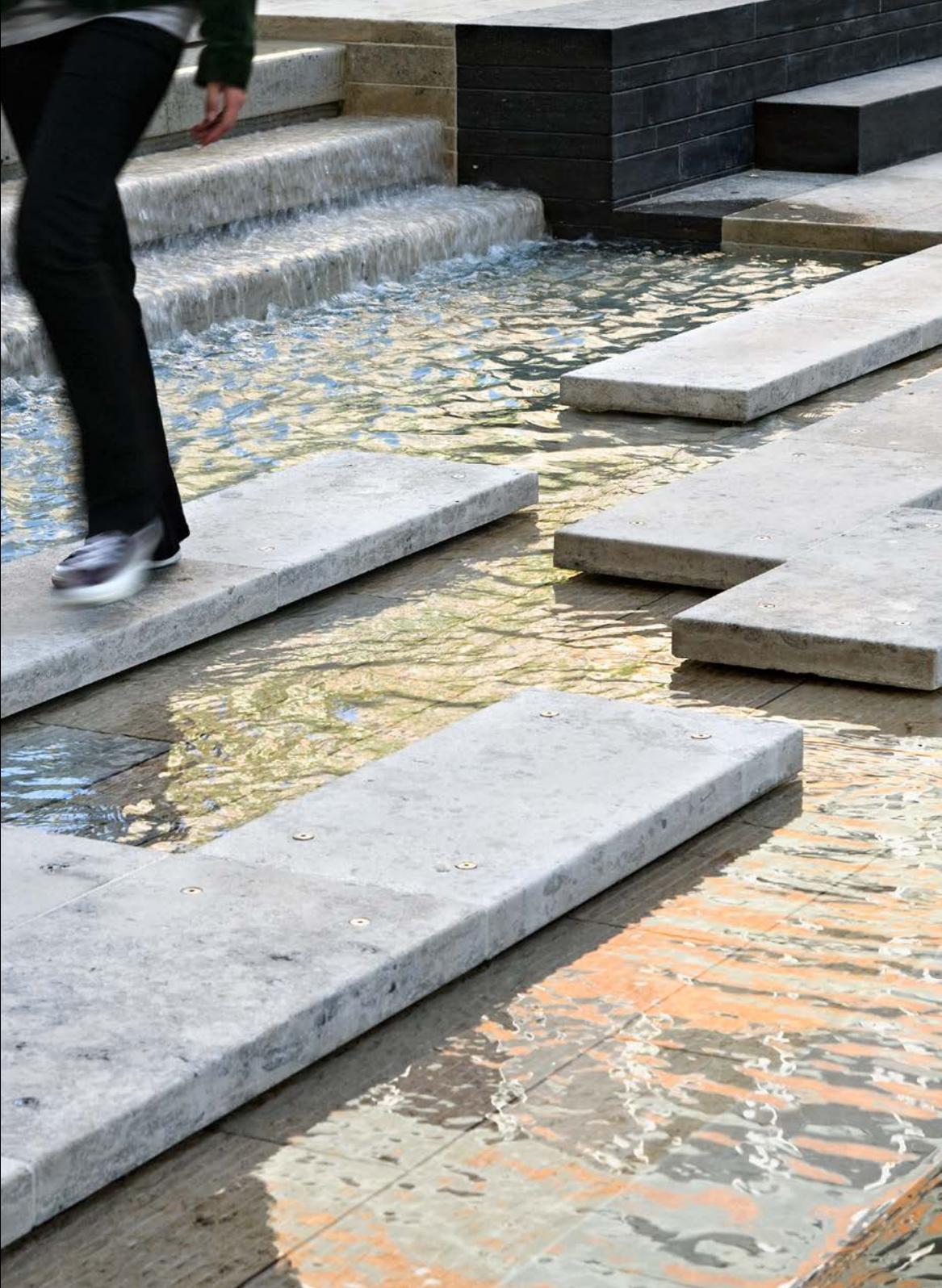
Auckland ●

● Christchurch









water

= wai

wairua

= spirit





Christchurch



ca. 1909

D.M. 273

Scale 4 Chains to an Inch

NO.	SECTION	GAZETTE & PURPOSE	DATE
100	253	Section in R.M. the District of Christchurch	25/3/50
		1852 p. 108	

P. 755, 781 & 783 being all the land in CT 389/18 (1874) Taken for Pub Buildings of Gen Govt. Gaz 1854 p. 491

closed, Division Roads Ordinance 1864 p. 557
 Canterbury Prov Gazette 1866 p. 416

for this portion
 see
 Sheet 1

D.M. 273 is considered to be the original plan of Christchurch (See file 93/35 to 251)

Chief Surveyor
 11/3/77

revised as a true copy of Block Map 273



TOWN RESERVE 24

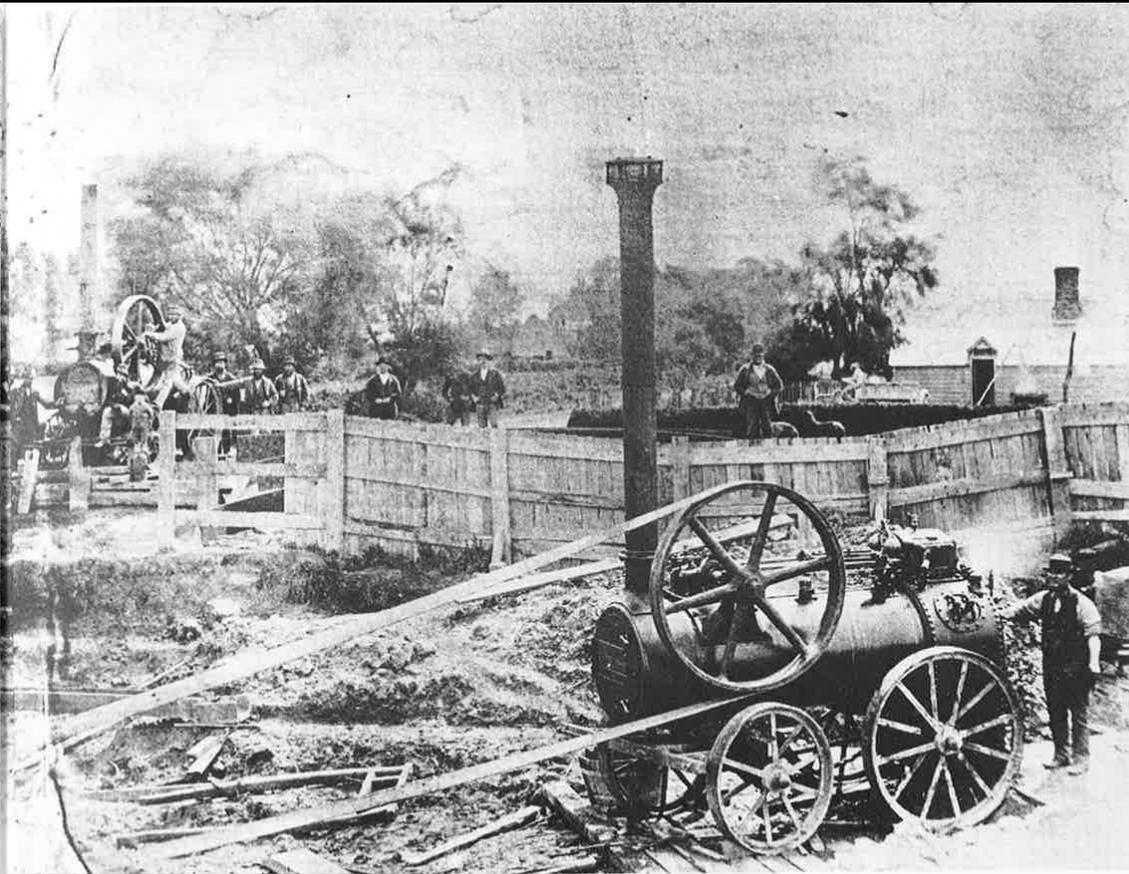
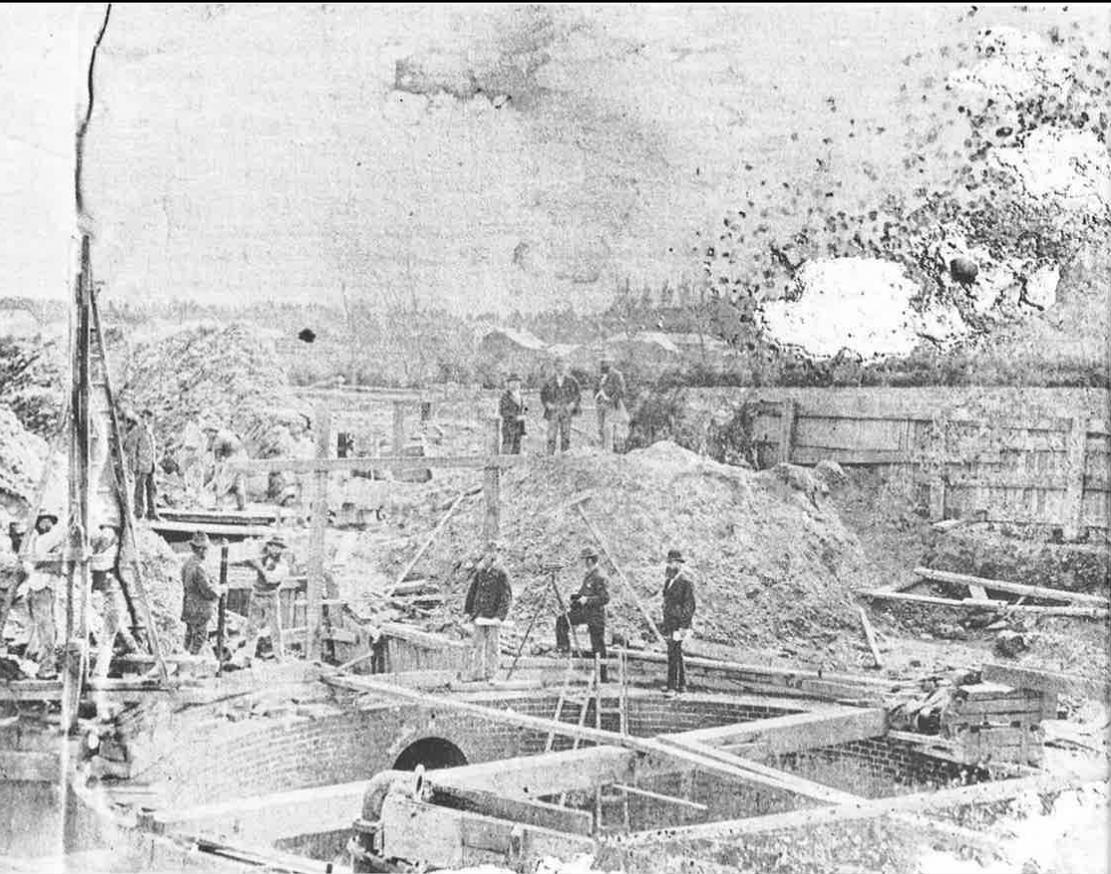
Plot of
CHRISTCHURCH

March 1850

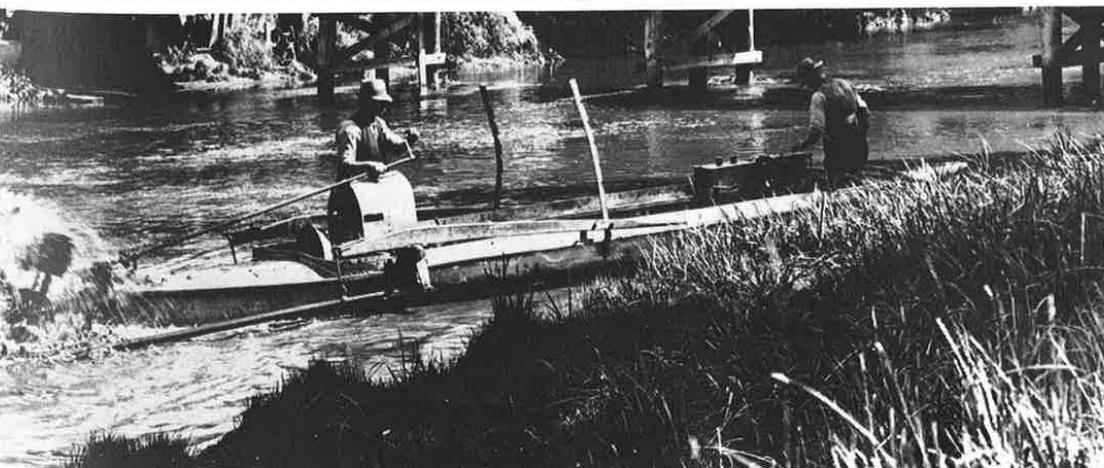
Surveyed by E^d Jollie Ant Surv CA

Scale 4 Chains to an Inch

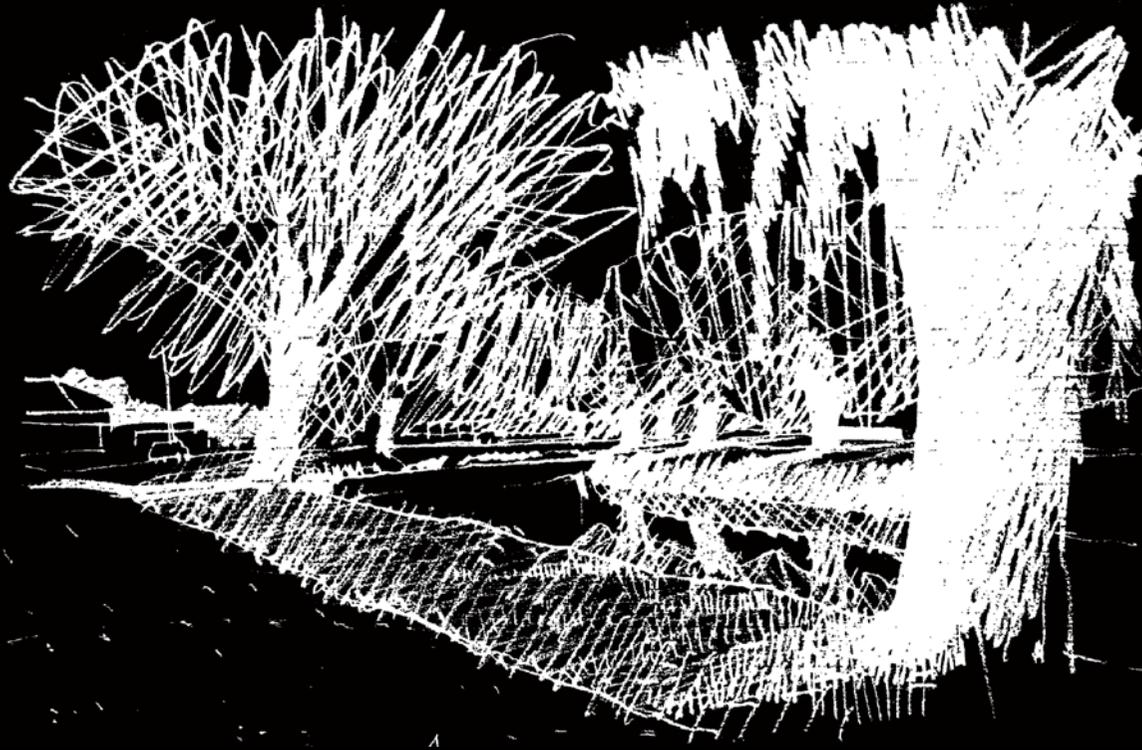
- Reserves
- A Parsonage and School
 - B Church of England
 - C Church of England Cemetery
 - D Hospital
 - E Association Store
 - F Immigration Barracks
 - G Survey Office
 - H Mechanics Institute
 - I Exchange
 - J Town Hall
 - K Police Court
 - L Post Office
 - M Jail
 - N Cattle Market
 - O Ashlar
 - P Observatory



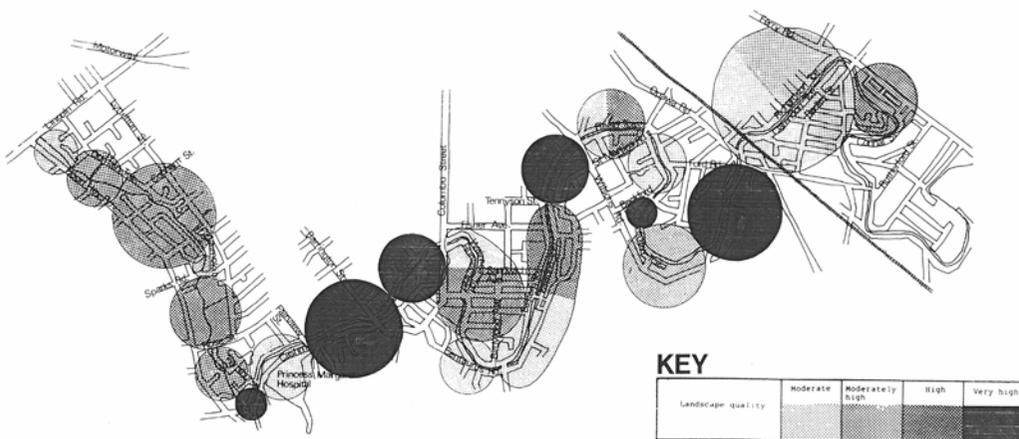
Drainage Board 1875 – 1989



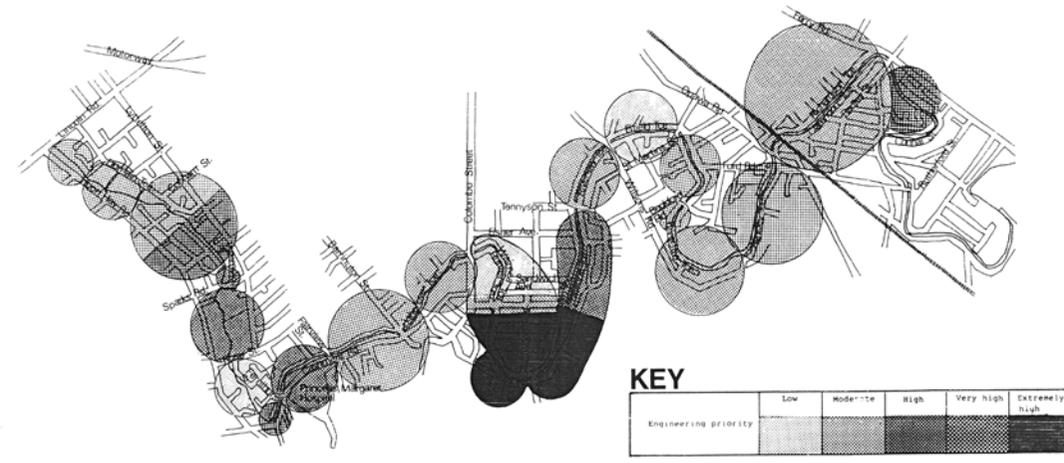
**Drainage Board
1875 – 1989**



River projects



● Landscape Quality



● Engineering Priorities

Heathcote River Environmental Impact Assessment

Prepared by Boffa Jackman Miskell and Partners, Landscape Architects, Christchurch for Christchurch Drainage Board. May 1984. Scale 1:25,000. Ref-no. 3482.







Blueprint for Christchurch Central Recovery Plan

Te Hononga Mokowā mō Maraka Ōtautahi

Prepared for: Christchurch Central Development Unit

By: Blueprint Team

Date: 26 July 2012

Timeline Of Events



February Earthquake

1

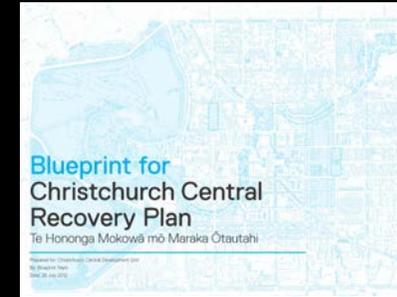


Share an idea

3

Formation of CCDU

5



7

Creation of



2

Draft Central City Plan



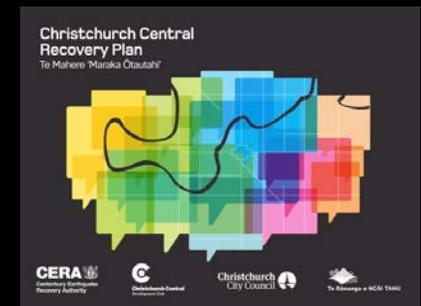
4

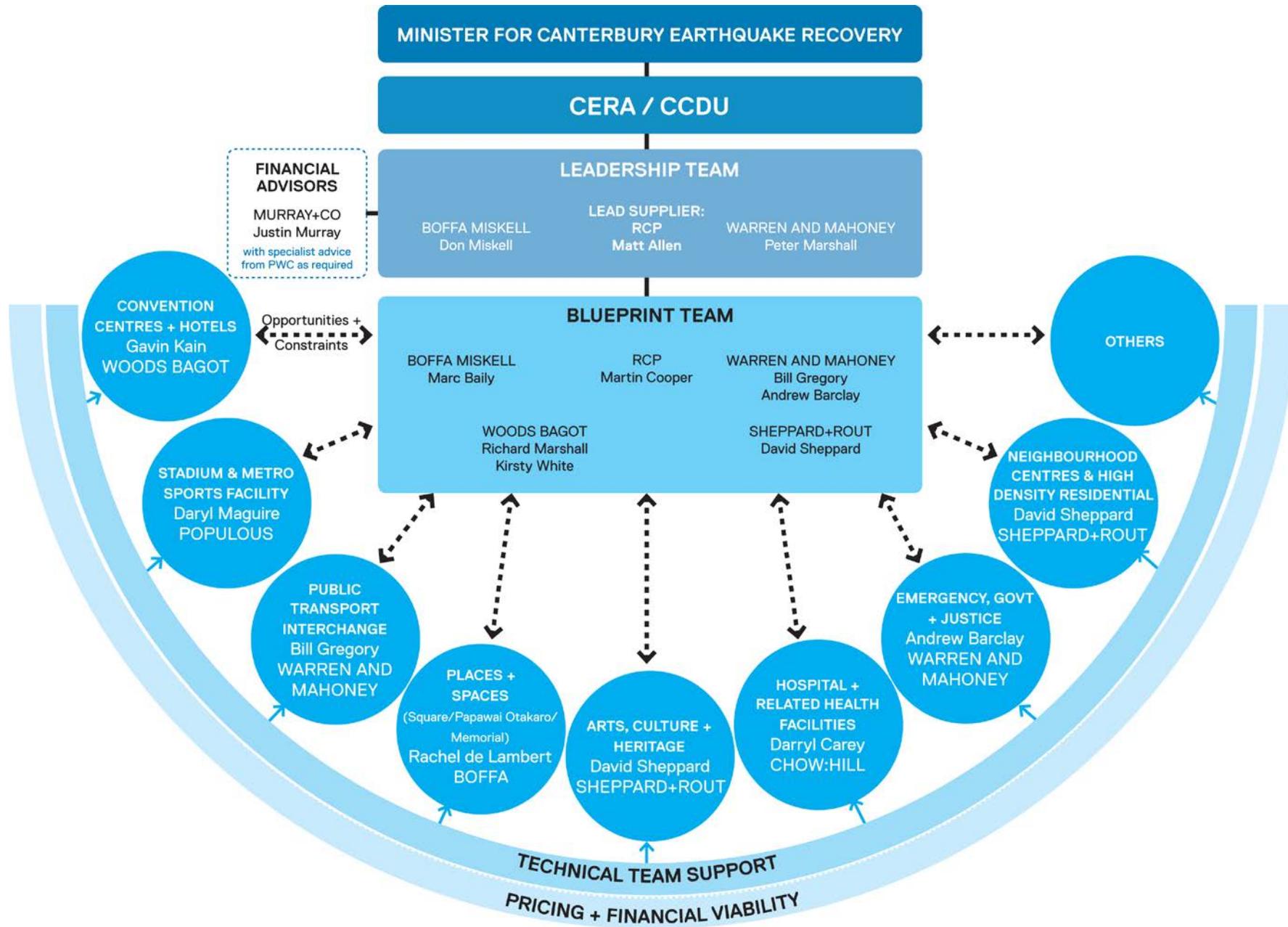
The 100 Day Blueprint

- Boffa Miskell
- Warren and Mahoney
- Populous
- Woods Bagot
- Sheppard & Rout
- RCP

6

8





Blueprint Anchor Projects:

The Frame

Convention Centre Precinct

Metro Sports Facility

Bus Interchange

Papa o Ōtākaro/Avon River Precinct

The Square

Earthquake Memorial

Te Puna Ahurea Cultural Centre

Performing Arts Precinct

Justice and Emergency Services Precinct

Health Precinct

Residential Demonstration

Central Library

Innovation Precinct

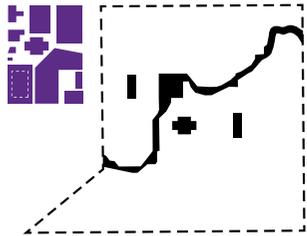
Retail Precinct

Stadium

Hagley Cricket Oval

Challenges

1 Too Much Space



The extent of the central area is significantly larger than the quantum of development that could reasonably be expected to refill it.

The commercial area was already underutilised before the earthquakes. The anticipated demand for new commercial space, even with the addition of Anchor Projects, means that there will be considerably more land than needed for commercial uses in the foreseeable future. [How can the city deal with this surplus of space?](#)

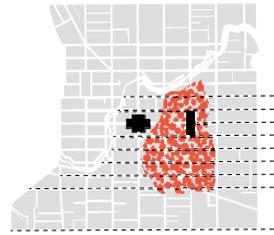
2 Extent Of Damage



The damage is such that there are extensive areas where there is little or no existing fabric from which to reinstate a core.

The damage is not confined to just one place and in many blocks most of the buildings have gone, or will go. The sense of being complete again will not come from just filling in a few gaps, whole areas will need to be rebuilt. [How can rebuilding address the risk of pepper-potting of development with no critical mass?](#)

3 East Is More Affected



The loss of city fabric to the east is affected more than in the west. There are large areas of vacant land and the sense of emptiness is exacerbated by the unending east-facing streets.

The east side of the city generally has been more affected. The street pattern of west to east running streets in the flat landscape increases the impression of emptiness. Individual redevelopments here will be isolated. [How can the east area gain spatial definition?](#)

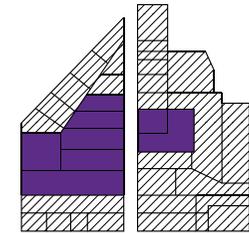
4 Time To Fix



Unless there is intervention, it will be a significant period of time before the city feels repaired and people want to come back.

The city should be a social place that is vibrant and comfortable. This will attract people and investment to return. The extent of the damage to the central area means that it will be a long time before the whole area feels repaired again and construction effects are at comfortable levels. [How can the city central area be made to feel like a great place to be again so people come back?](#)

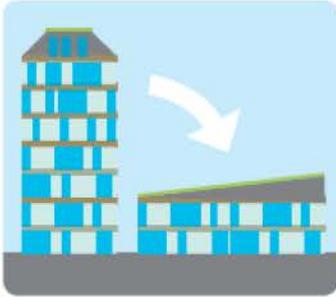
5 Multiple Owners



There are multiple landowners involved in the central area and comprehensive planned development will be difficult to achieve.

The growth of the city over time means that it now has a complex ownership pattern with thousands of different owners. The best outcomes from rebuilding come with coordinated design. This enables parking, open space, light or structural design for example to be considered block-by-block rather than site-by-site with better economic and environmental design results. [How can coordinated design and implementation be encouraged to occur?](#)

Design Principles



1.

Compress

Compress the size and scale of expected development to generate a critical mass in the Core.

2.

Contain

Contain the Core to the south, east and north with a frame.

3.

Catalyse

Position anchor projects so that development opportunities are created around and between them.

4.

Support

Locate anchor projects where the existing amenity features support their success.

5.

Repair

Focus on the areas that need the most assistance to redevelop.

Design Principles



6.

Embrace the river

Respond to the river corridor as the highest-value amenity space.

7.

Open space

Create new open spaces and improve existing open spaces.

8.

Complete

Complete the Core as quickly as possible.

9.

Existing value

Re-use existing buildings and building elements to provide continuity and reference points to the city's past.

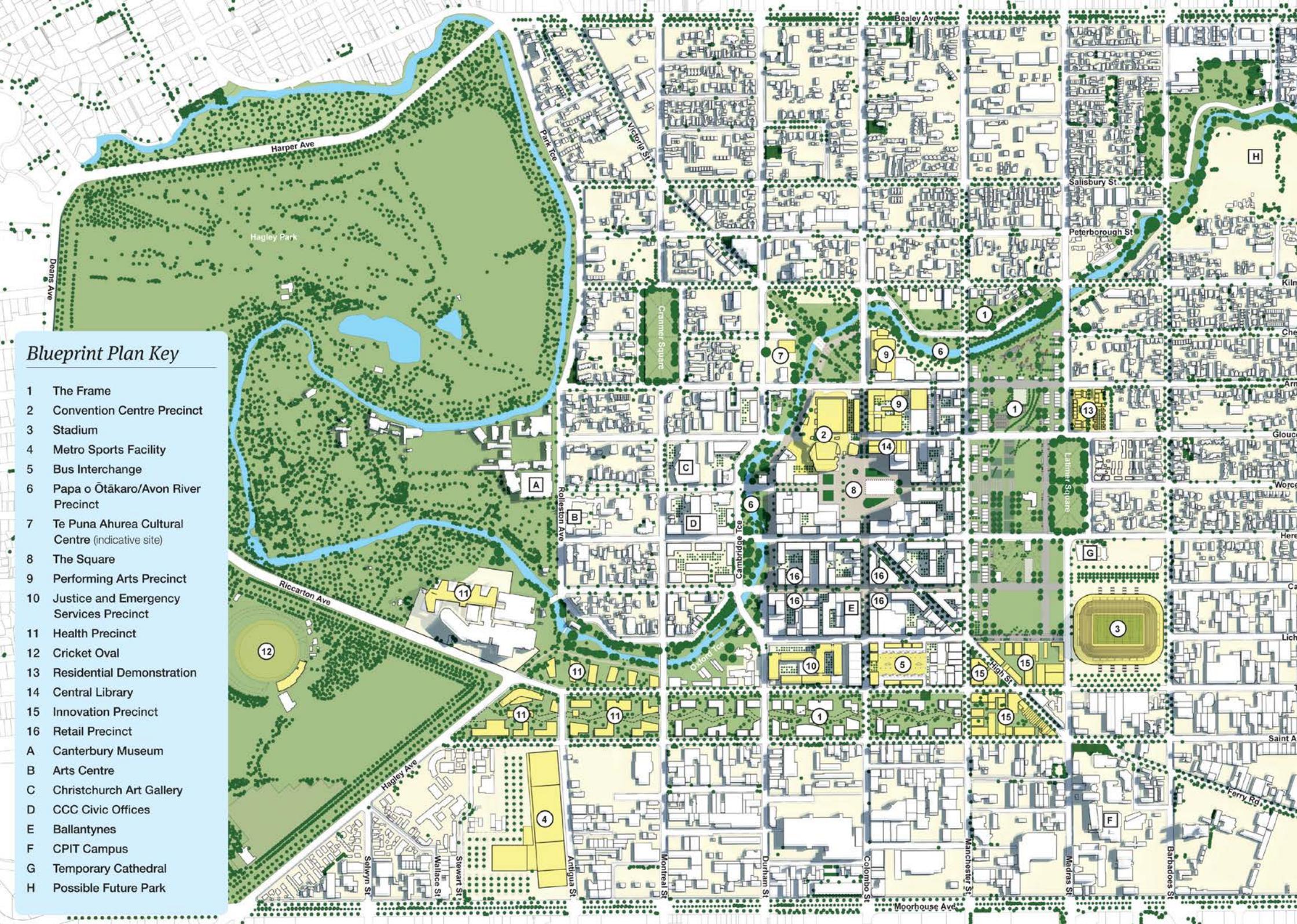
10.

Attract

Invite and attract people into the central area as a place to live, work, play, learn, visit and invest.

Blueprint Plan Key

- 1 The Frame
- 2 Convention Centre Precinct
- 3 Stadium
- 4 Metro Sports Facility
- 5 Bus Interchange
- 6 Papa o Ōtākaro/Avon River Precinct
- 7 Te Puna Ahurea Cultural Centre (indicative site)
- 8 The Square
- 9 Performing Arts Precinct
- 10 Justice and Emergency Services Precinct
- 11 Health Precinct
- 12 Cricket Oval
- 13 Residential Demonstration
- 14 Central Library
- 15 Innovation Precinct
- 16 Retail Precinct
- A Canterbury Museum
- B Arts Centre
- C Christchurch Art Gallery
- D CCC Civic Offices
- E Ballantynes
- F CPIT Campus
- G Temporary Cathedral
- H Possible Future Park



Te Papa o Ōtākaro



The North East and South Frame



Christchurch rebuild challenges:

- SCRIT: Like for like replacement.
Identification of enhancement / improvement opportunities
and who pays?

- Projects in isolation, getting on with the job

- Residential red zone land: habitat resoration, recreation,
open space, urban agriculture

Pegasus New Town Masterplan







'The Greenway' Tutaepatu Avenue

Keeping ground and surface water clean is critical to the quality of the Pegasus environment. A special system has been designed for Pegasus to treat the stormwater through an intricate system of swales and wetlands.

WHAT IS A GREENWAY?

A greenway is a linear open space with a central pathway, planted with trees and shrubs and used primarily for recreation. Greenways link parks and communities and provide access to other green spaces. Recreational opportunities include walking, jogging, biking, and skating. The Pegasus Greenway is named Tutaepatu Avenue and functions as a recreational space and green environment where rainwater is collected and cleaned.



TUTAEPATU AVENUE

The Greenway was named after Tutaepatu Lagoon which lies just south of Pegasus. The lagoon is highly valued by Te Runanga o Tuahuriri. All the coastal lagoons in this area were once a rich source of food, they provided good access to the sea and security from other tribes. Over time, Tutaepatu Lagoon has been degraded by encroaching willows and changes to land and water use upstream. Water management at Pegasus will ensure that only high quality water flows back into Tutaepatu and the coastal wetlands.

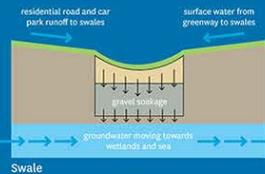
STORMWATER MANAGEMENT

Stormwater is the water that runs off the surface of the ground or roofs after rain and often contains contaminants. Traditionally, in most towns, this is collected by the street drainage system which sends the water to a treatment facility and then discharges to a river or the sea.

The stormwater management system for Pegasus is specially designed to protect:

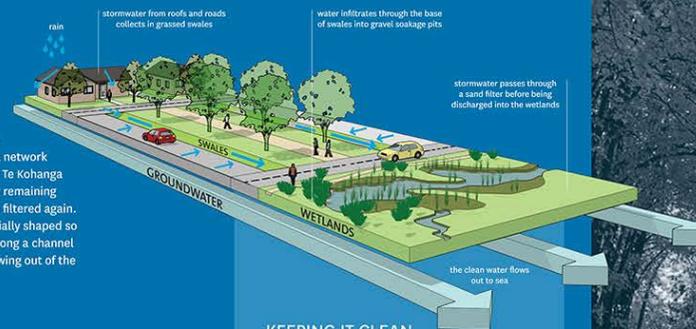
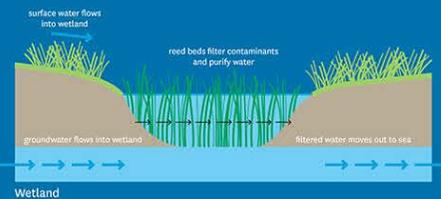
- The quality of water in the Pegasus Lake from township run-off
- The quality of water of wetland habitats and mahinga kai (food) in Te Kohanga (coastal wetlands), Tutaepatu Lagoon and Taranaki Stream.
- Downstream areas from flooding at times of heavy rainfall.

The Greenway swales and wetlands are an important part of this protection system.



WETLANDS AND LAKES

Pegasus town stormwater passes under the township and the residential stormwater passes through swales – both eventually seep into the Te Kohanga coastal wetlands. All wetlands contain plants that are good at taking up contaminants, and have roots that form a network to catch sediments. The vegetation in the Te Kohanga wetlands forms a dense cover so that any remaining sediment and potential contaminants are filtered again. The south end of wetlands has been specially shaped so that all the water in Te Kohanga passes along a channel and through dense raupo beds before flowing out of the outlet channel to the sea.



KEEPING IT CLEAN

You can help to protect Pegasus water quality by:

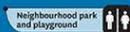
Using planter boxes to collect water from buildings, filtering through plants and soil.

Having a rainwater collection tank in your garden, so you can store rainfall or re-use washing-up water to water the garden.

Choosing permeable paving for your hard stand areas such as driveways and patios.

Avoiding unpainted or exposed zinc coated products when building your house.

Cutting down on fertiliser use in the garden and using plants that are suitable for Pegasus soils.

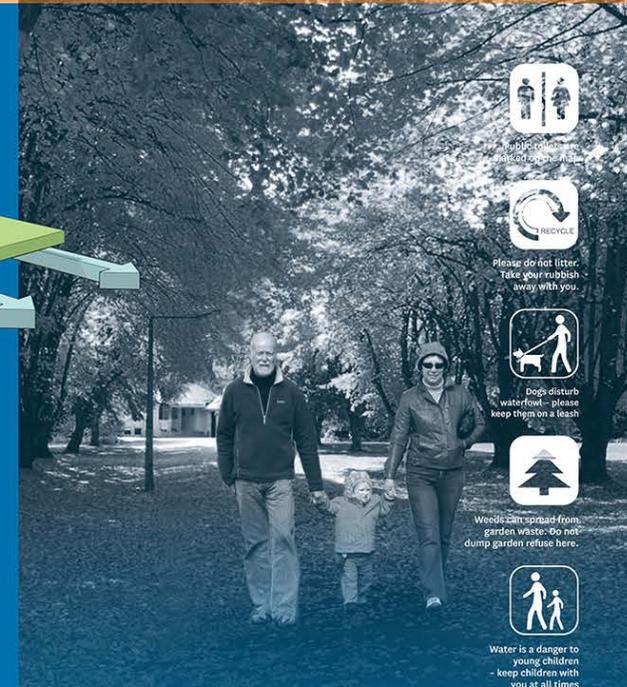


To Pegasus School

To Pegasus Town Centre

To Gladstone Park

To Gladstone Park





THE ISTHMUS OF AUCKLAND

with its extinct Volcanoes,

by

D^r Ferdinand von Hochstetter

1859.

The Drawing & geographical Foundation compiled principally from the Surveys of Stokes & Drury by A. Petermann

Scale 1:120,000.

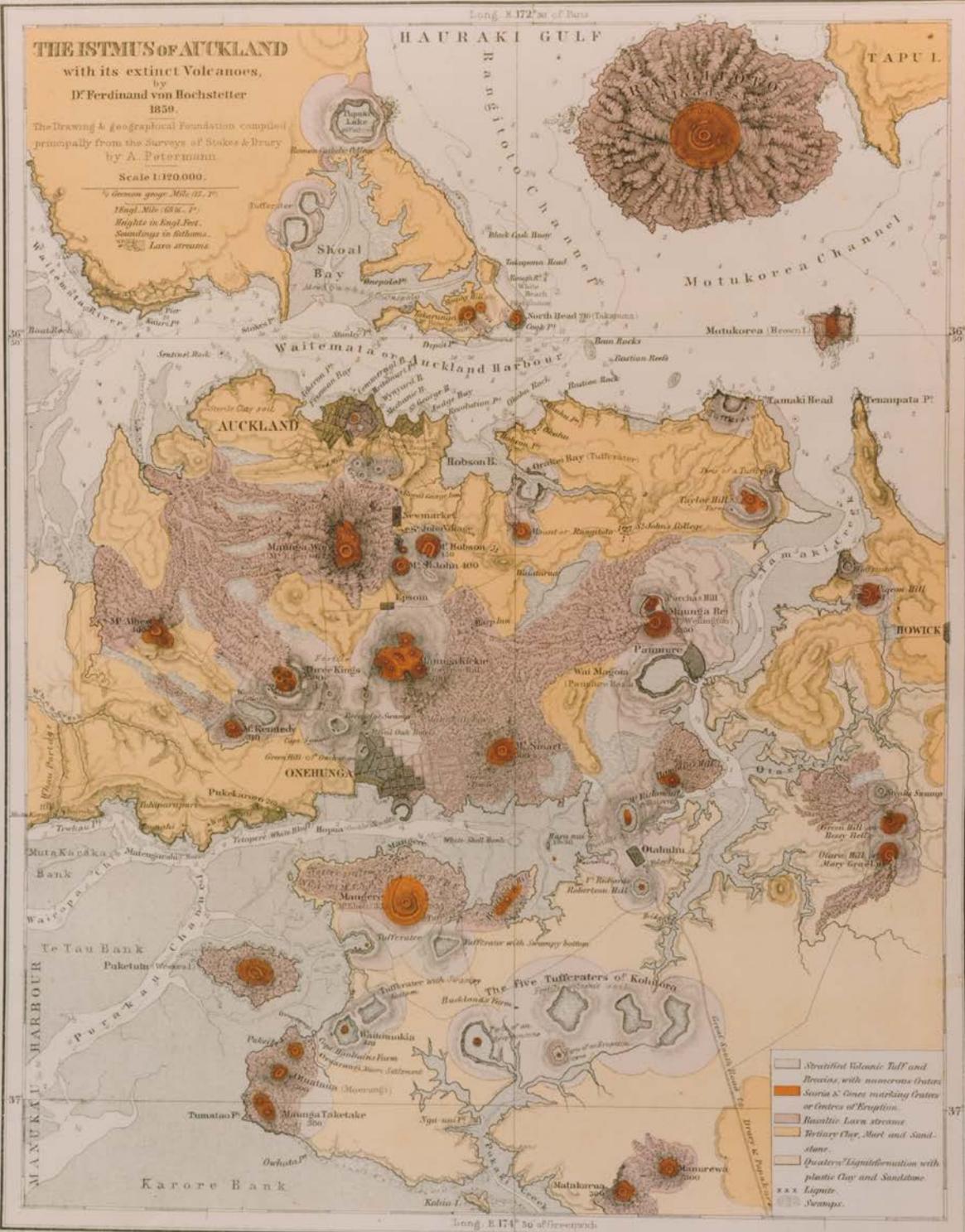
$\frac{1}{2}$ German geogr. Mile = 12.75

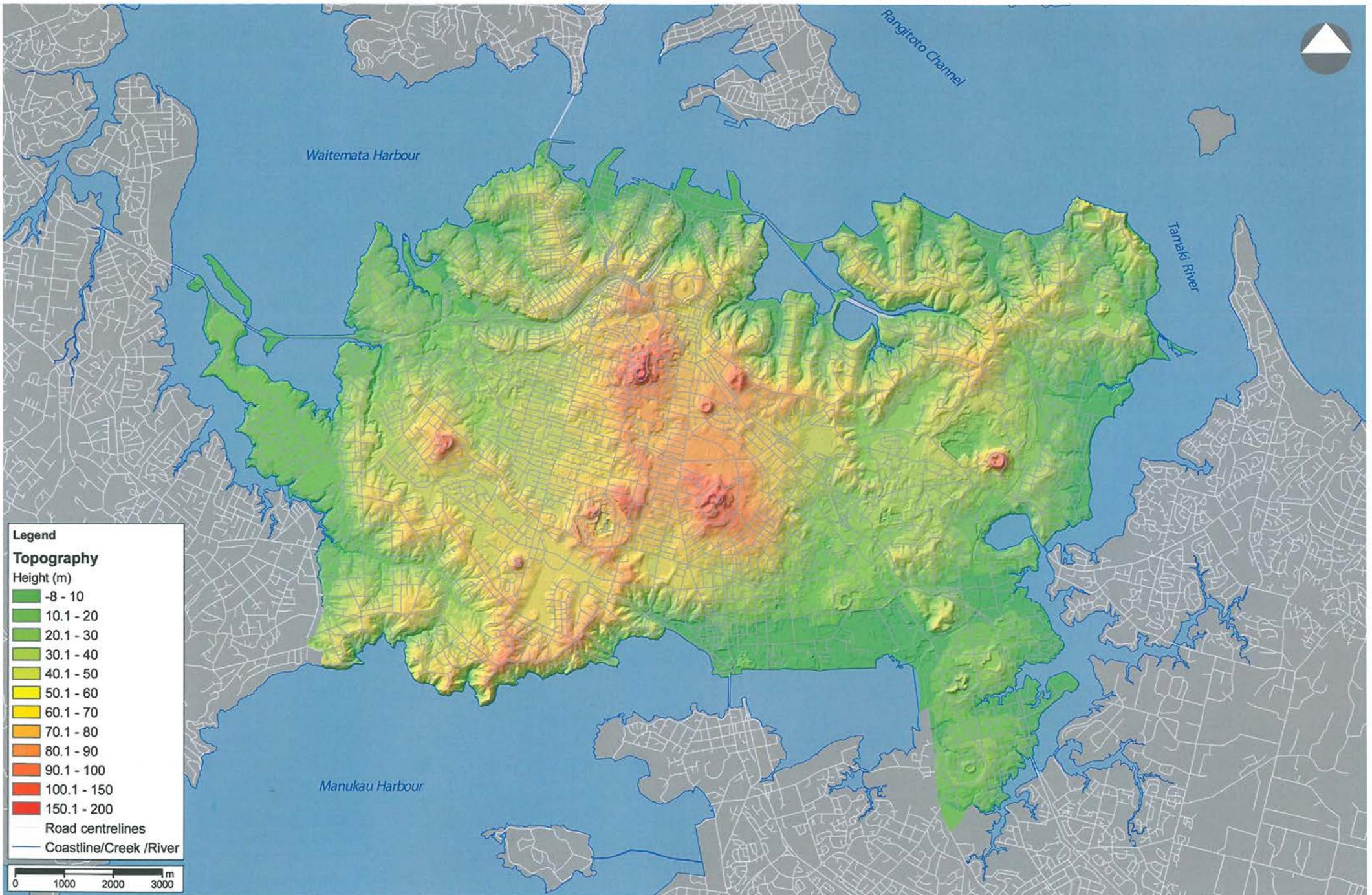
$\frac{1}{2}$ Engl. Mile = 636. F.

Heights in Engl. Feet.

Soundings in fathoms.

Lava streams





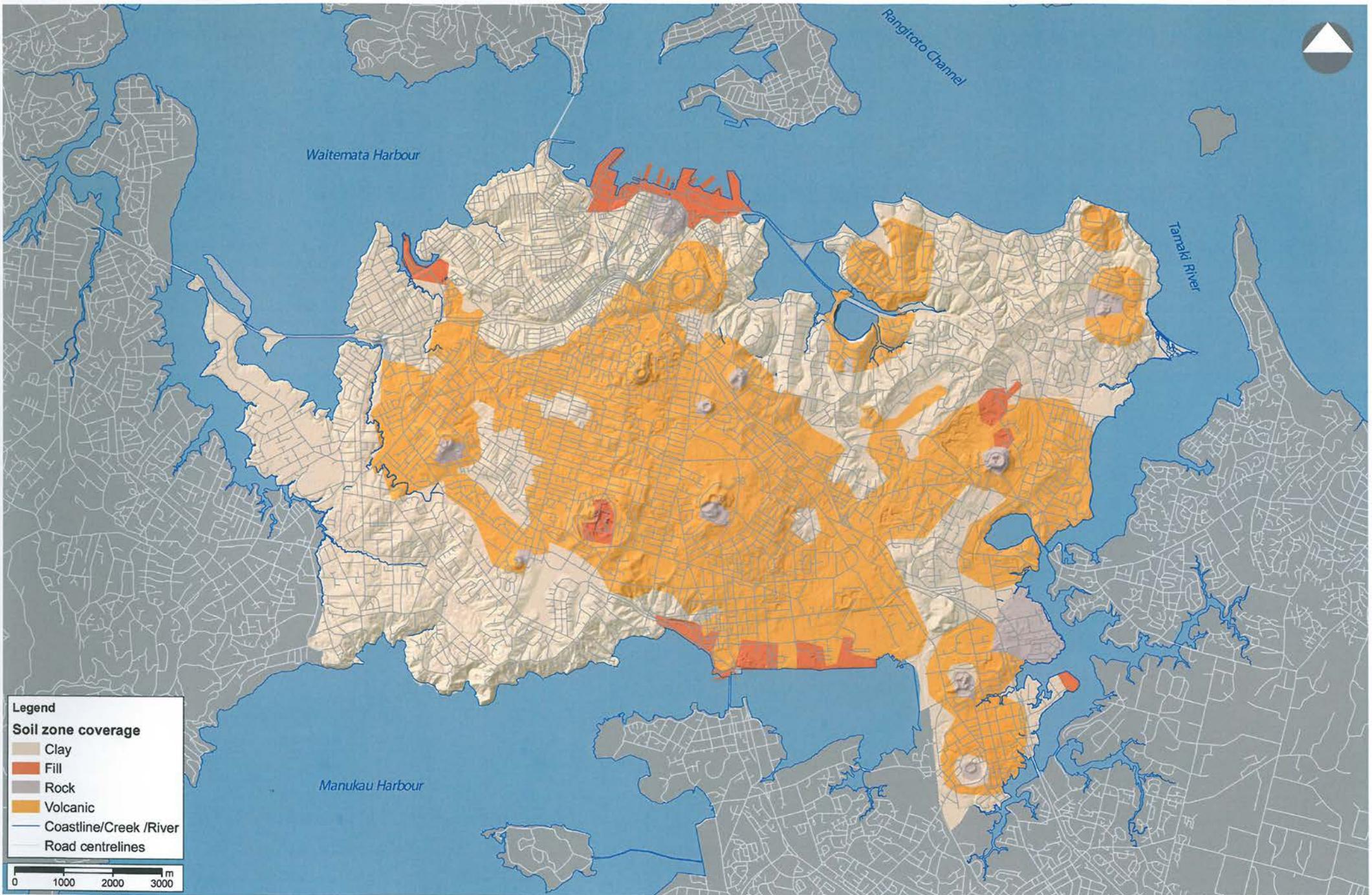
Produced by:
Auckland City Council

GEOMORPHOLOGY
G1: Terrain Model

Date Drawn: 30.05.2008
File Name: G1_a.pdf

Project Name: Auckland Isthmus Landscape Analysis

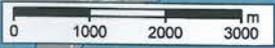




Legend

Soil zone coverage

- Clay
- Fill
- Rock
- Volcanic
- Coastline/Creek /River
- Road centrelines



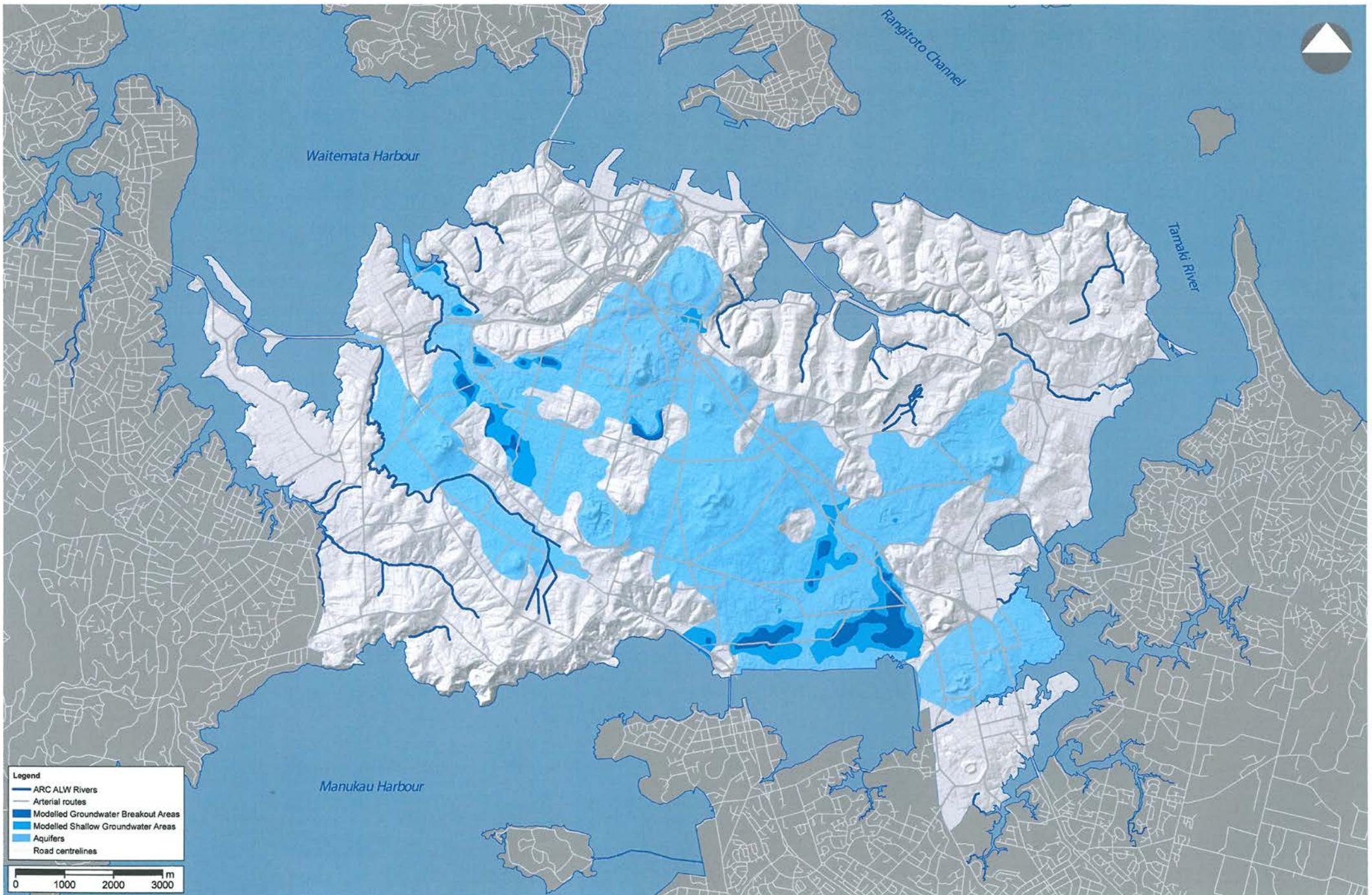
Produced by:
Auckland City Council

GEOMORPHOLOGY
G6: Soil Types

Date Drawn: 30.05.2008
File Name: G6_a.pdf

Project Name: Auckland Isthmus Landscape Analysis





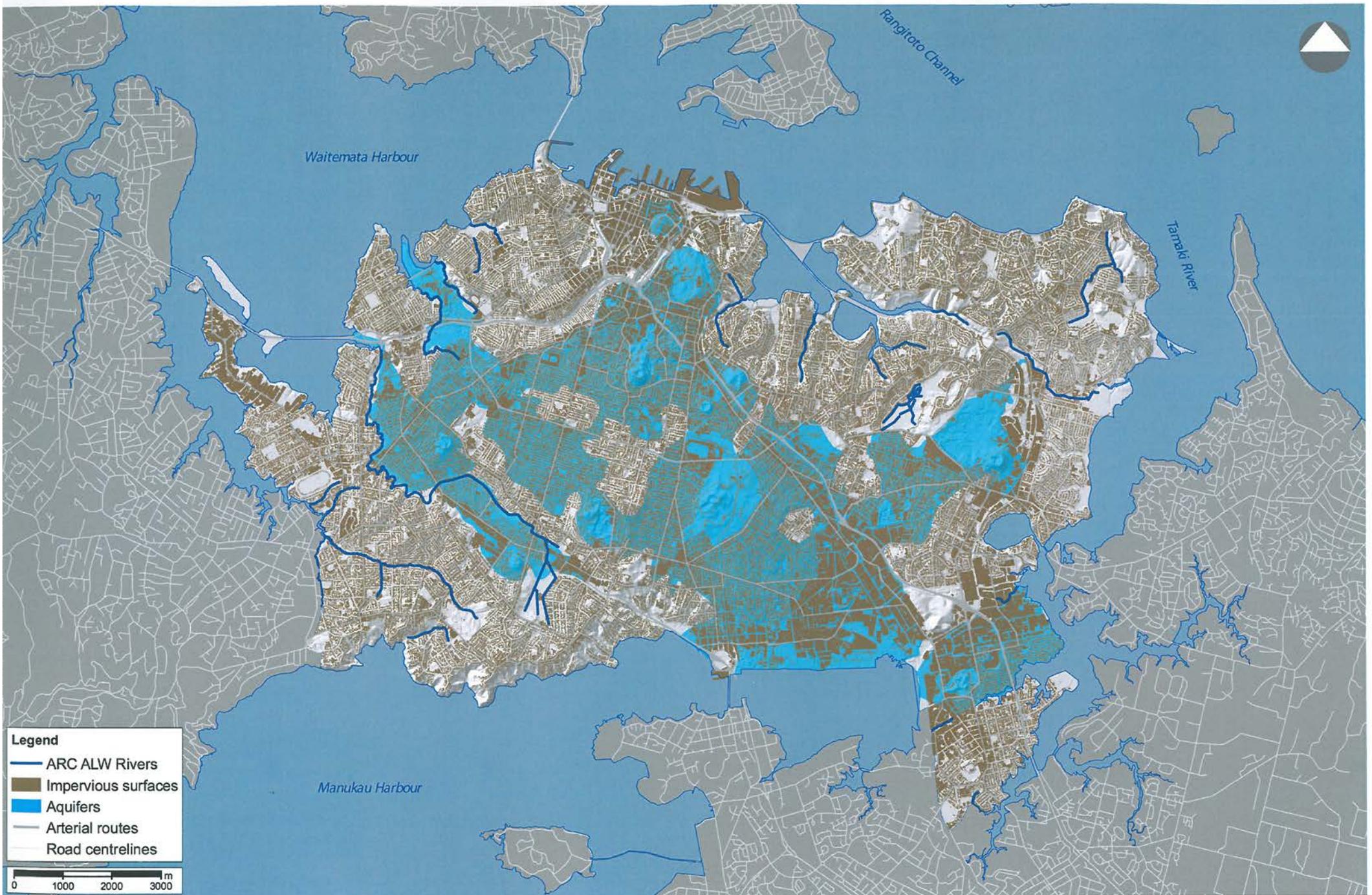
Produced by:
Auckland City Council

HYDROLOGY
H4: Ground Water Hydrology

Date Drawn: 30.05.08
File Name: H4_a.pdf

Project Name: Auckland Isthmus Landscape Analysis





- Legend**
- ARC ALW Rivers
 - Impervious surfaces
 - Aquifers
 - Arterial routes
 - Road centrelines

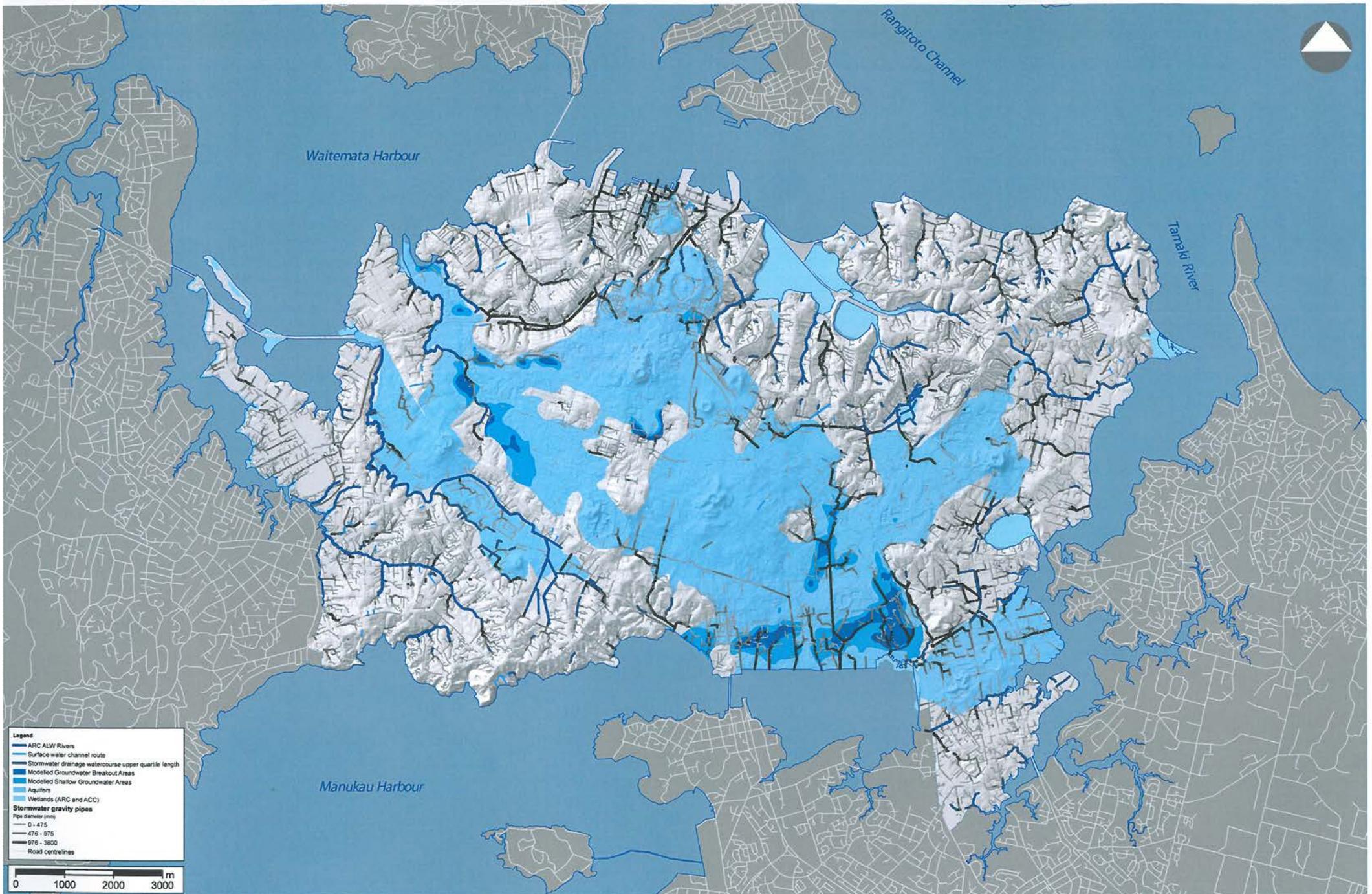
0 1000 2000 3000 m

Produced by:
Auckland City Council

HYDROLOGY
H5: Ground Water Hydrology: Impervious Surfaces

Date Drawn: 30.05.08 Project Name: Auckland Isthmus Landscape Analysis
File Name: H6_compressed_a.pdf





Produced by:
Auckland City Council

HYDROLOGY
H9: Combined Hydrology

Date Drawn: 30.05.08
File Name: H9_a.pdf

Project Name: Auckland Isthmus Landscape Analysis





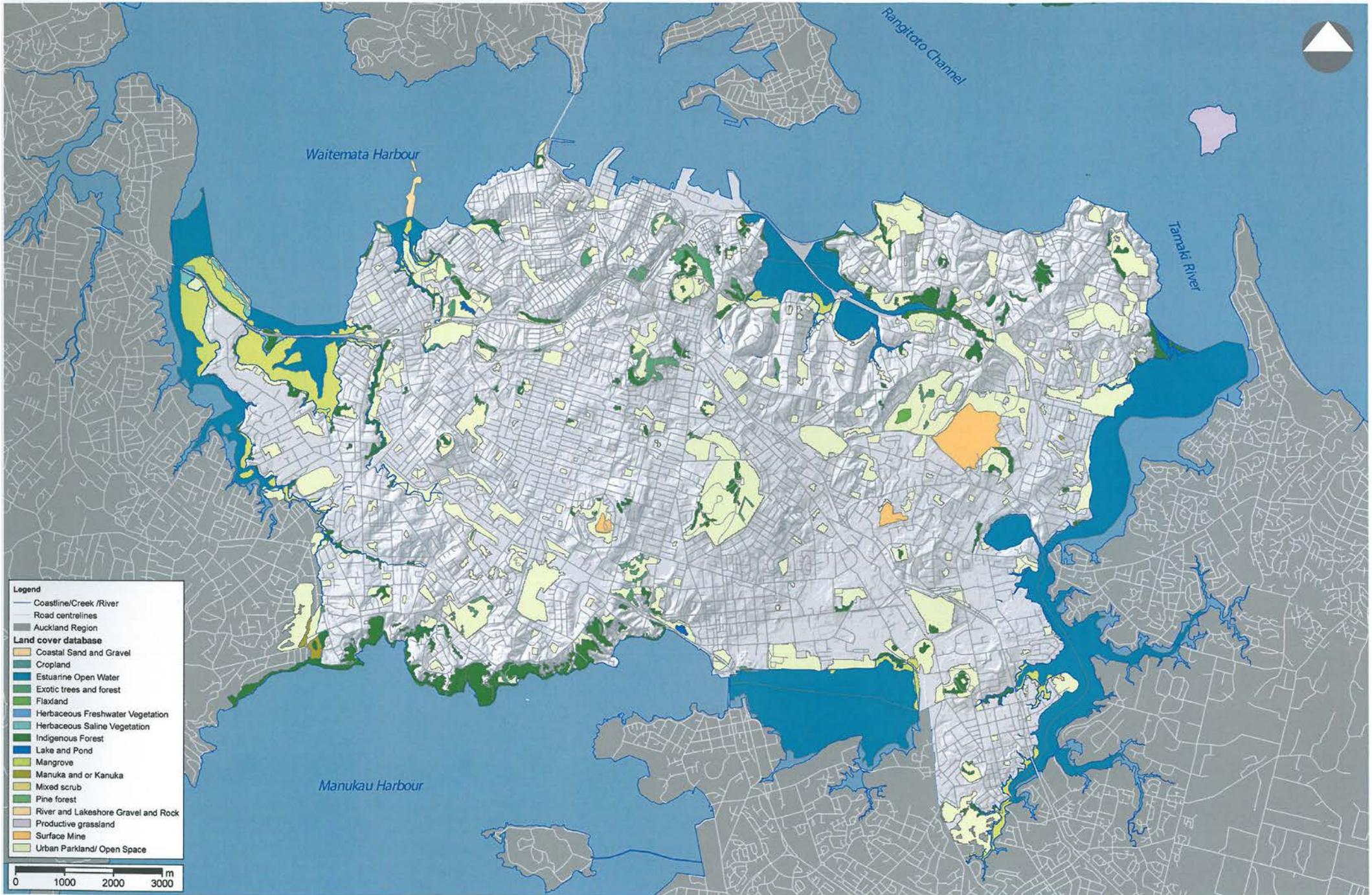
Produced by:
Auckland City Council

ECOLOGY
E2: Predicted Natural Vegetation of New Zealand (LEN2)

Date Drawn: 03.06.08
File Name: E2_a.jpg

Project Name: Auckland Isthmus Landscape Analysis





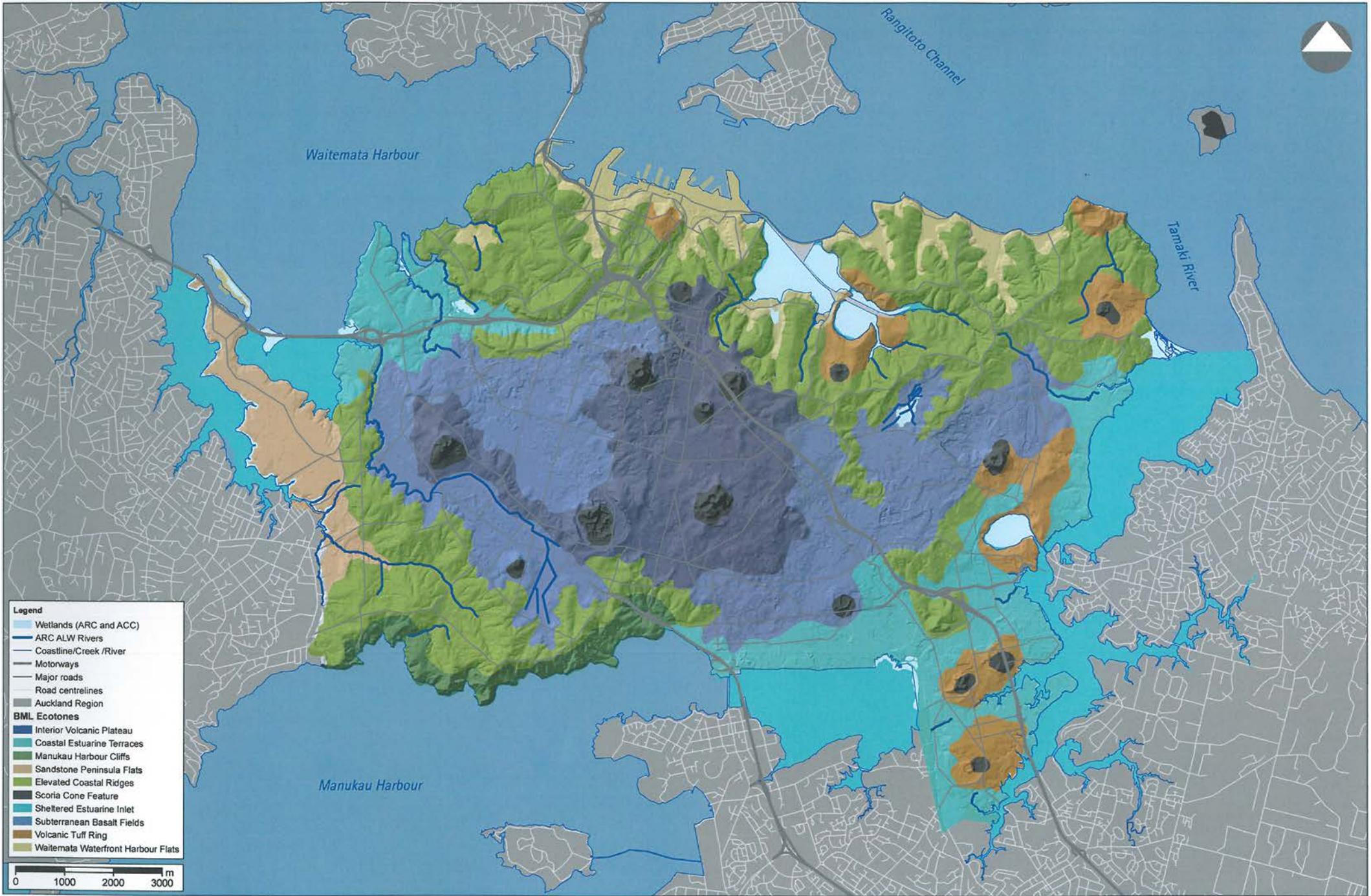
Produced by:
Auckland City Council

ECOLOGY
E3: Existing Vegetation Cover (LCDB2)

Date Drawn: 03.06.08
File Name: E3_b.jpg

Project Name: Auckland Isthmus Landscape Analysis





Produced by:
Auckland City Council

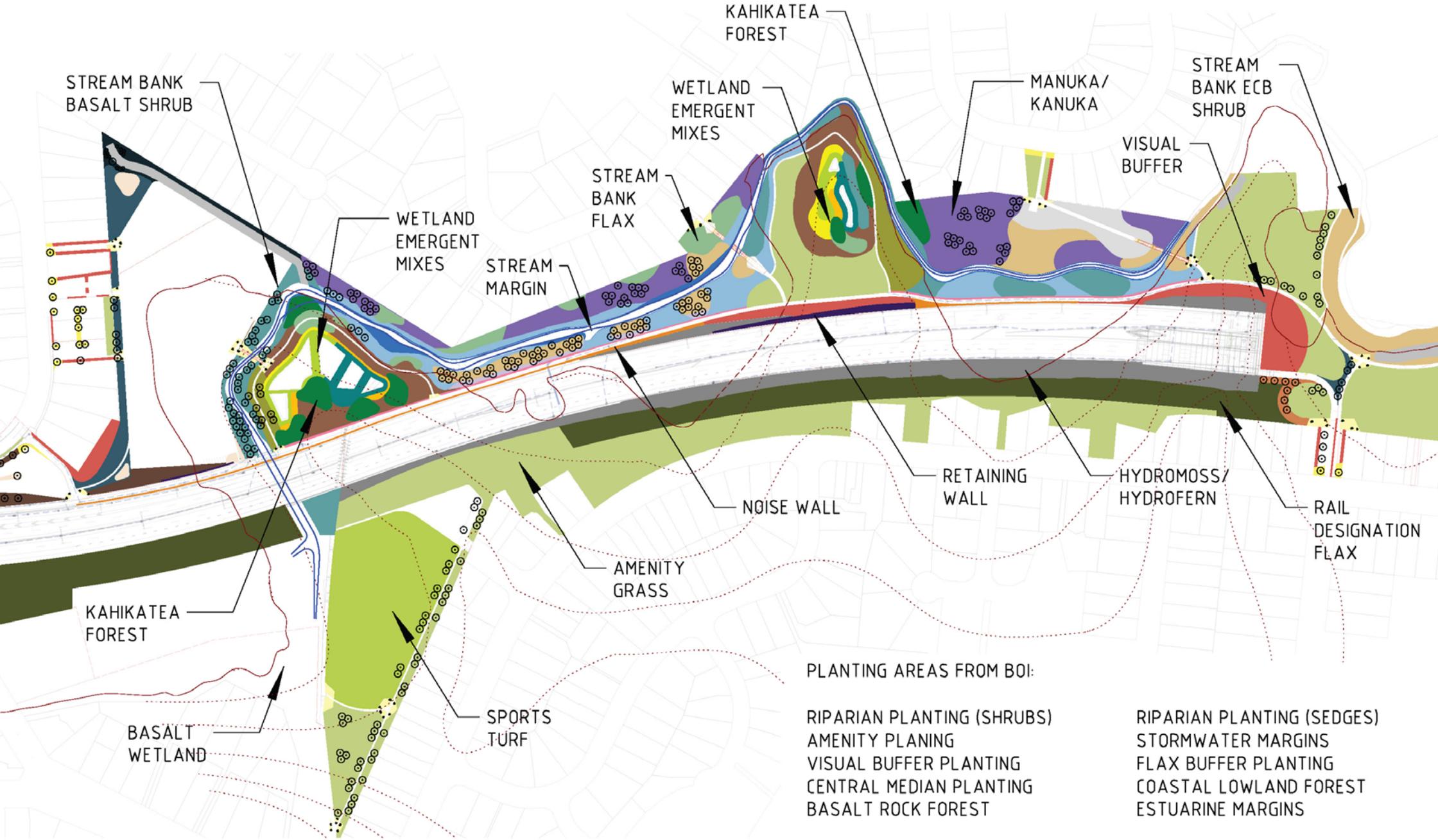
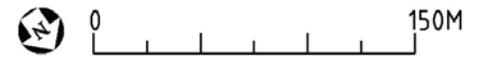
ECOLOGY
E15: Ecotone Analysis

Date Drawn: 03.06.08
File Name: E15_a.jpg

Project Name: Auckland Isthmus Landscape Analysis



SELECTED PLANT AREA TYPES



PLANTING AREAS FROM BOI:

- RIPARIAN PLANTING (SHRUBS)
- AMENITY PLANING
- VISUAL BUFFER PLANTING
- CENTRAL MEDIAN PLANTING
- BASALT ROCK FOREST

- RIPARIAN PLANTING (SEDGES)
- STORMWATER MARGINS
- FLAX BUFFER PLANTING
- COASTAL LOWLAND FOREST
- ESTUARINE MARGINS









Understanding water at all scales is important to LAs.

Water needs to inform a landscape architects thinking.

We need to work with others to realise good water solutions.

Landscape architects, because we are generalists, are often good at leading water projects.

There's lots of opportunity to push water solutions and the collaboration between the scientists, engineers and designers further.



