

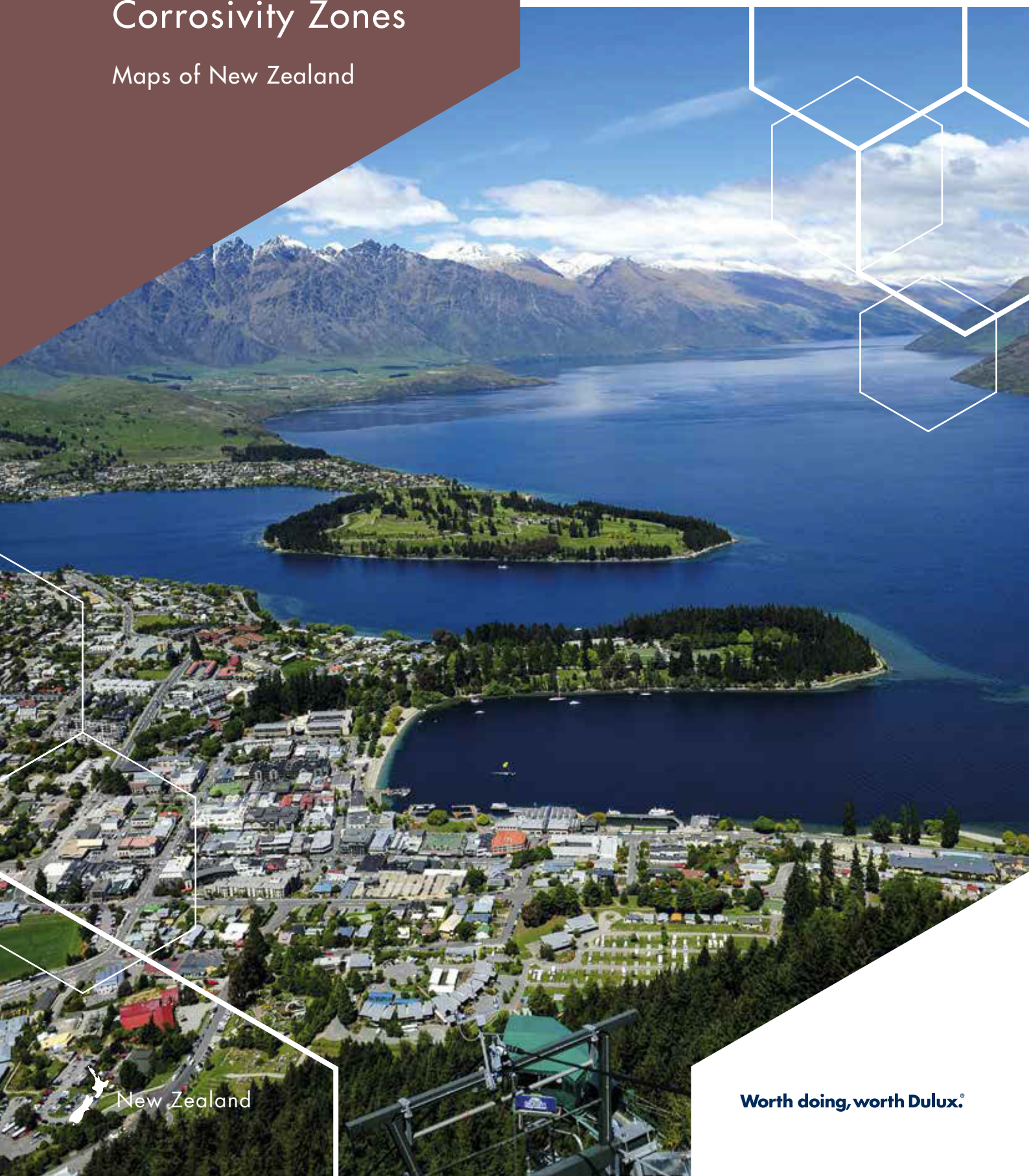
SPECIFICATION SOLUTIONS

Dulux Macroclimate Corrosivity Zones

Maps of New Zealand

Dulux®

**POWDER
COATINGS**



New Zealand

Worth doing, worth Dulux.®

Worth doing, Worth Dulux.®

Dulux Powder Coatings are an ideal choice for the long term protection of architectural aluminium and steel items for your next project and provide assurance through the issue of AlumiShield™ and Steel Shield™ warranties.

It is important to ensure your specification identifies the environment and conditions of your project to ensure you are able to select the correct product and a warranty for your project. Use the Dulux Macroclimate Corrosivity Zone Maps of New Zealand to help identify the specification for your project.



Developed with industry experts.

The Dulux Macroclimate Corrosivity Zone Maps of New Zealand have been developed by Dulux in collaboration with industry experts:

- NIWA –The National Institute of Water and Atmospheric Research.
- HERA –The Heavy Engineering Research Association

What the Maps detail

These maps provide indicative guidance to determine the Macroclimate Corrosivity Zone which can be used in association with the Dulux AlumiShield™ and Steel Shield™ specification brochures.

Maps are available for:

- North Island
- South island

In further detail there are individual maps for the following cities:

- Auckland
- Tauranga
- Wellington
- Christchurch
- Dunedin

The specification process

In order to identify a correct product specification it is essential you identify the following:

- Substrate
- Project type
- Environment
- Conditions
- Distance to the sea & liquids

Using the maps

The Dulux Macroclimate Corrosivity Zone Maps of New Zealand are an essential tool use to help identify the environment and conditions that your project will be endure.

Use the maps in association with:

1. Google Maps – use Google Maps to help you pinpoint your projects location and compare with the Dulux Macroclimate Corrosivity Zone Maps of New Zealand to identify the corrosivity zone of your project.
2. Dulux AlumiShield™ and Steel Shield™ warranty brochures – use these to bring your specification together. Use these maps to identify your environment and conditions and refer to the conditions tables below that feature in the AlumiShield™ and Steel Shield™ specifications.

If you are unsure about your project specification call our Advice line on 0800 800 975 or visit duluxpowders.co.nz

Conditions

Use the following table which references AS 2312.1, SNZ TS 3404 and ISO 9223 to identify the environment, conditions and atmospheric corrosivity categories. To further pinpoint your project this table can be used together with the Dulux Macroclimate Corrosivity Zone Maps of New Zealand Guide available at duluxpowders.co.nz

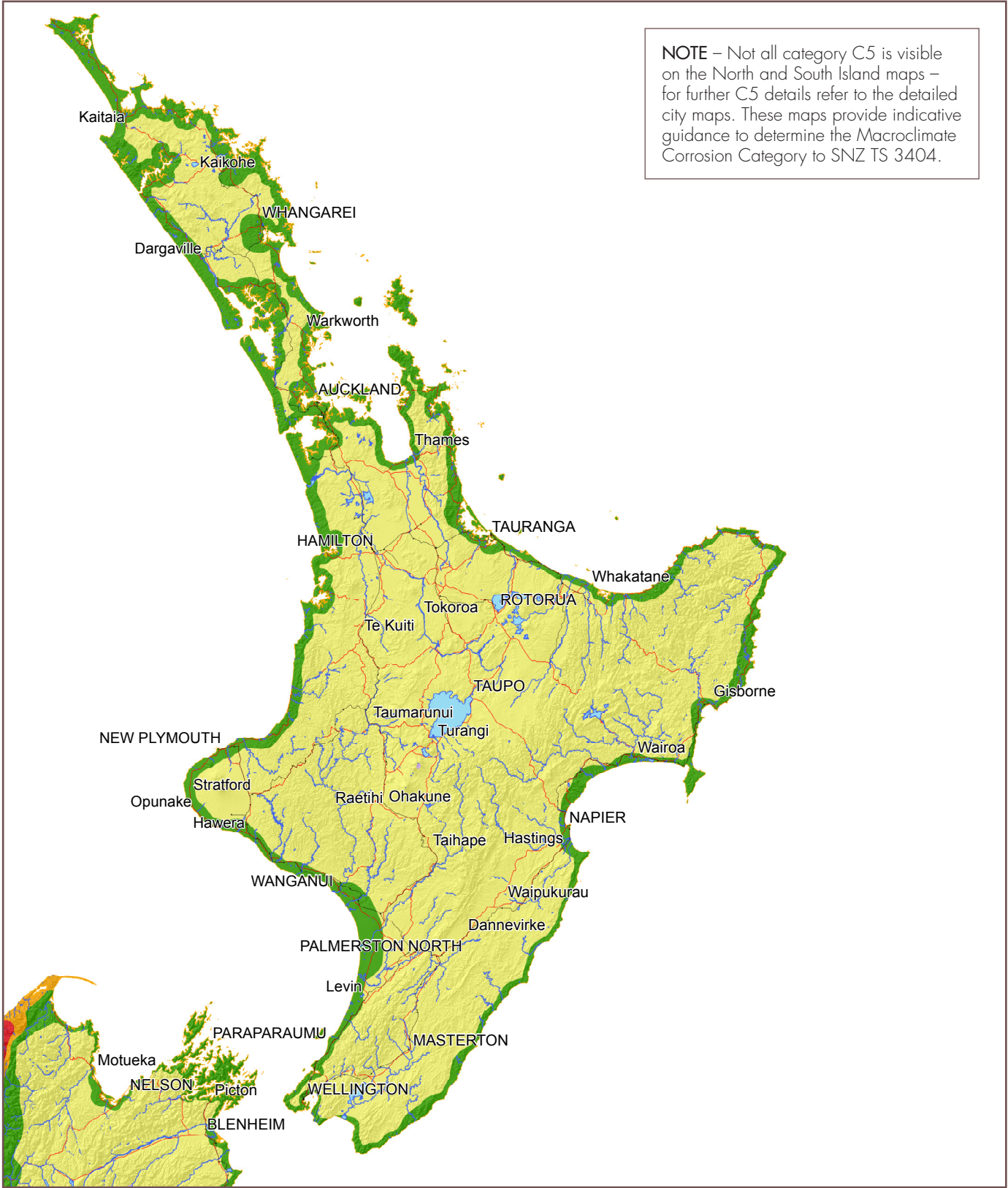
Environment	Conditions	Corrosivity Zone ⁴	Aluminium Corrosion Rate (g/m ²) ⁵	Carbon (Mild) Steel Corrosion Rate (g/m ²) ⁴	Example Environments
Exterior Environment	Mild	C2 Low	≤ 0.6	10–200	Arid, dry, urban, inland, city
		C3 Medium	0.6 – ≤ 2.0	200–400	Light Industrial, geothermal (>500m from source) ¹ and inland coastal (mild sea spray zone)
	Severe	C4 High	2 – ≤ 5	400–650	Sea shore (medium sea spray zone), offshore Islands ³ and or geothermal (<500m from source) ²
		C5 Very High Marine & Industrial	5 – ≤ 10	650–1500	Sea shore (high sea spray zone e.g. surf), offshore Islands ³ and heavy industrial
Interior Environments	General Interior	C1 Very Low	Negligible	<10	Dry interiors (homes, offices, shops)
		C2 Low	≤ 0.6	10–200	Minor condensation (warehouses, sports halls)
	Moderate Interior	C3 Medium	0.6 – ≤ 2.0	200–400	High moisture (dairy and food processing plants, breweries, and commercial laundries)
		C4 High	2 – ≤ 5	400–650	Significant contamination (swimming pools)

1. Geothermal environments greater than 500m of a bore, mud pool, steam vent, or other source with a pH between 5 and 9. For a pH outside this consult Dulux.
2. Geothermal hot spots within 500m of a bore, mud pool, steam vent, or other source.
3. All offshore islands including Waiheke Island, Stewart Island, Fraser Island and Pacific islands e.g. PNG, Fiji, Samoa, Tonga, Tahiti, Noumea.
4. The corrosion rates for the first year of exposure for the different corrosivity categories of Aluminium and Carbon (Mild) Steel are determined by the following standards:
 - SNZ TS 3404 - Standards NZ Technical Specification – Durability requirements for steel structures & components.

- AS 2312.1 - Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. Part 1: Paint coatings
- ISO 9223 - Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation
- 5. The corrosion rates for the first year of exposure for the different corrosivity categories of aluminium are determined by the following standard:
 - ISO 9223 - Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation.

North Island

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

Lake Railway Highway River

Kilometres

0 50 100

Auckland

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

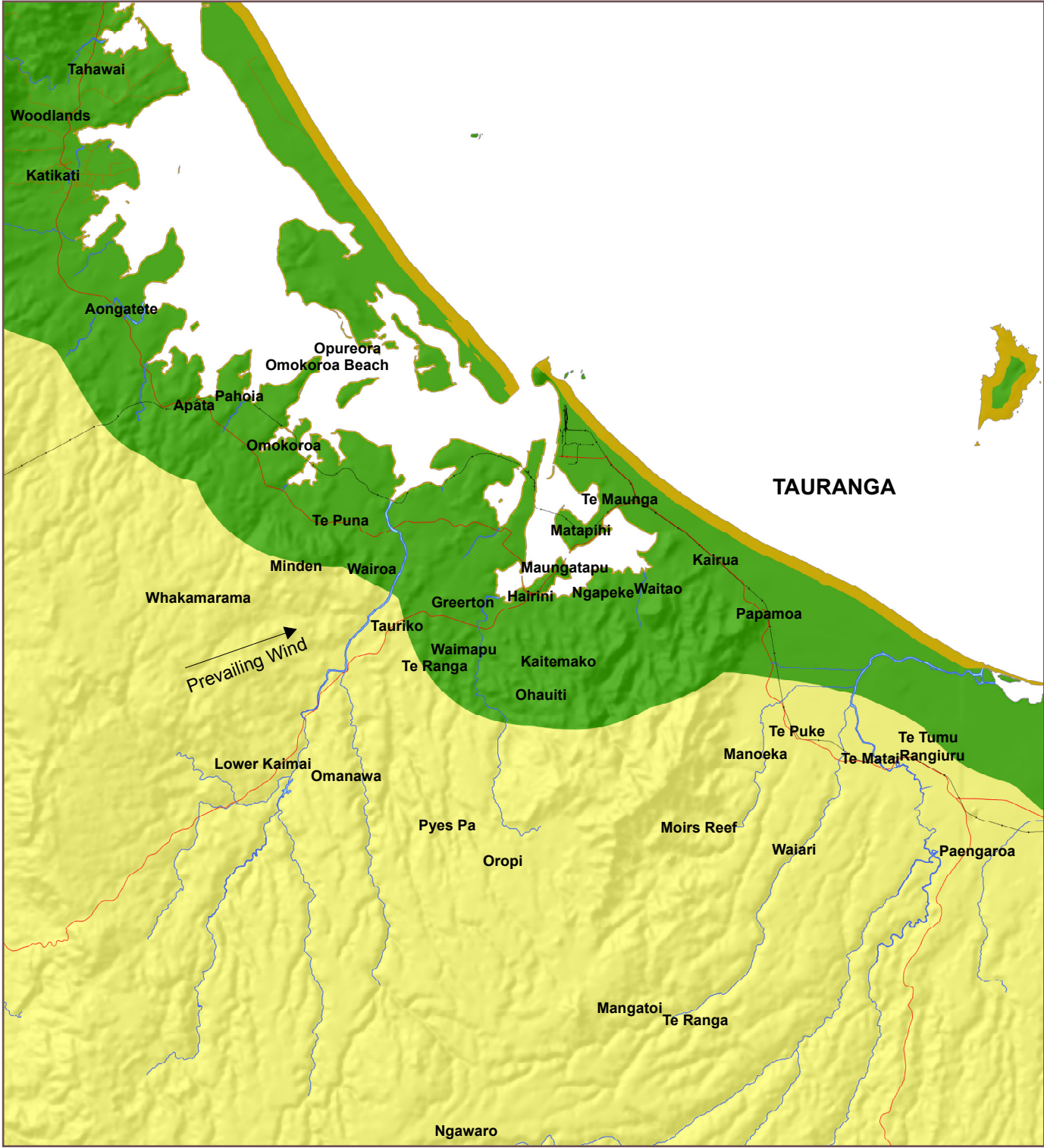
Lake Railway Highway River

Kilometres

0 5

Tauranga

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

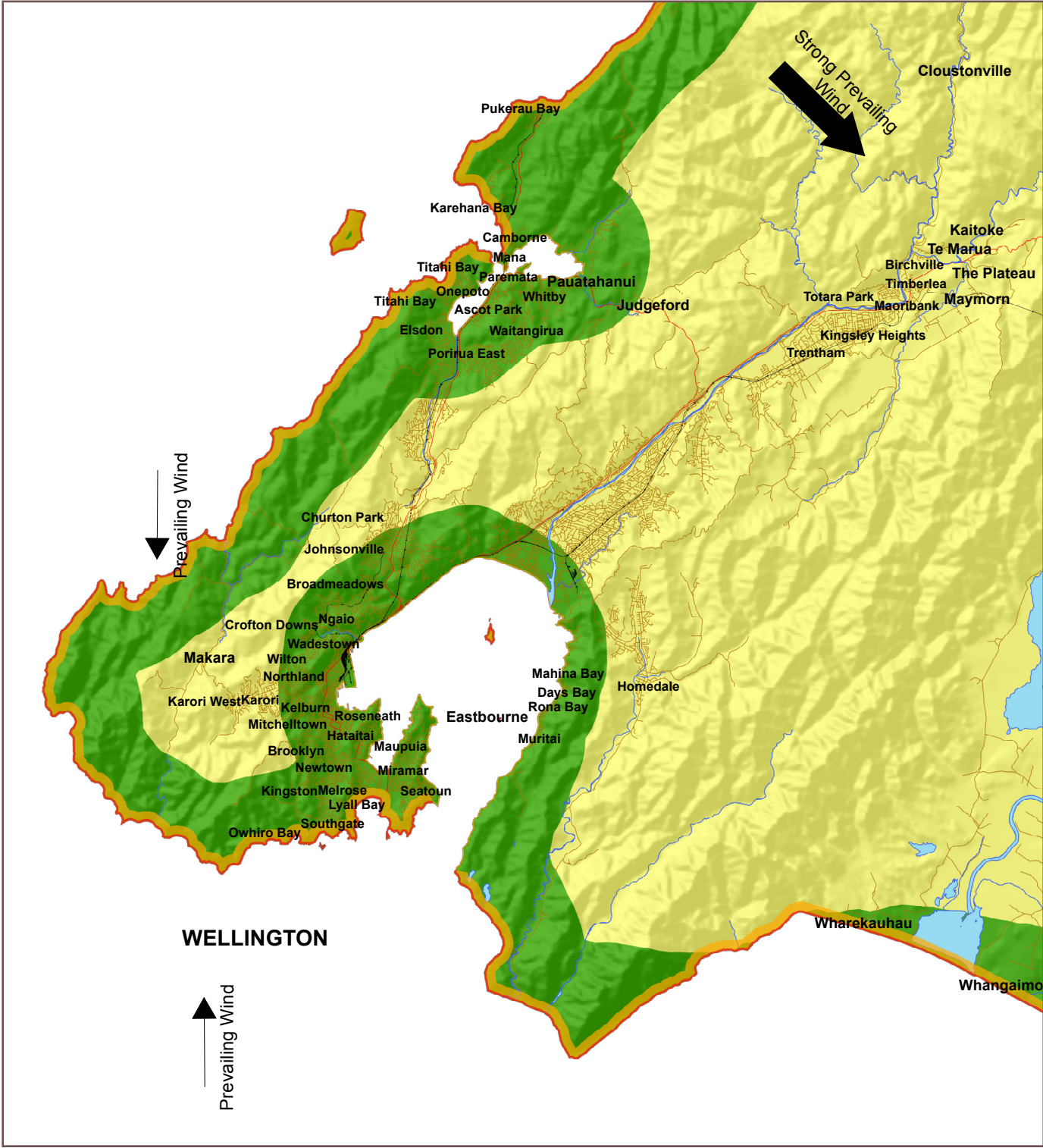
Lake Railway Highway River

Kilometres

0 5

Wellington

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

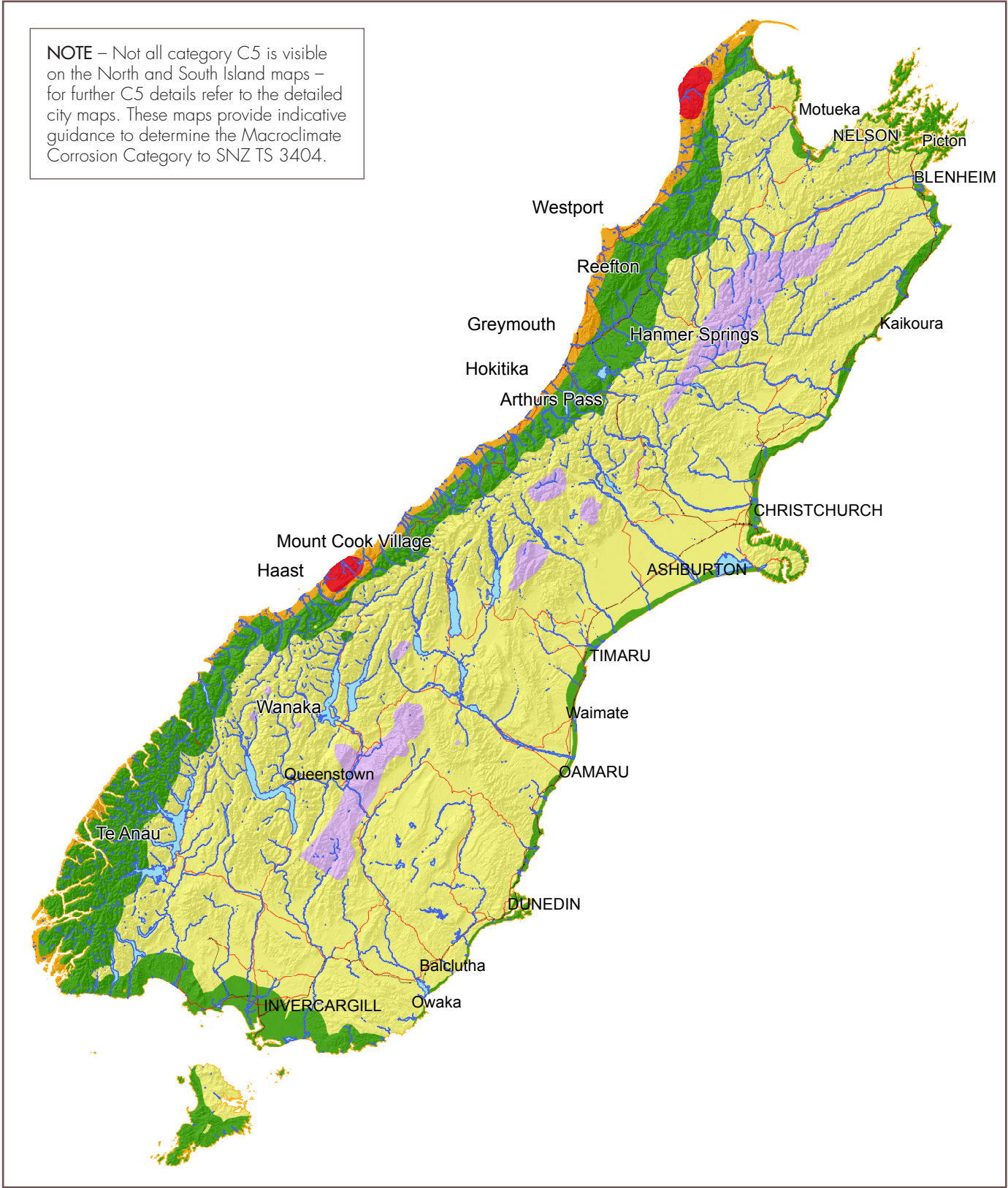
Lake Railway Highway River

Kilometres

0 5

South Island

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

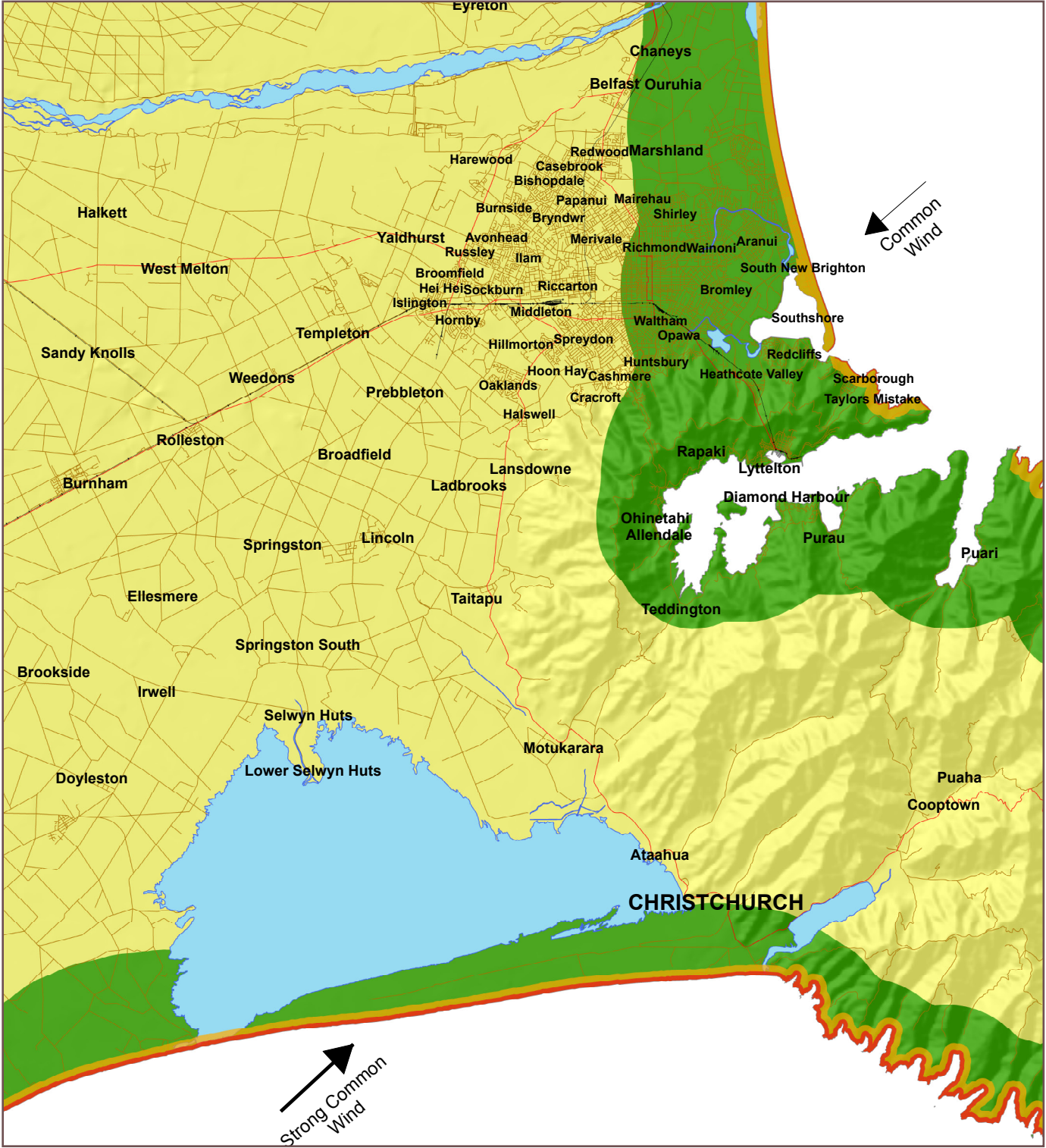
Lake Railway Highway River

Kilometres

0 50 100

Christchurch

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

Lake Railway Highway River

Kilometres

0 5

Dunedin

Macroclimate Corrosivity Zone Map



Corrosivity Category

C1 C2 C3 C4 C5

Legend

Lake Railway Highway River

Kilometres

0 5

Further Information

Below are some useful links to our suppliers and industry standards:

AAMA Specifications

AAMA
Technical Information Centre
1827 Walden Office Square, Suite 104
Schaumburg, Illinois 60173
U.S.A.
Phone (847) 303 5664
aamanet.org

AS/NZS and ASTM Standards

Standards Australia
1 The Crescent
Homebush
New South Wales 2140
Phone (02) 9746 4600
standards.org.au

Standards New Zealand

Ministry of Business Innovation & Employment
15 Stout Street
Wellington 6011
Within New Zealand (freecall): 0800 782 632
International Phone: +64 3 943 4259
standards.govt.nz

NIWA – The National Institute of Water and Atmospheric Research.

41 Market Place Viaduct Harbour
1010 Auckland
Phone 0800 746 464 (General Enquiries)
Phone +64 9 375 2050
niwa.co.nz

HERA – The Heavy Engineering Research Association

HERA House
17-19 Gladding Place
Manukau City
Auckland 2104
Phone +64 9 262 2885
hera.org.nz

Data Source of Maps:
Climate data used is based on the 30 year period 1971 – 2000.

Projection: New Zealand Map Grid
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Advice line

Our dedicated consultants can help simplify the specification process, saving you time and money by providing the right coating advice for your project. They can provide:

- Documented project specific specifications
- Written confirmation of your project's eligibility for an Alumi Shield™ or Steel Shield™ warranty
- Design, coating system and colour advice

For Australia call 13 24 99 or visit **duluxpowders.com.au**

For New Zealand call 0800 800 975 or visit **duluxpowders.co.nz**

Offices

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T (65) 6 8381 010

China

DGL International Powder Coatings
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China, PC 200333
T (86) 21 6173 8800



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