Federal Ministry
for Economic Affairs
and Energy

MITTELSTAND
GLOBAL
ENERGY SOLUTIONS
MADE IN GERMANY

Auckland's Sustainability Journey

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Auckland Council, New Zealand
30 March 2017

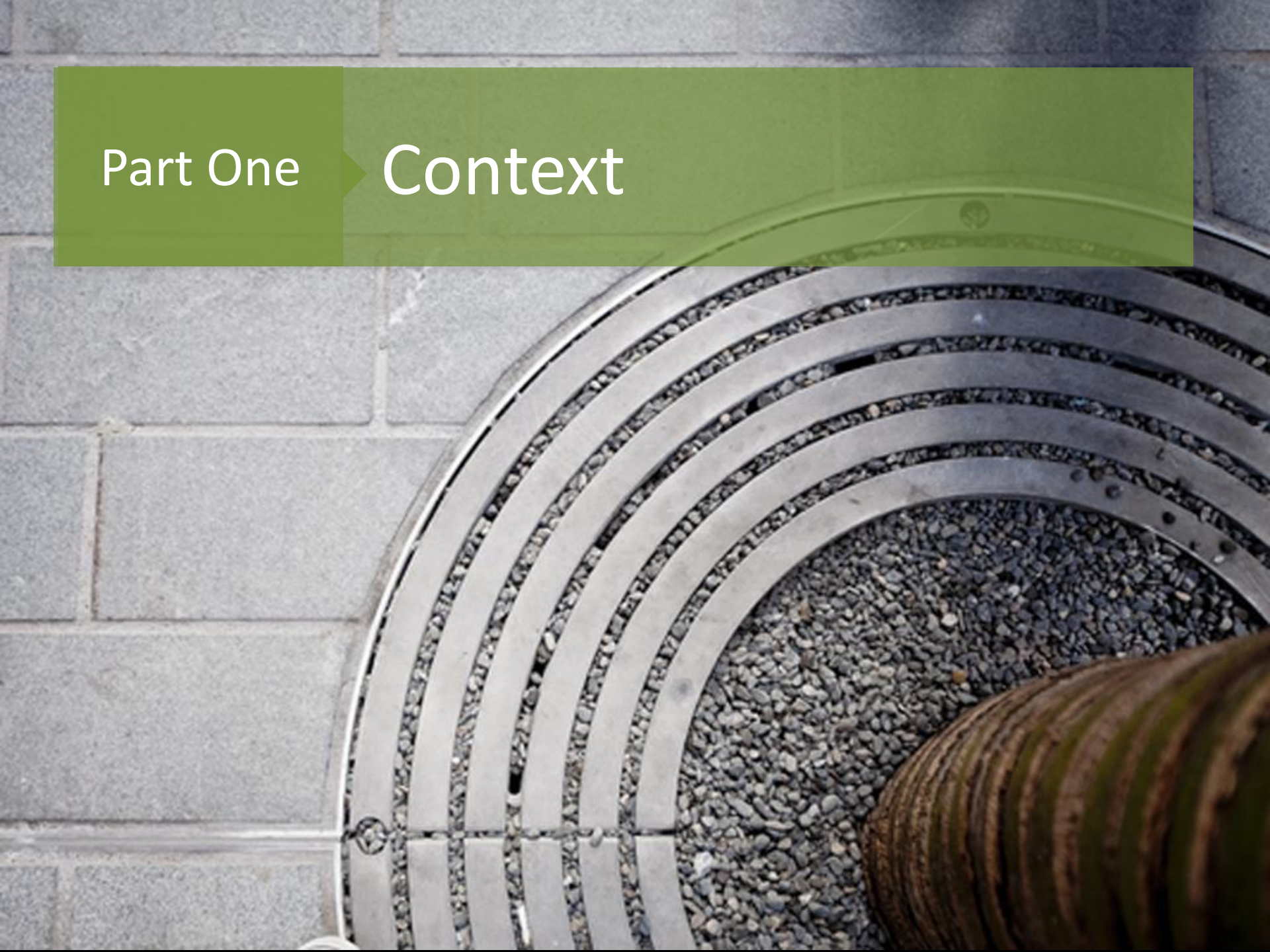
Facilitator

energie waechter

Part One:
Context

Part Two:
The Vision for Auckland

Part Three:
Challenges & Response



Part One Context

Forodwaith
Northern Waste
Forochel
Grey Mountains
Withered Heath
Angmar
Arnor
Auckland
Ettenmoors
Himling
Tol Fuin
Tol Morwen
Forlindon
Blue Mountains
Hobbiton
The Shire
Bree
Weathertop
Hollin
Erebor
Esgaroth
The Misty Mountains
Mirkwood
Harlindon
Minhiriath
Dunland
Enedwaith
Fangorn Forest
Wold
The Brown Lands
Dagorlad
East Emnet
West Emnet
White Mountains
Rohan
Anorien
Gondor
Anfalas
Ithilien
Mount Doom
Gorgoroth
Nurn
Mordor
The Sundering Seas
Middle Earth
Bay of Belfalas
Harondor
Near Harad
Umbar
Haradwaith

Context

Local View

- Amalgamation
- Urbanisation, growth and diversity
- Cost of infrastructure and service provision
- Scale in relation to national context

THE CITY AT A GLANCE

1.5 MILLION PEOPLE LIVE IN THE AUCKLAND REGION

180 DIFFERENT ETHNICITIES.

AUCKLAND'S CITY CENTRE IS THE ECONOMIC AND CULTURAL HUB OF THE REGION. EVERYTHING WE DO IN THE CITY CENTRE RECOGNISES ITS PLACE IN THE REGION AS A WHOLE.

70%
OF ALL INTERNATIONAL ARRIVALS TO NEW ZEALAND ARRIVE AT AUCKLAND INTERNATIONAL AIRPORT, 20KM FROM THE CITY CENTRE.

41%
OF ALL NEW ZEALAND TERTIARY STUDENTS STUDY IN AUCKLAND.

31%
OF NEW ZEALAND'S REGION AND 32% OF ITS EMPLOYESS.

$60b
P.A. ECONOMIC OUTPUT.

Auckland's story – who we are

37%

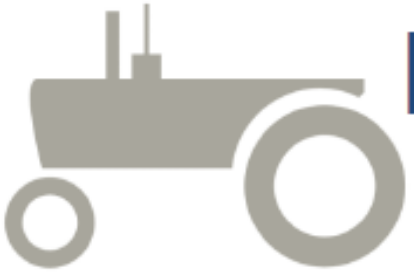
Of New Zealand's GDP and 34% of New Zealand's population

Biggest

New Zealand's biggest urban area

3rd

Most liveable city



Largest

New Zealand's largest rural area

220+

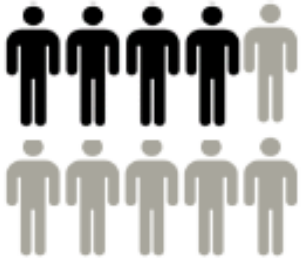
Ethnicities in Auckland and 44% of the workforce born overseas

90%

Of Aucklanders live in the urban core which is 20% of total land mass

Auckland's story - urbanisation

4



Out of every 10 Kiwis will be living in Auckland by 2043

400,000

Dwellings needed in the next 30 years

50%

Of New Zealand's growth in the last year

Seven

Years of land supply available for new dwellings before any Unitary Plan decisions

Third

Of population increase is natural (births over deaths) and two-thirds is net migration

$18.7bn

Of assets planned for next ten years - 43% for transport, 25% for water and 13% for parks and community assets

Auckland's story - growth

- Increases in Auckland's population is creating flow on impacts for council, government and other services providers
- Each week population growth would typically…

825 New residents

137 Additional seniors over 65

2.5 New doctors

472 New jobs

52 Additional students

17 or **3.5** Additional buses or trains filled

278 New dwellings required

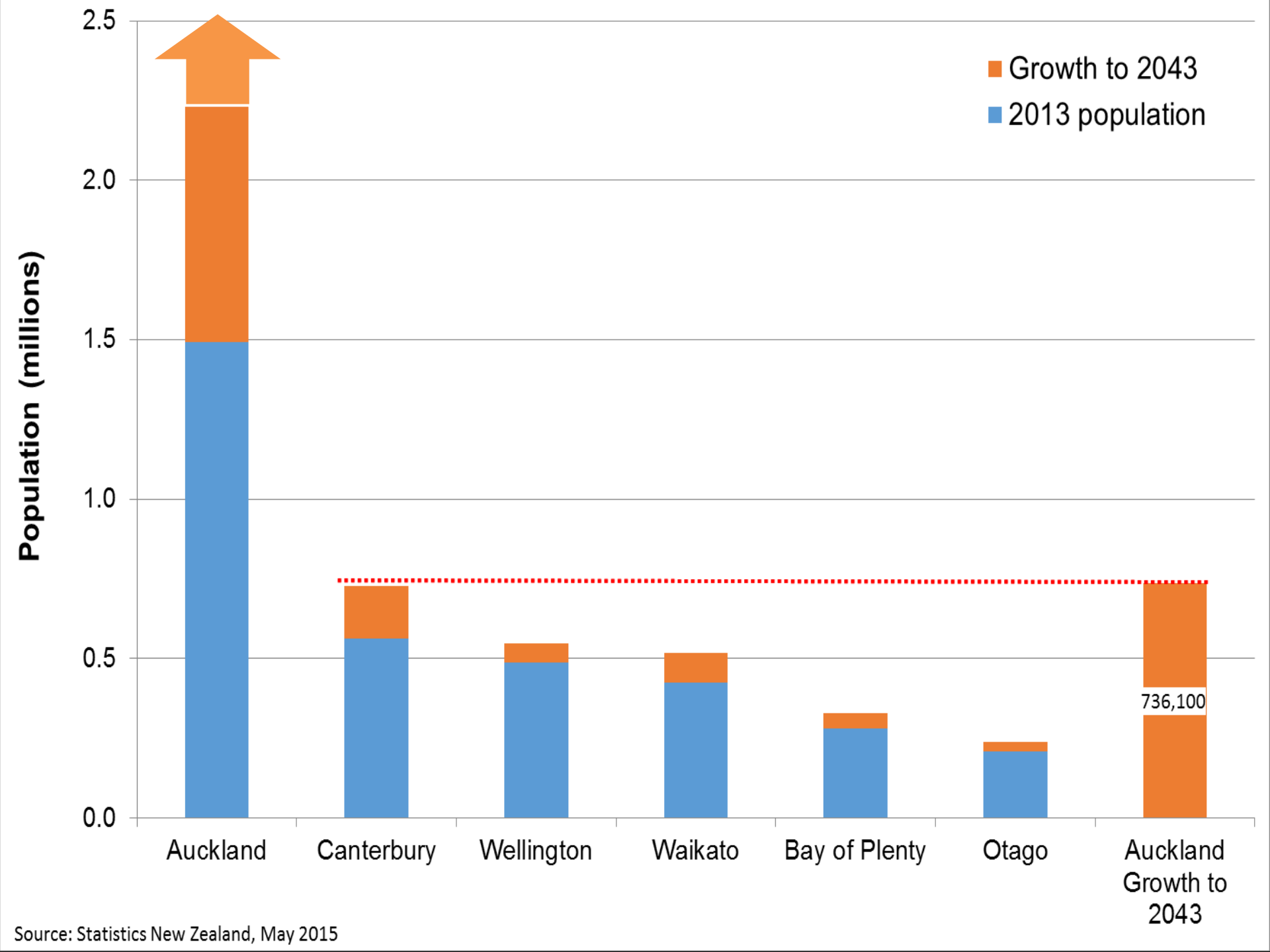
2 New teachers

825 Additional cars on our roads

39 Equivalent to thirty nine Metropolis buildings every 12 months

1 New school required every nine weeks

3 Every seven weeks filling an additional three motorway lanes in peak hours



Source: Statistics New Zealand, May 2015

Key financials for 2016/17

$1.945bn
Capital expenditure

$45.715bn
Total assets

$3.668bn
Operating expenditure

$8.767bn
Total borrowing

$1.637bn
Rates revenue

$34.057bn
Total equity

2.4%
Average annual rates increase

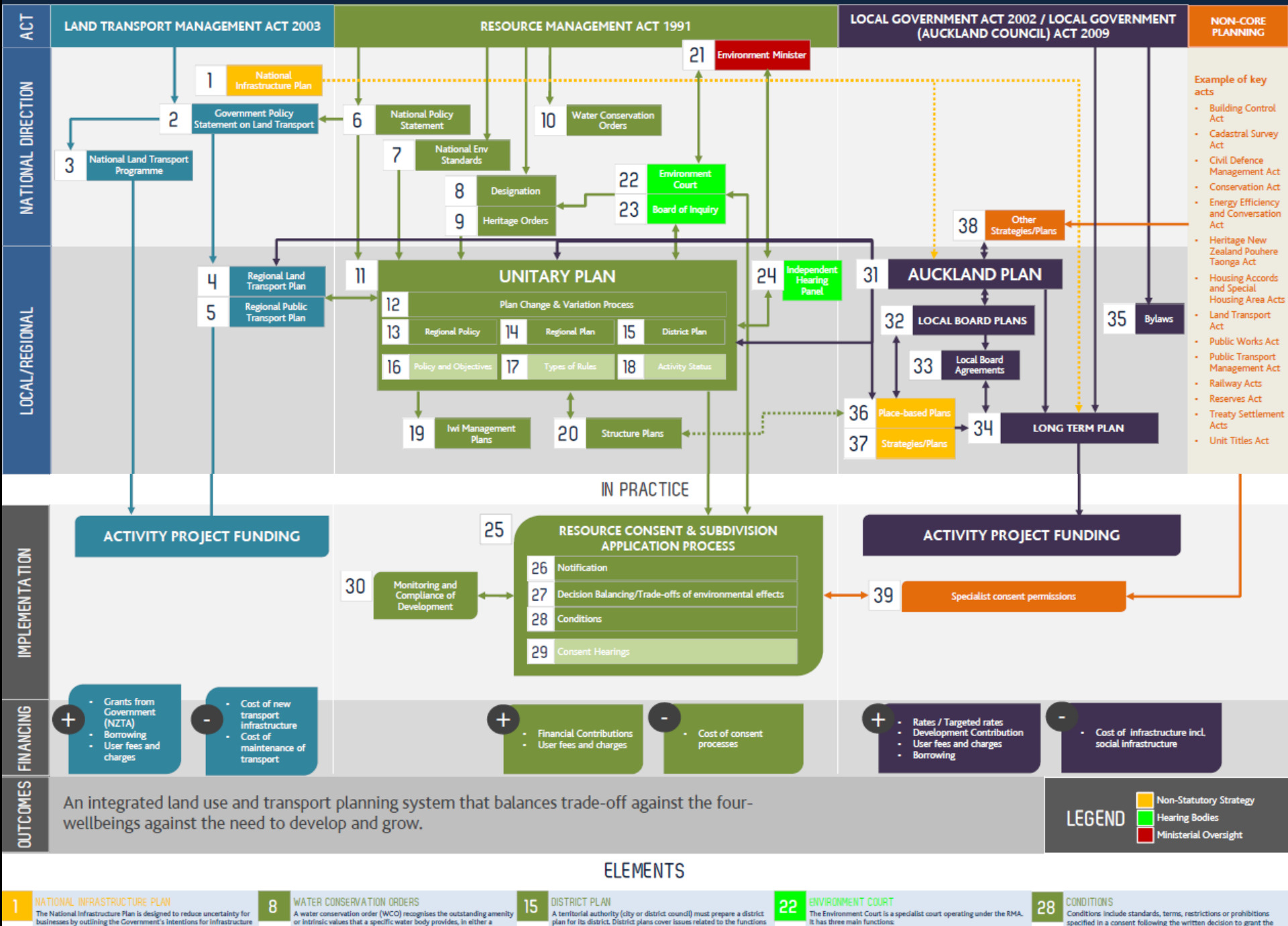
11.5%
Interest to revenue ratio

Context

National View

- National policy direction and framework
- Energy-related strategies and targets
- Paris Agreement
- 3 recent reports: OECD, Vivid, Arup/C40

AUCKLAND'S URBAN PLANNING SYSTEMS FRAMEWORK



ELEMENTS

1 NATIONAL INFRASTRUCTURE PLAN
The National Infrastructure Plan is designed to reduce uncertainty for businesses by outlining the Government's intentions for infrastructure

8 WATER CONSERVATION ORDERS
A water conservation order (WCO) recognises the outstanding amenity or intrinsic values that a specific water body provides, in either a

15 DISTRICT PLAN
A territorial authority (city or district council) must prepare a district plan for its district. District plans cover issues related to the functions

22 ENVIRONMENT COURT
The Environment Court is a specialist court operating under the RMA. It has three main functions

28 CONDITIONS
Conditions include standards, terms, restrictions or prohibitions specified in a consent following the written decision to grant the

OECD Environmental Performance Reviews

NEW ZEALAND

2017

OECD

Net zero in New Zealand

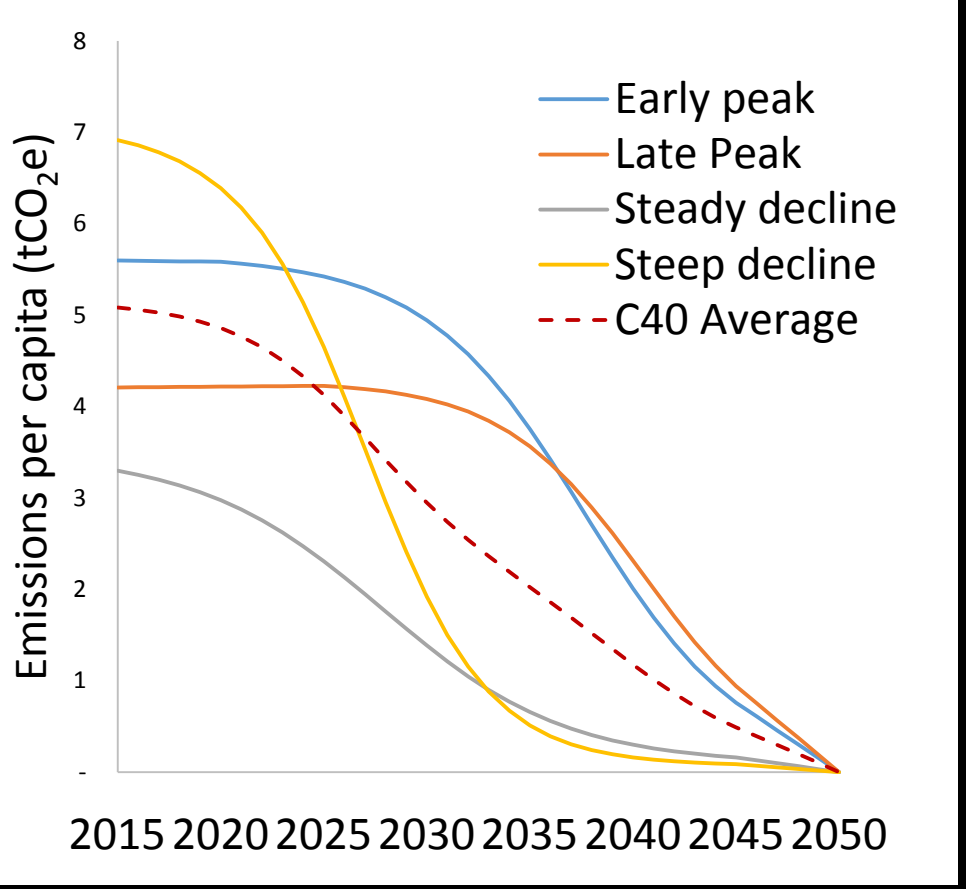
Scenarios to achieve domestic emissions neutrality in the second half of the century

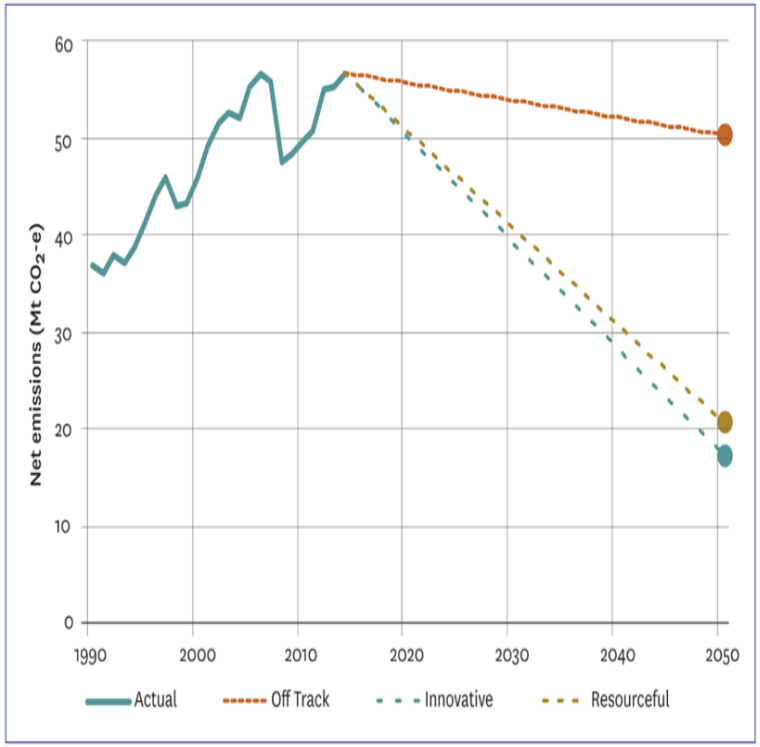
Summary report

Report prepared for GLOBE-NZ

March 2017

: vivideconomics



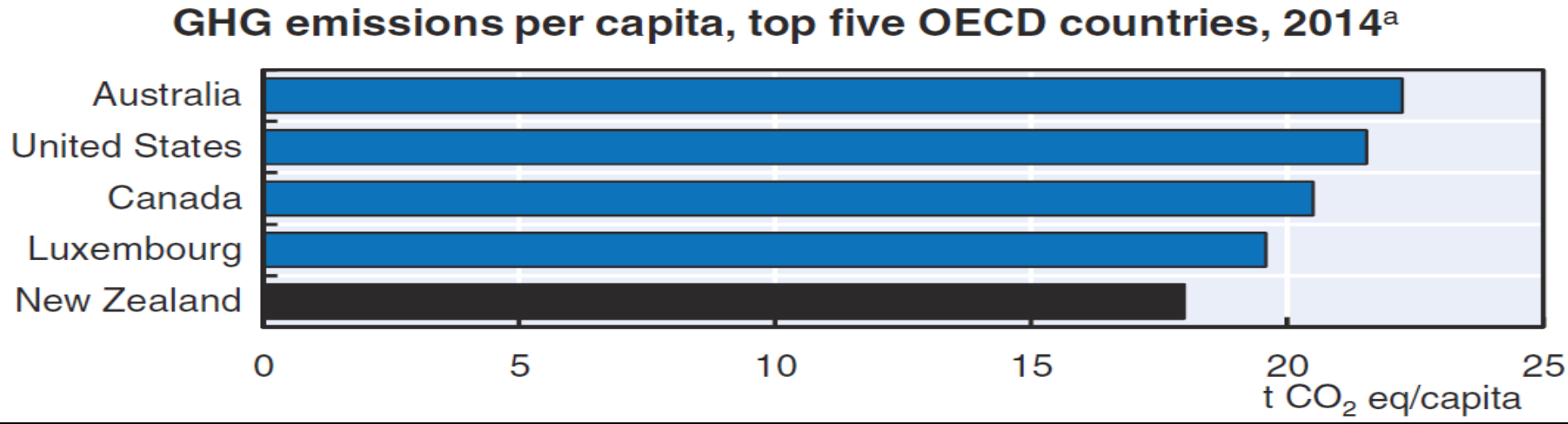


Off-Track
0.3 – 0.8 per cent per annum

Resourceful
2.8 – 3.9 per cent per annum

Innovative
3.3 – 4.3 per cent per annum

Emission reductions are reported on a net-to-net basis, compared to 2014 – the most recent data for emissions – as this represents, in the authors' view, the most transparent and easy-to-understand metric for assessing the extent of change from 2014 emissions and progress towards a net zero goal.



Part Two The Vision for Auckland

The World's Most Liveable City


Imagine

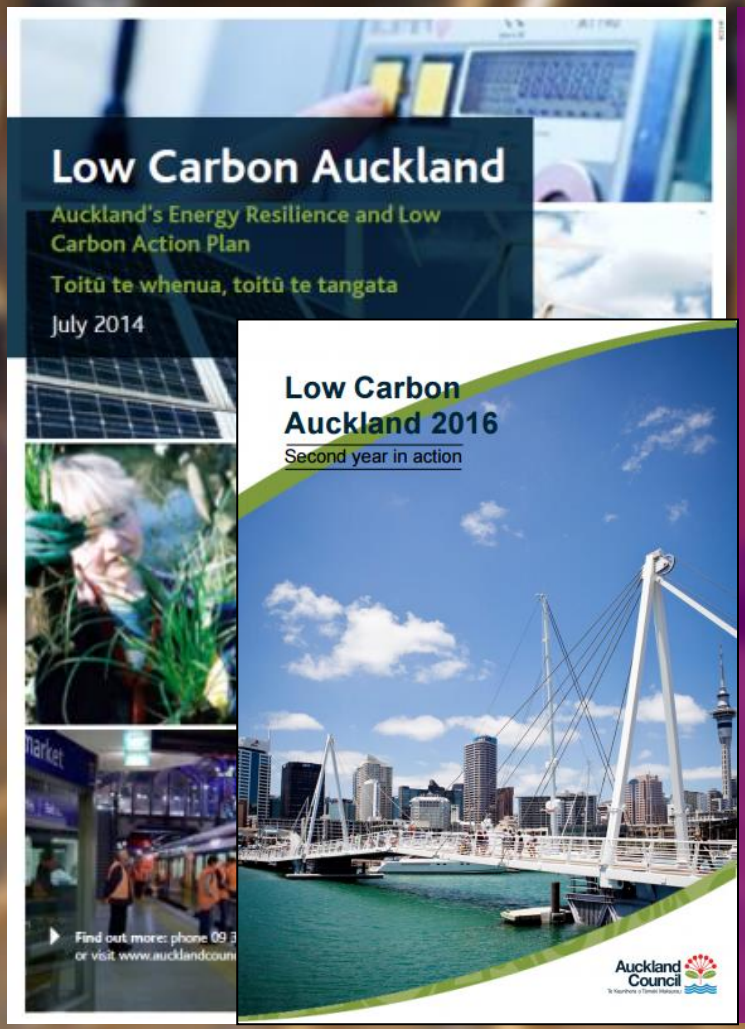

FREE ENTRY
AUCKLAND ART GALLERY TOI O TAMAKI

Part Three Challenges & Response

Challenges *Snapshot of Auckland Now: Six Key Issues*

1. Limited transport choice, affordability; high emissions (39% total) and business-as-usual emissions up 46% in 10 years
2. Energy consumption up 65% in 25 years; increasing price and vulnerability
3. Poor & aging infrastructure (e.g., housing, stormwater)
4. Over 1 tonne per person waste to landfill, ~50% organics
5. Impacts from historic sprawl development pattern; now 50% growth next 25 years
6. High sea level rise exposure and increasing flood risks

Response *Low Carbon Action Plan & 6 Transformations*



- Launched June 2014
- 30 year path & 10 year action plan
- 40% emissions reduction by 2040
- 6 Transformation Areas:
    1. Transport
    2. Energy generation/use
    3. Built environment
    4. Waste
    5. Natural carbon assets
    6. Climate resilience (under development)

www.aucklandcouncil.govt.nz/lowcarbon

AUCKLAND NOW

Transport contribution to Auckland's GHG emissions.

Highly dependent on our vehicles and fossil fuels.

Low but increasing use of public transport.

Small but increasing proportion of hybrid-electric vehicles.

Transforming the way we travel

Transformation

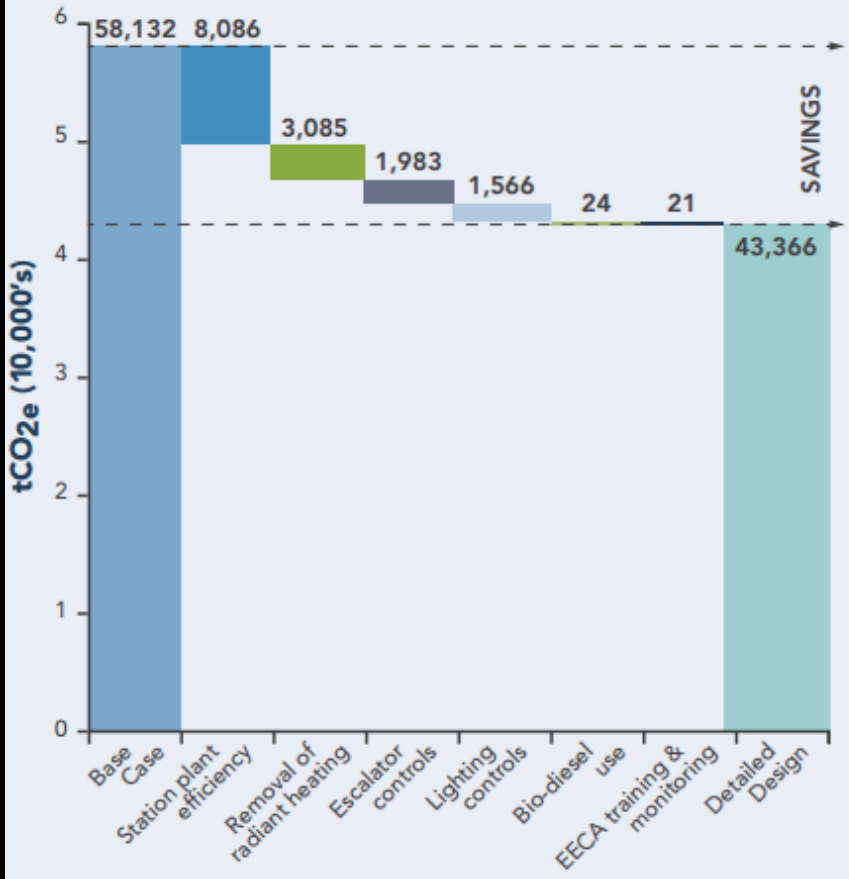
#1

- Reduce demand for travel
- Increase public transport, active modes
- Improve efficiency to reduce fuel consumption
- Move away from fossil fuel use


BUS
LANE


1
Metro Karangahape

GREENHOUSE GAS SAVINGS C1 & C2 OPERATIONS OVER 100 YEARS

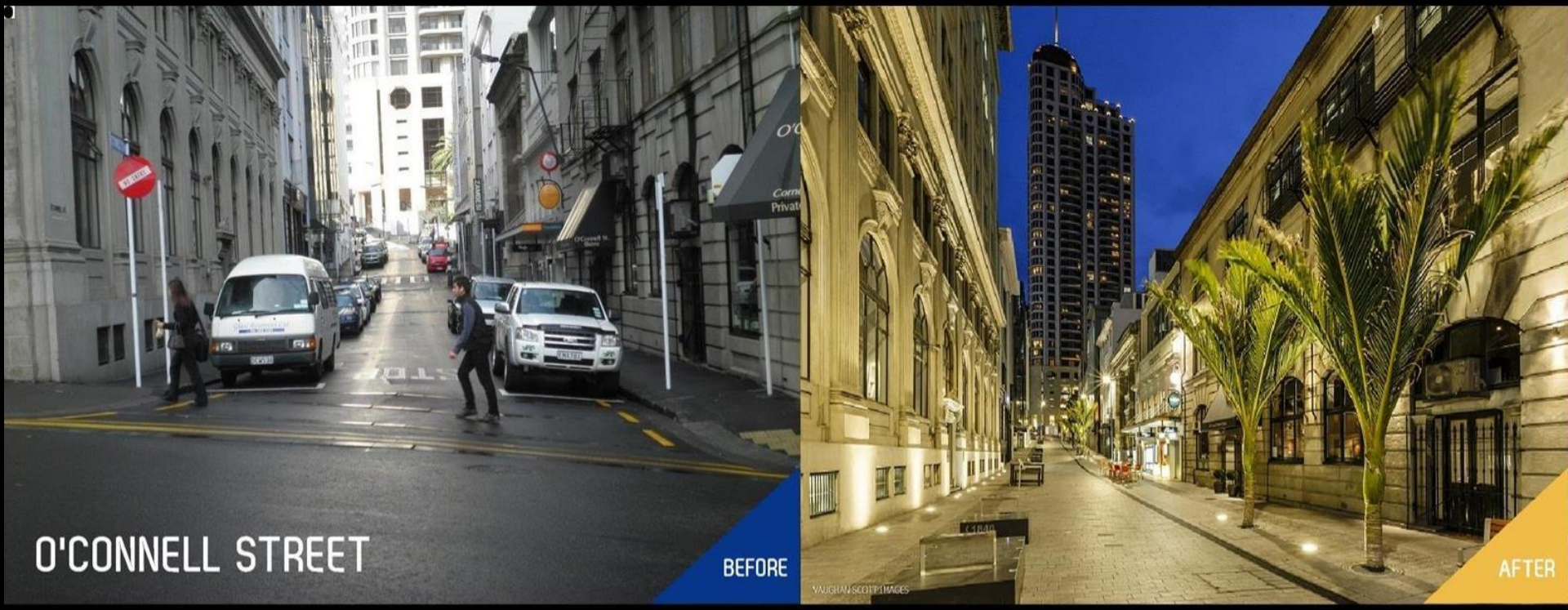


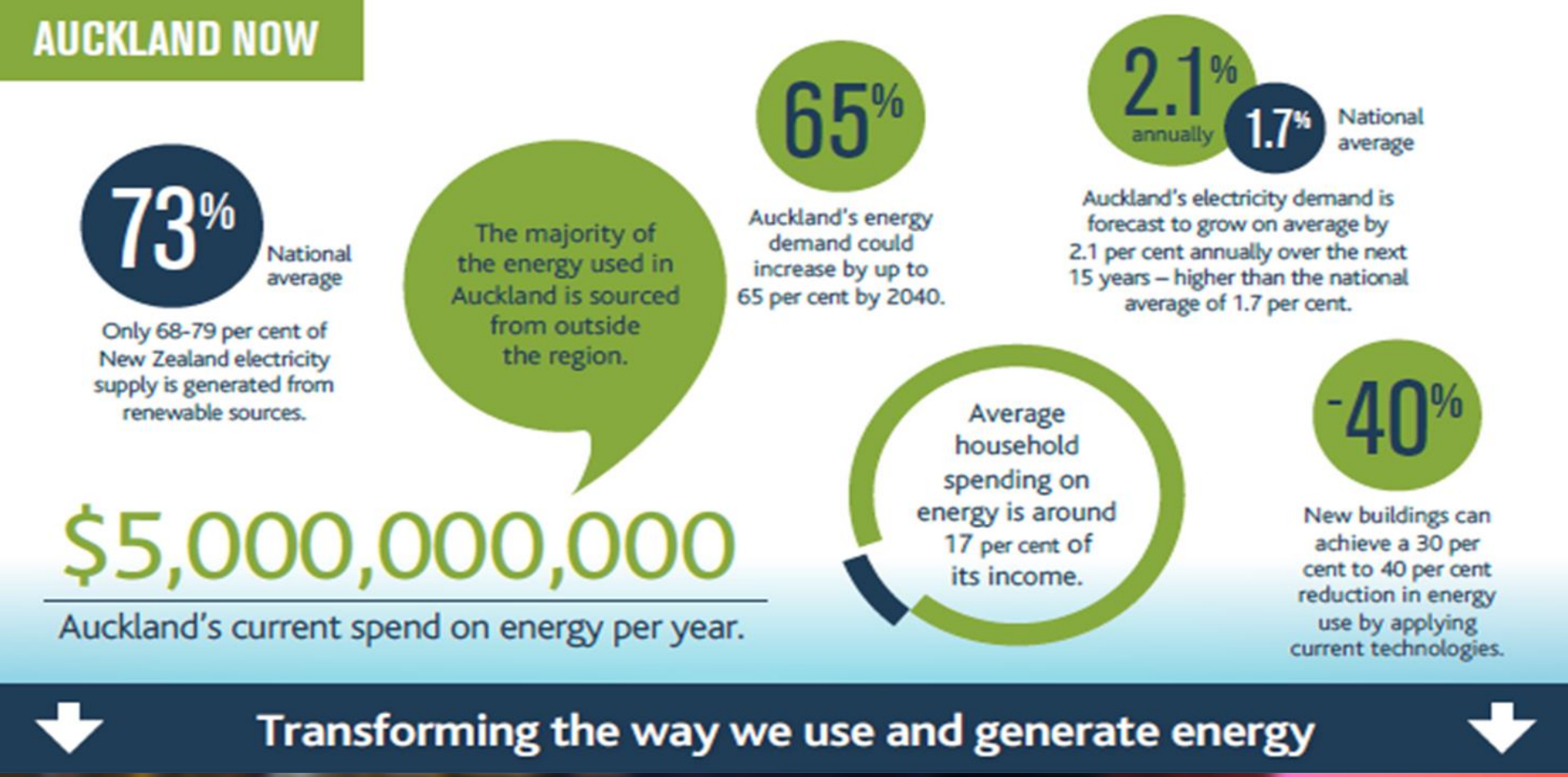

ELLIOTT STREET
BEFORE


10%
INCREASE IN
FOOT TRAFFIC
ELLIOTT STREET
AFTER


FORT STREET
BEFORE


TAB
34%
LESS CARS,
AND NOW AT
SLOWER SPEEDS
140%
INCREASE IN
FOOT TRAFFIC
FORT STREET
AFTER


O'CONNELL STREET
BEFORE
AFTER
VAUGHAN SCOTT IMAGES



Transforming the way we use and generate energy

Transformation

#2

- Manage energy demand
- Develop low carbon energy options

AUCKLAND NOW

Our housing is dispersed and low-density, which is relatively inefficient, resource hungry and dependent on fossil fuels.

Buildings and facilities consume the vast majority of electricity and natural gas in Auckland.

Our homes are frequently damp, cold and poorly insulated, and so expensive to heat.

13%

Lowest income households pay the greatest proportion of their income – almost 13 per cent – on household energy.

Of Auckland's schools, office and industrial buildings,

56 projects

have gained a 4 Green Star Design or Built rating or above.

Green and open spaces traditionally valued for conservation and recreation, also help improve community resilience to climate change.

Up to **400,000** new dwellings will need to be built by 2040 to house our growing population.

Transforming our built environment and green infrastructure

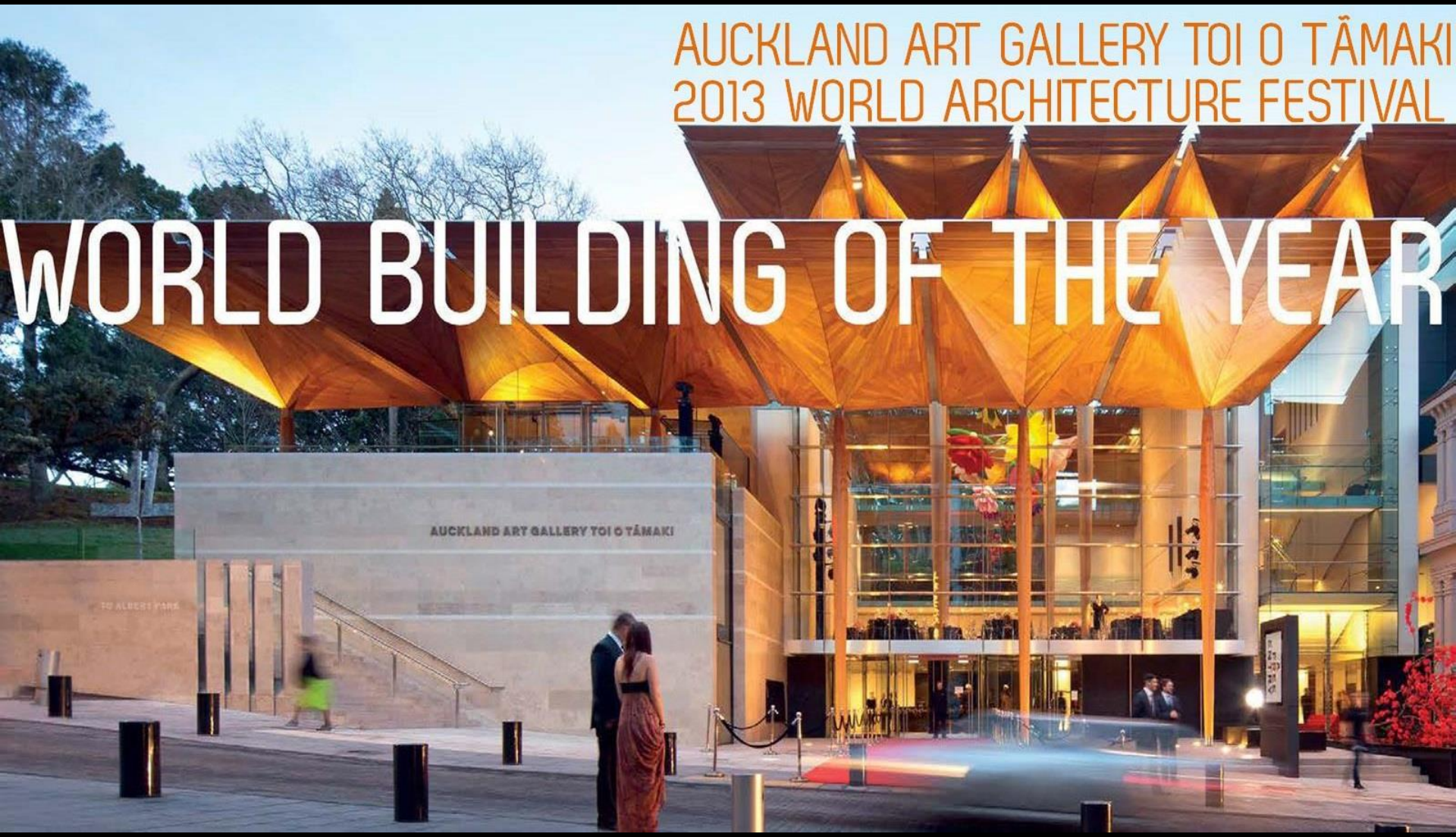
Transformation **#3**

- Demonstrate leadership and create quality exemplars
- Establish sustainable design standards and stimulate demand for efficient, healthy, comfortable buildings

TE ORO MUSIC & ARTS CENTRE

AUCKLAND ART GALLERY TOI O TĀMAKI
2013 WORLD ARCHITECTURE FESTIVAL

WORLD BUILDING OF THE YEAR



TE KAITAKA 'THE CLOAK'

AUCKLAND INTERNATIONAL AIRPORT
WINNER – DISPLAY BUILDINGS CATEGORY, 2014 WORLD ARCHITECTURE FESTIVAL

IMAGES - SIMON WILSON

PRIVATE DEVELOPMENT

BRITOMART PRECINCT.

PUBLIC PARKS.

SILO PARK.

WYNYARD QUARTER

WYNYARD QUARTER

Energy

Savings of 4.600GWh/year for
7 new buildings = reduction in
686.78 tonnes CO_2eq
Minimum 70% of roof space for solar

Transport

Sustainable transport is
tracking at 43-48%

Wynyard Quarter's key achievements

45% GHG emissions reduction by 2030 (compared to BaU)

Waste

Construction waste, recycled & reused
Park Hyatt 95%
Auckland Theatre Co 92%
132 Halsey 95.7%

Built Environment

Wynyard Central
23% 7-Homestar and 77% 8-Homestar
132 Halsey
33% 7-Homestar and 67% 8-Homestar

BEAUTIFUL. DYNAMIC. SUSTAINABLE.

Wynyard Quarter Smart aims to stimulate creativity and innovative partnerships that result in dynamic, beautiful and sustainable communities. Discover how we are tracking our progress towards a sustainable tomorrow. As Wynyard Quarter continues to grow and develop, so will the richness of data on this website.

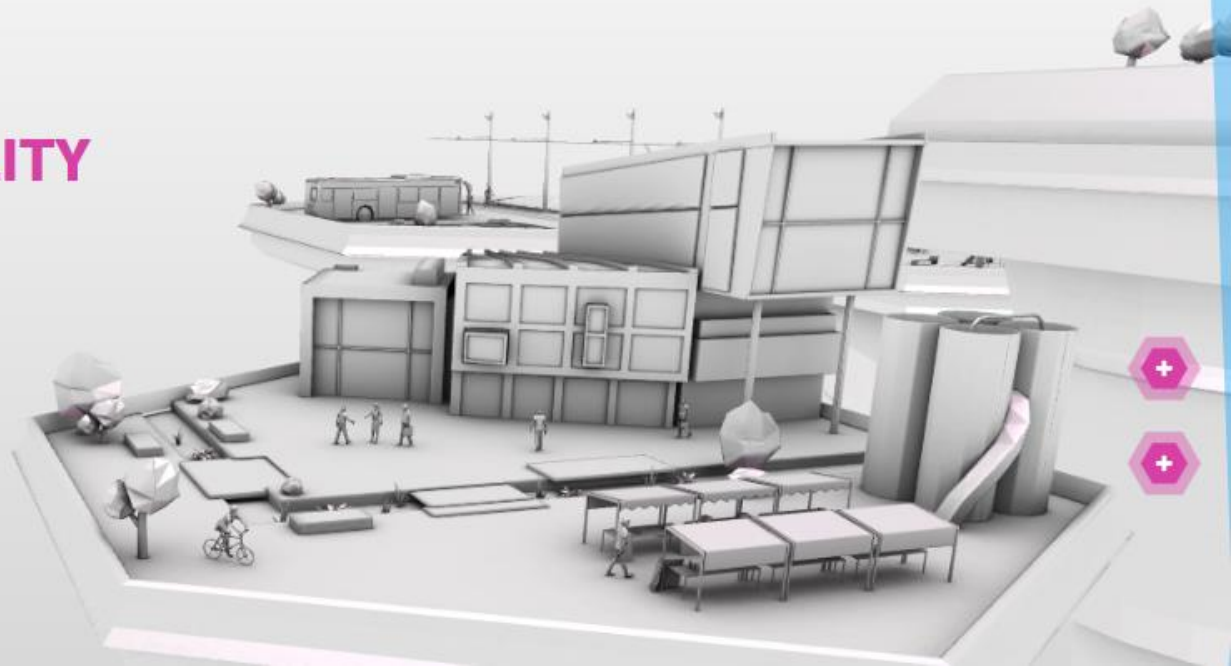
Explore and discover Wynyard Quarter Smart »

PARTNERS

ECONOMIC VITALITY

A successful waterfront needs to have a strong, distinct and diverse employment base that adds to the city and region's economic vitality.

Historically, the waterfront has been a major driver of Auckland's economic growth and this role is expected to continue into the future, with a mix of business services, retail, food and beverage, marine and fishing, cruise industry, tourism and event, and construction contributing an estimated $4.29 billion to Auckland's economy.



AUCKLAND NOW

1.174 million tonnes

of waste went to landfill in 2010. This represents approximately 0.8 tonnes of waste for every person in Auckland.

Food and garden waste currently make up around 50 per cent of an average household rubbish.

Around 65 per cent of kerbside refuse collected from households could be recovered, re-used or recycled.

From 2015 there will be incentives, education, rules and pricing for households to help reduce waste volumes generated.

An average Auckland rubbish bin (by weight) contains:

Transforming to Zero Waste

Transformation #4

- Increase waste minimisation
- Grow product design and responsibility


NEW ZEALAND
apples


Corona
VOLTA


Habitat for Humanity
ReStore
Habitat for Humanity
Auckland
ReStore
New or used furniture, clothing, antiques, collectables, building materials, household goods, appliances and more...
www.habitat.org.nz

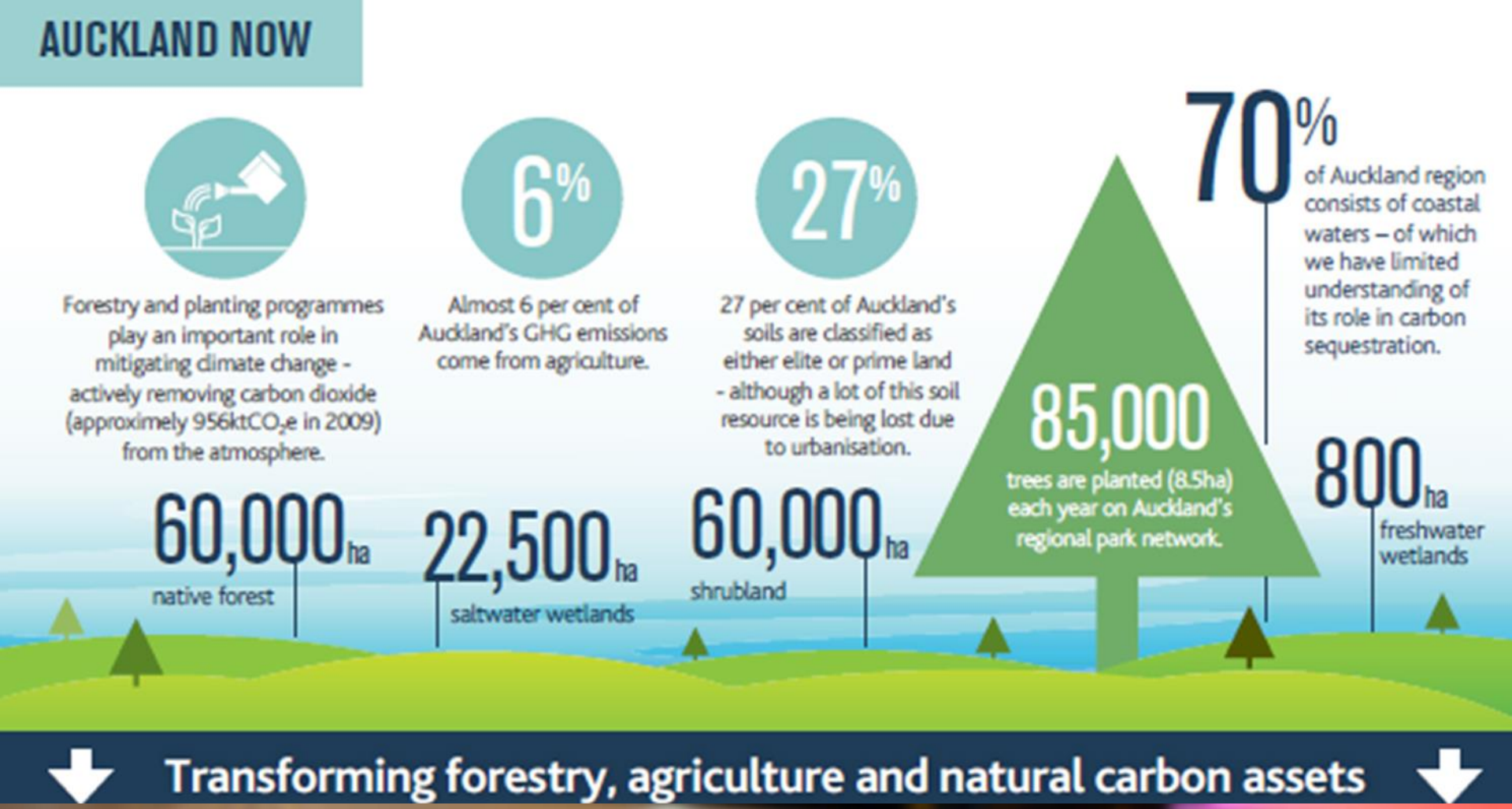

TIME TO THRIVE
TTT
SOUTH AUCKLAND NZ
TO STAY ALIVE


RESOURCE RESCUE

Students from The Southern Initiative's Māori and Pasifika Trades Training

Circular Economy Model Office Guide

The what, why and how of designing out waste in office refurbishments and builds



Transforming forestry, agriculture and natural carbon assets

Transformation

#5

- Grow urban and regional forests
- Turn forest and organic residue into energy
- Enhance local food production
- Explore marine sequestration potential


Ooooby
OUT OF OUR OWN BACKYARDS

AUCKLAND NOW

40-60 more 'hot' days by 2090

High sea level rise exposure to public and private assets

Significant storm water infrastructure needs and increasing flood risks

Disparate plans and management

30,000 km coast and waterways

Building Climate Resilience

Transformation #6

- Assess risks and vulnerabilities
- Embed in ongoing programmes and decision-making
- Embed in key policies and strategies
- Develop climate resilience strategy
- Monitor and evaluate

Predicted Coastal Inundation for Mission Bay and Kohimarama

Scale

0 0.075 0.15 0.3 0.45 0.6 Miles

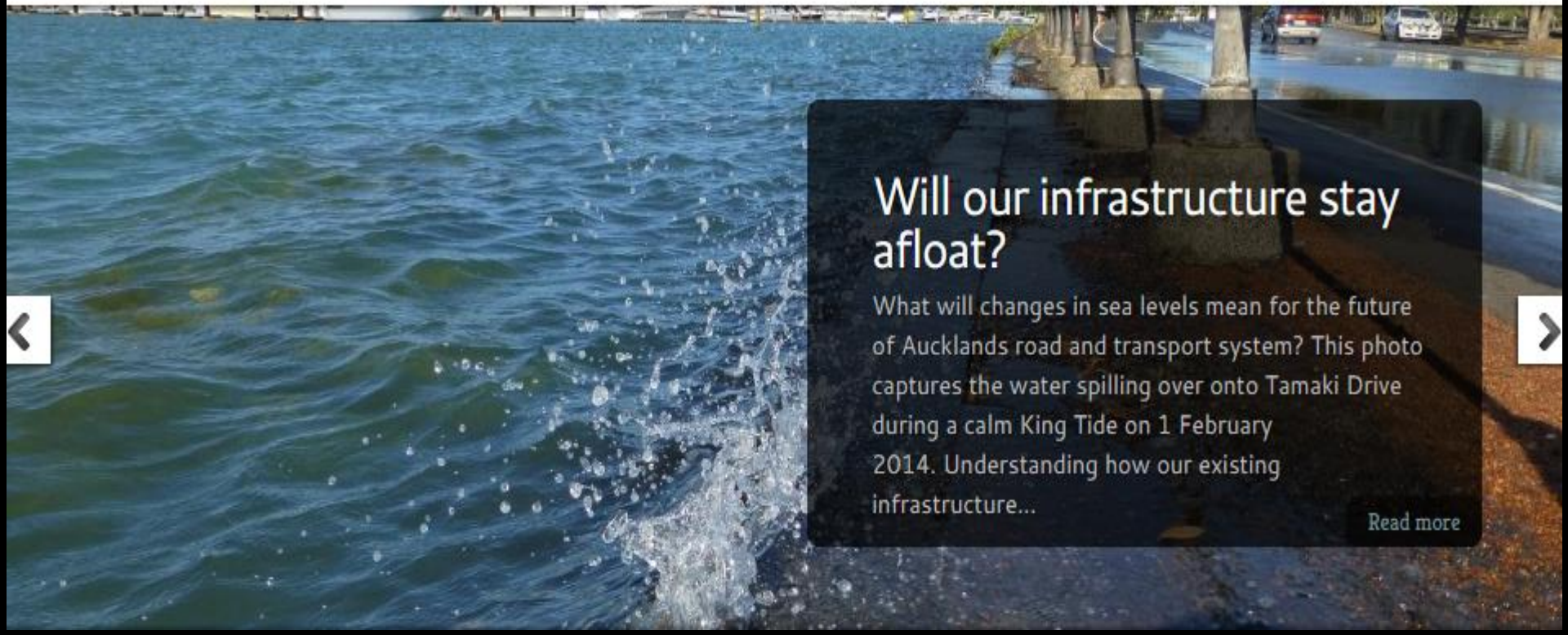
Search this site...

KING TIDES Auckland

Snap the coast See the future

Next King Tide
Wednesday 29th March

Home | Experts » | About » | Participate » | Next King Tide | See photos » | Partners » | Contact us | Blog



Will our infrastructure stay afloat?

What will changes in sea levels mean for the future of Aucklands road and transport system? This photo captures the water spilling over onto Tamaki Drive during a calm King Tide on 1 February 2014. Understanding how our existing infrastructure...

Read more

Brief Summary

1. Auckland is experiencing unpredicted **growth** as a global city – and with that comes incredible opportunity
2. Drivers for sustainability come less from regulation and more from private/public sector **leadership,** the **value** proposition of solving big challenges and knowledge of wider **co-benefits**
3. Auckland and New Zealand are **innovating** and piloting tomorrow's multifaceted sustainability solutions…
4. …But while NZ has previously **led the world** in many ways – we're now **fast followers** who need to get our mojo back
5. The time for **cross-sector collaboration** is now

Federal Ministry
for Economic Affairs
and Energy

MITTELSTAND
GLOBAL
ENERGY SOLUTIONS
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Thank you for your attention!

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