AUCKLAND, CONNECTED

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AECOM Global Cities Institute

AUCKLAND, CONNECTED

Foreword
Joe Brown
Chief Innovation Officer
AECOM

Better connected cities are dynamic. They act in tune with both internal and external factors, physical infrastructure and the civic mindset. Better connected cities respond to urban challenges that make sense in our increasingly interconnected world. Looking from the outside, connected cities are plugged in to the global economy, they set trends and push boundaries; from within, they are accessible and easy to get around, work well and are vibrant. We believe that Auckland, better connected, would be the world's most liveable city.

How to get there? Auckland is already in a fantastic position. The city has an unrivalled natural setting, enjoys the advantages of New Zealand's high levels of development, and has a strong and stable multicultural social fabric.

Auckland can build on these strengths to become not just an ever more liveable city, but to become a global city. A city that is relevant on an international stage.

To get to the finish line, there is no one-size-fits-all answer, but one thing is for sure – it will require joined-up thinking. This is the kind of thinking we advocate at AECOM, and it is why we created our Global Cities Institute.

Auckland, Connected is deeply informed by this mindset. Auckland cannot look at each of its urban problems in isolation. Transport, for example, needs a designer's eye. The economy benefits from a guiding social mission. Buildings are just as important as the spaces between them. A beautiful waterfront needs an economic engine to be successful. The pieces are all there - now it's time for *Auckland, Connected.*

Foreword
Dean Kimpton
Managing Director
AECOM New Zealand

Auckland is a great city. It is culturally diverse and has a wonderful natural environment. To maintain relevance in a dynamic and increasingly global world, these attributes are not enough – we need to transform.

To that end, Council has developed a bold vision for Auckland. That by 2040 we will be "the world's most liveable city" and in doing so secure our place on liveability indexes.

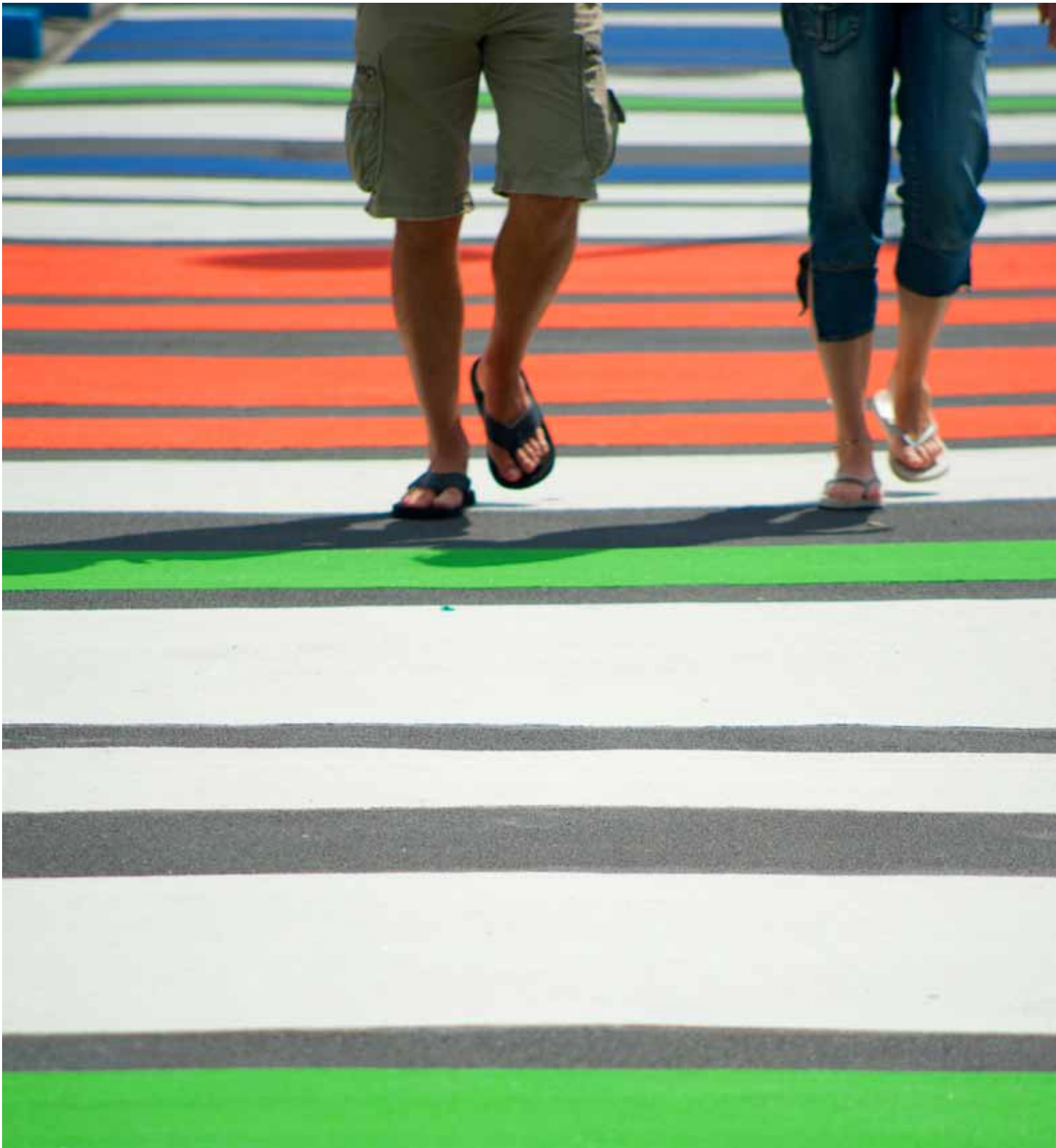
This vision captured the attention of the AECOM Global Cities Institute. The Institute's focus is addressing issues which challenge rapidly growing global cities. To look at Auckland in this context we brought together a range of talented people from within the Institute, from across New Zealand and the rest of the world.

The result, presented in this book, is a number of interconnected themes and recommendations written by specialists passionate about Auckland's future. They have concluded that Auckland could be the world's most liveable city.

To achieve this requires focus and persistence, commitment and leadership, the boldness of character necessary to challenge the status quo, make the hard decisions and drive effective change. We will get there, but only if we work together as a community inclusive of its residents, public and private sectors.

I began by referring to Auckland's cultural diversity and natural environment. These qualities, plus our heritage and hospitality, define us and must be protected. However, there are challenges we need to face, including the shift to a high-value economy with matching infrastructure and funding priorities. When these challenges are resolved Auckland will be a resilient city which continues to protect its environment, diversity and culture.

Read *Auckland, Connected.* Enjoy it. But most of all let it stimulate your own thinking and contribution to Auckland transforming into the world's most liveable city. If you do so then we will live up to our responsibilities today, that is, to provide for future generations – *Auckland, Connected.*



AUCKLAND, BETTER CONNECTED WOULD BE THE WORLD'S MOST LIVEABLE CITY.

AECOM Global Cities Institute


More bus stops:
D11, D16, D17,
D18, D19
CÁFE
HANOI

Introduction

We are at a crossroads. What will it be like to live in Auckland in 2040 when the population has grown to 2.4 million? How will we stay relevant in an increasingly competitive global economy? We have a choice, continuing on as we are today or radically transforming our city. Which way, Auckland?

Auckland Council's vision is that Auckland will be the world's most liveable city by 2040. It has consistently ranked in the top ten cities globally, so to set a goal of being consistently Number One is a courageous and aspirational vision. Now that Auckland has reorganised its seven local government authorities into one new entity, Auckland Council, creating the world's most liveable city is achievable.

Increasingly we will find the solutions to our shared global challenges – from climate change to infrastructure development – in how our cities and regions work. Auckland Council is addressing these issues in the Auckland Plan, its first Spatial Plan. It is a strategic document focusing on the long-term development of the city and region. It will help guide the location and timing of transport, housing, energy, water and other key infrastructure investments and services.

Achieving the vision will take commitment and focus from all who live and work in Auckland. It will take discipline to change the ways in which we live and move around the city and how we plan and fund the critical infrastructure. It will take imagination to benefit from the new ideas that come from innovation and from the clustering of industries to build economies of scale.

The AECOM Global Cities Institute was created to understand the most pressing issues facing a city or region and how to address them. The Institute draws on AECOM's fully integrated planning, design and management capabilities to make cities and regions better. For this study the Global Cities Institute has worked closely with Auckland Council, the New Zealand Institute, the University of Auckland and staff from the Mayor's office of Auckland Council.

The result is a fresh look at Council's vision for the city.

In July 2011 we brought together specialists from the Global Cities Institute, the New Zealand Institute and Council. From that forum four key focus areas were identified for 2040: liveability, urban form, economic growth and transportation. To align *Auckland, Connected* with the Auckland Plan we have taken 2040 as our planning horizon and developed our future scenarios around that date.

This book documents the exchange of ideas and identification of key issues and opportunities from across the various workstreams and reflects the feedback from specialist reviewers. We have titled this book *Auckland, Connected* because it signifies that, at the heart of a transformed Auckland, is a city interconnected, with its economy, society and the physical and natural environment.

Society and the environment are interconnected and inseparable. For Auckland to be the world's most liveable city the built environment must be right, and so must the harbours and waterways in which we recreate. Our view is that much has been achieved recently in addressing the "three waters" (water, wastewater and stormwater) issues and more is planned to safeguard water supplies and receiving waters. The pressing issues for Auckland are the economy, transport and urban form, and they are the focus of our work.

The findings in this book support the Auckland Plan. Our intention is to advance strategic thinking across critical issues which will facilitate informed decision making by all who are charged with, or have an interest in, making Auckland the world's most liveable city.

Auckland's opportunity is now. The foundation of One Mayor, One Council, One Vision is in place and the framework of One Plan provides direction. The challenge is to seize this opportunity and work together to create a sustainable and connected future for Auckland.

Welcome to *Auckland, Connected*.

Case studies

Case studies throughout the book offer insights and learnings that can inform Auckland's future growth and development.


ZAMBESI

THE WORLD'S MOST LIVEABLE CITY?

Auckland's time is now. Recent government reforms provide a unique opportunity to make the transformational change required to become "the world's most liveable city".

Auckland starts from a strong base with its stunning natural environment, access to a broad range of activities and recreational pursuits, rich cultural diversity and safe neighbourhoods with sound education and health systems. It consistently rates in the world's top ten most liveable cities, with some evaluations listing it as high as third[1]. This is a great platform on which to build, but alone it is not enough.

As the world becomes more urbanised and cities compete at a global scale, they must be smart if they are to sustain economic and cultural prosperity. Natural beauty by itself is not enough to create the world's most liveable city. Auckland must also retain and attract the talent, resources and ideas necessary to achieve the transformation. Yet Auckland is competing with other ambitious cities, all seeking to create opportunities for growth and economic wealth.

1 Economist (2011) World's Most Liveable Cities Index and Mercer (2010) Quality of Living Survey

Auckland is determined not to be slow out of the blocks and in the last two years has already taken the first steps towards transformational change:

Single city governance. The creation of Auckland Council as a single entity allows Aucklanders to unite under one governance and leadership structure, and to make the changes that will underpin the city's future.

One vision. Liveable cities require inspirational leadership and a clear vision. Auckland has the leaders and attributes to achieve its ambitions. Auckland seeks to be far more than just another pleasant place to live.

One Auckland Plan. The Auckland Plan provides a unified strategy and a fully-integrated blueprint for the city. Council must ensure the Plan is inspirational and achievable, with a prime objective being to stimulate private sector investment.

The Opportunity. The move towards transformational change is dependent on our timing and ability to act as one city through the identification and realisation of what is important to ensure our future success.

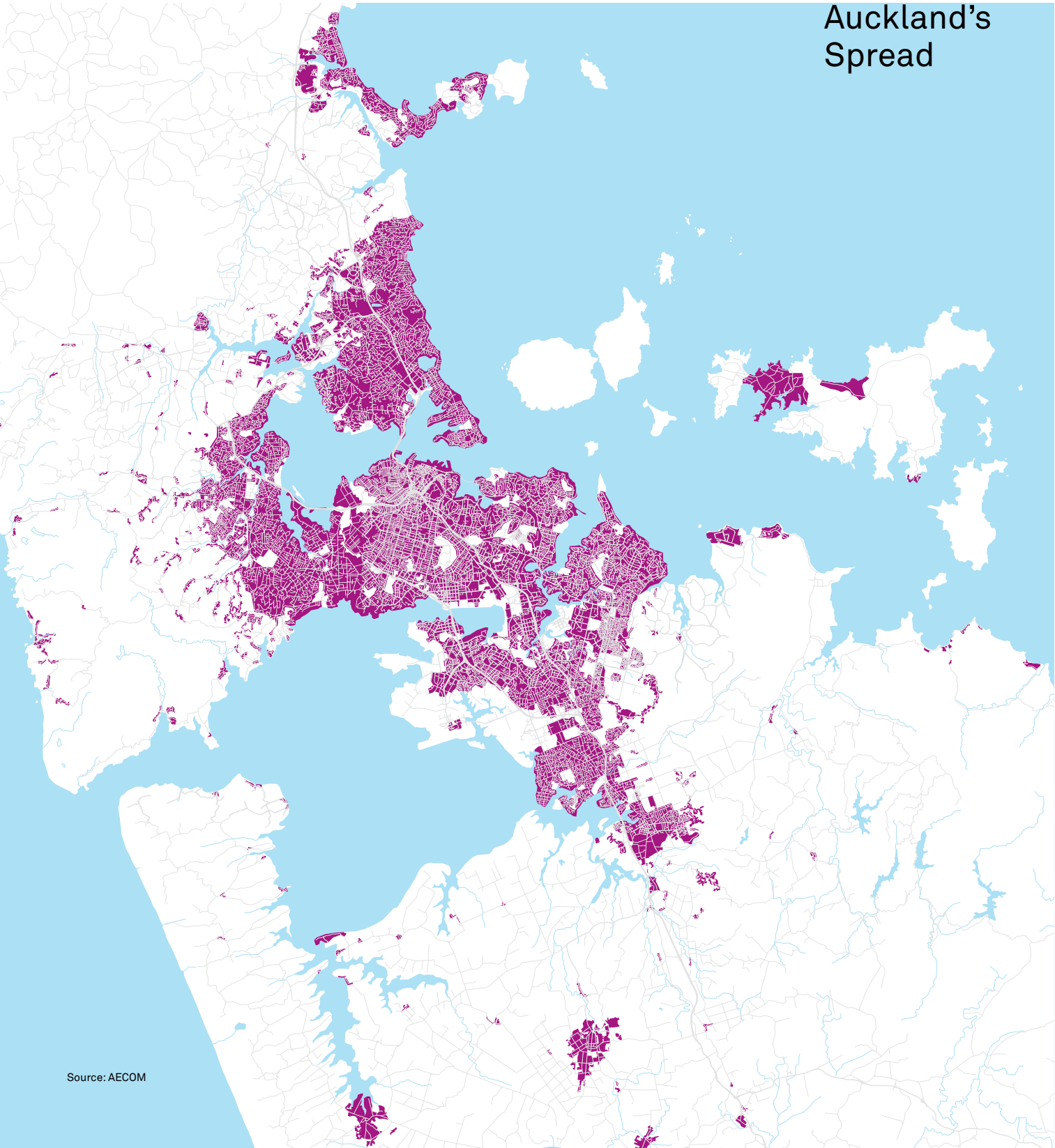
The city must become smarter in the way it encourages the public and private sectors to work together in partnership, and deliver private sector confidence to invest in the future of the city.

If that can be achieved, there will be a clear vision and agreement on what activities are core to the city's functions. There is no room for indecision, tardiness and a "she'll be right" attitude to prevail.

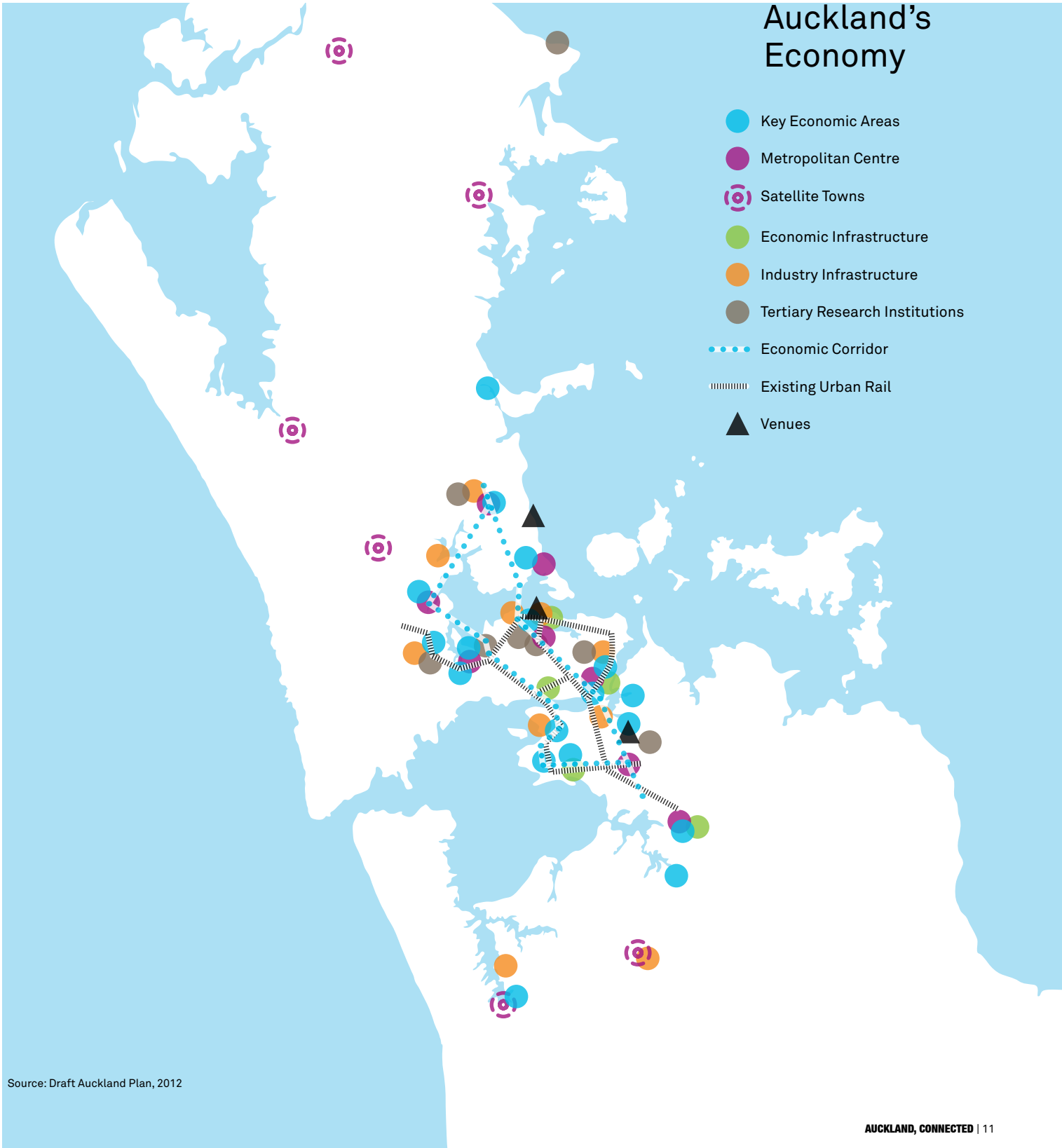
Auckland's opportunity is now– the foundation of One Council, One Mayor, One Vision is set and the framework of One Plan provides direction. The challenge is to seize this opportunity and to take positive steps to create the future.

HOW DOES AUCKLAND LOOK IN 2012?

Auckland's Spread



Source: AECOM



Source: Draft Auckland Plan, 2012


bar • nightclub
Carlsberg

BECOMING THE WORLD'S MOST LIVEABLE CITY IS A JOURNEY, NOT AN OVERNIGHT TRANSFORMATION, REQUIRING SMART DECISIONS AND COMMITMENT.

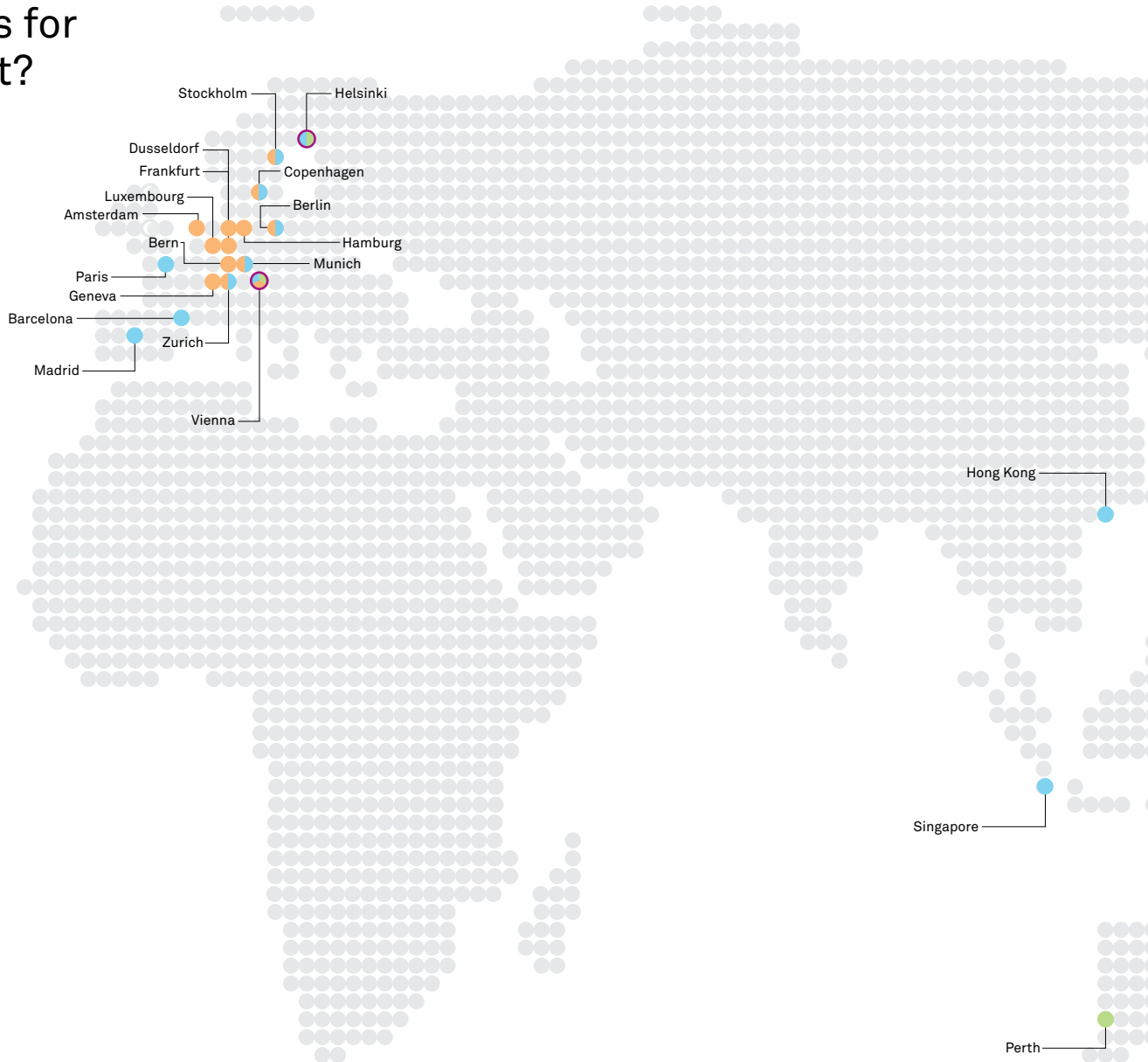
WHICH ARE TODAY'S MOST LIVEABLE CITIES?

Mercer 2011 Quality of Living Index		*Monocle* Most Liveable Cities Index 2011		The *Economist* World's Most Liveable Cities 2011	
1	Vienna	1	Helsinki	1	Melbourne
2	Zurich	2	Zurich	2	Vienna
3	Auckland	3	Copenhagen	3	Vancouver
4	Munich	4	Munich	4	Toronto
5	Dusseldorf	5	Melbourne	5	Calgary
6	Vancouver	6	Vienna	6	Sydney
7	Frankfurt	7	Sydney	7	Helsinki
8	Geneva	8	Berlin	8	Perth
9	Bern	9	Tokyo	9	Adelaide
10	Copenhagen	10	Madrid	10	Auckland
11	Sydney	11	Stockholm		
12	Amsterdam	12	Paris		
13	Wellington	13	Auckland		
14	Ottawa	14	Barcelona		
15	Toronto	15	Singapore		
16	Hamburg	16	Fukuoka		
17	Berlin	17	Hong Kong		
18	Melbourne	18	Portland		
19	Luxembourg	19	Honolulu		
20	Stockholm	20	Vancouver		

The competition

Who are Auckland's competitors for the top spot?

Cities by various liveability indices



Key

- Mercer 20
- Monocle 20
- Economist 10
- Mercer #1
- Monocle #1
- Economist #1


Calgary
Ottawa
Toronto
Vancouver
Portland
Fukuoka
Honolulu
Tokyo
Adelaide
Auckland
Wellington
Melbourne
Sydney

Rating the world's most liveable cities.

A variety of agencies rate the "liveability" of cities. Many of these ratings are used to establish salary comparisons for employees moving around the world in the course of their work. Consequently, surveys are mainly focused on living costs and income, tending to be somewhat restricted in the aspects of city life they evaluate.

Notwithstanding this, Auckland has consistently rated very well, typically appearing in the world's top ten and recently ranking third in the Mercer survey[2]. This is a significant achievement.

Although not comprehensive, these helpful surveys benchmark Auckland against other international cities. However, Auckland would benefit from developing a more sophisticated set of measures to evaluate and drive progress towards its vision of becoming the world's most liveable city.

2 See footnote 1

TO BE THE WORLD'S MOST LIVEABLE CITY WILL REQUIRE A CITY TO BE SMARTER IN BUSINESS TO SUSTAIN CITY EFFICIENCY AND PERFORMANCE

“THE WORLD WE HAVE CREATED TODAY, AS A RESULT OF OUR THINKING THUS FAR, HAS PROBLEMS WHICH CANNOT BE SOLVED BY THINKING THE WAY WE THOUGHT WHEN WE CREATED THEM”

ALBERT EINSTEIN

Characteristics of a highly liveable city

Liveability cannot be defined in a singular way. Instead, it is a measure of four strands of wellbeing – social, cultural, economic and environmental – which act as reference points and together provide a framework for people to judge the liveability of a particular city.

As the world's most liveable city, Auckland will display the following attributes: social strength, cultural diversity, economic success and environmental leadership.


Strong, safe and inclusive communities.
Auckland's Liveability Attributes
Social strength
Social cohesion.
The opportunity for all people to share in the benefits.
Affordable housing and amenities.
Different lifestyle and housing choices.

Auckland's Liveability Attributes

Cultural diversity

A community that embraces its diversity of people.

A community reflecting its indigenous cultures.

A creative city where art and culture prosper.

Auckland's Liveability Attributes

Economic success

Auckland's Liveability Attributes

Environmental leadership

Auckland's Liveability Attributes

Cornerstones of highly rated liveable cities

Value

Drive a high-wage, high-value economy.

Unique

Leverage off the unique location, characteristics and qualities of the city.

Connected

Have well connected, integrated transport systems and information technology.

Urban

Provide quality living opportunities and urban design, with well-structured settlement patterns.


Cultural
Provide unique recreational and cultural experiences.
Infrastructure
Seamlessly provide quality infrastructure to facilitate private sector investment.
Credibility
Deliver a plan of programmes which are committed, credible and deliver transformational change.
Unified
Have unified governance and a comprehensive plan to drive the city forward.

The competition

How big is Auckland?

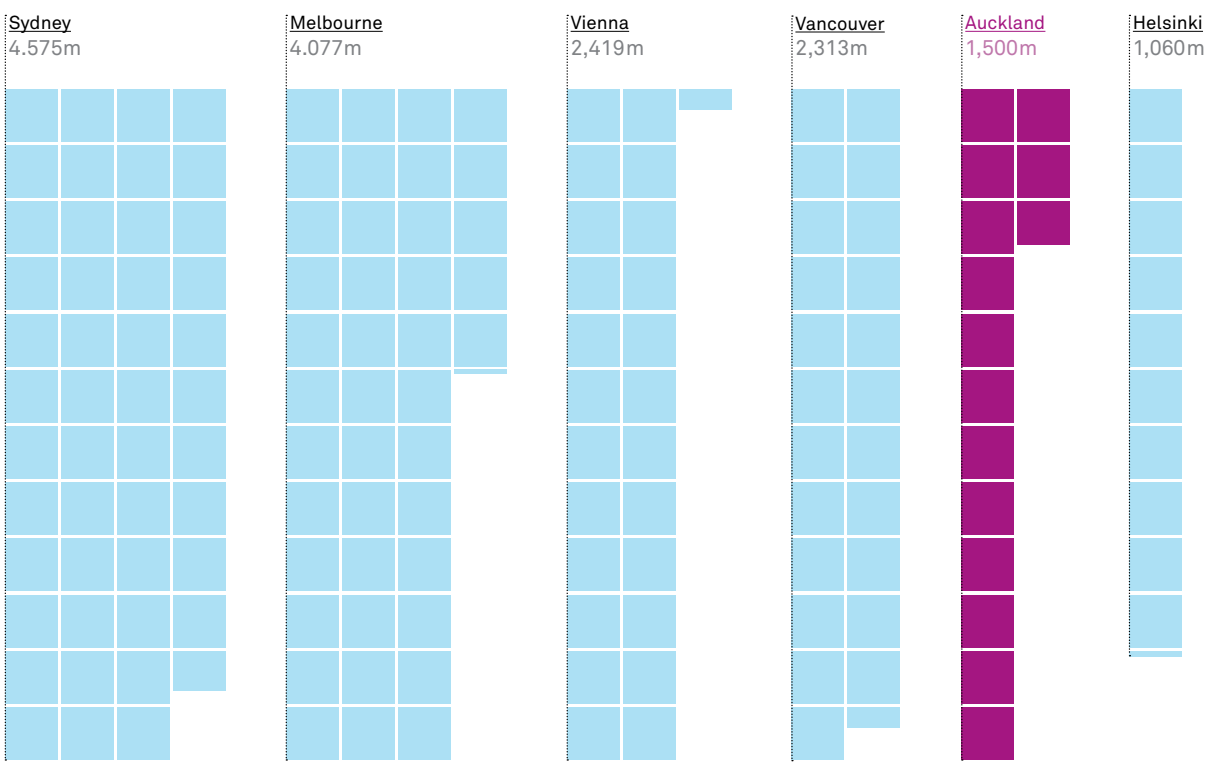
Residents living in metropolitan area 2011-12

Key

1 square
::
100k residents

Sources

Auckland Council
Australian Bureau of Statistics
Population Register of Finland
Statistics Canada
Statistik Austria



How urbanised is Auckland?

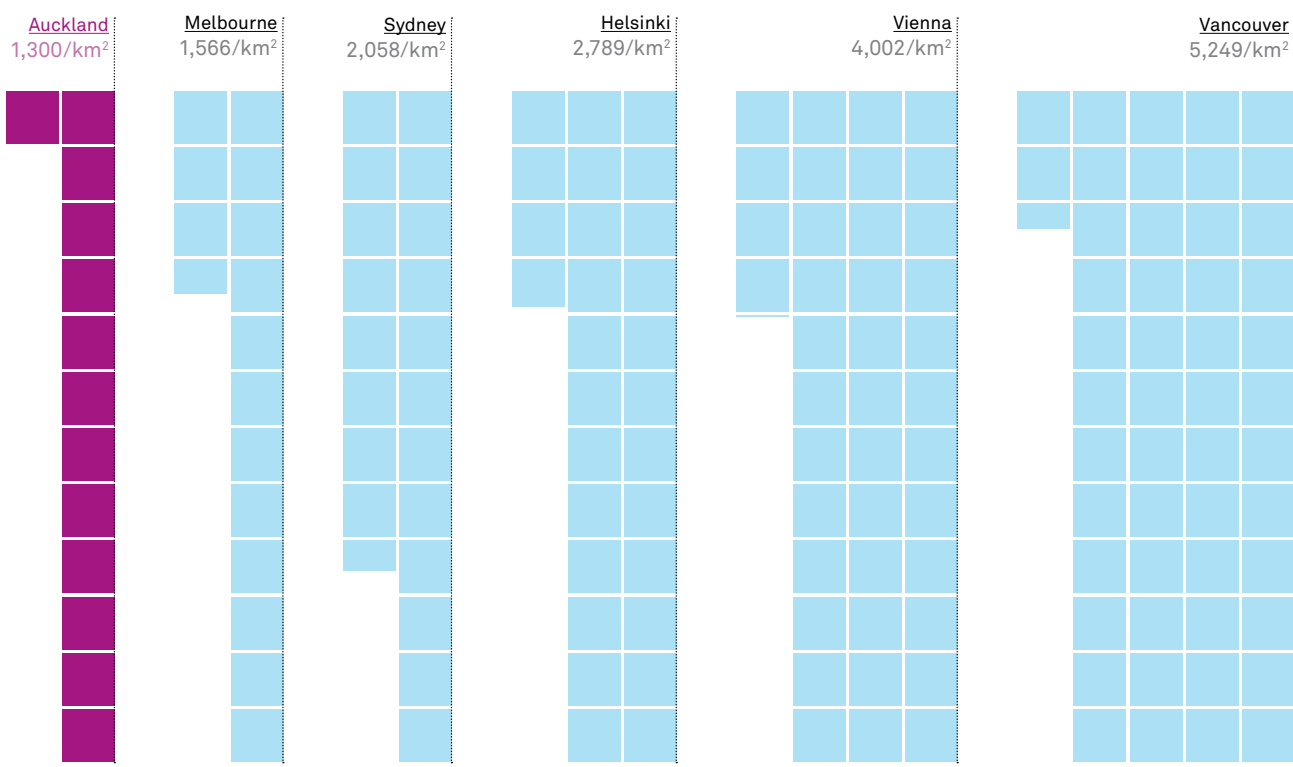
Residents living per square kilometre, 2010

Key

1 square
::
100 residents/km²

Sources

Australian Bureau of Statistics
Population Register of Finland
Statistics Canada
Statistics New Zealand
Statistik Austria



The competition

How large is Auckland's economy?

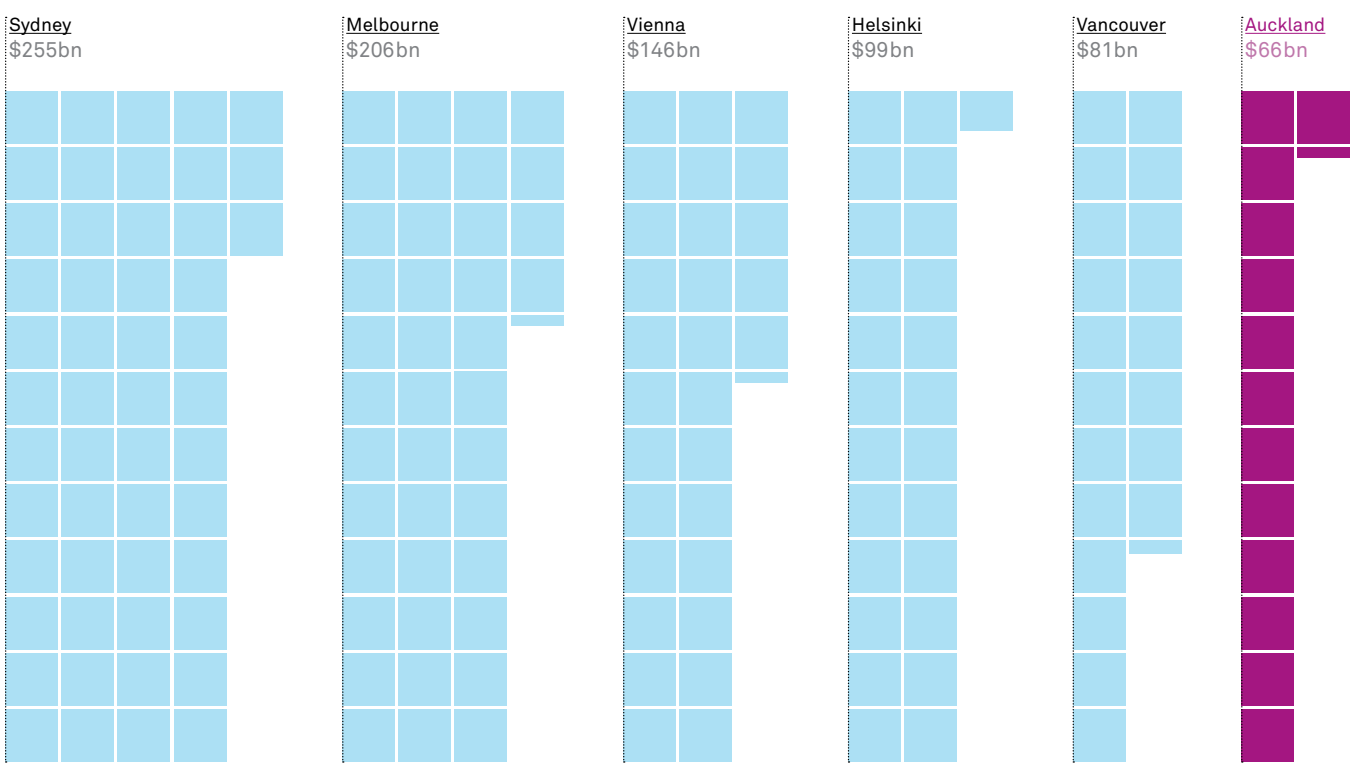
Gross City Product
in NZ$, 2010-11

Key

1 square
::
NZ$5bn

Sources

Auckland Council
City of Sydney
Future Melbourne
Greater Helsinki Promotion Agency
Port Metro Vancouver
Statistik Austria



How much are Aucklanders earning?

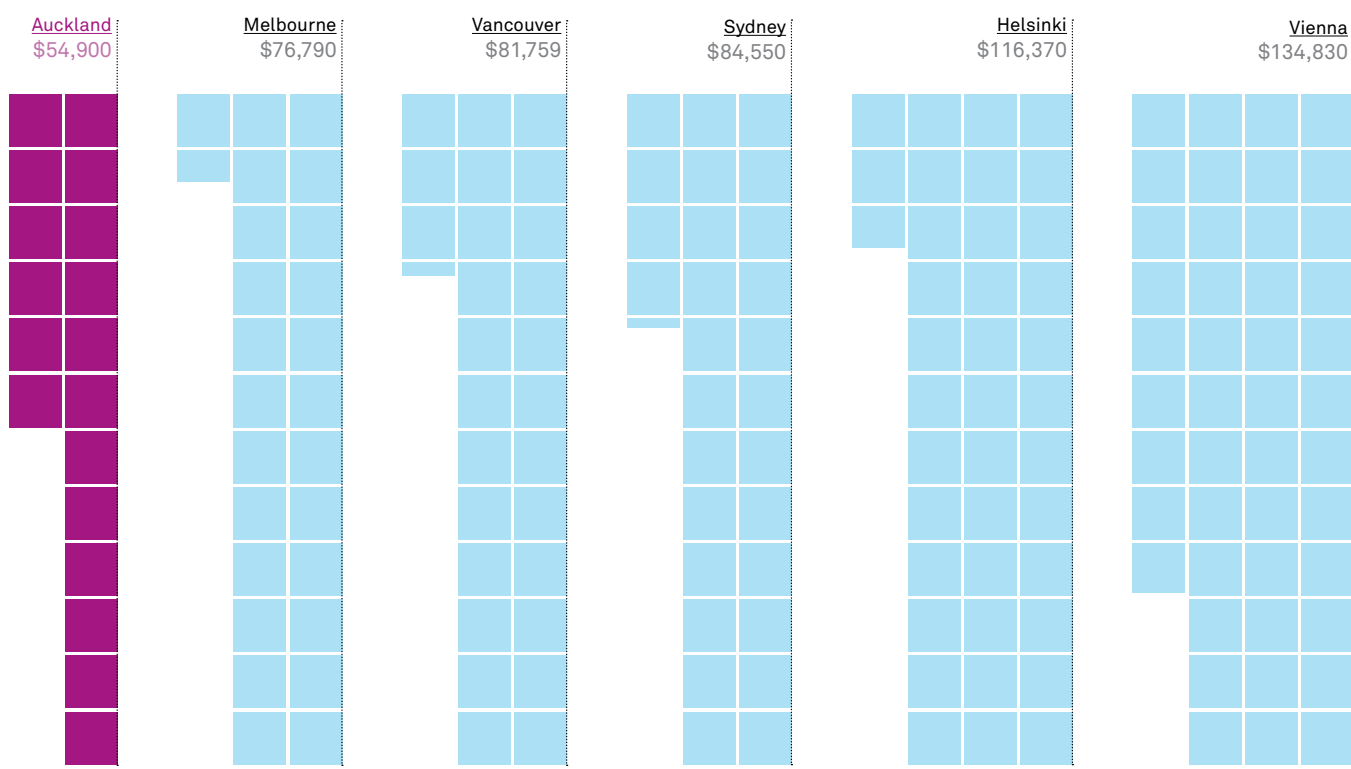
Median personal income
per year in NZ$, 2009-10

Key

1 square
::
NZ$3,000

Sources

New Zealand Herald
Payscale.com
Statistics Canada
Statistik Austria



The competition

How many are flying to Auckland?...

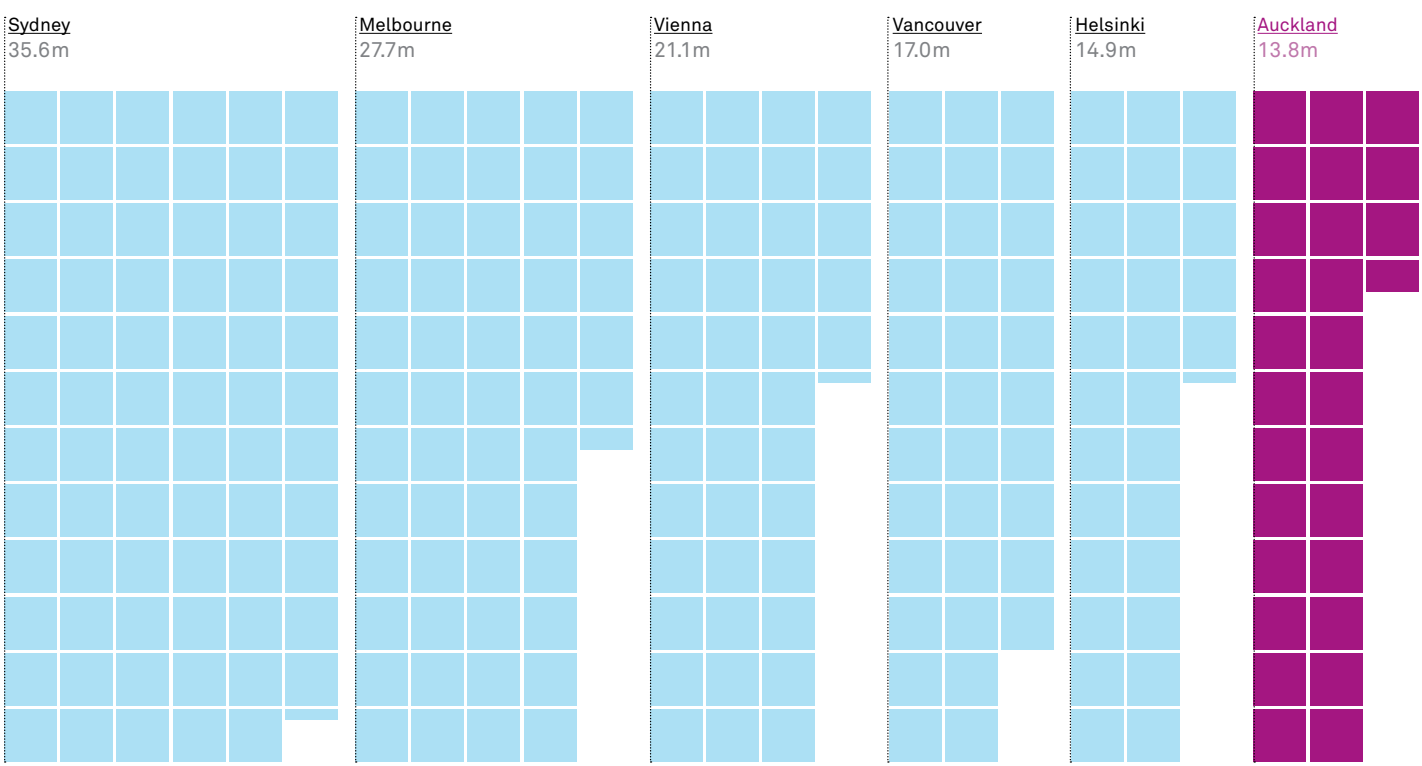
Airport passenger arrivals per year, 2011

Key

1 square
::
500k passengers

Sources

Auckland Intn'l Airport Ltd
Finavia
Flughafen Wein AG
Invest Victoria
The Moodie Report
Vancouver Airport Authority



...And are they staying overnight?

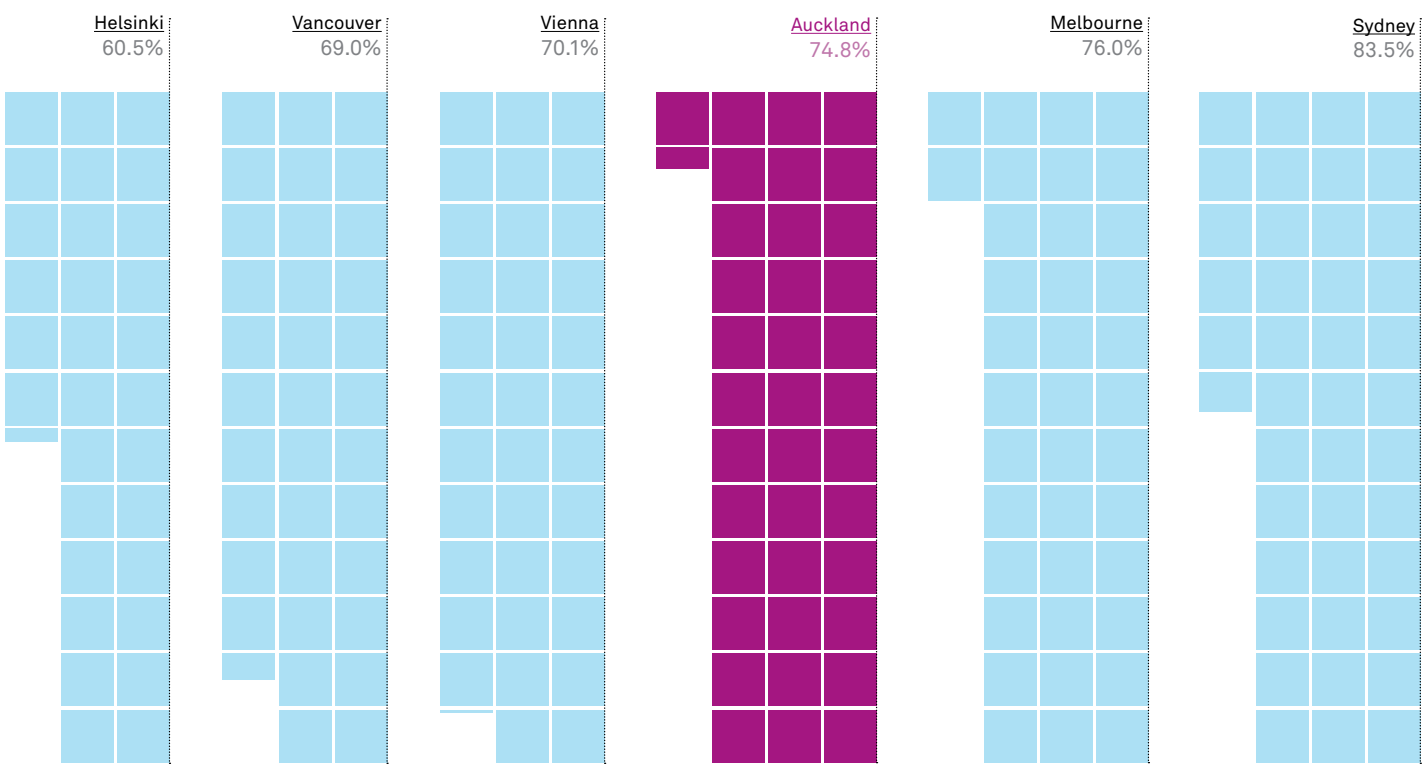
Average annual
hotel occupancy rate, 2010-11

Key

1 square
::
2% hotel occupancy rate

Sources

BC Appraisers
New Zealand Hotel Council
Property Council of Australia
Statistics Finland
Sydney Morning Herald
Vienna Tourist Board



The competition

How much shared open space does Auckland have?

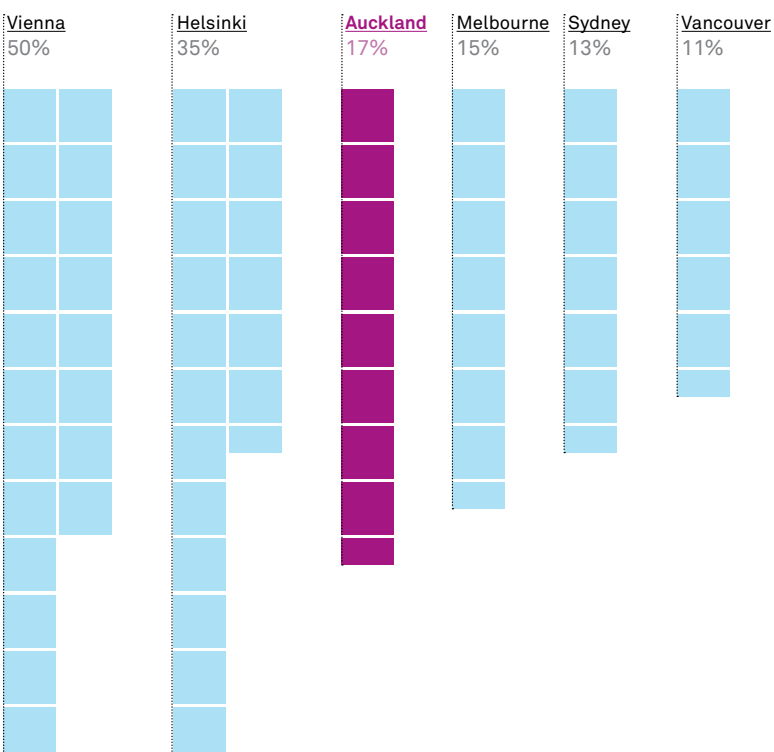
Public open space
as a percentage
of total city land area

Key

1 square
::
2% of land area

Sources

City of Melbourne
Royal Commission
on Auckland Governance
Washington University
Wien International



Liveable cities are dynamic. Dynamic cities act in tune with global realities. They are cities that never sleep. They mobilise decision-making processes and make better use of information technology to improve areas such as communication, transport and infrastructure systems.

Ambitious cities recognise that to compete on the global stage, they must attract and retain people with creative, technological and innovative skills. Talent, business acumen and innovation drive the economic growth of dynamic cities.

Dynamic cities are:

Evolving. The world's most liveable cities are not static, they are constantly evolving. For Auckland to achieve and maintain its position as the world's most liveable city it will require continuous enhancement and development. The reality is that Auckland competes with other cities, especially those in Australia. All are seeking to improve the quality of life for their citizens. Complacency is not an option.

Public sector stimulated, private sector driven. While Auckland Council will set the strategy and take leadership in delivery of the Auckland Plan, the investment required to make Auckland the world's most liveable city is more than Council can deliver alone. To achieve the vision, Council must inspire collaboration between the public and private sectors, and focus investment on critical facilities and infrastructure. The combined initiatives and investment of both public and private sectors is essential to Auckland's future.

Dynamic and evolving cities are well connected to their communities, economies and the world.

WHAT WILL AUCKLAND BE IN 2040?

THE STATUS QUO IS NOT AN OPTION.

Auckland is at a crossroads. By 2040, it will be a very different city. It will either have made the changes necessary in its pursuit to become the world's most liveable city or have let the status quo prevail.

The following two scenarios look at where the city could be in 2040. The first takes the approach that the status quo has been maintained, the second shows a city that has planned and implemented changes for the future.

Failure to embrace transformational change

In 2040, a physically isolated New Zealand is viewed as a safe haven from the wars, food shortages and natural disasters ravaging the rest of the world. This has led to rising numbers of migrants and refugees coming to live here, with many making Auckland their home.

The city's population has expanded to almost 2.1 million. Investment in developing skills is limited and while trained people can find jobs, a significant proportion of the workforce remains unskilled and can only obtain casual employment. As a consequence, GDP growth per capita has slowed and is slipping in comparison to cities in other Organisation for Economic Co-operation and Development (OECD) countries.

A two-speed economy

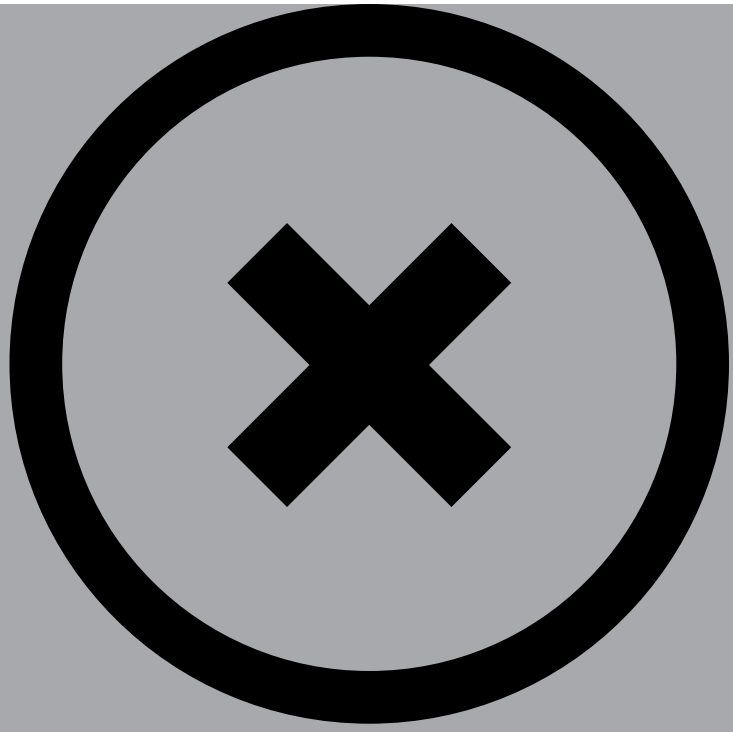
Auckland has remained as it was 30 years earlier, with a two-speed, low-skill, low-waged economy. The city continues to be the gateway to its agricultural hinterland and faces huge competition from Tauranga, Hamilton and Whangarei. Over the years, Auckland has failed to exploit and expand its services – including medical, educational, legal and financial – unlike other wealthy world leading cities which have nurtured and retained talent and investment in such businesses. The city's economy is primarily consumption and service based.

In 2040, Auckland struggles to maintain high-quality health and education services because of the wealth constraints facing the community. It lags well behind Australian and Asian cities, which continue to prosper. It continues to lose highly-skilled New Zealanders to the Australian workforce and does not compete in attracting skilled migrants here. Only those unable to gain entry into other, more prosperous countries, target Auckland.

Auckland remains an important tourism centre, but only as an entrance to the rest of New Zealand, with people either not staying or only being here one or two nights. Its tourism industry is underpinned by a low-wage workforce.

A pleasant place to live

Auckland in 2040 is a pleasant place to live and has slipped in the world's most liveable cities ratings to about average. While our natural environment, high levels of food production and abundance of water mean we are better off than many other cities, this does not provide a long-term advantage.



WILL AUCKLAND END UP JUST A PLEASANT PLACE?

Auckland in 2040

A transformed Auckland

In 2040, the population of New Zealand is about 5.5 million, Auckland will accommodate a further 700,000 to 1 million people, bringing its total population close to 2.4 million. Eighteen percent of the population is older than 65, compared to 10 percent in 2010.

The resolution of Treaty of Waitangi issues is complete and this has established the foundation for a New Zealand society that includes many positive influences from Maori culture.

Waves of migration from other countries have been accommodated, leading to a successful, multi-cultural society. Highly-skilled migrants, along with refugees and wealthy people seeking a safe haven from the world's troubles have been integrated into the Auckland community. All of these groups are gradually adopting the New Zealand way of life, while retaining links to their own culture and communities.

A prosperous city

Auckland has benefited from decades of strong leadership and a focus on the changes necessary to deliver a high-skill, high-wealth economy. As a result, GDP per capita has grown from $47,000 in 2009 to $65,000, with overall GDP doubling to almost $140 billion.

Emphasis on increasing the ability levels of the entire Auckland population has delivered sufficient skills and vibrant businesses to make the city the powerhouse of the New Zealand economy.

The loss of highly-trained workers to Australia has been reversed and skilled migrants are being attracted here by the raft of opportunities and better salaries.

Business clusters in food, health, education, ICT, marine, entertainment and several niche manufacturing sectors are well-established. Tourism is a significant part of the Auckland economy, with the city a destination in its own right.

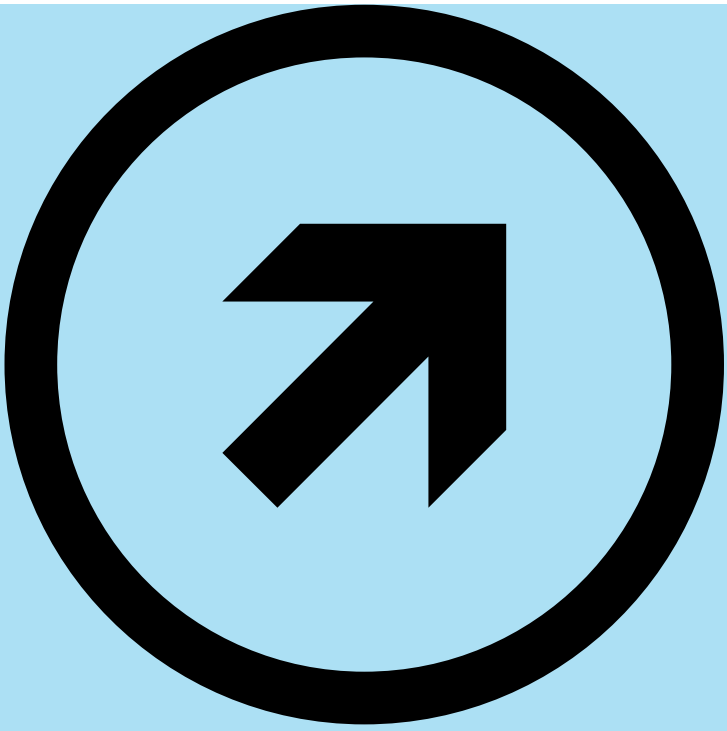
High-quality, high-capacity data and information connections are the norm, ensuring efficient and fast services are available for information, goods and people.

Auckland is the gateway to New Zealand and the Pacific, and has strong international connections with many other countries. The city also has robust links to its hinterland, including the Waikato and Bay of Plenty. Fast-moving transport and economic connections give scale to Auckland's markets, which include the "golden triangle" cities of Hamilton and Tauranga.

Auckland has built a strong economic research and development base, centred on its universities, other tertiary education institutions and Crown Research Institutes (CRIs). Start-up companies and established corporates are swarming to establish research and development facilities around the universities and CRIs. As a result, the universities are rapidly growing their research portfolios and bringing in more and more top doctoral students from overseas.

New Zealand and international companies are relocating to Auckland because of the depth of research available to them. Auckland is a leader in major technology breakthroughs in food production, medical technology, engineering and science.

Auckland's international education businesses at secondary and tertiary level are flourishing, bringing in enhanced revenue, new jobs and a pool of skilled immigrants and entrepreneurs.



OR WILL AUCKLAND BE A BETTER CONNECTED PLACE?

Environmental constraints are creating difficulties for many people in a world where necessities such as food and energy are expensive and in short supply. Auckland's contribution to the New Zealand food basket and access to relatively inexpensive energy resources have helped the city avoid such problems.

Reliable virtual and actual connectivity to the rest of the world, and particularly to Australia and Asia, has enabled Auckland to fare significantly better than many other countries.

An integrated transport system
Auckland has benefited from a planning strategy which has integrated land use and transport. People live in communities that meet their needs in terms of work, education, social infrastructure and entertainment. Reliable and regular transport connections enable them to link easily to the heart of the city and other residential and industrial centres within the Auckland region.

The rail network forms the backbone of an integrated public rapid transit system, connecting to a network of town centres, schools and employment hubs. Buses provide feeder services that link to the rail network to complete door-to-door transit.

The ferry network is well developed with fast connections around the Waitemata Harbour, including frequent connections to the North Shore, Upper Harbour, Pine Harbour, the Eastern Beaches and Tamaki Estuary.

The motorway system managed by the NZ Transport Agency and city roads managed by Auckland Transport, operate as a single network, with a third harbour crossing completed.

Commuter peaks are reduced as a result of adopting a single roading network approach, with improvements to public transport and smaller vehicles. Advancement and wider acceptance of telecommuting, 24-hour business operations and flexi-working also contribute to a reduction in travel times and congestion. Cumulatively, these factors contribute to an annual reduction in road demand that approximately offsets population growth.

Internal combustion vehicles are becoming increasingly obsolete, being replaced by a wide variety of small personal vehicles powered by electricity and alternative technologies.

A compelling place to live
Strong environmental policies have ensured Auckland retains its unique and special environment, and varied and spacious lifestyle options, despite significant population growth.

Residents have a variety of lifestyle and housing choices, be it rural property, bungalow, townhouse, apartment, loft or downtown high rise.

Auckland has an enviable health and safety record, underpinned by a society where all people have benefited from the growing prosperity of the past three decades.

The city draws many visitors for sports, cultural, recreation and tourism events. Whether a person enjoys the arts, sports, the outdoor café society, shopping, the beaches or exploring the bush and rural areas, all this is available and easily reached within the Auckland region.

Auckland benefits from the quality and availability of its preschool, primary, secondary and tertiary education facilities, and the breadth of health services available throughout the community.

And the outcome?
Auckland has planned for and benefitted from transformational change and is widely recognised as the world's most liveable city.

We now focus on what is necessary to create an interconnected city and what is important to Auckland and New Zealand. We identify the steps required for Auckland to become the world's most liveable city by 2040.

IN 2040 AUCKLAND HAS BENEFITTED FROM TRANSFORMATIONAL CHANGE AND IS WIDELY RECOGNISED AS THE WORLD'S MOST LIVEABLE CITY.

Learning from...

Two City States: Transformational change

Un-connected city

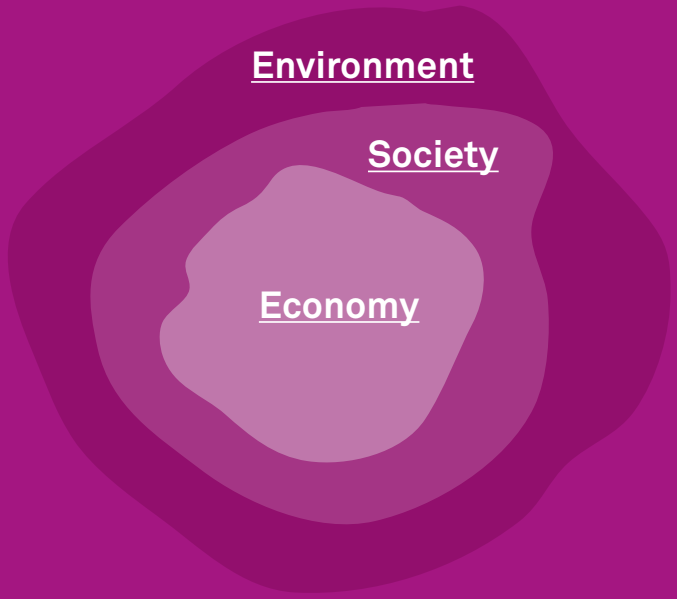
The unconnected city fails to realise the benefits of linking the economy and society to and within, its physical and natural environment.

The unconnected city struggles long term to be prosperous and competitive, with ever-weakening links between its economic, social, cultural and environmental assets. It is increasingly failing to capitalise on its collective strengths and assets. Through declining funding and the lack of robust plans and guidance, the city remains fragmented and its people struggle to participate socially, culturally and economically, adding further pressure to local and central government.

The lungs of the city – its environment – continue to suffer from neglect as the necessity of survival in a disconnected city puts additional weight on the environment's finite resources.

Source: AECOM

Inter-
connected city



At the core of a transformed Auckland is a city which is interconnected, linking the economy and society to and within its physical and natural environment. Through these three elements the city is an intrinsic living organism.

An interconnected city is an evolving city, embracing and understanding its past and future aspirations through a unified plan, vision and continuity of aspirational leadership.

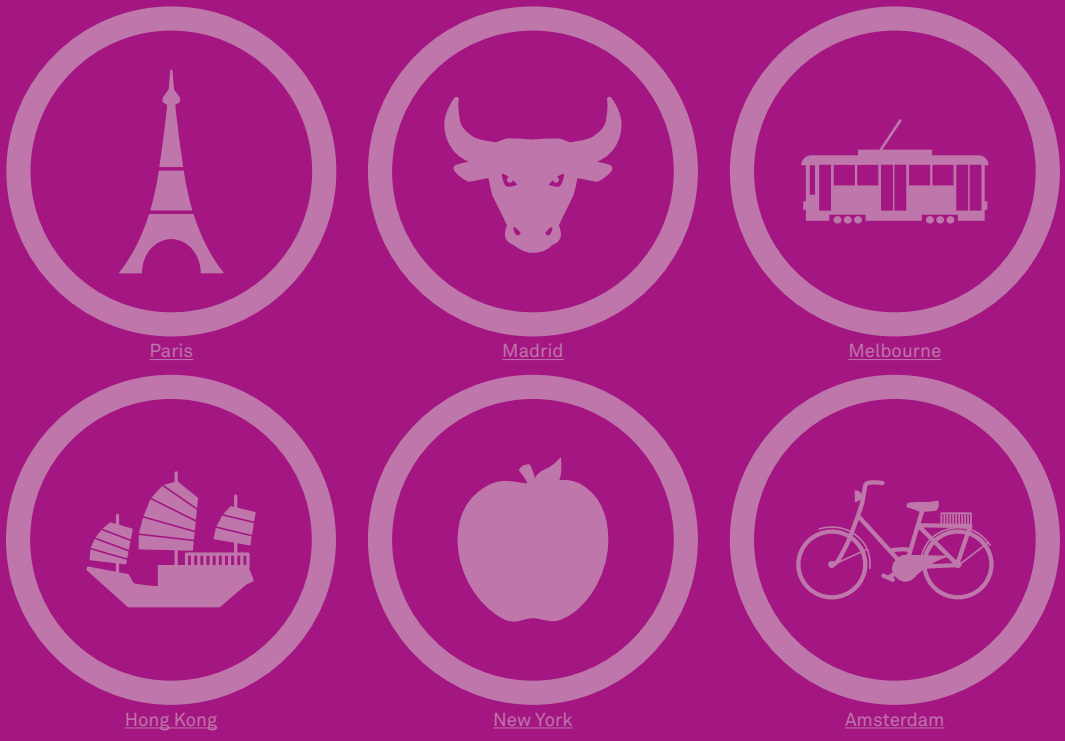
It is a city with a strong competitive core. It is dynamic because of its commitment to continued improvement, making better use of advances in information technology, attracting and retaining people with creativity, business acumen and technological skills to drive the future social and economic growth of an interconnected and transformed city. It is a city which respects its environment – the lungs of the city.

Source: AECOM


CAUTION
Fly Emirates
NEW ZEALAND

Learning from...

City icons




Munich
London
Wellington
Sydney
Toronto
Auckland


CONNECTED
ECONOMY
EXIT
6
16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Transformational Change

Projecting the past into the future will not deliver the Auckland Council's vision of becoming the world's most liveable city. Achieving this vision requires strong leadership, single-minded determination by Council, strong collaboration with the private sector, realistic funding and a focus on transformational change.

The Auckland Plan sets the framework and is well-positioned to take the next steps. To do so will require transformational change in five critical areas:

1. High-value economy

Moving Auckland's economy from a relatively low-wage, low-skill economy to one that is high-value and high-skill is the cornerstone of the city's future development. Without this fundamental change, personal and community wealth will remain constrained and the initiatives necessary to achieve the world's most liveable city status will be simply unaffordable.

2. Embracing innovation

The high-value economy planned for Auckland will begin with a focus on innovation, and research and development, through collaboration among the city's universities and Crown Research Institutes. It will include business clustering in the food, health, education, ICT and marine sectors, among others. Targeted investment in science and engineering will result in the establishment of start-up small to medium enterprises (SMEs) and future high-value jobs.

3. Quality urban form

Auckland's natural attributes – its harbours, coastline, volcanoes and weather make a significant contribution to its liveability. Consequently, it is important that these benefits are not lost through widespread residential and urban growth as the city becomes a more attractive place to live.

4. Integrated Transport

Auckland has existed for many years on a limited and poorly integrated public transport system. However, moves are already being made to overcome this, through integration of the various modes of transport, along with better services and the introduction of smart technologies.

5. Inspiring confidence through credibility

Auckland will significantly rely on private sector investment to deliver Auckland Council's vision. Investment relies on confidence, and the actions of Council will have the potential to instil or dilute investor confidence. Council will reinforce this confidence by developing an Auckland Plan that resonates with both business and the community, and a budget and funding programme which is achievable.

Interconnected change

Although distinct in their own right, all of the five elements of the transformational change Auckland is facing are closely interconnected. Each is reliant on, and cannot be separated, from the other four; nor can their individual importance or contribution be overlooked.

However, the main driver for Council's vision must be a high-value economy. This creation of wealth will enable Council to provide the core physical and social infrastructure, and to fund for example, the integrated transport solution that Auckland needs. It is this same growth in Auckland's wealth base that will enable the private sector to deliver a range of economic opportunities for the population and to build the city to the quality required for it to be the world's most liveable city.

Research shows other cities have focused on the creation of wealth, and achieved that, but without providing a quality lifestyle. They have become cities where people go to earn money before moving on to enjoy life somewhere else. These are merely transitional cities.

Growing personal wealth and using appropriate investment strategies to fund growth is a fundamental part of the strategy recommended in this book.

In this book, we look at each of the above elements of transformational change and expand on them in more detail.

AUCKLAND'S PROSPEROUS FUTURE IS IN A HIGH–VALUE ECONOMY.


EVERYTHING
50% OFF


S·P·Q·R

Auckland in 2012

The current Auckland economy[3]

Auckland is a major contributor to the New Zealand economy, providing 36% of economic activity and gross domestic product. While Auckland "carries its share" of the country's economic activity, it must be more of a powerhouse if transformational change is to be possible.

Growing

A slow growing economy with 30% of New Zealand's jobs and 36% of GDP.

Gateway

The gateway to New Zealand, with 73% of people arrivals into Auckland and 60% of freight.

Essential

Auckland the largest and pre-eminent service centre for New Zealand.

2-speed

A two-speed economy with fast growth in the service sector and declining growth in the manufacturing sector.

Limited

Limited research and development, and constrained investment in research and development.

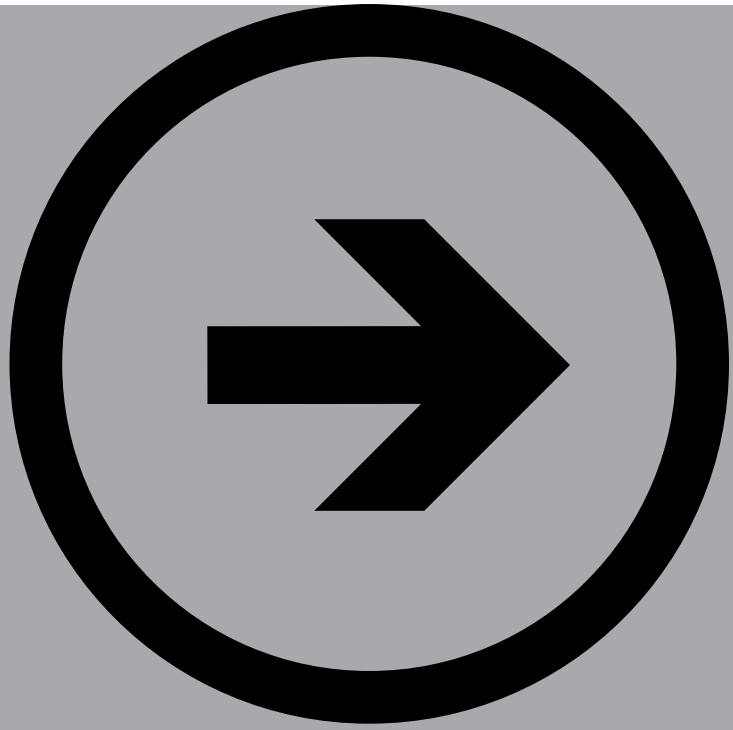
Potential

A small but growing number of innovation businesses.

3 Boven, R and Grace, L, 2011

Sparse

Specialist knowledge and expertise in key niche industries for New Zealand not leveraged.



Adequate

Adequate but by no means “international best practice” infrastructure.

Constraints

Constraints of a lack of scale, small domestic market, and distance from international markets.

Not Aligned

Research activities between universities and Crown Research Institutes (CRIs) are not aligned.

Driving for a high-skill, high-wealth economy

Auckland does many things well. In making the transition to a high-wealth economy we need to ensure that we keep those things we do well.

Key drivers that will help achieve the desired economic transformation include[4]:

→ Build skill levels in high-value industries.
→ Grow high-value export industries serving international markets.
→ Get better connected to the other parts of New Zealand, Australia, Asia and the rest of the world.
→ Lift annual productivity growth to match or exceed that of our major trading partners, notably Australia and Asian economies.

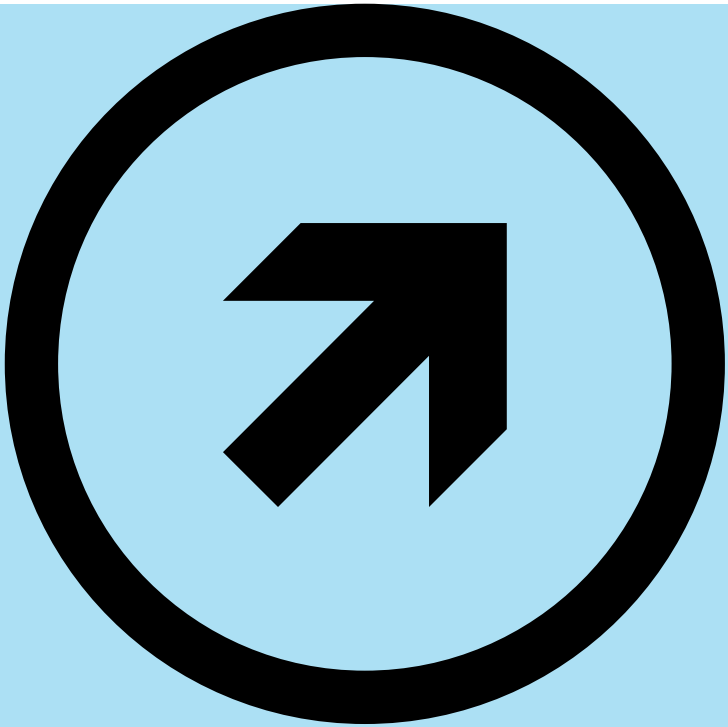
High-value export industries

New Zealand's scale and isolation means that a high-value economy must involve international markets and not just the domestic market. The latter is too small to support the high-tech industries capable of delivering enhanced economic growth. Put simply, Aucklanders cannot continue to "take in more of each other's washing", it is vital that new offshore markets are developed.

To do this, Auckland needs to:

→ Vigorously promote high-value industries, particularly those which are export driven.
→ Encourage and retain innovative industries. While high-volume operations may shift to access cheaper labour, Auckland must retain intellectual capital, knowledge, and the research and investment that comes at the beginning of the production cycle.
→ Leverage off iconic New Zealand brands.
→ Focus on sectors where sustainable, competitive advantages apply to a small remote country.
→ Identify and foster the niche high-value economic activity that gives New Zealand its competitive advantage
→ Leverage the research capability of the city's tertiary institutions, focusing that research on practicable, marketable initiatives.

4 McCann P, 2009



Connect to the rest of the world

To achieve the economic strength necessary to achieve Council's vision for the city, Auckland needs to interconnect – to the other parts of New Zealand and the rest of the world. New Zealand is too small to isolate itself from global trends. We need to find a balance by staying connected, by building sound resilience into the city's economy. This can be done through:

- → Ensuring the city's infrastructure is effective and efficient, particularly transport and communication.
- → Building an economy that takes New Zealand's isolation into account.
- → Setting in place the policies for economic development in a carbon-constrained future.
- → Development of Auckland International Airport as an economic gateway to the world.

Embrace innovation

Auckland as a centre of innovation

New Zealand's relatively poor performance against its trading partners over the past 30 years can largely be attributed to two interlinked factors: our failure to innovate and the high failure rate of start-ups which do not make the transition to stand-alone small to medium enterprises (SMEs).

Contributing to this under-performance have been:

→ Auckland's and New Zealand's physical isolation from the rest of the world.
→ Little change to exports and the value-to-weight ratio of our goods over the last 20 years or so.
→ A focus on high-volume, low-value commodities.
→ The failure to adapt to new technologies through the creation of high-tech industries.
→ The relative under-investment in education as well as research and development (R&D) enterprises.
→ Our limited labour market, compounded by a "long tail of educational underachievement".
→ The loss of major investment to competing Australian and Asian cities.

Auckland can benefit from the experiences of overseas cities that have transformed their economies through innovation, properly resourced R&D, an educated workforce and a commitment to sustainable economic growth. But it will entail radical changes.

The most significant of these changes will be to improve our productivity as measured by GDP per capita. For many years New Zealand's productivity growth has lagged that of Australia by 50% per annum. The result is today that our GDP per capita is about 66% that of Australia.

The Auckland Plan sets some bold targets for productivity growth in Auckland. While productivity has traditionally been higher in Auckland compared to the rest of New Zealand, the Council is advocating sustained growth rates in GDP exceeding five percent per annum and average annual productivity growth greater than two percent.

This would see Auckland's economy improve twenty places in twenty years as measured by the OECD GDP per capita rankings and closer to that of Australia. Such a transformation can only come about through fostering and embracing innovation - an initiative we strongly support.

The case for radical change

It cannot be overstressed that Auckland's future prosperity hinges on our ability to transform the city's under-performing, low-wage economy to one of high value and high wealth. Without this radical change the benefits of the amalgamation of local government will remain unrealised. The future will be merely a reflection of the past and the vision of Auckland as the world's most liveable city will not be realised.

City leaders must champion such change. Vision and influence will be more important in driving this change than injections of capital. Innovative change can be achieved through:

Focusing on the best people, the best ideas and the creation of new high-tech industries
This focus gives a simple, clear and widely acceptable strategy. It creates a benchmark against which to test educational, and research and development R&D initiatives, as well as a standard for Council's

own initiatives. It is a clear statement of what Auckland should be about.

Cluster for game-changing fundamental research
With limited R&D budgets, Auckland must focus on leveraging research that will lead to game-changing innovation and new economic initiatives. R&D investment must be directed to leverage the best outcome for New Zealand.

International experience shows that co-locating companies and research institutions in a cluster of existing and emerging businesses will lead to the leveraging of research capability, and the creation of new high-tech industrial sectors. Auckland can compensate for its relatively small size and R&D investment through co-locating university, Crown Research and private sector R&D. The benefits would be significant and critical to Auckland developing an innovation-driven economy.

Nurture the sources of new knowledge and help start-up ventures to cluster around them
Companies will naturally migrate their R&D centres to where they can access low-cost research facilities, outstanding ideas, business advice and protection of intellectual property. Auckland can successfully compete across all of these dimensions and provide an environment that will encourage businesses to cluster. The fastest way of doing this is to build on what is already present.

For example, the Grafton area is adjacent to Auckland University's faculties of business, science, engineering, medical and health sciences, and Uniservices, the university's contract research arm. Industrial Research, the government Crown Research Institute (CRI), also has its Auckland facility nearby. This area, with established buildings and infrastructure, could well become the "Grafton Research Quarter" providing a natural cluster environment for business innovation.

Council must ensure planning regulations actively encourage the clustering of high-tech companies around universities and CRIs. It may wish to show its initial support for this concept through sponsoring catalyst projects to assist building momentum.

Support export education institutions
Auckland has the potential to substantially grow export education, but current promotional initiatives are hindered by a lack of funding and coordination among the various organisations. Auckland needs an executive branch, working under the mandate of the Mayor's office, to drive growth in the international education sector. Bureaucratic impediments to growth in this area must also be overcome.

Support the development of high-quality tertiary institutions
Quality institutions attract top students, top staff and innovative industries. This is a fundamental component of a high-value economy. We need to invest in education so we more closely parallel Australian investment. The city would also benefit from a more integrated tertiary system, which staircases students through to advanced study.

Auckland must become an attractive place to study. It needs quality campuses, good student accommodation, a sense of the educational institutions being owned by and being part of the city – making Auckland a university city. The offer of tertiary education in New Zealand must attract bright local and international students to Auckland.

Encourage secondary and tertiary education success in all parts of the Auckland community
Council and community leaders must demonstrate that education is highly valued. The educational bar must be raised so that all young people, across every socio-economic group, achieve relevant learning that enables them to obtain skilled work with a good income. We need to provide pathways to ensure all our young people receive at least some level of tertiary training at either university or vocational level.


Make
your
mark
on the
world
THE UNIVERSITY
OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

Learning from...

Creating innovation: Embracing smart technologies

A city based on smarter systems needs to embrace new technologies by fostering innovation. These systems are interconnected, allowing people and objectives to interact in entirely new ways. Smart technologies save time and improve efficiency by responding to changes quickly, therefore optimising improvements.

Some innovative ways of embracing smart technologies for Auckland could be:

Virtual shopping
Eliminate the hassle of getting to the supermarket, finding a trolley and the queue. Consider simultaneously using your commuter waiting time to shop without the need to visit the store.

Could virtual shopping reduce large-format retail growth where land is scarce? It is possible. Tesco Homeplus in South Korea sought to be No.1 without increasing their number of stores. Saving on expansion costs, they decided to compete by taking their stores to their customers. The creation of virtual shopping on the subway station platform allows commuters to shop by using their smart phones. Each item is added to their online shopping cart, and once the transaction is complete, the products are delivered to the user's home within the day.

The result of this approach was twofold: Tesco embraced competition by bringing its store to the customer, thus becoming No.1 online, and reduced the cost of building large new supermarkets. They also attracted new customers to existing stores, while online shopping sales increased by 130 percent.

As an innovation, Tesco maximised the use of space within interchanges, adding to the concept of a lifestyle hub that turned commuter waiting time into shopping time. Picture Auckland's transport system offering such a service to commuters of the future.

Contactless cards: Travel and shopping

Imagine total mobility via a simple payment system based on distance travelled, with fares deducted from your smart phone. It would enable you to seamlessly use different modes of travel – buses, trains, taxis and ferries – and to have the fare deducted automatically from your transit card. Imagine a transit card that also acts like your eftpos card, enabling you to purchase your groceries and other daily requirements.

Ontario's "Presto" Card, Hong Kong's "Octopus" card and Singapore's "e-payment" system cater for both travel and shopping. Some cards can also be used to pay vehicle congestion charges and for car parking. With a stored-value loaded on their card, commuters scan it at the start and end of their trip, with fares deducted from their card balance – all within one-third of a second.

Singapore has managed an 80 percent reduction in revenue leakage from "lost" transactions caused by system issues and a two percent reduction in the overall lifecycle cost of the fare processing system. This has been achieved while doubling the system's performance capacity to 20 million fare transactions per day.

In Hong Kong, 95 percent of the population make daily use of the Octopus card. This generates more than 11 million transactions worth in excess of NZ$15 million, while Hong Kong's transport systems benefit from improved and faster passenger handling. No wonder the card's catch phrase is "Making Everyday Life Easier". Such readily available smart technologies could do wonders for transit operators such as Auckland Transport.

Sources: IBM Report; designboom.com


TYLER ST. GARAG
EATING HOUSE & BAR
P60
P120

Learning from...
More productive space and time

A reform agenda for land use and transport
Productivity growth provides the basis for improving living standards, investing in health and education, and caring for an ageing population. It increases the variety and quality of employment opportunities and achieves long-term sustainability.

Innovation is crucial to encouraging and sustaining productivity – through developing new products and devising more efficient processes and practices. Cities are engines for innovation, so enabling them to function better is also an essential component of productivity growth.

A study AECOM undertook for Australia's Victorian Competition and Efficiency Commission in November 2011 concluded that the productivity of urban land and transport should be considered jointly because transport and the use of space are inseparable. For example, Melbourne Passenger Rail is about 3.7 times more productive than the road network including on-road public transport. The comparable figure for Auckland in 2011 was just 1.06 (although higher productivity is expected when the Auckland CBD rail link is completed). The following maps show that the land footprint devoted to Auckland roads is more than 100 times that for passenger rail.

Current methods of transport appraisal do not fully account for productivity of land use. Nor do current methods of transport appraisal fully explore market mechanisms. AECOM's paper shows that greater use of market mechanisms could better balance transport supply and demand, to address the deadweight costs of congestion on the economy. These mechanisms already work well in other network industries, such as energy and water networks.

AECOM recommends dealing with causes rather than symptoms, of which the key causes are:

→ Inadequate price signals to road users.
→ Lack of integration between transport and land-use planning.
→ Too much focus on supply-side measures, especially roads.
→ Limitations within transport appraisal.

Auckland road network

Auckland rail network

AECOM outlined a 10-year programme of evolution. In the next few years, it should be possible to make more productive use of existing assets and increase contestability. Within five years, productivity improvements could be achieved from investments in more productive infrastructure. There could also be some clear productivity benefits from better governance of integrated land use and transport. Within 10 years, considerable progress could have been made towards pricing mobility (road usage) and influencing urban form.

These maps illustrate Auckland's road and rail network coverage. The land footprint devoted to roads currently is more than a 100 times that for passenger rail.

Source: AECOM

CONNECTED TRANSPORT


17:53
Scheduled
Due
17:58
18:00
Platform Destination
Scheduled
1 WAITAKERE
18:06
5 OTAHUHU via Newmarket
18:08
C=Cancelled *=Arrival due/Departing


SUNTOUR


Pier 1
Ferries to • Bays
• Devonport •
Smokefree
Inside
Ferries to
• Bayswater
Birkenhead
Devonport
Half Moon Bay
Northcote Point
maxx

Integrated transport

Auckland's public transport networks have been significantly underfunded for many years. In parallel, public transport patronage declined. Recent investment, such as improvements to the rail network and construction of the Northern busway, have reversed this trend. These initiatives show that commuters will switch back given a choice. It also demonstrates that road use has been under-priced and rising fuel and transport charges make public transport a viable alternative.

Developing a transport system which is integrated with land use provides people with transport choice that delivers reliability and affordability. It requires a significant improvement in the public transport service, using smart technologies to make better use of our current infrastructure, to provide reliable information and travel times.

Recent initiatives undertaken by the city to increase public transport patronage include:

→ Investing in electric commuter trains and upgrading train stations.
→ Introducing the HOP card for multi-mode travel.
→ New transport-oriented developments such as the Auckland Manukau Eastern Transport Initiative (AMETI) and the New Lynn Urban Regeneration Framework.
→ The integration of bus timetables.

The current situation

Auckland's current transport system has resulted from significant growth of the city during an era of relatively cheap private transport. The result is a low-density, widely spread city with a limited public transport network.

Compounding this has been an under-investment in public transport and a dependence on the private motor vehicle. Investment in public transport and the roading system has not kept pace with demand. As an example, Auckland's daily average travel speed declined by 3km per hour between 2006 and 2009. And the city's public transport currently accounts for only 6.4 percent of journeys during peak hours and 2.8 percent off-peak, which is close to the bottom of the range for comparable cities.

Furthermore, relative to most similar cities, the Auckland public transport system is poorly integrated in terms of modes, routes, fares and ticketing, although moves are in place to correct this.

Public transport has not been used as a driver for targeted population growth. Seldom are public transport routes and services put in place during new land developments. Rather, there is usually a hiatus until supply lags demand, by which stage the reliance on private vehicles is already firmly established.

Freight volumes continue to grow, but with little prioritisation for transporting freight to, from and around the city.

Overall, congestion is a significant cost to the region and limits productivity initiatives. The price of congestion in Auckland has been estimated to exceed $1 billion per annum.

Auckland lacks a realistic funding model to address public transport. Road users are not paying the real cost for transport and this compounds the cycle of under-investment.

A realisation that the current model will not cope with future growth has finally led to increased investment in infrastructure and modes of public transport over the past decade. Public transport has been upgraded, the rail system is part way through a rejuvenation programme, with new electrified rolling stock on order. Bus priority measures have been built and the start of integrated fares and timetabling projects are underway.

While this is a good start, Auckland still needs to put in place transformational public transport initiatives, such as the City Rail Link, if Council's vision of Auckland becoming the world's most liveable city is to be realised.

LAND USE AND TRANSPORT SYSTEMS SHOULD BE CONTINUOUSLY INTERCONNECTED ACROSS ALL MODES OF TRAVEL CHOICE

Delivering an integrated transport strategy

For Auckland to achieve an integrated transport strategy the following initiatives are all necessary:

Integrating land use and transport
Integrating land use and transport is a given when considering modern city development. Auckland needs to deal with this in two ways.

The first involves new growth areas, where planning and development must proceed on the basis of integrated transport and land use. Growth corridors and growth nodes should only be released for development when quality, high-speed and reliable public transport can be available from day one to establish early travel pattern behaviour.

The second element is the redesign of existing areas within the city. Although this is a much more difficult undertaking, a programme of long-term enhancement of transport initiatives must be actioned.

Quality planning initiatives ensure that people are able to live close to their work, and that they have easy access to the community and other services they need, such as shopping and entertainment.

Utilising smart technologies
Intelligent transport systems (ITS) will be central to how the Auckland transport system will operate in future, and therefore an integral part in the development of future transport systems. ITS allow operators to realise the maximum capacity from existing assets.

Making the system work requires a commitment from all transport operators for an integrated system to build the architecture, including transport management, infrastructure, mobile communications and logistics. There has already been cooperation between the NZ Transport Agency and Auckland Transport in the formation of the Joint Transport Operations Centre (JTOC), with real-time monitoring of bus and rail services. However, it still has a long way to go.

Creating a dedicated communication network covering all highways and arterial roads within Auckland creates the opportunity to manage the network in a way that increases efficiencies as well as reduces user frustration by keeping people fully informed. It also opens up opportunities for alternative funding mechanisms.

Development of ITS also means Auckland will be better able to respond to future technology advances and alternative transport initiatives. ITS is a fundamental component of cooperative mobility schemes in the United States and an important part of the transition to electric and alternative fuel vehicles.

Realistic pricing
Auckland's transport network suffers from historic under-investment. Recent initiatives have made significant progress, but are still essentially in catch-up mode.

Realistic road pricing through modern mechanisms is critical to funding the transport network. Such pricing of private transport enables informed decision making by the user and creates funding mechanisms for the road and public transport networks to provide alternative options for travellers.

Funding mechanisms include:

- → User charges and tolling: Sophisticated electronic tolling is a well-proven technology and cost effective to administer, if integrated and rolled out in a number of areas.
- → Fuel taxes: These already apply, but the challenge is to establish effective collection methods. Auckland has the opportunity to set appropriate fuel tax levels.
- → City development funding: Development levies and other funding initiatives can be imposed to ensure new land developments pay a realistic price towards transport infrastructure.

→ Parking/congestion charges and levies: Managing demand through parking or congestion levies is a common technique overseas. If integrated with an enhanced public transport offer, these levies could be a way to manage the pressure on the city from private vehicle usage.

→ Tax increment funding: This is generally a tax or special levy designed to capture some of the value otherwise accrued by property owners who benefit from transport and urban investment via capital gain. Such a tax or levy could be imposed where particular areas enjoy enhanced services.

→ Public private partnerships: The use of public private partnerships (PPPs) provides an alternative funding stream to deliver and/or manage the transport system and transfer risk. PPPs can be a valuable source of funding, assuming the opportunity for profit to the private sector and value for the public exists.

The Mayoral Office has recently published a document on funding options for Auckland's transport. It is important that all Aucklanders contribute to the disucssion.

A sophisticated, integrated network

All major metropolitan cities rely on a quality public transport network. This needs to be fast, frequent, safe, cheap, easy-to-use and provide the connections that people need.

Auckland is part way through a significant upgrade in its public transport network. Major improvements to the rail network, the use of bus priority measures and the upgrading of the ferry system are all necessary for a sophisticated public transport service.

The opportunity will be to leverage the investment in the new electrified rail network and dedicated bus-ways. Constructing the City Rail Link to create a through network rather than a terminating network at Britomart station is a fundamental component. Integrating bus transfers at rail connections and major bus-way stations, and park-and-ride facilities, are also essential to supporting passenger growth.

As mentioned earlier, Auckland suffers from under-investment in public transport – it is in catch-up mode. Investment will need to continue over the next few decades to underpin the world's most liveable city vision.

Targeting the critical projects

Transport is operating under constrained budgets. An affordable programme is needed to target those projects that will lead to transformational change and make the biggest difference to Auckland's future prosperity.

A CREDIBLE AND AFFORDABLE FUNDING PROGRAMME IS REQUIRED, TARGETING PROJECTS THAT WILL LEAD TO **TRANSFORMATIONAL CHANGE**

Learning from...

A people-centred land transport system: Singapore Land Transport Authority

A people-centred approach lies at the heart of Singapore's Land Transport Authority (LTA) transport system, ensuring it meets the diverse needs of an inclusive, liveable and vibrant global city[5]. Three strategic transformation initiatives over the next 10-15 years will guide the change: making passenger transport the mode of choice, managing road usage and meeting the diverse needs of the Singapore population.

→ **Making passenger transport the mode of choice:** The plan sets a passenger transport target of 85% which ensures that all passenger transport users will be able to complete their trip within one hour (door to door) during peak periods. To achieve this, the LTA focuses on the total commuter journey – ensuring that the entire public transport system is treated as a whole. As such, the LTA took on the role of central bus network planner to ensure greater integration, "hub and spoke", between bus and rail. Fare systems were restructured to support distance-based travel, removing penalties on fare transfers. Seasonal passes were introduced to provide unlimited travel on rail and basic bus services, a move that not only retained existing users, but also attracted new customers.

The backbone of Singapore's public transport network is its rail system. Currently covering 138km, an additional 140km is being added to the system every two years until 2020[6]. By then the network length per million people will have increased from 31km to 51km, making Singapore comparable to cities like New York and London, while surpassing Hong Kong and Tokyo with a station every 400m.

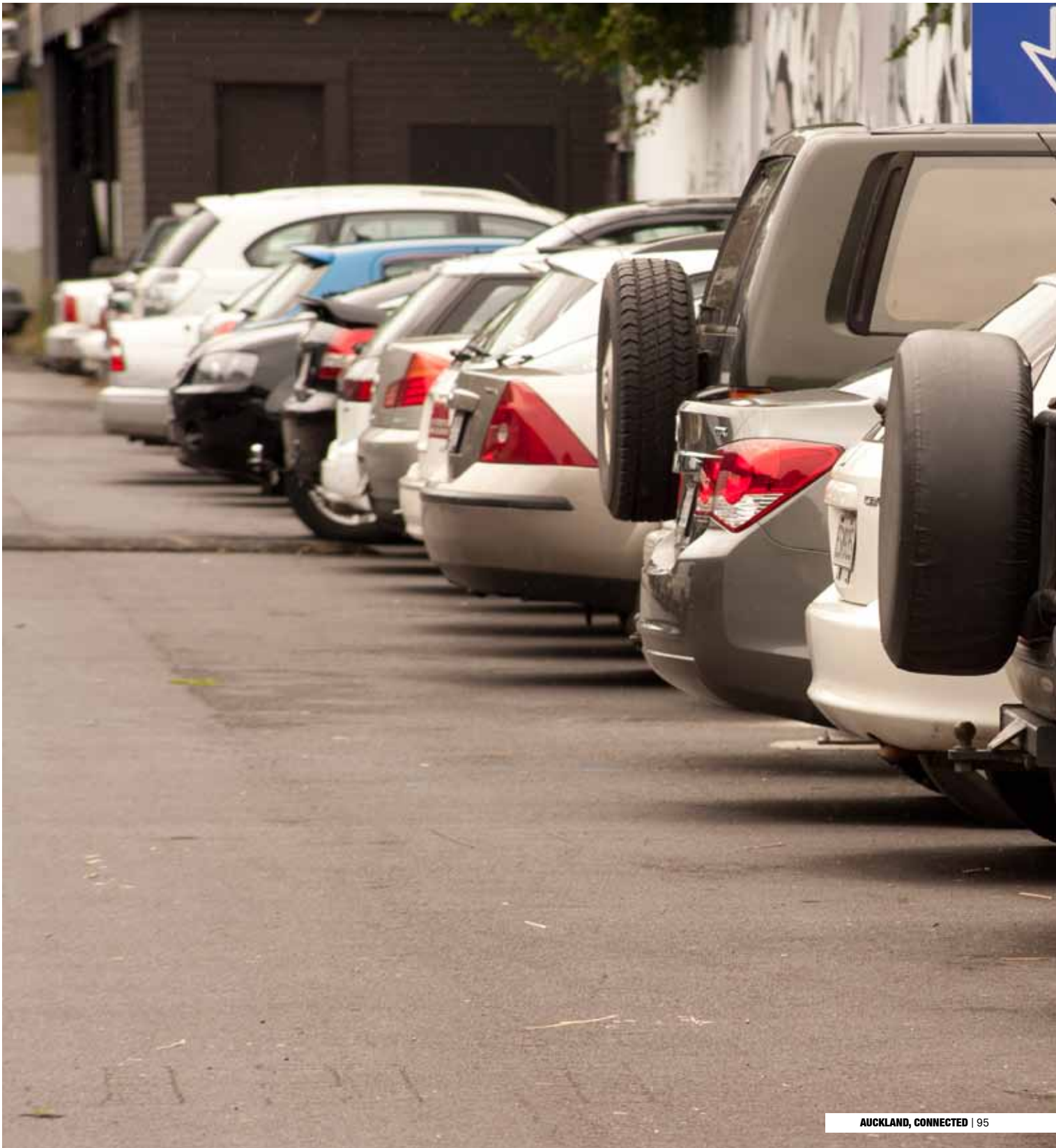
There is a continued focus on buses, with higher priority given within the street network making buses more attractive. The experience begins from home by enhancing safety and pedestrian links to stops and stations, with the ability to access standard or personalised bus services. As a result, from 1996 to 2007, total passenger transport patronage rose by 14.4 percent to 4.5 million with 80 percent of all commuters satisfied with the services provided[7].

5 Land Transport Master Plan, Singapore, 2008
6 Ibid
7 Ibid

- → **Managing road use:** The focus will shift from road taxes to additional user charges to ensure capacity for commercial use. Rail and buses will be unified so the customer sees one system with shorter travel times, to create the image of passenger transport being "my other car". New financing frameworks have been developed to ensure competition and innovation in the choice of services offered to customers. Operational and management systems will leverage more from intelligent transport systems, electric road pricing, expressway monitoring advisory systems and CCTV systems to ensure the smooth and effective running of a limited road network. Adopting a holistic approach saves money and it is estimated that NZ$38.8 million per annum has already been saved in travel time on expressways by minimising delays from incidents.

- → **Meeting the diverse needs of its people:** This can be achieved through a wider understanding of community needs. It includes, for example, ensuring that infrastructure meets the physical abilities of users, fares are affordable and services meet commuter expectations. Interchanges will become more integrated, focusing on being lifestyle hubs by supporting commercial, entertainment and retail activities, making them exciting and accessible destinations.

These three strategic objectives focus on a clear end goal: a transport system centred on people and their needs while managing the finite resources of Singapore's limited space through increased use of passenger transport.



Learning from...

On your bike: CycleCity Sydney

Improving health, reducing pollution, saving money, cutting congestion and mitigating climate change, CycleCity offers a new way of thinking about urban transport priorities. Using Sydney, Australia, as a case study, the work explores the feasibility of encouraging more people to cycle to and from the city centre. Key to the work was establishing a No Excuse Zone for Sydney.

Based on a series of test rides, a zone around the city's central business district (CBD) was mapped to measure the distance a healthy person can cycle within half an hour. The map is surprisingly far reaching and provocatively suggests if a person lives within this zone and works in the CBD, they should cycle to work at least a few days a week. The area within the zone contains a population in excess of 750,000 people who currently make almost 50,000 car trips every weekday. In a bid to create improved conditions for cyclists, suggestions for the future include cycle freeways on main routes. These would be a series of radial, fully separated cycle freeways that are safe, fast, efficient, direct and well lit, with potentially a proportion under cover. Designed for cyclists and pedestrians, they would connect Sydney's middle and inner suburbs with the CBD – to get people from home to work and back. Following this pilot study, may other cities have been mapped, with No Excuse Zones established in their urban centres.

Rethinking urban transport priorities
Through rigorous research, the study presents the bicycle as a critically important form of urban transportation in the face of major world issues, including health problems, global warming and peak oil. The findings were applied to a concise economic argument to justify a radical rethinking of urban transport priorities.

Objective. To initiate and promote a paradigm shift in urban modal transport based on sustainability and health.

Method. To design and propose a radical infrastructural intervention, which recognised the full potential of the bicycle.

Outcome. To prove and provoke, using Sydney as a case study, the positive possibilities cycling can offer health, the environment and the economy.

Key drivers for the initiative

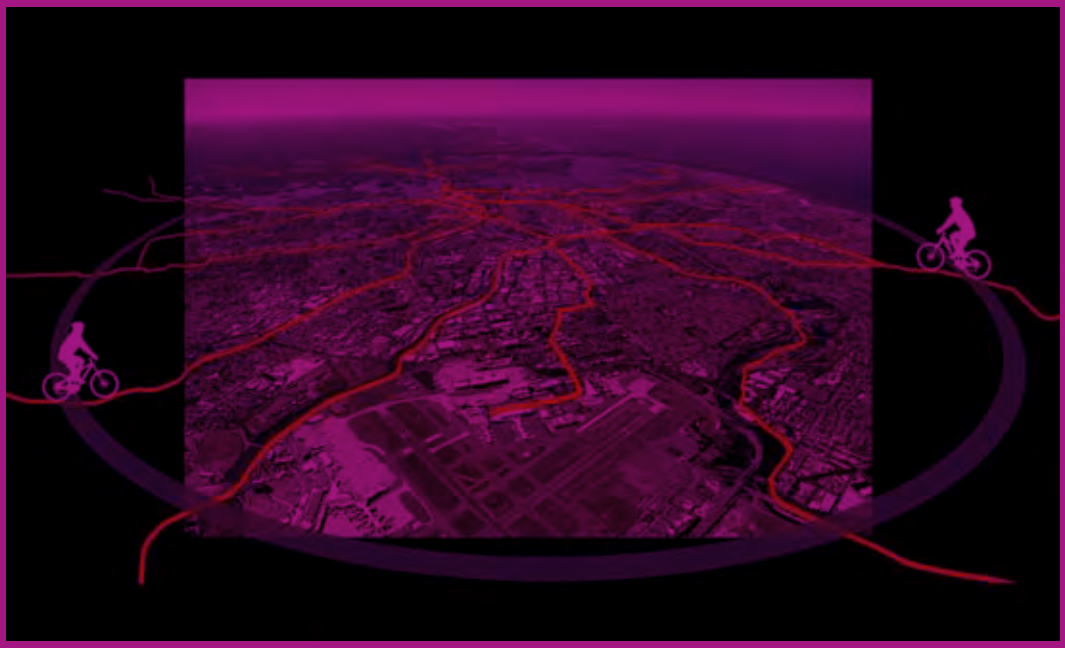
Traffic Congestion. It is anticipated that congestion on the roads will cost Australia $30 billion per annum by 2025.

Peak Oil. The “peaking and subsequent decline of world oil production was well documented and widely accepted as fact”.

Climate Change. The average car produces 4.36 tonnes of greenhouse gases per year.

Health. Physical inactivity costs Australian tax payers $15 billion a year. Physical inactivity is the second most significant cause of ill health in Australia.

Pollution. Each year, air pollution from cars causes between 900 and 2,000 early deaths, and between 900 and 4,500 cases of bronchitis, cardiovascular and respiratory disease, costing between $1.5 and $3.8 billion.



CycleCity could deliver to Sydney $NZ690 million cost savings including:

Vehicle operating costs
$87 million

Health benefits from cycling
$472 million

Decongestion benefits
$96 million

Total value of benefits
$690 million

Externality improvements
$33 million

No excuses
A CycleCity is also a liveable city. Using Sydney as a case study, the aerial photograph, above, defines the No Excuse Zone. The red-orange lines depict potential cycle routes linking the city centre and residential areas in journeys of under 30 minutes. This highlighted that the average kilometres travelled by a cyclist over 30 minutes into Sydney CBD was 10km. A six city comparison of the no excuses zone which includes Auckland and Wellington is illustrated on the following pages.

Source: AECOM

Connected Transport

What is Auckland's "no excuse" zone?

The distance a healthy person can cycle within half an hour, to and from the city centre

Key

City centre

20 minute ride

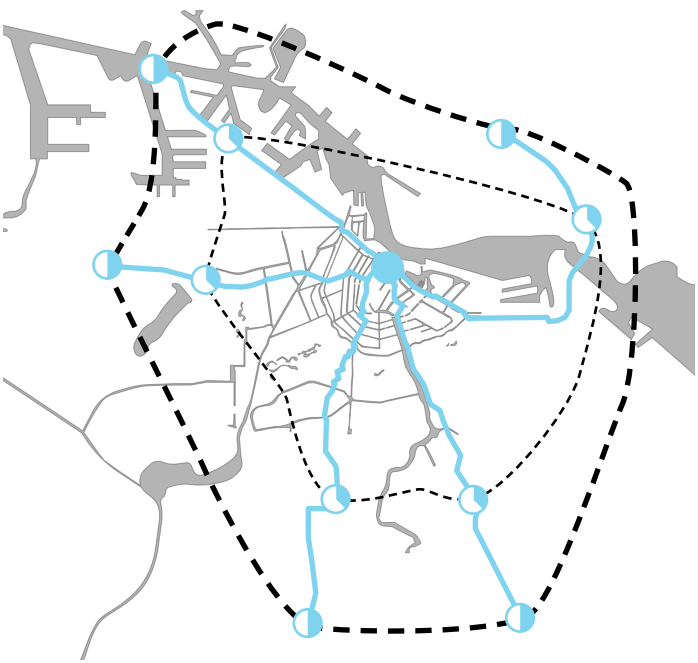
30 minute ride

Corridor route

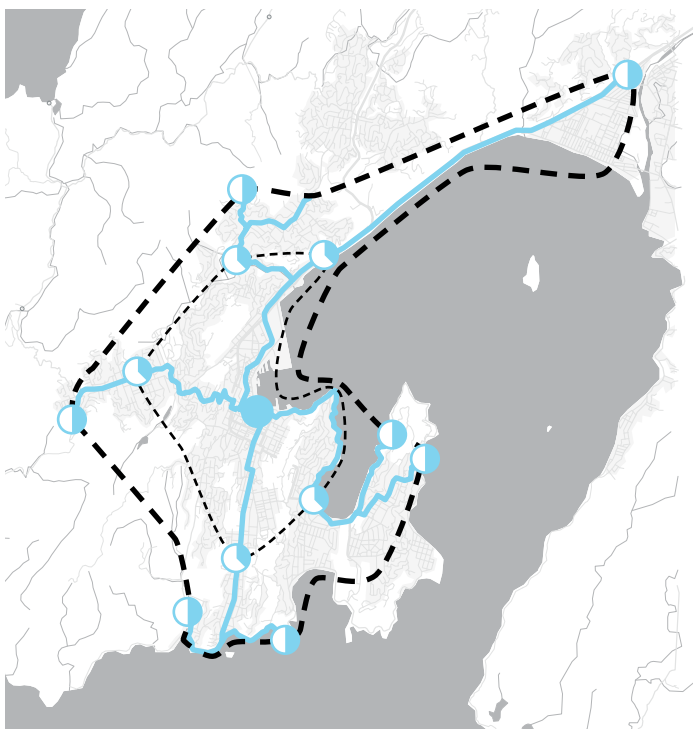
Sources

Based on a series of test rides.

Amsterdam

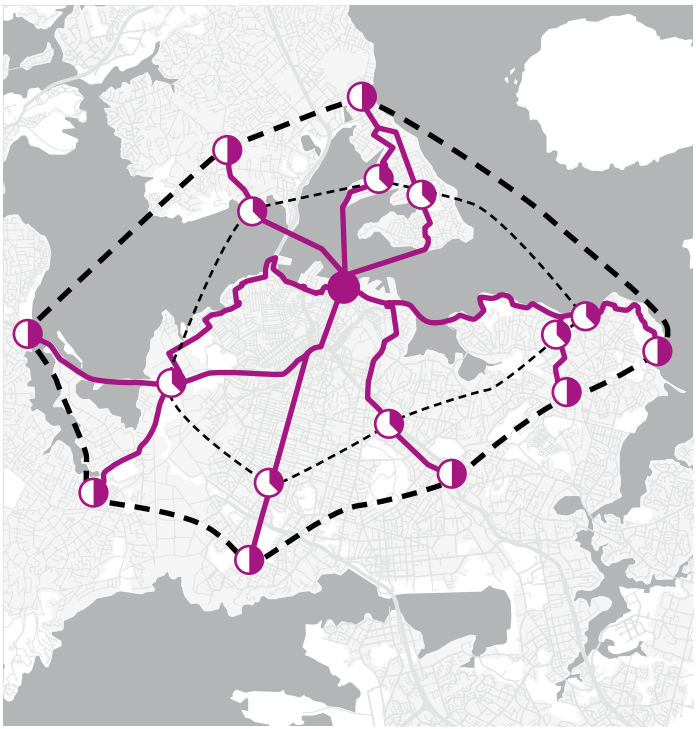


Wellington

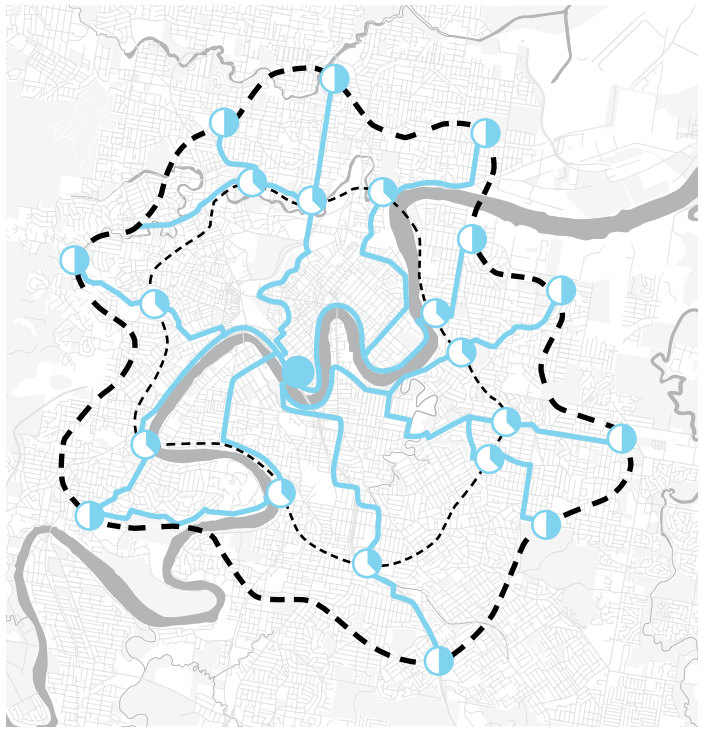


Source: AECOM

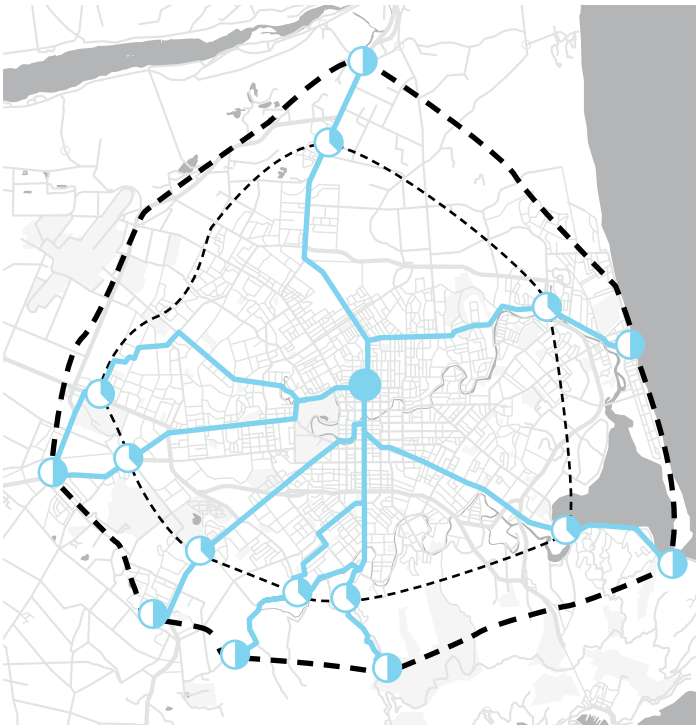
Auckland



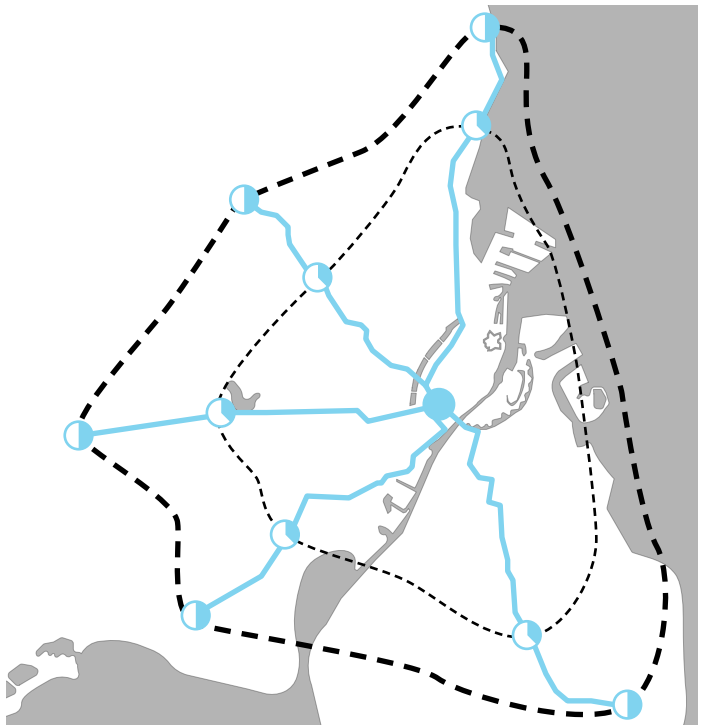
Brisbane



Christchurch



Copenhagen




TRANSPORT
INFORMATION
BUS
Arena

CONNECTED WORKING

Connected Working

Inspiring confidence through credibility

Giving confidence to the market

The economic transformation that Council seeks for its Economic Development Strategy, and which is so fundamental to turning Auckland into a high-wealth, high-skilled economy, relies on innovation and investment from the private sector. It is the private sector that will grow exports, the economy and new high-value jobs.

The market is influenced by a number of factors, of which confidence is the most critical. Some matters that impact confidence, such as national and international economic parameters, are beyond Council's control. However, there are a number of factors that Council can manage and which fundamentally impact confidence.

A robust growth plan

Implementing a robust growth plan gives significant confidence to the future direction and timing of public infrastructure investments. This in turn provides the market with confidence to plan and manage its own investment and economic expansion.

The Auckland Plan is a powerful tool with which to set the direction and investment for the city. However, the extensive number of unfunded projects in the Plan will undermine this confidence. The final Plan needs to embody clear prioritisation, identifying what is affordable within current budgets, what can be done with agreed but realistic increased funding, and what ideas can be better left for future generations to handle.

The Auckland Plan already signals this through a "less is more" philosophy. This is a sound approach and needs to be implemented.

Outcomes focused

The less is more principle outlined in the Auckland Plan is fundamental to Auckland's success in becoming the world's most liveable city. Council must be ruthless in its prioritisation of projects that will drive transformational change and leave other projects to private sector investors. For Council, there is far greater impact, and credibility to be gained from completing a few projects well, rather than a mediocre response to a number of uncoordinated undertakings.

Certainty of infrastructure

Sound robust infrastructure continually expanded to service future growth is a critical driver of economic investment. Infrastructure failures severely undermine economic confidence. Auckland has under-invested for too long in infrastructure development and has now been forced into catch-up mode.

Realistic funding

The Auckland Plan must provide a realistic funding programme to stimulate investment and development.

Auckland is a small city by global standards, with a constrained wealth base. To become the most liveable city in the world, it must leverage and carefully prioritise its programmes and projects.

Council will never be able to fund all the developments it aspires to. However, identifying critical elements and realistically funding them will boost investor confidence and the ability to leverage off public sector funding.

The alternative, of aspirational but unrealistic budgets, could discourage market investment confidence, the exact opposite to what Council is trying to achieve.

Bringing people along

A vital element in becoming the world's most liveable city is to ensure that the entire community benefits. Cities with high levels of disaffected people invariably face social cohesion issues, which detract from the city's compelling image.

For Auckland, this is about raising social and economic opportunities for all its inhabitants. This may entail encouraging some form of post-school training or qualifications, managing housing affordability or providing social and community infrastructure to all parts of the city. While there may be short-term costs to such an initiative, the benefits of engaging everyone in this bold socio-economic proposal are too great to ignore.

Making it easy to do business

Auckland needs to be an easy place to do business and a great place to undertake quality development.

The city needs to develop an "easy to do business with" reputation and Council can be an enabler of such a development. Care should be taken to identify and evaluate roadblocks and remove unnecessary constraints.


Mayoral Drive
Auckland Town Hall
Q Theatre
Queen Street


Exit to Queen St
BUS
TAXI
FERRY
CAFE
LOCKER
Toilets
Exit to QE2 Square

Learning from...
The One Hour City

The one-hour city theory (the Marchetti Constant) developed by Italian physicist Cesare Marchetti[8] identifies a one-hour, city-wide radius regardless of the mode of travel. It has been further developed by Yacov Zahavi, who concluded that, no matter where a person may live, the travelling time set aside by people is around one hour per day.

The map opposite illustrates the one-hour, city-wide limit as it applies to the Auckland region. It also illustrates the region's topography and existing industrial areas. These three elements provide a real indication of the likely future Rural Urban Boundary limit to accommodate Auckland's future industrial and residential expansion, while protecting sensitive environmental areas.

The one-hour limit applies to both road and rail travel. For vehicles, the one-hour limit has been applied at a speed of 80km per hour. Application of the Marchetti Constant shows that the existing metropolitan urban limit lies within the one-hour boundary. But it also indicates the potential to extend the limit (or Rural Urban Boundary) to accommodate and future-proof future greenfield areas and still be within the one-hour limit for both vehicle and rail travel.

The one-hour city concept has a number of benefits, supporting:

- → Active travel modes such as cycling and walking.
- → Transit-oriented developments – mixed-use residential or commercial areas designed to maximise access to public transport.
- → Compact developments within controlled expansion.
- → Infrastructure, to enable sustainable and energy-efficient developments.

The Marchetti Concept featured across two Australia cities: Melbourne applied the one-hour concept to its future growth boundary, while Sydney has also looked to apply a 30-mintue concept to its sub-regional centres.

8 Marchetti, C., (1994)

Source: Harvey, M.,(2011)


HireQuip
HireQuip


CONNECTED
TO THE WORLD


月亮灣
卡拉OK
Moon Bay KTV Bar & Restaurant
JIAXIN FINANCIAL INC.
Drapac
最派客
天然保健品礼品
添福来
Chinese Restaurant & Take
MA Accountants
嘉信
JIAXIN FI
价格

Get better connected to the rest of the world

High-performing cities tend to have fast and efficient links within their city-region and to other cities and regions by broadband, road, rail, and air, to enable the transfer of goods, services, people, technology and investment. Successful cities have strong global connections through their international airports and ports.

Auckland is the gateway to New Zealand and is this country's only city of international scale. Despite this, Auckland lacks critical mass, and faces challenges in terms of geographical remoteness, small economy and scale of business. These factors constrain productivity and inhibit access to ideas, knowledge, technology and networks. Auckland must compensate for this by clustering and agglomerating industries, and through better real and virtual connections within New Zealand and to Australia, Asia and the rest of the world.

Increased clustering and shared infrastruture will be key factors for some sectors to improving value from R&D innovation and a significant part in improving networks to achieve scale. Such an approach would see specific agglomeration benefits established, leading to the creation of efficiencies on the production of high-value goods. Connectivity is a critical determinant of international competitiveness. This includes physical (road, rail, sea ports and airports) and electronic (broadband and ICT) infrastruture. To achieve the objective of better connectivity, Auckland must:

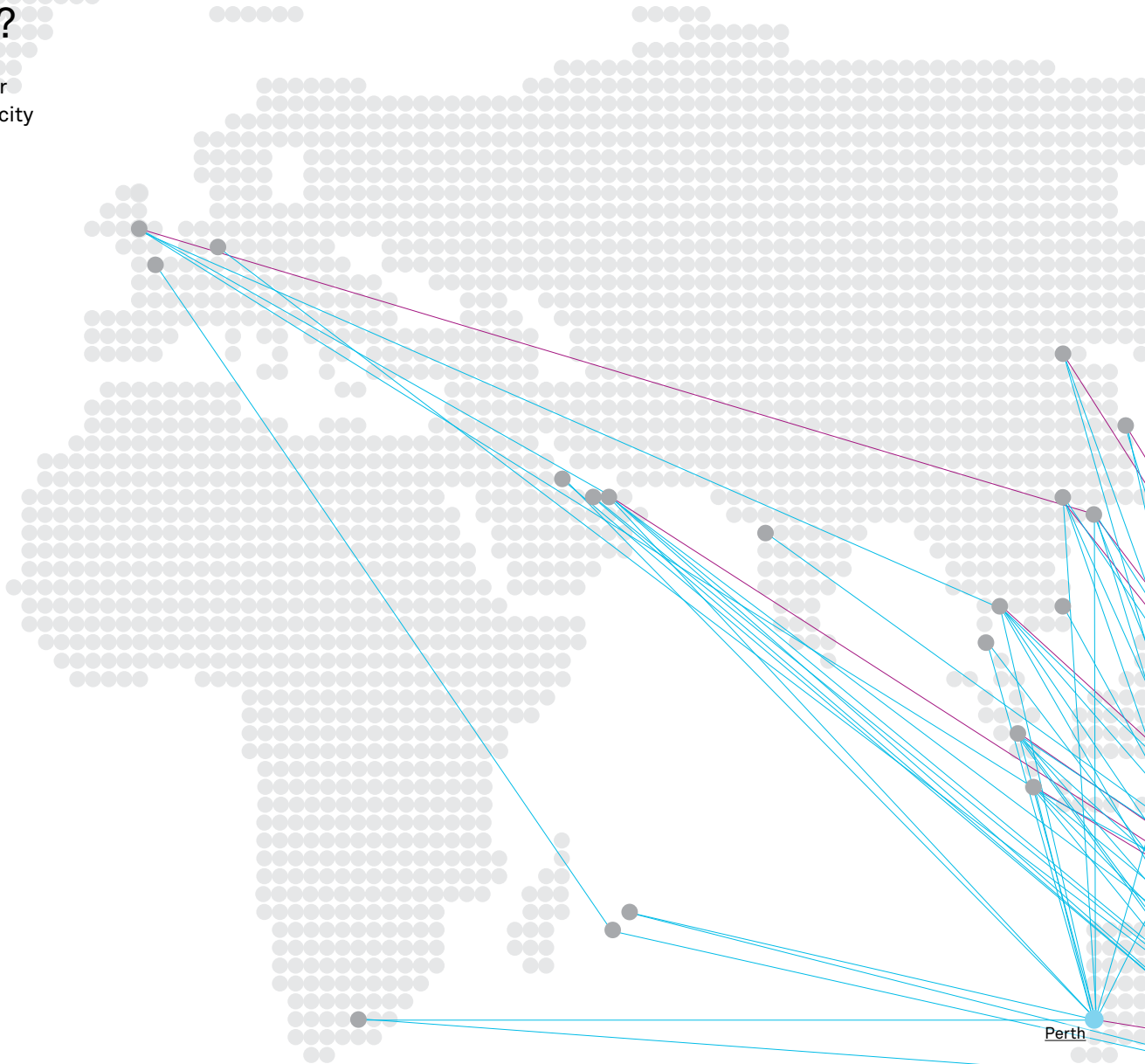
→ Promote international travel and trade, and the benefits of doing business with New Zealand.
→ Improve connectivity within the Auckland region, and Hamition and Tauranga, through better infrastructure and building the advantages of agglomeration and scale.
→ Foster the development of innovation parks and clustering of industries to generate greater value derived from R&D innovation and shared infrastruture.
→ Fill critical skill gaps from the Kiwi diaspora and targeted immigration, enabling ideas and technology to be developed through international networks.
→ Leverage the economic precinct of Auckland International Airport and the "aerotropolis" concept to improve access to New Zealand and, more importantly, access to Australia, Asia and beyond.
→ Provide virtual connectivity to promote high-quality telecommunication links with the rest of the world.
→ Promote and foster trade through the opening up of the regulatory environment with Australia and the development of trade into the Asia-Pacific region.
→ Promote Auckland as a tourist destination and for its accessibility to other premier tourist destinations.
→ Demonstrate the value of New Zealand as a destination and encourage inbound tourists to stay longer in New Zealand.
→ Create a culture of innovation and technology by opening ourselves up to new ideas by challenging the way we think and act.

BETTER REAL AND VIRTUAL CONNECTIONS TO NEW ZEALAND, AUSTRALIA, ASIA AND THE WORLD

Connected to the world

How connected is Auckland to other cities?

International passenger airport connections by city

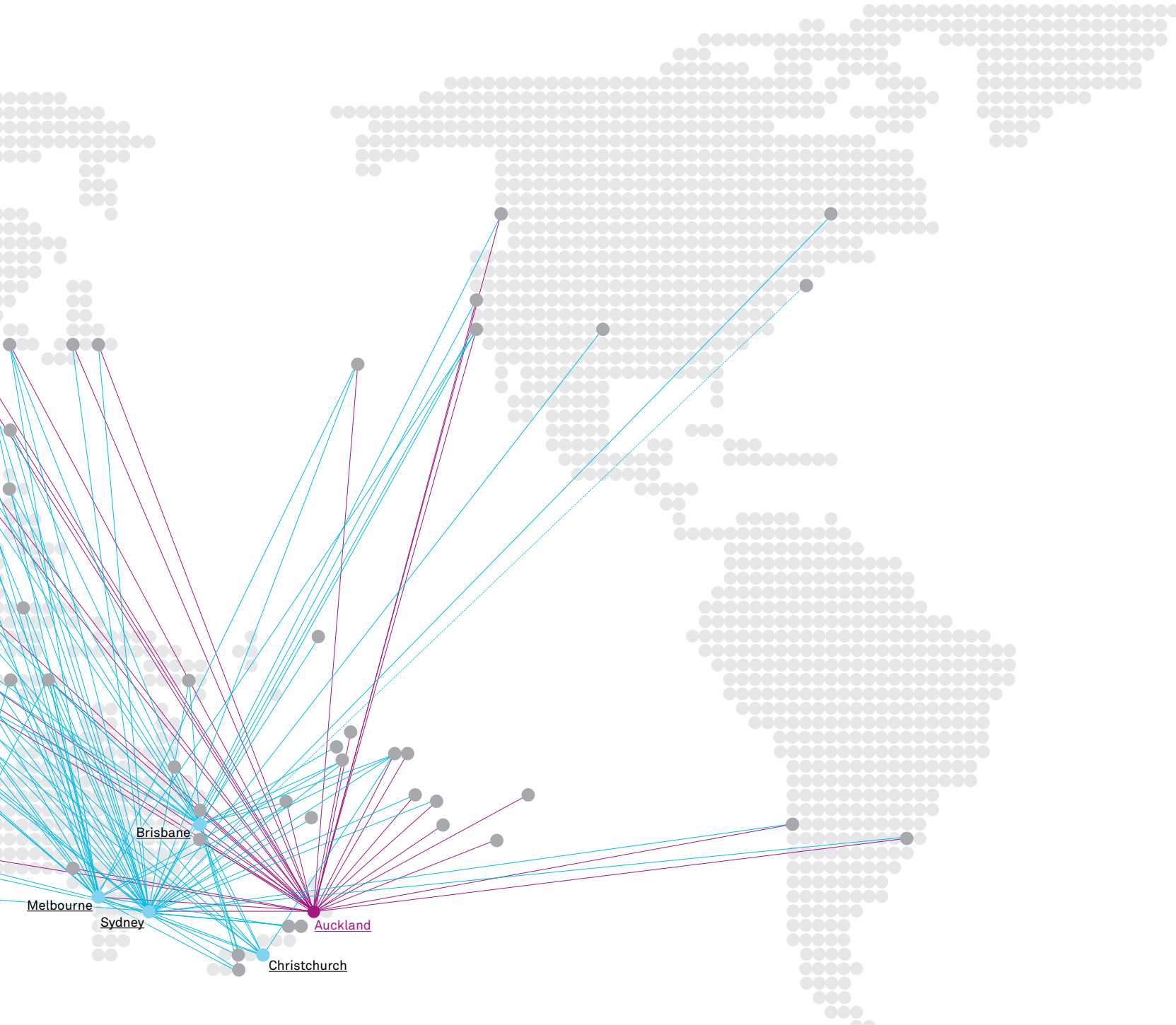


Key

- Auckland
- Peer cities
- International destination

Sources

Auckland Airport Company
Australia Pacific Airports Ltd
BAC Holdings Ltd
Western Australia Airports Corp
Sydney Airport Corporation


Brisbane
Melbourne
Sydney
Auckland
Christchurch

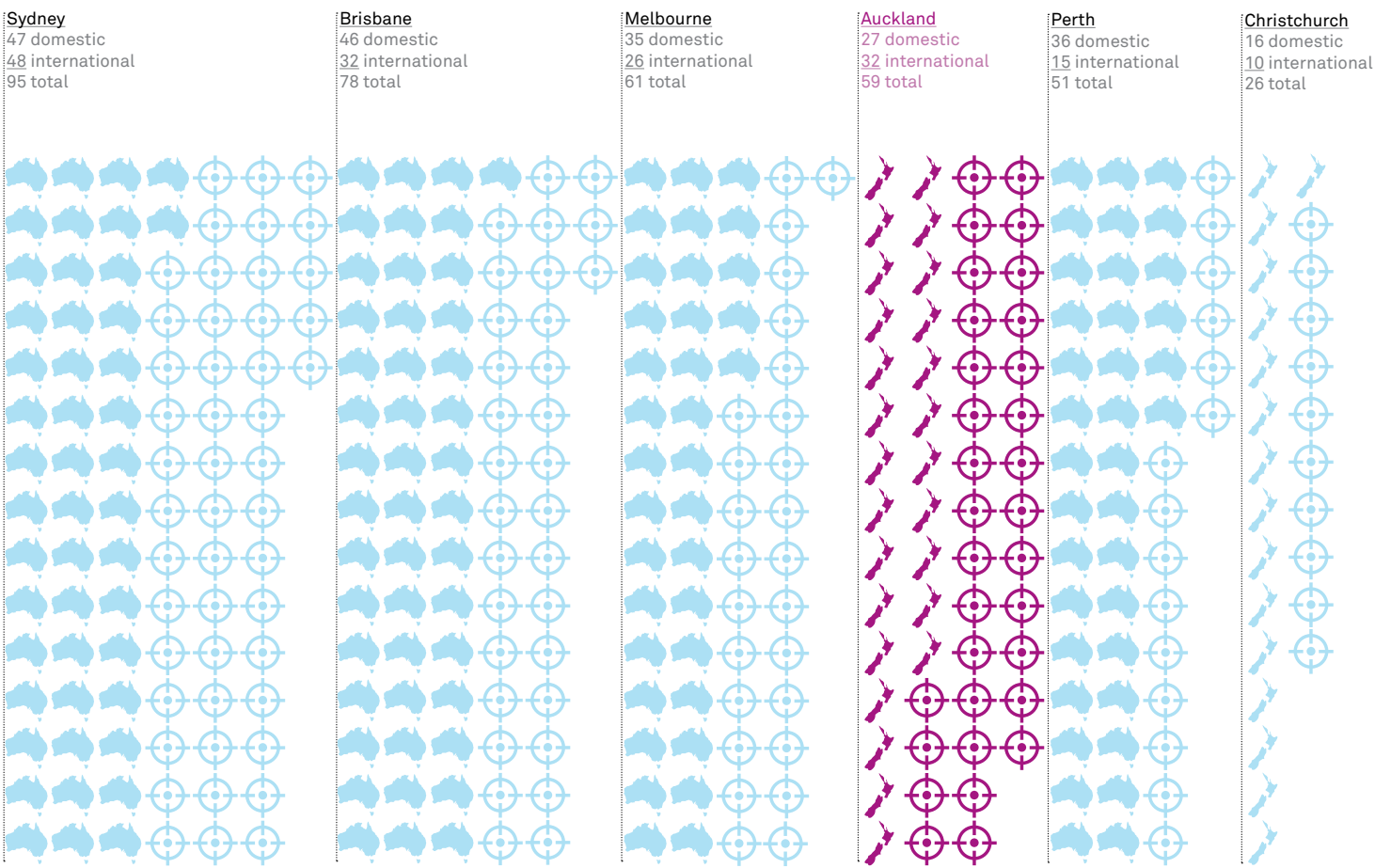
Connected to the world

How many people flying to and from Auckland?

Sources

City of Melbourne
Royal Commission on Auckland Governance
Washington University
Wien International

Number of international and domestic passenger destinations serviced



Connected to the world

How much non-aviation land available?

Key

1 square
::
50 hectare (ha) of land

Sources

Auckland Airport
Brisbane Airport
Christchurch Airport
Perth Airport
Sydney Airport
Melbourne Airport

Land area available for non-aviation business precinct development

Brisbane
1,000ha non-aviation property

Perth
700ha non-aviation property

Auckland
443ha non-aviation property

Melbourne
319ha non-aviation property

Christchurch
88ha non-aviation property

Sydney
81ha non-aviation property

Connected to the world

How far to the CBD?

Key

1 circle
::
5 minutes

Sources

Auckland Airport
Brisbane Airport
Christchurch Airport
Perth Airport
Sydney Airport
Melbourne Airport

Average vehicle travelling times - Airport to Central Business District (CBD)

Sydney
8km

Melbourne
27km

Auckland
21km

Perth
17km

Brisbane
15km

Christchurch
12km

Learning from...

Aerotropolis: Connecting to future growth

In many ways, cities have become more important than nations. Cities attract and consolidate people, wealth and innovation. Cities allow us to establish new and strengthen relationships through the exchange of ideas, goods and services.

The connective capacity of a city usually dictates its ability to evolve and grow. Now, like the railroad terminals and the ports that went before it, the airport is increasingly the principal economic gateway. Worldwide passenger movements continue to grow steadily at around 5 percent per year, with some regions such as Australia and Asia increasing well above that rate. Professional services, tourism, leisure and higher education are now also part of global economic networks, with key resources in one centre the catalyst for work in another distant urban centre.

The increasing centrality of aviation in our global life has profound implications for a city's economy. When measured by weight, less than two percent of global trade travels in the cargo hold of a plane. When calculated by value, an astonishing 40 percent now moves by air. High-value, low-weight products such as technology components, pharmaceuticals and perishable products are part of complex and extended global supply chains. Any city that seeks to derive comparative advantage by producing, and consuming products and services, through these evolving and dynamic supply chains must inevitably embrace aviation gateways.

Airports provide international access to a region. Increasing the number of overseas destinations served by an airport can influence where companies base their operations. In turn these business generate economic activity and diversity. For example:

- → Every one million passengers travelling through an airport support 3,000 direct and indirect jobs.
- → Every regularly scheduled long-haul air service that travels through a hub supports around 2,000 direct and indirect jobs.
- → A 10 percent increase in passenger numbers creates two percent growth in the regional economy.
- → One percent increase in regional growth rates produces 2.7 percent more passengers.

City airports have traditionally been located at the edge of urban limits. They were considered standalone, with insular functions, and hostile and incompatible with other functions. Today, in the age of globalisation and urbanisation we are seeing the emergence of the airport city – or the "aerotropolis". The airport city organises and consolidates commercial, logistical, hospitality and leisure functions that seek proximity to a dominant transportation gateway.

There are reciprocal benefits for both the airport and the airport city between "airside" and "landside" developments. If airside activities increase (more destinations, more passengers, more cargo) then landside developments become more valuable. If landside developments grow in variety, breadth and scale they become a destination for travellers and cargo, which in turn encourages the growth of airside capacities. Ultimately the airport city can be seen as the interactive combination of airside aviation and the associated landside economic clusters.

In the aerotropolis model the alignment of roads and public transportation that stretch between the airport and the city become "innovation corridors" where new industries can accrete and develop. The future prospects for the city and the airport become inextricably linked.

Auckland is already the largest commercial centre in the country. If Auckland Airport continues to expand its available destinations and if a specialised airport city develops around the airport, with first class transport services to central Auckland, then it too will evolve into what is referred to as an aerotroplolis. As competitive cities continue to develop their comparative advantages in a globalising world, Auckland and its international airport will increasingly rely on each other.

PEOPLE LIVING IN AUCKLAND, LOS ANGELES AND SEOUL ARE BECOMING MORE ATTUNED TO EACH OTHER THAN TO THEIR IMMEDIATE NEIGHBOURS

Source: AECOM


MAERSK
HAMBURG SÜD
MAERSK
P&O

CONNECTED URBAN FORM

Quality urban form[9]

The look and feel of a city and the quality, and character of our neighbourhoods, and natural environment, are significant contributors to the city's liveability. Growth is inevitable and the challenge will be to provide for planned residential and business growth within an urban form that can accommodate and affordably service that growth. And to do that in a manner which maintains Auckland's existing advantage of quality neighbourhoods, strong communities and lifestyle choice.

How Auckland's growth is accommodated is fundamental to whether the very qualities that make it so enjoyable and affordable will be either compromised or enhanced. If managed appropriately, growth will create significant advantages. If managed poorly, growth may seriously detract from the very qualities that led many people to settle in Auckland.

Auckland needs a settlement pattern that delivers connected urban form.

Connected urban form

Connected urban form refers to a network of communities and centres linked by efficient and affordable infrastructure corridors. Each of the centres has a unique role and function, and together they create a distinct urban settlement pattern. The centres will also have their own discrete identity and character, recognising and enhancing the existing form and arrangement of streets and buildings.

The network pattern of connected urban form will create a range of different-sized centres with multi-modal corridors linking the largest and the smallest. This will allow a greater choice of transport modes for visitors, residents and workers.

Connected urban form for Auckland must acknowledge the city's existing decentralised pattern, and identify and develop a connected network of denser centres and corridors offering variety and choice of functions and ease of access within and between each centre.

The aim of a connected urban form approach is to provide a community focus in compact patterns, with affordable housing choices, while allowing high accessibility between each centre.

Directing concentrations of employment, denser housing and urban services into a network of vibrant, accessible and relatively self-contained centres will require integration of economic, housing and transport policies.

Emphasis must be placed on a clearly understood implementation, facilitation and delivery framework.

9 Gillen, M., 2011

AUCKLAND NEEDS A SETTLEMENT PATTERN THAT DELIVERS CONNECTED URBAN FORM


SENIOR COLLEGE

Quality living/urban form[10]

Auckland's current urban environment

Auckland has a stunning natural landscape and character. The city has been built to take advantage of its harbours, coastline, volcanic cones, parks and other natural attributes. This has led to a number of challenges:

→ Auckland is a low-density, spread-out city. Most growth has occurred during the era of the private motor vehicle, so personal transport was widely available.
→ There is poor integration between land use and public transport.
→ There is a growing public transport network, but it is starting from a low base and many residential areas lack dedicated, efficient and reliable public transport connections.
→ Auckland is running out of land for peripheral expansion.
→ A future carbon-constrained world will create difficulties for a dispersed settlement pattern.
→ Auckland currently offers a variety of accommodation types and lifestyle choices, although there is a significant over-representation of single detached dwellings and townhouses.
→ Urban design patterns vary. The past decade has seen a focus on design, but significant portions of the city's building stock still date from an era lacking design quality.
→ Employment is historically centralised generating demands for long-distance commuting.

The attraction of Auckland

Auckland has many spacious, well-developed neighbourhoods located near to or along its extensive coastline and open spaces. This has resulted in significant sprawl, which will make the provision of physical and social infrastructure difficult and costly for a region whose population will grow to two million or more by 2040.

Auckland, like many of the world's most liveable cities, will need to move to a consolidated settlement pattern. This will see various parts of the Auckland region targeted for growth. These areas will be well-connected with public transport and have high levels of physical and social infrastructure (both existing and built as part of the city's growth management controls).

Auckland's future urban form must support and enhance its "liveability" through the establishment of a series of well-connected communities and centres. These will be sustainable, healthy environments that are resource efficient and well serviced by a range of retail activities, employment and housing opportunities.

10 Ibid

AUCKLAND, LIKE MANY OF THE WORLD'S MOST LIVEABLE CITIES, WILL NEED TO MOVE TO A CONSOLIDATED URBAN FORM

Accommodating Auckland's growth

Council proposes a sound settlement approach of a compact city, focusing growth around key nodes and along transport corridors, with a balanced strategy between urban intensification, greenfields development and satellite towns.

This represents a significant change to Auckland's existing urban form.

If Auckland is to build community support for this new city form, and to reinforce rather than undermine the very qualities that make it such a great place to live, then the transition from a low-density city to a compact city will need to be very well managed.

The Auckland Plan's approach of setting a hard and immediate target of 60 percent development within existing urban areas and only 40 percent greenfields under estimates the complexities of the issue. We strongly recommend a transition over time from current growth rates to the new targets. Experience elsewhere and market inertia tell us, traditonal consumer demand and a range of inter-connected factors will continue to mitigate against a set of unrealistic planning targets imposed upon an existing urban framework, without a comprehensive supporting framework for implementation and delivery.

If Auckland is to succeed in achieving a compact city model, then the following strategy is strongly recommended:

The urban growth boundary

→ Identification of an urban growth boundary, which is flexible and responsive enough to sustain growth. This boundary will provide a spatial growth limit, with recognition that all development needs will be adequately accommodated within the boundary until 2040, and prevent development outside the boundary. The urban boundary creates a metropolitan edge, protects agricultural and rural landscape values, and promotes connected density in identified development areas.

→ Ensure sufficient land supply so that development potential is not so constrained that it creates a scarcity of available sites and unfairly increases land prices, which in turn will impact housing affordability and industry.

→ The ongoing monitoring of development trends, as supply and demand will be critical to understanding that the urban growth boundary may have to change over time. The notion that sufficient land is available for new development within the urban boundary needs to be questioned and tested, as do the assumptions it is based upon. Regular monitoring and review of both the key assumptions and available capacity are critical to support the rationale for an urban growth boundary.

Urban/greenfields transition

→ Set a series of transition targets as Auckland moves from its current ratio of approximately 40 percent urban infill to 60 percent greenfields development ratio, to a settlement pattern much more focused on urban consolidation. Over time, this will give markets the opportunity to respond to the new housing and industrial types required for a compact city.

→ A 30-year plan needs to focus on what can realistically be achieved now and in the short-term against what other connected density policies and incentives can achieve over the medium to long term.

For instance, a reasonable target split might be:

- 0-5 years 45/55% intensification/ greenfields.
- 6-15 years 50/50%.
- 15+ years 60/40%.

However, the sliding scale approach needs regular monitoring, analysis and adjustment. Under this process, the release of brownfield and greenfield land can be phased in such a manner to meet demand, support and direct industry practices, and encourage regeneration of abandoned low-density sites for new and more efficient land use activities. It would also enhance the use of public and active transit modes.

Reassuring the neighbours

→ The potential that urban locations may provide for extra housing demands a detailed, local capacity assessment. This will chart the physical capacity and also the market viability and timing of a site's release. It can be developed in the short term with the establishment of an urban housing capacity tool.

→ Promote, encourage, regulate and, if necessary, provide some showcase developments of good-quality suburban apartments. One of the key reasons communities oppose urban consolidation is concern at the quality of high intensity housing. Good-quality development will change public perceptions.

→ Promote flexibility, to enable a range of different housing types responsive to different lifestyles, ages and cultures. This must range from housing that caters for those who enjoy the extended family lifestyle through to students, single workers, the elderly and traditional families.

→ Promote a housing policy that will assist in housing affordability.

Council can increase affordability through the planned release of development land, with sufficient over-zoning to ensure supply is not constrained and prices pushed higher. Council must lead and manage the timing for social and physical infrastructure, including public transport, which are necessary to make communities function.

→ Dispersing social housing throughout communities, so there is not a disproportionate over representation of social housing in selected areas.

The importance of urban design

→ Develop the community and physical infrastructure within the growth nodes and corridors to provide a range of community facilities that will, in turn, promote the attractiveness of these urban intensification areas.

→ Set a strong urban design framework which will drive quality. It is the cumulative impact of a number of small initiatives which make a significant difference. In this way, the community will encourage high quality without unduly compromising affordability. Focus on a place-based guideline which deals with local identity and character.

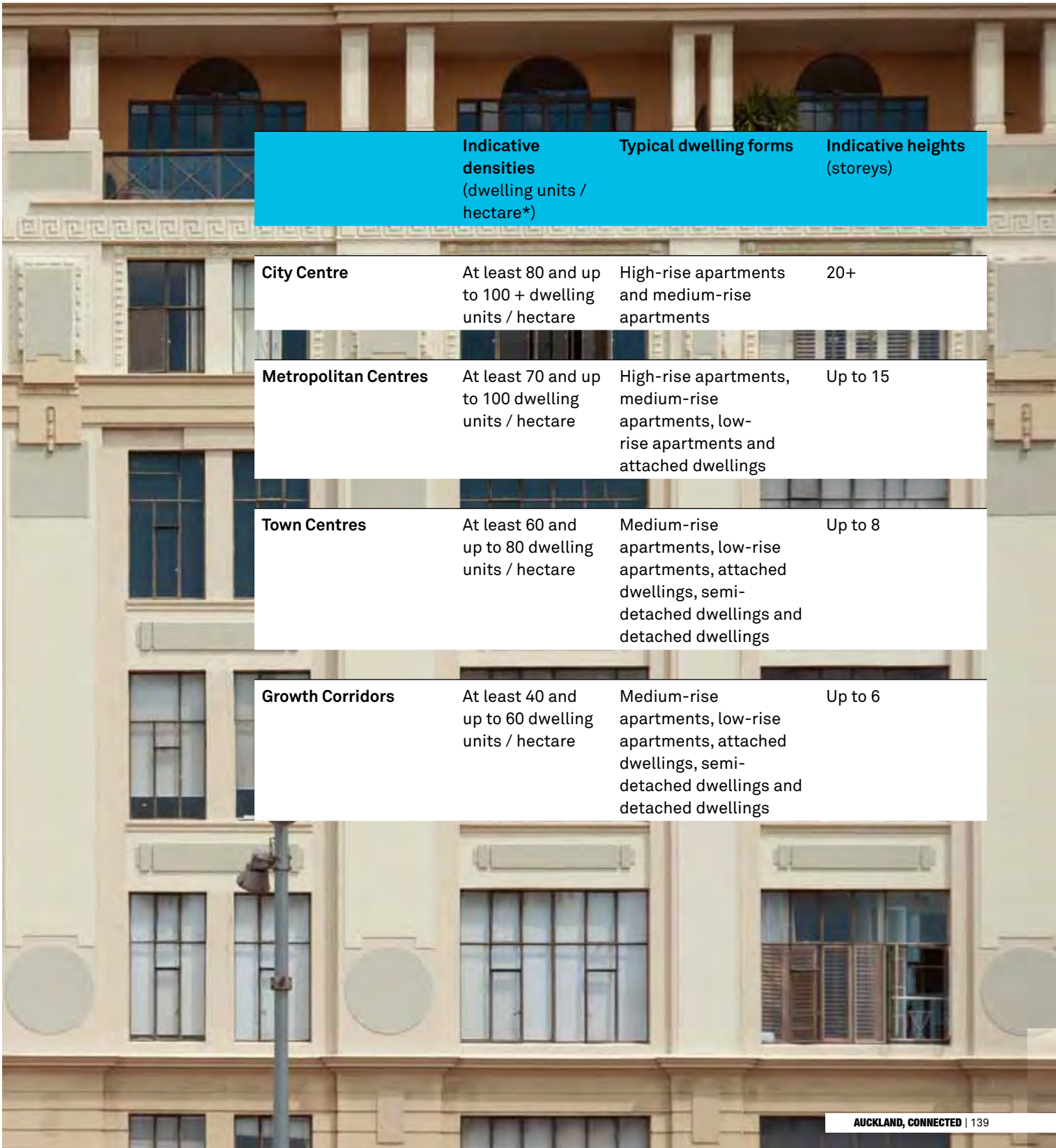
→ The development of an Auckland place-based urban design framework will provide a valuable guide and reference source for leading practice. This framework would focus attention on the macro issues of access and movement, identity and urban character, mixing of uses, density and form, energy efficiency, water and wastewater, public realm and landscape design. More localised micro-scale issues would include cadastral patterns, the character of existing streets and buildings, local materials and Crime Prevention Through Environmental Design (CPTED).

→ Emphasising design quality and a drive to deliver a sense of place in all locations, from the CBD to individual developments, needs to be supported by a commitment to raising the standards not just of the policies but the decision-makers themselves. Education and mentoring of Council planning and design staff are essential and should be a medium to long-term commitment.

→ Successful implementation of the future Auckland will require both private sector innovation in partnership with targeted public sector intervention to facilitate the desired outcomes. The opportunity exists to promote more infill development by leveraging from "lazy" under utilised public assets – e.g. land owned by Council and Central Government which is surplus to operational requirements.

Controlling density levels

→ Set minimum densities in growth areas. If Auckland is to pursue a strategy of retaining its extensive character areas for people who enjoy that lifestyle, then Council must carefully manage the development of urban intensification areas. Failure to manage this transition to higher-density development will lock up land for more than 50 years and promote demand for greenfields development as the city simply runs out of land for development within the urban area.Indicative minimum densities and dwelling type arrangements for infill locations suitable across the Auckland region are illustrated in the following table.



	Indicative densities (dwelling units / hectare*)	**Typical dwelling forms**	**Indicative heights** (storeys)
City Centre	At least 80 and up to 100 + dwelling units / hectare	High-rise apartments and medium-rise apartments	20+
Metropolitan Centres	At least 70 and up to 100 dwelling units / hectare	High-rise apartments, medium-rise apartments, low-rise apartments and attached dwellings	Up to 15
Town Centres	At least 60 and up to 80 dwelling units / hectare	Medium-rise apartments, low-rise apartments, attached dwellings, semi-detached dwellings and detached dwellings	Up to 8
Growth Corridors	At least 40 and up to 60 dwelling units / hectare	Medium-rise apartments, low-rise apartments, attached dwellings, semi-detached dwellings and detached dwellings	Up to 6

	Indicative densities (dwelling units / hectare*)	**Typical dwelling forms**	**Indicative heights** (storeys)
Satellite Towns	At least 40 and up to 55 dwelling units / hectare	Medium-rise apartments, low-rise apartments, attached dwellings, semi-detached dwellings and detached dwellings	Up to 6
Local Centres	At least 20 and up to 50 dwelling units / hectare	Low-rise apartments, attached dwellings, semi-detached dwellings and detached dwellings	Up to 5
Rural and Coastal Settlements	At least 20 and up to 40 dwelling units / hectare	Low-rise apartments, detached dwellings, semi-detached dwellings and attached dwellings	Up to 4
Rural and Coastal Villages	At least 15 and up to 25 dwelling units / hectare	Attached dwellings, semi-detached dwellings and detached dwellings	Up to 3

* Dwelling units per hectare for site density only.

→Auckland is currently a low-density city and the public perception of density needs to be carefully managed. Higher densities are often mistaken for significantly taller buildings and in Auckland over the past decade, this has been linked to poorly performing building design and “leaky” apartment blocks. The development of a residential density handbook showcasing leading practice examples will help educate a sceptical public. The handbook ideally should be richly illustrated and show design form, density (dwellings and people per hectare), car parking and public transit proximity, and public and private amenities.

→Ecourage a planning regulatory framework which rewards and encourages comprehensive master-planned development within growth areas.

DESIGN OF AUCKLAND'S URBAN SPACES MUST CONSIDER THE SPATIAL AND INSEPARABLE DIMENSION OF CONNECTIONS BETWEEN LAND USE ACTIVITY AND THE TRANSPORT SYSTEM

Connected Urban Form

How do Aucklanders get around?

Percentage who commute to work by public transit

Bogota 62%

Vienna 36%

Toronto 34%

Berlin 26%

Wellington 17%

Amsterdam 16%

Sydney 11%

Auckland 7%

Percentage who commute to work by bike

Amsterdam 37%

Berlin 13%

Vienna 5%

Bogota 2%

Sydney 2%

Toronto 2%

Wellington 2%

Auckland 1%

Sources

APA-Grafik Modal Split, Wiener
ADONIS 1998
Auckland Councils
Berlin Traffic
Camara de Comercio de Bogota, Colombia
City of Toronto
NSW Bureau of Transport Statistics
Greater Wellington Regional Council

Percentage who commute to work by automobile

Auckand 80%

Sydney 69%

Wellington 66%

Toronto 57%

Amsterdam 32%

Berlin 32%

Vienna 31%

Bogota 15%

Percentage who commute to work on foot

Berlin 29%

Vienna 28%

Sydney 18%

Bogota 15%

Wellington 11%

Amsterdam 10%

Toronto 7%

Auckland 5%

Learning from...
Howick Town Centre

Auckland's residents love their city and are often reluctant to support change if they believe it will have a negative impact on the quality and character of the environment. This case study illustrates that development sensitive to the overall character and heritage can take place in Auckland's historic town centres. This development can produce a significant increase in the number of residential units and commercial floor space.

Howick
Howick (or Howick Village), established in 1847, is one of Auckland's oldest suburbs. It is a "fencible' settlement", where land was provided for retired soldiers who agreed to emigrate to New Zealand to defend Auckland should war break out. Residents of Howick are proud of this history and the area is often described as "perhaps Auckland's most historically conscious place".

Picton Street, Howick's main street, runs along a ridge, with land dropping steeply on either side and breathtaking views across the Hauraki Gulf to Waiheke Island and beyond. Picton Street is anchored at one end by the heritage All Saints Anglican Church and at the other by Stockade Hill, the original defensible position established by the early settlers. There are a number of significant heritage buildings and sites between including Our Lady Star of the Sea Cemetery, The Prospect of Howick and the McInnes Building. The centre is identified as a Special Character Business Area with additional controls over development.

Much of the land between Picton Street and the coast is identified as a Residential Heritage Zone with restrictions on site subdivision. There is no prospect of a rail connection to Howick and the Auckland Plan does not promote a ferry connection to the CBD. Because of this and the centre's significant heritage interest, the Auckland Plan notes Howick as a town centre that has limited opportunities for growth.

However, Howick is one of the town centres in the eastern suburbs of Auckland where mixed use developments, including apartments, have recently been successfully undertaken. This includes "The Terraces'", completed within the past year. This development has converted and extended a disused shopping mall into a new mixed-use development including 34 residential apartments and a number of retail/commercial uses, including a boutique cinema, swimming school, gym and shops. It is safe to assume that this type of mixed-use, infill development will continue to occur in Howick.

Auckland Council owns significant land within the town centre area. Much of this is currently used as surface car parking and has the potential to be developed for other uses. Many other sites are also under-utilised and could contribute further to the vitality of the town centre – and even Auckland's wider housing shortfall. Unless Council takes the lead with its own exemplar schemes and a well-thought-through master plan, it is likely that development will occur in an ad-hoc manner without the benefits of integrated planning and thinking.

Character of the existing town centre

Features that contribute significantly to the current character of Howick include:

- → The scheduled heritage buildings and structures.
- → The open views along Picton Street to and from both All Saints Church and Stockade Hill.
- → The glimpses of Hauraki Gulf and islands from Picton Street.
- → The narrow shop frontages of most buildings along Picton Street and Cook Street that contribute to the area's "village" character.
- → The general "organic"character of the area, such that there is not one dominant building type or material.
- → The numerous walkways and alleys linked to Picton Street and Cook Street
- → The existing square and its weekend markets.
- → The numerous independent shops and businesses that are located in the area
- → The good range of community facilities, including the library, churches, police station and medical clinics.
- → Street trees and other plantings around the town centre.

Testing futures

What could the future Howick look like, taking into consideration the importance of maintaining the existing character of the town centre whilst providing a wide range of building types and lifestyle choices. The 3D image on the following page illustrates a potential future Howick in which all scheduled buildings and the existing views along Picton Street and from side roads facing towards the Hauraki Gulf will remain. Buildings along Picton Street and Cook Street are generally only two storeys high, with a third floor set back from the building frontage to maintain the current intimate, small-scale character of the streets. In key locations, such as on corners and at

intersections, buildings increase in height to three storeys, with a fourth floor set back from the building frontage. These taller buildings enhance the townscape quality of the streets by providing additional enclosure. The town centre still consists of a group of high-quality, individually designed buildings rather than monolithic blocks.

A regenerated Howick town centre would provide additional choice by supplementing existing family housing in the local area. For example, new terrace housing and apartments with different tenure options could encourage younger residents to remain in the area by stepping onto the property ladder. Additional shops are of a scale that encourages independent owners, along with new offices/workplaces. The Square remains a focal point for the community, with additional enclosure brought by the new buildings set around it, on existing alignments. Community facilities, such as churches, the Uxbridge Centre and the library would all remain. On-street public car parking can remain, with additional parking located in new parking building sites between Picton Street and Fencible Way. Additional residents in the town centre will improve the viability of extra bus services, linking to areas of employment e.g. East Tamaki, Manukau City Centre, Half Moon Bay ferry, and CBD via the Auckland Manukau Eastern Transport Initiative (AMETI).

Source: AECOM

Overall area of mixed use town centre	9.9 Hectare
Potential residential units	510 to 590
Potential dwelling mix	One to three bed apartments
Density	52 dwelling units per hectare to 60 dwelling units per hectare
Size of units m²	Apartments range between 45m2 to 90m2 in accordance with locally agreed standards
Potential additional commercial floorspace	Up to 7,600m2

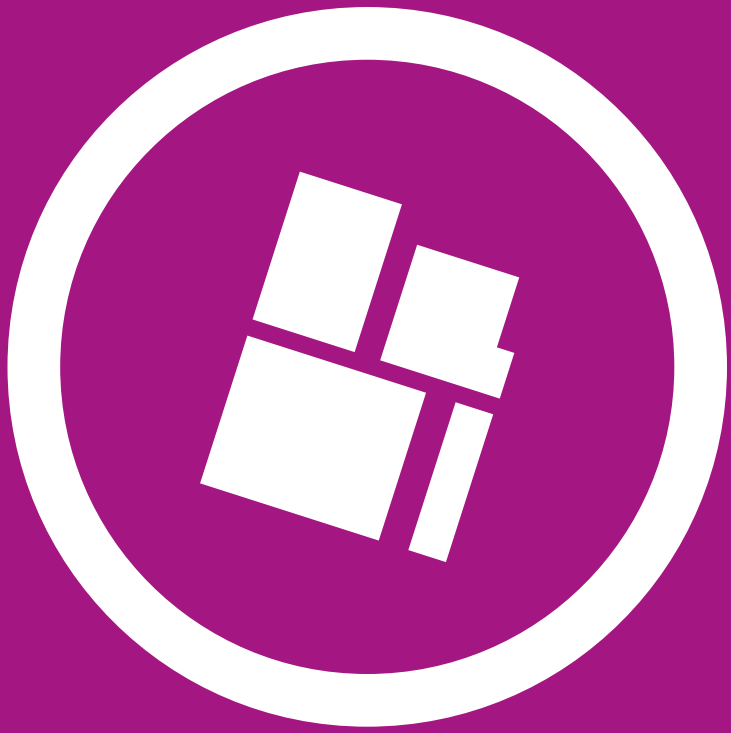
Learning from...
Urban design strategy and guides

Successful cities recognise urban design as a critical component of good urban form. Portland, Toronto and Singapore are examples where urban design strategies and guidelines enforce the city's and public's development expectations. These cities demonstrate that an urban design manual, with the appropriate planning tools, does not restrict development investment, innovation and good urban design outcomes.

Auckland Council's new Urban Design Strategy and Guidelines should consider how to:
- → Promote the design of a liveable city.
- → Promote high-quality urban design.
- → Promote and advocate for high-quality urban design.
- → Provide assistance to developers.
- → Show-case examples of urban design.

The following expands and identifies some areas of action, acknowledging work undertaken by previous councils and Auckland Council.

Promote the design of a liveable city
- → Advance the Auckland Plan by shaping growth and special interest areas through a series of high-level visual concept plans (and where necessary localised concepts). These identify opportunities for development, potential density (gross floor area/plot ratio), community facilities, heritage and movement corridors, as well as areas sensitive or restricted to development.
- → Translate the Auckland Plan's vision of a liveable city into concepts/localised plans. For example, town centres and neighbourhoods not only give certainty to residents but also guide future investment funding for developments.
- → Concept and/or localised plans are supported by sound planning tools via the Unitary Plan.
- → Development and zoning changes are achieved through the planning tools of Auckland Council's new Unitary Plan.



Promote high-quality urban design

→ Develop an Auckland-specific urban design strategy and guides.
→ Align city policies and rules to deliver the best practices in urban design e.g. ensure interagency documents, such as corridor management plans, airport master plans and environmental considerations align and promote the design of a safe and liveable city.
→ Provide guidance of urban design objectives where gaps exist, e.g. technological business/industrial parks, tall buildings and infill developments.
→ Reinstate the value of significant sites and buildings to communities, to create focus.

Promote and advocate for high-quality urban design resources and skills

→ Develop guidelines to clarify and support the urban design objectives of the Auckland Plan and Unitary Plan.
→ Acknowledge and bring together previous urban design guides for apartments and town centres so they are accessible on a Council urban design website – make it a globally recognised site of leading urban design guidance.
→ Urban design panels – expand these to include wider participation from the public and urban specialists.
→ Auckland conversations – these are essential to sustaining the professional/public understanding of urban design and change within the natural and physical environment.

- → Develop an Auckland Council urban publication – collaborate with central government, universities and industry on urban design practices and research (e.g. URA Skyline, available at http://www.ura.gov.sg/skyline/skyline_main.html, Raleigh Urban Centre http://www.raleighnc.gov/urbandesign).
- → Support academia in developing urban design skills to ensure Auckland has highly skilled urban design specialists available in the future.
- → Engage with communities – form workshops and local seminars to identify gateways, buildings and areas of significance at grass root and local board level.

Provide assistance to developers

- → No matter the scale or the design issue, assist applicants and developers before and during the application phase. This ensures that the process is efficient and results in faster application processing times.

Show-case examples of urban design

- → Inform the public why urban design matters – visually, for example through the use of road shows.
- → Show examples of good local urban design projects alongside international examples.
- → Provide guidance on minimum-density developments – consider virtual applications as a planning tool. Explain and demonstrate step changes necessary for sustaining growth.
- → Consider being a lead developer, through public investment. Design and implement a show case of good urban mixed use.

Source: AECOM


Trans
Trans

AUCKLAND, CONNECTED

“EFFICIENCY IS DOING THINGS RIGHT. EFFECTIVENESS IS DOING THE RIGHT THINGS”

PETER DRUCKER


Hospital
Grafton
TENNIS CENTRE
MUSEUM
16
EAST
Port
University
1
MWY SOUTH
Hamilton
16
MWY WEST
Helensville
1
MWY NORTH
Whangarei
STH

The way forward

The Global Cities Institute has examined Auckland and the Auckland Plan. Our objectives were to help advance strategic thinking across critical issues and to facilitate informed decision making. In parallel, we have "tested" Council's vision that Auckland will be the world's most liveable city. Our view is that Auckland can achieve this status, but not without transformational change to boost Auckland's economy and enable all those who live and work in Auckland to share in the wealth this creates.

Throughout our work, four themes kept emerging:

→ Connectedness of the economy, society and the environment.
→ Transformational change to a high-value, high-wealth economy.
→ Investment in transport to make it easier to move around Auckland.
→ Inspiring confidence through credibility.

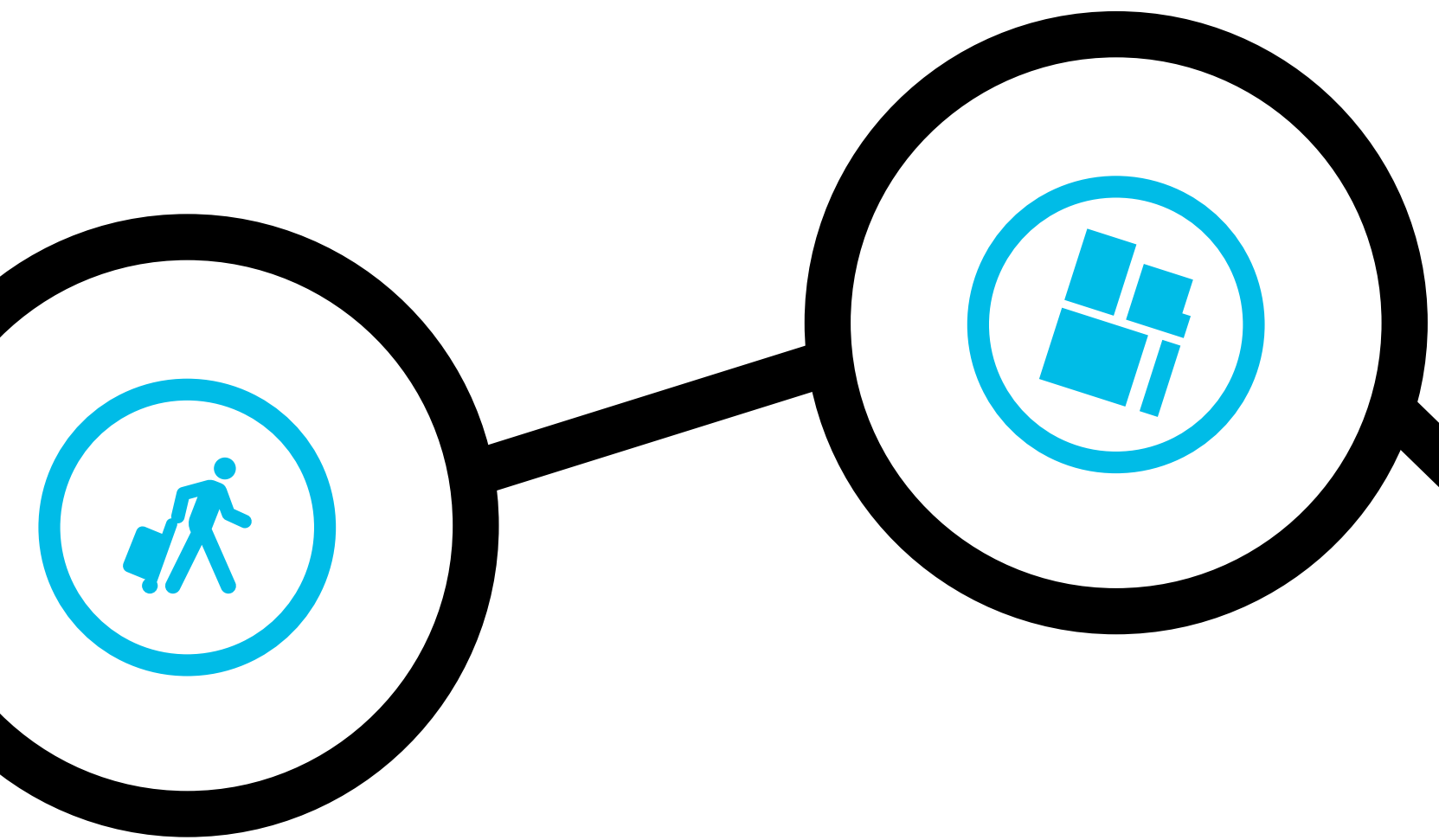
These four themes are at the centre of our recommendations on the way forward.

Connectedness. This theme is so important that we called this book *Auckland, Connected*. Being connected is at the heart of a liveable and prosperous city. An interconnected city is an evolving city embracing and understanding its past, and its future aspirations, through a unified plan, vision and continuity of leadership.

In this book we have devoted a chapter to each of our facets of connectedness: Connected Economy, Connected Transport, Connected Working, Connected to the World and Connected Urban Form, all supported by case studies to facilitate learning and understanding. Our work shows the potential and challenges of becoming a connected city.

Auckland, Connected underpins the notion that, if Auckland is to be the world's most liveable city, it must function as one connected city. Strengthening Auckland's connections as the nation's gateway to the world, if realised, will be far reaching and will benefit all New Zealanders.

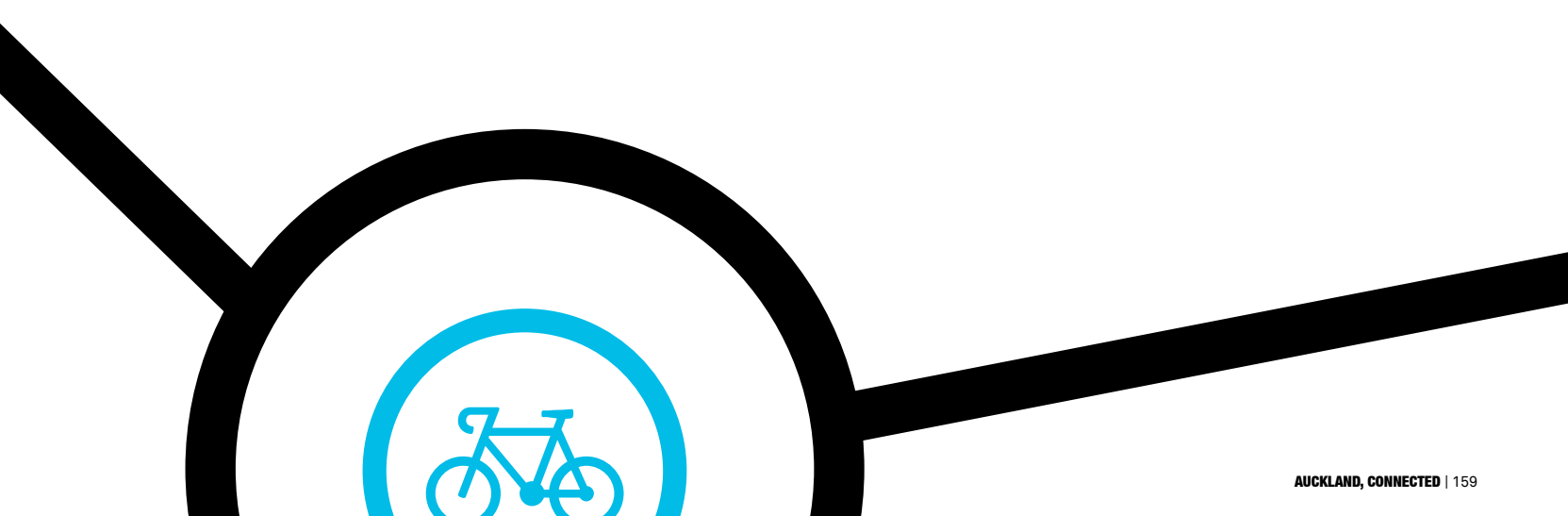
Transformational change. The status quo of a low-wage, two-speed economy is not a viable option. In our view, Auckland is at a crossroads and the only viable choice is to embrace transformational change across the whole economy. Without transformational change Auckland will be a pleasant place to live, but it will not achieve the status of the world's most liveable city.

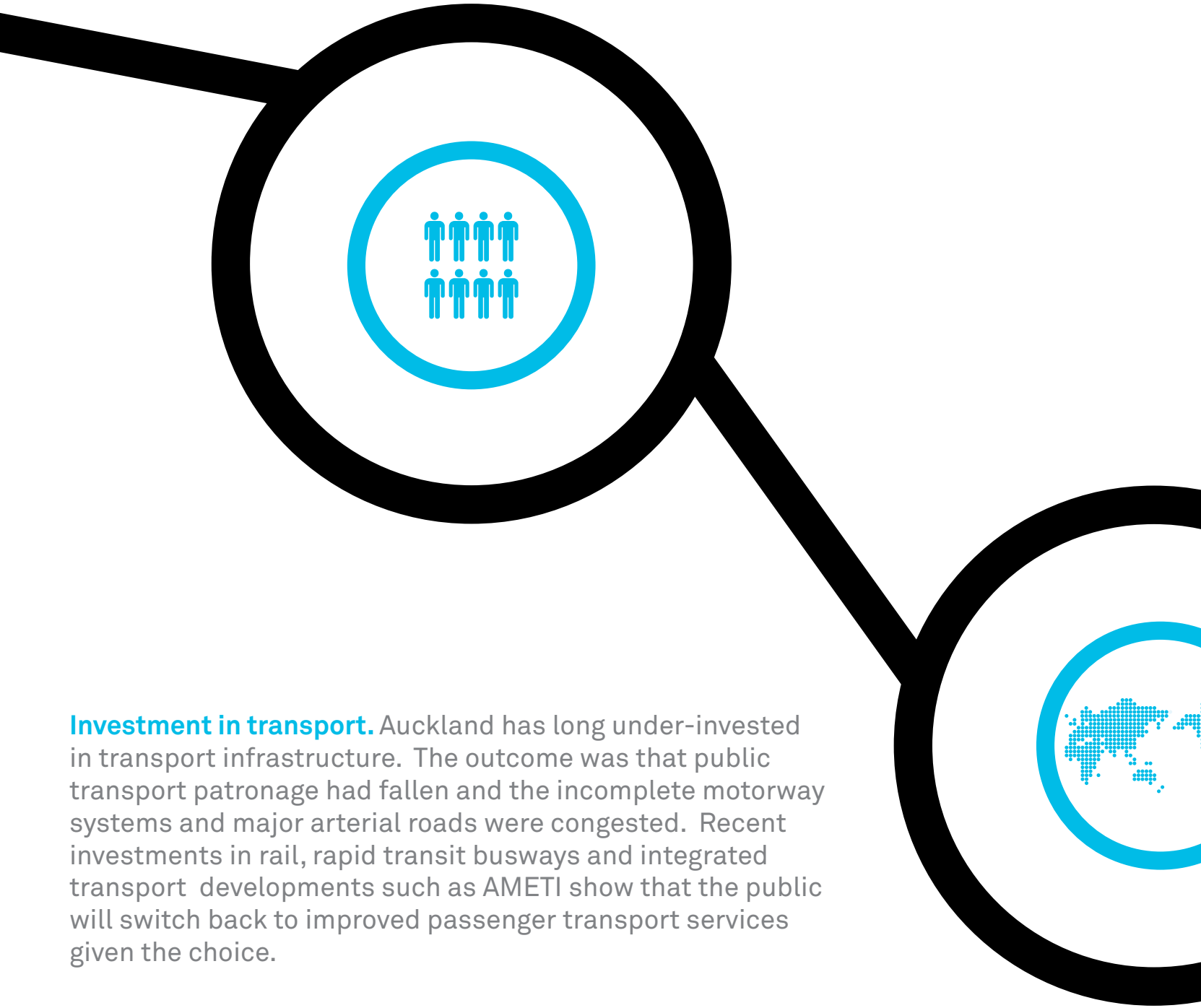


Auckland must make the transition from the current low-wage, low-skill economy to an innovation based, high-value knowledge economy. It can do this through embracing research and development and innovation, upskilling our people to equip them with the skills needed, attracting the most talented people back to New Zealand, clustering businesses to bring economies of scale, and focusing on international trade to grow our market places.

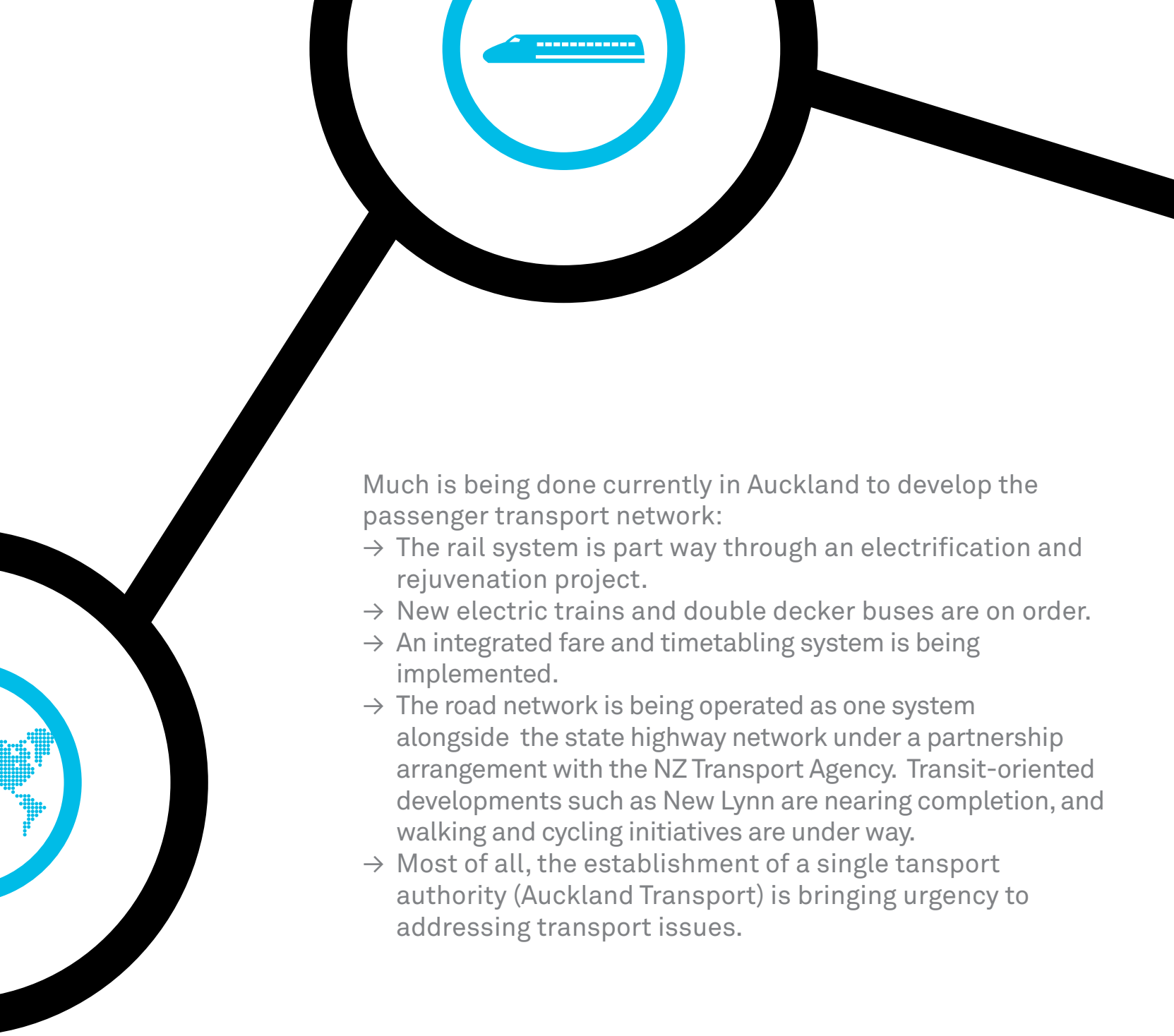
Such a transition will create wealth for all New Zealanders. It will enable us to restore our standard of living, as measured by the OECD League tables, from our current position of 28th back into the top half moving closer to our major trading partners.

That will enable critical infrastructure investment and make retirement, education and healthcare affordable to all. Given a choice, we do not believe Aucklanders would want the status quo.



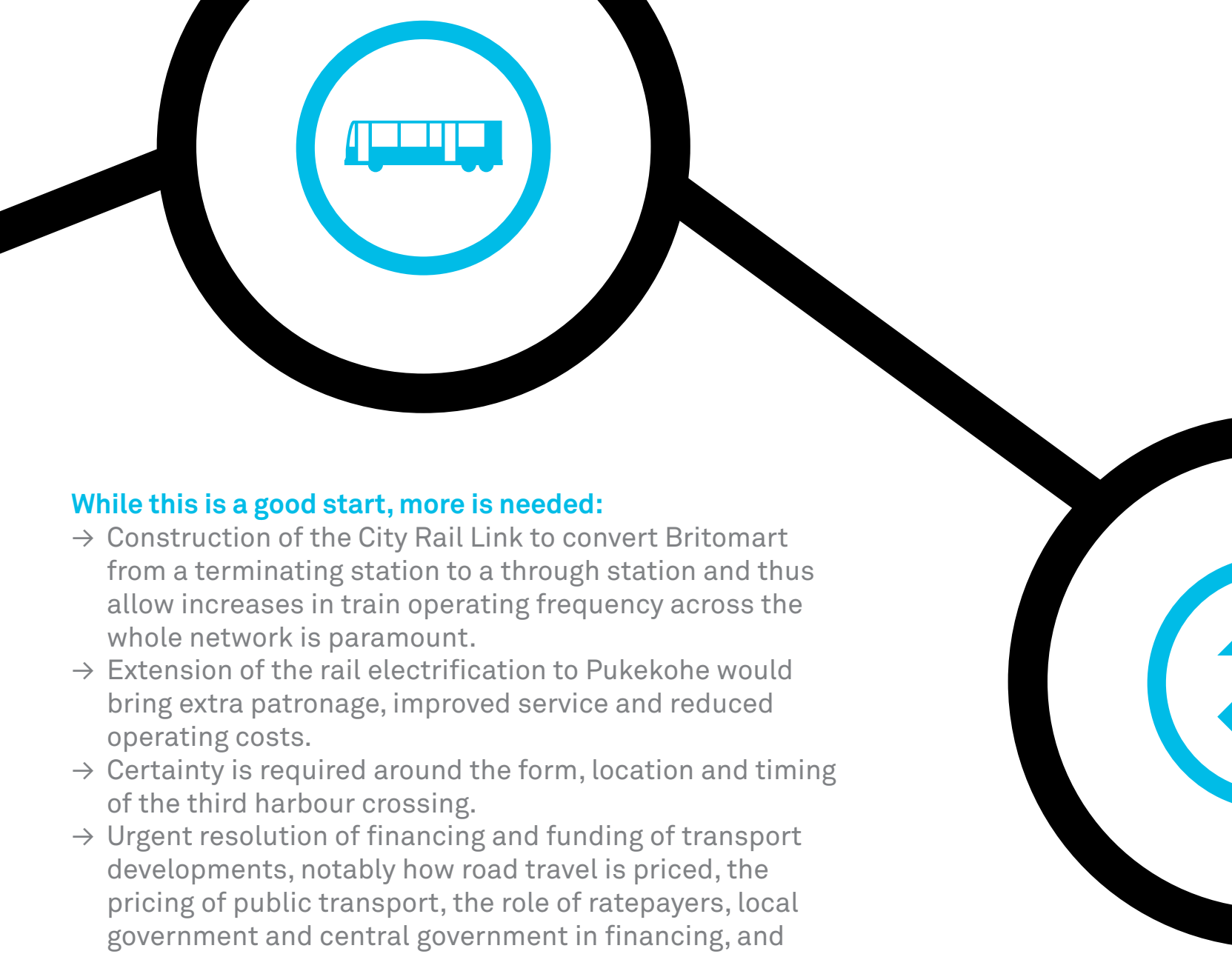


Investment in transport. Auckland has long under-invested in transport infrastructure. The outcome was that public transport patronage had fallen and the incomplete motorway systems and major arterial roads were congested. Recent investments in rail, rapid transit busways and integrated transport developments such as AMETI show that the public will switch back to improved passenger transport services given the choice.



Much is being done currently in Auckland to develop the passenger transport network:

→ The rail system is part way through an electrification and rejuvenation project.
→ New electric trains and double decker buses are on order.
→ An integrated fare and timetabling system is being implemented.
→ The road network is being operated as one system alongside the state highway network under a partnership arrangement with the NZ Transport Agency. Transit-oriented developments such as New Lynn are nearing completion, and walking and cycling initiatives are under way.
→ Most of all, the establishment of a single tansport authority (Auckland Transport) is bringing urgency to addressing transport issues.



While this is a good start, more is needed:

→ Construction of the City Rail Link to convert Britomart from a terminating station to a through station and thus allow increases in train operating frequency across the whole network is paramount.

→ Extension of the rail electrification to Pukekohe would bring extra patronage, improved service and reduced operating costs.

→ Certainty is required around the form, location and timing of the third harbour crossing.

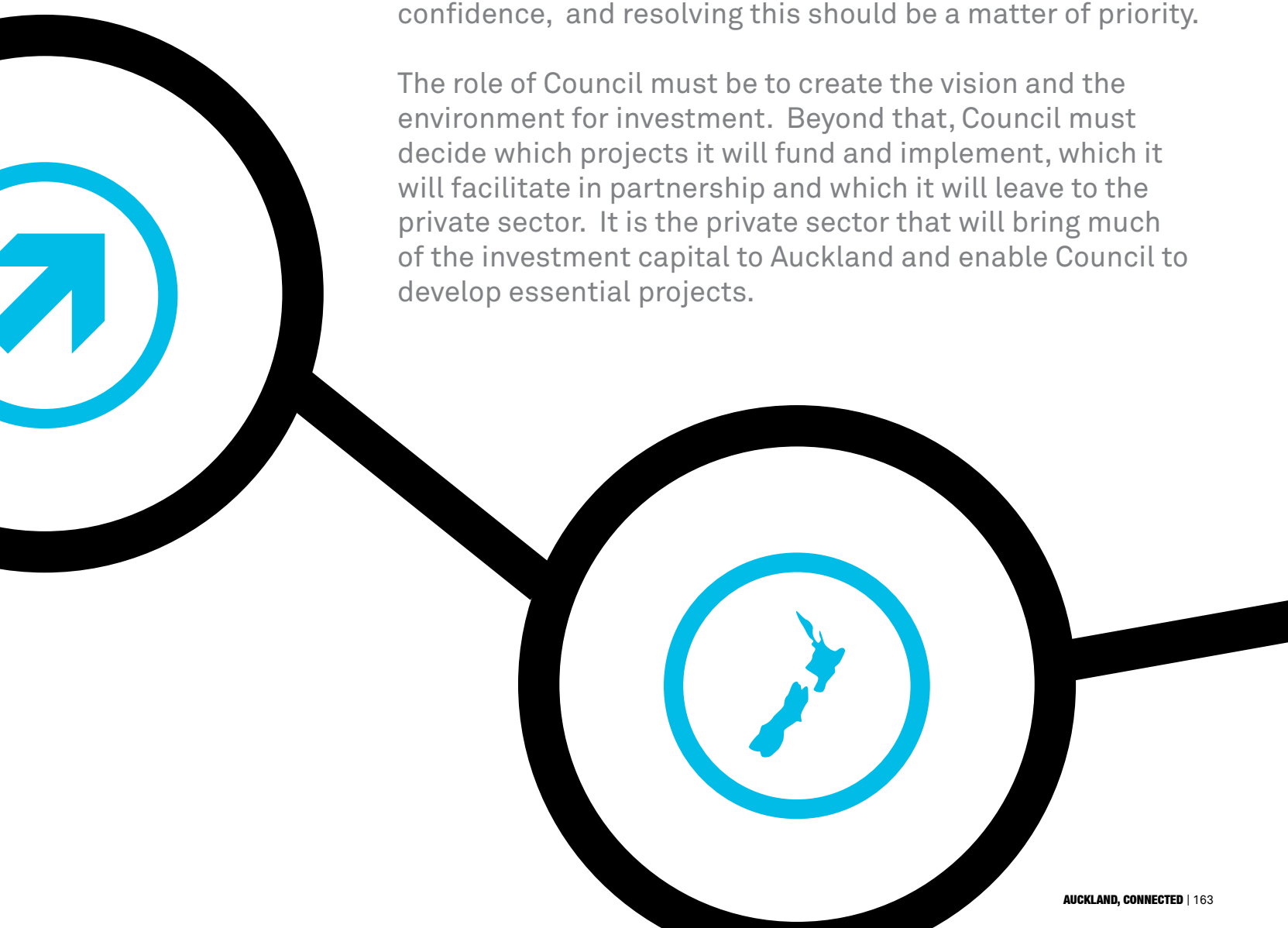
→ Urgent resolution of financing and funding of transport developments, notably how road travel is priced, the pricing of public transport, the role of ratepayers, local government and central government in financing, and consideration of intergenerational equity.

Auckland is not alone in facing funding gaps for critical infrastructure. Other cities face larger gaps where older infrastructure requires replacing. The critical debate and discussion which has already started, is “who pays and at what cost”.

Inspiring confidence through credibility. It is essential that Auckland Council provides bold leadership to realise the vision and delivery of the Plan. This will provide confidence that Council has a clear understanding of the future potential of Auckland and the challenging decisions to be made.

Inherent in such a far-reaching strategy is uncertainty and the unknown. One of the most significant challenges is the infrastructure funding shortfall, estimated today between $10 billion to $15 billion. This has the potential to undermine confidence, and resolving this should be a matter of priority.

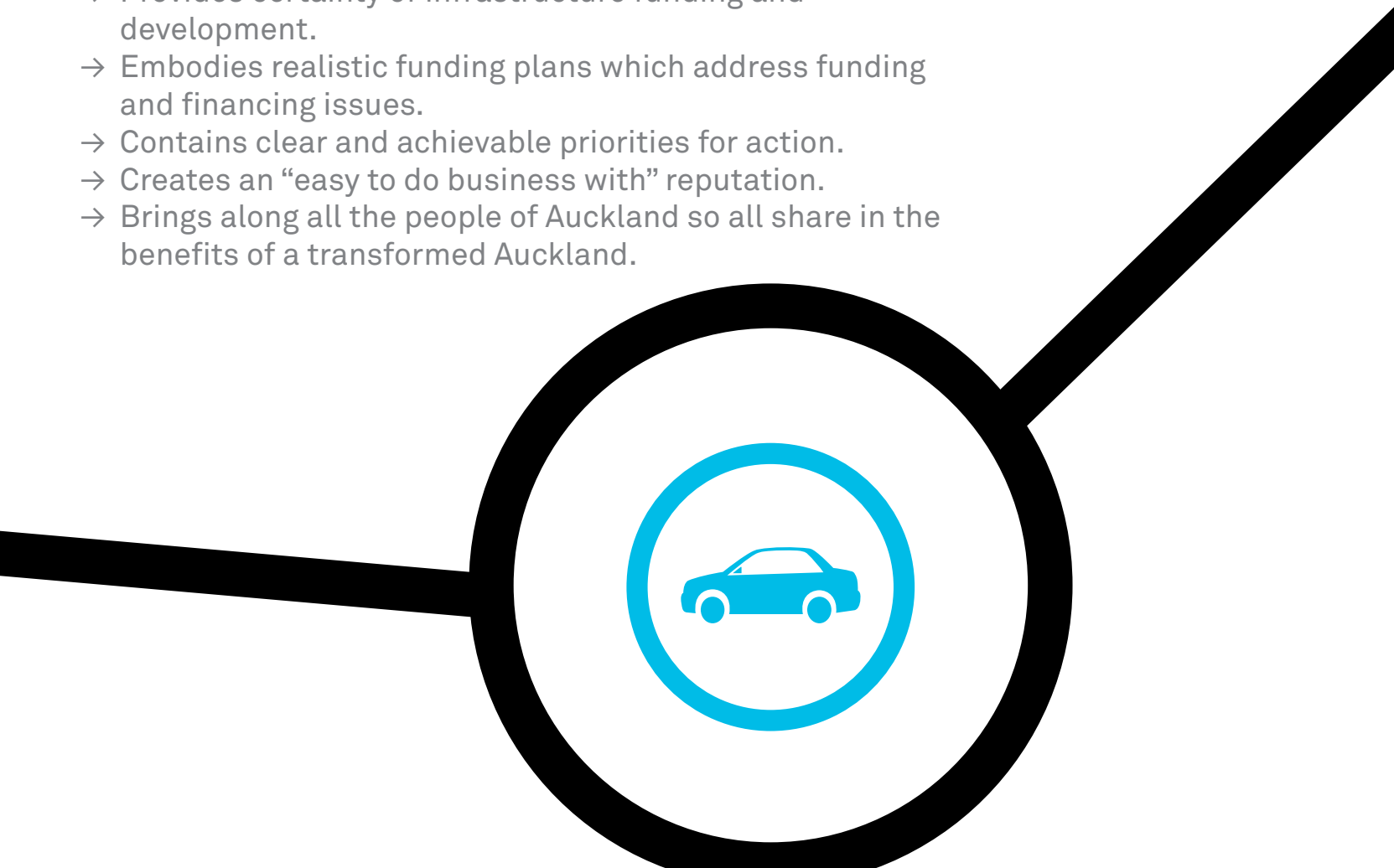
The role of Council must be to create the vision and the environment for investment. Beyond that, Council must decide which projects it will fund and implement, which it will facilitate in partnership and which it will leave to the private sector. It is the private sector that will bring much of the investment capital to Auckland and enable Council to develop essential projects.



The Plan identifies many projects which will undoubtedly add to the Auckland environment and the unique character of Auckland as the world's most liveable city. Some of these projects fall into the "nice to have" rather than "must have" categories. The question must be asked of all major items of capital expenditure: will this lead to the kind of transformational change and resulting business activity we are seeking?

In our view Council requires a robust - focused Plan which:

→ Partners private sector innovation with targeted public sector intervention.
→ Provides certainty of infrastructure funding and development.
→ Embodies realistic funding plans which address funding and financing issues.
→ Contains clear and achievable priorities for action.
→ Creates an "easy to do business with" reputation.
→ Brings along all the people of Auckland so all share in the benefits of a transformed Auckland.



Finally, the way forward is a journey. Our success will be dependent on today's planning, the opportunities to work in partnership, and the credibility of our programme and commitment to drive the city forward into 2040.

It is a journey that we will be proud to look back on – the achievement of Auckland's vision to be the world's most liveable city.

Auckland, Connected
May 2012

AUCKLAND DREAM PLAN & PURSUE THE GOAL

GROW TO YOUR FULLNESS YOUR POTENTIAL AS THE WORLD'S MOST LIVEABLE CITY – AUCKLAND, CONNECTED


Auckland
Theatre
Grafton
Hamilton
MAERSK

References

ADONIS report, (1998), *Analysis And Development Of New Insight Into Substitution Of Short Car Trips By Cycling And Walking*, includes information on travel mode split in various European cities [online] at www.vejdirektoratet.dk/dokument.asp?page=document&objno=7134

Auckland Airport facts and Figures, [online] available at http://www.aucklandairport.co.nz/Corporate/AboutUs/FastFacts.aspx

Auckland Regional Council, *Auckland Passenger Transport Performance Benchmark Study,* Final Report, 15 August 2011

Auckland Transport., *The 2010 Auckland Regional Land Transport Strategy*, 2010

Brisbane Airport Passenger Destinations, [online] available at http://bne.com.au/airlines-aviation/airline-contacts-and-destinations/destinations and http://en.wikipedia.org/wiki/Brisbane_Airport

Brisbane Airport, Property Master Plan, 2011

Boven, R and Grace, L., *Auckland in 2040*, The New Zealand Institute Discussion paper, 2011

Christchurch Airport Land, [online] available at http://www.christchurchairport.co.nz/content/2928/Year%207-8.pdf and http://www.christchurchairport.co.nz/content/2928/Year%207-8.pdf

Gillen, Mike, el al,*Settlement Pattern* – A Well Connected Auckland, AECOM, 2011

Harvey, M.,The One Hour City Concept from "The Accessible City - Opaheke Urban Design Framework", March 2011

http://www.designboom.com/weblog/cat/16/view/15557/tesco-virtual-supermarket-in-a-subway-station.html

http://www.perthairport.com.au/FlightInformation/RouteMaps.aspx

Land Transport Master Plan – *A People-Centred Land Transport System*, LTA Singapore 2008

Liveability ranking: Where the Livin' is Easiest", accessed on 15/8/2011 at http://www.economist.com/blogs/gulliver/2011/02/liveability_ranking.

Marchetti, C., T*echnological Forecasting and Social Change*, 47, 75-88 (1994)

McCann P, 2009, *'Economic geography, globalisation and New Zealand's productivity paradox', New Zealand Economic Papers*, 43:3, 279-314

Melbourne Airport [online] available at http://melbourneairport.com.au/About-Melbourne-Airport/corporate-information/facts-figures/faqs-492.html, http://melbourneairport.com.au/docs/melbourne-airport-2011-annual-report.pdf, http://melbourneairport.com.au/For-Business/Property/Overview.html and *http://en.wikipedia.org/wiki/Melbourne_Airport*

New South Wales Bureau of Transport Statistics, 2009/10 Household Travel Survey Key Indicators for Sydney.

New Zealand Council for Sustainable Development [online] accessed on 2 April, 2012 at http://www.sbc.org.nz/economicincentives/content.asp?id=343

"OECD Territorial Reviews: Competitive Cities in the Global Economy", [online] available from http://www.oecd.org/document/2/0,3746,en_2649_34413_37801602_1_1_1_1,00.htm

"Quality of Living worldwide city rankings 2010",[online] at http://www.mercer.com/press-releases/quality-of-living-report 2010.

Perth Airport, [online] available at http://www.perthairport.com.au/AboutUs/CorporateInformation.aspx and OECD (2006);

StatsCan 2011 Census for Vancouver CMA". 2011 Census data. Statistics Canada. [online] available at http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/Table-Tableau.cfm?LANG=Eng&T=303&SR=1&S=51&O=A&RPP=9999&PR=0&CMA=933.

Statistics Canada, 2006 Census, [online] available at *http://en.wikipedia.org/wiki/Canada_2006_Census*

Statistics NZ, Subnational population estimates tables, [online] available at http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-pop-estimates-tables.aspx.

Sydney Airport, [online] available at http://www.sydneyairport.com.au/corporate/about-us/~/media/Files/Corporate/About%20Us/Fact%20Sheets/SydneyAirprt%20Overview.pdf, and http://www.sydneyairport.com.au/corporate/aboutus/~/media/Files/Corporate/About%20Us/Fact%20Sheets/MasterPlan09%20Summary.pdf

The Liveable Cities Index 2011 [Monocle] accessed on 2 April 2012 at http://www.monocle.com/QoL-2011

Torontonians mode of travel to work [online] available at http://www.toronto.ca/cycling/reports/statistics/statistics-tables.htm

Travel survey of Bogota and the region 2008 (in Spanish only, Observatoria de Movilidad de Bogota y la Region, Camara de Comercio de Bogota), Colombia

Vienna Modal Split 2010 (in German only, APA-Grafik Modal Split, Wiener)

Wikipedia, Melbourne, [online] available at http://en.wikipedia.org/wiki/Melbourne

Wikipedia, Ontario's Canada "Presto" Card, IBM Report [online] available at http://en.wikipedia.org/wiki/Octopus_card

Wikipedia, Sydney, [online] available at http://en.wikipedia.org/wiki/Sydney

Wikipedia, 'Vienna' [online] available at http://en.wikipedia.org/wiki/Vienna

Bibliography

Adams, D et al., Auckland – High Value Economy., Nov 2011

Ascari Partners, Richard Paling Consulting and BERL: "Economic Linkages between New Zealand Cities: Final Report". Auckland Policy Office, Ministry of Economic Development, May 2011

Auckland's Competitive Advantage and Distinctiveness: final indicator report"; April 2011.

Auckland Council (2012) *Draft Auckland Plan* available at http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/PlansPoliciesPublications/theaucklandplan/DRAFTAUCKLANDPLAN/Pages/home.aspx

Auckland Council (2011) *Auckland Unleashed - The Auckland Plan Discussion Document* available at http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/PlansPoliciesPublications/theaucklandplan/discussiondocument/Pages/home.aspx

Auckland Council (2011) *City Centre Masterplan* available at http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/PlansPoliciesPublications/theaucklandplan/citycentremasterplan/Pages/home.aspx

Auckland Council (2011) *Draft Economic Development Strategy* available at http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/PlansPoliciesPublications/theaucklandplan/economicdevelopmentstrategy/Pages/home.aspx

Auckland Council (2011) *Draft Waterfront Plan* available at http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/PlansPoliciesPublications/theaucklandplan/draftwaterfrontplan/Pages/home.aspx

Auckland Regional Council; "Industry snapshot for the Auckland region: the bioscience sector". August 2010.

Department of Labour (2009); "The New Zealand Knowledge Economy: A refined methodology and further findings on the structure and growth of the knowledge economy". May, 2009

Dixit A. and Stiglitz, J. Monopolistic Competition and Optimum Product Diversity. The American Economic Review, Vol. 67, No. 3. (Jun 1977), pp. 297-308.

Education New Zealand, & Ministry of Education. (2008). The Economic Impact of Export Education

Glaeser, Edward; "Triumph of the City: how our greatest invention makes us richer, smarter, greener, healthier and happier". 2011.

Grimes, Arthur, Jason Le Vaillant and Philip McCann. "Auckland's Knowledge Economy: Australasian and European comparisons", Occasional Paper 11/02, Ministry of Economic Development. March 2011

Harvey, M.,The One Hour City Concept from "The Accessible City - Opaheke Urban Design Framework", March 2011

Hubbard, S et al., Transport in Auckland., 30 Nov 2011

Levinson, David and Emilia Istrate. "Access for Value: financing transportation through land value capture". Metropolitan Policy Program, Brookings Institute, April 2011

Lewis, Geoff and Steven Stillman; "Regional Economic Performance in New Zealand: How does Auckland Compare?". New Zealand Treasury Working Paper 05/05. November 2005

Louca, Stas,. Liveability., Oct 2011

Mare, David C.; "Labour Productivity in Auckland Firms". Motu Working Paper 08-12; June 2008. Motu Economic and Public Policy Research

Mare, David C. and Fabling, Richard., "Productivity and Local Workforce Composition". Motu Working Paper 11-10, Motu

Market Economics "Understanding Auckland's role in New Zealand's global engagement; exports of merchandise trade and services". Prepared for Knowledge Auckland January 2010

MED; "Economic Development Indicators 2011 – full report"; accessed on 15/8/2011 at http://www.med.govt.nz/templates/MultipageDocumentTOC____45709.aspx?&MSHiC=65001&L=0&W=Economic+Development+Indicators+2011+&Pre=%3cb%3e&Post=%3c%2fb%3e

Melbourne 2030: a planning update., Dec 2008 [online] available at www.dpcd.vic.gov.au/melbourne2030

Sweet, Fay., The Bigger Picture – Designing Better Places, EDAW and AECOM Design and Planning, Black Dog Publishing (25 Aug 2009).

The Geography of the European Creative Class: A Rank-Size Analysis: Mark Lorenzen and Kristina Vaarst Andersen: DRUID Working Paper No. 07-17: the creative class is a concept associated with Richard Florida

The Liveable Cities Index 2011 [Monocle]

Victorian Competition and Efficiency Commission., Securing Victoria's Future Prosperity: A Reform Agenda., Nov

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