Tina von Pein

From: [redacted]
Sent: Sunday, 17 February 2019 1:23 p.m.
To: Tina von Pein
Subject: FW: Material for Our Space Hearing - Laurie and Cherry McCallum 3.00pm Tuesday 26 Feb 2019
Attachments: Submission material for UDS Hearing 26 Feb 2019.pdf; Drivers-of-Urban-Change-PDF-edition-11-Feb-lowres-1.pdf

From: L C McCallum [redacted]
Sent: Thursday, 14 February 2019 8:29 p.m.
To: Von Pein, Tina [redacted]
Subject: Material for Our Space Hearing - Laurie and Cherry McCallum 3.00pm Tuesday 26 Feb 2019

Hi Tina,
Hope the second file is not too big. If the panel could take a look at Chapter 16 by Guy Salmon and particularly pages 164-165, Conclusion.

Regards Laurie

Our Space 2018-2048: Greater Christchurch Settlement Pattern Update
Submission of Laurie and Cherry McCalllum

Further to our submission lodged we would like to elaborate as follows:

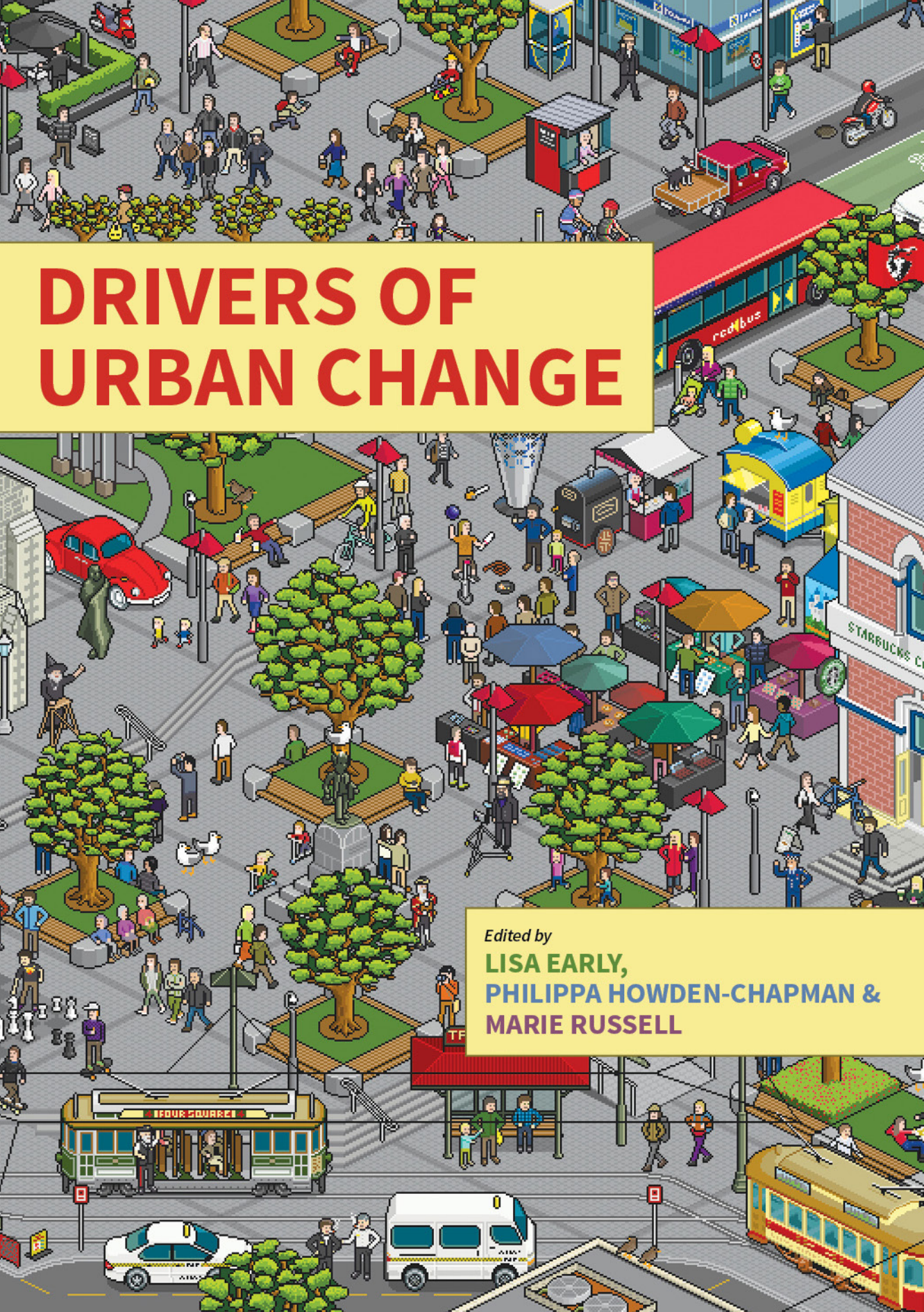
1. This is a joint submission by two citizens and ratepayers living at 44 Hawthorne Street, Strowan, Christchurch. It is a large rear section and for the most part idyllic except for the noise from surrounding 'home improvement', swimming pool use by teenage children, parties, drunken cricket matches and the use of power tools. With thirteen neighbours there is ongoing interaction over trees, fencing, tennis balls, pool construction, compost heaps, cats and dogs.
2. We are both retired from full time work. Laurie worked for forty years in town planning and resource management with the last 27 years at Environment Canterbury (including the North Canterbury Catchment Board). He has an MA in Geography with a thesis on Planning and State Housing and a MSc in Resource Management with a dissertation on the Management of the Avon Heathcote Estuary.
3. Laurie is the chairperson of two community noise liaison committees (Ruapuna Raceway and Christchurch International Airport) and last year taught a paper (Professional Practice) for a semester at Lincoln University. He has written two books on George McCulloch of Glasgow, Broken Hill and Kensington which have been purchased by the national libraries and art galleries of Scotland, England, Australia and USA.
4. Cherry worked for forty years as a teacher in primary schools but also with periods at secondary and intermediate and in both private and public. She has a B.Ed. and a Post Graduate diploma in Educational Management. She plays the violin for two orchestral groups.
5. This submission does not provide all the technical and legal details for its resolution that being beyond the capability of a couple of citizens who do not wish to become serial submitters or spend their lives attending hearings and writing up plans for Greater Christchurch. For that we trust the technical officers and consultants and political decision makers of the various organisations involved. However, this is a demanding submission seeking action and implementation way beyond just tinkering with the Settlement Pattern Update, in order for the UDS to be effective and true to its stated intentions.
6. To briefly summarise our submission, over the past ten years the UDS has become a strategy for controlled sprawl (low density, car dependent urban growth). The earthquakes and the way we have responded to them have been both a stimulant to this trend and a lost opportunity for the UDS (see attached article by Guy Salmon). We have been significantly too slow to provide medium density housing in the central city, let alone around any of the other centres while on transport, the discretionary funding has gone into

motorway construction rather than public transport, cycling and walking. We are creating an urban area for the past not the future and giving insufficient regard to the obesity epidemic, the ageing population, the one and two person households and most significant of all, climate change (the clock is ticking). All this is reflected in the SP Update where the 'tail is wagging the dog'. Too much intellectual energy and political time is going into debating whether Waimakariri and Selwyn should have more lower density (than Christchurch City) development on the periphery of the urban area. Rather, more effort should be going into the enhancement of where the bulk of the people live and work – the existing suburbs and centres of Christchurch. Obviously, the centres of Selwyn and Waimakariri are not to be ignored and need to become more self sufficient but more effort needs to be directed to Christchurch City.

7. The UDS cannot be chopped into bits and each bit dealt with on its own and then put back together and for the strategy to still remain coherent and true to its aims and objectives. That is what is occurring by looking at one aspect, the SP Update with what is being proposed just enhancing the current distorted pattern. Why are there separate reports for Waimakariri and Selwyn rather than one report for the total UDS area?
8. This leads to the question of how genuine is operation of the partnership? Are the organisations genuine partners or just involved for their own interests? When there are separate submissions by two partners (Christchurch City and the Health Board) and then on issues such as Christchurch water supply, partner members (CCC and CRC) are communicating with each other via the news media, how healthy are relationships between partner organisations on such a crucial matter as the UDS?
9. While Christchurch City is the prime mover behind getting medium density housing in the central city, it is not a case of just leaving it to the City and when it does not happen, putting one of the fundamental planks of the UDS at risk. The City need to acknowledge that all partners have an interest in this outcome and all partners (and the Government and its agencies) need to make this happen. The City need to also acknowledge that intensification is not just changing a great swathe of land from R1 to R3. This is what has given intensification a bad name. It needs to be more focused on a smaller area and may involve greater financial, urban design, architectural and organisational involvement to secure these outcomes (as is done in other jurisdictions).
10. Similarly on transport, every partner should be able to be actively involved. Again also, the 'tail should not wag the dog'. We do not want all the transport effort going into allowing commuters from the outskirts of the UDS to move more quickly to where the jobs and facilities are in Christchurch City. The residents of the existing suburbs of Christchurch also need to move in a sustainable, efficient and effective manner around Christchurch.

11. The existing PT system using buses is fine if you are retired, travelling off-peak and using a Gold Card and just want to pop into town. As a framework for the future it needs serious investment and re-booting. Having been to Adelaide, a town with a central plan the same as Christchurch and used their tram system, Christchurch could do a lot worse than follow their lead. There would be a tram running the length of Moorhouse Avenue, perhaps connecting to the railway station and then up Columbo to Bealey and out to New Brighton or Sumner and out to the university and airport.
12. Some people say, we do not have sufficient population. Are we going to have this housing and infrastructure when we hit 800,000 or a million? We need it now, otherwise we are going to be swamped by the motor vehicle and have an urban layout that does not provide the opportunities for people to live in a sustainable manner where they can walk, cycle or take public transport as their first options for their journey to work, play or other amenities. We need to be living in a climate change friendly manner. That does not include 30 minutes to an hour or more spent commuting by car daily going to work, school or whatever. At the moment the car is the only viable way of getting around most of Greater Christchurch and for many households it requires more than one vehicle.
13. So this submission is made with high expectations of the Hearing Panel. You will all need to be convinced and in turn convince your organisations that:
    - There should be no further expansion of the urban limits
    - Substantial development of medium density housing needs to occur in central Christchurch
    - The Passenger Transport system for Christchurch needs to be significantly improved so it becomes a genuine trigger for intensification at the nodes and central city.
14. These matters need to occur immediately and are of such challenge as to require the involvement of all UDS Partners and the Government. It may seem like “Mission Impossible” but either a few cages are rattled and things change or we just trundle along the way we are. In fact we are still building more motorways and so have yet to experience the full effect of this distortion of transport policy.
15. We trust this does not sound too arrogant and preachy, dreamed up sitting on the front porch listening to the grey warbler singing. We know you have all been working hard in the best interests of all of us but particularly with climate change where we are told we have ten years (or is it five?) to claw back on emissions and temperature rises, substantial change needs to occur immediately.
16. Thank you for the opportunity to comment.

DRIVERS OF URBAN CHANGE



Edited by
LISA EARLY,
PHILIPPA HOWDEN-CHAPMAN &
MARIE RUSSELL

Copies of this book can be ordered online at
steeleroberts.co.nz/product/drivers-of-urban-change/

ISBN 978-0-947493-09-7
A catalogue record for this book is available from the National Library of New Zealand

Suggested citation:
Early L, Howden-Chapman P, Russell M eds.
Drivers of Urban Change
Ebook
Steele Roberts, Wellington, 2015.

Printed by PrintStop, Wellington
Production by Matthew Bartlett and MK Roney
Set in Minion 10.5/13.3 & Souce Sans
Front cover: details from 'Christchurch Pixel Art' by Rodney Mackrell

Published in 2015 for the
New Zealand Centre for Sustainable Cities
centred at University of Otago, Wellington
www.sustainablecities.org.nz

new zealand centre for Sustainable Cities
te pokapū rōnaki tāone-nui

by

Steele Roberts Aotearoa
Box 9321 Wellington, Aotearoa New Zealand
info@steeleroberts.co.nz • www.steeleroberts.co.nz

Contents

Case studies

Figures

Tables

ONE

Introduction

Lisa Early, Philippa Howden-Chapman, Marie Russell, Anna Hamer-Adams & Jenny Ombler

Most New Zealanders (86%) live in urban areas and urban issues are important for the economy and environment as well as for our health and well-being. This report examines drivers of urban change, as well as its constraints and barriers, looking at the current situation and possible developments in the near future (over the next 20–30 years). We aimed to develop an understanding of what affects urban change and resilience in selected areas: Auckland, Hamilton, Wellington (Wellington City, Upper Hutt, Hutt City, Porirua and Kapiti), Christchurch and Dunedin. Our research drew on interviews with key stakeholders and decision-makers in these cities. The extensive local knowledge held by these experts has been combined with a national public opinion poll, and with case studies from the latest urban research, to offer an "overall mosaic of the range of contemporary thinking".[1]

Research framework

Resilient Urban Futures programme

This study is funded by the Ministry of Business, Innovation and Employment as part of the Resilient Urban Futures research programme, led by the New Zealand Centre for Sustainable Cities at the University of Otago, Wellington. This programme brings together a multi-disciplinary group of researchers from a number of different universities (Otago, Auckland, Massey, Victoria, Canterbury) and research organisations (NIWA, Motu, Cawthron Institute, Ecologic, local councils), all focused on how to develop vibrant, liveable, internationally competitive and resilient cities in the future. A particular aim of the programme is to compare the broad costs, benefits and qualitative features of two possible urban development paths, one emphasising more compact development and the other emphasising more dispersed development. The perspective we bring to this research is that we want our cities and towns to offer a desirable, prosperous, socially inclusive, healthy and environmentally sustainable way of life, with a New Zealand cultural character.

We view cities as complex systems, with interconnections between land use, transport, housing, infrastructure and environment, so that policies affecting one element of a city may also provide co-benefits.[2] We research real world case studies in order to give decision-makers a clear idea of the consequences of various urban policy and investment decisions.

Drivers of Urban Change research framework

The Drivers of Urban Change study attempted to understand implementation pathways for various types of urban development. If New Zealanders want types of urban development that are different from business-as-usual, this leads to questions about what drives change, what constrains change, and what institutional settings, public policy, political systems and cultures influence urban development processes. While this report considers a broad range of drivers, a key focus is on presenting the constraints and opportunities for implementation of intentional urban change.

We began with these research questions:

- What are key scenarios of demographic, environmental, social, economic, technological and policy change that are affecting or will affect cities?
- What is the interplay of major urban drivers and trends operating at national, regional and city levels?
- What are relevant governance arrangements and trends? Where and why do perspectives differ between central government, local government, iwi and other stakeholders?
- What is the nature of public opinion on urban trends?

We identified historical and continuing drivers, for example, demographic trends, economic investment or social norms, and how governance mechanisms worked with these. We also looked at newly-important and future drivers, for example climate change or the management of natural hazards, which may require new and creative policy responses. We studied a common range of drivers in all the cities, but recognised their varying influences in each case.

Study method

Five major cities were selected to study, following discussions and Memoranda of Understanding with city councils: Auckland, Hamilton, Wellington, Christchurch and Dunedin. In four of these cities, study focused on the areas within the city boundaries, though the relationship between the cities and their surrounding regions and regional government was also considered. In the case of Wellington, the study was broadened to include not just Wellington City but also adjacent urban areas within the Wellington Region including Porirua, Hutt City, Upper Hutt and Kapiti Coast, but excluding Wairarapa. These areas were included because resilience issues involving transport, infrastructure and

the environment are region-wide in their implications, and because there was a potential for amalgamation of these councils.

This report is primarily based on semi-structured interviews with key informants with deep knowledge of the cities. Participants included elected local government representatives, council managers, representatives of iwi and other Māori organisations, property developers and other business people, NGO and community group leaders, and central government representatives. Participants were chosen based on the role they held, as actors with knowledge of, and influence on, key decisions affecting the city. The majority of those approached agreed to an interview. Of those who declined, most recommended a deputy or senior staff member for interview instead. In this way, further participants were added based on selected recommendations. We interviewed over 90 people. While a study of five cities, with some common and some unique issues, does not cover every possible aspect of drivers of urban change, a strength of this study is the breadth and depth of experience of the participants.

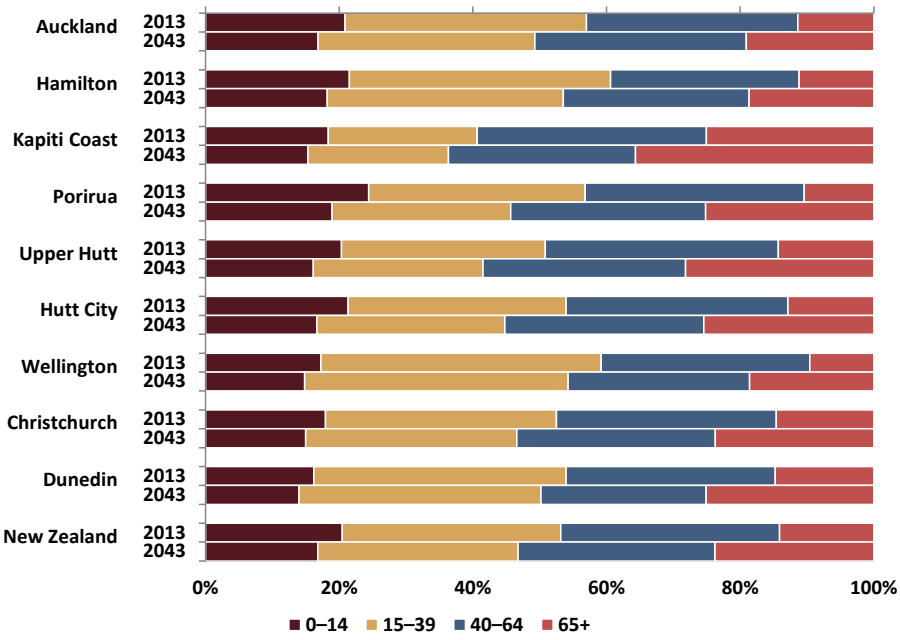
Most interviews were held face-to-face and one-to-one with one of two interviewers, but there was flexibility to interview two people together or via phone or Skype if requested. A standard list of questions was tailored for each city, to explore the diversity of issues facing different cities, and the list was sent to participants before the interviews so they would have some time to reflect. We wanted to know how they understood the key factors affecting urban change.

Analysis of the interviews identified key themes, points of agreement and disagreement, and issues specific to the city or related to any particular sector. This report was written with the intent that the opinions of individuals were not attributed (to allow for a frank exchange of views), but with the hope that each individual who contributed would see their viewpoint represented. Participants who agreed to be named as being interviewed are listed in Appendix 2. Responsibility for the content of the report rests solely with the authors.

Our selection of interview participants included a high proportion of people with long-standing connections to local government. In order to test some of our hypotheses, and to include the views of citizens, we also ran a public survey of 3,080 people undertaken by an online Horizon Poll. The survey was conducted on a national basis, and included each of the cities in our study. Some questions asked in a previous survey in 2009 were used again to see if there had been a change in sentiment over time (see Appendix 3 for survey questions).[3]

While based fundamentally on the views of participants, the report also includes analysis from relevant documents, and other research undertaken within the Resilient Urban Futures programme, some of which is highlighted in a series of case study boxes. Wherever possible, the data given in this report are for cities, using city/district council boundaries. However, on a number of subjects we found that only regional-level data were available and this is noted in the text.

Figure 1.1: Current and predicted age makeup of cities.[6] Age projections for cities use 2013 as the base year, and for New Zealand the base year is 2014.



Regional and national context

While looking at the specific situation of individual cities, it is also important to consider the wider social, economic and political processes which drive urban change and which operate at multiple scales, connecting local to regional and national. While some of these are discussed briefly here to give some background and context, they are elaborated on throughout the report.

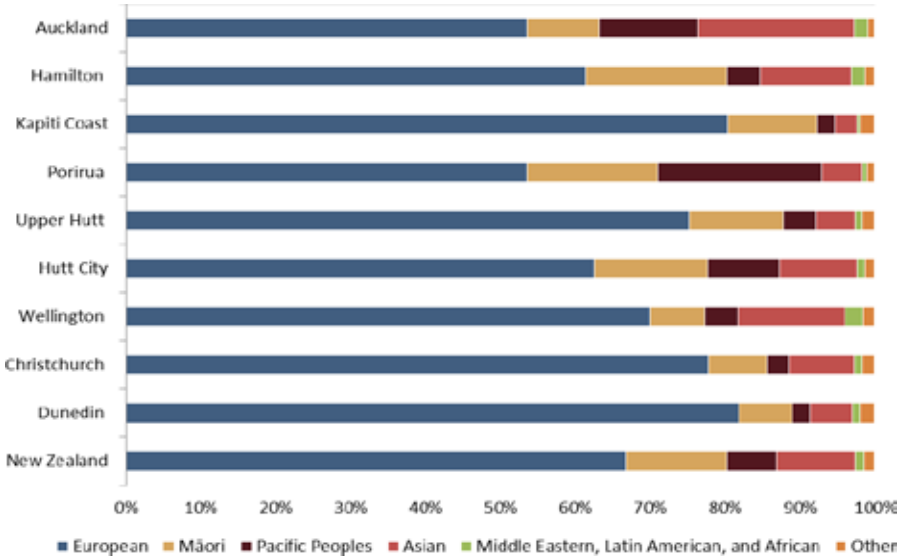
Demographic and economic trends

A trend mentioned often by participants, and also noted in research,[4,5] is that people are living longer and will need income for longer, and the proportion of the population in older age groups will increase. The strength of this trend is predicted to vary between cities (see Figure 1.1), and its likely impacts on urban form are discussed in the city chapters of this report.

The cities in our study vary in terms of their ethnic mix (see Figure 1.2). They are predicted to become more ethnically diverse in future, mainly due to an increase in the Asian population, especially in Auckland. Māori and Pasifika populations are expected to increase roughly in proportion with each other, apart from in Auckland where the population growth of Pasifika peoples is projected to be considerably more than that of Māori.[7]

Immigration's contribution to population growth is likely to increase, relative to that from natural increase. This trend is notable in Auckland, where 39% of

Figure 1.2: Composition of cities by ethnic group, 2013.[8]



the 2013 population were born overseas. Auckland accounted for over half the country's population growth between 2006 and 2013 and the prediction is for greater relative growth for Auckland and for other cities to experience slower growth.[4]

The varying nature of city economies is illustrated in Table 1.1, and current and future trends and drivers are explored in the city chapters. For example, tertiary-educated individuals cluster in the cities,[9] which have high concentrations of skilled labour and knowledge-intensive occupations, particularly Wellington and Auckland.[5] Our interview participants discussed the interrelationships between city and regional economic performance, ability to pay for urban development and infrastructure, a flourishing and equitable community, and a healthy environment.

Governance

Governance was identified by interview participants as a key aspect of urban change. This is discussed in all the city chapters, but is a particular focus in the Auckland and Christchurch chapters.

One theme is the effects of multi-level governance and the interactions of groups with differing interests and alternative plans for the development of cities. A city has three tiers of government: a territorial authority or city council, a regional authority, and central government. Auckland has a unitary council

Table 1.1: Economic indicators, 2013.

	Population[a]	Population growth (2001–13)[b]	Unemployment rate[c]	Number unemployed[d]
Auckland	1,415,600	22%	8.1%	57,500
Hamilton	141,600	21%	9.5%	6,800
Kapiti Coast	49,100	16%	7.6%	1,700
Porirua	51,700	9%	9.3%	2,400
Upper Hutt	40,200	10%	6.8%	1,400
Hutt City	98,200	3%	8.0%	4,100
Wellington City	191,000	17%	6.5%	7,400
Christchurch	341,500	5%	5.1%	9,300
Dunedin	120,200	5%	7.5%	4,600
New Zealand	4,242,000	14%	7.1%	153,200

	Percentage employed[e]	Number employed[f]	Median household income ($)[g]	Business locations (geographic units)[h]
Auckland	61%	650,600	76,500	163,600
Hamilton	61%	64,600	64,000	13,100
Kapiti Coast	55%	21,100	53,400	4,800
Porirua	63%	23,200	78,900	4,000
Upper Hutt	64%	19,500	68,400	2,900
Hutt City	64%	46,800	69,500	9,500
Wellington City	70%	105,200	91,100	25,200
Christchurch	65%	173,600	65,300	37,400
Dunedin	58%	56,000	54,400	10,800
New Zealand	62%	2,001,000	63,800	507,900

a Census usually resident population count of an area.[8]
b Calculated using 2001 and 2013 census usually resident population count.[8,10]
c Calculated for the census usually resident population count aged 15 years and over. Number unemployed/Number people in labour force.
d Number of usually resident population count aged 15 years and over unemployed at March 2013.
e Calculated for the census usually resident population count aged 15 years and over. Number employed/Number people.
f Number of usually resident population count aged 15 years and over employed (part-time + full-time) at March 2013.
g Median household income for households in occupied private dwellings, rounded to the nearest $100.[8]
h At February 2013. The geographic unit represents a business location engaged in predominantly one kind of economic activity at a single physical site. Businesses included meet at least one of these criteria: annual expenses or sales subject to GST of over $30,000; 12-month rolling mean employee count of >3; part of a group of enterprises; GST-registered and involved in agriculture or forestry; over $40,000 of income in the IR10 tax return.[11]

performing the functions of both a territorial authority and a regional authority, so in this case there are two main tiers. These territorial authorities vary greatly in population size (see Table 1.1), land size and money available to spend. The city interacts with its regional authority on matters of resource and environmental policy and management that affect the region as a whole, such as water management, air quality, and the planning and funding of public transport. City councils possess the bulk of local funding and manage land use planning, housing development and key infrastructure assets, and provide local services such as waste management and water supply as well as amenities such as swimming pools and libraries. Residents of the city interact with their council on local matters, either directly or through a network of local or community boards. Local governments also have varying formal and informal relationships with iwi, hapū and mātāwaka (those identifying with iwi from outside the rohe), with engagement mandated under the Local Government Act and the Resource Management Act.[12,13]

These structures allow for local representation and resilience, but create complexity in planning, decision-making and delivery of urban infrastructure and services. City residents may want some common outcomes from local government, such as affordability, but also want outcomes that are beneficial to their own neighbourhood and diverse interests.[14] Local government faces the challenge of balancing the interests of local communities, and their views about neighbourhood quality, with the interests of the whole city, which may benefit from a coherent urban form and the availability of a range of housing types and city amenities. This study explores how inevitable tensions within a multi-level governance system are differently expressed, and resolved or not in our cities, and how this impacts urban change.

Central government agencies provide services either directly to citizens of the city or via local authorities, which can apply to central government for project funding. While land use planning is mainly done at the local level, some transport infrastructure decisions are centralised, such as the roading decisions of the New Zealand Transport Agency (NZTA). Central government creates the legislative framework under which local government operates.[12,13] Successive governments have restructured local government and directed it to deliver certain objectives. For instance, legislation was passed in 2012 to amend the purpose of local government, financial and council governance arrangements, and intervention options for the Minister of Local Government. Further legislative change is under consideration, as of 2015.

Another theme that emerged from participants was the importance of trust and of decision-making processes perceived as inclusive and trust-enhancing. Some mistrust can be identified between central and local government, perhaps resulting from restructuring or from the nature of multi-level governance. Also, some people appear to lack trust in public authorities. For example, in some areas they may not trust that developments proposed by their city council in support of urban intensification will deliver or retain the type of housing, services

and neighbourhood they wish to have. A lack of trust may go together with a lack of shared values, which is why we asked our participants about changing attitudes. The aim was not to draw conclusions about which side was in the right, but rather to focus on the underlying drivers of, and barriers to, urban change.

Report structure

The report is divided into chapters reporting research results for each city. Each city chapter was produced by different researchers, who are identified as the authors, and was written to stand alone, for those readers with a particular interest in one city. In this respect, each researcher had their own perspective and each city its own voice. For those with an interest in several or all New Zealand cities, the final chapter draws together some overall conclusions of this study of drivers of urban change.

Waiwera River
Whangaparaoa
Bay
Orewa
Orewa River
Red Beach
Silverdale
Whangaparaoa Pen
Whangaparaoa
Passage
Wooded Island
Tiritiri Matangi
Island
Whangaparaoa
Whangaparaoa Peninsula
Stillwater
Kaukapakapa
Helensville
Kaipara
Dairy Flat
Long Bay
Torbay
Browns Bay
Rothesay Bay
Mairangi Bay
Campbells Bay
Castor Bay
Milford
Albany
The
Noises
Rakino
Island
Motutapu
Island
Rangitoto
Island
Rangitoto
Channel
Motuihe
Island
Waimauku
Huapai
Kumeu
Riverhead
Hobsonville
TAKAPUNA
Northcote
Devonport
North
Head
Waitemata
Harbour
Point
Chevalier
AUCKLAND
Browns Island
(Motukorea)
Tamaki River
Whau River
Newmarket
Remuera
MT EDEN
MT ALBERT
ONE TREE
HILL
Ellerslie
MT
WELLINGTON
Pakuranga
Howick
Glen Eden
New Lynn
MT ROSKILL
ONEHUNGA
OTAHUHU
East Tamaki
Heights
Whitford
Otara
PAPATOETOE
Puketutu
Island
WAITAKERE
RANGES
Piha
Lion Rock
Karekare
Huia
Little
Huia
Manukau
Harbour
Manukau
Entrance
South
Head
Papakura
Channel
Wiroa
Island
MANUREWA
Weymouth
Pahurehure
Inlet
PAPAKURA
Red Hill
Drury
Clarks
Beach
Waiau
Pa
Kingseat
Karaka
Te Hihi
Waitara Stream
Awhitu
Central
Orua
Bay
Big
Bay
Grahams
Beach
175°

TWO

Auckland

Guy Salmon

This chapter analyses a debate about whether to support a quality, compact city model for Auckland with public transport investments, or whether to adopt policies that would create a more sprawling pattern of development, linked to more private vehicle use and road-building. There are three components to the chapter.

The first sets out the events and issues culminating in the publication in September 2013 of the Proposed Auckland Unitary Plan (PAUP). This was the outcome of a high-profile public and political debate, and its provisions greatly reduced the number of dwellings that could potentially be built within Auckland's existing Metropolitan Urban Limit over the next 30 years, compared with the earlier Auckland Plan adopted in March 2012. Associated key developments in transport and housing policy are also described. A key focus is to understand how such a large difference came to exist between the Auckland Plan (the vision for the city) and the Proposed Auckland Unitary Plan (when finalised the Unitary Plan will be the rulebook to help put the Auckland Plan into action).

The second component focuses on the underlying social institutions which may influence Auckland's future urban form and density, and documents the perspectives held about these by people who are makers and influencers of policy. Data for these two components came from analysis of documents, media reports and interviews conducted following the council's round of political decisions in September 2013 with 29 people associated with the decision process (see Appendix 2 for interview participants and the report Introduction for study methods). Participants included central government and Auckland Council politicians and officials, a spokesperson for the main Parliamentary opposition party, and people with iwi, community, developer and independent professional perspectives.

The third component of the chapter examines the roles played by community attitudes, residential segregation and social cohesion as drivers of urban change, drawing on data from our nationwide survey (see Chapter 7: Survey of sentiments about cities). The chapter concludes by offering some reflections for the future.

Change in vision and plans for land use, transport and housing

Background

Prior to the formation of the unitary Auckland Council, Auckland was governed through the same structure of councils that remains typical elsewhere in New Zealand. The only region-wide entity was the Auckland Regional Council (ARC), whose functions were mainly confined to environmental and coastal planning and management, regional parks, transport planning and management of public transport (operational entities were separate). Four city and two district councils had responsibility for the majority of local government functions including district planning and district roading.

For many decades Auckland developed in a sprawling pattern with suburbs dominated by detached family homes with yards, connected by a network of arterial roads and motorways. A bus network was managed by ARC and there was a limited commuter rail service to the south and west, but commuting was overwhelmingly by car. Auckland was one of the world's most car-dependent cities, with public transport usage rates among the lowest in the world. These trends were caused by "one of the most extreme automobile oriented transport policies pursued by any major city between the 1950s and 1980s".[1]

From the mid-1990s ARC tried to change this pattern by imposing urban limits, encouraging urban intensification within the limits, and concentrating development along transport corridors and in town centres served by public transport. Its efforts to also strengthen the provision of public transport were constrained by the need for financial support for major investments from central government. ARC's policy of active urban growth management was opposed both by central government and by North Shore City, which launched extensive, though unsuccessful, court proceedings challenging any imposition of urban limits.[2] The battle lines so established persisted for many years.

Interview participants agreed that ARC had very limited success in implementing its policy of urban growth management. They unanimously nominated the fragmented governance structure of Auckland at the time as a major contributing factor. While many gave additional reasons for the failure of the policy (especially those related to cultural institutions), there was a shared view that ARC depended on the cooperation of the four city councils to implement the policy. Yet city councillors made little progress on implementation in the face of determined resistance by residents to intensification in their suburbs. The overall result was that insufficient houses were built to meet demand in a growing Auckland, even though the Metropolitan Urban Limit was extended several times.

Auckland Council and the Auckland Plan

In 2009 the government legislated for a unitary Auckland Council, including an unprecedented concentration of power in the office of the Mayor, in order to more effectively drive top-down decision-making and policy implementation. The legislation provided for the preparation of a spatial plan, later known as the Auckland Plan, to "contribute to Auckland's social, economic, environmental, and cultural well-being through a comprehensive and effective long-term (20- to 30-year) strategy for Auckland's growth and development".[3]

The first Auckland Council was elected in October 2010, dominated by the centre-Left, with a Labour mayor, Len Brown. Mr Brown made a strong public commitment to the model of a quality, compact city, a vision similar to that of ARC. Council staff promoted the benefits of this model[4] through public consultation processes on both the Auckland Plan and the Unitary Plan.

There was a period of public and professional debate of the draft Auckland Plan discussion document, published in March 2011.[5] Initially there was broad political consensus in the council that of the dwellings needed in Auckland by 2040, 75% should be accommodated within the existing Metropolitan Urban Limit. The expression widely used was that "Auckland should grow up, not out". However, visual simulations of possible medium- and high-rise coastal developments were leaked to the *New Zealand Herald* and provoked a strong public backlash. The debate that followed led the Auckland Council to favour more "out" and less "up". The maximum number of dwellings allowed outside the Metropolitan Urban Limit was increased to 40% or 160,000 dwellings when the final Auckland Plan was adopted in March 2012.[6] This was still conceived of, and promoted as, a quality, compact city.

Auckland Council's adoption of the final version of the Auckland Plan was marked by very broad, but not universal, support across the political spectrum on the council. Central government held a different view, although with some variation of opinion among its advisers.

The Auckland Plan set out Auckland Council's vision of a quality, compact city, with a high-level strategy for achieving this. However, the Plan did not have statutory force and did not go very far into identifying implementation pathways. There were two pillars of implementation:

- An additional funded programme, estimated at $10–15 billion over the Plan's 30-year period, was needed for transport infrastructure. The transport programme envisaged a mix of road-building, rail and bus enhancements, and investment in walking and cycling. It required the support of central government through direct funding and possibly also through legislating to empower the city to raise funds from road users.
- A statutory plan would regulate the land-use pattern and, in particular, enable increased residential density, aligned with public transport corridors, while controlling peri-urban growth. The Unitary Plan would provide the operating rulebook for delivering the vision and strategies of the Auckland Plan in relation

to land-use, replacing the Regional Policy Statement and 13 district and regional plans. It would be a statutory document under the Resource Management Act (RMA), combining the functions of a regional policy statement, regional plan, regional coastal plan and district plan. Through establishing rules and policies, the Unitary Plan would determine what can be built and where, how to create a higher quality and more compact Auckland, how to provide for rural activities and how to maintain the marine environment.[7]

Implementing the transport programme

One implementation pillar of the Auckland Plan was the transport programme. Improved public transport was a longstanding preoccupation of the Auckland Council and its predecessors. Significant changes included construction of the downtown transport centre at Britomart, inauguration of the northern busway, and electrification of the commuter rail network, including double-tracking the western line. The next major step, a flagship project of Mayor Len Brown, was to be the Central Rail Link, involving the costly construction of an underground loop track in the central city. The benefits of this were not confined to the downtown area; it would unlock the potential capacity of the whole commuter rail network. Britomart operated as a terminus on a spur line from the main commuter network, requiring peak-time trains to queue for access, load passengers, then reverse to re-join the network. By allowing trains to instead use Britomart as a through station on a circular line, the project would enable high frequency of trains and increase passenger capacity across the whole network.

The funding gap for delivery of the Auckland transport programme, over and above existing funding sources, was an estimated $10–15 billion over a 30-year period.[6] It required the support of government, either through direct funding, or through legislating to allow Auckland Council to raise funds from road users. The government supported elements of the transport programme, notably motorways, but was sceptical of the Central Rail Link and thought the council ought to consider asset sales as part of any funding package for such a project.

To engage government agencies and to build support for funding the transport programme, the council decided in July 2012 to convene a Consensus-Building Group on Auckland Transport Funding. It invited representatives of business, trade unions, property development, infrastructure, parking and tourism industries, the Automobile Association, the airport company, environmentalists, advocacy organisations for walking, cycling and public transport, people able to represent iwi and the interests of low-income people, and three central government agencies, the Treasury, the Ministry of Transport and the New Zealand Transport Agency (NZTA). Then Transport Minister, Gerry Brownlee, announced that the government did not support fuel taxes or tolls, and that no government agencies would take part in the process.[8]

However, the Group continued its work over a nine-month period, including public consultation and opinion polling. The process produced a broad,

evidence-based consensus among the various Auckland interests about the size of the transport funding gap ($12 billion) and the preferred revenue-raising tools, which included road pricing. A key conclusion was: "Unless Aucklanders are prepared to accept significantly higher rates increases and heavier congestion, introducing some form of road pricing by 2021 will be required".[9] Buses alone could not meet expected future commuter demand for access to the city.[10] A further proposal from Auckland Transport envisaged replacing some existing bus routes on arterial roads on the isthmus with light rail systems.[11] The Mayor noted that such proposals were additional to the existing $12 billion transport programme which was already well short of being funded.[12]

Responding to these developments, in June 2013 the Prime Minister announced government support for the Central Rail Link, indicating construction might start in 2020, five years later than proposed by Auckland Council. Given this commitment in principle, the council decided to implement enabling works in the meantime. Consultation with Aucklanders on the council's 10-year budget showed majority support for road pricing, but government would not legislate for this, so in May 2015 the council voted for a special, targeted interim transport levy on ratepayers to advance the transport programme while discussions with government continued. The Auckland Transport Alignment Project, a joint project involving Auckland Council and central government, was set up in 2015 to identify a preferred approach for developing Auckland's transport system over the next 30 years.

Deciding on the Unitary Plan

Another implementation pillar of the Auckland Plan was the Unitary Plan, published in draft in March 2013.[13] It included extensive up-zoning of residential areas across Auckland in order to accommodate the considerable intensification of residential density still required by the Auckland Plan targets.

There was vigorous community debate about the residential density implications of the draft Unitary Plan. This debate was reflected in decisions taken by Auckland Council just before the council elections, which were then embodied in the Proposed Auckland Unitary Plan, publicly notified in September 2013.[14] Amendments promoted at the last minute by councillors and the council's local boards were voted on without any staff analysis of their implications.

By imposing far-reaching restrictions on intensification within the Metropolitan Urban Limit, these decisions further reduced the total number of dwellings that could be accommodated inside the Metropolitan Urban Limit, from the Auckland Plan target of 240,000–280,000 to only 130,000–150,000.* On the stated assumption that 400,000 dwellings should be provided for during

* This Auckland Council estimate was provided in an interview in December 2013, based on a spatial modelling exercise, *Capacity for Growth Study*. There are contestable assumptions and parameters in a modelling process, but for the purposes of this chapter the numbers accepted and used by council decision-makers were the important factor.

the 30-year planning period, the maximum number that would have to be accommodated outside the Metropolitan Urban Limit grew from the Auckland Plan's original 40% (160,000) to as much as 67.5% (270,000).

The Proposed Auckland Unitary Plan continued to attract strong opposition, including from government,[15] and a three-year hearings process was established to consider the submissions made, with the Unitary Plan due to be finalised in late 2016. Central to this process was the non-political Independent Hearings Panel, which was constituted on an ad hoc basis under the Local Government (Auckland Transition Provisions) Act 2010. The Panel was intended as a single hearings process to replace the usual two-step process under the RMA, which involved hearings before a council-appointed panel and a further merit hearing on appeal to the Environment Court.

There were 9,407 public submissions. About half of the submitters asked to be heard by the Panel and hearings began in September 2014. While the final decision on Panel recommendations lay with Auckland Council, features of the process limited their input:

- The Panel was appointed by government ministers, after consultation with Auckland Council. It was in principle independent of politics, with membership focused on skills and expertise, with sitting councillors excluded and an Environment Court judge as chair.
- The usual ability of a council to amend or vary its proposed plan during the process was strongly restricted in the case of the Proposed Auckland Unitary Plan.
- If Auckland Council rejected any Panel recommendation, it would open up a right of appeal to the Environment Court.[16]

These features, together with the unusually strong powers of the Panel and the focus on deadlines, conveyed a sense that government's intent was to curb opportunities for political involvement and to sort out decisions on Auckland's future development in a centralised, expedited and final manner.

The Auckland Housing Accord

An important issue for Auckland was a marked rise in public and official concerns about housing affordability and escalation in residential land prices. A government and council summary of this issue read:

> This has a significant impact on family household budgets, leading to overcrowding, decreased home ownership, and reduced socio-economic well-being for communities, likely to be exacerbated by significant population growth. Auckland's competitiveness is also compromised. Such on-going price increases for land and housing in Auckland will impact on monetary policy, may compromise financial stability and may lead to intervention in interest rates.[17]

A 2012 Productivity Commission report concluded that new housing prices were affected by land supply restrictions, the method of charging for the provision of infrastructure, excessive building materials costs, low productivity in the construction sector and costs imposed by delays in the regulatory process.[18]

Auckland's population growth outstripped its growth in housing, while homeownership rates declined faster than the New Zealand average.[19] Auckland Council identified a shortfall of dwellings of around 20,000 to 30,000, and a need for 13,000 new homes each year for the next 30 years.[20] A government report confirmed the shortfall of between 20,000 to 30,000 dwellings in Auckland, and that residential building consents were running at less than half that required to accommodate population growth.[21] Local and central government agreed that immediate steps were needed to address Auckland's housing needs. After some critical public exchanges, both sides saw the need to engage with each other.

The draft Unitary Plan aimed to liberalise existing rules for building houses on both greenfield and brownfield sites, but this would not enter into force for some years. Auckland Council sought from the government a restoration of the former statutory arrangement* under which the Unitary Plan, once notified as a proposed plan, would have legal weight in consenting decisions. The government, anxious to be seen to be doing something about the housing crisis but not wanting to aggravate those opposed to the draft Unitary Plan, preferred to address the housing shortage directly through ad hoc legislation.

The Auckland Housing Accord, agreed between government and Auckland Council, was published in May 2013. The Accord was intended to increase housing supply and improve housing affordability in the interim period until the Auckland Unitary Plan became operative.[17]

For the government, the Accord was an interim measure in another sense. Reform of the Resource Management Act (RMA) was in progress, a reform that government saw as key to increasing the supply of affordable housing nationwide by deregulating the land supply market. Its intent was to provide a statutory basis for promulgating a national policy statement requiring local councils to remove perceived barriers to the market supply of housing. Many interview participants believed that the government's objective was to remove the urban limits from city plans in order to free up land for greenfield development. Initial attempts to change the purpose and principles of the RMA were not backed by the government's Parliamentary support parties due to concerns about the wider implications for maintaining environmental quality. Political discussions were ongoing.

The Housing Accords and Special Housing Areas Act 2013 implemented the Auckland Housing Accord. The objectives of the Accord were described as:

* This was the statutory arrangement that applied under the Resource Management Act, which was superseded for writing Auckland's Unitary Plan by the Local Government (Auckland Transition Provisions) Act 2010.

> The Government's and Council's priority is the development of as much additional housing as is possible, as quickly as possible, to alleviate pressures in the housing market; and the Council's focus is additionally on ensuring new residential housing developments are consistent with Auckland's future vision.[17]

In other words, the government did not share the Auckland Council's vision of a quality, compact city, but the two parties would work together nonetheless to increase housing supply.

Given the broad cross-party support for the quality, compact city within the Auckland Council, the National government refrained from a frontal attack on the concept. As a result, the extent of its opposition and its reasoning were not clearly set out. However, a campaign against the compact city approach was waged by Demographia, whose 2013 *International Housing Affordability Survey* included an introduction by Bill English, New Zealand's deputy prime minister and finance minister. Mr English set out the government's thinking about what was causing housing unaffordability and what should be done about it. While making clear that the government wanted to address the various causes of the problem and avoid "silver bullet" solutions, he emphasised that "supply side factors explain the deterioration in New Zealand's housing affordability."[22]

> Housing affordability is complex in the detail — governments intervene in many ways — but is conceptually simple. It costs too much and takes too long to build a house in New Zealand. Land has been made artificially scarce by regulation that locks up land for development. This regulation has made land supply unresponsive to demand. When demand shocks occur, as they did in the mid-2000s in New Zealand and around the world, much of that shock translates to higher prices rather than more houses. It simply takes too long to make new land available for development … Land use regulations and intrusive development rules have consequences. The Conservative government in the UK has recently taken first tentative steps to, as David Cameron put it, "[get] the planners off our backs" by increasing permitted activities by residents.

This did not disclose the basis for the government's difference with Auckland Council, whose draft Unitary Plan was controversial precisely because it sought to free up the rules that were restricting increased residential density, albeit while retaining controls over urban sprawl. On the philosophy described by Mr English, the government might be expected to want free market deregulation to enable lots of building outward and building upward. However, the latter was unpopular in the North Shore and isthmus electorates where the Parliamentary seats were held by the government or its support party, ACT. These circumstances suggested, and interviews confirmed, that the differences between Auckland Council and the government over the quality, compact city vision were not entirely of a principled nature, but were tilted by political considerations.

Opposition to greater residential density in government-held electorates not only shaped the general strategy of the Housing Accord, but also led to last-minute changes in the text to accommodate concerns of Auckland MPs. A participant knowledgeable about the process commented:

> *So there are things in the Accord which are the result of the local MPs making the life of the Minister and the PM very hard. So they had to compromise … Some of the easier ways to create more dwellings got taken away because National MPs didn't want to see it. It looks as though the Minister was a little bit closer to the Mayor and the council than some of his own Auckland MPs.*

Another acknowledged that politicians had to consider "what the community is prepared to tolerate", and added:

> *From a central Government perspective, the way we would like the levers to be pulled is that you set the overall amount of housing you require, which is about 13,000 houses per year. You maximise the amount of intensification that you can achieve, because that seems to be the broad goal, but you agree that you allow for sufficient greenfields to maximise up to that 13,000. That would be a far better way for public policy to go forward than the reverse, which is to bank on getting a level of intensification that you continuously fail on, and substantially squeezing in the supply of housing.*

The Auckland Housing Accord delivered on this approach by giving priority to the housing target, enabling developers to choose between greenfield or brownfield sites, and ensuring that ample greenfield land was available for development to meet the target.

The key implementation mechanism was the Special Housing Area, a designated area for predominantly residential development where special consenting and approval processes sped up development. These included pre-application processes, fast-tracked consenting and limited notification and appeals. Targets were set in the Accord for the council to deliver sufficient Special Housing Areas to provide 9,000 dwellings in year one, 13,000 dwellings in year two and 17,000 dwellings in year three. Developments must comply with permitted residential zonings in the Proposed Auckland Unitary Plan, so Special Housing Area developments in the mixed housing suburban zone could not be more than two storeys, and in the mixed housing urban zone not above three storeys. Developments in town centres were limited to six storeys. The Accord placed pressure on the council's planners to urgently recommend Special Housing Areas to meet ambitious, short-term dwelling consent targets, while retaining the framework of the Unitary Plan for making decisions on the location and character of these developments.

Importantly, the Accord also provided for bringing forward greenfield urban development in the future urban zone. This zone covered the area outside the existing built-up area but inside the Rural-Urban Boundary, an area set aside for urban development over 30 years that would become available for immediate

CASE STUDY 1

Special Housing Areas and sustainability

Auckland house prices have continued to rise: in June 2015 it was reported that real housing prices rose by 16% in the previous year and were 30% above the 2007 peak.[27] While the origins of the problem were contested,[28] and attempts were made to reduce demand pressure by making housing less attractive for property investors,[29] the primary thrust of the central government response to concerns about housing affordability was to address factors limiting supply.[28] Special Housing Areas are intended to increase supply of housing, so what will be their impact on sustainability and resilience in the city?

Researchers Nick Preval, Ed Randal, Ralph Chapman, Jonathan Moores and Philippa Howden-Chapman evaluated the impact of Special Housing Area location on measures of sustainability and resilience, with a focus on climate change. They used four approaches:

1. The impact of each Special Housing Area on Auckland's population weighted density was calculated in order to explore which of the Special Housing Areas made Auckland a denser and thus more sustainable city.
2. Commute data from the 2013 census were used to predict the average annual emissions per commuter (cars and public transport) for each Special Housing Area. These were compared with the average annual emissions of an Auckland commuter.
3. The likely proportion of active commuters (pedestrians and cyclists) was calculated for each Special Housing Area and compared to the Auckland average.
4. Finally, the likely impact on stormwater pollution of an average dwelling built in each Special Housing Area was calculated using aerial photographs and a previously developed land cover model in conjunction with Auckland Council's contaminant load model.

The research found that Special Housing Areas nearer the centre of the city resulted in higher population density and lower commute emissions (under a business-as-usual scenario). Special Housing Areas located beyond a 6km radius from the centre had fewer active commuters than the Auckland average. The average impact der dwelling of Special Housing Areas on stormwater pollution (zinc and copper) was lower for high-density and infill developments than for greenfield developments.

This highlights the importance of coordinating transport and infrastructure planning in order to address health, environmental and climate change concerns, while also addressing housing needs. Prioritising dense development and infill/brownfield development would allow the council to address stormwater pollution concerns, limit harmful emissions and improve the potential for people to get active with walking and cycling. These are goals to balance with land availability and developer and consumer housing preferences.

Nick Preval, Ed Randal, Ralph Chapman, Jonathan Moores and Philippa Howden-Chapman, "Special Housing Areas and sustainability: Evaluating impacts of a policy designed to address housing shortages and affordability in a New Zealand city" (in publication). This work was prepared as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

development using a fast-track plan variation procedure. In practice, the Accord would bring forward peri-urban development. The first Special Housing Areas were to add 8,000 hectares of rural land to the urban footprint of Auckland (adding to an urbanised area of 49,000 hectares in 2013[23]), consenting for housing within the next three years which the Auckland Plan had envisaged would be spread over 30 years.

A 2015 monitoring report, covering the first six tranches of Special Housing Areas, showed that 67% of dwelling sites would be greenfield sites outside the existing built-up area, and 50% of the final yield of dwellings would come from bringing forward the development of the future urban zone.[24] To summarise the significance of the Accord, together with the Proposed Auckland Unitary Plan:

- The provision of targeted housing numbers was prioritised over the Auckland Plan's aspiration to achieve a quality, compact city.
- The anticipated number of dwellings to be built outside the Metropolitan Urban Limit grew from 25% in the council's original proposal, to 40% in the final Auckland Plan, to 50% in the Auckland Housing Accord monitoring report, and was likely to grow further.

With some exceptions, subdivision and land use consents in Special Housing Areas are granted for an unlimited period[25,26] and will not lapse if not immediately developed. If developers take full advantage of the window of opportunity to fast-track consents without public notification or appeals, then the Auckland Housing Accord will — in the space of only three years — enable a substantial expansion of peripheral urban development for many years to come. The Accord will likely undermine the Auckland Plan's vision of a quality, compact city by enabling a resumption and acceleration of the pattern of peripheral development of Auckland.

The Accord contained a provision that, while it was in place, the government would not override the council's planning and consenting processes in respect of housing. This reflected a fear expressed by several interview participants that, if council did not comply with government's wishes in relation to the accelerated provision of housing, the Unitary Plan and/or its implementation by council would be overridden by the government. Reference was made to the government's taking over of the governance of the Canterbury Regional Council. Several participants considered that the council had little option but to cooperate in the Housing Accord.

The council obtained a provision on affordable housing: "Conditions of consent may include requirements for a proportion of the development to include affordable housing and/or provision for first home buyer purchase."[17] Overall, however, the Housing Accord had a narrowing effect on possible policy answers to the housing supply question in Auckland, with a focus on the controlled expansion of urban sprawl.

Underlying factors influencing urban form

An aim of our interviews with members of the governance network involved in city decision-making was to explore their views on underlying institutions and on links between institutional settings and urban form and density outcomes.

Cultural norms

Participants widely held that there were historically strong preferences for living in detached family homes with private yards, and for the use of private vehicles over public transport. These preferences remained important, especially in better-off suburbs, but were changing everywhere.

Travel by car was the dominant mode of travel in Auckland, representing 77% of trips from 2012–14. Pedestrian travel comprised 18%, public transport 4% and cycling less than 1% of all trip legs (the lowest of the cities we studied).[30] The high uptake of public transport on the northern busway was cited as an indication that there was pent-up demand for change that could be tapped following an upgrade in the quality and/or frequency of service provision. Participants differed, however, over the likely extent of such uptake, with some central government advisers doubtful as to whether uptake would be sufficient to produce an adequate return on the more costly proposed investments in public transport.

Auckland's regional population-weighted density increased significantly over the last decade, so the city was slightly denser than Wellington City.[23] A trend was said to be occurring toward greater acceptance of denser living styles, driven especially by younger and retired people, and by affordability considerations. This suggested that a stated preference for standalone housing was in some cases overridden by such practicalities as affordability or easy maintenance. The trend also appeared to reflect residents' preferences at different life stages. While a significant number of older people left Auckland,[31] there was an emerging interest in ageing in place, perhaps in a smaller dwelling in their existing community.

> *People are willing to consider alternative types of housing as long as they can live in the area they want to. So cultural expectation is changing rapidly and that is the one silver lining to house price inflation; there is a market for well-located, alternative housing styles.*

Several participants stated that market behaviour either was, or soon would be, running well ahead of political perceptions and even developers' expectations. They variously said:

> *Auckland councillors are mostly baby boomers with a particular understanding of cultural norms, and debates in council reflect their worldview — for example, the need for a yard for kids to kick a ball around.*

> *Those developers who are building townhouse-type typology or terraced housing or even low-rise apartments can't sell them fast enough … The Hobsonville Land*

> *Company [a subsidiary of Housing New Zealand] partnered with a whole lot of providers, and a lot of those partners were quite sceptical about the typology they were being asked to provide, and a lot of those providers were actually surprised by the amount of demand for those typologies … They were almost coerced into providing the typology by essentially a public institution and that process revealed that they perhaps didn't know their market as well as they thought they did.*

> *There are some significant cultural barriers to managing and leading a change in housing preferences, but I think the appetite to do that is grossly underestimated … People may not have a great appetite today, but deliver some great solutions and start to promote those solutions, the customers will be there.*

One participant summed up the views expressed by most, in saying that the influence of traditional cultural institutions remained important in the plan-writing process, but was much less influential in shaping people's actual market behaviour. People made pragmatic choices about housing type and location, and transport to work, revealing unmet demand for smaller homes and for public transport. The political processes leading to the Proposed Auckland Unitary Plan, on the other hand, demonstrated that advocates for traditional cultural institutions around single family homes and private motor vehicle use still had a strong influence on the outcome.

Several participants considered that natural and cultural amenities, especially character neighbourhoods, beaches, hills and views of the sea or mountains were highly valued. Protection of these from perceived degradation amounted to a cultural norm upheld not just by the people who lived there, but by all Aucklanders. This was said to go to the heart of Auckland's identity and desirability as a city in which to live.

> *I frequently have debates with my friends, who are also well-travelled, and say: "Guys, what do we love about Auckland?" We all say the same things. It's all about lifestyle, choices, beaches, harbour, the ocean, a bit of space, enough room to sit outside in the garden and all that kind of stuff. It's all to do with space and environment and views and all that kind of stuff. It's not sitting in a little apartment building overlooking another person's house.*

The cultural norm about protecting Auckland's special assets was seen by some as at risk. The draft Unitary Plan, in this view, fell short of protecting Auckland's special assets, and failed to direct denser living developments toward the most appropriate locations. Comparisons with Sydney (which was 77% denser[23]) featured in public debate and in some of the interviews. Proponents of denser coastal living pointed to high-rise developments around Sydney Harbour and thought these were accepted as desirable; opponents said that most high-rise development in Sydney was on clifftops and that beach fronts were protected.

The idea that protection of scenic and neighbourhood character assets amounted to a cultural norm was not challenged by any participants. Several

felt the relevant norms were being artificially extended by some community protagonists to claim protection from denser development for areas that had limited claims to scenic or historic special qualities. On this interpretation, many claims of so-called character neighbourhoods, for example, were cloaks for Not-In-My-Backyard (NIMBY) attitudes based on private or local interests rather than the broader public good.

Policies affecting the supply of buildings and infrastructure

Those interviewed were asked about whether supply-side policies, such as planning controls limiting upward or outward growth, parking requirements or compulsory land acquisition powers might differentially affect different patterns of urban growth.

Participants focused strongly on the Unitary Plan's policies and rules. They tended to view these, for better or worse, as by far the most important influence on urban form and density. An interesting feature was the extent of support for more liberalised and flexible plan requirements, other than from some residents' advocacy groups. Within the existing built-up area, it was not planners, but residents and their local boards who pushed for greater planning restrictions. Most interview participants felt a more liberal planning environment would favour a more compact urban form, and would also assist with the housing affordability issue by enabling smaller housing units to be built. These participants mostly favoured retention of some controls, but tended to see rules requiring minimum parking, restricting building heights to only two storeys, and restricting dwelling densities on a site as counterproductive to affordable housing and increased residential density.

Density rules featured in pre-existing plans in Auckland, and became particularly important in the final version of the Proposed Auckland Unitary Plan. According to developers, these rules were poorly-conceived:

> *I had interesting ideas on how to develop a particular site, which made it non-compliant, but which had less effect on the environment, and more profitable for the developer and provided more houses at a lower price point … But I got so wild with the response from council, the total paranoia about density, which the way it is defined is the number of titles per hectare. It doesn't have any regard for green space or any regard for the number of people that are living per hectare. Density is one house per 375m² regardless of whether it's a one-bedroom unit or a five-bedroom, 300m² townhouse, which is clearly a poor definition of density. So if you buy a thousand square metres, and it said one per 375, then you could build two units. Well, clearly you are not going to build two one-bedroom units are you? Or two two-bedroom units. That is madness. You have just paid a million dollars for a piece of land.*

On another site, the same developer went through a longer and more expensive consenting process to get approval for a development that did not comply with the Plan's density rule.

> *According to the Plan it was a three-unit site, but I built ten. So nominally the density is a 330% increase, but the reality is instead of three five-bedroom townhouses for a total of 15 bedrooms, I have a total of 14 bedrooms over ten units, so I haven't got any more people on the site. But I have more green space, because my ten carparks are in one garage rather than having a carriage way to three individual garages, and three individual turning areas, so I've got 10% concrete instead of 25%. Because the buildings are all together, the setbacks from neighbours are bigger, more green space. So I have three times the supply at half the price. It's more profitable for me financially. There is no increase in the loading on the sewer, because while it's a 300% increase in density I haven't got more people. I've just got smaller houses, which is what we need to get affordable housing solved.*

Some participants went further, seeing onerous costs in a wide range of Proposed Auckland Unitary Plan rules covering the existing urban area, which they held would drive development toward greenfield areas. Some considered that exemplar projects would build support for increased residential density, but suggested planned projects had yet to be implemented. Heritage protection rules were widely seen as necessary in principle, but excessive in practice, although the review process under way was expected to greatly reduce the number of buildings given interim protection, potentially opening the way to greater residential density in the inner suburbs. Overall, the perception of participants, both those favouring compact city policies and those favouring a market-driven approach, was that the restrictive rules for residential zones in the Proposed Auckland Unitary Plan would promote a more sprawling urban form.

The Rural-Urban Boundary would replace the Metropolitan Urban Limit when the Proposed Auckland Unitary Plan is adopted. Defining the maximum extent of urban development to 2041, the Rural-Urban Boundary is larger than the Metropolitan Urban Limit and increases the amount of greenfield land available for urban development. The Rural-Urban Boundary retained rhetorical importance in framing the vision of a quality, compact city. However, it was seen by interview participants as providing such flexibility in practice for allowing future greenfield developments that it attracted little adverse comment from developers or central government.

Reaction on the part of developer interests to council policies and community response was:

> *We know, because we know our customers, because we have to sell product to them, that it [the draft Unitary Plan] was never going to fly … We see density is a goal, and we are prepared to compromise street by street on it, but if we can't get the density, we will instantly start rolling out across greenfields, because as far as we are concerned, we have to achieve the housing targets.... Our fear has always been that the council will just put their head in the sand about demographics, underprovide and keep housing unaffordable, because they won't want to do greenfields because of all the physical environmental issues, and they won't be*

CASE STUDY 2

Leaky homes: An ongoing burden

The leaky homes problem continues to place a heavy burden on affected homeowners, councils, developers and the economy. An estimated 42,000 to 110,000 residential dwellings have been compromised,[35] and litigation continues between owners, developers and local authorities over who pays for repairs.

The scale of the problem indicates a system-wide failure. The Building Act 1991 has been seen as a precursor to the leaky homes crisis, as it marked a shift from prescriptive to light-handed, performance-based regulation. This, with a combination of other factors, including new products and designs in house construction, consumer preferences, and fewer apprenticeships in the building trades, culminated in a perfect storm with affected homeowners at the centre.[36,37]

Although many parties are liable for the damage to leaky homes, local councils bear the brunt of the costs as the 'last man standing'. Territorial authorities owe a duty of care to owners of premises, so may face litigation from owners of commercial and residential property.[38] The Building Act 1991 limited the liabilities of councils with a 10-year limit for claims, although many claimants have tried to work around this.[39,40]

In addition to the Building Act 2004, the government introduced two processes to address this problem. First, the Weathertight Homes Tribunal was established, with 7,267 claims for 12,245 properties being processed through the Tribunal to date, the majority from the Auckland region, followed by Wellington, Christchurch and Tauranga.[41] Second, the Financial Assistance Package (FAP) was introduced in 2011. Under this scheme, central and local government each agreed to pay a quarter of repair costs, and homeowners the remaining half. Take-up of the offer, which is due to expire in July 2016, has been low, and as of June 2013 only 249 homes had received payouts.[42] Of the cities in our study, only Hamilton is not participating in the FAP.[43]

The cost of the leaky homes problem is difficult to determine. Estimates range from 42,000 houses costing $11.3 billion to 110,000 dwellings at a cost of $33 billion.[36] The cost to local councils is equally unclear; their insurer, Riskpool, stopped covering leaky homes claims in 2009, and since then councils have been left to cover costs on their own.[44] ANZ estimated a total cost to local authorities of $1.6 billion if all claims came through FAP, and PricewaterhouseCoopers estimated $2.814 billion.[35,45] Both estimates considered only residential properties, excluding commercial or community buildings. Further, these estimates ignored the environmental and health costs. A conservative cumulative estimate for the health costs of damp and mould due to leaky homes is $200 million.[46] Although the landmark Hunn Report from the Weathertightness Overview Group identified possible health effects as critical, almost no research has been undertaken on this.

The burden of leaky homes will weigh down the economy for some time. Homes and apartments built in the 1990s are viewed with distrust, leading to lower prices.[47] Leaky homes are still being discovered and law suits are ongoing. Homes that have been fixed face the risk of secondary failures due to inadequate repairs. Finally, as there has been no systematic survey of buildings constructed in the 1990s and later, there is no guarantee that new homes being built will not be leaky.[48]

By Philippa Howden-Chapman and Anna Hamer-Adams. From P Howden-Chapman, C Ruthe, S Crichton, 'Habitable houses: Lessons learned?', in *The leaky building crisis: Understanding the issues*, Wellington, Thomson Reuters, 2011, 303–315.

> *able to do density because they will instantly lose their seats. And I regret to say, we were right and they were wrong … Wherever we've got a chance, we'll try to do terraced houses or apartments first, but if we can't do it, then it's uncontrolled sprawl. We'll sprawl down to Hamilton and up to Whangarei, we'll just keep going. We. Have. Got. To. Build. The. Houses!*

The Unitary Plan made provision for formal recognition of 3,600 sites of cultural significance in the Auckland region. Properties within 50 metres of these sites would have to apply to iwi for consent for major renovations, such as digging a swimming pool. The provision was viewed by some as another hurdle for landowners, and an opportunity for rent-seeking by iwi, but it meant that important sites such as urupa (burial sites) would be afforded official protection.[32]

Another issue affecting the supply side of the housing market was identified in several interviews. This was the perceived difficulty under existing law of amalgamating titles to allow townhouse developments and, especially, comprehensive developments in and around town centres. While compulsory acquisition powers, with appropriate safeguards, were provided in law for building certain types of infrastructure, such as motorways, these powers were thought not to extend to intensive housing developments. A number of developments were said to have been stymied because of hold-out landowners seeking unrealistic prices, and this issue appeared to hang over brownfield developments generally. The issue was extensively discussed within the professional planning and development communities, and addressed in internal council reports. A well-regarded report to the Ministry for the Environment recommended that: "The Public Works Act be reconsidered to ensure that local authorities have the ability to compulsorily acquire and amalgamate land for major urban regeneration projects (provided some form of central government oversight is required as a safeguard)."[33] The Productivity Commission took up the same issue: "Given the significant social and economic harms caused by the

current housing situation, a good case exists for compulsory acquisition powers to assist in the assembly of sites for large, master-planned developments."[34]

A handful of interview participants thought that the capacity for urban regeneration and increased residential density would require much more comprehensive policy change. A key missing institution in Auckland was an urban development authority, of the type seen in many overseas cities, with a mission to drive forward urban regeneration and affordable housing in particular. In addition, a relative lack of domestic private sector organisations with the financial and organisational capacity and experience to undertake large-scale residential developments was identified as an issue by two people familiar with such developments in Australian and North American cities.

Participants were asked about the extent to which processes of gaining consent for developments had a differential impact on patterns of urban growth. Those holding a view on this topic were unanimous that processes of gaining resource consent for developments, including the risks of delays and holding costs, did not have a particularly important differential impact. Further, in general, consent processing was regarded as relatively efficient. The real issue was around the underlying plan rules, which imposed the level or type of requirements for consents.

Allocation of infrastructure responsibilities

City infrastructure provision is divided among central government, Auckland Council, council-controlled organisations and private developers. This multi-layered governance system creates resilience, where expertise is held in more than one organisation, and fosters the potential for synergies. It also involves transaction costs in coordination between agencies, and potential for political or other impasses. This has consequences for planned changes to urban form.

Some tension was evident between Auckland Council and its own water infrastructure provider, Watercare Services, about the ambition of the draft Unitary Plan to zone suburban neighbourhoods for greater density across a large proportion of Auckland's existing built-up area. From the infrastructure provider's perspective, there was a need to identify reasonably far ahead where density was to increase at the street or neighbourhood level, in order to schedule work to meet the demand. Watercare favoured a more staged approach in which priority areas would be identified for sequential development, rather than enabling large areas to be available for development all at once.

A contrasting view was that market-led developers should choose the areas for denser development. For this to work, would-be residents and developers needed flexibility to identify opportunities as widely as reasonably possible across the region. The Unitary Plan's broad zonings were only the first step in a development planning process which included private developers' structure plans, area plans (such as those for the Special Housing Areas), and work programmes agreed upon between council and Watercare. In this view, it was not appropriate for these plans and programmes to be embodied in a relatively

inflexible framework like the Unitary Plan. It was stated that particular developments could still be declined if infrastructure capacity would not be available in time, although some felt that both developers and Watercare might find this problematic in practice. Further, ratepayers and residents in some areas worried that water infrastructure would not be coordinated and provided in a timely and cost-effective manner. This perception formed a part of their opposition to the up-zoning of their neighbourhoods in the draft Unitary Plan.

Most interview discussion of infrastructure issues focused not on water but on transport. The NZTA had a crucial role in shaping Auckland's future, and there was a need for, and difficulty in, achieving a strong strategic alignment between the council and this government agency. The government's roles in transport are as a provider of state highway infrastructure, a part-funder of local roads and public transport investment, and a legislator able to confer powers on the council to raise its own funds, for example, through road pricing (direct charging for the use of roads) or through a regional fuel tax. It was widely accepted that government decisions in each of these areas could have a very important long-term influence on Auckland's urban form, regardless of what was written in Auckland planning documents.

Participants viewed the split in responsibility for transport infrastructure provision as potentially important for urban outcomes, but many downplayed its significance in practice. This was because central government had become much more respectful of Auckland Council than it was before the creation of the super-city, and because relationships between the NZTA and the council had improved. NZTA's investment programme in Auckland was better harmonised with the council's priorities than before. Planning for the East-West Link, for example, was strongly influenced by Auckland planning considerations. The Pūhoi to Wellsford motorway link might promote sprawl to the north of the city, but the rationale for it was to advance an expressway to Whangarei, which was needed for national economic development reasons. The construction of this highway might affect underlying land values and the demand for development, but some interview participants felt it would not lead to urban sprawl, unless with the future consent of Auckland Council.

Some felt that in an ideal world, and perhaps in the original vision behind the creation of the super-city, the Auckland Plan would be agreed with government, whose transport funding decisions would then be guided by it. An alternative view was that this could lead to poor investment decisions driven off Auckland politicians' alleged philosophy of build-it-and-they-will-come (coming back to divided opinion on investments such as the City Rail Link). It was suggested that good transport investments ought to be both a good planning fit and good return on investment; the existing institutional arrangements supported this outcome.

NZTA was said to be moving in a strategic direction similar to that of Auckland Council, despite some highly-publicised and significant differences, such as the timing of the City Rail Link and the introduction of road pricing.

In 2013 NZTA changed its evaluation of national land transport projects from an 8% discount rate and 30-year evaluation period to a 6% discount rate and 40-year evaluation period (a rate which is still fairly high by developed country standards[49]). This would give government a more reliable and long-term view of the economic value of major infrastructure projects such as the City Rail Link. Completing the long-planned motorway network, strengthening public transport through an electric rail network, redesigning bus routes and services, providing cycling infrastructure, and later the City Rail Link, would improve infrastructure and services. This would then allow the emphasis to move toward behavioural change through demand management tools, including pricing tools. This would also enable people to make good decisions about where they live, work and play, and how they get about the city.

> *I must say also, just generally in terms of NZTA, their approach to doing things has certainly changed over the years. They are far more engaging, far more open, and yeah you don't suddenly learn "we are building a road here tomorrow" … I don't know if I would call it a culture change. Something has changed, and it's far more looking at you as partners and that's a really good thing … And it's a two way thing. So we have taken in the Auckland Plan and all of that. They were seriously involved in that and their views were respected. And it probably means they are going to respect the Plan a bit more. It works two ways. The relationship is a lot better and I think that will result in a lot of better outcomes.*

Lying behind this picture of improved relationships and coordination at the technical and policy advisory levels, politicians still had markedly different visions for the future of Auckland and different decision-making styles. This was reflected, for example, when ministers refused to allow the NZTA, Ministry of Transport and Treasury to take up places on the council-initiated Consensus-Building Group on Auckland Transport Funding. There was also a long delay in winning government acceptance of the need for investment in the Central Rail Link, continued differences over the timing of that investment and ongoing government reluctance to legislate to enable Auckland Council to develop a new source of revenue for transport investments.

One central government participant suggested that rises in rates meant an ability-to-pay or willingness-to-pay ceiling might be approached, posing a medium-term constraint on Auckland Council's ability to invest in infrastructure projects. While Auckland's GDP growth was similar to that of the national average between 2000 and 2014,[50] Auckland had the fourth-highest average rates bill of all territorial authorities.[51] To put this in perspective, the OECD estimated that taxes on property (rates) were about 5% of all taxes in New Zealand, and rates had remained at about 2% of GDP for over 100 years.[52]

Some participants considered that both Auckland Council and central government moved too slowly to invest in public transport. One argued for a halt to road-building, instead focus on public transport, and then later go back and assess what road-building, if any, might still be needed. Views of

this sort were driven not so much from a perceived deficiency in institutional responsibilities, as from a concern that decision-makers at all levels were failing to forge a strategic response to climate change.

Externalities

Participants were asked whether the negative externalities of environmental and congestion costs and the positive externalities of agglomeration associated with particular development patterns were attributed to those generating them, and whether this created different patterns of urban growth. Participants acknowledged that negative externalities such as noise, congestion, air pollution and greenhouse gas emissions were not being properly accounted for or effectively managed to make those creating the externalities take responsibility for mitigating them. It was widely conceded that failing to manage such externalities would largely favour a more sprawling over a more compact pattern of growth, although some considered that noise and protecting heritage could become more significant issues with a more compact settlement pattern.

Participants generally did not seem to have a clear sense of how significant the various externalities were, but a developer conceded that charging for congestion alone could make a significant difference to urban form and density: "If in fact we had charges on congestion and the true costs of living out in the outer suburbs were factored-in in that respect, it probably would change radically the way an awful lot of people think about density." One participant characterised the allowing of a sprawling pattern of development as an expedient practice that would impose high transport costs on future generations.

> *The cost of transport and the spread of a sprawling city or region would basically then be allocated to individual households completely. So I think externalities, I think the tricky thing around that is that it does not manifest itself within the generation. So you will have this sprawling development going on for 25 years. And you don't get to face up to it or try to deal with it in a policy sense till the next generation or the one after … It is really that expedient, saying: "Well, we can let that sprawling development go because we are not going to feel the effects of it in the next 20 years", but my goodness, the next generation will pay for it.*

Some stressed that externality management needed to be based on more careful analysis and design. As an example, one cited requirements on developers to provide parking spaces, which were justified as avoiding the perceived negative externality of people parking on the road or on verges.

> *It's very rarely you will see, especially in the Section 32 reports around these sets of rules, a real discussion around what the positive factors of the counterfactual would be. Suppose we didn't have minimum parking requirements, and therefore as a result we had slightly higher density because where you would normally park a car you could now park a bedroom. What are the positive effects of that in terms of housing, growth and economic activity?*

CASE STUDY 3

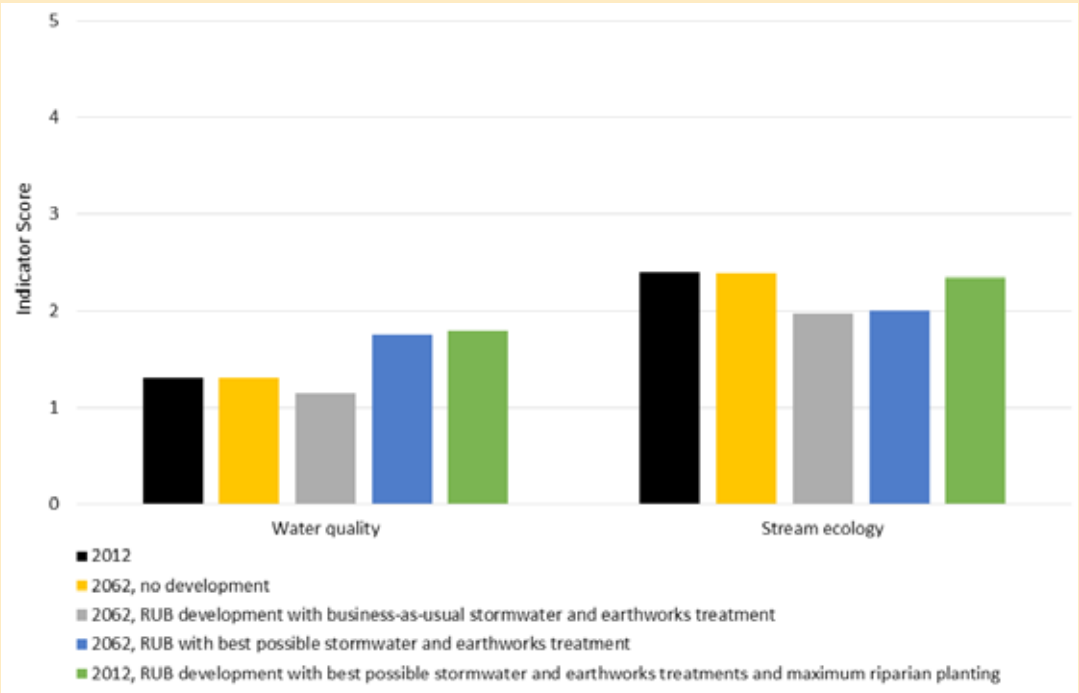
Assessing the resilience of urban water bodies to the effects of urban development in Auckland

The resilience of New Zealand cities rests on their ability to adapt to new scenarios. This requires planning, with cognisance of the environmental, social, cultural and economic effects of development and growth. The ecological and social aspects must be considered interdependently to ensure that our cities are truly resilient.

Forward-looking planning requires the ability to assess projected outcomes of development. Researchers with the Resilient Urban Futures programme, Jonathan Moores (NIWA), Chris Batstone (Cawthron Institute) and Malcolm Green (NIWA), are developing a decision support system to allow different land use and stormwater management scenarios to be compared. The system aims to incorporate environmental, economic, social and cultural well-being indicators.

In association with Auckland Council, the decision support system was used to assess the environmental outcomes of predicted urban growth in the southern part of Auckland, in the proposed Rural-Urban Boundary expansion area around Papakura and Pukekohe. The area is predominantly rural, but is forecast to have over 40,000 new homes, increasing the proportion of urban land from 5% to 18%. An area of approximately 250 km² was assessed, through which a number of streams flow to the estuaries of the Pahurehure Inlet in the south-

Figure 2.2 Freshwater indicators, Lower Oira.
Note: The higher the indicator score, the better the quality of the environment.



eastern Manukau Harbour. Predictions were made over a 50-year timeframe, paying special attention to the streams and estuaries most affected by urban development.

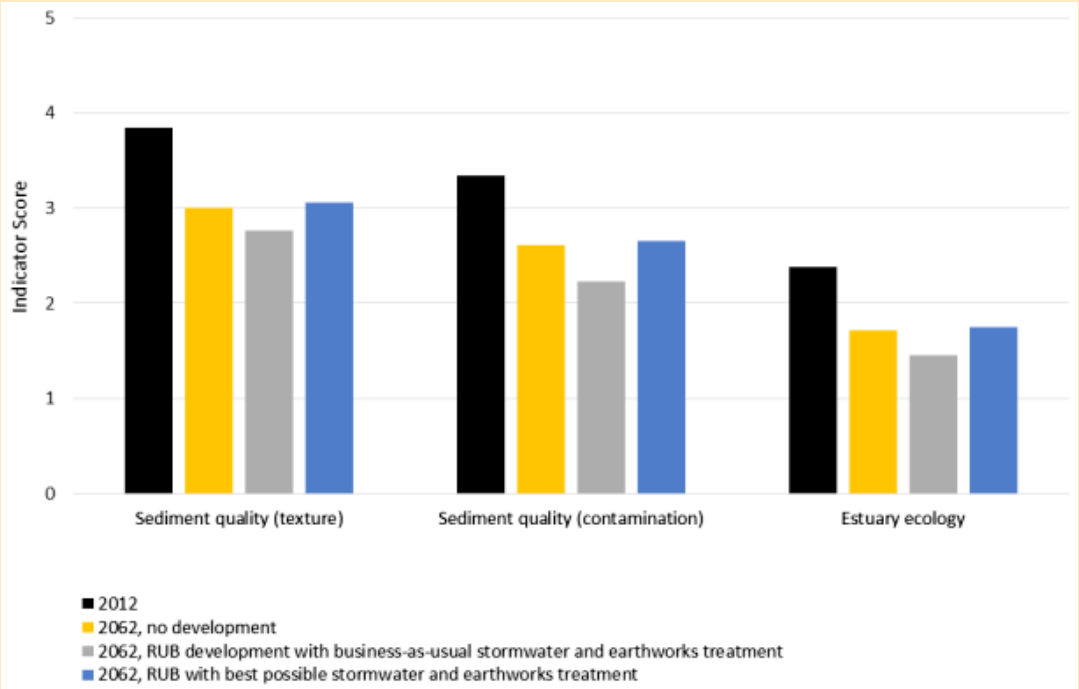
Four scenarios were assessed:

1. No development (baseline)
2. Rural-Urban Boundary development with business-as-usual stormwater and earthworks treatment
3. Rural-Urban Boundary development with best possible stormwater and earthworks treatment
4. Rural-Urban Boundary development with best possible stormwater and earthworks treatment, and maximum riparian planting

The assessment found that the streams and estuaries have already been impacted to some degree by existing urban and rural land use in the wider catchment. Without intervention, the streams and estuaries were predicted to worsen over time, even without any development. The second scenario, further development and business-as-usual treatment, was predicted to result in substantial negative effects on streams and estuaries, illustrated in Figures 2.2 and 2.3. However, the assessment also found that using best possible treatment and maximum riparian planting could mostly mitigate or even improve the effects of the proposed urban development.

As results indicated a worsening effect over time, even with no development, the researchers recommended intervention on the scale of the whole south-east Manukau Harbour catchment. Intervention would include additional riparian

Figure 2.3 Estuarine indicators, Inner Drury Creek Estuary.



fencing and planting in rural areas, and additional stormwater treatment in existing urban areas. Without intervention, critical ecological thresholds could be breached over the next 50 years. If development goes ahead in the study area, it is clear that best possible treatment and maximum riparian planting will be needed to avert ecological degradation and ensure a healthy environment for Aucklanders. Similar assessment can be applied to other areas with urban development potential.

From J Moores, M Cameron, S Harper, C Batstone, *Urban planning that sustains waterbodies: Southern RUB case study*, 2013, prepared by NIWA and Auckland Council Research, Investigations and Monitoring Unit, Auckland Council working report WR2013/006. This work was prepared as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment. The preparation of the working report was commissioned and funded by Auckland Council.

Those participants who were focused on whether public transport investments represented value for money accepted in principle that externalities needed to be accounted for, but spoke of the difficulty of establishing their true value. Moreover, protocols for cost-benefit work leading to policy advice embodied certain assumptions which had to be followed. Some of these assumptions were regarded by other interview participants as unrealistic or misguided.

A related matter was whether externalities connected to carbon would be treated as a marginal cost issue or as a strategic issue. One participant stated that carbon emissions had to be reduced to zero by mid-century. This required major strategic changes to urban form and infrastructure, which would take time and needed to be started immediately. Some other participants viewed carbon emissions as a marginal cost which was not of major significance in the calculation of the costs and benefits of transport infrastructure investments, and suggested that expected technological changes, such as cheap electric cars, would take care of the issue in due course.

Allocation of land rents

Urban growth, infrastructure provision and zoning changes to allow denser settlement tended to increase the value of land. We asked about the extent to which this increase in value benefited land owners and developers or public authorities, and what the resulting incentives were for different patterns of urban growth. Many participants were concerned that, inside the Rural-Urban Boundary, the allocation of land value between existing property owners and would-be property developers tended to favour the former. This was related to the legal difficulty developers faced in amalgamating sufficient titles for more intensive developments, such as terrace housing or large, mixed-use developments.

A majority of participants considered the allocation of land rents either a minor or moderate factor influencing the pattern of urban growth, although most did not appear to have given it much consideration. There was a suggestion among some that Auckland, compared to overseas cities, failed to take advantage of opportunities to lever private investments in denser developments off the rise in land values generated by the publicly-funded upgrading and extension of transport infrastructure. An Auckland Council planners' initiative, eventually dropped, sought to follow overseas models by capturing for public purposes some of the increase in peri-urban land value associated with zoning changes. The planners had taken the view that it was the growth of the city and its transport and other infrastructure, fostered by public investment, which lifted the value of nearby land. A portion of the resulting up-zoned land value (effectively unearned rent captured by the landowner once the land was zoned for residential use) should therefore be used for the city's public purposes, such as to help fund the city's needed infrastructure.

Fewer participants took the view that rents arose where public authority interventions had limited people from making efficient use of land in the first place. In this view, planning interventions, especially a Metropolitan Urban Limit, created distortions in a market-determined land value pattern, and allowing the resulting rents to be captured by public authorities would be undesirable.

The stance taken depended on whether serviced urban land was recognised as being a scarce resource or not, and on whether other factors bearing on this question, such as urban limits to manage externalities and infrastructure costs, were regarded as justified or not.

Allocation of public sector costs

We wondered about the extent to which the marginal costs of the public sector's investments to support urban development, including infrastructure costs, were attributed to those generating the demand for them, and whether this varied between different patterns of urban growth. Responses focused mainly on development contributions paid by property developers, and the amount of the costs incurred by public agencies which should be charged to developers.

Responses were highly polarised. This was probably partly a result of an amendment to the Local Government Act to limit the range of costs that councils could charge to property developers via the development contributions regime.* Those with property development interests said they had worked for a decade to achieve these amendments and were thrilled with the government's

* Development contributions had been used for infrastructure that would benefit the wider community. The Local Government Amendment Act 2014 restricted this to apply only to community centres/halls, public toilets and play equipment, in addition to network infrastructure. Community infrastructure of benefit to the wider district, not only the new development, would be funded through other means. Councils were also required to consider agreements with developers where, for example, a developer might provide the required infrastructure for a lesser cost than the development contributions would have been. To provide transparency and consistency between districts, the Act set up an objection process with an independent commissioner.

response. They saw the changes as being of great importance to the provision of affordable housing and to the accommodation of expected growth in Auckland. The property developers did not support a proposal by the think-tank The New Zealand Initiative which would have enabled the private sector to finance and provide infrastructure to greenfield developments. They considered that the changed development contributions regime was a better solution.

A government participant explained the rationale for the legislative changes by stressing that the political incentives on councillors were to keep rates down, and that many councils sought to do this by excessively loading costs onto developers. This contrasted with views expressed in the other cities in our study. Development contributions were a minor part of councils' total revenue, on average 2% and in Auckland just over 2% of revenue.[52]

An Auckland Council submission on changes to developer contributions estimated that they would "result in an additional impost on rates of $160 million over the next ten years".[52] Interview participants associated with the council felt that its inability to recover the full costs of providing for growth would have a marked effect on urban growth patterns and on the ability of the city to maintain its infrastructure assets.

> *When we talk about development contributions or infrastructure growth costs, whatever we charge those who generate the need, we do not charge for the real cost. That has massive consequences, massive consequences. The greenfield growth has major impacts on the viability of this city. It affects everybody. We pretend we charge people for what it costs, but we do not, not even remotely … The cumulative cost of all that is just getting bigger and bigger, and we are going to get to a point [that] unless we somehow change the economy to go into serious overdrive and we become a really wealthy place, we are not going to be able to maintain that infrastructure … I think we need to make far better decisions on that.*

Participants had a range of views on the extent to which the new development contributions regime would favour greenfield development over a more compact urban form. A key point for some was that it amounted to a public subsidy which would fuel private developments on the urban periphery, where the reduced ability to recover public sector costs was generally higher per housing unit. This incentive combined with the proliferation of Special Housing Areas in peripheral locations. However, developers maintained that this effect was less important than that of suburbs opposing greater density in their neighbourhoods, as discussed in the section 'Community attitudes, residential segregation and social cohesion' below.

Policies affecting the demand for buildings and infrastructure

Participants were asked about demand-side policy factors driving different patterns of urban growth, such as perceived lack of opportunities for investing

beyond property, taxation and immigration policy settings, or government's direction of state highway funding.

Policy intervention on the demand side of the housing market was a polarised issue. The policy that attracted most comment was the absence of a proper capital gains tax, and the associated popular focus on urban property investment, which was held to be inflating house prices and driving a major political debate around affordability. One interview participant stated that this issue's impact on urban outcomes rated an "A", but was being treated as though it was a "C". Others considered that the government's unwillingness for political reasons to address the issue of untaxed capital gains led directly to an unbalanced policy emphasis on increasing the supply of housing, virtually excluding demand-side policies.

Given suburban resistance to greater residential density, the quickest way for politicians to achieve a supply-side response was through promoting greenfield development, for example via the Special Housing Areas. The Special Housing Areas would, over the medium-term, drive a sprawling urban form and reduce the focus on urban regeneration in the existing built-up areas. They also might be less effective than demand-side policies in improving the affordability of housing in Auckland, especially when the transport costs of living in peripheral areas were taken into account. Some participants saw existing institutional settings on the demand side of the housing market, and the policy decision not to adjust these settings, as having important consequences for urban form outcomes.

Other participants attributed the inflation in house prices to excessive constraints on land supply imposed by the council's rules, as discussed above. Policy advisers to central government generally took a nuanced view, acknowledging in principle that both demand and supply-side institutions were influential drivers of housing affordability and urban outcomes. Another group of participants highlighted uncertainties about what solutions would work in practice, given what they perceived as lack of evidence.

Subsequent to these interviews, the Prime Minister announced some measures to address the demand side of the housing market, including some requirements for foreign investors and the introduction of a so-called 'bright line' two-year threshold for taxation of capital gains from housing.[53] While these measures overtly targeted housing affordability, their adoption suggested increasing agreement that demand-side policies have significant consequences, which as well as influencing affordability may also shape urban form.

Financial market constraints

Participants were asked if factors such as regulations, banking practices or banking covenants constraining loan-to-equity ratios differentially affected different patterns of urban growth. In answer, they focused on the financing of denser housing typologies as the key issue. Among those with knowledge in this area, there was wide agreement that financing constraints relating to the banks'

desire to secure finance against a title was an important factor for apartments, but not for terrace housing or most greenfield developments. This pointed to an institutional influence favouring sprawl, but the barrier to building apartments was not thought to be a major one, and participants pointed to considerable growth in the number of apartment developments being built.

Other social and demographic factors

Another factor with a significant influence on Auckland's development was demographic change. In 2013 over 1.4 million people resided in Auckland, making it by far New Zealand's largest city. With an annual average predicted population growth of 1.3%, Auckland is projected to pass 2 million inhabitants by 2033.[54] Most participants accepted this drove requirements for more housing, infrastructure and city amenities, and for planned rather than just ad hoc urban growth, although some participants disputed the population projections.

Auckland experienced population increase due to births (the region's population was relatively youthful) and migration. Gains came from international migration, while there was negative internal migration, that is, more people living in New Zealand left Auckland than moved there.[55] Annual population growth through to 2021 was projected to be highest for Asians (on average 3.8%), followed by Pacific people (2.4%), Māori (1.6%) then European or Other (0.5%). By 2021 over half Auckland's population would be Asian, Pasifika or Māori.[54] (For a snapshot of ethnicity in 2013, see Figure 1.2 on page 11.)

The Auckland region has several major iwi and hapū groupings, many of which had recent Treaty settlements completed, including Ngāti Whātua o Kaipara, Ngāti Whātua Ōrakei and Ngāti Manuhiri, with other settlements pending. As part of these settlements, Māori had multiple levels of engagement with local government. For example, ownership of fourteen maunga (mountains) was vested in the Tāmaki Makaurau Collective, with co-governance arrangements between the Collective, the Crown and Auckland Council for the management of these sites for the benefit of all Aucklanders. Auckland also had a large number of mātāwaka, or resident Māori whose ancestral links lay outside the region (discussed in Case Study 15 on mana whenua and mātāwaka populations in our main cities, page 167). During the super-city formation, the Independent Māori Statutory Board was formed. Board members were appointed, with seven members representing mana whenua and two members representing mātāwaka. Its purpose was to ensure that Auckland Council took the views of Māori into account in decision-making. Informed participants were in no doubt that the Board had a significant influence on the council's decision-making on the Unitary Plan and urban form. It is likely that Māori economic and political leadership will continue to have a significant part to play in Auckland.

Summary

Our interviews revealed disparate or even polarised views of the institutions driving Auckland's urban form and density issues, yet there were also areas of agreement:

- Cultural preferences for living in detached family homes with private yards, and for the use of private vehicles over public transport, were generally agreed to be important drivers, but in Auckland these preferences were thought to be changing. This preference change was already reflected in marketplace behaviour, but only partly reflected in governmental plans, policies and investments.
- Against this changing background of cultural preferences, it was widely agreed that the provisions of council plans were the crucial proximate factor governing urban form. The shift from the draft Unitary Plan to the Proposed Auckland Unitary Plan was universally seen as greatly restricting the city's ability to increase residential density.
- Transport infrastructure investments were also important. It was generally agreed that multi-layered governance of transport created significant challenges for achieving alignment on policies for preferred urban outcomes. Alignment had recently improved, but the existence of continuing differences remained a constraint on policy-making for urban change.

Demographic factors were important. There was also wide agreement on some factors considered not significant: any costs or delays in obtaining resource consents for greenfield versus brownfield sites; and any greater difficulty obtaining finance for apartment purchases compared to single family homes or medium-density developments.

There were areas where influence on urban form and density outcomes was accepted in principle, but deemed by some of the participants to be not relevant or significant in practice. For these, the public discourse was limited, views were not so well-formed, and perceptions were influenced by culture and politics:

- The accounting for, and allocation of, rents, public sector costs and externalities were widely thought likely in principle to have an impact on urban form. Some had strong views about the importance of these factors, but others were uncertain. There was debate about how appropriately these factors were assessed and valued, how they should be allocated, and how significant they really were.
- Some participants thought certain supply-side factors significant. These included: restriction on compulsory acquisition of land by public authorities to use for master-planned developments; the limited role of urban development authorities tasked with urban regeneration; and a lack of private sector organisations with the financial and organisational capacity to undertake large-scale residential developments.

CASE STUDY 4

Kids in the city: Socially sustainable urban planning

Socially sustainable cities require urban planning which takes children's well-being into account. Play, independent mobility, social interaction, and physical activity support the wellbeing and development of children. The default for urban planning limits children's activities to specific sites (parks or pools for example), rather than embracing children's presence city-wide. The routes between home, school and other neighbourhood destinations can be important spaces for children to exercise independent mobility and informal play, but not where they are designed primarily for cars and adults, and traffic speeds and volumes are high. The importance of these spaces for children is often overlooked in the design of cities.

Researchers from SHORE & Whāriki Research Centre, Massey University, Auckland University of Technology and the University of Auckland have studied the connections that Auckland children have with their neighbourhoods, in light of Auckland Council's new children first approach. Their research involved 260 children between 9 and 12 years old, from a range of areas, ethnicities, and socio-demographic backgrounds. The children filled in travel diaries, wore GPS units to track where they went, wore accelerometers to measure physical activity, engaged in discussion groups, and took part in individual child-led walks. The children were key informants and co-producers of knowledge. They reported on their neighbourhoods, discussed what they liked and disliked, talked about safety concerns, and made suggestions for more child-friendly neighbourhoods.

A key finding of the Kids in the City research was that shared public spaces, such as streets, grass verges, hallways in apartment buildings and carparks, were

Figure 2.4 A street tree: A suburban shared space, Otahuhu, Auckland.

Figure 2.5 A lost shared play space: An apartment stairwell, Auckland Central.

important to the children who live near them for play, physical activity and socialisation. At times these spaces were dangerous, or children were barred from playing there (for example due to noise concerns in an apartment foyer). Children wanted to be able to move around their neighbourhoods safely, and to have access to places to meet with their friends and play.

Formally recognising that these shared spaces serve multiple purposes, and designing them to meet children's needs as well as those of adult residents, will help to ensure that children can use these spaces, especially in an intensifying city. Quality design initiatives to slow traffic, increase walkability of our neighbourhoods, and provide plentiful shared public space in higher-density neighbourhoods will support our children's wellbeing and development, and the social sustainability of our cities.

From Penelope Carroll, Karen Witten, Robin Kearns, Phil Donovan, *Kids in the city: Children's use and experiences of urban neighbourhoods in Auckland*, New Zealand, 2015. This work was funded by the Marsden Fund and the Health Research Council.

- The absence at the time of interviews of policies to restrain demand in the housing market, such as taxation of capital income or controls on foreign investors' activities, were the subject of some uncertainty as to their significance, as well as some fairly polarised views.

There were also areas which may be of changing influence, such as the future governance and development activities of the Independent Māori Statutory Board and iwi with Treaty settlement resources. There would also be environmental impacts from urban growth and from climate change to consider.

Community attitudes, residential segregation and social cohesion

Community influence on urban planning

A feature of the public consultation process on the draft Unitary Plan was the trend across parts of Auckland, especially on the North Shore and the isthmus, for communities composed of single family homes to resist proposals to up-zone their neighbourhoods for greater residential density. A group called Auckland 2040 was formed to spearhead community opposition, which was already organised through the Character Coalition, a network of community and neighbourhood groups. A series of large public meetings rejected the draft Unitary Plan proposals. Opposition was not mollified by being told there would be planning controls to ensure quality developments. Over 20,000 submissions were lodged, which reflected deep community interest. The leaders of Auckland 2040 and the Character Coalition wrote:

> We are not opposed to intensification, nor apartment development. We are opposed to scattered, un-planned, uncoordinated developments with no or inadequate consideration of urban character values, heritage values or infrastructure and no community consultation.[56]

The central issue was the draft Plan's extensive mixed housing zone, which, as well as allowing infill development and the construction of two-storey buildings as of right, controversially allowed for applications to be made for planning approval for buildings up to three storeys without public notification. Also of concern was the lack of limits on the number of dwellings that could be built on a particular site. Auckland Council responded to these concerns by trying to find widely acceptable solutions, but their plans for increasing residential density started to unravel.

A collaborative workshop between the protagonists led to a proposal for two zones, mixed housing suburban (where permitted activities could go to two storeys) and mixed housing urban (three storeys). Following the workshop, the mixed housing zone in each suburb was apportioned between the two new zones by the elected local boards. This locally-driven process resulted in limited mixed housing urban areas and extensive adoption of the mixed housing suburban zone.

> *This is part of the outcomes you get when you work with communities on how you spatially outlay the zones … They didn't go the mixed housing urban way, they went the mixed housing suburban way … The Henderson Massey Board were very generous putting in mixed housing urban and terraced housing, because their communities didn't have an issue, but if you look on the North Shore there is very little mixed housing urban and a lot more mixed housing suburban single house.*

These events demonstrated that some public opinion, given voice, could influence planned urban change. The effect was to protect most neighbourhoods from as of right new developments, other than alterations and infill.

Immediately before the local government elections, at a meeting of the council's governing body and local board chairs, density controls were added to the mixed housing suburban zone. Architects and developers regarded the absence of density controls as crucial to their ability to offer smaller, lower-cost townhouses and apartments to the key market segments of young couples without children, single people and downsizing retired couples.

> *They stripped out that unlimited density, and as soon as they did that they stripped out the financial possibility of building small affordable one, two and three bedroom units. And that's a crime in the context that people that service the city can't afford to buy any house where they want to live.*

The news media were also identified in several interviews as affecting the Auckland community's ability to resolve its issues. These issues included:

- Lack of depth in media coverage, leading to a loss of sense of proportion;
- Reduction of complexity to sound bites, often around side issues;
- A focus on promoting polarised opinions; and
- Splits along generational lines between online media and radio, said to be favoured by younger people, and the *New Zealand Herald*, said to be favoured by an older demographic and showing a bias toward the views of wealthy property owners.

Trust

Another aspect of the community consultation process which came through in the interviews was a sense of mutual mistrust between the council and the aroused suburban residents. Both sides felt the other was misleading the public. Faced with explaining a complex draft Unitary Plan, the council produced simplified information and mounted an award-winning multi-media public engagement campaign, designed to "go further than any previous campaign had gone before". Opponents claimed the draft Unitary Plan was too difficult for ordinary people to understand:

> *I'll give you an example of how difficult. I am standing in front of 550 people and I just summarised to them what effects the Unitary Plan could have on them. Here are the diagrams. And I asked a question to the whole meeting and I said, "Could people put their hands up who had any inkling that this was possible, not the details, just any inkling?" Not one. There was no one, and that was a representative sample of people from the North Shore … Another mate of mine, he's a very serious property developer, very, very smart guy, uses planning all the time. He said, "I can't make head nor tail of the Unitary Plan, I can't find anything, can you help me." It took me 15 minutes to find the thing he was trying to find, and I thought I knew it. So as a document which is understandable to the public it's completely unintelligible. Now that is a problem because the council is going along and saying, "We have the support of Auckland for this model", and they don't.*

In the polarised and mistrusting environment that developed during the compressed time period of the consultation process, community opposition had a sense of urgency that sometimes took the form of defending existing neighbourhoods from any change whatsoever.

However, mistrust was seen to be directed not just toward the council's draft plan and its ability to deliver the promised quality of development, but also toward the type of people who might settle in established suburbs. This came through in various interviews:

> *You listen to some of these community groups and the way they talk about density — that strange, weird and probably criminal people will be coming to live in your area. They will be spending all their time looking over your backyard because they can.*

> *I think there is a fear of change. There is also a misconception that density in the Auckland context also equates to density in Singapore or Hong Kong, and if you think that through logically it doesn't make sense. We don't have the population to generate that kind of development … And the perception people have is that all the migration into Auckland is from Asian communities.*
>
> *It's that fear of the unknown. There's a whole negativity about people who might want to live in apartments. It's the most extraordinary thing. They're going to be rough, they're going to be solo mothers, they're going to be poor people. I think we completely fail to remind people that actually they might be our children; that this is the kind of life they might want to lead, people whose only crime is that they happen to be young, so they can't afford to live anywhere else.*

This grassroots opposition to the more liberalised planning approach widely favoured by the governance network was universally seen by interview participants as having had a far-reaching effect on the Proposed Auckland Unitary Plan outcome, by reducing the scope for residential density and increasing the impetus for greenfield development in accommodating Auckland's medium-term growth.

Residential segregation

This type of reaction acted to reinforce a pre-existing pattern of residential segregation on socio-economic lines evident in parts of Auckland. This is an urban pattern characterised by the American political scientist Robert Reich as the "Secession of the Successful."[57]

Auckland does not have the extreme patterns of residential segregation that characterised the North American cities about which Reich was writing. There are not extreme differences in the quality of schools across Auckland. Racial discrimination, while present in the housing and job markets, does not appear to be as big a factor as in the United States. High and ethnically diverse, yet relatively uncontroversial, levels of immigration are testament to an open, tolerant society (39% of Auckland residents in 2013 were born overseas[58]). Nonetheless, clear patterns of residential segregation based on socio-economic differences are a feature of Auckland. For example, median personal income in 2013 differed markedly between suburbs, ranging from $42,700 in Orakei Ward to $20,400 in Manukau Ward.[59]

A degree of residential segregation on either socio-economic or ethnic lines is an age-old manifestation of differentiation within society, but balanced by a capacity to maintain social mobility and avoid extreme inequality. Auckland has seen rapid inflation of asset values especially in desirable suburbs, young people experiencing difficulty getting on the housing ladder and the resistance of people in some neighbourhoods to allowing new entrants in lower-cost townhouses and apartments. These trends raise questions about the role of residential segregation and associated use of density limits and other planning rules in curbing social mobility, as well as questions about the capacity of

Auckland Council to deliver city-wide on its agreed vision of a quality, compact city.

Survey of public opinion

Our nationwide opinion poll, described in Chapter 7 (page 204), included questions on residential density and protective zoning rules in residential neighbourhoods. In addition to questions on urban growth, housing and transport preferences, we asked questions to test hypotheses on social capital, the flow of trust and equality in society.

Survey findings for New Zealand generally confirmed a significant level of opposition to buildings higher than two storeys being built in people's neighbourhoods. Findings also suggested that fear about property price impacts was not the main determinant of respondents' aversion to such buildings. Looking at survey responses from Aucklanders specifically, results across various parts of urban Auckland were similar on both counts.

Respondents were asked for their views about particular kinds of zoning rules in their neighbourhood. The question said: "Zoning rules are often imposed by councils to control the height and appearance of townhouses and apartment buildings, and to require a minimum floor area and a minimum number of car park spaces." It then asked: "To what extent do you agree or disagree with the following statements about these zoning rules?" Residents of the Auckland Council area (41%), and especially North Shore residents (52%), were more likely than New Zealanders generally (31%) to disagree or strongly disagree with the statement that "In my neighbourhood, these zoning rules aren't needed." Auckland Council area residents (55%) were slightly more likely than New Zealanders generally (49%) to agree or strongly agree with the statement that "These zoning rules would have a desirable and important effect on how my neighbourhood looks." Auckland Council area residents (35%) had similar views to New Zealanders generally (33%) in agreeing or strongly agreeing with the statement that "These zoning rules would have a desirable and important effect by limiting the type of people who might come to live in my neighbourhood."

The proportion who agreed or strongly agreed with the last statement in the Auckland Council area (35%) was similar to the proportion in the country as a whole (33%). Those who strongly agreed were then asked the question: "Why is it desirable for zoning rules to limit the type of people who might come to live in your neighbourhood?" The response rate to the four options offered dropped off markedly, so that only indicative conclusions could be drawn. In this sub-sample of 107 people in Auckland, there was little support (16%) for the statement that: "I would prefer to avoid having people of different backgrounds or beliefs in my neighbourhood." The two statements which attracted more support were: "I would prefer to avoid the risk of people moving into the neighbourhood who might not look after it" (68%) and "I have paid a lot to be in this neighbourhood and/or school zone, and if people are allowed to buy or rent here at low prices,

the value of what I have paid for will be reduced" (47%). It is important to note that the majority of the Auckland sample either disagreed that or did not know whether zoning rules had a desirable and important effect, with a high number choosing the latter response. This suggests that the results must be treated with caution. A variety of other factors may have been similarly significant, such as a lack of trust that Auckland Council would deliver a *quality,* compact city, but this is conjecture. What is clear is that, while some Aucklanders did support restrictions such as zoning rules to limit new arrivals into their neighbourhood, it was a minority of Aucklanders who took this view.

The key informant interviews, discussed earlier, raised the issue of a generalised lack of trust in outsiders who might move into established residential neighbourhoods. This was suggested from participants' experiences of public engagement on the Unitary Plan and the political decisions which scaled down provision for residential intensification in the Proposed Auckland Unitary Plan. In a study on social cohesion and trust, Christian Albrekt Larsen argued that measured losses of generalised trust will arise, after a lag period, in those developed countries where a large proportion of citizens have come to believe that their society is no longer a meritocratic, middle-class society. Table 7.1 (page 218) presents suggestive evidence that, of six developed societies similar to ours, New Zealand (for which the most recent data are available) perceived the greatest loss of the ideal of living in a middle-class society. If Larsen is correct, this finding may have implications for a decline of generalised trust among New Zealanders in future. Larsen further noted that "whether citizens find fellow citizens trustworthy or not has real consequences for the functioning of highly differentiated postmodern societies."[60] This is relevant to the ability of Auckland to effect planned urban change.

Explaining the gap between vision and delivery

As Auckland Council sought to deliver on its vision of a quality, compact city, there were three longstanding challenges to address:

1. The propensity of well-off communities on the North Shore and parts of the Auckland isthmus to resist efforts to create a more permissive planning environment for greater residential density in their neighbourhoods;
2. The lack of adequate public transport infrastructure, and the council's dependence on central government either to fund this or to empower the council to raise funds from road users. A further option was for the council to divest some of its existing shareholdings in order to acquire new public transport assets;
3. The backlog of under-provision of housing in Auckland, with growing affordability issues for low-income households and for politically-influential first-home buyers.

Auckland Council sought to address these challenges in several ways:

- The draft Unitary Plan provisions contained rules to reassure residents that greater density would be achieved with strong regard to quality of living environments, and was supported by a large public engagement programme.
- The Consensus-Building Group on Auckland Transport Funding attempted to build a broad base of support about a preferred way forward on transport needs and funding. A further year-long collaborative project with government was announced, the Auckland Transport Alignment Project,[61] along with a review of all the council's assets.
- The Housing Accord with central government led to rapid advancement of Special Housing Areas (at time of writing 97 Special Housing Areas were promulgated, with provision for 47,000 new homes).

Yet the council was not successful in translating its Auckland Plan vision for a quality, compact city into consistent provisions in the Proposed Auckland Unitary Plan. At time of writing, it also had not won government backing for the quality, compact city vision or for associated public transport investments. The number of new homes that council officers expected to have within the existing urban area was progressively revised downward; between the Auckland Plan and the Proposed Auckland Unitary Plan the number was roughly halved.

These outcomes were not due to lack of effort or leadership over the last five years from the Mayor and the council's majority. The council was frustrated in its efforts by a combination of factors:

- Auckland Council needed government support for its strategies in order to get key components funded or otherwise approved. While multi-level governance arrangements are quite common for large cities worldwide, the difference in expressed political viewpoints between the council and central government appeared from interviews to be fairly wide, even if muted in public exchanges.
- Suburban resistance to increased residential density, especially in better-off suburbs (which may in part have reflected lowered levels of generalised social trust), created a perception that it was electorally perilous for councillors to pursue policies for greater residential density. It also reinforced the political division with the government, whose MPs represented these suburbs. Again, this type of suburban reaction is not unusual where cities in English-speaking countries have attempted to advance compact city models. However, the powers of Auckland Council were more limited than those of cities more successful in implementing their vision. For example, Vancouver, sometimes regarded as a model for Auckland, had greater centralised authority to impose particular planning solutions. Its councillors were elected not from local wards but from the city at large, there were no elected local boards to advocate for local interests, and citizens' objections to planning proposals were decided by a committee of councillors without any right of hearing before an independent panel.[62] Despite lacking this degree of effective political

authority, it is possible that the balance of powers between Auckland Council and the Independent Hearings Panel may yet lead to an outcome more in line with the original Auckland Plan.

- Auckland Council's efforts to promote a quality, compact urban form coincided with marked house price inflation, which gave rise to a major political issue around housing affordability. This urban house price inflation was part of a worldwide phenomenon in relatively large and growing cities generally attributed to a period of extremely low interest rates following the global financial crisis in 2007–8 and the quantitative easing policies adopted by major economies. In the opinion of the Reserve Bank, it was probably aggravated by New Zealand's unusual tax treatment of income from property investments.[63] This came on top of the backlog in housing provision in Auckland, resulting from planning policies attempted under fragmented governance arrangements prior to the establishment of the super-city. This situation lent itself to a political narrative suggesting planning policies were throttling urban land supply. Further, the outcome of the Unitary Plan process made this critique seem more credible than it would have been had the draft Unitary Plan, with its liberalising thrust, been adopted in something close to its original form.

It is hard to see what further steps Auckland Council could have taken to advance its quality, compact urban model, while addressing these challenges. Interviews with Auckland decision-makers revealed divergence of thought on many of the institutions and factors that promoted a low-density, sprawling urban form, or otherwise influenced urban outcomes. This was particularly the case for the allocation of externalities, rents and public sector costs, and for institutions influencing the supply and demand of housing and infrastructure. However, it seemed from our interviews that these differences were more cognitive than value-based in nature. This suggests that — in a relatively pragmatic political culture — they may be open to change based on evidence, mutual dialogue and learning over time.

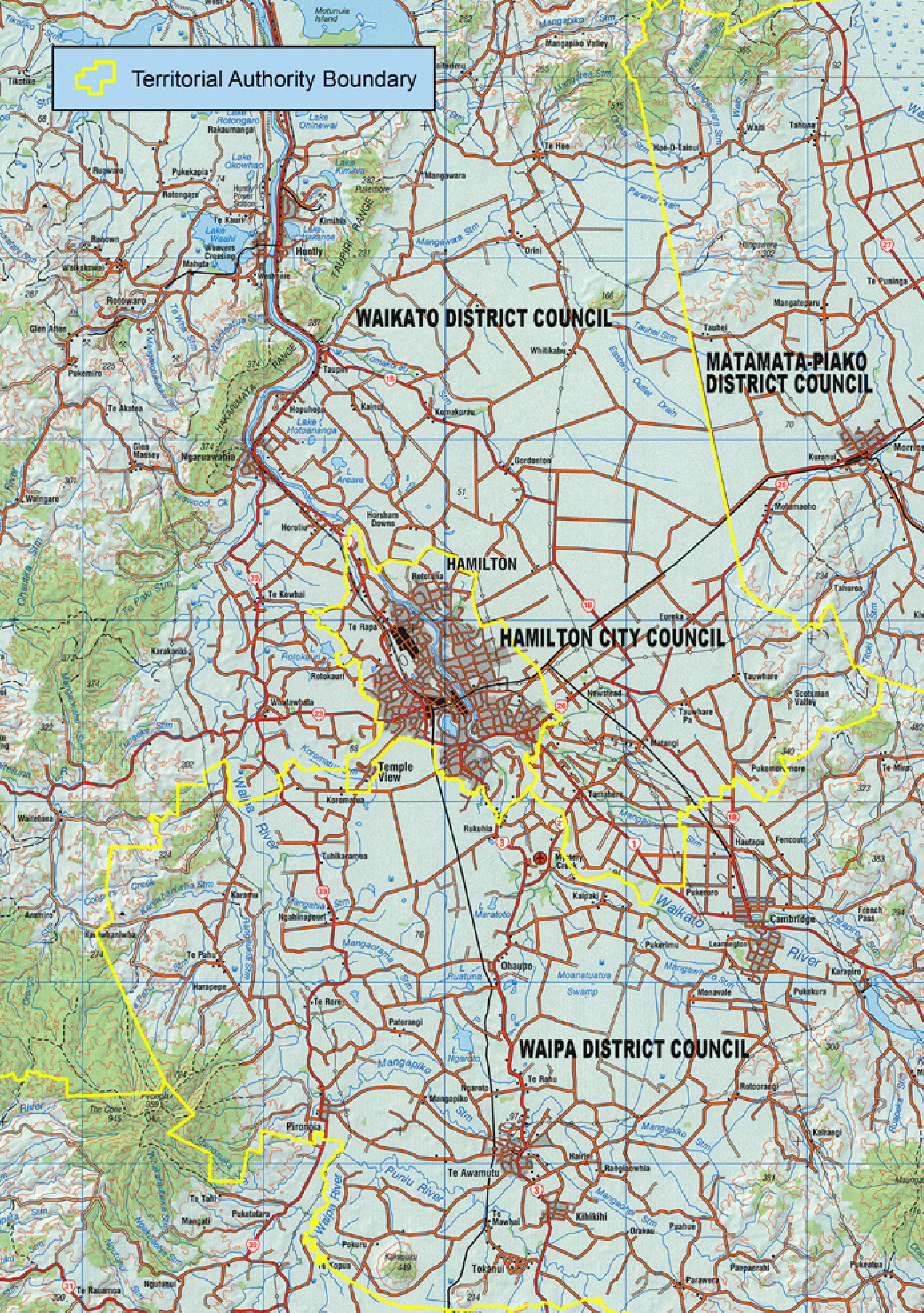
There was already agreement that cultural preferences for living in detached family homes with private yards, and for the use of private vehicles, were important drivers, but that these preferences were changing. Against this background, participants also agreed that the provisions of council plans were crucial, and transport infrastructure policy and investments were important in governing urban form.

An understanding of all these underlying factors is important for the success of city policies long-term and for judgments about the fairness of policies. Institutional factors determine whether an urban form and infrastructure pattern delivered by political interventions, or by decisions not to intervene, will function well for its inhabitants and meet their intergenerational needs. Such analysis can advance understandings of what sort of legacy is shaped by particular policies, and can help achieve outcomes of durable value.

As for delivering on the original vision of a quality, compact city, there remain opportunities to improve the Proposed Auckland Unitary Plan. At the time of writing, the Independent Hearings Panel is raising again with Auckland Council issues on which councillors had seen political difficulty in the pre-election period and now feel less constrained. Where the council provides political guidance consistent with its vision, the Panel will possibly feel able to move further than it otherwise would have done. Concerns about the quality of urban development can be addressed through planning rules by both the council and the Panel. There is a need to avoid plan provisions that deter the uptake of residential development opportunities, either by imposing excessive costs or by reducing developers' flexibility to build with greater density through creative, affordable and environmentally-friendly use of sites. Examples of flexibility-reducing rules are minimum parking requirements and density limits. Such plan provisions would divert housing development to peri-urban locations, where because of the proliferation of Special Housing Areas the council could not restrict low-rise greenfield development.

Auckland Council had a difficult task in striking a balance acceptable to the majority regarding the rules for residential intensification that enhanced the quality of new housing and public spaces. Underlying this difficulty was community resistance in some quarters to residential density, with uncertainty about how proposed changes might affect local neighbourhood character and amenities. The possibility that lack of social trust in Auckland may have been a barrier to achieving higher levels of residential density, or that it may become an increasing barrier in future, points to the need for policy at the national level to pay more attention to closing the yawning gap between the kind of society that New Zealanders of all political backgrounds said they wanted and their perception of the kind of society that New Zealand was actually becoming (discussed in Chapter 7, page 204).

Cities of Auckland's size commonly face multi-level governance issues in financing their inevitably costly public transport systems. Much of the time, different political parties control different levels of their governance structure, creating challenges for developing a shared view of the city's future development and investment needs. As the OECD identified, successful compact cities collaborated effectively across multi-level governance environments.[64] In the case of a fast-growing city like Auckland with huge importance for New Zealand's future, the policy dissonance between local and central government cannot continue for too long without major consequences. Given the mandate the electorate twice gave to the quality, compact city vision articulated by Auckland's leadership, and the steps that Auckland Council took to address government concerns, initiatives such as the Auckland Transport Alignment Project will clarify the extent to which the new governance arrangements will deliver any significant change from business-as-usual.



Territorial Authority Boundary
WAIKATO DISTRICT COUNCIL
MATAMATA-PIAKO DISTRICT COUNCIL
HAMILTON
HAMILTON CITY COUNCIL
WAIPA DISTRICT COUNCIL
Huntly
Ngaruawahia
Taupiri
Te Kowhai
Temple View
Rototuna
Te Rapa
Newstead
Matangi
Tamahere
Cambridge
Leamington
Ohaupo
Te Awamutu
Kihikihi
Pirongia
Te Rore
Te Pahu
Karapiro
Pukeroro
Hautapu
Tauwhare
Eureka
Gordonton
Horsham Downs
Whatawhata
Ngahinapouri
Rukuhia
Te Rahu
Mangapiko
Tokanui
Ngarua
Waikato River
Waipa River
Puniu River

THREE

Hamilton

Marie Russell, Lisa Early, Jenny Ombler & Anna Hamer-Adams

Hamilton is located in the centre of the Waikato Region on the banks of the Waikato River. Hamilton City Council's (HCC) boundaries are almost the same as the areas of urban development. Immediate local body neighbours are Waikato District Council around much of the city and Waipa District Council to the south-west. Waikato Regional Council surrounds the Hamilton City Council boundaries.

Hamilton is at a crossroad with decisions about which way to face. The centre of the city was built with its back to the river and grew outwards, supported by infrastructure that made car use easy; now it has policies to become a compact, river-facing city. Hamilton looks to benefit from its proximity to Auckland, but also has integral links to a hinterland of rural areas and small towns, whose economy, wellbeing and use of the environment profoundly affect Hamilton. Hamilton and the Waikato Region were said by one of our participants to have "the weakest brand, the least organised and coherent message of … any region in New Zealand". How well will the city realise its opportunities: a relatively young population; active tertiary education and research institutions; wealthy and organised iwi; and a productive but fragile environment?

The drivers of urban change most frequently identified by interview participants in Hamilton were: population, demographic and social factors; the impact of Auckland (and maybe the Golden Triangle); and the Waikato River and water issues. Other drivers identified were: employment opportunities and the labour market; the Māori economy and dairying (especially the big players, Fonterra and Tainui Group Holdings); transport issues; the planned Ruakura inland port; housing; infrastructure costs; and the environment in general, including climate change. Inequalities were named as an issue, not a driver, though responses to inequalities may be drivers of urban change.

Population changes

Population is a key driver of urban change in Hamilton. With about 141,600 residents in 2013, the city's population grew more than the national average from 2001–13, more than the other cities in our study except Auckland, and

is projected to continue growing by around 1.2% a year from 2014–43.[1–3] This presents opportunities to make changes to urban form and liveability as building takes place to accommodate the increasing populace, but may also put pressure on city amenities.

Over half of Hamilton's population is aged under 40 years.[3] The city has a disproportionately large number of people in their twenties and thirties, though it has experienced migration loss at 20–24 years of age, suggesting young people moved away when they completed their studies.[4] Hamilton's ratio of students in the population is at least as significant as in Dunedin. "Our biggest sources of urban migration are students for Waikato University, and our biggest source of out-migration are students who finish their studies at Waikato University". This student population formed a renting cohort and drove rents. This had implications for the types of amenities and housing the city needed to provide, and for the economic future of Hamilton if the youthful cohort could be attracted to stay.

Hamilton had one of the fastest growing youth populations (age 0–14) in New Zealand, with a similar proportion of these young residents to Hutt City and Porirua (see Figure 1.1: Current and predicted age makeup of cities). Over the next three decades, the overall number of people aged 0–14 in the city may increase.[3] Growth was projected in couple-without-children households and one-person households, and modest growth in two-parent families and other multi-person households,[5] suggesting there may be future changes in the types of housing and city amenities needed.

Hamilton was one of a few territorial authorities (others include Auckland, Wellington City and Christchurch) projected to see growth in other age groups as well as the 65+ age group between 2013 and 2043, but is likely to see around 36.5% of its growth in this group. Projections suggest that by 2043 18.6% of the population would be aged 65+, up from 12.5% in 2013.[3] The ageing section of the population was mentioned by many participants, who considered that the greater number of older people in Hamilton would lead to a demand for smaller houses, and to a more compact urban form. Thought needed to be given to the housing and amenity requirements for an ageing population.

Around 20% of Hamilton's population identified as Māori, and that population was youthful and projected to grow primarily due to births.[2,6] "In Hamilton we're a lot of reasonably wealthy, if not quite wealthy, Māori who have got children who are growing up here, who are going to go on and become movers and shakers in this environment."

Hamilton's Pacific and Asian populations were projected to grow strongly.[6] The ethnic mix of Hamilton was remarked upon by participants, particularly a significant Asian population (14%), comprising residents and some students[2] (see also Figure 1.2: Composition of cities by ethnic group). It was thought that as the ethnic diversity of the population grew, there would be greater diversity in

Hamilton and that these groups, by "sheer force of numbers" would have "more influence in decision-making".

Hamilton was a destination for immigrants and refugees.[7] Net migration was projected to remain positive, but to slow down across the period 2013–43.[3] The influx was lower than in Auckland and, unlike Auckland, it was thought Hamilton did not have the size for ethnic clusters to develop in residential areas. Immigrants included students and also medical professionals, attracted to work at Waikato Hospital. Immigration was valued as helping the economy and adding vibrancy to the city.

> *If the city is to continue to grow, we don't necessarily need high levels of migration; we're getting enough in terms of births at the moment to continue some growth. But we do need some … migration from overseas to continue to grow.*

There was movement to Hamilton from local rural areas and from New Zealand's general "drift north", and this was expected to continue. The area between Hamilton and Auckland would grow significantly in population, while "the rest of the Waikato is already or will soon be a declining population".

Cultural change

We asked participants in this study about cultural norms and preferences among Hamilton's residents that were likely to affect the city's urban form and future resilience. The preference for a detached house on a piece of land was said to be strong in Hamilton: "a house with dirt around it … this Kiwi entitlement". It was said that people did not like small sections where "they can't even put the barbeque out to have a private thing in the back yard." Research in 2011[8] found that "only about 20% of the population favours or is willing to consider living in attached-type dwellings. Most of the city is in detached dwellings, and indications are … that's unlikely to change in the foreseeable future". One participant disputed, not the preference, but the size of land available.

> *The dream used to be a quarter-acre section. Well, that's impossible in Hamilton now and even the existing quarter-acre sections have been bought up and sub-divided.*

Another housing preference noted was for large houses on small sections. The market was delivering this style of dwelling. "They're building a truckload of free standing houses … double, triple garage, brick and tile... on a small section". A participant thought that this would change in future too:

> *We will see less of the great mansions on the outskirts … People's expectations of the kind of space they'll live in will reduce in size.*

Some participants thought that "more and more people are welcoming medium-density living," with "increasing numbers happy to live in apartment-type buildings". However, the quality of medium-density housing was questioned.

> *[On] the west side of Hamilton you've got a lot of apartments and townhouses going in. It's still seen almost as lower socio-economic to be in one of these townhouses. The majority of them are built as rentals.*

Participants identified age differences among cultural norms: "my age group [65+] still likes the concept of families on blocks of land that have lawn around them, and kids actually can play, and have rabbits and live like we all did". Conversely the older age cohort was seen by other participants as wanting to live more compactly, for example in retirement villages. "Because that's such a big cohort, that will drive a different way of living, perhaps, that we haven't seen before in New Zealand."

Some participants considered home ownership was "still absolutely the ideal in many people's minds". Others thought this commitment to home ownership showed "some weakening", with younger people not all aspiring to buy, renting being a common household option in the city, and renting gradually becoming understood "as in Europe" though without the long-term rights accorded to renters in European countries. "We regard renting as short term." Another thought that "until you start bringing a capital gains tax in on property and start to manage the speculation and stuff going on, there isn't rental security". Rental properties were important in some investment portfolios:

> *The baby boomers are in total control at the moment. They generate policy, they generate the economic conditions for investment, and their lifestyles are totally caught up in rental properties.*

Neighbourhoods with a mix of ownership and renting, and a choice of housing types, were seen as positive and were occurring. "What we don't want is locked-in areas of poor quality housing".

Owning a car was seen as something Hamilton people hold dear. "We love our cars so much that they come into the house with us and the dog stays outside." This was considered a right. "Everyone thinks they've got a right to a car … getting their heads around not doing that is also going to require a fundamental behaviour shift". The city was car-centric. "It's just too easy here to drive a car everywhere … we're car-based, we're spread". It was said that the situation would only change if private transport became more unaffordable. Provision of public transport would be a key driver.

An attitude of reluctance to allow regulatory interventions to constrain private property rights or add to costs was discussed by some participants. This view, it was said, could be found among those who wanted to "pick apart the strategies" for urban limits for development.

> *People who live in Hamilton expect there to be rules around community and amenity and quality of life. And they don't begrudge, they in fact want the council to have those … However, when it comes to personally having to engage in a process which will have some rules, people might have a different view.*

Iwi and Māori

A strong driver of future change in Hamilton was likely to be the activities of the city's Māori population, around 38% of which are mana whenua (for details see Case Study 15 on mapping the diversity of urban Māori, page 167). The region has several iwi groupings, notably Waikato-Tainui, who negotiated treaty settlements with the Crown in 1995 and 2010.

Hamilton City Council (HCC) has a partnership with the iwi authority, Waikato-Tainui Te Kauhanganui Incorporated. The council also has specific partnerships and service agreements with Te Haa o te whenua o Kirikiriroa, representing mana whenua on management of Hamilton's natural and physical resources, and with Te Rūnanga Ō Kirikiriroa, an urban Māori authority representing mātāwaka (those identifying with iwi from outside the rohe — Hamilton) regarding the impact of council policies. One participant said that in the past, although Māori were present on various committees of council, "there was no sense of having a say". Another referred to council's "residual colonial attitudes". There was also said to be little Māori representation on the Hamilton City Council, although "Māori have put up some very good candidates". Hamilton City Council decided against establishing Māori wards.[9]

The Waikato Regional Council (WRC) recognises several Iwi Management Plans, developed by iwi to address resource management activities. WRC's iwi relationship team, Tai-ranga-whenua, is responsible for ensuring that Māori perspectives are part of council decision-making and for cultural competency council-wide.[10] In 2011 WRC voted to establish two Māori wards, Ngā Hau e Whā and Ngā Tai Ki Uta, with Hamilton in the former ward, and in 2013 the first two representatives were elected.[11] Tipa Mahuta, for Ngā Hau e Whā Māori, is the current deputy-chair of WRC.

The city and regional council and iwi are partners of the Waikato River Authority, charged with the clean-up of the Waikato River and responsible for a $210 million clean-up fund to which councils can apply for specific projects. The Authority board comprises five iwi appointees and five Crown appointees. Councils and iwi have entered into co-governance arrangements to realise the vision of the Waikato River settlement.[12–14] It was said by a participant that a better relationship had been forged with WRC during the negotiation of the 2010 Waikato River settlement, while questioning the effectiveness of the settlement: "you could throw that settlement into a 20-mile stretch of the river and see it disappear fairly quickly". As a non-Māori participant said, there was an urgent need for Māori to be involved in running things through the co-governance arrangements they sought, important in both economic and environmental fields.

Te Rūnanga Ō Kirikiriroa had a strong base in Hamilton and good relationships with Waikato-Tainui. It was said that in future Waikato-Tainui and mātāwaka would work more together, would take issues strategically to the

highest level for getting things done, and "we'll see more Māori saying, if we can't join you, we'll go and just create our own". The quality of future leadership was noted:

> *There is a lot of young, really intelligent Māori coming up, who have come up through kohanga and kura kaupapa, so are really matatau and steeped in who they are as Māori, but also have all of these other skills, and so you'll see a changing of that guard as it goes along, and much more dynamic decision-making.*

From Waikato-Tainui's settlement of $170 million in 1995, the iwi's total assets grew to around $1.1 billion.[15,16] Participants commented strongly about the impact of Tainui Group Holdings (TGH), the business arm of the iwi, on Hamilton. "Tainui is the biggest single powerhouse in the region". Considerable respect was expressed for the iwi and TGH, in terms of their conduct, business acumen, achievements and plans.

> *We're very, very lucky as a city to have a forward-thinking iwi as Tainui … They've changed the landscape of the city; they'll continue to change the landscape of the city. They're interested in the river, obviously. They're part of the management group that's cleaning up the river, which is very important.*

A Pākehā participant commented on the underlying racism of some parts of the business community which ignored what Waikato-Tainui had to offer in terms of partnerships. They are and will be a driver of urban change in Hamilton and of regional change:

> *The regional impact of the iwi is out of proportion to their share in regional domestic product because, unlike almost any commercial enterprise, Tainui cannot relocate to China; it cannot go somewhere else. So the fortunes of the Waikato region and the fortunes of Tainui are intimately bound together.*

There were potential conflicts between the high-yielding investments of TGH, such as in dairy farming, and other iwi values about the environment and the health of the river. One participant thought the iwi voice about spiritual connection to the Waikato River provided balance to Pākehā values favouring the commodification of water. In contrast, another participant did not think Māori investors were different to other investors.

> *When you have a neoliberal model that's focussed around profit, and there are a bunch of people who buy into this model to generate profit for their beneficiaries, then you're going to get the same type of behaviour that you'd see from a corporate model.*

The iwi was diversifying its investments, and also owned significant sites in the CBD, hotels, a casino, part of the local Go Bus business, and a site at Ruakura set for development of freighting, residential, industrial and educational facilities. If Waikato-Tainui "put their mind to having a dense urban focus, then that's what would happen".

CASE STUDY 5

Waikato-Tainui as a strategic planner in Hamilton

Future Proof (see page 84) (2009), along with the Waikato Regional Policy Statement, is acknowledged as the formal growth plan for the sub-region encompassing Hamilton City, Waikato District, and parts of Waipa District. However, Waikato-Tainui have also developed a strategic plan for the rohe (region), focusing on Waikato-Tainui iwi, hapū and marae.

Whakatupuranga Waikato-Tainui 2050, produced in 2007, is described as 'the blueprint for cultural, social and economic advancement for our people'.[17] The document sets out an integrated development agenda to the year 2050. Goals such as self-determination for economic independence reflect the tribe's desire to return to levels of prosperity experienced before 'raupatu' — the confiscation by the Crown of 1.2 million acres of land — in 1863. In those 'Golden Years' before raupatu, Waikato-Tainui were '… in charge of our own resources, exporting overseas, feeding Auckland'.[18] Although not specifically focused on growth management, *Whakatupuranga 2050* guides the direction and investment decisions of Waikato-Tainui organisations, including the major property developer Tainui Group Holdings.

Research carried out by Biddy Livesey, with guidance from Waikato-Tainui, investigates planning decisions made about development on land owned by Waikato-Tainui, and how relationships between Waikato-Tainui and Hamilton City Council are changing as a result of Treaty settlements. The research includes interviews with Waikato-Tainui and Hamilton City Council staff and decision-makers.

Preliminary findings suggest that urban developments by Tainui Group Holdings at Te Rapa and Ruakura are seen in the context of 'providing fuel' to allow Waikato-Tainui to deliver social, cultural, and economic goals in *Whakatupuranga 2050*. Waikato-Tainui see *Whakatupuranga 2050* as a document based on similar principles to local government plans such as the long term plan (known as the '10 Year Plan' in Hamilton), and would like to see central government, local government and other organisations consider how they can help to implement the directions and goals within *Whakatupuranga 2050*. However, analysis of local government documents to 2009 found little explicit mention of *Whakatupuranga 2050*, and limited recognition of Waikato-Tainui as resource developers and managers.

Waikato-Tainui and Hamilton City Council are currently working to increase the visibility of Waikato-Tainui aspirations in plans and policies. Further research will look at documents produced more recently by Waikato-Tainui and Hamilton City Council, including the *Tai Tumu Tai Pari Tai Ao Environment Plan* (2013) and the latest Hamilton District Plan (operative 2014).

From Biddy Livesey, Planning and development of land acquired under Treaty settlement: A case study in Waikato, Aotearoa New Zealand. SHORE and Whāriki Research Centre, Massey University (research to be completed 2016). This work is part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

> *Tainui is … very, very strongly affecting Hamilton's growth. It's totally changed where people do their shopping. If Ruakura [inland port] goes ahead, and the sort of businesses around that, it will shift … where people work and so that will change where people want to live as well.*

Further major housing development in Hamilton was expected to occur in conjunction with Tainui Group Holdings' development of an Inland Port at Ruakura, with 1800 dwellings expected to be built there by development partner Chedworth Properties Limited. One participant expressed the hope that the leaders of the Ruakura development would be "willing to invest in urban design that has benefits that are much broader than profit."

Economic drivers

The economy of Hamilton was said to be "quite buoyant" and "business as usual". Economic and employment trends had been quite flat over recent years, perhaps reflecting gradual recovery from recession.[19] In 2013 Hamilton had a median household income of $64,000, close to the national median (see Table 1.1).[2]

A number of participants saw the fortunes of the city as bound up with the surrounding region in an economy based on land use, particularly dairying, but also agriculture, horticulture and forestry, with a supply chain of freight, manufacturing and support services. Some examples were "stainless steel manufacture off the back of vats and various things for milk products", "secondary systems for milk supply", and research and development in "agronomic, food research, agritech" activities. As well as the region being important for Hamilton, the city was important for the region, servicing the rural sector, providing hospital, university and research institutions, and being a point of goods movement for exports.

Other economic activities mentioned were education and health care. The University of Waikato, Wintec and Te Wānanga o Aotearoa attracted a tertiary student population, and along with the hospital, generated employment. Healthcare was "one of the only constantly increasing industries in Hamilton", and a large employer. Waikato Hospital served the region and staff came from a world-wide pool: "it's like the United Nations up there … they've got it right in that sector". In 2014 the employment categories with most employees in Hamilton were first (by a long way) "health care and social assistance", followed by "retail trade", "manufacturing", "education and training" and "professional, scientific and technical services". From 2000 to 2014 employment in "health care", "professional, scientific and technical services", "computer related services", "education", "construction" and "retail trade" was increasing, while employment in "media and communications", "scientific research services", "transport, postal and warehousing", "agriculture, forestry and fishing", "freight" and "rail passenger transport" was actually decreasing.[20]

Hamilton's unemployment rate in 2013 was one of the higher rates of the cities we studied. Employment growth was static through the years of the global financial crisis,[19] and "if we don't get employment growth, the city could stop growing". A shortage of skilled workers was reported among employers in manufacturing, and research and development. Employers wanted easier access to work for skilled immigrant staff as well as for unskilled immigrant labourers for farm and related work. While many qualified workers emerged from the tertiary institutions, they did not stay in the city unless there was appropriate employment for them (these statements from participants suggesting a mismatch between the skills of graduates and the skills desired by city employers, or perhaps the competing attractions for graduates of nearby Auckland).

Participants had varying views on Hamilton's economic future. Some thought that "what's emerging as our future is being a food bowl". New Zealand's biggest concentration of dairy herds was in Waikato, and with traditional dairying said to have "maxed-out", intensive dairying was taking place. Employers were said to be optimistic about economic growth in Hamilton based on dairy products. A recent dip in dairy payouts gave rise to "jitters", but the impact on Hamilton was said to be "diluted" and "indirect". An optimistic view was that "we're not as reliant on the agricultural and on dairying as what people think". A contrary view was that "incredible reliance" on a single industry was very concerning: "there are going to be tears". Dairying is "always going to be there" it was claimed, but another view was that the environmental impacts of dairy and agricultural production would eventually "put the brake on growth." There would be conflict between desire for economic development and desire to restore and protect the health and wellbeing of the Waikato River. In that case, a participant suggested that alternative land uses might be in high-value horticulture, for example, herbal-based medicines and associated agri-tech.

Further diversity in the economy would be important, with health services, education, business and professional support services, science innovation and information technology named as possibilities for further growth. "Light engineering and biotechnology" were specified as prospects. While some participants felt Hamilton was too small to experience significant agglomeration effects, others thought there were clusters of light engineering firms developing. It was also claimed that Hamilton had one of the highest ratios of scientists per capita in the world. A challenge to this was thought to be restructuring and job losses at AgResearch in Hamilton: "we've lost a chunk of our science base". Another view was that Hamilton remained a city with connections to primary industry, and that focus on the "information and creative economy" was misplaced compared to unsung but economically significant activities like offal or onion exports.

> *The fact that they're here and managing to survive means they must know something. And they're not the move in–move out of the market people. They've got long relationships … And really that's what we do: we do forestry, we do meat, we do seafood, and we do dairy. And the rest of the economy just sells lattes to each other.*

Auckland and the Golden Triangle

Participants described Hamilton as a "young" or "adolescent" city, or as a "semi-rural" city. There was a sense that its big neighbour to the north, Auckland, loomed large over Hamilton. Having grown as a rural service town, it was thought that Hamilton would "increasingly be growing to serve Auckland". Proximity to Auckland was considered by several participants to be key to Hamilton's future.

This might be people relocating their business in Hamilton to take advantage of cheaper property, lower costs of doing business, and perhaps even to locate in a safer place as regards seismic natural hazards. Hamilton offered "the ability … to bring businesses down here, employ people down here, spend a fraction of

CASE STUDY 6

Factors influencing urban development and growth

How important are ease of transport, proximity to major cities, availability of natural and social amenities, and infrastructure to your choice of residence? In proposing that people's choice of where to live reveals which cities have an advantage in these areas over others, Grimes, Apatov, Lutchman and Robinson attempted to estimate what effect these factors have on long-run population growth within cities.

Untangling the impact and causality of these variables on urban growth is complex. Investment in infrastructure, for instance, can lead to better outcomes for individuals through lower transport costs, increased amenity value, or higher productivity and thus higher wages. However, the higher taxes needed to pay for such developments, or the increased land costs resulting from more people moving to the area, may counteract some of the benefits such infrastructure could bring. The causal impact of institutions such as universities or airports on population growth is also difficult to determine. An educational institution may be introduced as a result of a large population with strong demand for higher learning, or instead as an attempt to attract students to revitalise flagging population levels. How easy it is to share innovation and knowledge will influence whether growth in one area will spill over to surrounding regions. If transferral is difficult, this may result in separate clusters of innovation.

To shed light on these issues and more, Grimes *et al.* created a theoretical model of the determinants of urban growth. Holding other factors constant, people are theorised to be happier the closer they are to major city centres, such as Auckland or Christchurch, where they can both earn more and enjoy more amenities. Additionally, the natural and social characteristics of a chosen place of residence play an important role in an individual's satisfaction levels. Wages

increase with greater proximity to major urban areas and with agricultural productivity. Land rent similarly depends on distance to a major city centre and how desirable the land's location is in terms of the area's amenities and characteristics. People choose where to live based upon how much they can afford and their individual preferences for consumption and non-priced amenities, which may be related to proximity to major urban centres.

The researchers then tested this theoretical model through analysing the growth of 56 New Zealand towns with 80 years of data. Proxies were used depending on available data; for instance, land use capability was used to represent agricultural productivity and climate was measured through annual sunshine hours. Statistical techniques were then applied to decipher the impact and causality of infrastructure, amenities and distance from major city centres on population size and growth.

They identified four dominant factors; land-use capability, human capital, sunshine hours and proximity to Auckland all had a strong and positive impact on population growth, particularly from 1966 onwards. A more highly qualified population improved growth, but the impact of higher education institutions themselves on local growth was harder to determine. In addition, there appeared to be no apparent agglomeration or congestion effects aside from towns benefiting from being close to Auckland.

Grimes *et al.* concluded that these results suggest particular policy actions: work to increase human capital nationally and to attract human capital at the local level; improve transport links to Auckland; and, given Auckland's relatively small size internationally, do not overly constrain the growth of New Zealand's most economically significant city.

Arthur Grimes, Eyal Apatov, Larissa Lutchman, Anna Robinson, *Infrastructure's long-lived impact on urban development: Theory and empirics*, *Motu Working Paper* 14–11, 2014, Wellington, Motu Economic and Public Policy Research, www.motu.org.nz. This work was prepared as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

the time sitting in the car, get their kids to sports and schools". It was said by several participants that a significant number of small companies had moved from Auckland to Hamilton in the last five years. They included digital start-up companies, call centres and small engineering firms. The latter could operate well from the north of Hamilton where access to export ports was "no worse and sometimes better and quicker" than operating from Auckland. The reverse was also the case: some companies which had previously maintained a Hamilton office now operated solely out of Auckland to enjoy the business benefits offered in a larger city.

Participants hypothesised that the future potential of rail links and the development of the Waikato Expressway (a Road of National Significance)

would mean a faster commute between Hamilton and Auckland, and "the closer Auckland gets to Hamilton, the more activity shifts to Hamilton". Participants disagreed about how likely it was that many people would buy to live in north Hamilton and commute to Auckland.

> *At the moment there's very few people who commute between Auckland and Hamilton to work … It's hard to see why they'd come all the way to Hamilton, when they could just go a little south of Auckland and get the same thing.*

Several participants thought that Aucklanders were attracted to invest in Hamilton housing, where property prices were lower, either to live in or rent out.

One envisioned future for Hamilton was as a regional hub with strong transport connections, particularly within the Golden Triangle. The term Golden Triangle, referring to Hamilton, Auckland and Tauranga, has been in popular use since the late 2000s. These three neighbouring cities were projected to have 53% of New Zealand's total population and to comprise over half of New Zealand's total economic activity by around 2030. This has led some to view them as an emerging economic agglomeration.[21]

While some participants characterised the triangle as influential for development, infrastructure and business, others thought it was less significant and just a shorthand way to say there was a lot of activity in that part of New Zealand. In the latter view, three neighbouring cities were growing due to economic conditions rather than feeding off each other. There were also non-urban areas between the cities, where growth was not occurring. Research commissioned by the Ministry of Business, Innovation and Employment (MBIE) found in 2011 little evidence of the emergence of a three-city region, with commuting between the cities reflective of overall national trends, and each city's economic growth based on independent economic foundations.[22] As one participant put it:

> *You have Auckland as a commerce-centric point, you have Hamilton which is leveraging off the agri-tech, and you have Tauranga as the retirement village, but also then has the intense horticulture, so they complement each other; they're not necessarily competing with each other.*

Some thought that the key for Hamilton in the Golden Triangle was transport, with the potential for increasing the city's role as a centre for freight distribution. The location of Hamilton at "the mid-point between Auckland and Tauranga in terms of export ports, and the gateway to the huge domestic market going south" was a key aspect of the economy. For example, Fonterra recognised Hamilton as a centre for logistics and freight through placement of its cold-stores and administration bases in the city. Freight companies at Rotokauri were leveraging off the roading and other infrastructure there. It was also thought that the development of the Inland Port at Ruakura would build on existing links to the Port of Tauranga, provide local employment, and have considerable impact on Hamilton.

New technology

Participants discussed technology as a driver of change in the city, including two areas identified by Future Proof (discussed below) as a "growth management driver" — IT and transport.[23] Changes in work life through information and communications technology, for example working from home or remote working, with associated impacts on transport requirements and urban form had been anticipated for some decades but were slow to actually occur. One participant considered such change would not occur without further advances in broadband speed and in ways for people to connect such as:

> *a virtual office space where I can virtually walk around, talk to people who are also at their virtual office spaces … We still like being close because we like wandering around and having a chat to someone.*

New applications of electronic communication were in use in Hamilton in community-focussed distribution and commercial models for food and other services. Examples cited included Emma's Food Bag, a Waikato-owned business allowing food to be ordered online, and time-banking (trading of time spent helping or working for others), facilitated on a Waikato website. It was anticipated that there would be more collaborative crowd-sourced models of engagement and organisation facilitated by electronic communications. Also mentioned were: future advances in infrastructure technology, for example, in waste water processing; improvements in the technology used by Waikato's major industry, dairying; and changes in transport, such as the use of electric vehicles.

Transport

The momentum in Hamilton was towards further car-dependency and road-building, and away from resilient alternatives. New roads included the Waikato Expressway, a Road of National Significance set for completion in 2019, and the start and finish of the Southern Links (linking SH1 from Kahikatea Drive in Hamilton to the Waikato Expressway at Tamahere and SH3 from Hamilton Airport to central and east Hamilton). The Waikato Expressway was thought to have generated optimism among Hamilton businesses, while also having irreversible environmental effects as productive farmland was "churned up". The new and old roads around Hamilton would "effectively become the boundary of the city", containing city growth and a public transport network. Roads in the region were not congested. The continued road-building was condemned by a participant on two counts — it was the council's "single largest cost", and it made Hamilton "too easy to get around [by car]; it doesn't incentivise inner city living". There was also the matter of free car parking, such as at The Base and Westfield Chartwell, encouraging shoppers to drive. On current trajectory, Hamilton's future will remain bound up with extensive car use. "For a city our size, the car is still king."

Also said to influence urban development was the cost of bridge-building. For example, new development in the Peacocke area in the city's south would require a new bridge over the river, while a subdivision in the north-east of the city presented no significant problem, so the latter cheaper development was favoured, rather than the south which would have been "a better development for the city".

A high proportion of New Zealand's freight traffic moved around the upper North Island by road, with Hamilton as a distribution node. For example, Fonterra brings milk products into its Crawford Street site and then sends them on to the ports of Auckland and Tauranga. Effort was being aimed at "reducing the costs of moving goods from the farm gate all the way through the supply chain to the factories". This led to "high productivity motor vehicles … bigger, longer, wider trucks". Implications for the city included economic and environmental impacts, and problems for infrastructure maintenance as "they tear up the streets". Air freight was another option, though participants had mixed views about the potential for expansion of Hamilton's airport.

Kiwirail runs the Main Trunk and East Coast railway lines, significant for freight and with potential for commuting. The Golden Triangle was a focus for Kiwirail's modest spending on infrastructure upgrades. The Auckland-Tauranga rail route via Hamilton was New Zealand's busiest rail freight route, and expected to be increasingly important, driven by growth in Auckland, activities at the ports of Auckland and Tauranga, regional dairy and forestry activities, possible increasing road traffic congestion, and the development of freight consolidation centres in Hamilton.[24] Though a "critical player", it was said there was little capacity for investment in rail and there were questions about integrating road and rail freight. A resilient transport future would need someone "brave enough" to say "let's invest in rail, get support from central government, in order to create active rail links to Hamilton".

Between 2003 and 2014 less than 2% of trips in Hamilton were undertaken using public transport, a figure that remained fairly flat.[25] There has been recent investment in Hamilton's buses by both Waikato Regional Council and Hamilton City Council, including new buses and infrastructure such as bus shelters. It was said that most bus usage was for schools, social trips and shopping, rather than for people getting to work. The frustration of seeing almost empty buses was mentioned by several participants, who offered reasons for this. Because of the ease of car use, there were "no real motivators to use public transport". According to one participant, public transport was not even needed in Hamilton. Work was needed to make public transport more attractive, with buses not running frequently enough to be a good alternative and the free city bus reported in the media as used by "undesirables". Participants reported strong prejudice against public transport, feeling that people assumed bus users were forced to do so through poverty or circumstances.

> *People were looking at me on the bus as if I must be a drunk driver and lost my licence. It was: "why is that guy in a suit on the bus?"*

While school and university students might be using public transport, the bus service in Hamilton was essentially "an act of faith". It was also suggested that creating effective public transport and fitting bus lanes into existing networks in a city the size of Hamilton would be expensive. "The economic arguments are marginal really, despite all the hype". Sprawling development made it more expensive to run a bus service. "Passenger transport networks work best when you've got a reasonable population around where you get on a bus". This participant concluded that Hamilton had "a reasonably well developed passenger transport network," but it would never be really effective without further intensification in the city.

On the other hand, some participants considered that the orbiting buses were a good solution. An unforeseen consequence of the Orbiter buses circling the city was described by a participant. School principals had remarked that children in households which moved house frequently were able to stay at the same school when their parents moved as they went by the Orbiter bus; this was seen as a positive, stabilising influence.

On average during 2012–14, mode share of trips in Hamilton was: car/van 84.4%; pedestrian 12.8%; cyclist 0.9%; public transport 1.3%. Hamilton is flat, with a good climate and a walkable inner city, so has great potential for active travel. However, walkable communities were not seen as a particular priority for planning or investment. While any move toward compact city living would drive more walking, parts of Hamilton were built in a cul de sac design with no through-ways, so little walkability. Cycling infrastructure was poor, though Hamilton City Council was developing a cycling plan with a 30-year horizon, and a cycleway along the river running from Karapiro to Ngaruawahia had been negotiated by Te Awa trust, in conjunction with landowners and corporations who were also involved. Between 2003 and 2014 figures for trips by bicycle in Hamilton were very low, with no foreseeable change unless measures are taken to support cycling in the city,[25] for example the actions taken in New Plymouth and Hastings examined in Case Study 17 (page 183).

Inland port

Tainui Group Holdings and Chedworth Properties proposed to build a new development centring around an inland port at Ruakura in the east of Hamilton. The project, comprising areas for logistics, industry, education and retail, as well as residences and public open space, was considered as a proposal of national significance by the Minister for the Environment, and a plan change for the area was approved by the Environmental Protection Authority. When fully operational, the inland port would be capable of processing up to one million shipping containers, and 1,800 residential units would be built. The Ruakura site would make use of infrastructure including train lines and the Waikato

Expressway. Participants considered this a real innovation and one of the most economically and socially transformational projects to come along in a lifetime.

Anticipated impacts included a geographical change to the business focus of Hamilton, as the inland port would draw business and residential development to the Ruakura area. The project might be completed over a period of up to 50 years, and the number of jobs estimated to be created ranged from 10,000–12,000. Once established, work at the inland port would be primarily automated, so it was thought there would be less long-term employment growth. While business leaders embraced the idea, not all wanted to see the inland port go ahead. The University of Waikato is on Waikato-Tainui land near the inland port area, and one participant (not from the university) said "it will ruin the ambience of the university". Considerable disruption was anticipated, affecting those whose land would be acquired in connection with the development, and those whose properties "are going to back onto the port and wish they could have their land acquired so they could move".

Housing

Housing was not considered by participants to be a major issue in Hamilton, though the standard New Zealand housing issues around uninsulated and poorly-maintained older buildings were evident. Quality of housing development in Hamilton was said to have fluctuated along with the economy. The early state houses were now a heritage area in Hamilton, but later "you can see how quickly those intentions eroded into low cost, much more poorly- and less imaginatively-designed communities". Then "during the '87 share market crash, a lot of these cheaper Fibrolite house suburbs grew … It was good to see that that never happened with this recession." It was also expected that population trends would influence trends in types of housing.

It was said there were plenty of houses on the market. One participant thought housing affordability was not a problem in Hamilton, while another indicated it would soon be "on the radar". Some participants commented on the high cost of building materials in New Zealand (further examined in Case Study 7), and referred to the "two major suppliers" in the construction materials industry, Fletcher Building Ltd and Carter Holt Harvey. It was said that New Zealanders were paying the price for the success of the building materials companies: "we're being gouged." This was anticipated to continue influencing housing prices. "And if Christchurch, with all the political focus and all the furore that happened down there, can't shift it, then it's stronger than central government, obviously."

Comparisons were made between the high cost of a house in Auckland and the lower cost of one in Hamilton. It was suggested that what happened in Auckland with housing markets affected the rest of the country in a one-size-fits-all approach to policy which was not necessarily appropriate. Although prices to buy houses were much lower in Hamilton than Auckland, rents were

CASE STUDY 7

The cost of building materials for housing

There has been concern about the costs of building materials, as a major component of construction costs.[30–33] Concern has also been raised by ministers about excessive profit margins and the lack of transparency for consumers over what benefits builders get from using certain products.[34] Building materials constitute about 29% of total building costs, and between 2002 and 2011 the cost of building materials increased by around 20% in real terms. New Zealand has only two major manufacturers of building materials, which may be mainly due to the large scale required. The limited number of manufacturers, in combination with relatively high prices for building materials, has been linked to a lack of competition within the sector.[31,35]

NZIER found minimal differences in construction costs between New Zealand and Australia, yet their estimates included labour costs, when hourly wages in New Zealand were around 30% lower than in Australia.[36] In contrast, the Productivity Commission found prices were significantly higher in New Zealand than in Australia for certain building materials.[35,36]

Whether strategic behaviour in the building materials market is anti-competitive or not is an area of considerable debate.[37] While the Commerce Commission has investigated a number of cases, only one investigation concluded there was a breach of the Commerce Act, with a $1.85 million fine handed down in 2014 for fixing prices.[38] Fletcher Building Ltd has pointed out alternative possible drivers behind increasing building material prices, including lack of scale in New Zealand, a smaller and more dispersed population, and high domestic transport costs.[39]

At a time when the cost and supply of housing is a critical issue for urban development, the level of competition in the building materials sector is of increasing interest. With demand for housing outstripping supply in some cities, firms have fewer incentives to be highly competitive, while rising building costs place upward pressure on house prices, exacerbating the issue of housing affordability.[35]

By Anna Hamer-Adams, University of Otago Wellington, working as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

not proportionately as low. With tertiary education institutions and Waikato Hospital, there was a sizable population of renters in the city, and rental housing was of adequate quality.

A participant commented on the number of homeless people who came into the inner city. Another participant considered social housing was in a muddle, and that either central government or local government should take sole responsibility for social housing. Hamilton City Council was selling off its remaining social housing stock — 344 pensioner housing units — in 2015, following previous sales in 2012. The plan was for the units to be offered to social housing providers, with some conditions to protect existing tenants and keep the units as social housing for ten years. Council would use the money to repay debt.[26–28]

As the local council, concerned about debt, withdrew from housing services, it looked to communities to step in. Participants offered praise for Te Rūnanga Ō Kirikiriroa's work on the Enderley project, its focus on housing and investing in people to be healthy and productive. Te Rūnanga Ō Kirikiriroa has been working to develop well-designed and affordable medium-density housing at Enderley, an area of socio-economic deprivation in eastern Hamilton, and support Māori and others to live there in a community. The land previously had 53 state houses on it, and was purchased by Waikato-Tainui under Right of First Refusal. After a period of iwi consultation, Waikato-Tainui decided to sell the land to the Rūnanga, as they had the ability to develop the housing and the deposit money to purchase the land. A small amount of land was also gifted by HCC for the project. While the housing was intended to be mixed tenure, finances meant that the focus was more on home ownership, with four-fifths of the 62 dwellings for home-owners. There was a proposal for wrap-around services, aimed at "getting our people off the welfare state dependency", including social support, practical classes, and communal gardens and playgrounds. Te Rūnanga also extended its work to refugee and migrant people, many of whom came from communities comfortable with the traditional values of Māori. The relationship between the Rūnanga and the Hamilton City Council took a downward turn in debate over the amount of development contribution to be paid, which could add $892,000 to the cost and affect the project.[29]

Compact or dispersed urban form

Hamilton grew along the banks of the Waikato River. HCC and others wanted to revive the city centre, with the river as a focus. "We've got a beautiful river running through the centre of town and nobody knows it's there because we've hidden it." As the CBD was built with its back to the river, turning the buildings and infrastructure to face the river and adding riverside walkways will be a long-term project. The District Plan review adopted urban design principles, such as integrated infrastructure, development of the inner city, and the proposal for the

central city to turn its face toward the river and provide amenities there. This would allow for good urban design to happen but "we can't *make* it happen".

River Road, running for 20km along the river from Hamilton to Ngaruawahia, was built-up with "very large homes on quite large sections". Hamilton has available flat land around it in all directions and "the city can really grow wherever it wants to"; at present this was mainly to the north-east and north-west. One scenario saw the city "sprawling ever outwards". In 2013 Hamilton had a population-weighted density of 27.2 people per hectare. Of the cities in this study, only Christchurch was less dense. However, there was an increase in density in Hamilton of 9% between 2001 and 2013, and there was some evidence that Hamilton may become increasingly dense as it grows.[40]

Participants had "a broader conception of Hamilton than just the city limits", which included Hamilton's "travel to work" areas. A city council participant thought that 30% of city workers commuted daily from outside the city, although this estimate may be on the high side. People also travelled from rural residential developments into the city to use amenities such as libraries. Hamilton's neighbour, Waikato District Council, was said to have consented low-density developments on Hamilton's borders. Growth happening outside the city generated traffic with impacts on the city's transport network, and had environmental effects such as that of septic tanks on water. Hamilton was "effectively building infrastructure to support a greater geographical area" beyond its boundaries. So the city was said to have a "false boundary", where people who paid rates elsewhere were affecting the city.

Residential and commercial development had moved the population centre of the city north-easterly. TGH has been developing The Base, one of the largest retail and commercial centres in the country, on 29 hectares of Waikato-Tainui land in the north of Hamilton, returned as part of its Treaty settlement. This asset created returns for its shareholders, and TGH were said to be an understanding landlord, supporting businesses to keep trading through hard times; however, the development was controversial. "The Base has been spectacularly successful … economically a boon to Tainui, but … caused various levels of mayhem in Hamilton as a whole." Although the development was approved through various planning processes, participants described its planning and location as "disastrously bad" and "quite destructive"; it "maimed" the CBD shops by attracting customers away from the city centre to the city fringe.

Consequently, the council's Variation 21 was proposed to stop retailers leaving Hamilton's CBD, by creating a central-city zone for retailing and office space, a zone beyond that central ring requiring resource consent for large retail and office premises, and an industrial zone where these activities were non-complying. Waikato-Tainui appealed to the High Court for a judicial review of the process to develop Variation 21, arguing that Hamilton City Council had acted unlawfully by failing to consult with Waikato-Tainui in preparing the plan variation. The High Court emphasised the importance of The Base to the social,

cultural and economic wellbeing of the iwi, and quashed the variation.[41] The Proposed District Plan emphasises the primacy of the Central Business District and includes a hierarchy of business centres in which The Base is classified as a sub-regional centre.

The city centre was large but its streets were not well-used, although the malls were busy and buzzing. The southern part of the city was equipped with infrastructure, schools and amenities but was said to be "foundering" though proposals to build more subdivisions in the south, particularly in the Peacocke area, might "drag it back".

Higher density developments and urban intensification were strategic goals for Hamilton City Council, leading to efficient use of resources, increased amenity and improved urban form. Based on the concept of "mend before we extend", the Hamilton Urban Growth Strategy[42] proposed that around half of new dwellings in the next 20 years be provided through high quality infill development focused around key intensification nodes. A council participant said: "We've tried to allow a mix in our plan with medium high-density housing, even in the greenfield areas". The proposed District Plan allowed for high-density housing, and there were "quite substantial areas zoned for medium-density housing" in the two "northern growth cells", Rototuna and Rotokauri, the latter a subdivision with "green" features,[43] (see Environmental drivers, page 86). Several participants pointed out anomalies: Hamilton embraced a policy of intensifying, but continued to allow large houses, large sections and unrestrained sprawl at the city edge.

There were more people living around the centre of town, for example in second-floor apartments around Garden Place, whereas twenty years ago "you'd be hard-pressed to find anyone". There were some infill and intensive developments, notably around the hospital and university, "removing houses, putting town houses in, largely driven by student accommodation". Most were rentals; there was a view that townhouses were for poorer people. These accommodations were more intended for students and young workers than for the luxury end.

Some participants were clear about the efficiency and liveability advantages of intensification and expressed their hope for more compact development. "Going to compact housing, obviously that's going to save costs, for developers … for local government". Intensification of housing would drive use of active travel modes and public transport. For example, the proposed housing development at Enderley "didn't have a lot of garages" in its plan.

A range of factors acted against intensification: council's other policies and constraints; the car-centric nature of the city; infrastructure costs; the activities of Hamilton's neighbouring councils; and the market. Incentives to intensify were lacking, with little traffic congestion to make sprawl seem undesirable. It was said to be cheaper to build detached homes than city apartments, and there was not much of an apartment building industry. "The apartment market in Hamilton has never been particularly successful" because "everything is so close".

Several participants concluded that the main limit to compact form in Hamilton was demand. Property developers were "pushing back against constraints" to deliver what they thought the market wanted, and there was no great appetite in Hamilton for extensive planning controls on urban form. "The market is dictating, and the way the properties are selling, is that people are preferring to live in the new subdivisions". Some new subdivisions were thought to have covenants about who could live there, for example a "minimum value" covenant to ensure that only "PLUS — People Like Us — will come here". There was some agreement that future markets for medium- and high-density housing were likely to be among young people and older people.

Various ideas were put forward to advance compact development, ranging from "having innovative conversations with developers" to stronger measures such as "if you don't put a pipe to it, it won't develop".

> *If you want to increase the density of the city, you move to marginal rather than average cost contributions. You say OK, you want to build there, OK, fine, go ahead. But you pay the full cost of connecting it to the utilities … And I think that you'd find that the desire to then build little mansions around the edges of cities would be curbed … I'd like to see that kind of approach. It won't happen in fact.*

Alternatively, the city could incentivise central-city intensification by providing connections to utilities and removing development contributions for high-density developments. Another approach suggested by several participants was to provide positive models of attractive compact housing, not "cheap and nasty where you sit in the lounge and hear the neighbour's television". Compact dwellings needed to be safe, accessible for disabled people, and supportive of a good quality of life.

Infrastructure costs for infill and greenfield development

For the city and region, the challenge of increased infrastructure costs was a factor in determining settlement patterns.[44] At a city level there is evidence for the benefit of compact urban form in reducing infrastructure costs (see Case Study 18, page 187). On a case-by-case basis, however, it may be cost-effective in some areas and not in others. Obtaining good data about infrastructure assets, using big data tools to enable complex planning decisions, coordinating the work in order to select optimal locations and upgrading infrastructure in the best way with minimal disruption will be an ongoing challenge for city councils.

While roads were said to be generally in good condition, a barrier to intensification was the retrofitting of bridges, bus priority lanes and various underground infrastructures that needed to be dug up and rebuilt. The council view seemed to be that infill development was only cheaper if there was capacity available for water and waste water. Once infrastructure was at capacity, retrofitting was more expensive.[45] Several participants thought that the capacity of the pipes and other city infrastructure was already reached in existing

areas. "You start intensifying that, not only does it put pressure on the bulk mains and water systems and all that … but it also places pressure on the pipes that are already existing in the ground". In this view, replacing or retrofitting infrastructure to service infill development was expensive, difficult or disruptive. Another participant said of the council:

> *The existing city, the capacity of the pipes, is pretty much shot. So although we adhere to the planning ideal of intensification, in fact our official strategy aims for 50% of our growth to be in intensification of the city, the reality is that our infrastructure won't support anything like that … They [the pipes] are in need of increased size. And because they're already built under existing roads and so forth that is extremely expensive to do, more expensive than expanding into farmland, which, while we don't like to do from a planning perspective, there are obviously economic realities that we as a council face in terms of getting the best return for our investment in providing growth for the city … All other things being equal we'd like to grow the city in an intense way, and what we will try to do is confine that intensification to certain identified areas where we will be able to increase the infrastructure. … Even for the greenfield infrastructure, the big issue for us is affordability. It costs hundreds of millions of dollars to open up a new greenfield area, as it would to retrofit infill areas, and we already have high levels of debt.*

Investment in infrastructure

The costs of infrastructure were named both as a major reason for high house prices and as "the biggest constraint on the development of Hamilton at the moment." The city council would not put in all the infrastructure it would like, constrained by its ability to take on debt and not wanting to "push our debt levels higher than our credit rating agency would like." Rate-payers were said to have low tolerance for both debt and rates increases, and the council ran "a very tight fiscal approach". At the same time, there were obligations to put infrastructure in where new development areas were enabled through the District Plan, and in greenfield "growth cells" in Rototuna, Rotokauri, Ruakura and Peacocke.

It was said that standards for infrastructure and building might be inappropriate or overly-rigid, and "people start screaming about gold-plated infrastructure". For example, New Zealand Standard NZ4404 was cited as specifying minimum pipe sizes. "We over-design, we're risk averse, we want to put a pipe in, we think we're going to build a Roman Road and we can't afford it". Spending less may or may not be a resilient approach, particularly in relation to climate change, but needed to be investigated since "we've not got the capital to do any better".

Participants thought it appropriate that central government was paying for highways and some city roading (the NZTA funding assistance rate in Hamilton was 51%). Some participants noted central government funding for Auckland

and Christchurch, and thought that government could be contributing more to Hamilton's infrastructure.

Hamilton City Council was moving from a land value to a capital value-based rating system over a ten-year period. The intent for the change was increased transparency and equity, alignment with other territorial authorities, and to be more in line with properties' use of infrastructure. Under land value, commercial properties in malls paid less than stand-alone commercial properties. This had shaped the city by affecting where development occurred. "It's driven development out into the suburbs, driven malls out into suburbs, and seriously advantaged those operators over inner-city operators." The new system was likely to be unpopular with big commercial ratepayers, like supermarkets and mall owners, who would pay more in future where capital value of developed land was high. This might also change trends in urban development. Landowners might not develop property in order to avoid rate rises.[46] The rating change might support the city's planned central-city transformation and mixed-use downtown precinct by diminishing the incentives to mall development.

Participants of various political stripes agreed that developers also needed to pay for infrastructure. Some council participants thought developer contributions were "fair, equitable and proportionate, and appropriate", and "we work well … with developers". Many other participants thought developers should be paying more for infrastructure, rather than rate-payers. "If you cause the demand and you benefit from that demand, then you should pay for the infrastructure". Following overseas models, this might be payment in-kind, where a developer would pay by contributing part of a subdivision for parks and playgrounds, rather than paying in dollars. Timing of payment was considered important. Rate-payers funded infrastructure up front, while development contributions were taken at a later stage, which might be at point of subdivision or at point of sale of sections. The later the development contribution was taken, the more risk was borne by the rate-payers, for example if sales dried up or the development company went out of business or if developers deliberately controlled the release of properties into the market. "If we open all this land up and we put infrastructure in, all the houses that are going to pay for the infrastructure haven't been built yet; the current ratepayers have got to pay the burden of that."

The city's policy on development contributions favoured certain higher-density developments in Residential Intensification Zones by reducing infill base charges by two-thirds.[47] The development contribution for attached housing in the existing city was discounted to "a very low level" which may be making some difference "not to whether a project proceeds or not, but the form of that project". From the perspective of a council participant, development contributions were a small percentage of the infill development cost. "It is a bit bigger in the greenfield areas, but still not enough to disincentivise greenfield development". Another view was that the development contribution could be

used better to drive urban form towards intensification by making it free in the centre of Hamilton and "pay a bloody fortune" on the outer greenfield areas.

Development contributions were "only a small portion of the price of a house". However, they, along with GST, were daunting for a developer, and some developers sought to avoid paying. One participant suggested that "if people understood what they got for their development contributions and more what they got for their rates, maybe it would be less of a debate."

Development contributions were "extremely difficult and complicated to administer" with a price set for each type of development, based on costs in a particular area and on forecasts of growth over at least ten years. This was "a much more costly administrative process" than general rates and netted much less revenue. One council participant would prefer a flat tax on the value of development that would be simple to administer, predictable for developers to plan for, and unchallengeable.

> *Thanks to the new legislation, we now have an independent disputes tribunal where a developer can take council to a commissioner to get their development contribution reconsidered. There will be a whole industry developing around that.*

Regarding consents costs and delays, there were divided opinions. Several participants told anecdotes of "hoops to jump through", and apparently excessive, silly or unreasonable charges by local government relating to development. One participant thought consent processing costs "can be a judder bar", slowing things up for a developer. It was suggested that central government policy which would let other providers compete for the issuing of property consents would break the local council monopoly. In an alternative view, processing consents costs the council money and time and several participants thought developers should pay for this expert service. Consents costs were an "extremely small portion" of the cost of development and "if you're going to make a profit out of it, shouldn't you pay?" The underlying principle was that "people who are responsible for generating those externalities should meet more of the cost". There were mixed views on whether consent processing costs affected urban form and no evidence was cited for either perspective.

The topic of developers in Hamilton elicited strongly positive and negative views, which can be summarised as smart businesspeople, but "always looking for a way not to have the rules", and closing their eyes to demographic changes. Said by a participant who was neither a developer nor a council person:

> *Developers vary, but by and large they're relatively venal, so you can't trust them to actually do anything approaching the right thing. There are notable exceptions, developers … [who are] distinctively progressive, very interested in urban form.*

Developers were said to be "getting together as consortiums … they then own a larger portion of land, which means they can control the flow of land". One view of this was that few but large developers were easier for council to deal with and

more likely to deliver a well-planned outcome than many small developers. Another view was that the possibility arose to "form cartels and drive up the price".

Developers in Hamilton were holding off developing land, it was said. "There's a lot of land banking going on around here … for two reasons: they hold off paying development contributions, because they don't subdivide it off, but it also means that they can control the price." Participants wished for a mechanism to prevent such delay once infrastructure was in, for example a tax on landholdings. Zoning decisions to open up greenfield land were also a factor.

> *Those who benefit most from urbanisation are the initial land holders. Land immediately outside the border of the city is about ten times less valuable than land that's been zoned for urban development. And that's essentially a tenfold uplift in value for nothing more than changing a rule in a district plan.*

Planning of urban form and infrastructure

Groups involved in infrastructure provision around Hamilton included the city and regional councils, the New Zealand Transport Agency (NZTA) and local developers. With requirements under the Resource Management Act, the Local Government Act and the Land Transport Management Act, as well as councils' 30-year infrastructure plans, good coordination was required across council boundaries. Lack of coordination was mentioned by several participants, with "too many people cutting the pie" and "too much red tape". Another participant thought the "muddle" with local infrastructure was down to different agencies having different philosophical priorities. Some said that relationships between organisations were much better aligned now than in the past, while others thought a single organisation should coordinate infrastructure investment decisions and works. "They sealed my road, and within the next three or four months they'd probably dug it up three or four times to put down power lines and ultra-fast broadband and then the sewer." However, the Future Proof approach was commended.

Several participants criticised past planning in Hamilton for allowing unsustainable development, with enduring effects on the city's urban form. In controversial cases such as The Base, "everybody blames everybody else, but they should have all sat down and sorted it out". There were also sometimes long time periods between the planning and construction of infrastructure during which the situation might change: it was said the Southern Links part of Hamilton's roading had been designated but would not be built for another 15–20 years "because the growth in the area doesn't warrant it".

Other comments were about the place of community life in planning. "A lot of our town planning has been about isolating people, not creating a community", with a focus on cars "and not around the people who are living in the houses". The use of cul-de-sacs and arterial roads in modern developments in north-

east Hamilton made for living conditions that were "quite destructive of social integration" as people could not walk through neighbourhoods.

An absence of planning was described in residential developments that "just grow and grow and grow, then some people put some commercial buildings on an intersection and it becomes some kind of commercial hub, but it hasn't actually been planned". An alternative view was that the city had many plans but these needed to be joined together: "have your land use plan linked to development and your infrastructure investment". A politician described the difficulty for councils of anything beyond three-year thinking. The national requirement for council to do 30-year planning would slowly deliver "integrated planning across long-term land use, infrastructure and funding". But one participant quoted the chief executive of another city council as warning: "If you haven't got a dollar alongside a strategy — forget it". It was said that financing and financial incentives had to match public policy.

Professional and technical requirements and codes of conduct were thought by some to have a significant effect on planning and implementation, for example compact urban design had become best practice. One participant said there was "complete professional capture" in work on infrastructure, particularly under the ground. Another thought that codes like NZTA's Economic Evaluation Manual did not leave space for recognising people's beliefs, preferences and spiritual values, such as for water.

A lack of capacity, either financial literacy or understanding of the externalities and impacts of development, was said to be a problem among some stakeholder groups. Some professionals were seen as resistant to new thinking about infrastructure and urban planning, especially in relation to drivers such as climate change. "You see managers trying to push an agenda, but unless they've got middle management and the technical officers buying into it, then you're not really going to get any change." Communication issues between different professional groups were said to get in the way of integrated planning, with best practices at different stages of development in different professions with regards to issues like climate change. "The difficulty is that we don't have mechanisms for drawing these professions together". There was criticism of excessive use of consultants working on a short-term project-by-project basis to a specific brief. "A consultant knows the scope of what you gave them, and then they'll move on to the next thing and they'll forget everything they did for you in a few years' time."

Participants were aware of international models for practice that they would like to see in Hamilton. They cited Melbourne examples where schools, shops, and walkable and cyclable streets were planned for at the beginning of new housing projects, and put in before the housing, rather than added in later, and in particular they were looking at how to pay for that.

> *From an infrastructure point of view, planned and managed growth is critical. Planning where the settlement patterns are going to be, but also planning, not*

> *just where people are going to live, it's where they work and play. … Lag is dealing with problems we've created from the past … lead is trying to actively provide the infrastructure before, and that sounds like a very sensible thing to do, but it's actually quite hard to do.*

European examples such as the London Docklands redevelopment were mentioned in the context of not leaving everything to the market, but rather the city and urban transformation agencies providing coordination, vision and leadership.

> *Unless there's a change in leadership within urban planning in Hamilton, it's probably going to carry on as business as usual, a laissez-faire approach, responding to external drivers as they come up and then a minimalist attempt … to address those external drivers.*

Governance and regional cooperation

Participants identified a number of drivers of city change related to governance. One was the tension between having a long-term vision for the city but three-year electoral cycles within which to fund and deliver on that vision. The vagaries of election cycles affected urban form and resilience as over time there were "fundamental shifts in the willingness of councils to invest in a city's future". The division of responsibilities between central and local government was also a factor for one participant.

Discussions of city governance broadened into consideration of the wider Waikato Region to which Hamilton is closely linked. Including Hamilton City Council, there are 11 councils in the Waikato Region, covering numerous small towns and rural districts, some of which were said to be "in wholesale irretrievable decline", while Hamilton was growing. There was concern about inequalities of wealth and debt between different territories. "We've got all these dying communities to the south, and … need to refresh and sustain these smaller communities."

Hamilton City Council was conscious of its debt levels and had voluntarily limited its debt-to-revenue ratio with limited borrowing.

> *Our budget is very constrained, and there are very few circumstances in which we actually look to improve things. It's more or less just trying to keep things at the same level that they are now.*

As well as the effect on infrastructure spending, it was said this had been used to justify the council divesting itself of social and community responsibilities and services, such as pensioner housing, while retaining its regulatory role. "So they're buying into the government's 'just get back to rates, roads and regulations'".

Amalgamation

There was cooperation occurring between councils in the region, for example through the Mayoral Forum, the Upper North Island Strategic Alliance (UNISA), sub-regional relationships, and Future Proof. Councils were "beginning to be forced together because of various outputs they have to deliver". Countering this, it was said that "parochialism is still alive and well", and implementation a challenge.

> *The mayors here have collectively come up with an economic development strategy, and various other strategies, but they're now at the point of OK, what do we do about it? They actually don't have the mechanisms to deliver on it.*

Participants discussed whether amalgamation of territorial authorities into one Waikato Council, as had happened in Auckland, would lead to more effectiveness and resilience. Over half of the participants favoured some amalgamation of local authorities, or expected it to happen in the foreseeable future. Reasons in support of the move included improvement of local government efficiency, expansion of planning capabilities, better management of resources such as water across the region, fewer councils for iwi and Māori to interact with, and alleviation of the difficulties faced by councils in small communities to attract staff and elected representatives. One participant felt that positive experiences for Māori with the development of Auckland Council suggested the same should happen in Waikato, while another preferred to wait longer to see how arrangements worked out in Auckland Council in regards to the powers of the Independent Māori Statutory Board.

Suggested variations on amalgamation included one unitary authority, "everyone working together despite spats and compromises, one mayor making key decisions", or two or three unitary authorities (aligned with the three regional economies of: Taupo and South Waikato; Hamilton, Waipa and Waikato; and the Coromandel and Hauraki areas). Towns near Hamilton, from which workers came into the city and used city facilities, would be included with Hamilton. Another participant suggested that councils, District Health Boards, and other administrative organisations such as police should share common boundaries, with clear responsibilities, instead of the current overlapping of areas. Some considered that the only way was for central government to "force some unification," while another view was that forcing change was undesirable and that the Local Government Commission process did not work.

A smaller number of participants opposed amalgamation of councils in the Waikato. This was partly a "democratic objection", thinking sparsely-populated areas would not be adequately represented in a unified council and would lack access to resources and services. Hamilton would "get to be the centre of the universe and the extremities start suffocating". Other problems of amalgamation were loss of local culture and identity, continued need for administrative centres throughout the region, and the handling of unequal levels of debt and other

inequalities between councils, such as level of deprivation in communities. "Who wants to take on another community's debt?" In addition, Waikato's powerful farming lobby would be concerned about losing control to the commercial sector in Hamilton.

Some participants favoured low-key steps towards cooperation across the existing councils, "integration" rather than "subjugation". If local boards were chosen as a solution for local representation, it was said they would need "more teeth" than those in Auckland. It was also thought that the region could have joint businesses to manage certain functions while other functions remained decentralised. A spatial plan for Hamilton and the region had been proposed that would lead to more cooperation.

Starting with the *form* of governance, rather than the *purpose* was the wrong way around, it was said. "We just draw lines on maps and try and shove people into them". An alternative was to define the challenges first, look at what local government should do, and then look at governance alternatives. Some thought that the issues faced in the city and region would not be addressed by tinkering with governance structures as "you're just going to get another lot of people grappling with the same issues." What mattered was ability to pay for infrastructure and services and deliver these.

Future Proof

Future Proof is a growth strategy for the sub-region, developed between Hamilton City Council, Waikato District Council, Waipa District Council, Waikato Regional Council, NZTA and tangata whenua (Tainui Waka Alliance and Ngā Karu Atua o te Waka). With the aim of "knowing our future by planning today", Future Proof has a governance structure and provides a framework for cooperation over infrastructure. It published a non-statutory growth strategy in 2009 (which included identification of various growth management drivers).[23] The strategy was designed to be anchored in a Waikato Regional Policy Statement (RPS) that set out land uses and development within a regional boundary. The proposed 2012 RPS is still under review, but Future Proof plans and strategy were incorporated into it,[48] including land use planning, urban limits, locations of residential and industrial development, and density targets. This gave the Future Proof approach more strength, it was claimed, because, unlike a District Plan, the Regional Policy Statement cannot be changed through private plan change except if requested by a Minister or local authority.

Cooperation under Future Proof was a condition for the receipt of infrastructure funding from central government:

> *"If you want an expressway from Auckland all the way down here, we don't want the thing to have ribbon development all along the road. We need certainty that you are managing the risk of land use well." And so literally it was forced to occur because of that.*

Participants considered that Future Proof's influence was a good thing. It had moved the territorial authorities from working in isolation to thinking together with their neighbours about what was best for the region and working in a coordinated manner on key infrastructure and planning issues. "I don't know where we would be if we didn't have the financial Sword of Damocles hanging over our head with Future Proof."

Public engagement

Hamilton participants thought public engagement was important for urban change. "You've got to bring people with you". Within this, however, was a range of perspectives, from a belief in two-way dialogue and "the power of the crowd to solve problems", to the view that public representation should be balanced with evidence-based decision-making by professionals.

Nearly all who commented on public engagement were troubled by how it was done. "Putting out a paper for public consultation is not, as far as I'm concerned, public engagement". Public consultation was thought ineffective, expensive for organisations and groups involved, and slow. "There's got to be a better way of engaging with people". A city council person talked of the "painful process of weeks of official submissions, and hearing them, and then in the end people don't think you've listened anyway".

Council was required to consult on everything significant that would affect urban form. "We get a small minority of people who care enough to read the documents and submit on them". Unless people were directly impacted or "there's a significant change, they're not really interested in it." The ideal of going out to people who were not normally heard was "expensive and time-consuming". The process depended on comment from lobby groups, which often had energy and passion, but were primarily made up of volunteers, and tended to come and go. There was mixed opinion about the impact of lobby groups "breathing down your neck". One participant said that interest groups would have more impact if they presented "balanced contributions" rather than "narrow views put in an aggressive way".

Several participants saw a decline in interest and participation in local body politics and in meetings for the 2014 general election. They also noted a lack of local public engagement, including among Māori, where many were not involved with their marae, and did not go to meetings of marae or land trusts. Some spoke of the need for education about civics in the local wānanga and secondary schools, and for encouragement of leadership in the city, not thinking "somebody else should be sorting it out".

Cases where public engagement was thought to have worked well were cited. One example was engaging with Māori and with immigrant groups about what mattered to them in public transport. A Māori model of public engagement was to host a public meeting when a development group was moving into an area.

At a first meeting, the hosts' role was to listen, allow attendees to speak, and then return to hold further meetings to present information. Another approach tried for the 2014 river proposal in the city was to communicate via leaflets with photographs that "actually connected with people", rather than a "thick technical document".

Urban intensification was not a topic most people were interested in, it was said, given it was "not readily apparent that any one option is necessarily better than any other … problems are not clear cut or ideological, they're often purely technical". Another participant saw people engaging at two different levels with urban form: there were those with a view about how it should be, and also those who were choosing to act differently and to live in new urban developments.

Environmental drivers

There was considerable agreement among participants about environmental factors affecting Hamilton:

- water supply quality and quantity, and the health and capacity of the Waikato River;
- soil and land use; and
- climate change.

All these had connections to the impacts of dairying and agriculture, and to attitudes about the interrelation of economy and environment in the Waikato Region. In contrast to Auckland, Wellington and Christchurch, Hamilton participants did not raise seismic hazards such as volcanoes or earthquakes as major risks or drivers.

Participants identified a range of stakeholder views on the environment. It was suggested that environmental impacts from farming, particularly on the river, would bring conflict between "urban dwellers and the iwi on one part, and economic interests on another." "I think it's a healthy tension to have iwi driving and aspiring to a greater will than the political will, which is often tempered by rates and all that kind of stuff." Participants anticipated clashes between local government interests in the environment and intensified dairying, "big power houses like Fonterra". One participant thought the younger generation had "grown up with bad news about the environment" and had less tolerance for environmental damage than older people "who have seen so much of business-as-usual being the norm … that it's easy to believe it's possible to continue".

There was agreement among several participants that environmental impacts would eventually put a brake on growth of key economic activities in the region. Currently, economic activities took priority, but that was predicted to change in 20–60 years. "We are late noticing that we rely on the environment" but "pressure will come on really hard".

Water

Water is important to Hamilton and its surrounds for irrigation, power supply, industry, farm production and municipal domestic use. "We are heavy users and probably wasters of water". For water supply in Hamilton "it's the river or nothing". The urban form of Hamilton affects the river; its gully systems drain into the river. Infrastructure and buildings with large impervious and sealed areas create heat-islands and increase run-off from roads and other surfaces into the river, taking with it pollutants. Conversely, the quality of water in the river, the availability of water, and the possibility of flooding events, were all expected to impact urban form, building design and liveability in Hamilton. Many participants saw water quality, quantity and supply, and water management as enormous problems now and in future.

Participants saw drinking water capacity as an issue, and that water availability would "define and restrict industry more than anything else". It was thought that the conflict between dairy intensification and the environment would build and would be "crystallised on water", with pasture conversions in the upper catchment said to have a water take greater than that of the city. Most of the way along the Waikato River, water was "fully allocated", referring to the maximum amounts that could be taken under consents.

> *Everyone looks at the Waikato River flowing through here and thinks there's plenty of water. That river is fully allocated. … This city needs to do a lot better with its water conservation. It's not metered. The water's not priced properly.*

Finding a balance between the competing needs for water for irrigation, power supply and municipal use was a challenge.

Hamilton has experienced water restrictions due to river level. One council participant explained that if climate change continued this way, there would be changes in the way the city used water, a move to drought-resistant plantings, and changes in the technology used in order to recycle water as much as possible. The possibility of reliance on rainwater in newer subdivisions had been mooted, though this raised public health concerns, and some small communities in the wider region were "totally reliant on rainwater". There were efforts to encourage Hamiltonians to use less water.[49] Another participant noted that the regional council was locking down water use, with implications for limits on economic growth:

> *A lot of our industries are heavily water intensive, like dairy product manufacturing, and the reality is that there's just not enough water … We're already facing issues with drinking water capacity as well. We've recently lowered the water intake on the Waikato River to allow us to take water when the river is lower. So yeah, there are issues, and climate change for this region will lead to a drier region... if the models are correct.*

The quality of water in the river and other waterbodies in the region was an issue. Intensive farming had impacts on soil, groundwater and river water quality due to run-off of dairy effluent, pesticides and fertilisers, with nitrates and other chemicals leaching into soil and water, leading to changes in the aquatic environment. The algal bloom of 2003 focused attention on the fragility of the river. This contamination would not be stopped immediately, but even if it was, "momentum effects" would continue to see chemicals leaching into soils and waterways in future. It was thought the nutrients already in the ground would take 30–40 years to get to the river. River quality affected city amenities and recreation such as swimming. "Hamilton would be well below the standard for contact recreation [in the river] or damn near it". Recreation standard is 1.6m of clarity, with Waikato River at 1–2m visibility in Hamilton.[50] As well as the physical aspects of water, the spiritual connection of Māori and others to the river was of significance and there were thought to be "serious concerns about the degradation of the river" among Waikato-Tainui.

Waikato Regional Council was running a "Healthy Rivers" process, and working with stakeholders and partners such as iwi, as set out in settlement and co-management legislation. Participants considered cleaning up the Waikato River a priority, but there were no quick solutions, no "nitrate silver bullets". Some participants considered that this would require regulation of farming the length of the river to reduce intensification and focus on sustainable farming, with an associated "paradigm shift" among government and affected communities and sectors. There were questions over whether the political will existed to do this and over who would pay for the clean-up. An issue for dealing with the river was said to be the dominance of territorial authorities by the farming lobby, commercial interests and people with "vested short-term interests" who were not thinking of the long term and "intergenerational equity".

With growth and urban development come requirements to manage storm-water and flooding. There have been floods in Hamilton in the past[51] and participants anticipated "one hundred year floods" occurring more often due to climate change. The city council mapped areas prone to floods and other hazards. "What we do in the plan is to ensure buildings aren't built in areas of land instability and all those issues". Participants discussed traditional engineering and centralised control approaches to these issues, as well as the newer alternative solutions based on water sensitive urban design, for example, the new subdivision in Rotokauri that featured specific vegetation plantings and natural drainage on the streets intended to let water percolate through soil. Future Proof had a Three Waters Strategy for Waikato, Hamilton and Waipa, and there was a study on joint management of water and stormwater infrastructure.[52,53]

Soil and land use

Some participants commented on the high-quality soils around Hamilton, and what uses were made of this land. Intensification of horticulture was said

to be depleting formerly rich soils, highway development was churning up productive farmland, and lifestyle blocks, rural residential developments and urban developments were thought to be taking high-quality land that might be better used for farming.[54] One view was that what happened to these high-value soils affected the city: if they were not used wisely the long-term viability of the city would be impacted. It was also suggested that pressure from the rural production sector would force intensification of urban form on the city.

Climate change

Climate change as a driver of change in Hamilton and the Waikato Region was discussed by most participants. Being inland, participants did not consider sea level rise a pressing issue for Hamilton, but it was expected to be an issue, along with erosion, in Waikato's coastal areas. More extreme weather events were expected: increased droughts; heavy rains and flooding; and "weather bombs" bringing damage to buildings. Overall, it was expected the region would be drier. Impacts were frequently discussed with regard to the rural economy, with changes in what crops could be grown, shortage of stock feed during droughts, and impacts on dairying and dairy product processing. "If you have a commodity-based economy, it's actually very vulnerable to weather shocks". Any future policy decision to curb greenhouse gas emissions in the rural sector would also affect the regional economy, and effects on the rural economy would have an impact on Hamilton.

The city might expect changes to land use and where people live as a result of climate change. The design and location of buildings and infrastructure would need to accommodate weather effects and flooding. Some participants anticipated the arrival of climate change refugees, which might bring social problems or might push the city towards an increase in compact housing. One participant noted that as commuting by private car became more expensive owing to petrol price rises and associated carbon costs and taxes, electric cars might become more usual or people might reconsider how far from the city they were prepared to live and commute.

Several participants thought not enough was being done with policy, planning and financial incentives, and that responses from local and central government, legislators and the courts were inadequate.

> *We know what global warming is starting to do to us, and will continue to do to us. We are perhaps tuned into making bigger pipes to carry storm water because it's going to rain more heavily more often. I think we've got that bit. But really at the end of the day, I think from a CO_2 management point of view, a fossil fuel management point of view, there's not one financial incentive of any kind.*

Actions for mitigation and adaptation suggested by participants included: improved water management and recycling; city policies to promote compact housing; charging developers for environmental externalities; and measures to improve resilience in agriculture.

Conclusions

The concept that a compact urban design with medium- and high-density housing is more resilient than a sprawling urban form was familiar to Hamilton participants, and many spoke in support of that model. Hamilton City Council and other government bodies in the region, including Waikato Regional Council, Future Proof and NZTA, supported compact urban form and have developed visions, plans or strategies to allow it to happen.

Yet business-as-usual continued, with transport decisions prioritising cars and road freight, and the building of new housing subdivisions with large houses. Environmental issues, particularly associated with water and climate change, seemed to many participants to make some of the economic activities in the region and city environmentally unsustainable.

Cooperation between local government bodies in the region was occurring. One arrangement that seems to have worked is Future Proof, where economic leverage incentivised local government bodies and others to work together. Relationships between Hamilton City Council and Waikato-Tainui continue to evolve, and the iwi and the mātāwaka rūnanga will be "a key influencer in terms of where Hamilton's heading". The inland port proposed by Waikato-Tainui at Ruakura would do much to shape the future city.

Overall, participants expected that Hamilton would continue on its current path. There might be sudden change if there were an "external abrupt shock to the system, otherwise change is going to take a very slow process."

Territorial Authority Boundary
KAPITI COAST DISTRICT COUNCIL
PORIRUA CITY COUNCIL
UPPER HUTT CITY COUNCIL
HUTT CITY COUNCIL
WELLINGTON CITY COUNCIL
Kapiti Island
Mana Island
RAUOTERANGI CHANNEL (Otaheke Strait)
Otaki River
Otaki
Te Horo
Waikanae
PARAPARAUMU
Raumati South
Paekakariki
Pukerua Bay
Wairaka Point
Plimmerton
PORIRUA
TAWA
Pipinui Point
Ohariu Bay
UPPER HUTT
LOWER HUTT
Petone
WAINUIOMATA
WELLINGTON
Eastbourne
Lake Wairarapa
RIMUTAKA RANGE

FOUR

Wellington

Marie Russell, Lisa Early, Anna Hamer-Adams & Jenny Ombler

This section of the report reflects on the diversity of cities within the Wellington Region and the complexity of the many drivers of urban change within a city system. Much of Wellington's population lives in a series of adjacent urban areas in a region governed by one regional and eight territorial authorities. We focused on the urban areas within these territorial authorities — Kapiti Coast District Council, Porirua City Council, Upper Hutt City Council, Hutt City Council and Wellington City Council — and excluded the three Wairarapa territorial authorities, as they have more rural and small town interests. We also considered the role of Greater Wellington Regional Council and of central government agencies involved in decisions affecting urban form and infrastructure. The urban areas of the wider region were included for two reasons. First, resilience issues involving transport, water and other infrastructure had region-wide implications. Second, change was mooted in local governance arrangements with a potential amalgamation of councils. As region and city have the same name, for clarity in this report we distinguish between Wellington Region and Wellington City. We refer to the other cities as Porirua, Upper Hutt and Hutt City, and to the urban parts of Kapiti Coast District by the shorthand of Kapiti.

The cities of the Wellington Region are connected by economic, social and political ties and also by branched rail corridors and other transport links. Nevertheless, they were envisaged by research participants as having distinctive characteristics, with warnings against taking a simplistic or one-dimensional view. Wellington cities have evolved their form partly as a result of adaption to topography and partly as a result of decisions made on city and regional infrastructure. Each city has taken a different shape along a continuum from more compact form to dispersed development. These cities are considering the process of local government amalgamation and associated spatial planning that Auckland has already been through, and in matters of resilience to natural hazards they must bear in mind what Christchurch has experienced. In the next sections we consider in detail the potential drivers of change in Wellington cities, looking first at socio-economic changes and infrastructure, then focusing on particular challenges in local government and natural environment.

Population changes

Demographic change, and the needs and preferences of particular population groups, affects demand for housing, infrastructure, and amenities and services. The overall trend in the Wellington Region is for modest population growth: in 2013 there were 471,315 people usually living in the region, an increase of 5% since the 2006 census, with most urban areas expecting some population growth through to 2031.[1] Hutt City population growth since 2006 has been lower (0.55%) and the city may experience population decrease in future, with a small negative net migration each year.[2]

Wellington City has a higher proportion of people aged in their twenties and thirties, due to net migration gains, while Porirua and Hutt City have a higher proportion of children, due to relatively high birth rates. Upper Hutt and Kapiti Coast District have hourglass-shaped age structures reflecting the net migration loss of young adults (seen a little also in Hutt City and Porirua) and net gains at younger and older ages. The ratio of older adults (65+) to children (0–14) was projected to rise overall in the Wellington Region by 2043[1] (see also Figure 1.1: Current and predicted age makeup of cities, page 10). Several participants noted the impacts of population ageing. For example, in 2013, 25.3% of Kapiti's population was aged over 65,[3] which affected community and council provision of employment, housing and amenities for retirement, aged care and disability care. Cities were also influenced by the movement of older people. Rural people might move to urban areas upon retirement, attracted by amenities. Alternatively older people might move out of Wellington City into the northern and eastern part of the region, Kapiti and Wairarapa, attracted by affordability and climate. A participant observed that where older people moved, infrastructure and services followed, and vice versa, attracting older people to an area.

Wellington's children and youth also influenced the cities. Projections were for fewer young people in some Wellington cities by 2031, with implications for provision of schools and city amenities. This contrasted with immediate issues, according to participants. While Kapiti had a large retired population, 18.3% of its population were children aged 0–14,[3] putting pressure on schools. Porirua had the highest percentage of children in the region and the challenges were to educate and then employ them. Porirua City Council had made catering for youth a priority, spending over 30% of its rates on community and leisure, thought by a participant to be about double the national average.

The number of one-person households increased in each Wellington city between 2001 and 2013, with increases above the New Zealand average in Kapiti, Porirua and Upper Hutt, though the proportion of one-person households out of the total number of households stayed relatively constant.[3] Wellington City has a greater proportion of carless households than other large New Zealand cities.[4] Participants related these population trends to increased desire for smaller dwellings in medium- or high-density forms, believing that young people,

older people and single people were not drawn to the "traditional quarter-acre paradise", but preferred low maintenance housing with easy walking access to amenities. Changing preferences are discussed in the following section.

Within the Wellington Region there was variation, with rural residents who drove stock along the road, and city people who did not want "poo on their Porsches". Diversity also came from immigration. Participants were divided on the ability to attract and accommodate immigrants, and on the desirability of significantly boosting city population via immigration from within New Zealand or overseas. Migration patterns could be difficult to predict, but would influence how urban areas developed, and central and local government and communities had a part to play in planning for this. Immigrants were seen as more attuned to compact urban living. One participant felt that people from elsewhere considered "good environmental solutions" to be "normal business for a modern city" and that it was "perfectly normal to bring up kids in the inner city". Another participant foresaw that Wellington would not "be spared the prospect of people heading south" from other parts of the world to escape wars, troubles and climate change.

Cultural change

Values, norms or majority preferences can change over time; these can be both drivers of change and can change in response to other drivers. We asked participants whether they thought certain preferences were influencing the way Wellington cities were developing, particularly in relation to suburban or inner-city living.

In the opinion of some participants, the importance of owning one's own home with a fenced-off yard remained strong. Others considered preferences to be changing: attitudes toward renting were becoming more positive, and people were more willing to live in central-city apartments or on smaller sections — "we're a long way past the quarter-acre section". Participants saw challenges to meeting changing preferences with regard to the quality and availability of such housing, especially in Wellington City. Housing preferences are further discussed in Case Study 8 (page 95) (which considers research on demand, supply and regulatory processes) and in Chapter 7 (page 204). Participants also suggested that residents put a high value on walkability in some parts of the urban region, such as Wellington City and Kapiti. Changing travel preferences are discussed below in Transport (page 109).

There was some agreement among participants that cultural values which favoured dispersed urban development needed to change, and various ways were proposed to effect change. Some favoured information, education and demonstration projects, where examples of attractive housing alternatives and successful medium- and higher-density development could be showcased in local media. Some favoured structural changes, with intervention from central

CASE STUDY 8

Development drivers and constraints in the Wellington Region: Three sides of the story

Sustainable urban development addresses key long-term outcomes of human and ecosystem health and well-being (including climate stability) by integrating sustainable urban design principles, responsive institutions, appropriate investment in technology and infrastructure, and respect for natural systems. There are multiple factors and interests influencing the extent to which urban development is sustainable.

Researchers Ralph Chapman, Pattern Reid and Nadine Dodge have worked to understand influences on urban form by examining: 1) the regulatory process shaping development; 2) the supply side of the Wellington Region housing market; and 3) the demand side. Reid found that, despite opportunities, the strategic spatial planning process in northern Porirua did not perform well in integrating urban form and transport. Chapman and Reid found that developers had particular drivers and constraints when providing certain types of development, and that these did not always match with council objectives. Dodge found that there was latent demand for medium-density housing in Wellington, which was not being met.

Sustainable transport and urban form, such as more compact and mixed use development which facilitates use of public and active transport, can reduce transport emissions, increase physical activity, and save council investment in infrastructure provision. Reid completed a preliminary assessment of the strategic spatial planning process for development in northern Porirua, led by Porirua City Council in 2014. She found that insufficient clarity about compact urban form, transport sustainability and access as planning objectives, and the prioritisation of other concerns, meant that the draft plan missed out on opportunities to support sustainable transport, particularly to fully utilise the proximity of the electric passenger train line. This was despite opportunities for enhancing sustainable transport in the area being recognised in the council's early work that fed into the process.

Chapman and Reid interviewed ten key people, mainly developers, on the supply side of the Wellington housing market. They found that developers, who were predominantly driven by the market and profit, saw a trend in market demand towards more compact, more centrally located development. Land prices and the cost of building were important factors affecting developer choices. Developers were also constrained by a lack of clarity around council regulations and unpredictable timeframes for consents. Developer contributions were generally a relatively minor cost factor. Further, a perceived disjunction between the land that the council made available for development and the best sites for profitability and meeting market demand constrained the ability of developers and council to meet complementary objectives.

Dodge surveyed several hundred Wellington residents to understand if there was significant demand for higher-density living, and how people traded off neighbourhood, housing type and transport choices. She found that while, for some people, aspects of the quarter-acre dream remained important, a significant proportion would happily live in medium-density dwellings, if they were accessible to the city and amenities, and affordable. Of these people, many were currently living in standalone, less accessible housing. Because of the differences between their stated preferences and the realities of this sizeable group, Dodge concluded that the Wellington housing market failed to translate many people's preferences into housing choices.

From Ralph Chapman and Pattern Reid, "Just keeping up with the market? Developers' views on compact and dispersed residential development in Wellington city and region, 2014" (forthcoming); Pattern Reid, "Achieving urban sustainability: The consideration of sustainable transport in strategic spatial planning". Master's Thesis, Victoria University of Wellington (forthcoming); Nadine Dodge, "Housing and neighbourhood density and accessibility: Preliminary findings from Wellington", PhD update 2015, Victoria University of Wellington (forthcoming). This work was prepared as part of the Resilient Urban Futures Programme, funded by the Ministry of Business, Innovation and Employment.

or local government, such as taxes and tolling to alter transport patterns, while other participants did not favour intervention and emphasised the importance of individual choice in housing, transport mode and public amenities. The point was made by one participant that the issue lay not with people's preferences, whether changing or not, but with decision-makers' *beliefs* about those preferences and the actions taken based on those beliefs.

Economic drivers

On the economy of Wellington City, Prime Minister John Key said in 2013:

> The reality is, Wellington is dying and we don't know how to turn it around. All you have there is Government, Victoria University and Weta Workshop.[5]

A commentator concluded that the city was not dying, but not quite flying either.[6] A study participant described Wellington City as "anaemic at the moment, growing very slightly". An alternative view described the Wellington Region as a great place to do business, with diverse and vibrant enterprise and smart, talented people.[7] For comparison with other cities, see Table 1.1 (page 12).

Whatever the perspective, economic factors were seen as key drivers for the prospects of the region's cities, as well as for the country, with the region accounting for 13.2% of GDP in 2014 from 10.9% of the New Zealand population.[8,9] As one participant said: "If people feel good about themselves, if the country feels good about itself, then development, communities flourish".

Wellington Region, like Auckland, has a sophisticated economy. Specialising in many different sectors, Wellington cities are not uniform in their economies. For example, Hutt City was viewed by participants as specialising in research and science, with potential to become the "Silicon Valley" of New Zealand, while industrial activity was concentrated in the Hutt Valley and partly in Porirua. It was thought that Wellington City was, and would remain, dominant in the region. Upper Hutt was suggested to have a possible future for businesses catering to retirement living, alongside Hutt City and Kapiti. Participants also saw potential in the education sector and in tourism, with possible upgrades and extensions at Wellington and Kapiti airports. Cities were sometimes characterised as cooperating or as competing for the location of firms, with implications for transport and housing infrastructure, as well as for the health of the councils' business rating base. Additionally, city councils vary in financial size, with the annual operating revenue of Wellington City Council more than the other four councils put together.[10,11]

The development of Wellington's cities was seen by participants as affected both by external factors, such as oil price volatility, and internal decisions, such as council rates, where attempts by councils to keep rates low meant they had less money to spend. Size matters: a relatively small, densely-settled population allows for communities where people mix and cross-fertilisation of ideas occurs. With existing high concentrations of skilled and well-paid jobs, the region could expect to attract more jobs, businesses and workers. On the other hand, workers and businesses were also attracted to larger centres and "we're seeing significant commercial leadership leaving the region".

The amount and changing nature of employment was considered as a key driver, and there were moves towards a comprehensive strategy on this by the city and regional councils. Between 2006 and 2013 there were increased jobs in public administration, health care, education and environmental services in the Wellington Region, and fewer jobs in manufacturing.[4] The top categories of industry in 2013 by number employed were: "professional, scientific and technical services" (Wellington City, Hutt City, Porirua); "public administration and safety" (Wellington City, Hutt City, Upper Hutt, Porirua); "health care and social assistance" (Kapiti, Upper Hutt, Porirua); "retail trade" (Upper Hutt, Hutt City, Kapiti); and "education and training" (Wellington City, Kapiti).[3] Central government was a large employer in the Wellington Region[11] and many of these were highly skilled jobs. Moves in recent years to decrease the amount of floor space allocated to each government worker had affected demand for office space in Wellington City.

Nearly 50% of the region's workers were employed in knowledge-intensive occupations, above the national average of 33%.[12] It was thought that these knowledge-based, technology, science, education and creative industries would be as important in the future, with a challenge to create "more local intellectual property and expertise". Perhaps the most well-known of these was the

Wellington film industry, with its influence on tourism as well as employment, and its peaks and troughs which meant many workers were on short-term contracts. In terms of resilience, too, a knowledge- and service-based city economy provides opportunities to reduce carbon emissions.

Participants suggested a number of implications for their cities. Office employment tends to be clustered in city centres rather than located on the outskirts like factories, and workers in knowledge-based industries were thought to favour compact housing in central city areas. A recent UK report proposed that it is now proximity to knowledge rather than proximity to resources that is the primary driver of city growth.[13] This suggests that Wellington cities which continue to adapt their economies to international trends, with jobs in new knowledge-focused industries to offset job losses in traditional industries such as manufacturing, can flourish in the future. City and central government policies to encourage innovation, educate a skilled workforce and make each city attractive to knowledge-focused businesses would be important. This would include providing infrastructure to support density of employment in the centre of cities and facilitating knowledge networks within a city (links between skilled workers to allow the sharing of ideas and information and make businesses more productive). This includes face-to-face interactions:

> *If you walk everywhere then the stress levels are lower and the creativity rises and you bump into people. I can walk down Lambton Quay now, or almost any time in the business day — unfortunately it's not busy at night time because we don't have enough people living down there — but I could come across two or three people who could talk to me reasonably clearly about the thought that I'm currently obsessed about … I call it the thought kitchen of the country. We have a number of bright people here that you wouldn't find those people wandering around the streets of Auckland, unless they got misplaced or hi-jacked.*

There were two strands of thought about economic development. One was that effort should go into putting infrastructure in place to make the cities attractive places to live and economic development would follow. The other was that business-friendly policies and economic investment were needed up front, which would then grow the rating base and allow councils to create a pleasant place to live, provide community services and create a sustainable city. In this view: "If we can get the economics right, we'll then have the money to actually help improve the environmental quality and quality of life and the social inclusion, because they're not free".

Housing

Many participants spoke about the need to expand the range of housing options in the region. "We're not saying everyone has to move into high-density housing", but an increase in medium-density housing was generally favoured, alongside improved public spaces. Of the territorial authority areas, Wellington

City had the highest percentage of private dwellings that were joined to other private dwellings (37%).[14] There was also a need identified for traditional family-type housing in more affordable areas like the Hutt Valley and Porirua, and for partnerships between councils, developers and the non-profit sector for social housing.

There was a strong awareness of changing housing requirements. In Porirua: "at both ends, younger and older … the population is going to desire smaller low-maintenance properties close to amenities and public transport and community and social areas". In Hutt City, citizens were "telling [the council] what they want: a lot of people are keen to go into apartments, but they are also very keen to be able to walk in an environment that is quite green". Wellington City was building high-rise apartments in its centre and had taken a lead in such urban development. However, where some infill and intensified housing had been of poor quality, there was a need for more positive exemplars of such housing and for improved quality in the public realm such as public amenities and street improvements. This was also said to be the case for greenfield developments at the urban periphery, which had housing and basic infrastructure, but lacked services and amenities.

Two participants raised issues with the quality of existing building stock in Wellington cities. For example, on Porirua:

> *Selling [state houses] to private renters has not been successful as the state has realised they need to improve the health and liveability of their own houses through retrofitting insulation and the recognition that health and housing — you can't separate them. It's opened up still, unforeseen by many, that many of these similar houses have not been touched — uninsulated, mouldy, cold, hard to access for people with physical impairments … That's a big problem for our city.*

Participants' views on ways to improve housing ranged from regulation, such as building standards for heating and insulation, to selling state houses to owner-occupiers who would upgrade them, rather than to private landlords. New buildings could and should be built to higher standards, though that had cost implications for retrofitting existing social housing stock and for new development. "It's a good thing to do that, but it will mean there will be less development, overall. It has to be paid for somehow." Change to the quality and price of housing might come over time with increased availability of prefabricated or manufactured houses.

Housing affordability was a concern to many, but not all. One participant said affordability might be an issue in Wellington City, but was not significant in the region as a whole, and suggested that competition between the cities might lead to unnecessary greenfield development. Banking and financial market factors, such as minimum deposits and interest rates, were thought to have considerable effects on people's ability to pay for housing, and also affected individual developers, but were thought unlikely to impact on urban form. One

proposition was that building more medium-density housing would bring the unit price down, and another was that reducing the cost of local government compliance would help. Central government was discussing Special Housing Accord Areas with Wellington councils, though this was seen as a measure more suited for a big Auckland problem than Wellington, and as being about:

> *building more houses, faster, and hoping that the over-supply will bring the access costs down … using the market as a tool. The market's good for some things, but I don't think it's going to fix our overall problem.*

Mixtures of home ownership, density, culture and socio-economic demography were seen as important for a successful society. The mixed suburbs of Wellington were seen as a strength, with "council housing in [more affluent] Khandallah and really expensive houses in [less affluent] Strathmore". Wellington people enjoyed relatively high incomes: in 2013 the Wellington Region had the second highest median household income ($74,300) in the country after Auckland.[3] However, income distribution was unequal and geographically clustered. In Porirua the median household income in the Northern Ward was reported as nearly twice that of the Eastern and Western Wards. This was accompanied by poorer health and education outcomes for those on low incomes.[3,15]

> *Even within Porirua — Cannons Creek versus Whitby — you've got the highest and lowest incomes in the region in the one city, so that's not going to change in a hurry I think. The intervention should … try and address some of the poverty and related consequential issues of that in the poorer areas and what happens with kids.*

Discussions of housing and associated drivers of change came back to discussions about community-building. As one participant said when considering ways that local and central government might make home ownership more affordable:

> *That's how you build a civic society. You give everybody a right and everybody takes responsibility and that's how you develop a community, and you keep the community stable by people owning something, but also staying, you know. These are all values that are part of this.*

Compact or dispersed urban form

Cities can be seen as physical expressions of the advantages people enjoy when they cluster together.[16] Most participants considered a more compact urban form to be desirable for the region. They identified advantages of medium-density urban form and intensified housing over the currently more prevalent dispersed form, including: reducing infrastructure and service costs; improving the rates take; revitalising inner-city areas; providing a vibrant city culture and retaining people in the community; increasing employment and business productivity; reducing car ownership and usage; and preserving agricultural

land on the urban fringe. They differed on how possible it was to achieve a more compact urban form in the face of the expense to change existing infrastructure and buildings, and with perceived public resistance.

Participants noted that it had already been planned for parts of the region to move toward more compact urban forms, for example, in Wellington City CBD and at suburban shopping centres and transport nodes such as Kilbirnie and Johnsonville. Nunns'[16] population-weighted density measure found that between 2001 and 2013 Wellington's Metropolitan Urban Area experienced a significant increase in density (17%), notably in the centre of Wellington City. Wellington's population-weighted density in 2013 was 37.8 people per hectare, with over 100 people per hectare in some places. Like Auckland, density was high in Wellington City centre and fell off in surrounding suburbs, but in contrast to Auckland, demand for high density living appeared to have spilled over from central Wellington to neighbouring suburbs. There were few changes in the low-medium density urban areas in Hutt and Porirua.

Further intensified housing development around suburban commercial and transport centres was forecast by some, but the extent to which this would happen depended on the urban design capability of the councils, which was seen to vary between cities in the region. Participants predicted compact development and denser housing would happen in: Te Aro and Thorndon in Wellington City; Petone, when older buildings were replaced; Porirua city centre, Aotea and Whitby; and Kapiti, linked to redevelopment of the local airport, and where people with businesses at street level would want to live upstairs. Countering this trend were planned roading developments such as the Petone to Grenada link (Takapu Road) and Transmission Gully motorway which offered new building opportunities for commercial and residential developments and could foster sprawling development in the region.

Wellington City CBD contained increasing numbers of residential apartments, with opportunities for further purpose-built apartment blocks or re-purposed office buildings as floor space previously used by central government departments became available. One participant suggested that 60,000 people coming into Wellington City to work each day could be accommodated in the city. "The city supports them during the daytime, so it could certainly support them at night-time, in terms of services, water, electricity." Turning office buildings into apartments needed good working relationships between developers and council, and Wellington City Council had permitted developers to occupy buildings that were two-thirds of current building code and then progressively upgrade to the change-of-use requirements.

To reap the benefits of compact urban development, it needs to be quality development. There was a concern for the aesthetics of new developments, and a desire to avoid unsightly high-rises, such as the 14 storey one built in the 1990s near the beachfront at Paraparaumu. Positive examples identified in the region included Wellington's Chews Lane and Sanctum apartments, and the

planned development in Kapiti of three-storey townhouses and eco-hamlets. It was said that residents opposed to changes might rethink once they saw good new designs. Participants were also looking to innovations elsewhere, for example in Melbourne, and were aware that "design can assist with liveability and environmental values through such aspects as a green roof on high-rise buildings". Several participants emphasised the importance of retaining access to natural light and of providing additional facilities: "if you're doing more intensive building, you do need more green space … parks and places for people to go". Also important was the resilience of buildings and infrastructure, with concerns about how high or close together apartment buildings could safely be in these shaky isles.

Implied in this trend is that there have been, and will be, changes in what planners, developers, builders and architects offer in terms of buildings and use of land space, and changes in residents' attitudes to house size and density, as discussed above in the section Cultural change. Some participants sounded a note of confidence that this was coming with increasing environmental awareness, and that the highly-educated urban population of the Wellington Region liked the idea of "green roofs, more cycling, things like that which we expect from a modern city". Others felt that more conversation was needed on the issues of compact or dispersed greenfield development, for example a "healthy, robust debate around the relative values of agricultural land and urban land". Porirua participants favoured more brownfield development and intensification in their city centre, to provide for student accommodation, people working at Kenepuru Hospital, single people who wanted to be close to work and those who wanted to "take the commute problem out". It could revitalise the city centre. As yet there was little interest in this among council planners or developers, it was said, so intervention by central and local government would be needed to make things happen.

Planning of urban form and infrastructure

There was a certain amount of path dependency, where decisions taken earlier on urban form and infrastructure influenced urban change over a long lifespan. Wellington's comparatively well-developed public transport infrastructure continues to shape its development. Porirua's city centre, built in the 1960s with a focus on provision of car parking, was "dying before our eyes", though there were plans to develop residential areas in the CBD and turn the central city to become harbour-facing. This emphasised the importance of long-term planning. For example, Wellington City had pursued a policy of compact development and enhancement of the liveability of the central city, which was effective. There was an aim for Hutt City to become more compact in future, like Petone, with a move towards medium-density residential property in the city that was partly policy, and partly a response to land prices. Wellington cities were forecast to

continue growing slowly, offering perhaps less opportunity than a faster-growing city like Auckland to rapidly change infrastructure and urban form.

Participants identified a lack of cohesion in infrastructure planning in the region, and a lack of collaboration between related sectors such as transport networks and IT networks. Some systems were publicly run, for example roads, and others not, for example electricity supply, and there was no requirement for 30-year planning by private companies as there was for councils. Anomalies in the region, according to participants, ranged from too many office buildings built in the 1980s in Wellington City, to arbitrary administrative boundaries, such as Tawa being part of Wellington City rather than Porirua.

Planning for long-term infrastructure in cities was undertaken by each of the region's territorial authorities, the regional council, and by central government, such as Treasury's National Infrastructure Unit and NZTA. Planning activities, naturally, could be both drivers of, and barriers to, change. Clarity and direction from council plans was desirable "because that gives certainty to developers and community, and it's a lot clearer to everyone what happens where and why". Wellington cities had between them hundreds of plans, policies and strategies that had been consulted on with the public, including district, annual and long-term plans. This plethora of plans was "not designed to meet any real-time reality — it's about having something you can point to" for accountability purposes. The district plans, which contained rules and guidance for development, came in for criticism as hard to read, and the district planning process as convoluted, expensive and often unresponsive to communities. Directions varied between cities, for example, an 18-storey building had been rejected in Hutt City, but Wellington City and Porirua were said to be more permissive in planning around heights. Views differed on the Resource Management Act. One participant thought its effects-based approach was less needed than councils' ability to "actually name activities and say this is appropriate in this area and this isn't". Another observed that the Act was intended to say "what do you want to achieve, and allow people to offer different ways of achieving [it], but in fact had turned into an even bigger list of rules you have to comply with" in district plans.

While not easy, long-term planning activities represented an opportunity. For example, Wellington City Council was developing water-sensitive urban design guidelines. Planning by city and central governments also played a necessary role in responding to climate change.

> *If we take a good planning approach, as opposed to an engineering approach, then we avoid development where in the future we're going to have to protect ourselves … What might happen in the future with changes in sea levels and storm events and so on, is now driving our thinking, reinforcing that maybe we should avoid places, rather than just allow development to happen and then retrospectively protect.*

CASE STUDY 9

Safe and healthy pedestrian walkways

Urban walkways are important for enabling travel and creating connections in the city. Commuter walking is good for the prevention of chronic diseases (such as cardiovascular disease, various cancers and diabetes), and helps to reduce car usage, in turn reducing emissions and traffic congestion. Pedestrian-only, or shared cycle and pedestrian routes, can help to encourage commuter walking by offering short-cuts and more pleasurable routes than alongside traffic-heavy roads.

Researchers Nick Wilson, Bill Brander, Osman Mansoor and Amber Pearson piloted a study of 118 street-connecting urban walkways in Wellington to assess quality and make recommendations for improvement. They found positive aspects, for example most stairs had handrails. They also found that Wellington City Council could make some low-cost improvements, including better signage and lighting. For improved monitoring systems, the researchers recommended development of a crowdsourcing approach to quality assessment. Indeed, the council has recently adopted the approach of a FIX IT smartphone app for citizens to report faults. A further pilot study was conducted on walkways at night, which found that simple measures could be taken to improve after-dark walking, including better positioning of street lights and painting white lines on steps.

From Nick Wilson, Bill Brander, Osman D Mansoor, Amber L Pearson, "Building a reliable measure for unobtrusive observations of street-connecting pedestrian walkways", *Journal of Urban Health*, 91:6, Dec 2014, and "Infrastructure for supporting physical activity: A pilot survey of the quality of street-connecting walkways at night", letter to *New Zealand Medical Journal*, 13 March 2015. This work was prepared by researchers affiliated with the New Zealand Centre for Sustainable Cities within the Department of Public Health, University of Otago, Wellington, and private researchers.

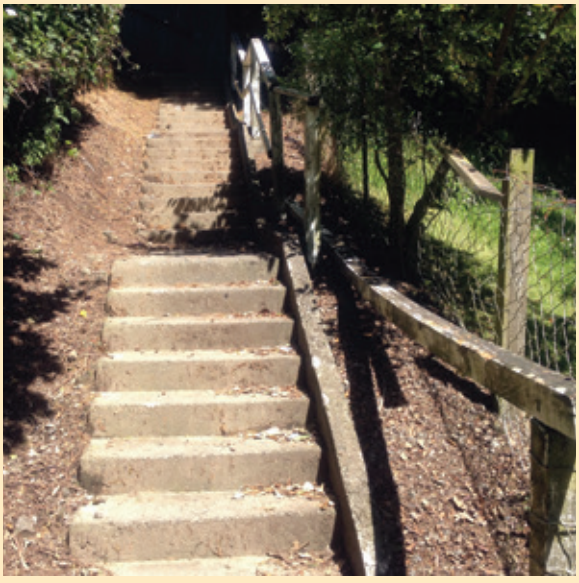


Figure 4.2 Walkway between Hazelwood Ave and South Karori Rd, broken railing, December 2013.

Figure 4.3 Walkway with lighting and metal rails, part of Drummond St, Mt Cook, November 2013.

Investment in infrastructure

Provision of infrastructure and community facilities is a major influence on urban change, on where development occurs, and on who is attracted to live in certain areas. Whoever decides on and pays for infrastructure thus influences urban development. This includes new infrastructure and maintenance and repair of existing plant, equipment and networks. It was said that in Wellington cities some maintenance work was overdue and councils were "increasingly playing catch-up". Both central and local government paid for infrastructure, with new infrastructure nation-wide accounting for approximately half of the estimated $3.6 billion of local authority capital expenditure in 2013.[17] Who pays for new city infrastructure was an ongoing discussion. The Local Government Act 2002 was amended in 2014, including changes to the development contribution, the purpose of which was to "enable territorial authorities to recover from those persons undertaking development a fair, equitable, and proportionate portion of the total cost of capital expenditure necessary to service growth over the long term".[18] These changes emphasised increased transparency, and were welcomed by participants, who considered that government recognised how development contributions mattered for councils' sustainability.

One view was that citizens were prepared to pay within reason for the up-front costs of pipes, wires and parking for new developments, but they did not want to pay for it through their rates. Therefore market forces would drive development, the developer would pay a contribution for infrastructure to the council, the infrastructure would go in to the standard required by the council and the developer would make the money back via the market by passing the cost to the buyer. Also, in theory if not always in practice, the increase in the rating value of the district would help with the cost of infrastructure. The cost per section to develop properties varied in the region due to the hilly terrain and scale of development. In terms of compact versus dispersed development, "if you're going to have a new greenfield development you should be paying more", as infrastructure costs were lower for compact developments at existing transport nodes. One participant went further, considering that infrastructure costs should be paid for by the people who developed and lived in the area and that "should include externalities around things like greenhouse gas emissions".

Other participants considered that developers held back from developing their land because of council development contributions (which vary between cities but were estimated in Auckland to be 4% of the cost of building a house).[17] One participant felt that Upper Hutt City, Hutt City and Porirua needed to "buy their future; it's not going to come … they have to make it happen". Hutt City Council had "virtually stripped [away] any development contribution requirement for new development". Another disagreed:

> *Development does cost … you can't push it all onto current residents and ratepayers … I'm not in favour of councils dropping their pants on the*

development contributions to get new development; I think it's got to be paid for up front. We can't have it on the never-never.

Councils might adjust developer contributions to take account of green building practices, for example where rainwater was recycled to have less impact on stormwater infrastructure, "but it takes quite a lot of time and energy to calculate that and go into bat; if you're not careful you end up with lawyers on both sides". In Wellington City it was proposed that if a development had a five on the green star rating, development contributions would be halved, with a process intended to be simple and transparent and indicate that the city was open for business.

Consents and legal fees for building a house were around 3% of the overall cost (an estimate for Auckland).[17] One participant thought financial contributions under the Resource Management Act were of concern, and, in Porirua at least, regional requirements around watercourses were of greater significance than city council requirements to developers of new subdivisions. Another participant thought that consent delays and holding costs were a burden to developers. A participant with experience in council consenting disagreed: compared to the total cost of development, consents costs were "just nothing … it's a huge beat-up" and delays were normally down to the developer "not providing the right information and not being prepared to do the right assessment or not engaging with the right people".

Planning rules, zoning and development contributions are all levers for changing urban form. Although theoretically councils had the right to determine what, where and when developments should take place, there was a sense that this was hard to achieve. Developers were engaging in land-banking, for example in the north of Wellington City, Kapiti and other areas, and were generally adept at controlling the release of their assets onto the market. The stakes were high. For example, the Westfield mall was "built on the back of the Hutt City Council putting lots of money in or not requiring a whole lot of contributions", but the huge enclosed mall had "basically killed the heart of the Hutt, the High Street". Though it was challenging to achieve collaboration, in future there may need to be "a total partnership between state, local and private sector … particularly for major developments".

Technical requirements and codes of practice

Urban development was also influenced by the setting of national and local technical standards and requirements, and by the codes of practice of professions such as planners, architects and engineers. While some participants did not see these practices and standards as barriers or enablers for resilient urban change, others had critical opinions. Planners were seen by one council participant as "often too regimented and too rigid". Another said of planners and engineers: "they don't ask why are we doing it, the value of doing it and to what extent they should be flexible … they are mindlessly applying rules". Others

discussed the "silo thinking" of engineers and roading people as a barrier for good development, attributing this to the earlier period in which some received their training. There was also the inertia of large local and central government organisations, where:

> *the rules have always worked; you've got people in those organisations who are committed to the processes … It's just a big organisation that's been doing stuff for a long, long time.*

There was a suggestion that council staff members were not empowered to take risks. This pointed towards the need for good leadership and clarity of goals, good communications to bridge the languages of each profession and inclusion of a mix of skills in project teams, for example having "cultural, environmental-type people involved at the ground floor as we develop in the future, with the engineers". Changes were occurring in the professions within councils, it was claimed. For example, in flood protection there was a move away from building structures to stop the flood towards thinking "actually if we prevent the problem in the first place, we don't have to build the structures", that is, from an engineering to a planning approach.

On the other hand, standards for buildings and developments needed to be "absolutely top-notch and unquestionable". Even a participant who generally favoured market solutions in cities thought that "regulations need to be there. We've got to have controls, do things properly". Approaches to regulation in future would be influenced by two ongoing issues, earthquake preparedness and leaky homes. The leaky homes disaster was viewed as a lesson for government, councils and the community, although participants viewed the lesson on regulation from different perspectives. A participant from outside local government blamed regulation which disempowered builders through inspections. An elected representative thought:

> *The council cops it … the rate-payers cop it … We spend a lot of ratepayers' money fixing ratepayer problems that weren't ours, created by other rules and regulations.*

Another considered that because local government "was the only party left standing and we have to bear a significant amount of cost, people know why building inspectors get very concerned and very rigid". The costs that councils had to meet for leaky homes and, to a lesser extent from interior fit-outs, for example to prevent ceiling tiles falling in a quake, would have a continuing economic impact and lead to a risk-averse building inspection system (for more see Case Study 2 on leaky homes, page 31).

New technology

New technologies, and the fast pace of technological change, will impact greatly on the urban environment. Those mentioned by participants ranged from technology to make heavy engineering infrastructure tasks easier, to the amount of renewable energy that could be generated locally, particularly from wind, and used to power electric vehicles. Central government participants were interested in improvements in vehicle technology and dynamic traffic management. A number of government departments were said to see transport technology as a great lever, discussed below in the Transport section.

Several council participants focused on digital technology in support of businesses. ICT had made it possible for changes in work and travel patterns, with the potential for remote working, to reduce commuting and its impacts on traffic congestion. There were discussions about central government departments potentially locating in the Hutt Valley rather than Wellington City CBD: "do all of their people need to be within walking distance of a Minister?" The example was given of Americans running their Silicon Valley business from Whiteman's Valley. Mobile technology also made it more appealing to be connected on the bus or train rather than stuck in a car in traffic. One participant considered that changes in communications technology and mobility would also impact on our definition of what neighbourhood meant — where people were not reliant physically on neighbours, except in a disaster situation.

Many technologies with the potential to affect urban environments were rarely mentioned by participants. These include technology to make buildings more energy efficient, sensors to provide real-time data to assist in the planning and running of city buildings and infrastructure, and new ways to enhance, utilise and recycle city resources. This may be a reflection of our interview questions, or it may be that city decision-makers do not feel that technology is the most important driver of change. One participant implied that city councils had little control over the development and adoption of new technologies, though there was a range of policy tools at their disposal. There may also be a gap between those with technical knowledge and those making policy, and a tension between desiring innovation and not wanting to risk being on the bleeding edge.[19] There was:

> *a lot of evidence that some of these things are changing, but it hasn't flowed through into decision-making yet — it takes time … can be a brake on responding rapidly to change because of inertia and societal beliefs and beliefs of the decision-makers.*

Transport

Transport systems can determine how urban land is used and where urban development takes place, because roading and access, with the associated pipes and wires for water supply, sewage and energy, can open up new areas for development or support intensification of existing urban areas. Transport availability also influences the way people move through cities and where they live, as does the location of work and educational opportunities. As well as commuting within Wellington cities, there is substantial commuting between the cities for work, school and recreation.

Most participants expressed a vision for transport not very different from current networks. Some key drivers for the future were identified:

- The nature of existing infrastructure and infrastructure being constructed now, as these have a long life;
- The nature of governance and decision-making about transport;
- Debate over the potential and desirability to shift mode-share (the percentage of people using a certain type of transportation) from cars to public transport and active travel, affected by social, environmental and economic drivers; and
- Pressures to transition away from fossil fuels.

On the latter, one participant said of Wellington City: "We've got huge advantages to being a compact city, and quite how strongly that will be reinforced given the road building programme will depend, will be hugely about the price of fuel". Another considered that, whether stemming from democratic pressures within the region or from international agreements, the result would be "a more compact development and much more use of low-carbon transport modes".

Transport infrastructure

The region's existing transport infrastructure includes a port, roads, rail links between urban areas, a tiny number of cycleways, and airports, the latter considered a valuable conduit of business connections and tourism. Transport investments were not just reactive to trends, but were shaping transport and land use trends. The central government was running a programme to build a Road of National Significance (RONS), the Wellington Northern Corridor between Wellington airport and Levin, including the Kapiti Expressway, and the Transmission Gully motorway, as well as the proposed Petone to Grenada link (Takapu Road).

Participants thought that upgraded and new roads would affect urban form, because where the roads go "eventually developments take place, whether it's by accident or not, because of the access". Transmission Gully would affect the whole region, especially Porirua because the proposed road would go in and around the city, but might also move development up to Kapiti. One participant said there was "unanimous agreement" that Transmission Gully would increase development along its route and lead to a sprawling type of development and an increase in traffic and commuters travelling to Wellington. This had been borne

out in international studies showing that increasing road space led to an increase in driving, cancelling out improvements in congestion and carbon emissions.[20] This was not seen as desirable; for another participant, intensification in Wellington City was preferable to further developments requiring residents to commute. The Kapiti Expressway was expected to lead to new employment in the area during the building phase, and an overall positive economic impact on the region was expected by some participants from work on the extensions. A participant who did not agree with the RONS programme nevertheless felt there was nothing to be done as it was out of local control and councils in the region should just "get them done and get on with the public transport stuff".

Transport decision-making

Decision-making on transport in Wellington's urban areas is not unified and this affects outcomes. The New Zealand Transport Agency (NZTA) pays for all highways and major arterial roads, and 50% of funding (more in some cases, less in others) for urban, suburban and rural roads, which are co-funded with councils according to long-standing formulas. Hard-up councils received higher support from NZTA than wealthier councils, but the fact that the road funding was available meant councils were incentivised to take it up, whether or not this was a priority for them, it was said. When Porirua boosted its funding for social and cultural services and spent about half the national average on roads, it was criticised by NZTA and other crown agencies for under-providing, a participant said. Participants were not confident that NZTA's approach was working well for the region. NZTA "just doesn't know if [it is making] the right investment decisions". They saw NZTA as operating from traditional thinking based in engineering solutions and suffering from inertia. The state highways group within the Agency was said to be entrenched and powerful, though some changes in personnel by current management might be introducing thinking beyond the traditional predict-and-provide approach. Generally, NZTA followed direction from central not city government; Roads of National Significance were dominating transport investment and decisions in the region, and "the roading priorities of central government take no account of the negatives of urban sprawl … all the externalities, and that's problematic".

Various ways forward were proposed, for example, a single transport entity could be made responsible for all roading; or NZTA could work more collegially with local government. NZTA was reviewing its Funding Assistance Rates to councils (co-funding for transport infrastructure) at the time of the research.[21,22] A participant thought that if councils had to pay more, they might be less keen to provide roads and bridges for remote residential housing, though businesses and farms would be a different proposition. Such a change in roading and associated infrastructure would have a subtle impact on urban form in the longer term. Another participant suggested that a region-wide plan for urban form was needed, so that deliberate decisions could be made about the transport infrastructure and then built around it.

Public transport, active transport and cars

The car was the dominant mode of transport in the Wellington Region for commuting and for all trips, but the region did have a proportion of people who travelled by walking and cycling that was higher than the national average,[3] and a public transport spine served by electric rail in two corridors connecting Hutt Valley, and Porirua and Kapiti with Wellington City. Public transport mode-share target increases set by Greater Wellington Regional Council (GWRC) were not being met and fares had been increasing steadily. However, in Wellington City the proportion of commuters travelling by public transport was relatively high in Australasian terms.

Some participants thought the private car would remain important in cities in future. As well as continued emphasis on provision of roads, other structural factors supported continued car use, such as the requirement in some Wellington cities for provision of car parks.

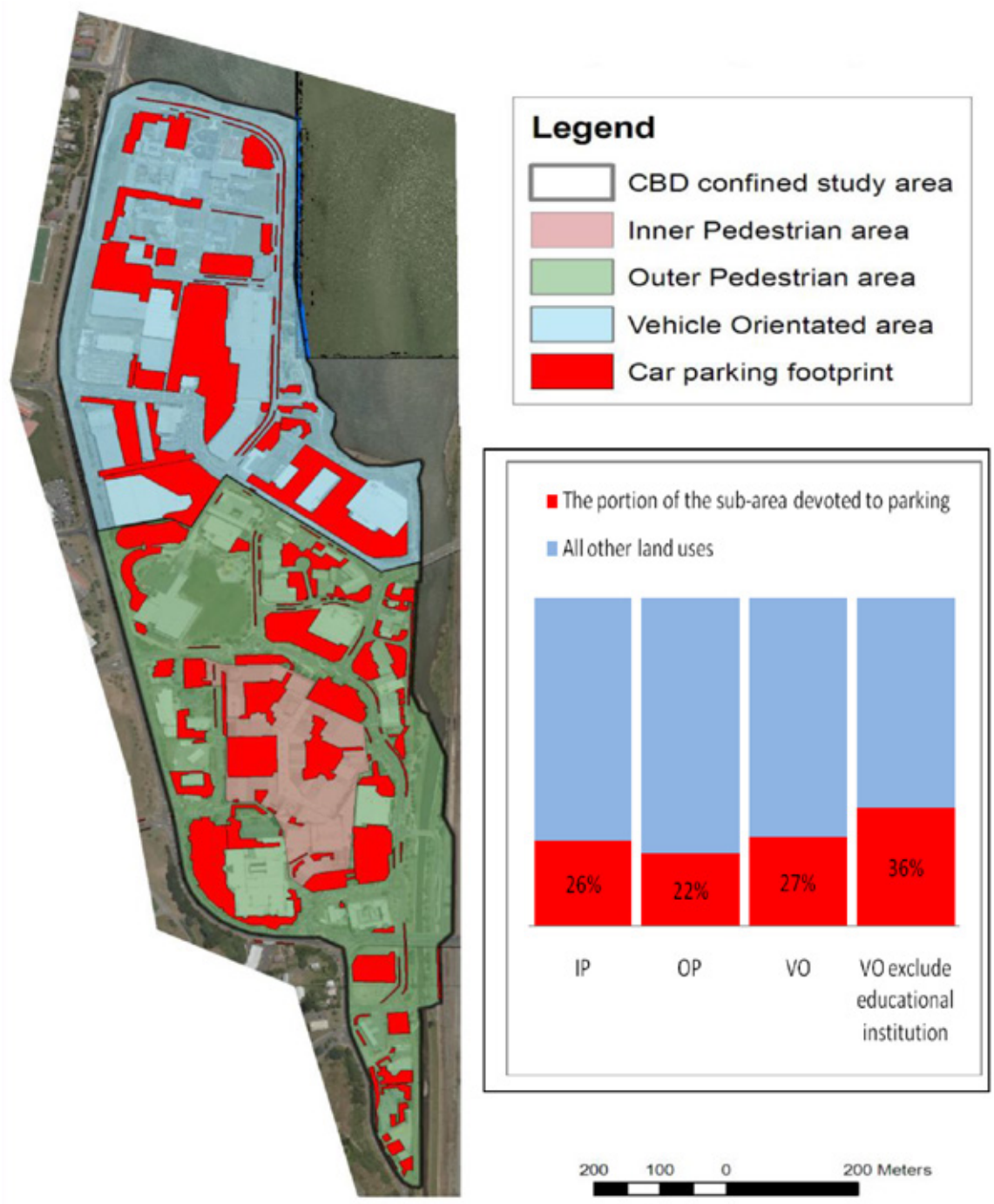
> *You want people to use public transport, ride their bike. If you make them have two car parks for every building, it defeats the whole purpose of the thing.*

Figure 4.4 illustrates the proportion of Porirua CBD land used for car parks. Provision of "free parking" for businesses and shoppers, such as in Porirua, was contentious, and problematic where road space allocated to on-road parking could potentially be used for cycleways or public transport. Participants saw a requirement to provide car parks as an example of "constraints that governments aren't reacting to". Changing urban form, with the development of apartments and intensification in Wellington City, had been facilitated by "one single policy lever that made the difference": the removal of minimum car parking requirements (previously two parks per dwelling).

The dominance of the private car might be affected by factors such as: whether renewable energy could be generated locally for electric cars or bikes, and how rapidly such technology could be introduced; by potential price signals from a carbon tax or Emissions Trading Scheme; by oil price rises; or by increased preference by the public and policy-makers for alternative modes. It was suggested that younger people demonstrated a preference for active transport and public transport, where they could use their mobile devices to be connected, and there was a trend for fewer young people to have a driver's licence (see also Case Study 16, page 177).

While the roading network was needed for private and freight vehicles, participants considered that a "reliable and affordable public transport system is a key priority", naming a variety of possible actions that would support its provision and use. An important factor was making sure that infrastructure encouraged it. Barriers identified included cultural preferences such as wanting to own and drive a car, a perception that driving or carpooling was cheaper than public transport, and room for improvement in the reach and reliability of public transport services. One participant thought that changes would come only via

Figure 4.4 Porirua CBD car parking footprint.[23]



a regional commitment, or through central or local government forcing those issues through taxing, tolling, subsidies and other means. Another suggestion was that:

> *we can anticipate the uplift in rates from property values that will occur from public transport development … The council can actually buy one of the properties [in a development served by public transport] so they can capture the value uplift and then sell it on at the end to help fund the project.*

Some participants approved of the proposed development of the public transport spine linking key assets for Wellington City, such as the railway station and regional hospital, and consolidating growth around it. One participant, who had personal experience of living close to rail yards, noted the noisy downside of living around transport nodes. In that case KiwiRail had responded positively to complaints and went to some expense to change practices and retrain staff, demonstrating that "good neighbour" arrangements between transport providers and local residents were needed to make housing at transport nodes work well. Participants were more divided on the Hutt Valley: some considered that people wanted the choice of public and active transport travel modes and that public transport would play a greater part in these communities in future; others thought that "until public transport or alternative forms of transport are the easier option, it's hard to see that growth too much".

Participants were enthusiastic about the compact nature of Wellington City centre, with the ability to walk everywhere.

> *Cuba Street's a fascinating study. There's a river of humanity comes down there each morning and it's just lovely, it's the tune of Wellington.*

Another said: "we're pretty proud to be the most walkable city in Australasia". This trend was considered likely to continue, with many people placing a high value on living within walking distance to work. "That's not always possible and easy as you get further out, but … it's a matter of making sure that infrastructure encourages it." Green spaces would continue to have high value for walking; "the outer town belt is so well loved for walking and running … I'm sure there's a few people who would love to build all over it, but they would be very very few". In other urban areas where a walkable community was thought to be less valued, a participant commented that this was changing, with a focus on walking as part of recreation and use of green space.

Cycling was not often mentioned by participants, and was unlikely to increase greatly, given that GWRC's goal (of 4.6% of journeys to work being undertaken by bicycle by 2025[24]) was not much more than what would be expected if current rates of increased cycling continued in future without any policy intervention. One participant mused on what it might take to change institutions, norms and habits around cycling to improve mode share, and noted the cost-benefit analysis where "it's easy to quantify the economic benefits of saving five minutes

driving; it's not so easy to quantify the economic benefits of it taking ten minutes longer but being much safer to cycle" and healthier. On the next page is a case study which considers the potential for cycling in Wellington.

Regional cooperation

Discussions of city or transport infrastructure often led to consideration of regional cooperation. Wellington Region's nine councils cooperated at several levels, including the Mayoral Forum and work on water supply, regional transport, emergency planning, urban growth, infrastructure, economic development, shared services, climate change and biodiversity. The Mayoral Forum has also worked on the Wellington Regional Amenities Review and Regional Governance Review. Decisions made collaboratively required time and compromise, it was said, with tensions between patch protection and a "real willingness to work on a collective basis across the region". Councils developed a regional transport strategy, but the criticism was made that Wellington City Council's actions, for one, did not reflect the strategy.

There has been a long-standing trend towards cooperation between councils over water.[25] GWRC provided drinking water, wastewater and stormwater management to the cities, with different service level agreements and contracts for each council so they were "still controlling for their own patch". During the research period there was a change toward one undifferentiated water service, but debate remained over who should own and control the infrastructure. The difficulties of cooperation were not technical, according to participants, but were about "governance and perceptions of ownership and who makes the decisions and whether the decisions are publicly owned or done by appointed directors". One participant felt that changes to water services were misinterpreted in the media as "a mechanism to run water meters out through the region".

Areas where cooperation was needed included: proposed airport extensions; roading; public transport; urban planning; civil defence and emergency management; economic development and employment; big-ticket items like stadia and convention centres; and infrastructure in general. Participants discussed Hutt City Council's 2014 proposal to build a stadium at Petone. Despite "probably three years of joint facility planning by all councils in the region", the other cities were not aware the proposal was in development: "why are they wanting to build another stadium, that's just dumb". The bid to be Gigatown, a competition where the winning town (Dunedin) received ultrafast broadband services, was another example where planning was fragmented, so that several Wellington cities or parts of cities put in separate bids. Drivers toward increased regional cooperation included a desire to avoid misalignment and poor decision-making, economic and population factors where the population was too small for every town "to have gold-plated every service", and a view that cooperation was the right way forward for Wellington.

CASE STUDY 10

The potential for urban cycling

Cycling benefits individual wellbeing and public health, and is an environmentally-friendly and cost-effective way to travel, yet cycling accounts for only about 1.4% of all trips in New Zealand. Researchers are looking at how to best invest to increase urban cycling.

Jean Beetham's research found there was significant latent demand for cycling in Wellington, which would likely be realised if adequate cycling infrastructure were provided. Likewise, Ed Randal found that increased support for recreational cycling would boost cycling numbers, and that recreational cyclists would be very likely to take up commuter cycling if safety concerns were addressed. Both researchers concluded that there were significant health and environmental benefits to increasing uptake of urban cycling, and also potential contributions to the vibrancy and liveability of urban areas.

They found that in Wellington the overwhelming barrier to urban cycling was safety, actual and perceived. While cycling gives an overall positive health benefit by protecting against cardiovascular and other diseases, cyclists are exposed to risk of accident. Cycling is the second most dangerous form of transport in New Zealand (after motorcycling), and Wellington is the most dangerous city for cycling. Infrastructure to make cycling safer would be the primary driver for increasing cycling in Wellington.

Beetham found strong public support for the reallocation of road space from on-street parking to a cycle route in the Island Bay to City cycleway. On-street parking was found to have a minimal effect on adjacent retail, and the economic effect on adjacent businesses would likely be positive if the cycleway infrastructure was well-designed, as commuter cyclists were likely to stop and shop. This suggests that councils could incorporate cycling investments as part of their overall strategy to increase vibrancy, liveability and economic activity in their towns.

From Jean Beetham, "Re-cycling the streets: Exploring the allocation of public space for transport". Master's Thesis, School of Geography, Environment and Earth Sciences, Victoria University of Wellington, 2014, and Ed Randal, "What makes a commuter cyclist? A mixed methods study of behavioural antecedents and perceptions of commuter cycling in the Wellington Region". Master's Thesis, School of Geography, Environment and Earth Sciences, Victoria University of Wellington, 2014.

> *The region is interdependent economically, socially, recreationally, environmentally, and we're far more conscious of this than ever before and we need to organise ourselves … The infrastructure, the planning, the economic development, the transport; wherever there's a network the decision [should be] made across the whole network.*

Regional cooperation has the potential to change urban form in the Wellington Region. Two linked approaches were discussed: a spatial plan and council amalgamation.

Spatial plan

The concept of a spatial plan at a regional scale was generally favoured by participants, many citing Auckland's lead.

> *If we're really clear about our spatial form, our discussion around our infrastructure investments will be a lot more sensible. We waste a lot of time in our debates about where we're investing in roading and public transport and so on, because actually we are not clear about where we want to go, and have so many different views.*

A regional spatial plan, it was expected, would give cohesion to the location of key industries, residential and commercial areas, leisure and social facilities, as well as aid development of effective city policies, and support planning of major infrastructure where central government was also involved.

> *We don't have to deliver everything [in one city]: the sports field that suits every code and the flash swimming pool with the five slides. Actually you might go to the Hutt Valley for the swimming pool experience and to Porirua for the performing arts experience. And that goes for housing and living as well.*

Participants remarked on councils' willingness to collaborate on a spatial plan and noted that some spatial planning had already started in the Mayoral Forum. One saw this as an attempt to forestall council amalgamation. Others thought a spatial plan could be developed, but would be difficult to implement.

> *When it comes to agreeing to something being built in somebody else's patch and not theirs, I think that's just too hard for councils, and it's not their fault, it's just the way local government is set up.*

This was linked to perceived barriers to regional collaboration stemming from central government laws and regulations.

Amalgamation

In 2012 the Local Government Review Panel identified five issues for local government in the Wellington Region: regional leadership, especially for economic development and employment; resilience in the face of natural hazards; many complex plans of local authorities which might be replaced by a spatial plan; need for a coordinated approach to infrastructure; and efficiency

and effectiveness.[26] A key recommendation was that a new Greater Wellington Council be established, with a single rating system, a mayor elected by the region, and councillors elected from within current territorial boundaries. There would also be local representative bodies to manage local issues and maintain democracy at a community level. At the time of writing, the Local Government Commission was reconsidering amalgamation plans.

Whether participants agreed or disagreed with it, or felt it should take a different form, they considered amalgamation would be a major driver of urban change. They did not expect deep-seated or lasting changes unless amalgamation and a spatial plan were introduced. Anticipated changes in local government included: positive collaboration between city councils in working through the amalgamation debate; money savings; local development becoming more coherent, streamlined, efficient and sensible; and increasing "faceless" bureaucracy. Effects would be gradual, as new governance arrangements would take two or three electoral cycles to settle down, and getting to one plan would take years, as the Auckland experience showed. A key unknown was quality of leadership, and the relationship between councillors and their electorate; this would be particularly important during and after any amalgamation.

A survey of local opinion in February 2015 showed 26% support for the amalgamation proposal, with 61% against and 14% undecided, with slightly more support in Wellington City and Porirua and strongest opposition in the Wairarapa and Hutt Valley.[27] Our participants discussed the effects of amalgamation on democracy and public engagement. One view was that amalgamation would increase the distance between decision-makers and voters. Another was that localities need not fear a loss of voice and would still influence decisions, for example through local boards, which need not be toothless if given charge of part of the city budget. In this view, the unified council would deal with regional decisions and undifferentiated services, while "decisions that affect the character of the local area — libraries, parks, general amenities" might stay with the people of that area. Some felt that "neighbourhoods are the best place for decisions about shape and feel and values", while others felt that the needs of neighbourhoods must be considered within a larger city-wide context.

Public engagement

Whether planned (surveys, submissions) or spontaneous, few participants were happy with local or central government engagement with the public on city issues, variously described by those in and outside city government as "dismal", "patchy", "largely fruitless", or undertaken for accountability purposes rather than real engagement.

> *We kid ourselves, and we have kidded ourselves through this Local Government amalgamation debate, that we do things really collaboratively with our communities now. We don't.*

The poor quality of consultation processes and the low expectations of how, or even if, citizens might influence urban development were a barrier to positive urban change. The quality of public participation was important, it was said, as was trust from the public that their voices would be heard and that decision-makers would take account of their requirements.

> *You've got to prove once you've started that consultation process that you're using that information … It's a flip side thing as well — the community needs to realise the impact of those changes.*

There were intimations that people were more motivated to get involved in formal consultations if they felt negatively about the proposal or were likely to be "losers" in a proposed change. The level of public participation was also an issue. Voter turnout in the 2010 and 2013 local body elections was less than 50% in Wellington urban areas (with the exception of Kapiti in 2013), typical for New Zealand local elections but considerably lower than turnouts for general elections.[28] One experienced participant saw failure to listen as the biggest problem with public engagement.

From another perspective, a participant who had lobbied councils felt it was possible to have an impact, that "it can take a long time to wear away, then all of a sudden there's a tipping point". Other participants thought communities did not realise "just how much they can influence politicians from the bottom" to change their community and city. One participant discussed the value of public engagement:

> *Quite often parties will change their view, whether it's the community or the politicians … Everyone says: "Now I understand that. I can see the process, or why that changes, and maybe I'm still not happy, but I'm prepared to accept that because I now understand why".*

In Kapiti there was a "heavily involved community", where, it was claimed, controversial issues such as water-metering and roading contributed strongly to that interest. Examples where participants were proud of responding to community ideas included the painting of blue lines on roads to represent tsunami penetration around Wellington's southern and eastern suburbs. "There was a lot of worry about whether it would cause property [value] drop, but it hasn't and it hasn't given the children nightmares". It was "an idea we wouldn't have had otherwise … such a simple thing, and cheap". A Porirua participant was interested to involve schools and also to engage with children so they too would feel connected to the community and feel they play a part in decisions.

According to one council participant, public engagement influenced decisions only on relatively minor issues and there was not much public input into the "big stuff". Public input was considered appropriate for the neighbourhood level: if there was an amalgamation this involvement could be with local boards which would not be "distracted dealing with the big infrastructure decisions".

Participants suggested that public input probably did not greatly influence urban form. However, there are new, online approaches to public engagement, seen as offering possibilities for more, and more meaningful, public engagement in city decisions, and it will be interesting to see if public engagement becomes more influential in future.

Engagement with Māori

Participants raised few drivers of change in the Wellington urban region that were specific to Māori (or other ethnic groups). A possible driver was the role of Māori organisations and iwi in city development, boosted by the rights and resources returned to them via Treaty of Waitangi settlements. This area would benefit from further research. Another was the engagement of Māori with local government in a variety of existing initiatives, and the possibility of a Māori Board being part of an amalgamated Wellington super-city.

Māori of the Wellington urban area comprise 6.59% mana whenua, with a large population of mātāwaka, Māori whose ancestral links lie outside the region,* (for details see Case Study 15 on mapping the diversity of urban Māori, page 167) Wellington Region has two main iwi groupings: Ngāti Toa Rangatira; and Taranaki Whānui ki Te Upoko o Te Ika (a collective name for local iwi, in particular Te Atiawa, who settled Wellington from Taranaki, and whose Treaty settlement is managed by the Port Nicholson Settlement Trust). Both these groups concluded Treaty settlements, in 2012 and 2008 respectively. The primary Māori landowner in Wellington City is the Wellington Tenths Trust, which manages the remains of the land set aside for the descendants of Māori resident in Wellington in the 1840s. The Trust is recognised as an iwi authority for Wellington City.

Most Wellington councils have formal means of engagement with local iwi, aside from Hutt City Council and Upper Hutt City Council which both support settlements, but do not have formal engagement mechanisms beyond the requirements of relevant legislation. Wellington City Council has a cultural advisor/Kaiārahi Tikanga Māori whose role is to develop the relationship between council and Wellington Māori. There is also a chapter in the District Plan entitled "Issues for Tangata Whenua", which covers matters such as harbour pollution and preservation of wāhi tapu/sacred sites and wāhi tupuna/ancestral sites. GWRC has a Memorandum of Partnership with the region's iwi, represented by six organisations. Five times per year the regional council holds iwi workshops, and it also has a natural resource management committee, Te Upoko Taiao, comprising elected councillors and appointed members from the region's mana whenua. Porirua City Council and Ngāti Toa have established

* This study used the Statistics New Zealand urban area classification (designed to identify concentrated urban or semi-urban settlements without the distortions of administrative boundaries) and urban boundaries for Wellington and included the Kapiti main urban area.

a Treaty Partnership Group, made up of councillors identified by council and members identified by Te Rūnanga. The council also seeks to work with local pan-tribal marae (such as the Maraeroa Marae) to enable a relationship with Māori residing in Porirua who are not of Ngāti Toa descent. Kapiti Coast District Council has established Te Whakaminenga o Kāpiti, a council/mana whenua organisation linking the council with the three iwi of the area, which is responsible for guiding the council's partnership with local Māori. The council also has a Māori Economic Development Grants fund, and receives advice around archaeological and earthworks activity.

The Local Government Commission's proposal for reorganisation of Wellington's local government included a recommendation for a Māori Board, similar to the already-established Independent Māori Statutory Board in the new Auckland Council, with the purpose of fostering communication and engagement between the council and mana whenua, and assisting the council in ensuring it meets its obligations to Māori, including Treaty obligations. The Board would consist of one representative of each iwi having rohe or takiwā over part of the Greater Wellington District, the Mayor and two councillors; and board members could be appointed to council committees.

Central government and local government

Central government also drives urban change, through the setting of legal requirements, and via the funding and policy decisions of agencies (such as NZTA, discussed in the Transport section above). Central government is also a major employer in the region, with the ability to affect Wellington cities by its budgetary, employment and location decisions (discussed in the Economic drivers section above).

A major issue was the role and capacity of the cities to shape their futures, compared to the influence of central government. Participants saw this balance differently. One thought: "Often local government is just the administrator of central government legislation and requirements". Two participants from different ends of the political spectrum considered local autonomy preferable to national approaches. Others considered that central government put "a lot on local authorities which is central government's responsibility", citing the Building Act, the Resource Management Act and other regulations, rules and laws. One suggested that as central government moved some responsibilities to local government there was less "free money for communities" which then sharpened thinking and planning. Tensions between central and local government in the region were discussed in terms of local government having to carry out central government policy and compliance activities, and the role of central government agencies in controversial local transport and housing issues. For example, the government's Coastal Policy Statement had required 50- and 100-year coastal hazard lines to be recorded, useful information but its appearance

on Land Information Memoranda (LIM reports) had caused headaches in Kapiti. There were discrepancies between "what's wanted at the local level … and what has been dictated from the top". Other participants suggested local political arrangements were a potential barrier to positive urban change, proposing that items like transport, water and civil defence needed decisions unhindered by "ward noise" or pet projects. An example of implementation challenges is given in Case Study 11.

The people of Wellington cities are represented by both local and central government, and another challenge anticipated in the future was "whether Wellington will remain the centre of government". Given Auckland's growth, its MPs might come to dominate the parliamentary process. One advantage for Wellington City lay in having government departments within walking distance "so the relationships can happen, all that informal stuff that is actually really important for integrating thinking and policy development".

Environmental drivers

The nature of the landscape has had a strong influence on the current shape of the Wellington urban region. Houses nestle on hillsides and alongside rivers and coasts, on land subject to floods and erosion, above earthquake fault lines and exposed to strong winds. The degree to which urban areas can be resilient in the face of environmental challenges will be a determinant for the future of the Wellington Region and what happens with its urban form. Participants in this study highlighted four key drivers:

- Management of immediate or near-term local environmental issues;
- Emergency preparedness;
- Climate change; and
- The degree of awareness of environmental issues among citizens and city decision-makers.

The first, response to local environmental issues and management of the impact of people on the environment, is part and parcel of the life of any city. A certain level of comfort was expressed by participants about the overall environmental performance of the Wellington urban regions, with generally clean air and controls on pollution. Concerns were expressed around water. A debate was being played out in Kapiti around rights to and use of water and water meters. Also of concern was the discharge of largely untreated stormwater into watercourses and harbours around the region, for example Porirua's harbour, with solutions likely to be expensive for rate-payers. One participant explained that water issues would be increasingly important — its quality and availability, ownership and who pays for it.

> *If you're a conspiracy theorist, you see it's a catalyst to privatisation at one end and at the other end it's the commodification of something that belongs to*

> *everybody. Tends to ignore the iwi argument that it doesn't belong to everybody. And everyone sits uneasily around that question. That's the biggest one for us and in a city like Porirua our identity is basically our harbour. It shapes our physical identity. The behaviour of that harbour has changed so much, essentially in a generation, because of sediment. We live with the effects of it.*

Major infrastructure developments in the region also had an environmental impact, the nature of which was debated. For example, the Kapiti Expressway passes through a wetland, although remediation was expected so that "for every area of wetland that they destroy, they have to replace it with three or four or five times [the area so]… it's going to enhance our greenness". Another view was that "if there was one thing that you might look at in a hazards sense, not developing coastal wetlands would be a good place to start" as they had such an important function in the ecosystem.

The degree of awareness of environmental issues among citizens and city decision-makers was expected to continue to increase.

> *In terms of land use, the protection of the natural landscape is increasingly important, simply because we're losing it, and as a region we have some seismic risk that we're possibly contributing to. I suspect people over the next 30 years will get closer to understanding what their occupancy of the natural environment is costing.*

Emergency preparedness

The nine Wellington councils are involved with joint emergency response planning to parameters set by the Ministry of Civil Defence and Emergency Management. Wellington Region Emergency Management Office (WREMO) is charged with organising for civil defence and recovery across the councils. Central government agencies, including the Treasury and NZTA, as well as the Wellington Lifelines Group, which co-ordinates the physical risk management activities of Wellington utility and transport service providers, also put effort into assessing the vulnerability and likely resilience of public services and infrastructure. Their assessments showed more serious concerns than what is implied in the "It's easy" information material provided to residents.[29] The urban region was seen as vulnerable to major storms, floods and earthquakes. In response:

> *since Christchurch [earthquakes] is the first time I've sat in a room with a swathe of people nutting out a solution to a problem where you have an economist and policy analyst, a local government person, an engineer — the technical and policy people having to sit down … lawyers, environmental, social … policy — all in the same room.*

This kind of cooperation, and thinking on a regional basis about the big picture of infrastructure and services, seems likely to improve city and regional resilience.

CASE STUDY 11

Implementation challenges for sustainable city redevelopment

The Adelaide Road Framework, developed by Wellington City Council in consultation with the public between 2007–8 aimed to support walking and cycling, mixed land use and increased density. Initial plans indicated that Adelaide Road would be widened to give wider footpaths, median strips to help pedestrians cross, and potentially bus and cycle lanes. In the journey to implementation, however, this plan was altered in response to a variety of influences. Ultimately, the degree of urban change was much less than first envisioned.

Differing perspectives vied for dominance within the council organisation. Planners liked the concept of a walkable boulevard, but this vision was watered down and harder to implement when the views of other professions came into the mix. Reorganisation and staff departures shifted the balance of influence. Within the council there were also barriers, such as no single team being responsible for implementation and lack of experience in land development activities and project management.

It was anticipated that the project would receive NZTA funding, but hopes were dashed after evaluations showed a benefit-to-cost ratio of less than one. The NZTA funding assessments emphasised travel time savings, rather than health or benefits to other modes of travel that the Adelaide Road Framework aimed to provide. The loss of expected funding, equating to roughly half the initial budget, led councillors to vote on a new approach, whereupon they decided not to widen the road. (Six out of 15 voted to abandon the venture altogether, despite it once being considered the council's number one priority.)

Figure 4.5 Artist's impression of a widened Adelaide Road, Wellington City Council, 2008.

The context in which local government operated was important. The Local Government Act 2010 required councils to focus on core services, leading to what were described as "deep-seated laissez-faire" attitudes to council facilitation of development. There also seemed to be a lack of funding alternatives available to council, aside from rates and development contributions. The council's unwillingness to carry increased financial risk meant implementation of the Framework was largely dependent on central government and market decisions.

Development of Adelaide Road was constrained by the city environment. To widen the road it was necessary to consult with local businesses and property owners, which slowed design, increased costs and added uncertainty. Compromise led to deviating from the Framework's broader objectives. For instance, a non-widened road meant choosing between a cycle lane and parking outside businesses and the latter won out.

The belief that the car is king influenced the outcome. In reshaping designs following the decision not to widen the road, separate space for cars to drive and park was considered a necessity, while pedestrians lost the wide pavement initially proposed, cyclists were restricted to sharing a three-metre lane with buses and public transport had no full-time bus lanes allocated. Topham's thesis shows how a range of political, cultural, structural and financial factors can significantly affect planned project outcomes and influence the progress of urban change.

From Helen Topham, "'More than just a road?' A case study exploring implementation challenges for sustainable city redevelopment". Master of Public Health, University of Otago, 2012. This work was supported by the New Zealand Centre for Sustainable Cities, which leads the Resilient Urban Futures programme.

Figure 4.6 Adelaide Road, 2015.

Many participants focused on the vulnerability of Wellington City to earthquake. There was much less discussion of flood and storm hazards. One viewed the danger from earthquakes as "vastly overdone", with Wellington City in "very good nick" because the buildings were at "30–40% of code". This was a lone voice. A more mainstream view was that earthquake vulnerability for buildings was a major issue needing to be addressed, especially in the CBD, looking at both building safety and the perception of safety. Another participant proposed that in a serious earthquake there would be waits of 60–90 days for roading repairs in Wellington City and of up to 85 days for a networked water supply in the eastern suburbs. The area would be vulnerable in terms of isolation and ability to have transport networks operating, with potential for travel route blockages at key points such as at Kaiwharawhara and in connections to the regional hospital in Newtown. Given "just-in-time delivery" logistics, strategic freight routes from port and airport via city streets or railways were a concern. Community preparedness was seen as a high priority as residents would need to rely on themselves and their neighbours in such an emergency.

The response to this earthquake risk affects the urban form of Wellington City. All councils were required under the Building Act 2004 to have a policy on local buildings most vulnerable in a moderate earthquake, balancing the need to address earthquake risk with the social and economic implications of repair costs. Earthquake remediation of buildings was set at one third of the New Building Standard. Wellington City was stricter than some other regions, with the council setting maximum time-frames for strengthening or demolition of earthquake-prone buildings ranging from 20 years for low priority to 10 years for high priority. Hutt City Council also registered earthquake-prone buildings with timeframes to strengthen. An amendment to the 2004 Act proposes timeframes for all New Zealand and a public register of earthquake-prone buildings. As Porirua is relatively new, it is estimated that only 10 buildings will be earthquake-prone,[30] but for some of the other cities, and particularly Wellington City, there will be ongoing changes to city buildings, with financial implications. For example, some building owners could not get insurance cover and therefore could not borrow for the work. Building owners understood if a building was stickered as sub-standard, but wanted flexibility of response: "You can't say pull the whole building down and start again". Wellington City Council decided that if "a block of apartments or offices [in the CBD] can't be inhabited for a certain period, then they don't get charged the downtown levy", softening what one participant described as the "short-term unfairness" while "doing the right thing in the long term". Another noted that having earthquake strengthening work tax deductible "would make a massive difference to investment … and retain confidence in Wellington".

Climate change

Six out of 16 participants we interviewed nominated climate change as a key driver of urban change. Views ranged from a participant who saw climate change as one of two "really big drivers" to another who felt that in the Wellington Region "we're not really bothered by global warming; it's a horrible thing to say I suppose because some people are badly affected by it". Risks included sea-level rise and extreme weather events, with effects on coastal erosion and storm damage to infrastructure including storm-water, sewage and transport systems. Impacts most commonly mentioned by participants were to coastal cities and towns, in particular Kapiti. Some noted that climate change would affect what land could be developed for use; a number of areas currently settled, for example in the Hutt Valley near the river, would not be built on today because of flood hazard. More intensive brownfield development was suggested as the best growth option for Porirua in terms of climate change and lessening environmental impacts. The conclusion of one participant was that natural hazards, especially climate-change related events, would affect urban infrastructure within the next 30 years and Wellington City's centre would be especially vulnerable.

Climate change mitigation and adaptation has been considered in varying levels of detail in the planning and policy documents of councils.[7,31–34] Wellington Region's emissions per capita were lower than the New Zealand average, but high by international standards. Wellington City and Kapiti were more clearly committed to emissions reduction, but all of the Wellington cities were doing less than they could, perhaps constrained by their limited influence over the energy-generation sector and by central government policies, such as road-building, that pulled in the opposite direction.

Planning across local and central government agencies for climate change was seen as harder than planning for big civil defence events, though not impossible. There was concern that planning by civic leaders was being done "in a hotchpotch way" where "people say the right things, but their actions don't follow … It's not a real commitment for that longer term". Climate change effects were not yet seen as within the traditional planning horizon for infrastructure, even though there would be impacts within the next 30 years. The apparent absence from public consciousness and urban planning of further impacts was lamented: sea-water affecting soils and water supplies; climate change altering agriculture and land use; and biosecurity breaches or pest invasions. It was said that the political response of councils to what they perceived the public wanted would affect responses to climate change. While there was a belief that most people now accepted the reality of climate change, "people have to be able to understand what they're being told and if they can't, you lose them". It was thought that extreme weather, such as floods or a very hot year, may be the prompt to action. This suggested that some activities to add resilience to cities would not be implemented until there was a crisis that rendered such measures valuable to citizens.

Resilience

The ways that decision-makers thought about the resilience of the region's cities was influenced by response to previous shocks and anticipation of future shocks of a similar nature, such as storms and earthquakes. Storm events in recent years that affected the railway from the Hutt to Wellington City had an effect on resilience thinking at the NZTA and other government departments, leading to putting value on building resilience into the transport network. There was also consideration of a co-benefits approach: if a cycleway were sited on the seaward side of the Hutt-Wellington rail and roadway, this would protect the railway lines while meeting active transport and tourism needs. The Treasury's thinking on the attributes of resilience was "coloured by Christchurch and issues there and how they facilitated or hampered response and recovery". An example of collaboration on resilience thinking was a joint effort started between NZTA, KiwiRail and Transpower in a shared resilience response framework.[35] Preparation for emergencies was considered positive for overall resilience.

Participants distinguished two key attributes for future resilience:

- The first was the ability to maintain infrastructure networks, including water supply, electricity, roads and public transport: "how do we create [infrastructure networks] so if an event happened we're still going to be able to operate?"
- The second was the ability of community networks and neighbourhoods to respond to major events, to adapt and endure: "urban resilience isn't just about the physical infrastructure, it's about whether people are connected, whether people are ready in their household or their street".

These two were interconnected. For example, in a suburb with limited community infrastructure and social networks, the local school might be the only meeting place. Community halls, libraries and marae might also be important.

There were concerns expressed about the extent to which resilience work has focused on risk management and insurance, and about gaps between the assessment of long-term resilience being done in central and local government and translation of that information into actions. While "the long-term thinking is often quite good, the long-term strategy and vision isn't reflected in action", perhaps requiring changes in the institutional setting to ensure that long-term thinking was reflected in the short-term decisions. There was also recognition that resilience mattered not just at times of major events, but also in order to strengthen communities in the face of gradual demographic, social and economic change. One participant considered that decisions and activities at the city level were likely to prove of greater benefit to resilience in the longer term, as they currently leaned more than central government toward low-carbon, resilient forms of development. Several participants linked resilience with sustainability:

Resilience is very much a component of sustainable [city] systems, even if it means they change as a consequence of what happens. It's about that long-term functionality and endurance, rather than everything as it always was.

Conclusion

Some of the cities in the Wellington Region were relatively tolerant of sprawling development, while Wellington City, especially in its inner city, has seen increasing density in recent years. Cultural acceptance of compact urban forms was strong, but grew weaker with distance from Wellington City. Slow but steady economic and population growth in the region seemed likely to continue and would not be strong drivers of change.

Of the range of environmental, seismic and climate change-related hazards that could affect the region, much attention was focused on earthquakes, especially in Wellington City; no doubt because of Christchurch's recent experiences. While climate change impacts promised to affect the cities in this region, this driver of urban change was not yet widely recognised or deeply addressed.

The cities were well-connected in transport terms, with Wellington City having the country's highest per capita usage of public transport. But central government's road-building programmes in the region seemed likely to counter the changes towards compact and resilient development that many would like to see. This infrastructure was likely to lead to further spreading development along the highways, and overall to reduce available spending for other transport modes.

Central government was a significant player in other ways too, as the region is home to the national government. Inequalities within the cities, as elsewhere, were likely to cause increasing concern in the absence of effective policies to counter them. A potential future amalgamation of local authorities, and commitment to spatial planning, could drive urban change in the region. Without a mechanism or concerted effort to bring the cities and their governance into alignment, which could deliver opportunities for resilient development, the Wellington Region seemed likely to continue along in its existing directions.


WAIMAKARIRI DISTRICT COUNCIL
CHRISTCHURCH CITY COUNCIL
SELWYN DISTRICT COUNCIL
CHRISTCHURCH
Rangiora
Kaiapoi
Woodend
Belfast
Papanui
Riccarton
Rolleston
Lincoln
Prebbleton
Templeton
Burnham
Lyttelton
Sumner
Ashley River / Rakahuri
Waimakariri River
Kowai River
Lake Ellesmere (Te Waihora)
Territorial Authority Boundary

FIVE

Christchurch

Guy Salmon

Christchurch, like Auckland, has a strong local political mandate for a quality, compact city, with increased residential density and enhanced public transport. This mandate derives from a major foresight, planning and public consultation exercise, the Greater Christchurch Urban Development Strategy (UDS), carried out on a consensus-building basis during 2004–6 and adopted by all the relevant governance authorities in 2007.[1]

The unique element about Christchurch, from the perspective of this report, is the 2010–11 earthquakes, and the demolition and rebuilding process which followed. Viewed from the perspective of implementing the UDS, the earthquakes created not only suffering and disruption, but also opportunity.

A striking feature of post-earthquake Christchurch is its transformation into a so-called "doughnut city". This is a term with international origins which has entered popular discourse in the city. Christchurch has become the type of city in which suburban and ex-urban sprawl dominates (much of it generated by population exodus to settlements well beyond the city boundaries, and associated with diminished use of public transport), and in which there is a much diminished city centre.

The last part of this phenomenon — the hole in the middle of the doughnut — has persisted for some years past the main post-quake demolition phase, but is still widely regarded as a short-term situation. In the view of some interview participants, it may have been more or less inevitable, although others hold that it was aggravated by policy decisions. The earthquakes caused extensive damage to buildings in the CBD; it took some time to demolish and clear these before rebuilding could begin. In the meantime, and especially following the initial failure to agree on a draft Central City Plan, construction of new homes and offices began elsewhere, and people and businesses moved to those sites. The development of the central city, particularly the CBD, then stalled.

Despite this, planning still officially intends that a strong central city should develop. This is expected to be assisted by the move of government departments back into the CBD, the building of the delayed anchor projects, the newly deregulated planning environment, and any sustained economic growth that then occurs in wider Canterbury. However, while the much talked-about

"vibrant" central city may eventually be realised, albeit over a much longer time period than originally anticipated, the other part of the doughnut story — the very dispersed pattern of residential settlement and business locations that has now become established, and the associated reliance on commuting by car — may prove a larger challenge to the future resilience of Greater Christchurch.

The UDS, with its supporting documents, provided comprehensive analysis of the economic, social and environmental drivers of urban change in Christchurch. There is little new to add on this subject, except that the earthquakes provided new drivers of change: most notably the requirement to resettle thousands of people from the eastern suburbs; and the need to rebuild the city centre following extensive demolition of damaged buildings. The high priority for addressing these issues has elevated the role of public policy and governance drivers in post-earthquake urban change. This chapter explores the hypothesis that these policy and governance drivers have themselves made a significant contribution to the development of Christchurch's doughnut form.

Muted in public discourse, but nonetheless real, are policy differences over what the relative roles of planning and markets should be. These differences are manifest: between central government and the city council; between the various councils involved, often following a rural-urban cleavage; and within the city itself. Such differences over planning versus markets are characteristic of the governance of any city. In examining drivers of, and constraints on, urban change, it is arguable that what really matters is *how these differences are resolved*. At the heart of this is the capacity of a multi-level, democratic governance system for deliberation, learning, foresight, cohesion, and pragmatic decision-making.[2]

This chapter clarifies the background to the UDS and identifies a series of critical decision-points at which the UDS consensus about the desired future for Christchurch was tested. Interviews with members of the governance network provided information on how and why these decisions were made. The chapter concludes with an assessment of the extent to which particular policy and governance factors acted as drivers or constraints on the implementation of the UDS in the post-earthquake environment.

Greater Christchurch Urban Development Strategy

The purpose of the Urban Development Strategy was to provide for Greater Christchurch a clear strategic direction over the next 35 years for what the city and peri-urban environment was to look like. This included: where future housing was to occur; where to develop or enhance social and retail centres of activity; where areas of new employment were to occur; and how transport networks were integrated to service these areas. The Greater Christchurch area was defined to include Christchurch City plus communities within the commuter belt (around half an hour's drive from the central city) in Selwyn and Waimakariri Districts.[3]

The UDS was drawn up under the Local Government Act by a special committee comprising the Canterbury Regional Council (Environment Canterbury), Christchurch City Council, Selwyn and Waimakariri District Councils, Transit New Zealand (now the NZ Transport Agency, NZTA) and Te Runanga o Ngāi Tahu, later referred to as the UDS partners. Ngāi Tahu completed their Treaty settlement with the Crown in 1997, and partially as a result of Treaty settlements, Ngāi Tahu Holdings, the commercial arm of Ngāi Tahu, is the largest developer of residential property in Christchurch. [4]

The UDS was adopted by each of its partners, who were then obliged to take a series of implementing actions under other statutes, including the Resource Management Act (RMA) which regulates land use. This was in 2007, three years before the first earthquake.

Along with the Canterbury Water Management Strategy,[5] the UDS was seen by many as marking a surprising but welcome turning point in the ability of Cantabrians to work together on long-term issues. The development of Canterbury, and of Christchurch, has long been strongly influenced by difficulties in managing multi-level governance. In facing long-term issues, there has been poor cohesion and functionality between the different governance levels:

- A schism between regional and district governance entities was already evident by the 1980s, when the short-lived Canterbury United Council first sought to achieve an integrated plan for future development of Christchurch City and adjoining districts.
- There was extensive Environment Court litigation between the districts, the city and the Canterbury Regional Council during the 1990s and early 2000s, centred on whether peripheral subdivision and development should be allowed in plans.
- Central government's Ministry for the Environment maintained an office in Christchurch which during the 1990s played an active role in resisting controls over urban development.
- During this period, the pattern of peri-urban and ex-urban development was developer-led, reflecting the inability of councils to agree and clearly specify a desired pattern in their planning documents. This culminated in the Pegasus Bay decision, in which the Environment Court approved a private plan change for a new town located away from existing settlements and public transport routes, and made a record award of costs against the Canterbury Regional Council for opposing the development without having adequate basis in its plan for doing so.[6]
- On three separate occasions from the mid-90s, attempts were made to develop an agreed strategic approach to urban development across the various local, regional and central government entities. The first two attempts failed.
- The third attempt to create an urban development strategy began in 2003, initiated by an ad-hoc consortium of councils, and included a major public consultation process on options for the development of Christchurch. This

produced a strong public mandate for Option A, the most compact of the urban models put out for comment. This option was backed by both professional analysis and 62% of over 3,400 public submissions, giving strong political momentum to the development of the UDS.

- Representatives of the peri-urban district councils disagreed with the preferred option, and there were some efforts to delay the finalisation of the UDS. The eventual outcome was an agreed partial modification of the public's preferred option, and in 2007 the UDS was signed by all its partners. This was the first time that these central, regional and local government entities had achieved alignment over urban development strategy.
- Tension between the territorial authorities and the regional council continued however, with all ten Canterbury mayors writing to central government criticising the Canterbury Regional Council, principally over water planning, leading to the dismissal of the regional councillors and the appointment of commissioners to run the organisation in May 2010.
- Differences between central, regional and district level governance bodies re-emerged in the post-earthquake recovery planning phase, together with strong divisions within the Christchurch City Council, and an associated perception of dysfunctionality.
- Against this background, and taking into account the large financial contribution it was making to the rebuild, central government gave itself extensive powers to direct the recovery in a hands-on manner through the establishment of CERA, the Canterbury Earthquake Recovery Authority.
- Although the controlling majority on the city council and central government were both of the centre-right politically, tensions between the two grew, following the 2012 preparation by the city council of a proposed plan for the rebuild of the central city.
- After a protracted stand-off, central government extended its hands-on, centralised control over the city through dismissing the city council's draft plan and establishing the Christchurch Central Development Unit (CCDU), to take over central city planning functions from the city council. Control over the approval of the replacement District Plan for the remainder of Christchurch City was also moved to central government. The combined effect of these decisions left the elected mayor and city councillors with no direct decision-making role in planning the future of the city.

This history suggests that longstanding divisions, and a non-collaborative political culture, have affected multi-level governance in Canterbury and have provided a distinctive institutional influence on recent events. The UDS partners alluded to this, in a foreword to their Strategy:

> The UDS project was initiated in 2004 arising from concerns about the lack of collaborative leadership and institutional arrangements to manage growth in a sustainable way.[1]

Factors affecting Urban Development Strategy implementation

The interviews carried out for this report revealed a wide awareness of this culture and history. Among the UDS partners, there was a strong commitment to the idea that the consensual style and relationships developed through the UDS process, and the integrity of the UDS purpose, must be carefully maintained and built upon in the post-earthquake environment. Five key features of the UDS and its context have affected its partners' capacity to deliver on those intentions, both positively and negatively.

First and foremost, central government was never a partner in the UDS. This did not matter much at the time the Strategy was prepared, but it became an issue once the government had established CERA and especially once CERA progressively became a vehicle for the Minister to take effective control of regional and city planning functions for Christchurch. Also the government's replacement of the elected councillors on the Canterbury Regional Council with appointed commissioners led to a change in that council's approach to regional land use planning. According to interview participants, the National-led government was not enthusiastic about the type of urban planning policies which the UDS embodies. The UDS emphasis on setting and managing urban limits and increasing residential density, with strong quality controls and strategic ends in view, was seen by Ministers as antithetical in practice to the efficient provision of affordable housing, primarily on the basis that it compromises the use of markets to allocate land, leads to excessive prescriptiveness around the design of building developments, and may lead to otherwise unwarranted investments in public transport.

The NZTA is a longstanding UDS partner, and with the change of government the NZTA continued to be a regular attendee at UDS partners' meetings. However, the agency's signature on the UDS dated from the time of the previous (Labour-led) government; some interviewees thought it unlikely that the National-led government would have authorised the NZTA to become a signatory. Moreover, at the time of the earthquakes and during the initial recovery period, the NZTA's Minister was Gerry Brownlee, who also became the Earthquake Recovery Minister, holding widespread powers over the future direction of Christchurch. It would not have been tenable for the NZTA to adopt a line at UDS meetings that was at variance with the views of its Minister.

Second, and to some extent counter-balancing central government's role, the UDS partners established an ongoing governance structure that ensured the UDS document could not be simply put on the shelf and forgotten. Each UDS partner had to report regularly on a series of implementation actions agreed as part of the Strategy. A three-tier implementation committee structure was established to oversee and co-ordinate implementation, supported by an Implementation Manager. The top tier decision-making committee comprised political governors of the UDS partners, and was independently chaired by a planning professional from outside the region (an arrangement which was widely considered

important to its success). The second tier, an advisory committee, comprised chief executives of the UDS partners or their senior nominees, while a third tier comprised co-operating technical personnel from each of the participating organisations. From interview accounts, a major effort was put into maintaining excellent relationships and consensual decision-making at all levels, especially in the unstable post-earthquake political environment.

After the creation of CERA to take control of the earthquake recovery and rebuilding effort, there was a danger the UDS implementation structure would become marginalised. However, the UDS partner organisations were successful in their efforts to remain integral to decision-making, at the cost of making some significant compromises to align with central government's wishes. A CERA representative attended UDS meetings as an observer, and the UDS partner meetings were co-ordinated with meetings of the CERA-led Recovery Strategy Committee. The same representatives of UDS partner organisations attended both sets of meetings, effectively moving an established set of relationships from one setting to the other and, to the greatest extent possible, maintaining a consensual mode of operating. It was widely acknowledged that the CERA Minister, Gerry Brownlee, was the dominant decision-maker, but the UDS partners have played an important role.

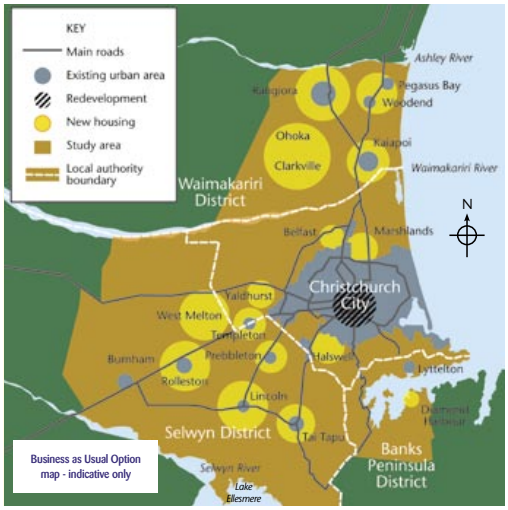
A third factor which has significantly influenced UDS implementation relationships and outcomes is the nature of the compromises which were built into the strategy at the beginning. As mentioned above, the public was presented in 2005 with four broad options for the future development of Christchurch.[7] The options assumed Christchurch would continue to grow, with about 52,000 more people by 2021 and up to 120,000 by 2041. Maps were used to illustrate the options (Figure 5.2).

The four options differed in their proportions of greenfield subdivisions and urban renewal. The document defined urban renewal as "redevelopment of existing housing, retail and commercial areas" and defined redevelopment as including "new housing developments in existing residential areas as well as retail, commercial and industrial renewal". Table 5.1, reproduced from the discussion document, compared the four options on the basis of land use and housing type, while Table 5.2 compared the four options from a transport perspective.

The most compact option, Option A, made it clear that new housing would be "mostly housing without gardens". There was overwhelming professional and public support for the most compact option, namely Option A. However, Option A did not find favour with the mayors of Selwyn and Waimakariri Districts, who wanted more growth in peri-urban communities than Option A allowed for. There were also questions about how rapidly a more intensified residential pattern could be accomplished given existing zonings and market realities. To achieve unanimity around a final strategy, significant compromises were made, in a manner which the UDS described as "a mix of options A and B",[1]

Figure 5.2 Maps of expected growth for each option presented in 2005.[7]

Business-as-usual



Option A

Option B

Option C

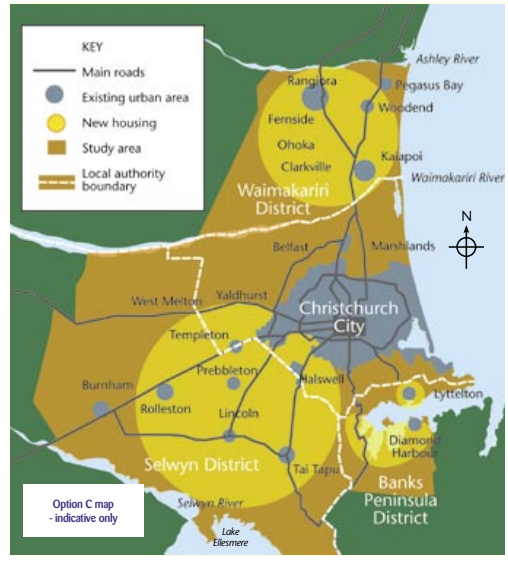


Table 5.1 Comparison of projected land use and housing outcomes under the UDS options, 2005.[7]

Land Use and Housing	Business as Usual Option (see pages 8-9)	Option A (see pages 10-11)	Option B (see pages 12-13)	Option C (see pages 14-15)
Locations for new housing	**79% new subdivisions** (Spread across districts in towns and rural subdivisions) **21% urban renewal** (Christchurch inner suburbs)	**40% new subdivisions** (Around edge of towns and Christchurch) **60% urban renewal** (Christchurch Central City and inner suburbs; Rangiora, Kaiapoi and Rolleston)	**62% new subdivisions** (Southwest of Christchurch to Selwyn, in Waimakariri around existing towns) **38% urban renewal** (Urban centres in Christchurch and towns)	**90% new subdivisions** (Southwest from Halswell to Rolleston, North of Waimakariri River and Lyttelton harbour) **10% urban renewal** (Christchurch City)
New housing • *Type* • *Choice*	• **Mixture of housing types:** 49,000 houses on medium to large sections 13,000 townhouses and apartments • Some choices in most locations	• **Mostly housing without gardens:** 37,000 townhouses and apartments in urban renewal 25,000 houses on small to medium sections • Good choices in inner suburbs	• **Townhouses and apartments at urban centres with houses in new subdivisions:** 38,000 houses on medium sized sections 24,000 townhouses and apartments • Good choices in most locations	• **Mostly houses, few townhouses and apartments:** 56,000 houses on medium to large sections 6,000 townhouses and apartments • Good choices in new subdivisions
Land to house 120,000 more people	**4,920 hectares** - equivalent land area to 26 Hagley Parks	**2,110 hectares** - equivalent land area to 11 Hagley Parks (uses **43% less** land than Business as Usual)	**3,900 hectares** - equivalent land area to 21 Hagley Parks (uses **20% less** land than Business as Usual)	**6,850 hectares** - equivalent land area to 36 Hagley Parks (uses **40% more** land than Business as Usual)
Public infrastructure cost for new housing	$560 Million	$430 Million (**$130 million less** than Business as Usual)	$480 Million (**$80 million less** than Business as Usual)	$580 Million (**$20 million more** than Business as Usual)

but which essentially involved a gradual phasing-in of the target of having new development split between 60% intensification, 40% new developments. According to the UDS, the reasons for this related to the momentum of existing path dependence:

- 60% intensification is a significant shift from the current development split (of 23%, 2002–6) and the market cannot be changed within such a short timeframe.
- There is zoned land available for development now — it would be very difficult to zone these back to rural, and
- Communities outside Christchurch City will continue to grow and provision must be made for this to occur.[1]

This outcome was one which disappointed many of the most fervent supporters of the UDS process, who later saw the genesis of the doughnut city in the compromises that were made when the UDS was finalised. One interview participant said:

> *The UDS compromised a lot. It was light on intensification being quality … You could say its biggest success was getting the government to fund a motorway project. It's hard to see other results.*

Table 5.2 Comparison of projected transport outcomes under the UDS options, 2005.[7]

Transport	Business as Usual Option (see pages 8-9)	Option A (see pages 10-11)	Option B (see pages 12-13)	Option C (see pages 14-15)
Congestion • *Increase* • *Cost to avoid increase* • *Impact on travelling times*	• Congestion increases **320%** • $2 billion to avoid increase • Commute takes **55% longer** – 30-minute trip takes 47 minutes	• Congestion increases **190%** • $1.9 billion to avoid increase (**$100 million less** than Business as Usual) • Commute takes **45% longer** – 30-minute trip takes 44 minutes	• Congestion increases **290%** • $2 billion to avoid increase (same as Business as Usual) • Commute takes **50% longer** – 30-minute trip takes 45 minutes	• Congestion increases **630%** • $2.1 billion to avoid increase (**$100 million more** than Business as Usual) • Commute takes **65% longer** – 30-minute trip takes 50 minutes
Transport consequences • *Vehicle emissions* • *Energy use* • *Motoring costs (fuel and crashes)*	• Vehicle emissions increase **64%** • 1.53 million litres per day (**58% increase** from 2001) • Motoring costs $3.9 billion per year (**150% increase** from 2001)	• Vehicle emissions increase **49%** • 1.39 million litres per day (**45% increase** from 2001) • Motoring costs $3.5 billion per year (**135% increase** from 2001)	• Vehicle emissions increase **64%** • 1.51 million litres per day (**57% increase** from 2001) • Motoring costs $3.9 billion per year (**150% increase** from 2001)	• Vehicle emissions increase **103%** • 1.87 million litres per day (**95% increase** from 2001) • Motoring costs $4.9 billion per day (**188% increase** from 2001)
Transport choices	Good in some built up areas for public transport, walking and cycling – poor for subdivisions in districts	Very good in city and inner suburbs for walking, cycling and public transport Limited elsewhere	Very good at urban centres for walking, cycling and public transport Public transport to new developments	Poor for people in new developments – limited public transport – walking and cycling not practical

A fourth factor affecting implementation outcomes of the UDS was its dependence on the alacrity of the constituent councils in giving the UDS regulatory effect under the RMA. Like the Auckland Plan, the UDS is promulgated under the Local Government Act and does not itself have an effect on the pattern of development. Unlike Auckland, where a unitary council exists and could promulgate a unitary plan covering all RMA regulatory functions over the whole region, the UDS depends on each constituent council to implement changes to its RMA plans. The peri-urban district councils moved faster than the city council to have their greenfield sites ready, with appropriate infrastructure and plan provisions for subdivision. Meanwhile, the city council also advanced its greenfield sites more rapidly than its intensification sites. District Plan provisions for intensification in the city's suburbs were wrung from a reluctant city council only by repeated pressure from central government and were limited in extent and largely confined to lower-income suburbs.

> *The District Plans for Waimak[ariri] and Selwyn, they reviewed them post the earthquakes, within a year or 18 months, while the Christchurch City didn't, and so their planning framework is still based on when they set it up … so it's old, it's outdated.*

A fifth factor affecting UDS implementation was the ebb and flow of public engagement. At the time the UDS was formulated, there was a high level of public engagement with the issues and a strong and vocal public constituency

for the vision of a quality, compact city. This vision was inspired in part by the experience which many leading local politicians, community leaders and others had of European cities. However, after the earthquakes, personal difficulties experienced by many took the energy out of community groups, and with the establishment of CERA the views of the mayor and councillors were progressively marginalised. An effort was made to rekindle public engagement in planning the future of the central city through the well-attended Share an Idea process (see the case study on the next page), which again articulated a vision of a quality, European-style city. This culminated in the city council's draft plan for the central city, but when this was discarded by the Minister, and planning for the central city was taken over by the CCDU, a sense of disempowerment and apathy became more prevalent, according to some interview participants.

> *The start of the UDS was a huge public engagement. It's now down to a handful of people making decisions with no public involvement … Bob [Parker] used the UDS as a way to get elected. It was popular and there were leaflets going out with his name on it just before the [mayoral] election. After the second quake, he — and the whole elected council — were suddenly pushed aside. So now, it's hard for people to see what we can do. We are a city no longer in control of our own destiny.*

Post-earthquake settlement and transport changes

Christchurch was struck by two major earthquakes, on 4 September 2010 and 22 February 2011. Changes in urban land use and transport patterns which followed were partly due to post-earthquake policy and decision-making, and partly directly attributable to the earthquakes.

There was massive damage to infrastructure. While electricity supply infrastructure was relatively resilient and was quite rapidly restored, the damage to underground water supply, sewage and stormwater infrastructure, and to roads, was much more serious and has been long-lasting in its effects. The impact was compounded by insurance-related factors, notably: under-insurance of the city council's infrastructure; longstanding under-provision for depreciation; and the basis for insurance being simple replacement of existing infrastructure. The combined effect of these factors has not allowed for needed upgrading to enable denser settlement or to meet contemporary environmental standards, and has meant the community assumed a significant debt burden.

Despite a cost-sharing agreement, under which the total foreseen quantum of the earthquake's community-related costs was to be shared between central and local government, the costs of infrastructure repair will be a major burden on the Christchurch City Council's finances and those of its residents and ratepayers for a long time to come. This affects the community's ability to finance other needs and may undermine its resilience to future events and trends.

CASE STUDY 12

Share an Idea: Collaborative community engagement in Christchurch

In 2011 Christchurch City Council introduced Share an Idea, a community engagement programme utilising online tools developed by New Zealand company, NV Interactive. Share an Idea won several international awards for innovation in online community engagement. Around 21% of Christchurch residents participated, and some 106,000 community-driven ideas were proposed. The ideas were compiled by Christchurch City Council, and formed the basis for the initial draft Central City Plan to rebuild the central city after the earthquakes of 2010 and 2011.[8,9]

At times up to 1000 ideas per day were submitted, on a wide range of issues, such as lighting, public transport, gardens, and parks. A Central City Plan, based on Share an Idea, was given to the Christchurch Earthquake Recovery Authority (CERA) for revision and implementation by CERA's Christchurch Central Development Unit. Both Share an Idea and the initial plan were well-received by the Christchurch community, and demonstrated innovative ways of engaging with the public on complex urban issues. A similar approach was later employed by CERA, with their CANVAS programme on what to do with red-zoned land in Waimakariri.[10]

Despite its promise, there was discontent about the extent to which community ideas were translated into decision-making.[11] For some citizens who engaged with Share an Idea, it was difficult to see how their ideas fed into the final plan, leading to a feeling that their time and effort was wasted, and that central government powers did not engage as expected.[12] Though it would be impossible to please all who shared their ideas, the experience indicated that more could be done to assure the community of the integrity of the process. Overseas examples show that decision-makers who traditionally operate a top-down approach will need to adapt to work with these novel public engagement tools and to meet public expectations around transparency and collaboration.[13] Online tools may be part of facilitating meaningful and collaborative relationships between governance bodies and urban communities.

By Jenny Ombler, University of Otago Wellington, working as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

An estimated 100,000 homes were severely damaged in the earthquakes, leading to both considerable housing deprivation (see Case Study 14, page 162), and to changes in where and how people lived. Many business premises were also damaged or destroyed, and the CBD was initially off limits, leading to business relocations to suburban areas. Another outcome directly related to the earthquakes was the effective abandonment of human settlement across a large area of low-lying land in the eastern suburbs, because of the high costs of securing foundations for buildings. While future options for the use of this land formally remain open, most of it is expected to be included in parkland centred on the Avon River. Additionally, over a wider area the earthquakes lowered the land surface relative to mean high water sea-level, and thereby increased flood risks, both in frequency and severity. The resilience of the city was reduced.

Transportation trends also changed. Compared to 2006, bus usage for commuting decreased by 29%, with 2000 fewer people commuting by bus in Christchurch City in 2013. In contrast, use of motorcycles and power cycles increased amongst commuters in Selwyn, Waimakariri and Christchurch, alongside bicycle use, with an extra 8% or 700 commuters cycling to work in Christchurch City. Company car usage also increased, rising by 15% in Christchurch City, 40.2% in Waimakariri and 63% in Selwyn.[14,15] This may have been due to businesses providing employees with cars to encourage them to stay in the region, or to compensate them for travel to work locations outside the CBD, or due to an increase in work in professions such as builders, plumbers and electricians. Motor vehicles remained the dominant mode of transport in Christchurch.[16] Changing settlement and associated transport patterns had effects on the city environment, as shown in the TOTUS case study (page 143).

Between 2001 and 2013 population growth in Christchurch was modest. There was a 7.5% increase in population from 2001 to 2006, and a 2% decrease between 2006 and 2013, so overall a 5.4% increase from 2001 to 2013.[14,15,17] Christchurch is projected to have positive population growth from 2013 onwards, at a similar rate to Wellington but slower than Auckland.[18] Trends in population distribution can be seen in Table 5.3; percentages show the proportion of growth to occur in each area (not the percentage increase in population). The census data was from March 2013, when only a modest proportion of the residential rebuild was completed.[19] The distribution of population growth that occurred from 2001 to 2013 most reflected the distribution anticipated in 2005 under the sprawling Option C (and not the preferred compact development of Option A).

These patterns of redistribution of people and activities were influenced by governance decisions.

Table 5.3 Comparison of projected proportions of population growth under the UDS options (2001–41)[7] with actual growth (2001–13).[14]

Area*	Population 2001	Population 2013	Proportion of growth in each area 2001–13	Projected growth 2001–41, Business as usual	Projected growth 2001–41, Option A	Projected growth 2001–41, Option B	Projected growth 2001–41, Option C
Christchurch City	324,078	341,469	36%	59%	85%	70%	40%
Banks Peninsula	–	–	–	1%	1%	1%	6%
Selwyn District	27,291	44,595	36%	18%	6%	12%	28%
Waimakariri District	36,903	49,989	27%	22%	8%	16%	26%

* Territorial Authority boundaries were used for actual population growth 2001–13, with Banks Peninsula included as part of Christchurch City. Projected population growth boundaries were those used in comparing UDS options within the Greater Christchurch urban area. The two datasets are comparable as the vast majority of actual population growth was within the UDS geographical area.

Post-earthquake governance

Following the second major earthquake it became apparent that a major resettlement programme would be required, with much more government financial assistance and a perceived corresponding need to maintain direct financial control of this expenditure. On 29 March 2011 it was announced that a new central government agency, the Canterbury Earthquake Recovery Authority (CERA) would be created to lead the recovery process. This was welcomed by Christchurch mayor Bob Parker, who said it would allow for the right mix of government, council and resident involvement.[20] CERA established a Community Forum, an Iwi Māori Recovery Programme (to address cultural and environmental issues and services, as well as housing and redevelopment on Māori land and reserves), and endeavoured to work with the city council and other local authorities. In respect of urban planning, the impact of the centralisation of government authority over Christchurch was mediated by the consensus-seeking structure of the UDS Implementation Committee. However, interview participants spoke of tensions between CERA and Christchurch City Council.

CERA was strongly steered throughout by its Minister, Gerry Brownlee, who was not available for interview for this report. Participants who worked with him, or were present at meetings with him, described aspects of his leadership of the recovery effort:

> *You've got a Minister who is very clear and very hands-on. A lot of power is vested there. But the discussions have always been about what's best for Christchurch.*

> *We had a big boardroom table, and I remember Brownlee kind of saying "Go and get me a big map, get some cardboard and some scissors and let's just cut*

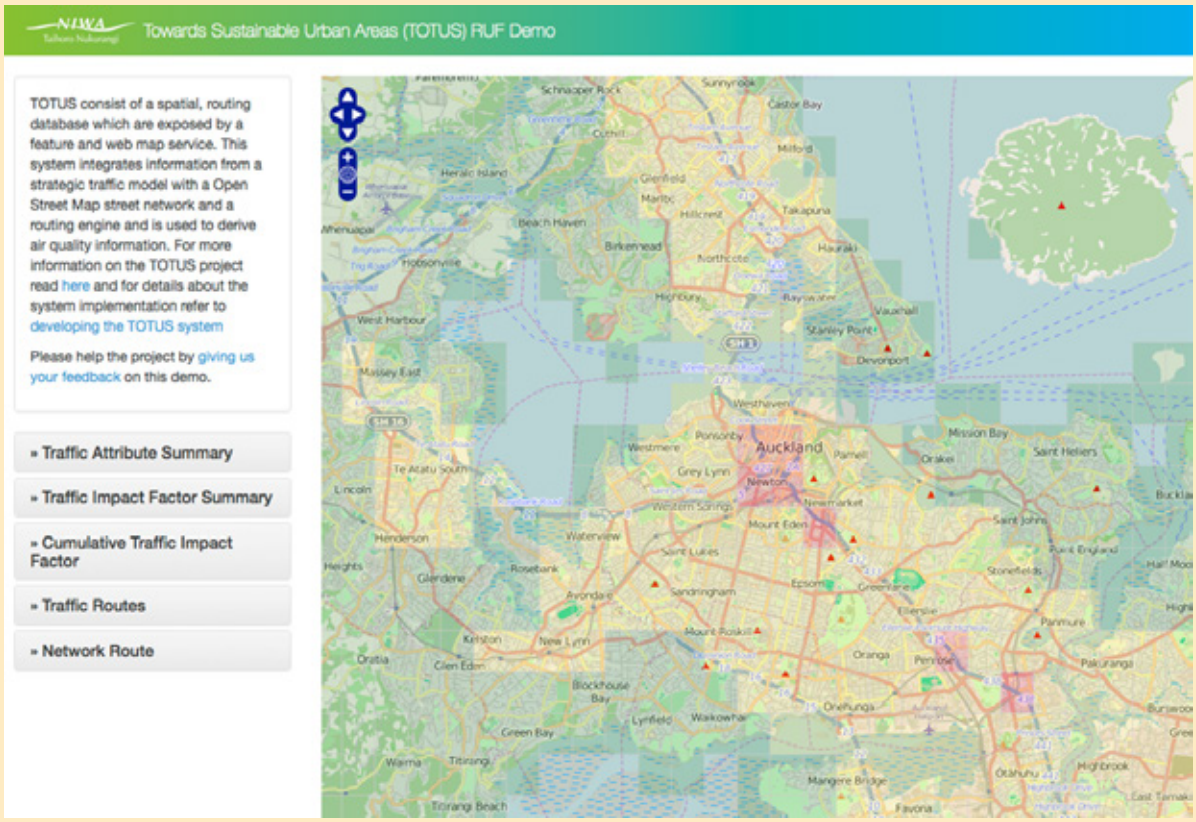
CASE STUDY 13

TOTUS: Towards sustainable urban forms

Sustainability and resilience are important concepts, especially when it comes to planning our cities. There is a strong need to take a multi-disciplinary approach when testing city preparedness for change, both sudden (catastrophic) and gradual. However, few systems allow us to explicitly address the trade-offs that decision-makers must make when they invest in one type of urban planning decision over another.

TOTUS (Latin for *all encompassing*) is a data and modelling system intended to bridge this gap, supporting scenario development and evaluation through homogenising multiple information layers in urban environments, allowing for cross-reference. Depending on the data inputs and models implemented, TOTUS can estimate a range of impacts from environmental to economic. Using Open Street Map data, TOTUS can enable standard-compliant scenario creation that can then be used to evaluate their outcomes, such as air quality and health. A key feature of TOTUS is its flexibility — it has been designed to handle a wide range of datasets, such as New Zealand Census, strategic transport model output, and energy consumption, and can be adapted for various calculations using data from all the available layers.

Figure 5.3 Auckland, TOTUS screenshot, from totus-niwa.dyndns.org

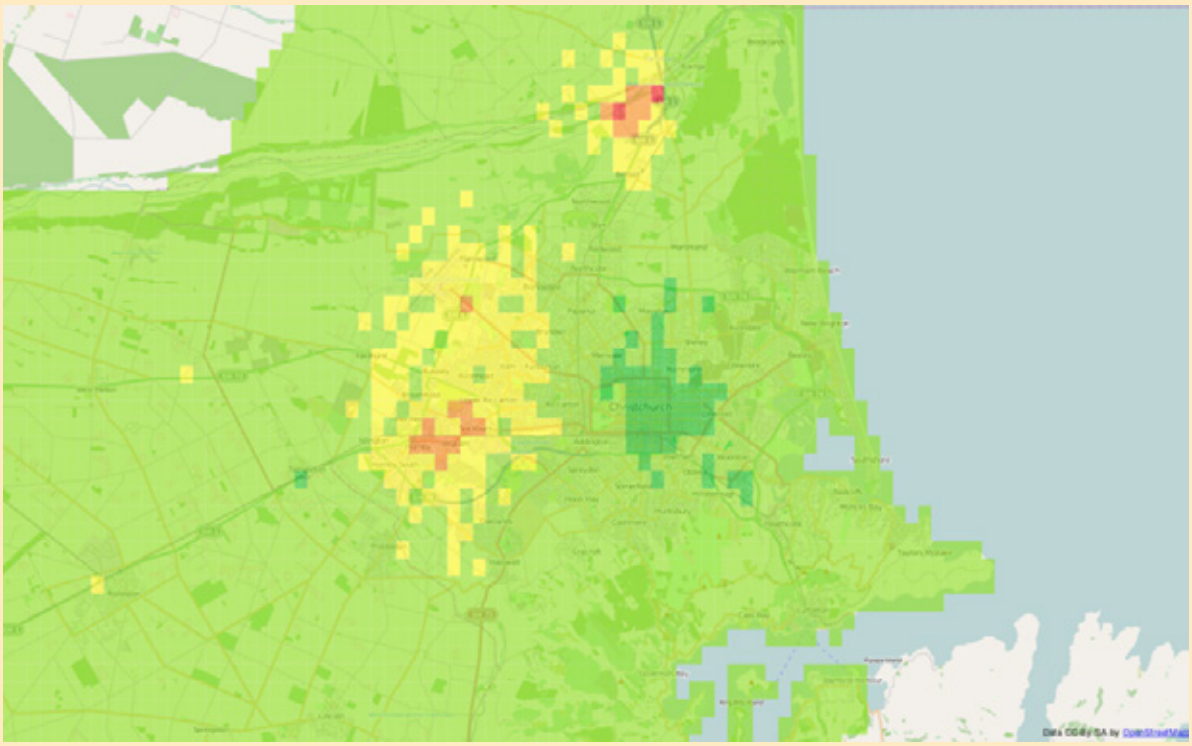


One example of the potential use of TOTUS was to explore the impact of the Christchurch earthquakes on energy use and air quality. Using the output from Christchurch's strategic transport model, TOTUS was used to estimate the long-term change in traffic impact from before and after the earthquakes. The following TOTUS-generated image displays the air quality of different areas within Christchurch, with darker green displaying where air quality has improved post-earthquakes, and the yellow and red areas showing the degree to which air quality has deteriorated. Noticeably, this image shows estimates that individuals and traffic have moved away from the main CBD to two new centres, and that this shift has had a demonstrable impact on the natural environment.

With the right data layers, TOTUS is able to quantify the complex interactions between the urban form and the environment. The above example shows just one facet of these interactions; the impacts of more deliberate changes to urban form such as policy choices may also be modelled. As the resilience and sustainability of our urban centres will become increasingly important, TOTUS will be an important addition to the policy-maker's toolkit.

This work has been prepared as part of the Resilient Urban Futures research programme, funded by the Ministry of Business, Innovation and Employment. For more information, contact the TOTUS team at the National Institute of Water and Atmospheric Research (NIWA).

Figure 5.4 Christchurch, TOTUS-generated image illustrating changes in air quality.



> *out some models and convention centres and let's just work out where they're going to go". We were like "What the hell? It's true, it's actually going to happen, we're going to have this Minister working out what the central city looks like, and we're going to do it in the space of 45 minutes on the basis of what just feels right to us!" And we did do that for about an hour, and then he goes, "Ah well, you guys know more about this than me" and he did actually pull back.*
>
> *The Minister had developers coming and saying "Look, this area which is currently residential, we really want to put these shops and these office spaces in and it's going to work really well", and the Minister nearly always resisted that. He said "Well, I've got the power to do that. I'm actually deciding that I think I'm really overstepping the mark, and if I do do that, then everybody'll just come to me, no one'll try to work through the city". So he's got those boundaries, absolutely to his credit.*

While it was widely agreed that the Minister was not acting on the basis of special interests, there was an ideological strand to the decisions taken. Participants considered this reflected not so much Mr Brownlee's views but those of the government overall.

> *Ministers have generally wanted just more laissez-faire. In general. Fewer restrictions. Although to be fair to them, in the central city they did actually agree, it did need to be planned, and they did want height restrictions, they didn't want everything to be … leaving it all a big bloody mess. But in general the government did want more laissez-faire … fewer restrictions.*

The Minister's personal relationships were inevitably important in such a centralised and hands-on governance environment. Participants spoke of the Minister's poor relationship with Bob Parker, the mayor of Christchurch up to October 2013, even though both men were from the same side of politics. Certainly a lot of tension was evident between central government and the city council during this period, although another participant downplayed the personal relationship factor and attributed the situation to Parker's relative lack of experience in knowing how to get things done in Wellington, particularly when compared with his successor, Lianne Dalziel, a former Labour minister.

CERA elicited divided views from participants. Some credit was given for its willingness to meet with community groups and its work with the Community Forum. The business community found protracted delays and lack of certainty problematic. CERA's relationships with the city council were widely regarded as difficult, although some of the responsibility for that was apportioned to the council. Affecting all CERA's relationships was a perceived lack of transparency. There were indications that the Minister's attitude on these matters was a constraint.

> *People with commercial interests want just the best guess at the moment so they can work out what they're going to do. So I think that drives you to try and de-politicise information as much as possible … Ministers always want to filter the information and say "look, people will pull this bad statistic out" or whatever.*

There were varied views on whether the CERA structure has been a success, especially in light of its difficult relationship with the mayor and city councillors.

> *This whole thing about two organisations fighting over stuff has been really difficult. Especially in this environment, you need gutsy decisions made. And I think elected people in this environment are just not usually good at making gutsy decisions, especially when they've got so much else going on … I would have replaced the Christchurch city councillors with commissioners. And I would've given them a mandate, pretty much to do everything CERA does. Just have one super-Christchurch City Council, with a bunch of commissioners, and there's no reason why then they couldn't have advisory groups working for them, of local people, debating issues about where red zones were going to go, what the blueprint was going to look like. There's no reason why they couldn't have done that. You wouldn't have Brownlee coming up with ideas, and the council coming up with ideas, and trying to make them work together, which by definition is hard.*

Deciding on peri-urban development

The first major policy document produced by CERA to steer the recovery was the *Recovery Strategy for Greater Christchurch,* published in May 2012 after a period of public consultation. An associated question-and-answer document issued by CERA stated:

> *The emphasis of earthquake recovery has shifted from the immediate disaster response phase … It's time to look at the future and form a recovery vision for Greater Christchurch and a road map to get there.*

The Recovery Strategy document did not address the UDS. This was not helpful for UDS implementation, since the Recovery Strategy is a statutory document governing all recovery plans, programmes and activities, and where inconsistencies arise, the Strategy prevails. The nearest thing to a commitment to following the UDS is in the Strategy's Principle 5.5: "Zoning sufficient land for recovery needs within settlement patterns consistent with an urban form which provides for the future development of Greater Christchurch." According to an interview participant: "No, it didn't talk about the UDS, but it was decided that it wasn't a necessary component of the Recovery Strategy."

In fact, major changes to the UDS had in effect already been decided, determining the future pattern of Christchurch's development. A public discussion document, the Draft Recovery Strategy for Greater Christchurch, was published in September 2011 without outlining what was planned. Then, on 17 October 2011, Minister Brownlee exercised statutory powers under the Canterbury Earthquake Recovery Act to insert a special Chapter 12a into the Canterbury Regional Policy Statement, with immediate effect. In order to do this, the powers of the Environment Court, which had just commenced a

hearing into an earlier version of a Regional Policy Statement change to give effect to the UDS, were suspended.

The context for this decision was as follows. CERA had identified that thousands of households in red zones would have to be resettled if they were to stay in the Christchurch area:

> Red zones cover over 7,400 properties. In these zones there is area-wide land damage and an engineering solution to remediate the land damage would be uncertain; disruptive, and not timely and cost effective; and the health and wellbeing of residents is at risk.[21]

There was also strong public pressure for early decisions on affordable sites where people could resettle with suitable infrastructure, especially a sewerage connection.[22] The Minister took advantage of this urgent requirement to resettle around 7,400 households, but widened the scope of the decision: he decided on zoning for a total of 80,715 household units, citing population projections out to 2041. Thinking seems to have been influenced in part by a belief that ample land supply, and a multiplicity of landowners with developable land, would drive section prices down. The new Chapter 12a of the Regional Policy Statement introduced provision for 24,930 greenfield sections around the periphery of Christchurch and a further 22,295 greenfield sections around small towns in the Selwyn and Waimakariri Districts. The density of the latter was to be low — 10 lots or household units per hectare, with a density of 15 lots or household units per hectare in greenfield developments around the fringes of Christchurch. In addition, in a nod to the original compact city vision, provision was allowed for some intensification: 13,990 lots or household units in the central city and 19,500 in existing Christchurch suburbs. The density of these was to be 50 lots or household units per hectare in the central city and 30 in the other intensification areas.

The pace at which these zones were actually developed would be up to the various city and district councils, but there was no constraint on their competing with each other to obtain a larger share of the incoming and relocated population. Market acceptance and capacity to build denser settlement typologies had not been tested since the UDS was adopted, and planning provision for residential intensification in the central city and surrounding suburbs became delayed. At the time of writing, intensification was still not happening at any scale. Thus, during the main resettlement period, peripheral and ex-urban locations accounted for the lion's share of sites available for development, and market choices were shaped accordingly. Hope of achieving a more intensified pattern of settlement would now depend mainly on infill and new, denser development of the city over future years.

The areas which were selected for greenfield development in the Ministerial amendment to the Canterbury Regional Policy Statement were a mix of:

- Areas which the UDS had planned for development of urban settlement in the future, mostly decades into the future; and
- Areas which had been excluded from future settlement under the UDS, in one case an area (Prestons Road) whose development through a private plan change was being opposed by the UDS partners in Environment Court proceedings at the time.

While the new greenfield areas were formally agreed by the UDS partners, interview participants made clear that the desire to expand the city outward was very much driven by the city's new controllers in central government.

> *The first reaction was that the earthquake, terrible as it was, gave the opportunity to advance and accelerate achievement of the urban development strategy … I think what we had initially — and it came in two bites — was a political overlay, particularly at a national level, and from the Minister, that was very focused on saying we must be doing more to release land.*

> *[There was] public pressure, Ministerial pressure, practical pressure to say, "Actually here is 6,000 households being destroyed overnight in the North East, gosh isn't Prestons the obvious answer to provide a solution for that". So Prestons became in some respects a symbolic response to the loss of these suburbs. I mean, you would have to go and do some analysis on how many people from the likes of Dallington and Bexley could actually afford to go in and invest in Prestons, that would be an interesting exercise in itself, but there was this symbolic trading of the East.*

Some participants considered that a more persuasive rationale for opening up large new greenfield areas was to enable more developers to enter the market for supply of sections, thus obtaining a more affordable supply of sections for building.

> *A lot of the blocks that were identified, particularly around Christchurch, were controlled by one or two players, and the theory was that [while] from an efficiency point of view opening too many fronts wasn't a great idea, it did actually provide an opportunity for other players to enter the market.*

Participants were uncertain about whether the strategy of bringing in lots of land and getting more competitors in the market had really driven down the price of land and allowed more affordable homes.

> *I am not an expert in land prices in that sense, but I don't know if it has. It probably has encouraged some developers to think about entering the market earlier, but equally I think some of the developers are not necessarily using the circumstances to drive prices up, but they are certainly not flooding the market to destroy their own price points.*

> *A lot of the communities that were dislocated found price points that were more suitable for them in places like Kaiapoi, Rangiora and Rolleston, because essentially land was cheaper, development contributions were cheaper. I've also*

> *taken the view, which is not always shared by everybody, that while it would be ideal to provide opportunity inside the Christchurch city boundary, thinking about it in a greater Christchurch context, actually having the market in a position to absorb some of that in some of those peripheral communities hasn't hurt, has actually been a positive.*

In the urgency of the post-quake period, there was little time for the UDS partners to engage effectively with central government ministers over the nature of the strategy and the reasons for it. The government was sufficiently aware of the importance of the UDS that it obtained UDS Implementation Committee backing for some key decisions to change the intended UDS outcomes. The UDS partners agreed to the proposed greenfield areas before they were announced by central government, not only bringing forward greenfield areas intended to be used in the more distant future, but even reversing their previous opposition to the Prestons Road subdivision (and two other areas).

The UDS was an attempt not just to ensure that new greenfield subdivisions were properly planned, but was also an attempt to create a compact city, through increasing the residential density of the existing urban area over time. Thanks to the work of the UDS committee members and officers, there was an ample supply of properly planned greenfield sites ready for early residential settlement in Christchurch's hour of need. In some of the interviews, however, there was also a sense of goal displacement in the committee's work — that it was not so much urban compactness and increased residential density that was their goal as the availability of properly planned sites ready for residential settlement. While much was said about the value of the latter, it was the former that comprised the original, distinctive strategic purpose of the UDS. In summary, decisions taken at central government level paved the way for considerable spread into greenfield areas at the outskirts of the city, a spread which may have occurred more slowly, or not at all, without a central government orientation to greenfield development.

Deciding on development of the central city

After completion of the Recovery Strategy, further planning for the city's rebuild was not addressed in an integrated way, but was divided into two separate plan processes. The central city was to be the subject of a special plan which the government had agreed could be developed by the Christchurch City Council, while the rest of Greater Christchurch was to be covered by the Land Use Recovery Plan, discussed below.

The central city plan was seen by the city council as the key to attracting large numbers of inner city residents and creating a liveable, vibrant city. This was backed by central government to the extent that 13,990 central city household units were allowed for in the government-mandated Chapter 12a of the Regional Policy Statement. The Council's planning team moved extremely rapidly to

engage the public, draft the plan, publish it for comment, run a hearings process, and achieve a document which had the unanimous support of the mayor and councillors. The initial public engagement phase, dubbed Share an Idea, was extraordinarily successful (see Case Study 12, page 140). The underlying vision, widely supported, was informed by Copenhagen architect Jan Gehl's thinking about how to create a liveable city. It included proposals to create a smaller, more compact CBD.

However, the plan for the central city brought to a head the underlying fundamental philosophical difference between the council and central government over planning. The council's belief in the role of detailed planning to create an attractive, liveable city was not a party political matter, but broadly and deeply rooted in the city's civic culture. Interviews revealed that councillors were quite unified in their passion for European-style urbanist lifestyles and for the creation of a vibrant inner city environment through people-oriented planning endeavours. The government's view, in contrast, appeared to be that the reconstruction of Christchurch provided an important opportunity, if not a necessity, to throw off prescriptive planning frameworks in favour of enabling market outcomes. This stance was reinforced by a vocal business lobby, the Canterbury Business Leaders Group, led by Don Elder, then chief executive of Christchurch-based Solid Energy. Accordingly, the Government eventually decided not to accept the proposed plan developed by the city council, and announced it would take over the planning and development of the central city itself, through the CCDU.

Besides the perception that it was over-prescriptive, for example its height limits and set-back requirements on new buildings, two aspects of the city council's draft plan proved controversial, and were unacceptable to central government. One was the proposal for a light rail system, initially linking the city to the University of Canterbury, which had long been championed by Mayor Parker, but which was criticised as unrealistic or difficult to justify given the capital demands of reconstruction in the city. The other was the attempt to use the central city plan provisions to restrict the ability of businesses to move out of the central city to suburban business parks.

The Blueprint eventually produced by the CCDU on 30 July 2012 borrowed much from the city council's proposed plan, but stripped out the detailed planning rules. The concept and broader features of a strong city core were retained and reinforced, including by the creation of a "framed" and more compact CBD through a land acquisition programme backed by compulsory acquisition powers. There was to be government funding of some major central city anchor projects, including a convention centre. Certain liveability assets, including a riverside park along the Avon River, were retained. Politically, a sense of unity and momentum behind the Blueprint was created, but its implementation quickly ran into difficulties, many of them caused by the long gestation of a plan for the central city.

Issues with implementation of central city redevelopment

The delay involved in developing a central city plan, awaiting a government decision on it, and then awaiting the development of a new plan, was considered by most interview participants to have been fatal to prospects for early redevelopment of the central city, including the proposed residential developments. One participant said:

> *The Minister's often just been really slow. Ministers are almost inherently slow compared to boards … Officials start working it up, and realise the Minister's going to take a period of time, and then he's away for a bloody month or six weeks.*

By the time the central city was ready for investment, businesses had taken out long-term leases located in places like Addington, Riccarton or near the airport. Households had made long-term commitments to new sites in the suburbs and surrounding rural towns.

The CCDU's land acquisition programme to deliver the government's Blueprint for the central city was widely considered to have added a further complication, driving up land values, driving out some small businesses and reportedly discouraging the entry of others. Costly anchor projects such as the convention centre suffered delays and added to the uncertainty about the viability of doing business in the central area. Outside the core area controlled by CERA, there was some rapid development by the private sector in the western corridor of Victoria and Durham Streets, which as well as suggesting the CBD might move to the west of its original location, also accentuated the contrast between areas under government and private sector control.

There were also views that reconstruction delays were not unusual, and perhaps inevitable, in cities which experienced disasters.

> *If we get it up and running the way it was, better than pre- the earthquake, in fifteen years, everyone in New Zealand should be clapping their hands and doing happy dances … Because when it has happened internationally, most cities who have had this type of event have gone through double or triple kind of economic dips. It's not just the central city, it's the region around it. So you look at New Orleans, they are five years ahead of us. They have gone through two double dips economically, both in the central city and outwards. We are trying to manage that on a much more medium- to long-term basis, rather than kind of looking at the short-term. So when we take a Greater Christchurch perspective, the likes of the Addingtons, they are always going to develop as little satellite suburb areas. They have just developed a bit earlier and, yes, we would have loved the Duncan Cotterills [large law firm offices] to be in the central city, but where they want to be is not going to be built for another 5–10 years, so actually them taking the decision to go into Victoria Street is still good … Actually we would have loved them to be in the core, but you know, getting them into the four avenues was a great move.*

From a UDS perspective, a key question is why early action was not taken to secure residential development within the central city. While the planning delay was a major factor, other issues emerged in interviews.

In the immediate post-earthquake environment there was a degree of uncertainty, and especially a perception of uncertainty by would-be purchasers, about the safety of building in the central city. The quake had exposed a lack of information, or at least a lack of recognition in the city's plans, about the security of the ground foundation for building on some sites, which took time to resolve. As a participant pointed out:

> *There are new building code regulations in place now. There is a significant amount of land remediation work that has to be done because of the earthquakes.*

While there was strong public enthusiasm for denser forms of urban residential development during the public engagement on the UDS, this did not translate into local market experience or developer confidence about investing in this type of residential development. There was wide agreement among interview participants that the lack of market experience in townhouses and apartments in Christchurch gave rise to higher commercial risks. Then, after the earthquakes, there were further uncertainties about the value proposition for investing in the CBD.

> *At Prestons the guy knows he can sell the section for $160,000, he'll know what it's going to cost to develop the section, away he goes. Or does he come into the CBD? And there's just uncertainties for him. It was just an unknown quantity. They could see what they could do for Prestons, they know they could sell the land. That brownfields stuff was just much less certain whether people were going to buy it.*

Some developers considered that the pre-existing rules were too prescriptive and added too much cost to make developments viable. One participant commented on the urban design requirements:

> *The key thing here is that the residential rules for building in the central city were only just changed in the last month. Prior to that the residential rules in place were set out in the District Plan and again it's that general thing where they were very prescriptive. I used to live in an apartment and got hoha because the District Plan told me where I could put my rubbish bin on my property (and I was like: "Really, I'm an adult, I own this property") and how big your garage could be … It's been a bit of a controversy when it really shouldn't be, but the urban design requirements are [now] much more enabling and are written on one page rather than the original seventy pages that they fitted on.*

While the city council wanted to get residential development going in the central city, the government had different priorities, considering it was more important to stimulate development across the region as a whole.

> *Basically they were going: "Everything has to be built here in the central city", and we were going: "You are not taking into account the recovery of Greater Christchurch". The central city is a core component of it, but it's not the be-all and end-all of Greater Christchurch even though it is the catalyst for investment in other places. So we had to make sure the [wider] region is actually being catalysed.*

There were strong differences between those who wanted low land values, affordable houses and a diversity of small businesses in the central city, and the CERA approach which required good returns on the funds invested in land acquisition and was therefore looking for higher-value land uses.

> *We have bought land at market value … over 80% have been voluntary acquisitions … There is an expectation that the Crown might have acquired that land, go and remediate it, and then we will give it back to the previous owner for the price that we originally bought it for. I don't think so.*

> *The Crown is trying to add value to the central city … in 2012 and 2011 we had a number of investors, both local and international, going: "The area is valueless — why even build the central city within those four avenues. It should be out at the airport." So yes, prices are increasing. The Crown acquisition programme could be a factor, but is that a bad thing if we are adding value back into the economy?*

Could central government have shouldered some of the risks, to encourage residential intensification within the four avenues (the area within the four avenues — Bealey, Fitzgerald, Moorhouse and Deans — is considered to be Christchurch's centre), especially at a time when the displacement of people created a higher than usual demand for housing? Participants were clear that the government was not disposed to do so. One considered ways that central and local government might encourage brownfield development, such as writing off development contributions on such projects, but "courage to do any of those sort of things, I never saw that sort of courage". Another noted that "what we need though is alternative kind of suggestions around affordable housing".

In summary, the city council's plan for the central city, informed by public engagement and a vision of a liveable, compact city, was replaced by a central government plan stripped of its detailed planning rules while adding anchor projects and a major land acquisition programme. The disagreement between the government and the council over the type of plan that should be put in place, and the delay that resulted, caused a window of opportunity for early development to be lost, especially for residential development, with an impact that may last for many years. However, other issues also contributed to this outcome, including: the perceived safety of building in the central area; lack of local market experience in residential apartments; the impact of the land acquisition programme on land values and hence business viability; ongoing delays in the anchor projects; the government's emphasis on regional recovery and disinclination to incentivise central city investment; and perhaps inevitable delays in a city that had experienced disaster. Overall, the feeling among interview participants was that residential development in the central city would be a long-term process:

> *Significant residential rebuild, you know, getting another 20,000 people in there, is not something that is going to happen overnight. Again it is a 15 to 20 year game plan that you need to have.*

Deciding on intensification in the suburbs

A Land Use Recovery Plan (LURP) was prepared to flesh out the Recovery Strategy by providing direction for residential and business land use development and rebuilding, including transport infrastructure, across Greater Christchurch for a 10–15 year period. Key aims included to enable people to make informed decisions about where to move from their red zone properties, and to help businesses decide where to rebuild or relocate.[23]

The spreading of Greater Christchurch through greenfield developments was decided on by the government before the LURP was drafted, and the central city was side-lined into a separate, slow-moving planning and development process. Therefore, the major practical significance of the LURP in relation to the UDS lay in its determination of the extent of residential intensification allowed in the suburbs of Christchurch City during the rebuild, and the level of planning control to be exercised over that intensification.

Minister Brownlee directed the Canterbury Regional Council to prepare the LURP in November 2012. This involved considerable public consultation, including receiving comments on a preliminary draft during March-April 2013. A finalised draft was submitted to the Minister in July 2013. A period of consideration and further discussions between the government and the UDS partners followed. The major difficulty that arose was a difference between CERA and central government on the one hand and Christchurch City Council on the other. The resolution of this difference, detailed below, culminated in a compromise agreement between the parties, and the LURP was gazetted by the Minister on 6 December 2013.

Table 5.4 (page 155) shows the projected distribution of household growth under the Land Use Recovery Plan, in comparison to the Urban Development Strategy projections done before the earthquakes. Percentages show the proportion of growth to occur in each area (not the percentage increase in population). The projected distribution of household growth under the LURP, and the proportion of growth that occurred between 2001 and 2012, are significantly different to the UDS options, with less growth occurring in Christchurch City, including Banks Peninsula, and more in the surrounding areas of Selwyn and Waimakariri.

While the LURP reflected what was agreed, including making changes to the Christchurch District Plan with immediate effect, one of the LURP action points was a review of the District Plan, which was expected to lead to further changes. The government appointed commissioners to undertake this review, ongoing at the time of writing. The decisions taken through this review process will establish the final framework for residential intensification across the city.

City council consideration of residential intensification

The city council focused on the LURP development process on four occasions. The first was on 20 June 2013 when it endorsed the preliminary draft LURP as

Table 5.4 Comparison of projected distributions of household growth under the UDS Business as usual option,[7] the UDS mix of Options A and B,[1] and the Land Use Recovery Plan, 2001–21.[24]

	UDS Business as usual (pre-earthquakes)			UDS Mix of Option A & B (intended to be implemented)			LURP (post-earthquakes)		
	Households		Proportion of growth	Households		Proportion of growth	Households		Proportion of growth
Area*	2001	2021	2001–21	2001	2021	2001–21	2012	2021	2012–21
Christchurch City	131,930	155,760	71%	131,930	166,855	68%	143,150	153,850	59%
Selwyn District	5,620	9,730	12%	5,620	13,800	16%	10,505	13,850	19%
Waimakariri District	11,400	17,050	17%	11,400	19,825	16%	15,250	19,200	22%

* Both UDS and LURP projections use the same boundaries, which are not the same as Territorial Authority boundaries, i.e. they both look at "the Greater Christchurch area of districts only". Pre-2006 UDS projections list Banks Peninsula District and Christchurch City separately, but we have included Banks Peninsula as part of Christchurch City in this table in order to compare with the LURP projections.

a basis for public consultation. This draft emphasised greenfield development, reflecting decisions already made by government. It noted that:

> Assessment of Greenfield land supply indicates a total of 42,600 Greenfield sections can be available by 2028. The majority of these, some 30,600 sections, are, or can be, zoned and serviced … by 2016. A further 9,800 potential sections could be available by 2021 and a further 2,200 by 2028. This indicates an abundance of Greenfield supply compared with the expected household growth during this period of 36,150.[23]

This suggests that a substantial surplus of housing supply over demand could emerge if all available greenfield sections were developed. The implication, which influenced subsequent council thinking, was that there was no urgent need to consider greater residential density in existing suburbs.

Without mentioning the UDS or the concept of compact development, the draft LURP did say that "the mix, location and affordability of housing may not meet demand" and that there were "potentially significant implications for the rebuild of the central city and existing suburban areas and Key Activity Centres if all household growth occurred in new Greenfield subdivisions".[23] It suggested some measures to encourage medium-density development within existing urban areas, notably a future Ministerial direction to the city council to provide District Plan provisions for this. The accompanying map identified areas which the council had already zoned for intensification, adding vague indications as to the Key Activity Centres where additional intensification might occur. By endorsing this draft, the council accepted that most of the needed resettlement would occur in greenfield areas, but that it would be asked in future to provide for some further re-development within the existing urban area, through a plan development process which would be largely under its own control.

Those interviewed for this report indicated that, after the government's initial decisions emphasising greenfield development, the UDS partners "came

back" to press for a greater focus on intensification in the existing urban area. This gradually won government support and influenced the subsequent policy process. This was apparent by the time of the city council's second consideration of the LURP, which took place on 3 October 2013, at the final meeting of the council before the local government elections. CERA was pressing for the council to agree to intensification within a substantial part of its Living Zone 1, a zone dedicated to single family homes, as well as in its existing, limited intensification zones, Living Zones 2 and 3.[25]

CERA's views were resisted by council officers who did, however, recommend that the council agree to the idea of a Comprehensive Redevelopment Mechanism, which would facilitate intensified development in Living Zones 2 and 3 and allow for limited "logical extensions" into a few parts of Living Zone 1. Although sounding ambitious, the Comprehensive Redevelopment Mechanism was defined as the "amalgamation of two or more lots to create an integrated development." The intention was for design-led development. To encourage developers, it was couched in RMA consenting terms as a restricted discretionary activity, but within its specification there remained a high level of council control over matters which developers regarded as relatively subjective in nature and therefore, in their eyes, giving rise to continued uncertainty around the likelihood of Not-In-My-Back-Yard objections.

The areas approved by councillors for the Comprehensive Redevelopment Mechanism tended mainly to be relatively socio-economically deprived parts of the city. Table 5.5 shows NZ Deprivation Index scores for the main new areas approved by the outgoing council; these are derived from nine socio-economic area-based measures recorded in the census and reported on a 1–10 scale, with 10 representing the most deprived 10%. Separately, the council agreed in principle to work with housing providers to identify some exemplar sites for residential intensification, as originally promoted six years earlier in the UDS.

Ministers were unhappy with the outgoing council's decisions, believing that too little provision was made for residential intensification. As soon as the new mayor and councillors were installed, Minister Brownlee briefed them that the

Table 5.5 Main new areas for residential intensification using Comprehensive Redevelopment Mechanism, approved by outgoing city council, October 2013.[26]

Area	NZ Deprivation Index rating for corresponding census area unit(s)*
Linwood	9
Sydenham-Beckenham	8
Barrington	7
Richmond	9
Riccarton	7

* A NZ Deprivation Index score was assigned based on the 2013 score of the census area unit in which each area is located. Where the area overlaps multiple census area units, an average score was calculated. We excluded very small areas from the table. The same method was used for Table 5.6.

council's proposals "did not go far enough in tackling housing supply issues."[27] In response to this, and to discussions with CERA staff, council planners developed a more ambitious two-part approach to residential intensification.

First, the planners agreed (with minor modifications) to support CERA's City-Wide Intensification Mechanism, which earlier they had rejected. This removed occupancy restrictions on family flats, enabling them to be occupied as a second independent residence, and on elderly persons' housing, enabling these small dwellings progressively to be occupied by people of any age group. Additionally and more importantly, it enabled people to remove a house on a section of 450m^2 or more, and replace it with two residential units.

Second, the Comprehensive Redevelopment Mechanism, retitled the Comprehensive Development Mechanism (CDM), was recommended to apply over a much larger, carefully planned area. The new proposal, dubbed Scenario 2 (for comparison with the outgoing council's decision, Scenario 1), was recommended for council approval subject to the council being satisfied with any changes the government proposed to the normal resource management decision-making process for the District Plan review. In effect, the council would allow a wider area to be available for modest intensification for the short-term, provided the government assured the council of a reasonable measure of planning control over the outcome in the longer-term.

The shared concern of all the UDS partners and central government was that:

> sufficient housing potential is available in order that the market can respond to the 2014–17 housing 'pinch' and ultimately ensure that the city's longer term recovery — projected out to 2028 — is not held back by ongoing stress in the housing market.[27]

But Scenario 2 was still less ambitious than central government wanted. Ministers sought more scope for the operation of market forces in the residential intensification process, including allowing intensification over a wider area and with less discretionary control reserved to political decision-makers. They believed this would improve investor uptake of intensification opportunities, and that a greater range of suburban sites available for intensification would drive down the cost of developments, making housing overall more affordable.

Within this market-oriented mandate, CERA nonetheless reached agreement with the council's planners on all but one of the criteria to be used in the planning process to identify the proposed intensification areas. The core concept was that intensification should be allowed only within walking distance (800 metres) of commercial zones with needed amenities including supermarkets. Qualifying areas must also lie within walking distance of primary or intermediate schools, and of a core public transport route. Further, they must lie within 400 metres of qualifying open space zones, must lie outside hazard zones such as residential red zone and tsunami inundation areas, and must recognise water infrastructure constraints. The last factor excluded from intensification the catchment of the

Riccarton wastewater interceptor, already running at capacity. Within all those criteria, CERA identified an estimated 2,500 hectares suitable for intensification, while the council's planners identified only 887 hectares. The difference was accounted for almost entirely by a single factor: the size of the commercial zones within walking distance of which intensification would be allowed.

The council planners accepted intensification on qualifying sites within 800 metres of its large Business 2 zones, while CERA also wanted intensification on sites within 800 metres of a larger number of smaller commercial centres which had supermarkets. The planners' reasons for not wanting intensification around these smaller centres were not entirely transparent. Their key argument was that the greenfield areas already approved, together with proposed developments in the central city and other intensification actions, were providing a very substantial "contingency oversupply" of housing to meet needs through to 2016. If more houses were needed through intensification after that date, this could be considered through the Replacement City Plan process which would take place in the meantime, and over which the city council hoped to have control.

The difference became incidental on 21 November 2013 when the new council was not prepared to accept its own staff recommendations to proceed with the larger area outlined in Scenario 2. A key issue was the resistance of some councillors to intensification in the suburbs which they represented and other similar suburbs.

> *I think there is a combination of there being a kind of NIMBY aspect, and the other component is those NIMBY residents therefore talking to councillors, and councillors deciding from a planning perspective "we are not going to use those provisions" … Some of the councillors were like "no way in hell" on the basis that (how do you say this is in nice way) that's where you know some of the high earners live and why would they want to have two houses next to them when they have only ever had one?*

> *I have very strong memories of sitting talking about the Land Use Recovery Plan, and Councillor X, who we all love, has this great reputation, making statements like, "I don't like this. And my people don't like it, and I'm not going to support it". And me saying: "But hold on guys, what about the people who aren't in this room, who want to move into your ward, who you currently don't represent? What about them?" [X] said: "Oh, I don't represent them, so I'm not there for them".*

A compromise agreement on the LURP was finalised by the city council on 28 November 2013, with flexibility for the Mayor and two other councillors to negotiate with the government if necessary. The outcome was accepted by the government, allowing the LURP to be published on 6 December 2013. Effectively, this belatedly adopted the City-Wide Intensification Mechanism while, in respect of the Comprehensive Development Mechanism, the councillors made major modifications to their planners' original recommendations:

- Councillors acted to protect mainly upper-income suburbs such as Fendalton, Merivale and St Martins from further residential intensification under the Comprehensive Development Mechanism (see Table 5.6).
- Instead of new Comprehensive Development Mechanism areas proposed by the planners under Scenario 2 (in addition to those already agreed upon in October by the outgoing council), they introduced new Community Housing Redevelopment Mechanism (CHRM) areas, where the focus was on redevelopment of existing social housing units, notably by Housing NZ which had plans to deliver 4,500 homes over the next five years.
- The CHRM areas were selected on the basis that concentrations of social housing already existed there. The main large areas zoned for this purpose were in mid to low socio-economic status areas such as Aranui and Shirley or in peripheral suburbs such as Broomfield and Northcote Road.
- The overall result was that no additions were made to the limited areas approved by the outgoing council for design-led, integrated residential intensification, except for areas dominated by existing social housing.

Before the formal agreement of this compromise package of policies, a deal had been struck between Mayor Dalziel, subsequently supported by councillors, and Minister Brownlee, subsequently supported by other Ministers.

The council's desire to retain control over the future District Plan review process was not acceptable to the government, which wanted to use this process to achieve a more liberalised planning environment. The time period for the application of the agreed immediate changes to the existing Plan, and the protection thereby provided against comprehensive developments in most areas of the city, was extended to 31 December 2018. In agreeing to this, Ministers were expecting the District Plan review to achieve further change.

> *Ministers thought it [the CDM area] needed to be larger. But Mr Brownlee put up an argument: while we would love to have a greater area of intensification, one, what is really key here is our relationship with the city council and actually the Mayor and the Minister are of the same view, and isn't this important for the relationship … And secondly, there was going to be a District Plan review going ahead, and then we might pick that up … broader through the District Plan review … which the Mayor agreed to, and she got her councillors to agree to that and the Cabinet went okay, we agree to that too.*

As a result of this deal, the comprehensive development option — of acquiring and amalgamating multiple titles to produce integrated, well-designed higher density developments in walkable neighbourhoods — was severely restricted to areas which already had concentrations of social housing. The more ad hoc, individualised intensification option of allowing the renting out of living places originally built as family flats and elderly persons' housing, and of cramming an extra building on to an existing title, was permitted city-wide (excluding hill suburbs).

Table 5.6 Changes made by elected councillors to staff recommendations of 21 November 2013 on additional areas for residential intensification.[26,28]

Proposed CDM areas excluded by city councillors on 28 November 2013	Average deprivation index rating for the main corresponding census area unit(s)	CHRM areas approved by city councillors on 28 November 2013	Average deprivation index rating for the main corresponding census area unit(s)
Aranui	9	Aranui	9.5
Church Corner	7	Church Corner	7
Wairakei/Greers	6.25	Wairakei/Greers	7.5
Papanui/Northlands	5	Papanui/Northlands	6.5
Shirley	6.5	Shirley	8
Bishopdale	4.5	Bishopdale	4
Hillmorton	6	Rowley (Hillmorton)	7
Hornby	7	Broomfield (Hornby)	7
Merivale	3	Dallington	9
Halswell	1.67	Northcote Road	6
Fendalton	1.67		
Parklands	4		
Woolston	8		
St Martins	2.33		
Belfast	5		
Average	5.128	Average	7.15

> *I think we run the risk of allowing the opportunity over a much greater area, but in doing so diluting the opportunity to make real change. You might get a more low level, sporadic sort of intensification as opposed to a more concentrated opportunity. One of the things that I'm concerned about is that we end up with an intensification model that repeats the problems of the '70s which says intensification equals dividing the back of my section off.*

As well as making planners uncomfortable, this decision was not what was wanted by CERA's Community Forum. The Forum lost influence through failing to crystallise and recommend its preferred alternative for achieving more intensification.

> *[The Forum] said: "You won't get this; this is not sustainable for the community. You don't need every single section in the Christchurch District to be halved" … So they didn't say what [to do instead], they said you need to go away and reconsider. The Minister looked at the advice and went "oh ok", so he asked officials to do some further advice … The Mayor and the Minister came up with an alternative, then they took it back through their processes and that's the one that got approved … I think this is where politics enters into it, rather than policy advice.*

After the LURP was finalised, the government appointed independent commissioners to hear submissions and make decisions on a review and replacement of the Christchurch District Plan. While a major city plan review process, including appeals to the Environment Court, might normally take up to ten years to finalise, the procedure for Christchurch, imposed under the Canterbury Earthquake Recovery Act, commenced in July 2014 and must be completed by March 2016. No appeals to the Environment Court were allowed. The ongoing review process highlighted continuing tensions over the extent of residential intensification and the controls required over it.

However, lack of appropriate zoning was not the only barrier to intensification within the existing urban footprint. In both the central city and the suburbs the lack of a culture in Christchurch of denser urban living, the lack of developers experienced and willing to lead more intensive developments, the large supply of greenfield sites on the periphery, and a consequent lack of market interest in intensification remained significant eight years after the adoption of the UDS, despite the opportunity for change provided by the earthquakes.

> *After this Land Use Recovery Plan has been put into play, and we're allowing these more liberal things, from what I can see, stuff-all more has really happened. Very little intensification has really gone on.*

Deciding on transport issues

Transport infrastructure provides a strong influence on the development pattern of a growing city. Its role is highlighted in the concept of a doughnut city, a term popularised in reference to Houston and other fast-growing, sunbelt cities in the United States.[29] The term was associated with the rapid growth and concentration of urban activity on a ring road, and the parallel decay of the central city within, through an accelerated process of obsolescence and demolition of buildings. Where a second ring road further out was later constructed to provide an uncongested bypass, this attracted a new generation of office parks, residential developments and shopping centres. With vitality and accessibility focused on the urban fringe, inner suburbs became occupied by socio-economically deprived groups, auguring an urban decay process that would lead to further demolitions. For many years the sunbelt cities followed this doughnut pattern of ever-expanding peripheral vitality and central decay, although in recent years many of them have made conscious strategic decisions to revitalise their centres and provide rail connections to enhance the central city's accessibility and role.

The physical geography of Christchurch, especially the Port Hills and the estuary, made a ring road concept more difficult to implement, but key elements of a ring road system were in place or were being developed around Christchurch. These roads attracted a large share of development, including office parks. The main areas zoned for new commercial uses in Chapter 24a of the Regional Policy Statement were along the Western Corridor, which was being upgraded

CASE STUDY 14

The inverse care law: Housing and the Christchurch rebuild

Vulnerable people continue to be disproportionately burdened by the effects of the 2010–11 Christchurch earthquakes. In particular, the lack of affordable housing in Christchurch following the earthquakes mainly affects people in lower socio-economic circumstances and those with chronic illness or disability. Researchers from He Kainga Oranga/Housing and Health Research Programme say that the government is missing an opportunity to build a more resilient city, with housing that keeps its occupants — including the most vulnerable — safe, warm and dry.

An estimated 100,000 homes were severely damaged in the earthquakes. The number of private rental properties fell by 19% between December 2010 and 2012, and rents increased by 39% between the 2006 and 2013 censuses. Christchurch City Council, once New Zealand's second-largest social housing provider, lost 440 properties, and Housing New Zealand Corporation lost 330, with a further 5,000 needing repair. In 2014 the number of people on social housing waiting lists was at least three times pre-quake numbers. An estimated 5,510–7,400 people were experiencing "severe housing deprivation" in 2013, up from 3,750 pre-quake.

The Government's rebuild priorities have favoured a market-based approach, with high visibility infrastructure, large developments, and land use policies that support high-end greenfield development. Through the Earthquake Commission (EQC), home repair and rebuild has only been offered to those who are insured. Low-income people, who are more likely to be uninsured or renting, have missed out on core government assistance. Affordable and accessible housing is generally not favoured by the market, as high-end property provides higher returns. Central and local government, however, have policy settings available to them that would support development of affordable housing.

The inverse care law describes situations where health or social care is disproportionately accessed by the wealthy, who are least in need of it. In Christchurch those who were already more wealthy were better able to access government assistance, and were able to cope with the demands of a natural disaster due to greater mobility and ability to pay for services. Whilst the earthquakes were unavoidable, their disproportionate and ongoing impacts on low-income people are not.

From Philippa Howden-Chapman, Amber L. Pearson, Rosemary Goodyear, Elinor Chisholm, Kate Amore, Graciela Rivera-Muñoz and Esther Woodbury, 'The inverse care law' in *Once in a lifetime: City-building after disaster in Christchurch*, Christchurch, Freerange Press, 2014. This work was prepared as part of the He Kainga Oranga/Housing and Health Research Programme funded by the Health Research Council.

to a four-lane highway. New motorways and upgraded arterial roads were also facilitating the movement of commuters from outer suburbs and peri-urban towns to various parts of the urban fringe. The access which developments on the ring roads had via motor vehicles contrasted with the situation in the city centre, which remained relatively inaccessible, and where there were disputes over the extent of provision to be made for parking.

The development of transport infrastructure since the earthquakes represented an acceleration of a programme of work envisaged in the UDS to occur over a 30-year period. There was considerable debate over the transport component of the UDS at the time it was formulated. Some interview participants considered the lack of development of a rail network to serve Christchurch a major deficiency which would have to be remedied in future. The existing main trunk railway line had for decades connected Rolleston and Rangiora with the main Christchurch urban area and with the port of Lyttelton. However, by the time the UDS was formulated, decisions had been taken which made it arguably uneconomic to reinstate rail commuting into the central city. The Christchurch central railway station was closed and, during the period when the railway system was in private ownership, land that would be needed for any commuter rail services was disposed of, as part of an asset-stripping process.

Participants were divided about the future prospects for a commuter rail service connecting the fast-growing ex-urban centres of Rolleston, Kaiapoi and Rangiora with Christchurch City. The majority considered that the combined effect of the high cost of double-tracking the railway line for commuter traffic, the lack of any present or planned residential density around the rail stations, and the current lack of any rail access to the central city (necessitating a change from rail to some other mode for commuters) would make rail commuting a challenging project for many years to come. The vision for light rail long promoted by the former mayor, Bob Parker, and reflected in the draft central city plan, was swiftly dispensed with when that plan was replaced by Minister Brownlee's Blueprint.

This then places emphasis on the bus network if the UDS vision for good use of public transport is to be delivered. The dispersal of commuter origins and destinations triggered by the earthquakes and subsequent decisions made it more difficult to configure bus services in a way that can compete effectively with private motor vehicles. In response to the new situation, the regional council completely redesigned its route network, moving away from the former radial pattern of bus routes serving the CBD, toward a new pattern with a connected network approach.[30] Bus patronage was yet to recover to pre-earthquake levels.

Of all the transport modes that offer a sustainable alternative to private motor vehicles, only cycling has been decisively advanced in the post-earthquake environment. In 2013 around 7% of commuter trips in Christchurch were made by bicycle, which is a small base from which to grow (though only Nelson had a higher proportion of cycling commuters),[31] and a much lower level of cycling

than prevailed in Christchurch before the growth in car traffic.[32] The city council has been making a major funding commitment to cycleways, which it expected to be supported by central government. The large plan for the Christchurch Major Cycleway Network included seven cycleways receiving an estimated $42 million from NZTA.[33]

Conclusion

It is not possible to rigorously differentiate the earthquake's effects on the urban form from public policy's effects on it. But research can describe the key points at which the decisions taken diverged from the UDS strategy, where preferences of policy-makers differed, how outcomes were related to the relative influence of the various governance levels, how differences were resolved, and what these events tell us about the challenges of implementing a long-term strategy like the UDS.

While urban change is a long-term process, it reflects key decision-making episodes when the die is cast for many decades ahead. This is particularly true given the path-dependent nature of land use decision-making. The period immediately following the Christchurch earthquakes was one such key episode of decision-making. Decisions needed to be taken at a more rapid pace than usual. Informal relationships and networks were important in getting things done during the recovery phase. In examining drivers of, and constraints on, urban change, one aspect that really matters is the capacity of the multi-level, democratic, urban governance system to resolve differences, through deliberation, learning, foresight, cohesion and pragmatic decision-making.

The earthquakes created a context in which urgent decisions had to be made about the resettling of over 7,400 households, as well as the re-establishment of organisations and businesses. However, much larger and more long-term decisions were made in the immediate post-earthquake environment. Using legal powers that do not normally exist to over-ride democratic and judicial processes, zoning provisions were instead made for the settlement of up to 80,715 households. This outcome saw a marked shift away from the quality, compact city model articulated in the UDS, at least for the medium-term. It is one of the paradoxes of the UDS that its existence, and the forward planning it promoted, served the interests of those who wanted to accelerate the sprawl of Christchurch, while the originally-intended increased developments in residential density are little to be seen, almost five years after the first earthquake.

During the post-quake resettlement period, the long-term vision of the UDS for a quality, compact city was undermined by a set of factors, some of which had their origin before the earthquakes:

- There was momentum in the widespread pattern of suburban malls, low-density peripheral growth and associated car dependency that was well established before the earthquakes, even though it was not universally desired.

- There were delays in UDS implementation. Christchurch City in particular was very slow (during the years both before and after the earthquakes) to change its city plan effectively to facilitate increased residential intensification within the existing urban footprint, and to establish exemplar projects to build public and developer support for denser residential living.
- Additional post-earthquake factors were perceived uncertainties around safe foundation conditions for building in some areas, and the need to head off a potentially challenging situation for housing affordability.
- The government wanted to take the opportunity to deregulate the urban planning environment in Christchurch. This factor, whatever its merits, led to the government's refusal to accept the central city plan unanimously adopted by the mayor and councillors, and to the subsequent long delays in establishing a plan and delivering on business and residential developments in the central city. It also underlay the government's strategic decision to prioritise greenfield developments on the urban periphery and around outlying rural towns.
- All these factors combined to create a deficit in the preconditions for post-earthquake residential intensification within the existing urban footprint. The missing preconditions essentially were broad market, political and community acceptance of denser residential living.
- The factors listed above also combined to stimulate changes in transport infrastructure, which saw increased emphasis on early road-building and road-widening, and a reconfiguration and diminished role for public transport.

At one level, there is a relatively simple story to be told: the over-riding powers assumed by central government after the earthquakes, and its desire to impose a more deregulated planning system, made a big difference to urban outcomes. However, this has interacted with other local factors to create an outcome that represents a particular form of deregulation, one that favours sprawl while also creating barriers to design-led intensification of the existing urban footprint. Both aspects are profoundly at variance with what the UDS was originally trying to achieve.

At the heart of the issue in Greater Christchurch is the underlying lack of consensus about whether and how to promote residential intensification within the existing urban footprint. The political power of upper-income residential neighbourhoods and the divergent views about the value of planning at different levels of the multi-level governance structure combined to create a dynamic in which the easiest path forward politically was to allow an individualised pattern of infill development on existing sections rather than properly planned, design-led development in walkable neighbourhoods along public transport corridors.

The UDS model of a quality, compact city could still be progressed in the longer term if there is continued growth in the urban population, further planning

and provision for design-led residential intensification, and an enhanced level of investment in public transport. While a large investment in public transport corridors with compact, walkable residential development around key nodes in these corridors would likely enable the intended UDS pattern of development to eventuate, the high post-earthquake level of civic debt means that the city will depend on future central government investment if it is to get back on track toward the original UDS vision.

CASE STUDY 15

Mapping the diversity of urban Māori: Mana whenua and mātāwaka populations

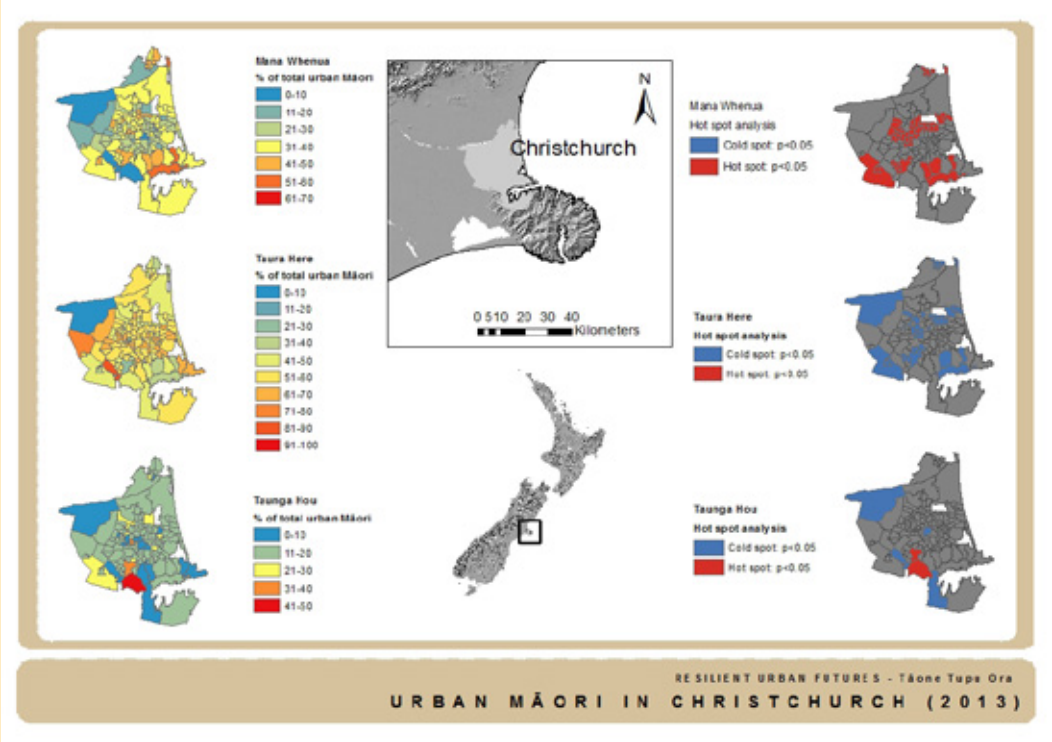
Urban Māori are often thought of as a homogeneous group, but in reality urban Māori are diverse and heterogeneous. Mana whenua refers to the iwi or hapū who hold traditional mana over the land in which they live. Mātāwaka are people of Māori descent who reside in urban areas, but do not have ancestral ties to that area. Mana whenua have specific rights and responsibilities, especially related to engagement with local government. Mātāwaka have broader rights conferred by the Treaty, but little formal representation at a local government level.

Resilient Urban Futures researchers, in the *Taone Tupu Ora* strand, have mapped mana whenua and mātāwaka populations in Auckland, Hamilton, Wellington and Christchurch, based on 2013 census data. They further divided the mātāwaka group into two: taura here, those who retain connections to their iwi or hapū; and taunga hou, those whose primary connection is with the urban social and physical environment. They found that taunga hou populations were relatively similar in size in each centre, between 13% and 15% of the Māori population. Taura here populations ranged from 47% in Hamilton to 80% in Wellington. The greatest variance was amongst mana whenua, in which populations ranged from 38% in Hamilton to 7% in Wellington.

Table 5.7 Urban Māori within Auckland, Hamilton, Wellington and Christchurch, 2013.

		Mātāwaka		Total Māori (by urban area)
	Mana whenua	Taura here	Taunga Hou	
Auckland				
No.	19,527	84,633	18,279	122,016
%	16.00	69.36	14.98	
Hamilton				
No.	14,136	17,571	5,286	36,897
%	38.31	47.62	14.33	
Wellington				
No.	3,099	37,833	6,168	47,004
%	6.59	80.49	13.12	
Christchurch				
No.	8,151	15,003	4,290	27,285
%	29.87	54.99	15.72	
Total Māori (by group)	44,913	155,040	34,023	233,202

Figure 5.5 Map of Urban Māori in Christchurch showing populations and hotspots, 2013.



Wellington and Auckland have high proportions of mātāwaka in their Māori populations. In Wellington there is no formal arrangement for Māori representation at a local government level. The Auckland Independent Māori Statutory Board has two mātāwaka representatives (of nine), but these are appointed by a mana whenua selection committee. Some mana whenua are concerned that if proposals such as Māori seats on local government are established as a primary mechanism for Māori representation, mana whenua interests will be subsumed into the interests of the larger mātāwaka population. Others argue that mātāwaka have particular rights that are not currently adequately represented in a formal manner. Local government reform may need to incorporate mana whenua and mātāwaka interests appropriately, and to do so will need a sound understanding of the nature of Māori traditional land law, the heterogeneity of urban Māori populations, and the diversity of their interests.

From John Ryks, Andrew Waa, Amber L Pearson, "Mapping urban Māori: A population-based study of Māori heterogeneity", 2014. This work was prepared as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.


DUNEDIN CITY COUNCIL
DUNEDIN
MOSGIEL
Port Chalmers
Otago Peninsula
Territorial Authority Boundary

SIX

Dunedin

Marie Russell, Lisa Early, Jenny Ombler & Anna Hamer-Adams

Dunedin City Council differs from other city councils in covering a very large geographical area relative to the size of the main urban area, from boundaries put in place in 1989. This means that urban Dunedin's population is smaller than the city figures suggest, and that the council has responsibility for rural areas and small towns, as well as the Dunedin urban area which is the focus of this chapter.

Dunedin's Pākehā history, and evidence of the lively late 19-century period when Dunedin was at times the largest city in the country, can be seen in the handsome heritage buildings of the city and university. The same history is also discernible, according to a research participant, in the tenor of the city, derived from the Scottish values of its founders, and seen as an ongoing force in Dunedin.

> *There's a real ethos of looking out for other people … Scottishness is something about thrift and … having a social conscience which really was bedded down with the early settlers in terms of doing things in the community that bring the community together … There's the Presbyterian element in that as well … The 'tartan mafia' gets talked about … the business corps from way back, the old gold-mining days and the banks … The attitudes to education, which is still one of the Scottish elements … education is very, very important.*

Participants described Dunedin as a city "torn" in several ways. The city had a "forward looking, sometimes quite extreme perspective coming from the academic side of town", and also "a quite conservative kind of business, solid Dunedinite … side of town as well". There were some who "want Dunedin to change really dramatically and there's a group that don't want Dunedin to change at all". While having strong links to its rural hinterland, it was not "a provincial town", but neither was it "a city [with] high growth prospects". One view was that developments like the Forsyth Barr stadium (opened 2011) and the casino were illustrations of Dunedin's impulse to emulate bigger cities. Another view saw Dunedin as two cities: North Dunedin "where all the development is" as well as amenities like the botanical gardens, and South Dunedin where "there's nothing down that end of town".

Factors discussed by participants as affecting future urban change included: current modest economic and population growth; the city's focus on education as the major economic activity following decline in other industries; a large residential area (South Dunedin) affected by poverty and facing climate change impacts; the old built heritage of the relatively compact urban area and good potential for intensification in the inner city; awareness that central government's focus was to support Auckland and Christchurch ahead of other cities; and some existing strengths in city planning for a compact urban future. These and other drivers such as iwi activities in the city, transport, infrastructure, technology, development and governance issues are explored in this chapter.

Population

The population of the Dunedin City Council area at the 2013 census was 120,249, up 1.3% from the 2006 census.[1] This population figure includes residents of rural regions and townships within the large area covered by the council, such as Mosgiel (with a population of 9,210), Port Chalmers and Sawyers Bay (2,577), and Waikouaiti (1,125),[1,2] as well as the city of Dunedin which is the focus of our study.

"Even though we have low population growth, we haven't had decline." Population growth between 2001 and 2013 was lower in Dunedin (5%) than in New Zealand overall (14%), and this trend was projected to continue. While Auckland and Hamilton were projected to see annual average increases in population of 1.3% and 1.2% respectively from 2013 to 2043, Dunedin was projected to see 0.2%. This modest positive growth forecast can be compared to Porirua (0.2%) and contrasted to the negative growth seen in Statistics New Zealand's medium projections for 21 territorial authorities.[1,3]

Dunedin in 2013 had a smaller proportion of youth (16.2% aged 0–14) than New Zealand as a whole, but more young adults (37.7% aged 15–39) including a "burst of students", and older age groups in similar proportions (31.3% aged 40–64 and 14.7% aged 65 and over) to New Zealand overall. Projections were for Dunedin's proportion of youth to fall a little by 2043, its proportion of those aged 15–64 to fall, and its proportion of retirement-aged individuals to rise considerably[4] (see also Figure 1.1: Current and predicted age makeup of cities, page 10).

Dunedin is relatively ethnically homogenous, with about half the proportion of Māori, Pacific and Asian residents of the New Zealand average (see Figure 1.2: Composition of cities by ethnic group, page 11). Māori made up 7.7%, Pacific peoples 2.5% and Asians 6.2% of the population in 2013.[1] Dunedin's Māori population was projected to increase 17% by 2021, the smallest increase of our cities studied (for example, compared to a projected 40% increase in Auckland). The Asian population was predicted to increase 46% during the same period, compared to Auckland (53%), Wellington (41%), Porirua (22%) and Hutt City (20%).[1,5]

Interview participants believed that Dunedin had experienced a "drift north" and "brain drain", notably in the 1980s and 1990s. There is some evidence of positive net population movements from the lower South Island (Waitaki, Clutha and Southland District Council areas) to Dunedin, while most internal migrants to Dunedin between 2008–13 came from Christchurch, Invercargill and Auckland.[6] In keeping with Dunedin's reputation as a temporary home for students, 15–19 year olds represented the biggest gain of migrants, and the biggest decrease came from the 20–24 year age group.[7]

Participants considered New Zealand an attractive place to live, protected from the worst of population pressures and climate change impacts, but noted that immigrants to New Zealand tended not to come to Dunedin. Out of the 58,259 people who migrated to New Zealand in the year ended June 2015, only 1% moved to Dunedin. The 592 net permanent and long-term migrants to Dunedin in 2015 were an increase from the 409 in 2014 and –6 in 2013, representing the largest net migration Dunedin has experienced since the early 2000s.[8]

While "a static population is not necessarily a bad thing", there was concern about refreshing the working-age population for future resilience. There was surplus capacity in Dunedin's secondary schools, it was said, although some increase in primary school rolls was occurring.[9] Slow population growth could mean the loss of population-based government services, for example in health care. Several participants expressed concern about the increasing number of older people. The ageing population had implications for the labour market, for the kinds of urban amenities required and for housing types. With Dunedin also having a higher proportion of one-person households than New Zealand typically,[1] it was thought that there would be "more demand for smaller units and potentially retirement villages".

Economic drivers

Median incomes were lower in Dunedin than nationally, with median household and personal incomes of $54,400 and $23,300 in Dunedin in 2013, compared to the New Zealand medians of $63,800 and $28,500 respectively[1] (see also Table 1.1, page 12). Given the large student population, the percentage of people not in the labour force was relatively high at 37.4% (compared to 32.9% nationally), with almost twice the national rate of student allowance receipt (though similar levels of receipt of other benefits).[1] The unemployment rate (slightly higher than for New Zealand overall) and the nature of jobs available in Dunedin (many low-paid) was a concern to participants.

> *We have a very poor population; it's heavily dependent on government funding through either student loans or government pensions or unemployment benefits … We have very wealthy people that are employed by government in our tertiary education sector, or in police, education, health, whatever … That gap in the middle, we have lost blue collar jobs, we have lost the managers that*

> *were in those factories, and the CEOs, and we've lost the small businesses that serviced that, and when you start losing that chunk in the middle you've got some issues to deal with.*

The local economy was described as "fragile" by one participant. Growth in the city in a number of indicators, including GDP, employment, labour productivity and business size was below that of the Otago Region, the New Zealand average for 2014, as well as the preceding decade. This contrasted with phenomenal growth rates experienced by the Queenstown-Lakes District over the decade.[10] When a BERL report was released in 2013, Otago Chamber of Commerce president Peter McIntyre noted: "If Dunedin was taken out of the equation, then Otago pretty much leads the country."[11]

The largest sectors of employment in Dunedin in 2014 were "health care and social assistance", "education and training", "retail trade" and "accommodation and food services", but particularly hospitals and tertiary education. Sectors where employment declined between 2000 and 2014 were "construction", "professional, scientific and technical services", "rental, hiring and real estate services" and "manufacturing".[12]

As elsewhere, the Dunedin economy was "at the mercy of global events, global pricing and a much more connected worldwide environment". A gradual retreat from manufacturing, for example in textiles, and also from meat-processing, had left tertiary education Dunedin's biggest industry currently and for the foreseeable future, according to participants. The number of exporting businesses in the city was estimated as declining from 207 in 2006 to 162 in 2010.[13] The Hillside Railway workshops' closure in 2012, when new carriages for Wellington's rail system were ordered from China rather than Dunedin, was an example of the impact of industry closures. It was not only the direct loss of jobs that concerned one participant. Hillside had also trained "a whole variety of people [mainly men] who went into other occupations, other private sector workplaces".

The city retained an important role as a service centre for its large rural hinterland, including warehousing for primary industries and the food industry. While retailers were "struggling", participants observed that growth was occurring in small companies. There was activity in education and tourism, and it was thought there would be further development in information technology. The tourism sector grew faster in Dunedin compared to the national average between 2004 and 2014,[10] with one participant noting that cruise ship visits were particularly important.

Dunedin's port, New Zealand's deepest container port, was important for the city and regional economy, sending meat and other produce from the city's hinterland. Port Otago Ltd., wholly owned by Otago Regional Council, was a "well-managed, arm's-length body that's run like a business", yielding a dividend to the regional council that offsets residents' rates by about one-third, according to one participant, and about a half, according to another.

Sectors of the economy showing promise in the region included food and beverages, especially beverage manufacturing,[12] with claims for economic potential in food technology, and provenance and efficacy research. Forestry was "coming on-stream"; logs were exported or chipped for paper. Otago Regional Council had supported "added-value" thinking in managed irrigation schemes and in processing regional timber locally. Also in the city and supporting the rural sector was the Invermay Agricultural Centre, providing evidence and technology for farmers.

Parties to the Dunedin Economic Development Strategy 2013–2023 were Dunedin City Council, Ngāi Tahu, University of Otago, Otago Polytechnic, Otago Chamber of Commerce and Otago Southland Employers' Association. These organisations headed different aspects or projects within the strategy which is a "long-term game" according to a participant. One participant thought that the strategy had facilitated collaboration and broken down perceived barriers about competition.

Approaches among Māori to economic development may be changing, it was thought. The example given was the controversial quarrying[14] at Saddle Hill (Makamaka and Pikiwara), a site noted in Ngāi Tahu mythology. Younger Māori, a participant observed, were less concerned about work happening on the site or environmental impacts, and more about employment opportunities.

Part of the economic development strategy was to "maximise the sister-city relationship" between Dunedin and Shanghai, set up in the 1990s. Regular delegations, civic and mayoral relationships, research and museum exhibition exchanges, and projects led by the Otago Chamber of Commerce, Otago Polytechnic, and University of Otago were mentioned. Dunedin's Chinese Garden, "one of three authentic Chinese Gardens outside China", was a material reminder of the relationship. There had been "business wins and investment from Chinese investors into Dunedin businesses that don't tend to get a lot of press". Seven of the city's secondary schools had sister-relationships with schools in Shanghai, it was said, and the university cooperated with Shanghai Jiao Tong and Fudan universities on technology research. Potential downsides of the relationship with China arose from being the smaller partner, over-dependence on one market, and concerns about "being ripped off" or about "cultural norms that we're not comfortable with imposed on us".

The Christchurch earthquakes had negatively affected Dunedin's economy, it was claimed, with adverse impacts on student numbers, tourist numbers, retail, and manufacturers reliant on the Christchurch market. Without the "luxury of government funding" to prop up the economy, the earthquake had "a huge ripple effect out to our community, and the small businesses".

Several participants saw Dunedin affected, along with other smaller cities, by central government's concentration on developments in the larger cities. The government sector was an important part of the city's economy, with a quarter of jobs funded by government, particularly at the university and hospitals. But

there had been significant job cuts. "One in five public service jobs in Otago and Southland" had gone "since the current government came to power".[15] The city had an "underused abundance of infrastructure" and housing, and there was a call for the government to stop centralising operations in Auckland and Christchurch and assign agencies to other cities like Dunedin. An example was the ACC call-centre in Dunedin, reported as employing about 100 people. There had been discussions with both the Treasury and local MPs, but a participant warned: "on the other hand it's not a particularly good strategic decision to pin your city's future on public resources".

It was hoped entrepreneurs would be attracted to Dunedin if there was a supportive business culture. Possibly the older business culture — the "tartan mafia" — had not been especially supportive. But in the IT and biomedical areas it was thought the culture was more mutually supportive. Dunedin needed to find new ways of developing economically, and a suggested direction for increasing employment was in expansion of small businesses, with "niche value-added knowledge-based … economic opportunities". There was a concern that Dunedin tended to "focus quite a lot on low-level jobs — but lots of them."

Many participants held the view that "some of the major drivers of change are around the education sector". As well as the Otago Polytechnic, and, crucially, the University of Otago, there were 12 secondary schools, many with ambitions to increase their numbers of foreign fee-paying students.

Town and gown

The University of Otago was said to have a huge economic impact on Dunedin, and to have $100m "set aside for investment in infrastructure". Student numbers at the university had fallen from "20,000 FTEs some years ago" to 18,875 in 2013,[16] including some in the Christchurch and Wellington campuses. Similarly Otago Polytechnic student numbers had fallen, and many lived outside Dunedin as distance learners. Participants blamed both the ripple effects from the Christchurch earthquakes and government education policies for declining student numbers. The impact of central government's policies on public tertiary education was watched with concern; government funding for students was not increasing. Polytechnics had been affected by government's "shift of money … to private providers". An expectation that tertiary trades training in Dunedin would increase to supply the Christchurch rebuilding had not been realised, it was said. One participant foresaw new risks and challenges for the university in the Health and Safety Reform Bill, because in an organisation dealing with "everything from drug trials to student antics", safety issues were an increasing burden.

International students made up 7–8% of total Equivalent Full-time Student numbers [16] at the university; the government favoured increasing this, and it was expected to bring more cultural diversity to the city. This, along with intellectual

property generated by research and some entrepreneurial education businesses, made the education sector a big export industry for Dunedin.

About a quarter of Dunedin's population was thought to rely upon the university. The university was "one of the South Island's largest and most influential employers",[17] and the "biggest employer in the city by far". Participants agreed that the relationship between the city council and the university was very good.

> *The city totally understands it's reliant on the University of Otago for a lot of its economic growth. Equally the University of Otago totally understands its place in the city and the necessity of the city for the university's growth … The university has realised that it is part of the community and needs to act as if it is … It has opened its campus up more, just little things like putting cafés on the campus and things like that and inviting the public.... Twenty-five years ago the University of Otago had some sort of invisible wall around it … We depend on them and they depend on us and it is about equal.*

As with other universities, title to university land (equivalent to "about 20 city blocks", for which rates were not paid) was about to be transferred from the Crown to the university.[18] A campus Master Plan had prompted purchase of properties and there was room for expansion. University management had done much to enhance the environs of the campus, with infrastructure, and retaining facades-only or whole historic villas and character buildings. The university was involved with the nearby Forsyth Barr stadium, and began sponsoring a sports team in the Super Rugby Competition franchise in 2014. Current campus landscaping work along the Water of Leith was in conjunction with the city's replacement of pipes and sewers.

Participants discussed various aspects of the relations between city and university. One described a programme where children from poorer schools were taken onto the campus to introduce tertiary education as a possibility. Although living only "a few kilometres" away, "generations of their whānau have never been there". A perennial topic was students' behaviour, which sometimes irritated other residents, but it was thought that the affected people appreciated the university's efforts to deal with it. Urban policy, investment and development decisions tended to cater to students' needs during their education; students typically stayed in Dunedin only for the period of their studies.

While high-calibre university staff could be attracted to Dunedin, retaining them was challenging, especially if their spouses or children could not find work in the city. Most students — it was said about 90% — left Dunedin once their studies were finished; there were few jobs for them in the city. However, the two outputs from tertiary education (graduates and research) had the potential to be "leveraged into new businesses or existing businesses producing added-value products" in Dunedin. From a town point of view, the university was emphasising the education of post-graduate students and this gave the potential

CASE STUDY 16

Predicting trends in car travel

Predicting how people will travel in the future is important for appropriate transport planning and investment in cities. However, the way we are choosing to travel is changing, which makes prediction difficult.[20]

A key measure of the demand for driving is light fleet vehicle kilometres travelled (VKT). This is the distance travelled on all roads by light motor vehicles (less than 3.5 tonnes) each year and is estimated at a national level using odometer readings recorded at the Warrant or Certificate of Fitness inspections of all vehicles.[21] In the past it was thought that as populations, income and GDP rose, the demand for driving, and hence VKT, would also rise. From the 1980s to the mid-2000s there were annual increases in VKT of around 3%. However, since 2005 VKT has been largely stable and VKT per capita has been decreasing.[22] This trend is not unique to New Zealand and researchers around the world are trying to figure out why people in many developed nations are driving less.[23]

A range of explanations have been offered, one of which is the (perhaps temporary) impact of the global financial crisis on travel spending choices, yet the levelling off of VKT in New Zealand happened well before 2008/9. Additionally, VKT shows little correlation with GDP or income in the last decade.[24] The relatively large, long-term fuel price increase over the past decade is likely to have reduced people's tendency to drive, especially when alternative transport options are available.[25,26]

One factor is technology that makes personal travel less necessary. The ability to connect online, transfer files, email and video, and shop online may have had an impact on travel patterns. These technological changes also make driving a car less desirable. Many people want to spend their travel time using their phone or tablet rather than in control of a vehicle, turning sitting on a bus or train into valuable time. The decreased desirability of driving is evident in the noticeable decline in young people applying for driver's licences.[27]

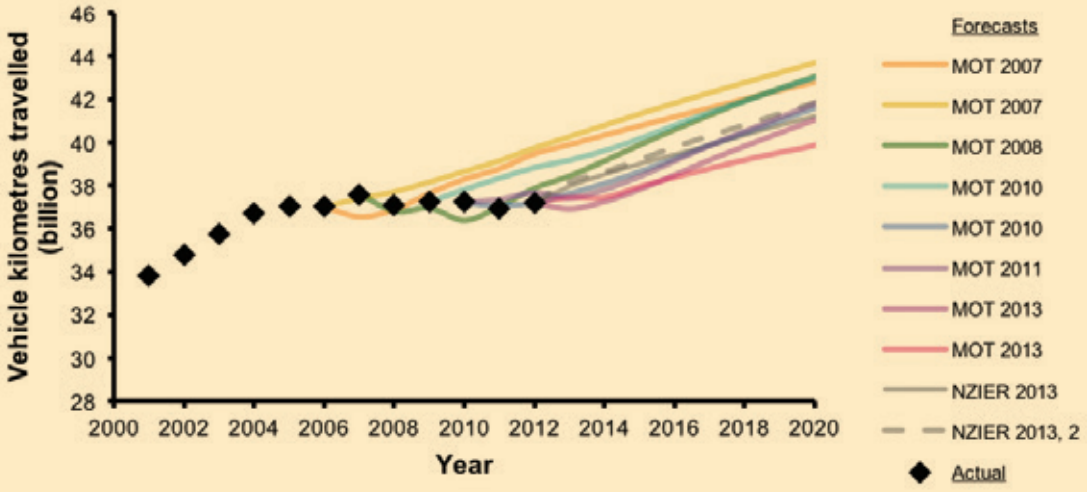
Another suggested reason for the decline in car use is a social change in the way people want to live. Some choose to live closer to work, take other modes of transport, and spend their time, money and space on other things over cars. It is in urban areas, where these choices are made possible by density, connectivity, mixed land use, alternative transport options and agglomeration, that we see the decrease in VKT occurring.[22]

While the causes of the decline in car use have not yet been agreed upon, it is likely that a number of the explanations discussed here are contributing factors. With all these variables and a trend that is still not clear, the future for car use remains unknown. Traditional transport models still rely on the assumption that the trends of the 20th century hold true. As seen in Figure 6.2, these models continue to predict a return to an ever-increasing VKT. As the Ministry of Transport concluded, traditional transport forecasts alone cannot be relied on to

make sound transport investment decisions.[28] Alternatively, we can consider the desired functions of urban transport and plan how these can be facilitated in the context of uncertain future demand.

By Ed Randal, University of Otago Wellington, Resilient Urban Futures research programme.

Figure 6.2 Historic New Zealand light vehicle traffic forecasts vs actual growth from the Ministry of Transport.[28]



for "start-ups and entrepreneurial businesses to develop in the city". These might be in bio-medicine, design or IT. The university's academic expertise on urban-related topics did not always manifest in the non-academic, property-services side of the institution, nor speak to the city as much as it might, it was said. The university delivered to an "international world", and was not just focused on Dunedin. But overall participants acknowledged that the university brought many economic, social and cultural benefits to the city.

Technology drivers

Participants saw technology as a driver of change and gave examples of current and potential technology activities. Some arose from the university: for example, collaborative research on biomedical technology between Otago researchers and colleagues at Shanghai Jiao Tong University. High-tech, medical technology and niche biotechnology companies were already present and employed staff in the city. There was good potential for Dunedin's economy in the IT-based,

additive manufacturing area. Another area of potential was said to be in Internet data centres in the city, as such storage centres preferred cool climates, access to cold harbour water for their cooling systems and cheap land. In the education sector there was likely to be further changes in teaching delivery, with expanded use of technology for distance learning. Distance education could affect resident student numbers in the future.

While technology in general would affect the way people "engage in an urban setting", current differential access to technology in the community, specifically for Māori, Pasifika and new immigrant groups, was noted by some participants as creating and aggravating inequalities in the future.

During the research period it was announced that Dunedin was the winner of the ultra-fast broadband competition, Gigatown.[19] Several participants thought this would prove advantageous for Dunedin. The process of applying for the competition and the win had brought diverse groups together and was "a psychological boost for Dunedin". In practical terms, "we've now got national, and in some cases international, companies focussed on how they can derive the benefit from that". One hope was that Gigatown would deliver a "short term boost … to attract and retain some of those students".

Some participants anticipated further technological change in housing, forced by climate change impacts. One wondered if northern European style "communal heating" could be introduced, involving hot water piped from a central point. Others expected there might emerge new relocatable home technology and more common use of solar panels. Some anticipated technology trends had the potential to affect transport habits, including more people working remotely and more consumer goods ordered online and delivered to people's homes.

Transport

Dunedin transport patterns in part reflect its population. Many young people did not see a need to drive (a trend discussed in Case Study 16, page 177). Students tended not to use public transport or cars much and most walked to campus; 80% of university students were said to live within three kilometres of the Clock Tower. In a "resilient compact city", especially if oil costs continued to rise, it was claimed this trend would continue. One participant said "we're still very car-dominated, and it's difficult to see in Dunedin how that's going to change". Other participants thought transport and specifically petrol costs would be a driver of change. One suggestion was that, in future, neighbourhoods rather than individuals would own cars, and pool vehicles (as used in large businesses now) would be available for residents.

Parking policy supported car use. The city provided plenty of parking either free or "affordable" at $1 an hour, an amount that residents still baulked at, it was said. Using a car was a cultural norm in Dunedin, according to a participant,

and there was a view that "parking's like a human right". Attempts by the council to reduce free parking caused "continuous fights every time". Retailers were reported as saying "if you take the car-parking spot away from the front of my shop, then that will ruin my business", although a study discussed in Case Study 10 (page 115) suggests this would not be so.

Public transport service in the city was said to be "appalling", "terrible" and underused. Bus fares were high and frequency of service low. Buses were said to be empty 90% of the time. Public transport trips in Dunedin made up only 1.14% of all trips in 2012–14.[29] Public transport competed against the cost, comfort and convenience of the car and lack of congestion: "you're a twenty-minute drive from anywhere in Dunedin". Port Chalmers was mentioned as having particular bus service problems; it was "a more affordable area for people to buy houses, only 12km from town, but you couldn't have a job in town outside normal Monday-to-Friday hours if you didn't have your own transport". It was thought that public transport and usage would only improve with increased population: "we just don't have the population density or size … to get really efficient public transport".

One participant thought that bus priority measures were needed. Free bus services had been tried in the past and were not used — students "don't need them". There had been discussions about the city council taking over responsibility from the regional council for public transport; it was thought this might happen in the next three or four years. Currently, the city council had "limited ability" to have an impact on decisions about buses, such as new services into areas where the city would like to encourage residents to move. In future, a participant thought, tighter drink-driving laws could potentially mean greater public transport usage. Another suggested that the small bus or van used for hospital patients or older people during the day could be used by night as a safe-driver transport.

Rail had lost its place in city public transport options, but "about 60% of the product that goes out through the port is taken [to Port Chalmers] by train". The remainder went by trucks, and the road, State Highway 88, was said to be busy, often dangerous and in constant repair. A future where more produce could be transported by rail was suggested by one participant as both safer and more sustainable.

One participant identified "a bit of a sea change in generations" about cycling. Demand for more cycleways was showing up in Annual Plan submissions. While "naysayers" might suggest "it's a hilly city, it's just a fad", it was thought that in future "electric bikes will flatten hills". Further demand came from the university. The Vice-Chancellor was quoted by a participant as reporting:

> *When they're recruiting academics from overseas, almost the most common question from the academics from other places is: can I cycle to work? So if we're aiming to develop a city which is outward-looking and future-focused and wanting to attract younger people, and the biggest industry in the city is peopled by folk who want to have cycleways, then why wouldn't we?*

Participants mentioned difficulties with a recent cycling infrastructure project. Expert advice on the "quiet streets" approach, developed in Portland, Oregon, and elsewhere, had been implemented with "minimal buy-in" from residents on a short stretch of road. Owing to a lack of coordination between the teams responsible, the infrastructure was left un-landscaped for a long time. This resulted in "a big fight over a tiny thing" for the city council. A lesson learned was that developments needed to be more carefully thought through. One participant spoke with frustration of how most people in Dunedin "do not get" cycling and the need for cycleways. It was thought "the large majority of the population has no comprehension of how good cycling can be", and this was retarding the needed development of cycling infrastructure. From NZTA's point of view, cycling projects typically had high benefit-to-cost ratios. A drawback was local authorities' struggle to meet their share of costs. NZTA was seen as currently "very keen on funding cycleways", which was positive for goals about compact urban form; "that enables us to aspire to create a certain kind of city with certain kinds of linkages. If they weren't so keen it would be harder, because it's not cheap".

Because Dunedin's main urban area is small, "you can pretty much walk anywhere in an hour". One participant thought that walking would be even easier if the city was more compact, especially if shelter from the weather was available along footpaths. But walking in the steep parts of the city was difficult, with flights of steps making it impossible for parents with buggies. The South Dunedin walkway and cycleway initiative was noted, and a separated cycleway/walkway from the centre of Dunedin to the port was two-thirds completed, developed from the city's Strategic Cycle Network.

An argument was put forward that Vote Health funding should be used to promote and protect active transport modes, since many health conditions are associated with lack of exercise. This approach was seen as "investing for outcomes; the outcome is health". Individuals' transport costs would reduce as well. Compact urban form reinforced this "because you can get away from owning your own vehicle". Case Study 17 (page 183) looks at how two New Zealand cities have successfully promoted walking and cycling.

NZTA's revised Financial Assistance Rate to Dunedin for roads within the city would reduce from 59% currently to 51%, over nine years. This was said to be a big change for the council and likely to cause tensions, as there were "fairly overt pressures to keep rate rises at around the level of inflation". Constraints on NZTA funding had more of an impact on smaller councils, which spend a greater proportion of their funds on roading. Not everyone agreed on roading as a priority: one participant criticised spending on widening the state highway just outside the urban area of Dunedin. Some participants thought central government, through NZTA, should be paying more for infrastructure, given that local institutions could not afford to pay for major roading modifications.

One argument was that roads in Dunedin City Council's area were not only of local importance.

> *The regions produce a disproportionate amount of the export dollars. So if … the milk tanks and the logging trucks and the sheep trucks etc. that go over those roads, if they are held up, that's an inefficiency, that's a cost, and it's a cost to the national economy. It's not just a cost to the regional economy.*

Urban form

Between 2001 and 2013 Dunedin experienced a significant increase in population-weighted density, from 28.1 people/ha in 2001 to 31.9 people/ha in 2013, a 14% change, compared to 17% in Wellington and 33% in Auckland.[32] Dunedin's Spatial Plan (see Planning) and 2nd Generation District Plan (the latter still under development) reveal the city's ideas about urban form:

> The overall urban form objective is to have a compact city with resilient townships. This development pattern is based on maintaining and strengthening a compact urban form centred on the main urban area of Dunedin, while recognising the existing townships. In general, the expectation is that most new development will occur in the main urban area of Dunedin, utilising existing urban land more efficiently, including through more mixed-use residential development in the central city and suburban centres and providing for residential intensification. The limit of urban development will be defined by an urban rural boundary.[33]

The draft Regional Policy Statement is equally clear about containing and avoiding urban sprawl.[34]

Some of the broader drivers behind this approach were described by participants: the expected slow population growth; rising energy costs; costs of infrastructure. Some parts of the city had poor housing quality, and renewal (where feasible) was favoured over greenfield development. Dunedin, a "centred" city, designed "with a formal picture in mind" where the town planner "actually had everything [coming] down towards the harbour", was seen as already quite small and compact. The limited flat land and the hilly terrain in the built-up city area had historically encouraged "quite small lots with quite small houses". The city had wisely "not allowed the spread of urban malls and urban shopping centres … the centre of the city is alive and well". Increasing the supply of intensified inner-city dwellings would have various effects, according to participants: reducing the need for private cars; reinvigorating less desirable inner city areas by creating an apartment and café precinct; and freeing up a lot of houses in the suburbs. There would also be implications for public transport provision and roading investment and disinvestment decisions.

Another view was that Dunedin did not need a more compact urban form and people did not value intensified housing or want apartment living; and,

CASE STUDY 17

Assessing city interventions to increase walking and cycling

The ACTIVE study, part of the Resilient Urban Futures research programme, found that in an environment in which active travel (in this case walking and cycling) is on a steady decline, government and council-led interventions are effective in arresting that decline and encouraging uptake of active travel. Increased use of active travel modes have individual and public health benefits, as more physical activity decreases risk of obesity, cardiovascular disease and diabetes. There are also environmental and economic benefits in using fossil fuel transport modes less, as emissions are decreased, less imported fuel is required and air quality is improved.

The long-term trend for active travel use in New Zealand is in decline, though some larger cities (notably Wellington) have experienced recent increases in use of active travel modes for commuting to work.[30] Observations overseas suggest that car use is tending to decline in high-density urban areas, but increase in areas of lower density. [31] This suggests that in New Zealand we might expect to see increased uptake of active travel in higher-density urban areas, but a decline in lower-density urban areas. Assessing the success of efforts to make our smaller cities friendlier to walking and cycling is important to understanding how to arrest this decline in active travel and attain the health, wellbeing and environmental co-benefits.

Figure 6.3 Separated cycleway on Havelock Road, Hasting, heading towards Havelock North.

The ACTIVE study assessed whether government and council-led interventions to encourage active travel were effective by studying two cities that implemented such measures. In New Zealand and internationally there is a lack of analysis about interventions of this kind, so the study will be useful for informing future policy.

New Plymouth and Hastings District Councils each received funding from the NZTA to encourage and facilitate active travel through infrastructure (bike lanes, for example) and outreach programmes. Whanganui and Masterton did not receive funding, but are similar in demographics and have an interest in encouraging active travel, so were chosen as control cities to compare with the two intervention cities. The researchers drew on the New Zealand Travel Survey and their own survey over 3 years, 2011 (pre-intervention), 2012 (mid-intervention) and 2013 (post-intervention).

Whilst patterns of active travel decline were apparent in Whanganui and Masterton, the council-led interventions in New Plymouth and Hastings were effective in arresting that decline and encouraging cycling and walking. Such interventions, which facilitate and promote active travel, are therefore important components of resilient and health-aware transport policies.

From Michael Keall, Ralph Chapman, Philippa Howden-Chapman, Karen Witten, Wokje Abrahamse, Alistair Woodward, "Increasing active travel: Results of a quasi-experimental study of an intervention to encourage walking and cycling", in press, *Journal of Epidemiology and Community Health*, 2015. This work was prepared as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

anyway, there was plenty of land available for housing. A developer who had initially proposed a number of attached dwellings had retreated from this after negative neighbourhood feedback. One participant thought residents had little knowledge and experience of higher-density or apartment living, and favoured having some "demonstration houses" to showcase. Several participants mentioned the need for high quality in compact development, and adjacent amenities.

Recent redevelopments in the Warehouse Precinct (between Queens Gardens and Police Street), where apartments had been put in, were considered particularly attractive by some participants. More such high-density inner-city living was needed and there were "some wonderful buildings" available. Positive externalities of apartments in the Warehouse Precinct were anticipated, such as IT firms relocating there, and more cafés.

On the waterfront there was a lot of under-utilised land. Apart from the developments in the Warehouse Precinct, Chalmers Property, owned by the Port, was "talking about better facilities in that area, better quality, light industrial and commercial". There were some concerns that such a development might

detract from the CBD George Street shopping area. The potential waterfront development of a university marine science building, and moving the aquarium from Portobello to the waterfront, were seen as positive for revitalising the area.

A proposal in 2012 for a 28-storey hotel on the waterfront had focused Dunedin's attention on what kind of city it wanted. While "most of the business community" supported the hotel proposal, it also created "huge outrage" in the city. Approval was declined. The direct employment such a hotel could deliver was "mostly very low-level jobs: chamber maids and catering". The process had led to "a lot of talk about the kind of urban form that we want and what we want for the city and how much we value the heritage look and how this thing was out of scale and out of place".

Heritage buildings were being re-fitted as dwellings, but there remained "a large number of under-utilised buildings" in the city. Some were on reclaimed land and needed earthquake strengthening, and some were run-down (Princes Street had examples), or were "demolition material". Commercial building-owners needed to have "a whole lot of equity" because banks would not lend for work that did not increase the value of the building. The cost of earthquake strengthening was considered prohibitive; some owners of historic buildings would say "no one will buy my building because they've got to buy all the earthquake strengthening and the fire protection work that needs to be done, and I can't afford to do it, so I will just let it rot". Some upgrading was being done for "love for the heritage environment" rather than profit. A participant lamented that few new buildings of equal stature in present-day terms were being built in the city. Apart from the university's building programme, there was opposition to public agencies spending money on "anything that's deemed to be lavish", even green building design.

One participant could not see infill housing working well in Dunedin and challenged the city council to identify all the places suitable for infill, especially on very steep land. Planned changes to the District Plan would permit infill housing with granny flat provision (but without kitchen facilities) in most parts of Dunedin, although not in South Dunedin where the plan being prepared was said to exclude medium-density development. This was seen as "a pretty massive signal: don't buy there". A participant queried whether there would be any impact from the granny flat concept on density; such a sleep-out might have limited occupation uses. Another person suggested that infill housing is not always attractive. A further concern was the pressure put on infrastructure: "you hope like hell that what is on the street [pipes and drains etc.] is going to be enough to cope with what you're putting in". One person thought that infill development was more expensive than greenfield. Pipes in the inner city "might have only been built to cope with office densities"; they might not cope with firefighting requirements, effluent removal and storm water. Increasing hard surfaces would increase "the volume of runoff". The relationship between urban density and infrastructure cost is explored in Case Study 18 (page 187).

Only certain kinds of people wanted to live in medium- or high-density housing, it was thought. Participants suggested these might be older people (some of whom already lived in medium-density retirement villages), young single people, younger couples and students — but only if they had outdoor space, good street-scaping, access to parks, and community gardens nearby. People in high-pressure jobs, or wealthier people, might want to live in inner-city apartments, and leave the city on weekends. One participant suggested those who could not afford a beach house might not want to live in compact housing. There would always be a need for detached family homes, it was said; it was a cultural norm especially for people with young children. For houses on the hills, having a view was a strongly-held Dunedin value, and it was thought there was an equal need for apartments to have a good outlook: "if you can get that recipe right, people [will] live in it".

One view was that "if you constrain supply" to encourage high density, "the normal market response is to increase the price of the land and therefore the developers have got to sell their apartments" at higher prices. Some would not be able to afford to buy inner-city dwellings and were doubly disadvantaged by having to live in outer suburbs because of transport.

> *They don't really have much of a choice about walking or cycling or bus, so therefore they go straight into a car. They typically have more pressures on them, so they have got less household budget for discretionary spending. They buy an older car so it is less safe. If they have an accident, then it affects them to a greater extent. It won't be as fuel-efficient as a more modern vehicle and they are going to spend a lot more every day, every year travelling.*

Some of Dunedin's current urban development was on the Taieri Plain, participants said. The area was "a liquefaction-prone and flood-prone area which isn't ideal for building, but it's flat and it's slightly warmer than the city". One participant, concerned about wellbeing, feared a new type of suburban neurosis would emerge in new housing areas where there were no amenities, "just endless housing, no dairies, no corner stores, a bit of park, but it's pretty limited".

Issues for a smaller city

Dunedin was thought likely to remain "a little bit caught on the coat-tails of changes that happen elsewhere in the country". Specifically, the work done by Auckland Council in discussions around urban growth and containment had "done an enormous amount for furthering the understanding of your average Joe down here about urban form and about the need for intensification".

Dunedin was said to be rather like Wellington City, with their town belts, hilly terrain and harbours. Wellington and New Plymouth were admired for their waterfront walkways and cycleways, and several participants spoke of Dunedin aspiring to make something similar of its harbour edge. Both Dunedin and the capital were seen as having already "a compact urban environment", though Dunedin lacked comparable dense inner-city living opportunities.

CASE STUDY 18

Urban density and the cost of infrastructure

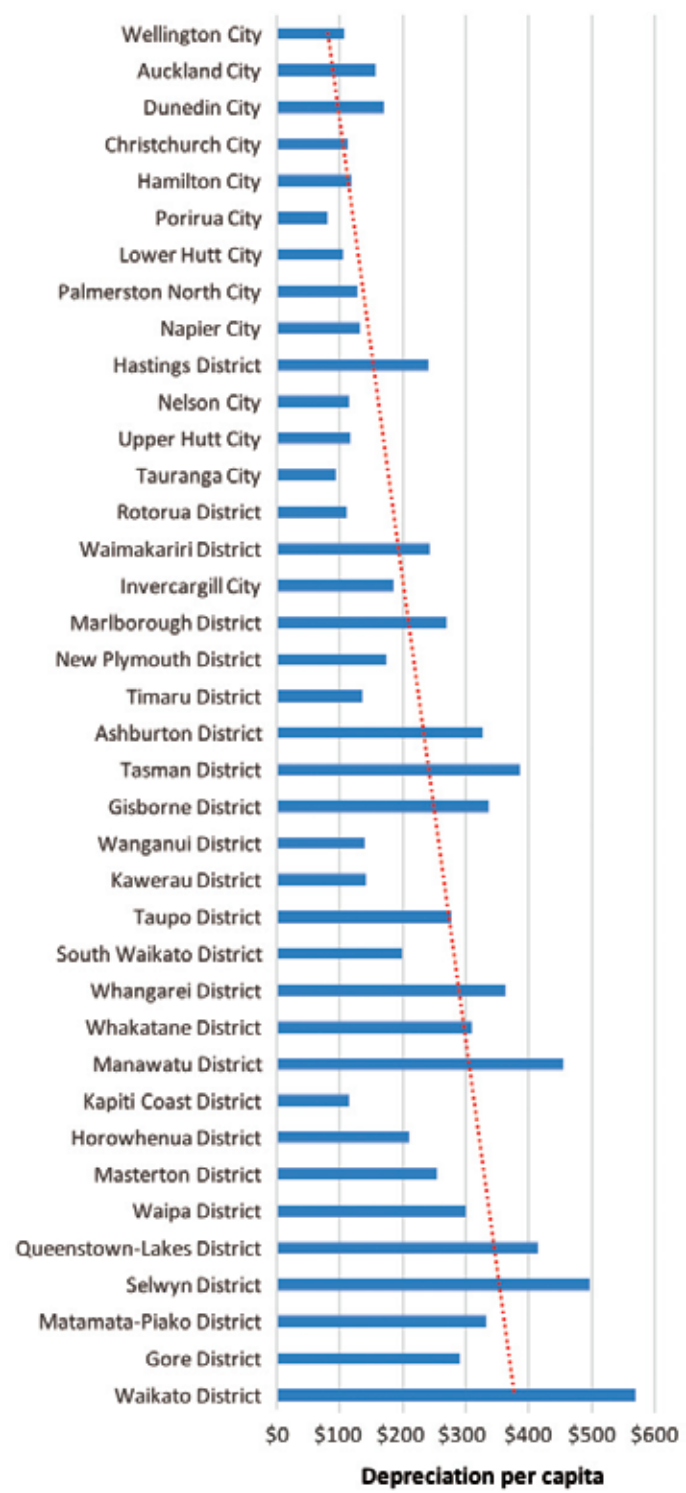
While an argument is made that mid- and high-density development incurs lower infrastructure costs per capita, there is a need for more real world evidence in the New Zealand context. Researchers Matt Adams and Ralph Chapman worked with publicly available infrastructure cost data to explore the relationship between infrastructure costs per capita and urban density.

They selected territorial authority (TA) as the ideal unit of analysis, because publicly available mandatory annual financial reporting by TAs includes infrastructure depreciation, which can be used as a pragmatic proxy for the annual cost of council-owned infrastructure. Using 2013 census and land area data obtained from Statistics New Zealand, a population-weighted density (people per hectare) was assigned to each TA. The researchers then extracted depreciation data for roading, stormwater, water supply and wastewater infrastructure from 2013/14 TA annual reports. Using census data on population per TA, it was possible to calculate the annual cost of infrastructure per capita for each TA except one. Finally, infrastructure cost per capita was graphed against the population weighted density of each TA. Figure 6.4 shows this relationship for roading infrastructure costs. TAs are arranged in order from highest (Wellington) to lowest population density.

The graph (which excludes the least dense TAs for reasons of concision) shows that, in the case of roading infrastructure costs per capita, there was a strong relationship between lower costs and higher population density. The relationship was similar for water supply costs, although was in the opposite direction for stormwater and wastewater costs. As roading and water supply infrastructure typically make up a high proportion of total infrastructure costs (71% of infrastructure depreciation expense across all TAs for 2013/2014), this research provides some evidence in favour of compact development. There is also justification for policies that differentiate developer contributions within each TA using density as a criterion.

From Matt Adams and Ralph Chapman, Victoria University of Wellington, project in draft form. Summary prepared by Nick Preval, University of Otago Wellington, working as part of the Resilient Urban Futures research programme funded by the Ministry of Business, Innovation and Employment.

Figure 6.4 Roading infrastructure costs per capita.



Smaller or provincial cities were said to have a closer and clearer connection than larger cities to their rural hinterlands and the rural economy. One view was that Dunedin was not quite a provincial city and yet not a city with high growth prospects. "Dunedin is right at that point of being neither one nor the other". This left its future in terms of compact development a little unclear.

> *In terms of scale, certainly for the big cities like Auckland, Wellington, Christchurch, the compact discussion is certainly alive and needs to be alive, but when you get to the provincial ones, the smaller ones, I just question whether it is such a big issue.*

Housing

Dunedin's housing stock (46,590 occupied and 3,915 unoccupied dwellings in 2013)[1] was said to include some very poor houses. Some houses were so old "you can't insulate the walls without ripping the place apart". House prices varied, but two participants noted $200,000 could buy a house in Dunedin. It was said that there were not enough smaller inner-city apartments or townhouses currently on the market. One participant reported house-building costs in Dunedin to be cheaper ($1,900 per square metre) than in Auckland ($3,000 per square metre), attributed to lines of sub-contracting and to profiteering. Another view was that Auckland had "economies of scale and a better supply chain".

Just over a quarter of Dunedin's households (25.7%) were renting[1] (lower than the national average), including most students. Several participants mentioned rating schemes for rental houses. "Rate My Flat" was one, an "online database of rental properties that are rated by their previous tenants".[35] One participant thought such rating schemes needed proper policing, but that any enforcement regime prohibiting people from living in a low-rated house would be "a big call". Dunedin City Council has been investigating a rental housing warrant of fitness scheme.

Landlords could get a good return on relatively low-priced properties; this was "probably skewed by the students". Some landlords were providing poor quality student flats, "very run-down houses that have a high density of rooms in them … and landlords don't seem to do very much to the properties". One participant described student flat landlords as "greedy and lazy". Another view was that students would treat properties more respectfully if they were better maintained. Students had run competitions for the best flat and the worst flat, and this was said to have an impact on landlords, with subsequent improvements. As student numbers had declined, houses in the university area became vacant for longer. The university had invested a lot in halls of residence (colleges) at a time when student numbers were higher than at present.

Dunedin was planning ahead for aged-care institutions, but not for other social housing, it was said. There were some kaumatua flats at Araiteuru Marae although not all had specifically older Māori living in them. Dunedin City

Council had over 950 community flats and 46 other flats, and Housing New Zealand had over 1,403 dwellings.[36–38] The "marked polarisation of incomes" in the Dunedin population meant providing good affordable housing for all was a challenge. One view was that inequalities would grow if provision of affordable housing was left entirely to the market. The city's Spatial Plan included as a priority "the need for quality new housing, including replacement of old and cold housing in existing urban areas close to services and infrastructure, particularly for our largest demographic growth area (1–2 person households)".[39]

South Dunedin: a vulnerable area

Over half the participants discussed South Dunedin as a particular geographic and social feature and an area of concern. One said her tupuna regularly travelled to the Titi Islands for mutton-birds and, on returning, crossed the area that is now South Dunedin by boat. That area is now reclaimed land, and densely occupied. South Dunedin is geologically and environmentally frail,[40] with the water table barely beneath the surface, so the area is "boggy", "sitting on sand and water", and "you only have to dig a little bit and there's water there". The potentially hazardous effect of an earthquake was a concern to participants, following what is known about liquefaction after the Christchurch earthquakes.

South Dunedin had the city's "worst housing quality" and "probably three-quarters of the housing wouldn't get a tick" on a rating scheme. But, being central, flat, close to services and beaches, and having the "cheapest rents", it was an attractive area for some. House prices were said to be relatively low. The housing — mostly old cottages — was compact; South Dunedin was thought to be "one of the most densely populated areas in the country". With "a lot of poverty that people don't necessarily recognise", the area was "run-down". Major employers had operated there in the past, but many, like the railways' Hillside workshops, had closed. The shopping centre was recently revitalised and plans were underway to set up a low-cost Māori health centre, supporting the concept of a kaik (village or hub).

Participants agreed something must be done in the coming two or three decades to address South Dunedin's vulnerability to sea-level rise and flooding. Sea inundation was not the main concern at the time of research; rather, it was that houses were damp, with surface ponding and chronic flooding in places. Floods from heavy rain in June 2015 bore out these fears. It was questioned whether the city had "the economic means and the political will to want to retrofit housing down there or whether it will become not worth it … because the housing's in a bad state already". A council participant said:

> *If the sea-level projections are right, we'll be starting to see significant impacts … We've got to start thinking about where else might people be located if they cannot continue long term in these coastal areas, where are they going to go? … [We have looked] at what are the protection options available to us for*

South Dunedin and we did raise with the community that we will be exploring non-protection options and that's really challenging for everyone.

Several participants discussed the concept of a "planned retreat" or "assisted managed retreat" from residential South Dunedin. There was a fear of exacerbating existing inequalities and creating new ones; "you don't want to have a ghetto created which some people cannot escape from, that becomes less and less inhabitable". It was thought that eventually market pressures would come into play, with insurance companies declining to insure properties in the area. This would have an impact on council decision-making without fail.

Participants referred to experiences in Kapiti (see page 126), which had shown some of the problems of speaking openly about coastal hazards. Residents there had insurance difficulties and blamed the district council for devaluing their property. Similar concerns led to changes to Dunedin City Council's proposed new provisions on natural hazards for the revised District Plan, due for public notification in September 2015.[41]

Relocating this community was said to be something never "confronted at that scale before". Other suggested options were a policy intervention requiring buyer and seller to share the cost of a required upgrade at time of sale, and technical solutions, such as a canal that individual houses pump to. One participant spoke of using "expensive electric pumps … and when the liquefied earthquake comes along, you abandon it, like they have in Christchurch, call it a red zone".

Infrastructure

There were implications for future resilience in the ageing of parts of Dunedin's infrastructure, particularly pipes and drains, such as in South Dunedin. City infrastructure projects experienced problems of coordination between different players, for example between transport and urban design and development. "Trying to get coordination between the council and the roading authorities is atrociously difficult". A case in point was the university's Campus Master Plan, which aimed to straighten the s-bend roads that run through the campus in order to accommodate rational building and calm traffic. All of this was unlikely to happen, not just because of the cost, but also because it was "just about impossible" to get central government and the council to agree.

Differences between the roles and viewpoints of regional and local councils in Dunedin were described by one participant as ideological. The regional council was responsible for the scientific identification of hazards, but it was the city council's responsibility to respond to them, for example in the District Plan. Hazards identified in certain areas might elicit a response that no-one should be allowed to live there, yet the city council had to deal with people *already* living in the area and impacts on property values.

However, multi-agency involvement in infrastructure and especially roading was seen as advantageous by other participants. There were clear "lines of

demarcation" between the different agencies; "mostly we see eye to eye". An example was access by utilities providers (energy and telecommunications) to the roading system which was allowed in statutory protocols, but in practice the needed coordination relied very much on influence and good working relationships. Another issue was transparency about who was doing work, whether private or public sector. Sometimes it was a matter of having the right people in particular jobs, one participant said. In a multi-agency system:

> *Different agencies respond to different parts of the community, and that can be really valuable, and it's also a protection … You don't have just one decision-maker in town; you're more accountable.*

Barriers to and enablers of development

Little development was occurring in Dunedin, it was said, reflecting low population growth, poor employment prospects for many, and low average incomes. Some participants cited barriers to development in the city and offered development "war stories" about consent costs and other problems.

Within the business community, local government's reputation was said to be "appalling". Virtually the only evidence offered by participants for this kind of view related to the time taken to get a building consent, with both council and other sector participants indicating the council was not "an enabling organisation" in relation to building consents. Dunedin City Council was seen as "anti-development" by one participant and another said "people want to renovate these old buildings and build apartments in them and the city says, yeah, you can do that, but here are four hundred hoops you have got to go through". Compliance costs, in particular around safety, were driving an excessively "risk-averse" development culture, according to a participant. New council staff were criticised as not up to speed with local conditions, and causing developers delays, while some senior council staff were said to be "too long in the job". An attitude in council was described as "God syndrome: they have the power … so they like to wield it". Developers were said to need two years from buying a block of land to get the first house up and going. It was claimed that the average time to get a building consent was 30 to 40 days. In an unusual feature of the local scene, some developers were said to have few issues around purchase or holding costs because the land on which they were building was inherited or owned by their families.

Another view was that the council treated developers "quite generously" and gave "a reasonable amount of support". It was easier from the council's point of view to deal with few large developers than many small ones; in fact, there were few active developers in Dunedin. Politically, the council had to deal with two diverse groups: one saying "if you own the land, you should be able to build absolutely whatever you want", and another group saying "we live as a collective, we live as a group, and the community needs a say". Council staff operated in

regulatory teams, and saw themselves as "guardians", such that proactively forwarding a developer's desired outcome was a "different kind of role" for them. Issues around consent and compliance costs, and time delays, were generally because of requirements "pretty much imposed by central government". While there might be times where the council was slow or failed to communicate, developers equally needed to present "better worded and more accurate" applications. A participant considered it "unfortunate" that some government ministers had criticised council planners "as if they were applying their own rules, as if they're a law unto themselves". It was thought that, in general, local planners were applying central government policies fairly.

Some participants thought developers, or end users of new or existing infrastructure, should be paying more for it, or that at least the costs should be transparent. "Why shouldn't the people that benefit the most pay up-front?" The development contribution required from developers was said to be one of the lowest in the country, reflecting both Dunedin's current low growth, and strong lobbying by developers. All participants who mentioned it agreed it was fair or low. The council no longer budgeted for expected development contributions; instead they were "a bonus" in council accounts. It also allowed variations to the timing of payments. The development contribution was "a tool that you can use to share the cost of infrastructure amongst those that benefit from it". If it did not reflect actual costs, ratepayers had to pay, with councils carrying the risks, it was said. One view was that if councils wished to give incentives to developers, a better approach was to use other tools than the development contribution, such as timing of payments, rates relief or direct assistance.

Concern was expressed for transparency and the "true costs" of development, including impacts on the environment, infrastructure, neighbours and inter-generational debt. The costs of *not* regulating development must be considered, it was said. Leaky homes (see also Case Study 2, page 31) had been an object lesson on the failure to regulate. Environmental degradation and the protection of the Resource Management Act should also be considered. If the Act was changed and it was accepted that "the economy trumps the environment", it might conceivably be acceptable in the short-term, but "you're going to get major costs in the long term", and these would fall on councils.

Other challenges cited were in the building code, and the further changes expected in WorkSafe New Zealand increasing costs of development. Some thought that codes of practice and various professions' technical requirements were producing "standards creep" in building work. Some were legislated or were around health and safety, such as scaffolding around the roof while building, or suicide-proofing university building stairways. Professions engaged in development were interlinked, and "where you get dominance of one party you usually get grief". An example given was where developers "got too much of a say" on roading decisions. On large projects, such as new buildings at the university, or the Forsyth Barr stadium, it was said that work invariably over-

ran initial budgets. Another view was that building codes focused on minimum requirements. In the future these would need reviewing in light of climate change, healthy homes issues, air pollution and other factors.

Governance

The reputation in Dunedin of local government was said to be poor. When "interacting with the community on a wide range of fronts, providing all sorts of services", there was potential for citizen perceptions of the council to be negatively affected by even something minor like a library fine. Participants commented that property-owners "moan about their rates", yet "most people would spend way more on their electricity bill than they do on their rates bill". A view from within the city council was: "we have not kept people informed as to why we matter", with 45% of people surveyed apparently not knowing their rates paid for local roads. A participant suggested they be reminded at every opportunity (for example every roadworks event). The council did provide informational notices about some of its activities.

Relationships between central and local government were said to have improved since the recent overhaul of Local Government New Zealand. There remained concern about cost-shifting from central to local government in the legislative requirements around the Resource Management Act and other regimes. The introduction of the Rules Reduction Taskforce,[42] and its invitation for submissions and complaints about "stupid local government rules", was seen as unfairly demonising local government. Clarification at central government's

Figure 6.5 Notices in the Octagon with information about council activities, December 2014.

end was seen as preferable to the Taskforce's approach. It was also thought that the division in responsibilities between city and regional councils and central government did not always make sense for the management of city resources such as water.

Whatever their political ideologies, elected representatives typically used their energies for the good of the community and the city or region, according to participants. However, councillors were often elected on single issues, or in reaction to the previous council. Dunedin was a "very small networked place" where lobbying happened continuously in the community, with a result that "it's not always impartial decision-making". Some council members had a particular focus, for example on environmental issues. Understanding these politics was important for council staff.

> *Inevitably because of the breadth of the council's work, you've got many different motives and agendas at play and different ideologies, so that it's quite hard to actually get everyone on the same page on any issue … It's not like a business where the CEO can just say this is the line and if you don't follow it, you're off.*

Where senior local government managers had come from the private sector, they were used to quicker decision-making, and while good when "driving internal efficiencies and corporate running", they might lack council leadership, vision, background and influence. Running council affairs like a business ignored the fact that businesses can fail, but a certain level of risk is not acceptable for councils, where they simply "can't have the sewage system failing".

Dunedin City Council's level of debt was noted by participants (in 2013/14, $620 million including council and council-controlled organisations[43]). There was a positive aspect, though, to being in a "very indebted city", which was that "every decision *does* get discussed to quite a significant degree", leading to improved decision-making. Potential implications included more careful planning and assessment of the short- and long-term costs of different urban forms.

Trust issues between councillors, council staff and community were a concern to several participants: "trust is really hard to build but really easy to destroy". Sometimes councillors distanced themselves from staff on contentious issues, it was said. A defining moment in recent years was the building of the controversial Forsyth Barr stadium. "The stadium's been a bit of a disappointment" to the council and left "quite a legacy of distrust". The pace of change in the council was sometimes quite fast and pressure of work on staff meant that "inevitably things slip or don't get done". This was important in terms of community trust. Even something straightforward like variations in the length of time for public consultations could cause suspicion. In a general atmosphere of distrust between community and council, staff were "having to overcome distrust" before starting discussions on any topic, which affected ability to drive changes in the city.

Planning

Following a period when the city council had developed nearly 50 plans and strategies, seen as trying to "appease everyone, and not make any decisions", Dunedin developed a Spatial Plan in 2012. The Spatial Plan was an alternative to allowing the market to determine what happened in the city. While some citizens might feel disadvantaged by the city's overall vision (they were thought to be "mostly in the property area"), it elicited good levels of input from the community and achieved a "rough consensus".

The Regional Policy Statement review was under consultation at the time of research. Territorial authorities in the region were said to have asked the regional council to include certain items in the document, on the basis that local councils were having difficulty effecting change in areas such as subdivision development, sediment and run off, which affected urban storm water and drainage.

Amalgamation

Participants described generally good relationships between the councils in the region, with forums between mayors and chair, and staff contacts. Shared services arrangements between councils in the lower South Island were thought more likely than amalgamations, which might not be discussed for another five years yet, or at least until "Wellington's resolved". Amalgamations might result in the same numbers of CEOs, but across work-areas or functions in council-controlled organisations for transport, tourism, economic development, etc., rather than across geographical areas as at present. It was not clear if Dunedin would be any better off, nor how transport or other services could improve under amalgamation. One participant believed that services, social contact and connectedness were better in smaller councils. A further view was that "the vast bulk of people don't really give a damn" about local government form.

Central government's impulse to amalgamate councils was seen as a reflection of the level of distrust between central and local government, and a mechanism to rein in devolved control.

> *Something that major, that really does affect local governance so strongly, is being done without any form of centralised blueprint, without the government going out and consulting … Nobody sat down and said 'what is the best form for local government for New Zealand'?*

If amalgamation had to happen, one participant thought the Auckland "one plan" model was desirable, but in Otago a lot of "consensus building on a direction" would be needed first. Some services had to be provided locally. Among controversial moves away from local provision of services was the health sector example: the "national sandwich" proposal to have food for hospitals made in a central kitchen outside the region,[44] with attendant nutritional and sustainability risks.

Iwi and Māori

Dunedin's primary iwi grouping is Ngāi Tahu, which completed its Treaty settlement with the Crown in 1997. There is one mātāwaka marae in the city. Relationships between Māori and major Dunedin institutions such as councils and the university were said to be good. The city council had an Advisory Group on Māori Participation, a guide to iwi consultation for resource management projects,[45] and a Māori Business Support programme,[46] while successive mayors had good relations with chairs of the different rūnanga. The Otago Regional Council had a Memorandum of Understanding and Protocol with local iwi, Te Rūnanga o Ngāi Tahu and Kāi Tahu ki Otago,[47] and acknowledged the importance of the coastal environment to local iwi.[48] The regional and city councils and local rūnanga are parties since 2012 to Te Rōpu Taiao Otago, a forum of local government and Ngāi Tahu.[49] There was also iwi representation at different levels in Grow Dunedin (the organisation responsible for steering the Dunedin Economic Development Strategy), the university and many non-government organisations.

A city council participant said "increasingly we involve the local rūnanga in various things that we do". An example was the inclusion of representatives from two city rūnanga in a sister-city visit to Shanghai, as the mana whenua face of the city. At the corporate level "cordial but not intimate" relations existed between the council and Ngāi Tahu headquarters in Christchurch. A more critical view was that institutions' work in partnership with Māori in Dunedin was "slightly lip-servicey".

Te Rūnanga o Ngāi Tahu's investment company Ngāi Tahu Holdings Corporation Ltd., a major investor and one of the South Island's biggest businesses, was said to favour long-term but high-return investments, and "they won't be taking their money off when they get the profit; they want to reinvest in their own communities". Otherwise, Ngāi Tahu Holdings Ltd was said to be no different from other developers: "it's just a bigger corporation … trying to make money for their shareholders which is their iwi". Some disquiet was expressed about the potential conflicts between Ngāi Tahu's investment approach and other iwi values; for example, investment in dairying, where both economic uncertainty and environmental damage raised concerns, and in relation to proposed drilling near Dunedin by New Zealand Oil & Gas Ltd.

> *Ngāi Tahu has a particular ethic I think around … this phrase called "Ki uta ki tai", which is "from the mountains to the sea", when we think about the environment. But it hasn't stopped a lot of Ngāi Tahu talking to these people who want to drill oil.*

It was thought unlikely that Ngāi Tahu investments would have an effect on Dunedin's urban form, but local rūnanga partnerships might; they were seeking "a really visible presence of Ngāi Tahu in this area". Local rūnanga, for example, were interested in the aquarium that might be moved to the waterfront, and the

iwi owned long-term leased properties in the city. This investment had "paid off the buildings within four years". The Police Station in Dunedin is owned by Ngāi Tahu, which states that the "long-term lease … sits comfortably with Ngāi Tahu Property's strategy of secure inter-generational investment".[50] One participant observed that the iwi's investments in the city were mostly "passive investment", but suggested that Ngāi Tahu might in future use investment "as an economic driver, by building infrastructure, new product … working in the tourism sector". Ngāi Tahu's caution was noted by participants in relation to the halt called on a hall of residence development at Otago Polytechnic. Their requirement for return was said to be "way above what could be achieved in a student accommodation block". Further, Ngāi Tahu was concentrating on developments in Christchurch as they were more profitable; "the quake in Christchurch has skewed things, and it's quite difficult for Ngāi Tahu outside of Christchurch to go hey … you need to remember that we're all out here".

One area where iwi may affect future urban developments is in housing for Māori. Kāi Tahu ki Otago Ltd (KTKO) is an iwi consultation service based in Dunedin which deals with the resource management needs of rūnanga on their behalf, in relation to six councils in the region. Current review of the Dunedin District Plan included KTKO promoting District Plan changes to allow for more permissive papakāinga housing developments on Māori land blocks, as well as for papakāinga on "general land" in the city, where this lies within the original Native Reserve land blocks. For local rūnanga, the impulse behind this lay in people "coming home" to Dunedin, for ahi kaa, or keeping the fires burning, and "cultural revitalisation". Mana whenua wanted to develop their own houses, on land to which they have an important connection. Such papakāinga could be built by the local rūnanga or by individuals who whakapapa back to the original grantees of the Native Reserves.

Public engagement

Like the other cities we studied, public engagement with local government was considered important by participants, but none thought it easy. Challenges lay in: the extent of public feedback; which groups responded; managing unrealistic public expectations; pressures on councillors; and how councils might go about consultation.

Councils were "stewards of assets and communities" and without public input might "get stuck doing what [they] have always done". Public engagement had the capacity to prevent "undesirable development". Proposed developments could be "appealed or changed because of public engagement or public consultation". An alternate view was that the same processes could limit innovation and change.

Although public consultation and engagement were "like apple pie really, you couldn't say no to it", they were also time-consuming, difficult and expensive. Various alternatives were discussed: a street open day in the heritage

precinct; consultations through citizens' communities rather than residential neighbourhoods; where very small neighbourhoods were involved in a proposed change, holding ultra-local consultations among the relevant streets; and using schools, workplaces, and community and voluntary sector organisations as consultation conduits.

Social media gave more channels through which citizens could give their opinion "in a way you have no control over". The medium of engagement was said by some participants to affect the output, for example, with email survey panels, there was a tendency to do the bare minimum, "fill in the easy bits" and not the sections asking "have you got any comment about this". Participants variously favoured face-to-face or telephone discussions, email panel surveys or the social media consultations in use in Dunedin. Digital submissions created processing problems for staff, as the 4,262 submissions on the city council's alcohol policy consultation in 2014 showed; some of the online submissions were solicited in pubs, and 79% of the submissions received used hospitality and alcohol industry forms.[51] With social media, it was "harder to know where the truth is because you get so much more noise", and there were questions over the consultation experience and local government understanding possessed by digital consultation companies.

While there had been good community engagement with the Spatial Plan and the current 2nd Generation District Plan, it was said that inadequate attention was paid in local government planning generally (including District Health Boards) to inequalities. One area where citizen input was possible was the response to resource management consents, but, apart from one local who attended every hearing, this was rarely taken up. Participants often referred to who gets heard. "When you consult, the silent majority are silent and it is the lobbies that make all the noise". Young families — the very people who might have a strong interest in the future of the city — were not engaging because "they've got other things on their mind".

There were perhaps "a couple of hundred frequent flyers who will always submit on everything". Where councillors wanted to accept staff advice, they were in a difficult position if the advice differed from community lobbying. One view was that whereas in the past virtually all councillors had occupations that put them in frequent contact with citizens, for example, running local businesses, this was less the case now. Where lobbyists or councillors favoured policies based on overseas models, problems arose when these did not fit New Zealand's local government set-up. An example given was the "quiet streets" cycle plan, coming from "large flat cities with grid networks", which was not so easily implemented in Dunedin.

Citizens had an expectation that their submissions would be implemented. If not, they tended to assume they had not been heard. For one council participant, policy decision-making was not always evidence-based; as well as the multitude of inputs, there was a role for "intuition", although this rendered policy-making

"vague", "un-transparent" and "hard to understand". This was further in conflict with "the digital world that most people have in their heads now", where "you think that everything is like a logical process".

Uniquely, Dunedin has an independently-owned local newspaper, the *Otago Daily Times* (ODT). The newspaper paid close attention to civic affairs, and even minor matters could "become very big issues, because that's all there is to write about". The ODT was active in scrutinising city affairs and played a role in the levels of trust between councils and communities. However, "the newspaper has its own agendas as well, it's not completely neutral on topics". The ODT turned up to "every meeting", and attentively followed discussions over time. It put councils under the spotlight, sometimes to their discomfiture, but it was valued as "dedicated to the good of Dunedin and Otago". A council participant said:

> *We are the only news in town, there's not a lot of international news, there's not a lot about the government … Sometimes we think that somebody down at the ODT takes pleasure in never putting the word 'Auckland' in the paper.*

However, another participant deplored the absence of investigative or in-depth journalism alongside expanding social media.

Engaging with citizens was a two-way road; councils were able to lead citizens "to a place they won't even know about", and citizens in turn, with their very local knowledge, could provide information councils might not be aware of. Council technical and professional staff needed support to have an open connection with residents, because this often achieved better *technical* results, it was said. Strong leadership was also essential to balance lobbyists.

Environmental drivers and climate change

Dunedin is faced with the same environmental drivers of urban change as other cities, from fossil fuel use, climate change impacts, water issues and others. But not all participants considered these as serious issues: "environmental problems, pollution and so on are not evident when you live in Dunedin".

Others spoke of a range of water issues including: the Leith's potential, as a mountain river, to flood; the use of septic tanks outside the main urban area; and storm water sediment run-off and pollution. Where septic tanks were used, it was difficult and expensive to get those areas up to regional standards for water quality and discharges. Low-lying land in the wider city was at risk for flooding, as were the "high quality soils" of the Taieri Plain, and the airport, which is below sea level. Yet houses were still being developed at Mosgiel. Generally, river water quality in the region was better than required nationally for swimability, and Otago Regional Council put effort into maintaining this. Participants noted further work was needed on estuarine environments and pest eradication. Otago Regional Council gave some support to biodiversity work by voluntary groups. The environmental impact of dairy farming in the region remained a concern.

As discussed in the Transport section above, Dunedin's residents seemed "wedded to private transport", and this created a conflict with city policy to reduce carbon emissions. A further conflict was evident in attempts to increase flights to Dunedin airport. During the research period, Dunedin City Council voted to disinvest from fossil fuel extraction companies.[52] Off-shore oil and gas exploration was a divisive issue.[53,54]

> *Decision-making around environmental issues is not resolved in Dunedin. So for example the idea of offshore petroleum exploration, it brings up a lot of dissenting views … and it's clear that as a city we don't like to actually decide on a way forward, we do like to just … please everyone a little bit. And on those sorts of issues it gets tricky because in some cases, you actually do need to stick your marker in the sand and say that's who we are … Environmentally …, we may have to make some choices and I don't know how comfortable Dunedin will be making choices like that.*

Ngāi Tahu's Environmental Management Plan, Te Poha o Tohu Raumati,[55] stating the iwi's principles and beliefs, was a useful tool for councils. There were hopes that Ngāi Tahu would be involved with Otago Regional Council and others in further environmental restoration work on estuaries. Ngāi Tahu has particular sites of significance, which it protects from development, but it was observed that although people might think "there would be a really clear black-and-white principle [about oil and gas exploration] for Māori around environment, there actually isn't." However this participant, although acknowledging the conflict, noted "I'm quite happy with the fact that Māori values will evolve". New Zealand Oil & Gas was said to have approached rūnanga with financial support to fund "committees", but not all rūnanga in the area engaged in such discussions. One which refused the $20,000 funding believed that accepting it "actually ties us into something".

Climate change effects were not considered as very serious by all participants, some of whom even naively welcomed improvements in Dunedin's weather. One queried whether there would be any effects other than increased storm water. Others discussed flood hazards, land and coastal erosion, extreme weather events and sea-level rise, and the pressing issue of expected impacts on South Dunedin. Much residential land was right on the coast, and "most of the Kāi Tahu sites of significance are within a kilometre of the coastline, so they're really concerned about the effects of erosion and storm surges on those sites". Because Native Reserves also included land on the slopes, papakāinga could be built away from the shore in future. Coastal erosion was already affecting roads in North Otago, it was claimed. For some, climate change prospects were "quite scary". One noted that in an annual ranking of countries' progress in climate change policy and practice,[56] "New Zealand is continuously getting worse and worse".

Some participants were clear that those who caused environmental problems, that is, through pollution, should pay for rectifying the problem. Another view was that all urban residents benefit from the city and all suffer from environmental degradation of the harbour or rivers, so all should pay to mitigate the negative externalities of city living.

Conclusion: thinking about the future

Dunedin's recent and predicted population growth and economic performance is comparable to that of similar-sized cities. Unemployment rates were similar to or better in Dunedin than in Hamilton, Tauranga, Palmerston North and Hutt City in 2013. Dunedin is predicted to experience slower population growth than those cities (with the exception of Hutt City), with smaller growth in the 65+ age group.[1,3,4]

Dunedin's modest rates of population growth and economic development mean less immediate pressure to change transport patterns, or to pursue either new greenfield development or urban intensification, but formal city planning is committed to a more compact urban form and there are opportunities to refurbish ageing housing and infrastructure. More resilient future development may come in recognition of potential impacts from climate change, although how this might play out was unclear, because "sea-level rise, climate change, energy depletion and various other forms of environmental degradation and overpopulation, it's never happened to the world all at once before".

Much discussion about future resilience was utopian, according to one participant, "as if we'll all suddenly stop being human and start being perfect". Resilience was favoured as a broad concept by another:

> *Looking forward, resilience is a better way of expressing what used to be talked about as sustainability … Sustainability is in a sense backward-looking, you're sustaining something that's already there. Resilience is the ability to adapt to things that … we're not too sure of yet.*

Many current features of Dunedin were expected to continue. These included: low positive population and economic growth; the importance of the education sector in the city's economy and in attracting students to the city; housing and income inequalities; and the trend towards living in rental accommodation. The liveable nature of the city would continue to attract people to "move here for lifestyle reasons", bringing business and expertise with them. The city would remain important in servicing the needs of its rural hinterland.

"The jury's still out" on how investment by Ngāi Tahu would affect the city. A participant who spoke at length about the future noted "everybody's looking for the next thing that's going to be our saviour", whether in the form of new oil and gas industries, a centre for innovation to commercialise university outputs, the

Internet connectivity benefits from Gigatown developments, or relationships with China.

The city had different directions to choose from. One option was to continue along the path already taken, emulating cities like Auckland, with large houses, high-rise hotels and casino. Others focused on the potential of Dunedin's smaller size, wildlife and scenery, "cultural and intellectual life", and other unusual features such as the 2014 City of Literature UNESCO designation, to attract tourists, retain graduates, and encourage "clever people to come and set up here". Dunedin faces the challenges of a smaller city distant from the agglomeration benefits enjoyed around Auckland, and city decision-makers need to engage effectively and creatively with citizens to effect urban change.

SEVEN

Survey of sentiments about cities

Philippa Howden-Chapman, Anna Hamer-Adams,
Ed Randal, Ralph Chapman, Guy Salmon

Policy- and decision-makers influence the shape and future of their cities, and the lives of their inhabitants. Yet city residents, as stakeholders in the process of urban change, also shape the priorities and actions of decision-makers. Several of the cities in our report have proposed plans emphasising a vision of compact urban growth that is a significant departure from business-as-usual development. The achievement of this vision will require support from residents. To establish what individuals think, we undertook a nation-wide survey of the views of New Zealanders on their housing and locational preferences, and what they think about urban issues, urban governance, trust, and inequality.

Background to the survey

The way we have developed cities in the past may not be a suitable blueprint for the future. Population growth, transport issues, housing affordability, inequality, and climate change are forcing a rethink of the quarter-acre dream in our biggest cities. Councils and central government are under pressure to balance the provision of affordable housing (in one of the OECD's least affordable countries), transport, and resilient and reliable infrastructure, and to limit the loss of fertile farmland at the urban fringe. This needs to be achieved while maintaining high levels of liveability, and encouraging healthy and happy communities.[1,2] The question we face is: can all of these outcomes be sustainably achieved in a constrained environment? The Productivity Commission was charged by the government on two occasions to consider these issues: housing in 2012,[3] and land supply in 2015.[4] It states:

> The functioning of cities can also be enhanced by well-targeted policy interventions, such as investments in transport infrastructure. Yet the interest of the nation in having cities grow may not be reflected in local choices and planning systems. Local residents may not wish to bear the costs of growth (e.g., congestion) and may act to slow or constrain the development of their cities. Existing homeowners also benefit from policies that restrict the supply of new dwellings, as they help keep the price of housing high.[4]

Internationally, researchers have found some solutions in compact, smart-growth cities, where increased density, mixed land use, multiple transport modes, and affordable housing options are given greater priority.[5–7] Many organisations, including the IPCC, the OECD, the UN and the WHO, are encouraging planners to consider where people will live, shop, play, and work, and how this interacts with the transport options available, and the transport choices people make.[8–11] There are significant and proven health, economic, and environmental benefits to be gained from taking a more integrated, systems view of cities, leading to designs that encourage active and socially connected lifestyles.[7,12–15] For example, a suburban house on the city fringe may have a cheap purchase price, but may not be as economically viable once travel time, travel cost and health impacts are accounted for.[16,17] While some people prefer to live in the suburbs, financial constraints mean others can only afford a house in the suburbs. The less well-off in society can be faced with the greater economic and health burdens of living in an outer suburb, further exacerbating social inequalities.[18,19]

As outlined in the city chapters of this report, government and councils wanted to promote more resilient and sustainable development, but found it difficult to balance conflicting interests, while putting the necessary legislative, planning and financial frameworks in place to make change. For example, inner city apartment living is becoming more common, with building consents issued for apartments in 2015 running at a seven-year high.[20] However, there is still an emphasis in the market and the media on large suburban houses on large sections, and few apartments are available on the market to suit larger households.

Compact and smart urban growth is a significant change from business-as-usual, so we considered it important to look at what New Zealanders really want for housing and the development of their cities. In 2009 we surveyed 3,244 New Zealanders using an online Horizon poll to find out their opinions and preferences for urban environments, including the types and locations of housing, transport options, and planning regulations. We found that preferences for housing type and location were strongly related to life stage, with stand-alone housing preferred by those of child-bearing age, and small houses and apartments becoming increasingly popular with other age groups. We also found that people were generally keen to live within walking or cycling distance of the destinations they needed to get to most often. Most appreciated the need for urban limits to achieve sustainability, and felt that councils, rather than market forces, should have the key role in shaping our cities.[19]

In early 2015 we surveyed 3,080 New Zealanders aged 18 or over to find out whether these opinions had changed. We used a nation-wide online Horizon poll, which included mainly urban but also rural dwellers, and used the same methodology, weights, and many of the same questions as the 2009 survey. We also asked about affordable housing, climate change policy, and zoning rules, as well as questions regarding inequality and trust in New Zealand society

(see Appendix 3 for the list of questions). The results are presented here. All cross-analyses described in the text have been checked using the χ^2 test and are statistically significant.

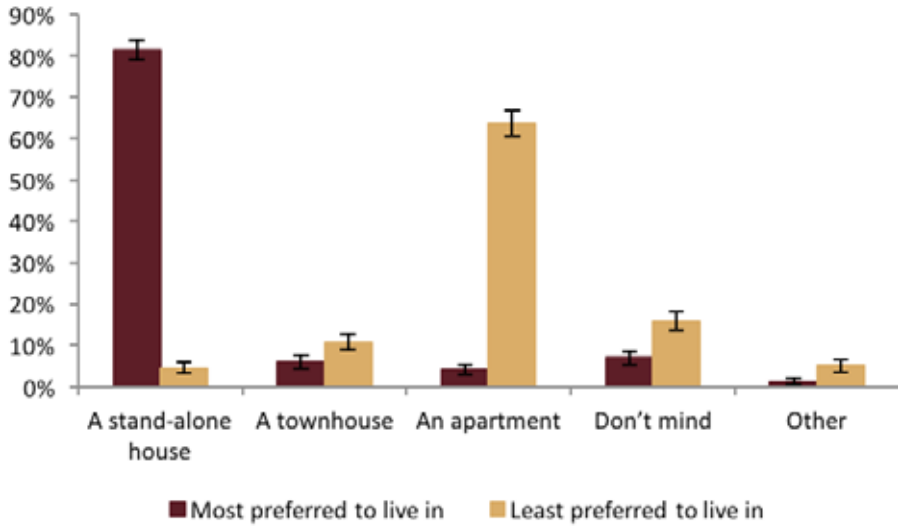
Preferred housing type

The strongest housing preference, abstracted from other considerations, was still for a stand-alone house. When asked what type of dwelling they would most prefer and least prefer to live in, a clear majority said a stand-alone house and an apartment respectively (see Figure 7.1). Similarly, in Figure 7.3, most individuals displayed a strong preference for a larger house, further out, rather than a smaller dwelling close to the city/town centre. These preferences appeared to be fairly stable, with some shift towards a shorter commute, between 2009 and 2015.

Just over half (53%) of respondents said having space was more important to them than having a shorter commute time, while a quarter (26%) thought that having a shorter commute was more important than the house they lived in, increasing from 15% in 2009 (Figure 7.2). This is a significant increase, potentially reflecting some realignment of values. There was a roughly equivalent decrease in those who said they did not mind. The proportion of respondents valuing a short commute to work over the type of house they live in increased in all of the cities we studied, except for Dunedin, where this proportion decreased slightly.

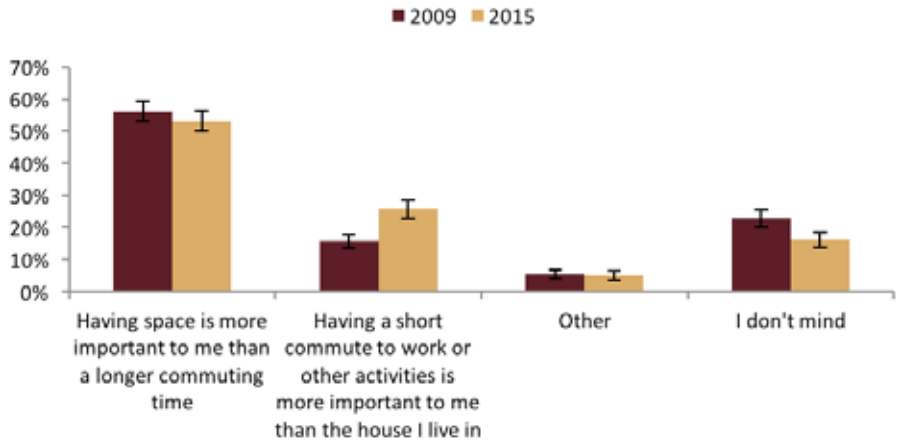
Attitudes towards housing type varied significantly by age and gender. While overall both men and women least preferred to live in an apartment, slightly more than half the men (57%) said so, compared to a larger majority of women (70%). Women were also more likely to say having space was more important than a longer commute time (56% of women compared to 50% of men), while

Figure 7.1 Most preferred and least preferred dwelling type, 2015.*



* Question 2: Some people do not mind whether they live in a stand-alone house, a townhouse or an apartment; other people have strong preferences. What would you most prefer to live in? And which would you least prefer?

Figure 7.2 Views about the trade-off between residential space and commute time, 2009 and 2015.*



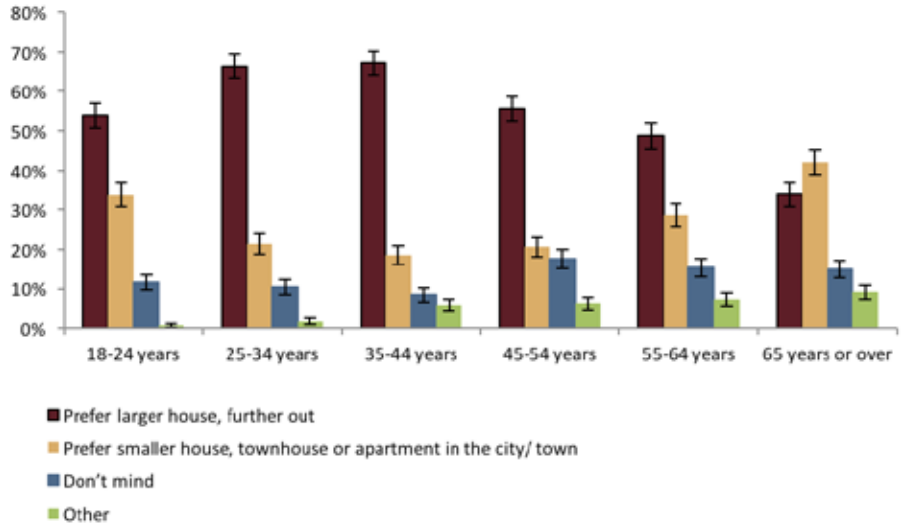
* Question 4: For some people a house and garden in the outer suburbs is more important than the time spent commuting to work; for other people a shorter commute to work and city life is the most important issue. In your opinion (please tick one): A. Having space is more important to me than a longer commuting time. B. Having a short commute to work or other activities is more important to me than the house I live in. C. I don't mind. D. Other.

men were more likely than women to say a shorter commute is more important (30% of men compared to 21% of women).

As shown in Figure 7.3, the desire for large houses with more space (even with the consequence of longer commutes) reaches its peak in middle age, and decreases markedly as individuals approach or pass the retirement age. People aged 18–24 or 65 and over, single-person households, and those flatting or boarding were far less averse to living in smaller houses than 25–64 year olds and people in families with children, and had a relatively stronger preference for living closer to the urban centre. This indicates that life stage has an important relationship with housing and locational preferences.

While the majority of all respondents preferred a larger house, further out, a larger proportion of Auckland and Wellington (in this chapter Wellington refers to Wellington City, and not the wider region) respondents preferred a smaller house, townhouse or apartment in the city/town than those from the rest of the country (32% of Auckland and Wellington residents combined, compared to 24% of respondents from the rest of the country). Similarly, a smaller proportion of Wellington and Auckland respondents preferred having more space with a longer commute time than the rest of the country (48% compared to 56%) and a larger proportion thought a shorter commute was more important than the house they live in (34% compared to 21% from the rest of the country). This may reflect factors such as the greater costs of longer commutes in Auckland and Wellington.

Figure 7.3 Analysis by age of preferences regarding the trade-off between house size and proximity to urban centre, 2015.*



* Question 3: As our cities develop further, the choices available to city residents may come down to a larger house and section in a suburb away from the heart of the city, or a smaller house, townhouse or apartment close to the heart of the city or town nearest you. Which would you prefer?

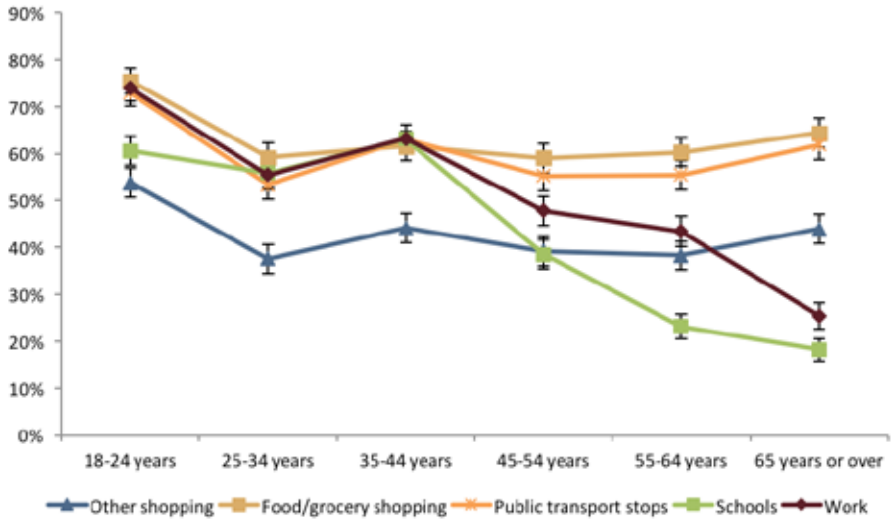
Locational preferences

In 2009, 68% of respondents preferred to live within walking and cycling distance of some of the key destinations they visited most often. The 2015 survey unravelled these preferences further by asking for individuals' preferences about each destination. People wanted to live within walking and/or cycling distance of work (51%), food/grocery shopping (63%), and public transport stops (59%). Proximity to public transport was most valued by those in flatting situations and one-parent households. Women were more likely to say "yes" regarding proximity to schools, while men were more likely to say "yes" for "other shopping" and more likely to say "no" for work.

Preferences for location appeared to vary with age. As illustrated by Figure 7.4, younger (18–24) and older (65+) people were more likely to prefer proximity to amenities, with few exceptions. Understandably, those over 65 (and the unemployed) were much less concerned with being close to work, and those over 45 years of age displayed a distinctly lower level of concern over being close to schools and, to a lesser degree, work.

Respondents were also asked if they approved, in principle, of mixed-use development that put housing within walking and cycling distance of offices, shops, parks, schools and public transport routes rather than planning that promoted residential subdivisions and separate commercial areas. The majority of individuals approved or strongly approved (50% and 25% respectively), with

Figure 7.4 Preference by age for living in proximity to amenities, 2015.*



* Question 5: Would you prefer to live within walking and/or cycling distance of some of the destinations you need to get to most often, like work, shops, parks, and public transport stops? Asked seperately for "Work", "Food/grocery shopping", "Other shopping", "Schools" and "Public transport stops". This graph displays the percentage of "Yes" responses by each age group for each amenity option.

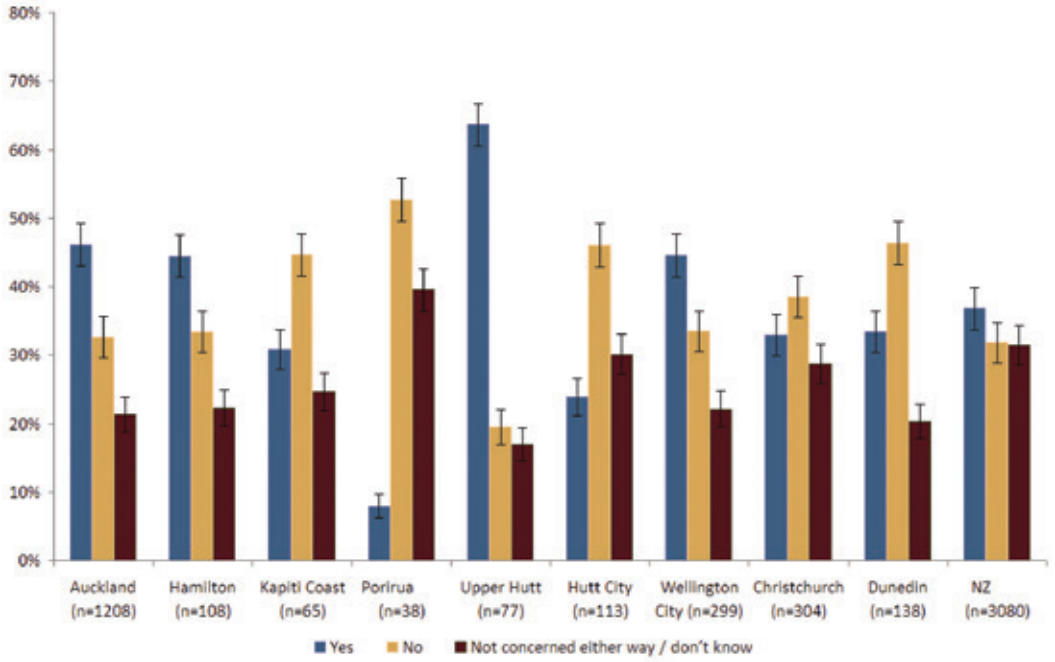
9% disapproving or strongly disapproving, and 17% not sure. Approval for mixed-use development increased between 2009 and 2015 in Auckland and fell in Dunedin.[21] People aged 18–24 and those self-identified as having no control over household decisions were much more likely to strongly approve of mixed-use development.

Support for planning in the city

The Auckland Plan promotes a vision of a quality compact city, which includes increasing the density of dwellings in residential areas, with more provision for apartment and townhouse living, and strengthening public transport. When asked about supporting a plan similar to the Auckland Plan in their *own* city, 37% of respondents agreed, 32% disagreed, and 31% "didn't know/weren't concerned".

In further questions many participants' views more strongly aligned with the key components of the Auckland Plan. The majority strongly approved (50%) or approved (25%) in principle of mixed-use developments that put housing within walking and cycling distance of key amenities. About half (49%) agreed that urban limits are necessary for cities to develop more sustainably, as opposed to thinking urban limits unnecessarily limit city development (18%), although a third (33%) were not sure (see Figure 7.6). These results are very similar to the 2009 survey results. Finally, the majority (59%) believed that councils, elected by

Figure 7.5 Support for a vision of a quality compact city by area, 2015.*

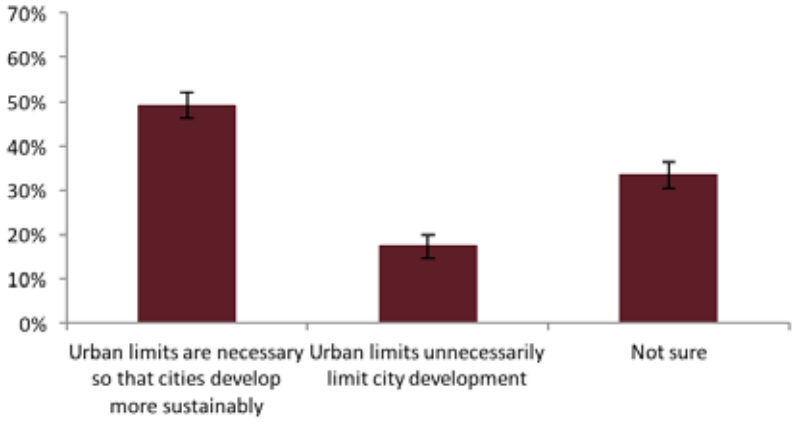


* Question 7: The Auckland Plan promotes a vision of a quality, compact city, which includes increasing the density of dwellings in residential areas, with more provision for apartment and townhouse living, and strengthening public transport. Generally speaking, do you support such a vision for your city?

residents, should have the key role in defining the limits and form of the city, as opposed to market forces, increasing from the 51% who supported councils in the 2009 survey. Only 18% disagreed and were in favour of market forces, while 33% were not sure (see Figure 7.7). In light of these responses, it is interesting that there was substantial disagreement around implementing a similar vision to the Auckland Plan in respondents' own cities. It may be that respondents accepted some but not all elements posed in our question (question 7) about the Auckland Plan, whether it be increased residential density, apartment and townhouse living, stronger public transport, or following Auckland.

As illustrated by Figure 7.5, support for an Auckland Plan-like compact vision for their own city varied considerably amongst respondents in the different urban regions. More respondents from Auckland, Hamilton, Upper Hutt and Wellington supported than opposed such a vision, whereas most from Kapiti Coast, Porirua, Hutt City, and Dunedin did not. Overall, more individuals across New Zealand approved than opposed such a plan in their own city. Upper Hutt and Porirua showed particularly clear preferences for and against this idea respectively, indicating either strong views or potential bias from the sample size (n=77 individuals from Upper Hutt and n=39 from Porirua).

Figure 7.6 Attitudes to urban limits, 2015.*



* Question 14: Some people say cities need urban limits and intensified housing in the city; other people say urban limits force up the price of housing. In your opinion (please tick one): A. Urban limits are necessary so that cities develop more sustainably. B. Urban limits unnecessarily limit city development. C. Not sure.

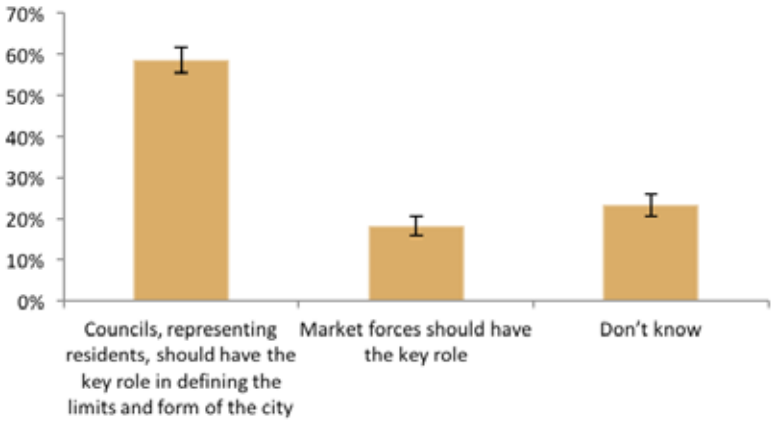
Demographic factors may play some role in explaining the mixed responses, with men, those under 25 years, those with higher education levels, and individuals earning more than $70,000 per year being more likely to agree to an equivalent vision for their city (with high earners being almost twice as likely to approve than low earners). Views on compact development may also be influenced by personal preferences. For instance, 72% of those who did not support a compact city vision in their own city would themselves prefer to live in a larger house further out. An alternative explanation is NIMBYism (Not-In-My-Back-Yard), with some respondents possibly feeling more comfortable with the idea of these changes when they do not directly affect their own city or neighbourhood.

Support for planning in one's own neighbourhood

Respondents appeared to be in favour of urban limits. While individuals were evenly divided about whether zoning rules were needed in their own neighbourhood, more people (49%) than not believed that urban limits are necessary so that cities develop more sustainably (Figure 7.6). Further, the majority of respondents (59%) felt that councils, rather than markets, should have the key role in defining the limits and form of the city (Figure 7.7).

Support for councils having the key role in defining the limits and form of the city increased from 2009 to 2015 (from 51% to 59%). Support for market-led development fell in all areas studied, on average from 26% to 18%. This drop was negligible and not significant for Christchurch respondents (17% to 16%), but was very large and significant for Hamilton (29% to 18%) and Dunedin (31% to

Figure 7.7 Support for council regulation of urban form, 2015.*



* Question 13: Some people say councils should set urban limits, to protect rural land and encourage compact cities; other people say this constrains economic development. In your opinion (please tick one): A. Councils, representing residents, should have the key role in defining the limits and form of the city. B. Market forces should have the key role. C. Don't know.

16%). Dunedin and Hamilton also saw a significant increase in the percentage of respondents who were unsure who should have the key role.

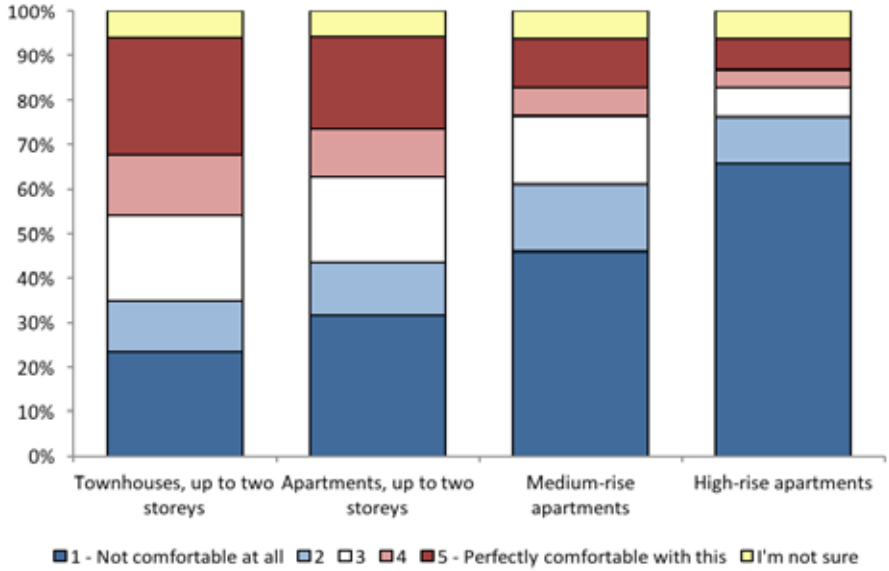
Viewpoints around urban governance also varied with education and income levels. Greater levels of education were associated with a higher likelihood of saying urban limits were necessary for sustainable development, while those on higher incomes ($70,000+ per year) were more likely to say the market should have the key role in defining the limits and form of the city. Those who added comments to the survey displayed strong anti-developer sentiment, as well as general distrust of the intentions of councils or central government, or were concerned about sprawling urban development using up productive farmland.

Increased urban density

We asked people about their level of comfort with increased residential density. Figure 7.8 shows that more people were comfortable (40%) than neutral (19%), not sure (6%) or uncomfortable (35%) with townhouses up to two storeys in their neighbourhood. Respondents became increasingly uncomfortable at the prospect of apartments that were up to two storeys, medium-rise apartments and high-rise.

The proportion of respondents not comfortable at all with these developments ranged from 24% for townhouses to 32% for low-rise apartments, 46% for medium-rise apartments and 66% for higher-rise apartments, and those perfectly comfortable ranged from 26% to 21%, 11% and 7% respectively. Women were less likely than men to be perfectly comfortable with any type of higher density development in their neighbourhood. Preferences only marginally differed by

Figure 7.8 Levels of comfort with increased residential density, 2015.*



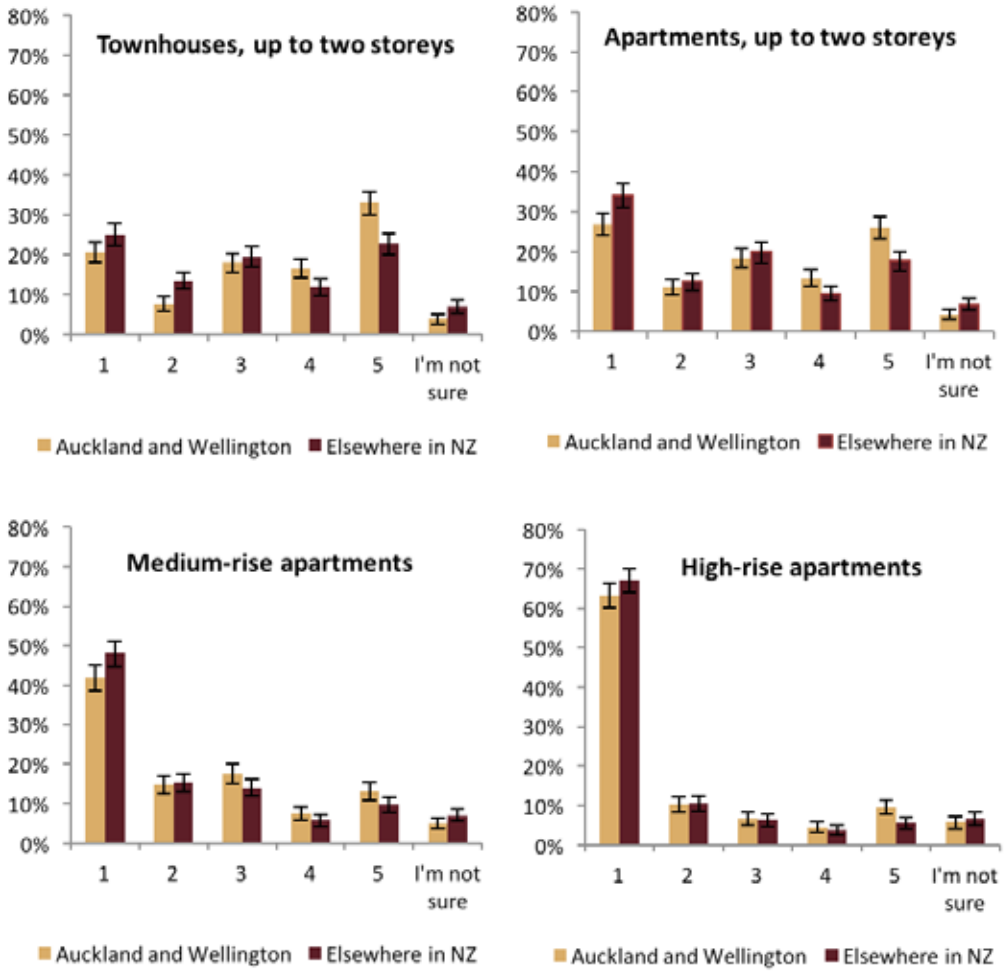
* Question 8: How comfortable would you be with a greater density of residential development in your own neighbourhood, if this development was of the following types: A. Townhouses, up to two storeys. B. Apartments, up to two storeys. C. Medium-rise apartments. D. High-rise apartments. Comfort levels ranked from 1 — Not comfortable at all, to 5 — Perfectly comfortable with this, or I'm not sure.

sex concerning buildings up to two storeys, but widened regarding high-rise apartments, with 71% of women not comfortable at all with such development in their neighbourhood compared to 61% of men.

Comfort with density varied by city. Wellington and Auckland participants were much more comfortable with townhouses and apartments up to two storeys being developed in their neighbourhood than respondents from the rest of the country. As shown in Figure 7.9, these regional differences in opinions diminished as proposed apartment heights grew, with most people from all regions saying they would not be comfortable at all with high-rise apartments. Respondents from Christchurch were more likely to say they were not sure how comfortable they felt with apartments and townhouses being built in their neighbourhoods.

Similar proportions of respondents thought that new townhouses or apartments would lower property prices in their neighbourhood (32%), not make a significant difference (36%), or did not know (32%). Wellington respondents were the most likely to think that building new apartments and townhouses would not make a significant difference to values (47%), perhaps because the city already has many such buildings. These findings suggest that fear about property prices was not the main determinant of aversion to apartments being built in their neighbourhoods.

Figure 7.9 Levels of comfort with increased residential density by region, 2015. Answers are on a scale from 1–5, with 1 representing "Not comfortable at all" and 5 indicating the respondent was "Perfectly comfortable" with this.



We speculate that differences between Wellington and Auckland respondents, and those from the rest of New Zealand, may relate to economic factors (such as dwelling prices) or to differing local experiences of development. They may be due to self-selection, that is, individuals who prefer living in apartments and close to amenities may choose to live in Auckland or Wellington. Another explanation could be that Aucklanders and Wellingtonians are exposed to more positive examples of denser residential development, making the thought of having townhouses or apartments in their neighbourhood more familiar and attractive.

Role of government in affordable housing

A large majority of respondents (79%) agreed there was need for central government policies to encourage affordable housing. Only 13% thought government intervention was not needed as the market can provide affordable housing, with the remaining 8% of respondents saying "don't know".

Gender, age and income levels were significant factors. Women (83%) were more likely than men (75%) to believe that the government should encourage affordable housing. Older people and those on higher incomes were less likely to support government policy to address affordable housing. These differences of opinion between younger and older individuals could be indicative of a generation gap in opinions. Alternatively, differences may reflect participants' perceptions of whether or how they could be personally affected by the policies.

Opinions on transport

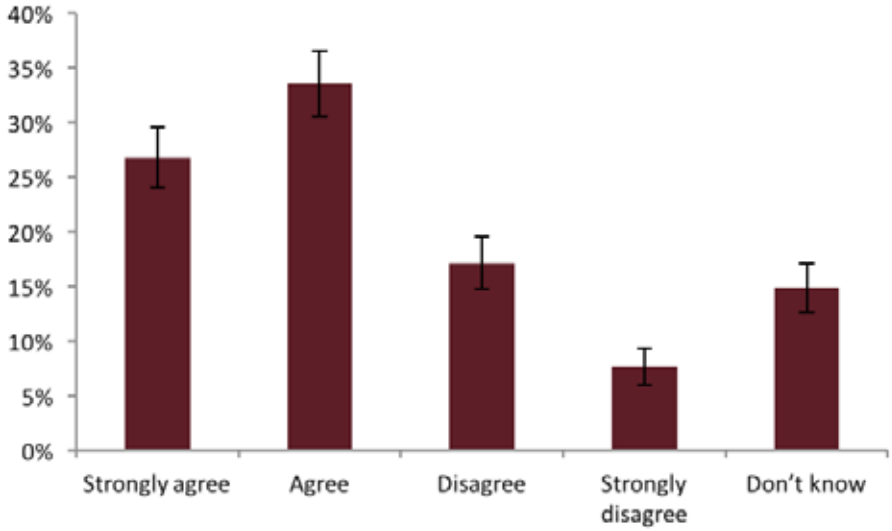
Responses were sought to two differing statements about road congestion: "Some people say that building more roads is important to reduce traffic congestion; other people say that new roads simply lead to more car trips which fill roads up." About the same proportions of respondents agreed with the first statement (31%), agreed with the second statement (31%), or did not agree with either (27%), while 11% said they did not know. Men and those with university qualifications were more likely to think that new roads would lead to more overall car trips. The lack of clear majority support for either statement indicates that people are divided on the issue of new roads. The number believing that building more roads will reduce traffic congestion fell substantially from 2009 to 2015 (from 45% to 31%). However, the number believing that building more roads will lead to more car trips fell (to a lesser degree) from 38% in 2009 to 31% in 2015. These changes may indicate shifts in opinion, but are more likely to be due to the addition of a new answer category in the 2015 survey: "I don't agree with either of these".

Intervention regarding climate change

Climate change was widely considered to be a pressing issue. The majority of respondents agreed or strongly agreed (60%) that there is an urgent need for policies to reduce greenhouse gas (GHG) emissions in New Zealand, while 25% disagreed or strongly disagreed (see Figure 7.10).

Young people, those with tertiary qualifications, women, and those in households with children were on average more likely to agree that urgent action is needed to reduce GHG emissions. Conversely, men, older age groups, and the very rich (those who answered that their personal or household income was greater than $200,000 per year) were more likely to disagree with this statement than other groups. Some of these differences could reflect a generation gap in perspectives, or in the extent to which people believed they or their family might be affected by climate change.

Figure 7.10 Support for policies to reduce greenhouse gas emissions in New Zealand, 2015.*



* Question 16: Do you agree or disagree with the statement that "There is an urgent need for policies to reduce greenhouse gas emissions in New Zealand"?

Responses to climate change policy intervention were associated with urban development responses. Those who believed urban limits would unnecessarily limit city development were more likely to oppose GHG emission-reduction policies, and much less likely to strongly agree that such policies were needed. Those who thought market forces should have the key role in urban development were significantly less likely to agree or strongly agree that action to reduce GHG emissions needs to be taken. Those who agreed with affordable housing policies were much more likely to agree and strongly agree with policies aimed at reducing GHG emissions than those who said the market can provide affordable housing. These links suggest either that participants have similar responses to interventionist policies at any governing level, or that they see links between the issues of climate change mitigation and the way we run our cities.

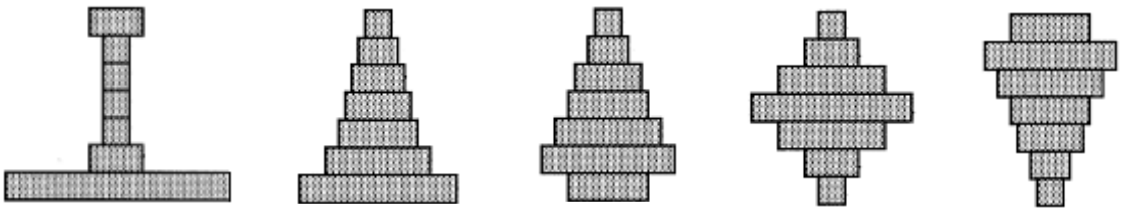
There was a strong link between opinions on whether building more roads would reduce traffic congestion and views about intervention regarding climate change. Respondents who said that building roads will reduce traffic congestion were much less likely to strongly agree that urgent action was needed to reduce GHG emissions. Conversely, those who felt building roads would not solve congestion issues were more strongly in favour of urgent GHG reduction policy.

Illustrating the shape of inequality

We explored whether views about how we develop our cities are related to views about inequality in society. We asked two questions that have also been used in international studies, using the diagram in Figure 7.11.

As shown in Figure 7.12, one-third of respondents (33%) thought that New Zealand society today is best described as having a small elite with most people at the bottom (type B), followed closely (30%) by those who thought there is a small elite with the great mass of people at the bottom (type A); indicating strong perceptions of inequality in New Zealand. A higher proportion of younger respondents believed New Zealand reflects type A, while the proportion believing society reflects type B increased steadily with age. Respondents from

Figure 7.11 Different perceptions of New Zealand society.



Type A
A small elite at the top, very few people in the middle, and the great mass of people at the bottom.

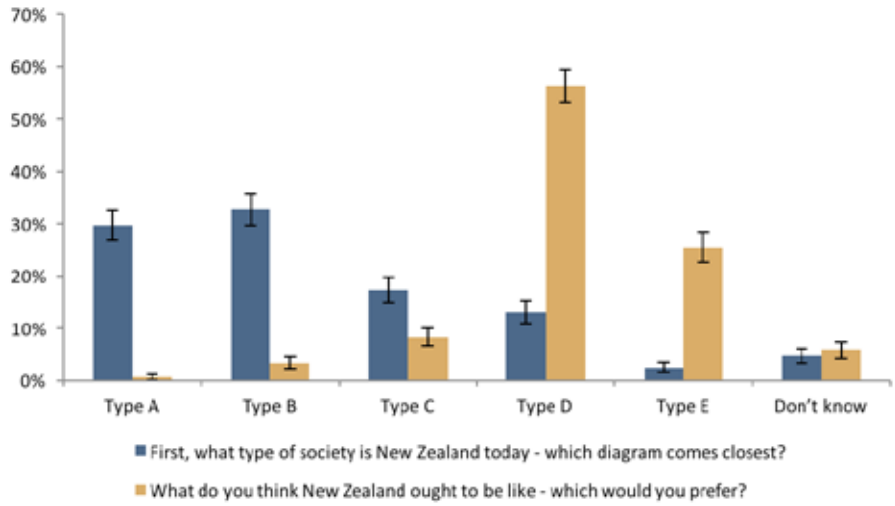
Type B
A society like a pyramid with a small elite at the top, more people in the middle, and most at the bottom.

Type C
A pyramid except that just a few people are at the bottom.

Type D
A society with most people in the middle.

Type E
Many people near the top, and only a few near the bottom.

Figure 7.12 Views on New Zealand society today, 2015.*



* Question 18: What type of society is New Zealand today — which diagram comes closest?
Question 19: What do you think New Zealand ought to be like — which would you prefer?

Christchurch, Hutt City, Porirua and Hamilton were more likely to pick type A than respondents from the rest of the areas studied. Finally, those who described the country as reflecting type C or D were more likely to have higher incomes.

Many respondents desired to live in a more equal society. The majority said that New Zealand *ought* to have most people in the middle (56%, selecting type D), followed by many people near the top and few at the bottom (25%, selecting type E). That is, 82% said New Zealand should be a society with most people in the middle or towards the top. Around 10% of individuals chose the remaining options, while 6% said they "don't know". While 62% thought that New Zealand society currently reflected type A or type B, only 4% wanted this to be the case. These views were reasonably consistent, regardless of which party respondents voted for at the 2014 election.

Table 7.1 compares responses to the same questions from several other surveys, for which the time-frames and the context differ. It illustrates, first, a striking similarity of aspirations across a range of countries for living in a middle-class society, a society which has most people in the middle or toward the top, and has few people at the bottom. Second, it shows a wide variation across societies in the perception of whether one's own country was achieving that ideal. Third, it shows that of the six countries surveyed, New Zealand appears to have the largest gap between people's ideal society and their perceived reality. However, the New Zealand data are the most recent and follow the global financial crisis, whereas the data from the other countries come from earlier periods — 2000 (USA) and 2009 (European countries).

The ideal of a meritocratic, middle class society is a shared ideal of both the social democracies of Scandinavia and the liberal democracies of the English-speaking world. Our data suggests a broad base of support in New Zealand for a meritocratic, middle class society. Further, both the nature of the ideal society envisaged by New Zealanders, and the perception that this ideal was not being met, were widely shared by people across the political spectrum. This suggests a political dynamic that would reward well-conceived and well-communicated policies to restore such a society.

We can also infer from another question that an overwhelming number of respondents felt New Zealand was not as equal as they would like. The majority (75%) agreed or strongly agreed when asked whether "differences in income in New Zealand are too large" and less than 10% disagreed. The proportion of those who strongly agreed with this statement dropped consistently and significantly as income increased.

Table 7.1 People's perceptions of an ideal society, and the extent to which they believed their own society met their ideal.

	NZ	Australia[22]	USA[23]	UK[23]	Sweden[23]	Denmark[23]
Favouring type D or E as ideal society	82%	81%	75%	75%	84%	90%
Believing existing society was type D or E	16%	43%	30%	22%	39%	60%

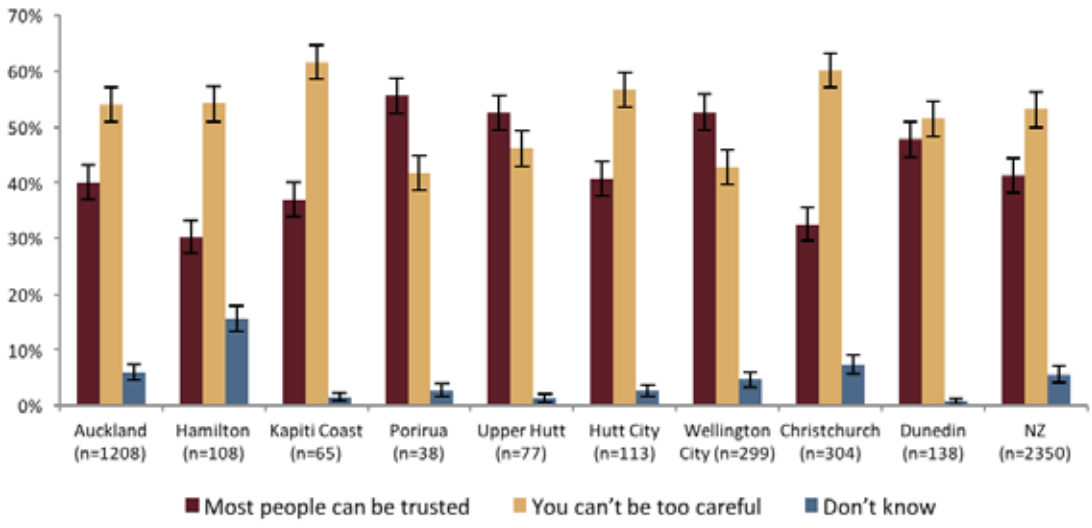
Views about inequality were associated with views on urban governance. The proportion of individuals believing that market forces should have the key role in determining urban form increased in line with their views around inequality: the more strongly respondents disagreed that differences in income were too large, the more likely they were to favour market forces as the arbiters of urban form. Individuals who felt government interventions were not necessary around affordable housing, GHG emissions, or urban limits were significantly more likely to believe New Zealand was currently a society with most people in the middle (type D). Those who thought New Zealand was more unequal (identifying type A or B) and those who thought income inequality was too large were more likely to favour government and council policies over market forces.

Feelings of trust

Making significant changes in a city requires public support and residents' trust that the changes will be for the better. To assess if views about urban policies were related to views about trust, we included a general question about how trusting people were.

More respondents felt that "you can't be too careful in dealing with people" (54%), rather than "most people can be trusted" (40%). Women in general were more distrusting, while people under 25 and over 65 were more trusting on average. Income was strongly associated with responses; those earning over $70,000 per year were much more trusting than those earning less. Individuals who claimed that "you can't be too careful in dealing with people" were also more likely to say New Zealand is best represented by the stark inequality of type A. Figure 7.13 shows how people from Wellington and Porirua were the most trusting, while those from Christchurch and Kapiti Coast were the least trusting.

Figure 7.13 Levels of trust by city, 2015.*



* Question 17) Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?

Table 7.2 Percentages saying "most people can be trusted" in World Values Survey, four countries over two decades.[24]

	1994–98	2005–9	2010–14*
New Zealand	47%	49%	55%
Australia	39%	46%	51%
Sweden	57%	64%	60%
United States	35%	39%	35%

* Data from the World Values Survey was accessed on 29 September 2015.

Those who felt that "most people can be trusted" were more likely to look favourably on action around compact urban development and reducing greenhouse gas emissions. Trusting individuals were more likely to agree with a compact-city vision (similar to the Auckland Plan) for their own city, feel that urban limits are necessary, and believe that councils should have the key role in urban development. Most who felt that "you can't be too careful in dealing with people" disagreed with a vision similar to the Auckland Plan, and were less likely to strongly agree with urgent policies to reduce GHG emissions in New Zealand.

In the World Values Survey, of four countries (New Zealand, Australia, Sweden, United States) for which comparative data are available at the same time over the last two decades, after Sweden (60%), New Zealand had the highest (55%) and rising percentage of people reporting that "most people can be trusted" (see Table 7.2). However, there is an unexplained discrepancy with respondents' answers to the same question in our Horizon Poll, where only 40% of people responded that "most people can be trusted". This discrepancy may be due to a later date or a different context for the Horizon survey question.

Conclusions

It remains the case that New Zealand respondents' strong housing preference is a stand-alone house. On average, apartments were the least-preferred housing type, with most favouring more space on a section further from the centre of town. Although preferences were fairly stable, some shift had occurred towards preferring a short commute (as more important than the house lived in), compared with the 2009 survey. Despite majority approval of councils for setting urban limits, most people were only comfortable with increased density of residential development in their own neighbourhood if the development was at most two storeys. Respondents were divided about the benefits of zoning in their own neighbourhood, and more (37%) were in favour of a quality, compact city vision for their own city, similar to the Auckland Plan, than against (32%).

Respondents overall showed strong approval for government intervention to encourage affordable housing, reduce greenhouse gas emissions and set urban limits. The majority favoured mixed-use development in principle, and the ability to walk and/or cycle to work and important amenities. There was broad

agreement that councils should have the key role in defining the limits and form of the city, and more people than not thought that urban limits are necessary in order for cities to develop more sustainably.

These results suggest some tension between what most participants believe is good for cities in general, and the strongly felt views of a minority about what they want in their own neighbourhood. These results also indicate some of the challenges faced by urban planners, policy-makers, and local and central government in effectively implementing urban change while meeting public expectations. Preferences for a stand-alone house on a large section, but also in close proximity to work and amenities, are hard to meet: some trade-offs in housing attributes or prices are necessary.

These results speak to the need for further research. Respondents may be influenced by current circumstances, and the lack of local examples of quality, smart-growth development, when answering questions about their own preferences. Investigating how recent experiences with earthquake-prone buildings and leaky homes have influenced attitudes towards apartment living would also be illuminating as these may well be factors influencing the preference we found for stand-alone houses. This chapter largely reports on how people see housing, planning and the city in relation to the world as it is today, rather than the world as it may evolve in coming years. Other research in the Resilient Urban Futures programme examines the trade-offs people may make in relation to future conditions, which will provide another perspective on future cities.

Another area of interest would be a longitudinal picture of participants' attitudes to housing, commuting, and related issues as they age and their household type and size changes. Our survey results were commonly associated with the respondents' age and whether or not they had children. Participants with children had clear preferences for larger homes, away from the city centre, and against apartment or townhouse living. The opposite was true for single-person households and older individuals (whose children may have left home). Given the aging population, and the predicted increasing proportion of one- and two-person households, it is clear that cities need to provide a range of residential options.

This survey also identified a divide between what people thought the nature of New Zealand society *was*, and what they thought it *ought to be*. There are indications that, compared with a range of developed countries, New Zealanders show the largest differences between what they see as an ideal society and the perceived reality. Most individuals believed that society is unequal, with a small elite and most people on the bottom. Most respondents agreed that differences in income were too large, and that "you can't be too careful in dealing with people". The majority, regardless of their political preferences, said that New Zealand ought to have most people in the middle, suggesting a political dynamic

that would reward well-conceived and well-communicated policies to restore such a society.

In general, survey responses were associated with income, age, gender, geographic location, and views on trust, with differences between those on high and low incomes, young and old, men and women, and Wellington- and Auckland-based respondents compared to the rest of New Zealand. Geographical differences may relate to selection issues, such as choosing to live in a city that already offers the desired amenities and form, or to differing local experiences of urban development. Views around government intervention may relate to ideological differences, or be influenced by the degree to which such interventions may positively or negatively impact on individuals. Trust also seemed to play a role, with more trusting individuals more likely to look favourably on policy action around compact urban development and polices to reduce greenhouse gas emissions. A more detailed study in future could control for the influence of various confounding factors and investigate whether many of the differences seen here are a function of one or two key variables (such as age and income) and how other influences play a part in changing preferences and opinions.

Policy-makers have the difficult job of balancing these differing views in situations of high housing costs and pressing environmental concerns that demand change from business-as-usual. This survey indicates that opinions can vary widely on some topics, but also that there is some convergence regarding what people want for their society and their city, suggesting areas where actions can be taken.

CONCLUSION

What shapes our cities?

Lisa Early, Marie Russell, Geoff Fougere & Philippa Howden-Chapman

For this report, we were privileged to draw on the collective knowledge of a broad range of decision-makers, experts and stakeholders. We have tried to present their various views — the points of agreement as well as debate — along with contemporary thinking on the drivers of urban change in Aotearoa New Zealand.

We wanted to find out about urban change and resilience in some of our cities: Auckland, Hamilton, Wellington (Wellington City, Upper Hutt, Hutt City, Porirua and Kapiti), Christchurch and Dunedin. We considered the complex interactions between the natural environment that supports and defines the city, the socio-economic and political life of the city and its surrounds, and the built environment. Rather than canvassing all drivers of urban change, we selected certain drivers and the relationships between them for study, emphasising the constraints and opportunities for implementing intentional urban change. In addition, we considered how governance and policy at national, regional and local levels can affect how a city develops, and what citizens think about this.

Compact urban development

The dispersed development approach, typical of cities like Auckland in past decades, saw greenfield developments added at a spreading urban fringe, connected by extensive roading for private vehicles and freight. An alternative is compact urban development: increasing residential density within existing city limits and improving public open spaces and public transport.

Several of the cities in our study had a strong local political mandate for a quality, compact city. Reasons for favouring a compact urban form include: more efficient use of resources; reducing infrastructure costs; responding to rising energy costs; increasing amenity values; revitalising the inner city; renewing areas of poor housing and preserving agricultural land on city fringes. The difficulties of realising a more compact city form are highlighted in our studies, particularly of Auckland and Christchurch.

Auckland was unable, or only partly able, to translate its 2012 Auckland Plan vision of a quality, compact city into consistent provisions in the Proposed

Auckland Unitary Plan. This, together with activities under the Auckland Housing Accord, may further enable rather than curb the city's historic pattern of sprawling development. There was ongoing debate, under pressure of the need for affordable housing, about whether to support a compact city or to free up land for building in more sprawling developments. Issues with underlying planning rules led to the political mobilisation of neighbourhoods dominated by stand-alone dwellings resistant to intensification. Auckland participants generally agreed that the traditional preference for living in detached homes with private yards and private cars was an important driver of urban form, but this was changing toward greater acceptance of denser living styles. These changing norms were reflected in the marketplace, but only partly reflected in government plans, policies and investment.

Hamilton City Council's strategies and plans were for higher density, including infill development. Factors countering intensification in Hamilton included: the Council's other policies and constraints; the activities of surrounding councils; the anticipated cost of upgrading existing infrastructure; the car-centric nature of the city with little traffic congestion and little incentive to switch to public transport; new highways; and the lack of an apartment market or much demand for it from residents, with the possible exception of young and older people. City growth has continued to include large houses, large sections and sprawl at the city boundary.

Most Wellington participants considered a more compact urban form to be desirable for the region. They differed on how to achieve this in the face of the expense of changing current infrastructure and buildings, path dependency, perceived public resistance in some quarters, the varying urban design capacities of councils, and planned highways that may foster sprawled development along their length. The cities in the region had plans to intensify, but most considered Wellington City the more likely site of further intensification, rather than Upper Hutt, Hutt City, Kapiti or Porirua. In our public survey, respondents from Wellington City and Auckland — the two cities that have developed most densely in the past decade — were more comfortable with townhouse and apartment developments than respondents in other parts of the country.

Christchurch had a strategy for a compact, sustainable urban form since 2007, yet ex-urban sprawl continued. Christchurch's "doughnut city" form, with the move of businesses and residents away from the central city, owes a great deal to its devastating earthquakes. However, the post-earthquake period of critical decision-making will set the direction of urban development for decades to come. It seems that constraints in the capacity of the multi-level urban governance system to resolve stakeholder differences continue to lead Christchurch away from its ideal strategic direction of compact development.

Dunedin City Council, with its large geographical area, had the objectives of a compact city and resilient townships. On one hand, slow population growth makes further city sprawl undesirable; on the other, low population

and employment growth are barriers to changing the existing urban form. Intensification is not such a pressing issue as it would be in a larger, faster-growing city. Participants thought that residents valued heritage buildings and did not want intensified housing, and this was borne out in our survey. Dunedin respondents were significantly more likely than others to oppose a vision for their city similar to the Auckland Plan, and significantly more likely to be uncomfortable with townhouses and apartments in their neighbourhood.

The results of our nation-wide poll indicated a general continuing preference for stand-alone housing, and more living space further out of town rather than less living space with a shorter commute. Most respondents were only comfortable with increased density of residential development in their own neighbourhood if the development comprised townhouses (not apartment blocks). Just over a third of respondents favoured a compact vision for their city similar to the Auckland Plan. We speculate that these preferences were influenced by various factors: scarcity of local examples of good-quality compact development; negative experiences of leaky homes or cities' failure to protect natural, heritage and cultural amenities; and heightened earthquake-consciousness about high-rise developments. However, the majority favoured mixed-use developments and the ability to walk or cycle to work.

Age and life-stage affected views: individuals living in families with children tended to prefer larger homes, away from the city centre, rather than apartment or townhouse living. The opposite was true for single-person households and older respondents. There was majority approval for policy intervention encouraging affordable housing and reducing greenhouse gas emissions. There was also broad agreement on setting urban limits so that cities could develop more sustainably, and that councils rather than market forces should have the key role in defining the limits and form of the city.

Infrastructure, transport and housing

Sprawling development leads to inefficient use of energy and resources. This includes more travel by private car, heating stand-alone buildings (as opposed to heating apartments and blocks) and providing amenities and expensive infrastructure including roads, pipes and wires to suburbs at a city's periphery.

Whether local authorities pay entirely for such infrastructure or developers make some contribution, cities are responsible for ongoing infrastructure maintenance and repair costs. Compact development is commonly thought to reduce a city's infrastructure costs and initial research supported this conclusion for New Zealand cities (see Case Study 18, page 187). This is also backed by examination of particular sectors, for example the extra amount of cable needed here (compared to Europe) to connect stand-alone suburban homes to the Internet.[1] However, this may vary by city or within cities. Hamilton participants indicated greater costs were expected there in upgrading existing infrastructure

for intensification than for new infrastructure in greenfield development. Who decides on requirements and then who pays for infrastructure development and maintenance are vital questions for the future of cities.

Participants considered transport infrastructure an important determinant of urban form. A factor working against resilience in our cities is the dominance of car use and road-building, prioritised and subsidised over other transport modes. All cities in our study have an urban form based around car use, with large areas of city land devoted to roads and car parking. This seems likely to continue in cities such as Hamilton and Dunedin, owing to ease of driving and the absence of appealing alternatives. Where there are newly-built highways facilitating increased traffic, as in Hamilton, cities have less motivation to promote or support alternatives.

Our transport future was a key area of tension between policy aims at different levels of government. With expertise and responsibility for transport divided between central, regional and local government and private companies, it was a challenge to achieve agreement on policies for preferred urban outcomes. Participants thought alignment had improved, but significant differences remained. There was a suggestion that, compared to overseas cities, Auckland was missing opportunities to lever private investments in denser developments off the rise in land values generated by the publicly-funded upgrading and extension of transport infrastructure.

Factors that might tip the balance towards the more sustainable transport alternatives of walking, cycling and public transport include: the evidence about socio-economic and health benefits of active travel; pressures for action on climate change; increasing oil prices; availability of e-bikes; and a possible change in preferences among older and younger citizens for walkable, compact cities and connections made online rather than by car. Frequently mentioned by participants was the combination of Internet and mobile technology that has already changed the way we connect socially and the way we work. Views were mixed on whether this has already, or will in future, reduce commuting by car.

All our cities had a proportion of housing stock of poor quality, whether old and uninsulated, modern and leaky, endangered by floods or earthquakes, or unaffordable for those on low incomes (and higher incomes too, in Auckland). Replacing or upgrading this stock would be a major challenge and financial burden for cities. Awareness of the issues has led to proposals to regulate housing quality in different ways, and contributed to conflicting views on how to increase supply. In some cities, such as Wellington City, there was a commitment to public supply of social housing, but in others, such as Hamilton, there was a move away from this. In such cases, Māori organisations and other NGOs may step in. In Christchurch much damaged housing stock, including that owned by the Council and Housing New Zealand, was not yet repaired or replaced following earthquake damage. The contribution of urban developers on the supply side was also significant for quantity and quality of developments, and for the availability and cost of houses.

Auckland remained a special case, with turmoil in the housing market and central government involvement in problems of supply and affordability. Canterbury's experience prompted some concern among Auckland participants that the housing crisis there, while of a different order from that in Christchurch, might lead to a similar result, with the government taking over the local governance role. Some participants expressed the fear that, if Auckland Council did not comply with central government wishes on the accelerated provision of housing, the Unitary Plan or its implementation by the Council would be overridden by the government. Several participants considered that in general the Council had little option but to co-operate with the government in the Housing Accord.

In some cities participants wanted to expand the range of housing options available, in particular medium-density housing combined with improved public spaces. In Wellington City, for example, diversity of land use, home ownership, density, culture and socio-economic demography were seen as strengths, contributing to community-building and resilience. Research in the Wellington region, highlighted in Case Study 8 on development in Wellington, (page 95) identified gaps between latent demand for medium-density housing, the incentives for developers supplying housing, and the objectives and processes of local government.

Planning and development

Infrastructure, transport, housing and land use are linked and can be viewed as parts of a city system. For example, provision of infrastructure and community facilities has a major influence on where urban change occurs, and who is attracted to live and work in certain areas. Changes are most effective when planned and undertaken in tandem, to take account of such links and influences. Our cities had a plethora of planning documents, strategies, policies and action plans, not always in concordance. Added to this were the technical requirements and professional codes of practice of groups like planners and engineers, who sometimes operated narrowly in their professional silos. Participants emphasised the importance of good urban and transport planning, of cohesion in infrastructure planning, and of cooperation between the multiple agencies involved in planning and delivery of urban development. The provisions of council plans, such as those relating to density, were a crucial proximate factor governing urban form outcomes, for example in the situations described in the Auckland and Christchurch chapters.

There were many plans on smart urban development, public and active transport, and climate change mitigation, but these could be very challenging to implement. The inert power of the status quo for urban form was literally built into the ground, in the form of roads, bridges, parking precincts and other infrastructure and buildings. There was also the factor of path dependency, so

that once costly infrastructure and buildings were in place, a certain type of urban form was cemented-in for decades. Porirua is an example of a city where the plan to have minimum car parking requirements had broad knock-on effects for the shape and lack of vibrancy of the CBD. Depending on the differing views of participants, Hamilton was also said to be living with the consequences of poor urban and transport planning decisions, or lack of planning, or lack of urban design capacity, or a laissez-faire business-as-usual approach. Both cities faced the question of how to revitalise their city centre.

Hamilton illustrates the influence of developers' activities on a city, notably where Tainui Group Holdings went through the local planning processes and developed retail and industrial properties at Te Rapa, which drew activity away from the city centre. In addition to long-standing development companies, newer iwi developers investing Treaty settlement funds were expected to have impacts on urban development in future. Apart from some community and social projects, developers are primarily motivated by commercial imperatives. City planning processes can direct such activities in ways that benefit the city and its inhabitants overall.

Some other supply-side factors were thought by some but not all participants to influence urban form and density: legal restrictions on compulsory acquisition of land by public authorities to amalgamate titles for developments; the limited role in some cities of public housing development authorities; and the relative lack of private companies with the capacity and experience to undertake large-scale residential developments. Factors thought not to have a significant overall impact were costs and delays of obtaining resource consents in greenfield versus brownfield sites, or any greater difficulty obtaining finance for apartments compared to single family homes.

While much urban change is a long-term organic process, there are key decision-making episodes, for example the post-earthquake decisions in Christchurch. The outcome of this period was a shift away from the existing strategy for a compact city, combined with renewed emphasis on road-building and a diminished role for public transport. There was momentum in existing patterns of land use in suburbs, car dependency, the routines of private sector developers and pre-existing patterns of political conflict. There were new and urgent pressures yet delays in taking action, concerns about building safety and affordability, and central government's intent to deregulate urban planning and its assumption of over-riding powers. There was also a lack of broad property market and political and community acceptance of denser residential living within the existing urban footprint. The easiest way forward was to allow individualised infill development rather than well-planned, comprehensive development in walkable neighbourhoods along public transport corridors.

Governance and public engagement

Successful compact cities collaborate effectively across multi-level governance environments.[2] Governance factors at play in our cities include some legacy of conflicts, as well as cooperation, joint planning and alignment of purpose between local government bodies and between the various tiers of government. This features in debate over areas of joint or split responsibilities, such as transport policy, who pays for infrastructure and whose vision for the city wins out. Local government's responsibilities for managing central government regulatory requirements, for example in building standards, caused some participants unease. Political considerations were ever-present for elected representatives, adding tensions that ebbed and flowed with electoral cycles. A missing institution that could make a difference is an urban development authority of the type seen in many overseas cities, with a mission to drive forward urban regeneration and affordable housing in particular. To some extent the Canterbury Earthquake Recovery Authority (CERA) was charged with urban regeneration, highlighting that institutional innovation and designated function are important for achieving planned urban change, as are the process of setting and implementing objectives and the degree of civic participation.

Our cities vary in the setup, land area and budgets of their governing councils. Hamilton is contained within council borders that just envelop the urban region. Sprawling urban development can take place outside the city limits if approved by neighbouring councils, with residents who commute into Hamilton for work and leisure. The city has effectively built infrastructure and amenities to support developments beyond its borders, without receiving rates or developer contributions. In contrast, Dunedin is a smaller urban area within a large council area. While Dunedin City Council has direct responsibility for a mostly rural hinterland, Hamilton City Council has reasons to take interest in its hinterland even though it is not formally part of the city. Incentivised by central government transport funding, Hamilton has been working on long-term planning with three contiguous councils and other agencies through Future Proof.

Future Proof is an example where collaboration and coherent planning do not depend on a single underlying institutional structure. However, being a unitary authority allowed Auckland Council greater power to act across its region and plan urban and transport development together. Following the earthquakes, Christchurch's governance arrangements were in flux, with long-term, cross-party, multi-institutional commitment needed to build a resilient city. In the Wellington Region, city boundaries cut across what sometimes feels like a single urban community; for example the line that attaches Tawa to Wellington and separates it from Porirua. During the period of our study, the question of local body amalgamations was on the table and participants reported the threat of amalgamation improved the cooperation between councils. Although

amalgamation proposals were yet to achieve broad political and public acceptance, such increased coordination, regional spatial planning and potential amalgamation would affect urban development.

The National-led Government from 2008 to the present was not supportive of compact city design. The Roads of National Significance policy was centre-stage and there was less resource dedicated to the public and active transport that compact urban design implies. The sprawl effects of highway development, for example in the Hamilton and Wellington regions, were likely to work against existing plans for compact development in those areas.

Auckland and Christchurch provided examples of how central government can undo rather than advance a shift from dispersed to compact urban development. In both cases, there were well-accepted planning templates and associated transport plans intended to transform city development to a compact design. However, both cities became enveloped in crisis. In Christchurch, earthquake destruction required the rapid rebuilding of the central city and new housing for thousands of displaced households. In Auckland, the crisis was about availability of affordable housing as house prices shot up. These crises introduced central government as a major player in the systems of multi-level governance of the cities. In Christchurch, CERA took over control of city redevelopment from Christchurch City Council. In Auckland, the agenda was to rapidly speed up the supply of new housing. More central government intervention came with legislation for the Auckland Housing Accord and involvement in transport funding.

In the National-led Government's view, planning constraints slowed down urban development and house-building, creating a problem of availability and affordability; solving this required undoing prescriptive regulation and freeing up property markets. The result was the rapid opening up of greenfield sites. These sites were planned for under compact city designs and so shovel ready, but they then became the dominant sites of growth rather than, as originally planned, subordinate aspects of an overall intensification within existing city boundaries.

Pressures from central government also added urgency to the detailed development of planning rules for the intensification of existing urban neighbourhoods (privileged under the compact city designs). Suddenly the local, neighbourhood-by-neighbourhood implications of intensification were manifest. This provoked a further set of actors, newly-organised, articulate and politically-powerful community representatives resisting plans for intensification in their largely higher-income residential neighbourhoods. This effectively reversed plans for the intensification of their suburbs and slowed the overall process of intensification within city boundaries. The proponents of compact development at city government level were largely disempowered by a scissors movement: on one hand by central government and on the other by

well-organised neighbourhoods defending their patches. The overall result was a significant blow against compact city proposals.

Participants considered that in general a good level of trust was needed between the tiers of government, and between city councillors, council staff and citizens, in order to effect planned change. Our public survey also examined the role of generalised trust, finding that those who felt that "most people can be trusted" were more likely to look favourably on policy action for compact urban development and policies to reduce greenhouse gas emissions. Trusting individuals were more likely to agree with a compact-city vision similar to the Auckland Plan for their own city, to feel that urban limits are necessary, and to answer that councils should have the key role in urban development.

Most of our participants agreed that public engagement and consultation with citizens should be important for policy-making, but many thought that it was poorly done (a view strongly expressed in some cities, for example Dunedin, but not so much in Auckland). While social media offered new means of public engagement, questions remained on how public engagement can be done well and how decision-makers listen and act on what the public tells them. The news media were also an important part of the institutional context for cities, and had a role in communication on urban issues. For example, coverage of urban and transport planning in Auckland often tended to reduce complexity to sound-bites on side issues and to polarise opinion.

As the wellbeing of the people who live in a city is a reason for that city's existence, equity and social sustainability are central goals of urban development. Our public survey indicated strong perceptions of inequality in New Zealand today, yet most respondents wanted to live in an equal society, regardless of their other political preferences. Views about inequality were associated with views on urban governance. Those who thought New Zealand was unequal, and those who thought income inequality was too large, were more likely to favour government and council policies rather than market forces in shaping our cities.

Social, demographic and economic trends

Cities are affected by social, demographic and economic trends occurring regionally, nationally and globally, as well as by changes in technology. These drivers are hugely important for the nature of long-term urban growth; other studies have examined the implications for New Zealand (see Appendix 4). Participants selected these drivers of urban change for particular mention.

Our cities varied in their demographic profile, from the strong growth in numbers and ethnic diversity of Auckland to the modest growth and more homogeneous population of Dunedin. Many of our cities had a sizable youthful cohort, or had a large student population, such as Dunedin and Hamilton. Such groups added energy to city economies and shaped the kinds of amenities that cities needed to provide. However, participants more frequently emphasised the

projected sizeable increase in numbers of older people living in our urban areas, for example in Kapiti. This had implications for employment patterns and the demand for low-maintenance, compact housing in walkable neighbourhoods, as well as for the types of urban amenities desired by older residents.

While some medium- and long-term demographic drivers of change in cities can be foreseen, immigration trends (where there are not explicit policies) are difficult to predict, but likely to be affected by global political and economic events and by climate change. The urban culture and economy of Auckland, certainly, has been influenced by the addition of migrants from around the world, including the Pacific and Asia. There was notable population growth in the north of the North Island. When discussing the growth and economic future of Hamilton, several participants considered being in the sphere of Auckland's influence important. This aligned with research in the Resilient Urban Futures programme (see Case Study 6, page 65), which found four factors mattered historically for long-run population growth within cities: land use capacity, sunshine hours, human capital and proximity to Auckland.

The influence of iwi and Māori organisations and leaders was notable and expected to strengthen. Iwi such as Waikato-Tainui and Ngāi Tahu had post-Treaty settlement financial power, political influence, and social and economic development plans that included urban developments. There was also a diverse range of both mana whenua and mātāwaka urban organisations planning and building papakāinga and affordable, healthy, medium-density housing developments, such as Waimahia in Auckland and Enderley in Hamilton. This influence was less remarked by participants in the cities of the Wellington Region. Further research is needed to understand the diversity of Māori organisations in the urban environment and explore their role as strategic planners within each rohe.

While all our cities were affected by national and international economic trends, urban economies differed. Auckland and Wellington City had sophisticated, specialised economies with a range of well-paid, knowledge-based jobs, while Dunedin and Hamilton depended more on some key industries and employers and were aware of the prosperity (or otherwise) of their rural hinterlands. The city economy affects urban form directly, through the location of firms attracting people to work in particular cities, or parts of cities, and influencing the location of residences and infrastructure. Examples were seen in the impact of Tainui Group Holdings in Hamilton, the University of Otago in Dunedin, and government departments as well as the newer creative industries in Wellington City. These enterprises stimulated and supported growth and change in certain parts of those cities, for example the north of Dunedin and Miramar in Wellington City. The location and health of local commerce was a factor considered when city governments made planning decisions.

As participants often pointed out, city development requires money, and city councils varied considerably in size and financial health. A growing city

population and economy provide both the need for urban development and the rates base to pay for it. The cities in our study, with the exception of Hutt City, were projected to continue growing in population size, though at different rates, and this affected investment decisions and priorities. For example, South Dunedin presented a pressing need for regeneration, but there were question marks over how to support this, given a slow-growing population and economy. This contrasted with fast-growing Auckland with its needs and opportunities for urban redevelopment. In Christchurch, high levels of post-earthquake civic debt and urban sprawl suggested that the city would depend on population growth and on central government investment channelled into public transport and residential intensification in order to achieve a quality, compact city.

Environmental challenges

Underlying all urban developments are the impacts of growth on the ecosystem services of cities and on the pleasant living environments that residents enjoy. Local research, such as that outlined in our case studies on urban water bodies (page 37) and air (TOTUS, page 143), has highlighted the interdependence between social, economic and environmental factors. This needs to be taken into account for urban development and transport decisions.

Participants' views varied on cities' key environmental drivers and problems. In Hamilton, the focus was on water availability, quality and quantity, and to what extent these would in future affect city amenities and constrain economic activities in the region. South Dunedin and the cities near the Hutt River had areas identified as particularly vulnerable to flooding, while Kapiti had a focus on sea-level rise; these are issues related to climate change. In Wellington City and in Christchurch there was an understandable focus on earthquake-resilient buildings and infrastructure. Of course, the environmental impacts of the earthquakes, intertwined with the effects of the public policy response, were huge drivers of change in Christchurch's urban form.

Addressing environmental issues such as noise, air and water pollution and greenhouse gas emissions offered political, technical and financial challenges. Such negative externalities were often not properly accounted for nor effectively managed to ensure that those creating the pollution were also responsible for mitigating it. Auckland participants posited that failing to manage such externalities would favour a more sprawling pattern of growth. Accounting for and allocation of externalities, public sector costs and rents were widely thought likely, in principle, to have an impact on Auckland's urban form. Some participants had strong views about the importance of these factors, but for others there was uncertainty about how significant they were for urban outcomes in practice.

Short-term environmental challenges included deciding what action to take, securing stakeholder and citizen support, and paying for needed changes.

Medium- to longer-term considerations were about managing areas of cities and populations that are vulnerable to climate change impacts and other environmental damage, mitigating risks where possible, and adapting when city and regional socio-economic activities become environmentally unsustainable under business-as-usual conditions. Some city and regional councils had strategies and policies on climate change mitigation and adaptation, but often without concrete and measurable actions attached. Our cities and government can and need to do much more in this respect.

In conclusion

The cities in our study are diverse and each represents a unique, complex system. Faced with an array of challenges, each has, with varying enthusiasm and success, pursued the concept of developing a more compact, resilient urban form. It is difficult to deliberately change existing dispersed urban forms, as built housing, infrastructure and transport systems have long life-courses that are not amenable to rapid changes of direction. More dynamic influences also drive, or are barriers to, change: economic cycles, technological innovations, population growth and movements, changing political values and governance mechanisms, and shifts in cultural norms. All of these factors are framed within, and constrained by, the natural history of the city; our responses to environmental forces — including earthquakes and climate change — have the potential to lead cities to decline or to resilience and wellbeing.

APPENDIX 1

About the contributors

Ralph Chapman directs the graduate programme in Environmental Studies at Victoria University of Wellington. An environmental economist, he has worked on a range of climate change-related policy issues — housing, energy, transport and urban design. He has also worked with the New Zealand Ministry for the Environment, the New Zealand Treasury, the British Treasury in Whitehall, the OECD, in the Beehive, and as a negotiator for New Zealand of the Kyoto Protocol. Ralph has a bachelor's in engineering, a master's in public policy and a PhD in economics.

Lisa Early is development manager for the New Zealand Centre for Sustainable Cities and the Resilient Urban Futures research programme, and is based in Wellington at the University of Otago. She has research interests in history and environmental studies, and has previously worked at the New Zealand Ministry of Foreign Affairs and Trade, Dunedin City Council, the Victoria and Albert Museum and The National Archives of the UK. Lisa also edited, with Sarah Bierre and Philippa Howden-Chapman, a book on housing in New Zealand called *Homes People Can Afford,* Steele Roberts, 2013.

Geoff Fougere is a sociologist and senior lecturer in the Department of Public Health, University of Otago, Wellington. His research interests focus on politics and policy in relation to health, cities, housing and other issues. He has served on a number of ministerial and other public advisory committees on health policy and is a former chair of the Public Health Advisory Committee (National Health Committee).

Anna Hamer-Adams is an assistant research fellow for the Resilient Urban Futures programme at the New Zealand Centre for Sustainable Cities. She has an academic background in economics and political science and graduated with first class honours in economics from Victoria University of Wellington. Her previous roles include researcher at the Council for International Development, acting as the 'Youth MP' for Palmerston North, and working on projects relating to the United Nations and the welfare state. She has a strong interest in the closely entwined topics of economic development and the health and wellbeing of New Zealanders.

Philippa Howden-Chapman is a professor of public health at the University of Otago, Wellington, where she teaches public policy. She is director of He Kainga Oranga/Housing and Health Research Programme and the New Zealand Centre for Sustainable Cities. She has conducted a number of randomised community housing trials in partnership with local communities, which have had a major influence on housing, health and energy policy. She has a strong interest in reducing inequalities in the determinants of health and has published widely in this area, receiving awards for her work. She is currently the chair of the WHO Housing and Health Guidelines Development Group and was a member of the Children's Commissioner's Expert Advisory Group on Solutions to Child Poverty.

Jenny Ombler is an assistant research fellow for the Resilient Urban Futures programme at the New Zealand Centre for Sustainable Cities, and is concurrently working towards an MA in international relations at Victoria University of Wellington. She has an academic background in international relations, art history and Asian studies, and graduated with first class honours in international relations. She has also worked as executive assistant to Dr Kennedy Graham MP in the New Zealand Parliament. Her research interests include critical theory, social justice and climate change.

Nick Preval is a research fellow for the Resilient Urban Futures programme at the New Zealand Centre for Sustainable Cities. His current research looks at costs, benefits and risks of compact versus dispersed urban development. Nick has worked on previous projects at the Centre for Sustainable Cities, including defining a local government research agenda and a survey of home location preference. He has an environmental studies background, and his PhD and Masters theses were primarily focused on quantifying the costs and benefits resulting from insulation and heating interventions.

Ed Randal is a research fellow with the Resilient Urban Futures programme at the New Zealand Centre for Sustainable Cities. He has worked on a number of research strands, including drivers of urban change, compact versus dispersed urban development, active transport in cities and integrated modelling of land-use, transport and environment. Ed completed a Master in Environmental Studies at Victoria University of Wellington on the effective promotion of cycling for transport, assessing the potential for recreational cycling to be used as a gateway into commuter cycling.

Marie Russell is a research fellow for the New Zealand Centre for Sustainable Cities at the University of Otago, Wellington. Public transport and how passengers use their travel time on buses and trains were the focus of Marie's PhD research, completed in 2012. Other research interests include tobacco policy, social research methodology and children's issues. Marie has previously worked as a librarian, a mother at home, and an independent documentary producer for Radio New Zealand. More recently, Marie began making documentary films, her first effort being 2009's 'A place to stay', exploring the relation between urban design and a sense of community.

Guy Salmon is executive director of the Ecologic Foundation. He is an environmental policy specialist, working in policy advice, consulting and research roles. His comparative study of environmental decision-making in New Zealand and the Nordic countries (with collaborators at the University of Helsinki) highlighted the power of collaborative governance for integrating economic and environmental outcomes, and led to Guy championing the adoption of collaborative governance practices in New Zealand. He has worked as a convenor, project manager, adviser and participant in a range of consensus-building policy processes. He has been a member of the Advisory Group on Green Growth and of the Land and Water Forum. Guy's policy research work embraces climate change, water management, urban issues and collaborative governance.

APPENDIX 2

Interview participants

Jill Atkinson	*Environment Canterbury*
Shaun Awatere	*Landcare Research*
Mere Balzer	*Te Rūnanga Ō Kirikiriroa*
Sue Bidrose	*Dunedin City Council*
Hilary Blake	*Treasury*
Roger Blakeley	*Auckland Council*
David Blow	*Watercare Services*
Peter Bodeker	*Otago Regional Council*
Richard Briggs	*Hamilton City Council*
Len Brown	*Auckland Council*
Richard Burton	*Auckland 2040*
Ian Cassels	*The Wellington Group*
James Caygill	*Te Rūnanga o Ngāi Tahu*
Gordon Chesterman	*Hamilton City Council*
Jenny Chetwynd	*New Zealand Transport Agency*
John Christie	*Enterprise Dunedin*
Ross Church	*Kapiti Coast District Council*
William Cochrane	*University of Waikato*
Geoff Cooper	*Auckland Council*
Louise Croot	*Otago Regional Council*
Dave Cull	*Dunedin City Council*
Lianne Dalziel	*Christchurch City Council*
Jane Davis	*Greater Wellington Regional Council*
Jo Doyle	*Ministry of Business, Innovation & Employment*
Roger Fairclough	*Treasury*
Mark Flowers	*Wintec: Waikato Institute of Technology*
Ilze Gotelli	*Watercare Services*
Wayne Guppy	*Upper Hutt City Council*

Julie Hardaker	*Hamilton City Council*
Jim Harland	*New Zealand Transport Agency*
David Hermans	*Ministry for the Environment*
Dell Hood	*Waikato District Health Board*
Sally Hughes	*Character Coalition*
Penny Hulse	*Auckland Council*
Carolyn Ingles	*Christchurch City Council*
Maria Ioannou	*Dunedin City Council*
Yani Johanson	*Christchurch City Council*
Ben Johnson	*Employers and Manufacturers Association, Waikato*
Chris Kissling	*Lincoln University and Christchurch Civic Trust*
Maree Kleinlangevelsloo	*Kāi Tahu ki Otago Ltd*
Kevin Lavery	*Wellington City Council*
Nick Leggett	*Porirua City Council*
Donna Matahaere-Atariki	*Te Rūnanga o Ōtākou*
Laurie McCallum	*Environment Canterbury*
Scott McCulloch	*Property Council South Island Branch*
Ryan Mearns	*Generation Zero*
Tracy Mears	*Treasury*
Lloyd Morshuis	*Morclarke Developments*
Jennifer Nickel	*Fonterra*
Bob Parker	*Christchurch City Council*
John Patrick	*University of Otago*
John Peet	*Sustainable Ōtautahi Christchurch*
Penny Pirrit	*Auckland Council*
Noel Reardon	*Auckland Council*
Matiu Rei	*Ngāti Toa Rangatira/Te Rūnanga o Toa Rangatira*
Paula Rolfe	*Hamilton City Council*
Bob Simcock	*Waikato District Health Board and Waikato Regional Council*
Nick Smith	*Minister of Housing*
Benesia Smith	*Canterbury Earthquake Recovery Authority*
Kris Smith	*Tertiary Education Union*
Michael Spurr	*Hamilton City Council*
Roger Sutton	*Canterbury Earthquake Recovery Authority*
David Taipari	*Independent Māori Statutory Board*

Keith Tallentire	*Greater Christchurch Urban Development Strategy*
Michael Theelen	*Christchurch City Council*
Mark Todd	*Property Developer*
Stephen Town	*New Zealand Transport Agency*
Connal Townsend	*Property Council*
Peter Townsend	*Canterbury Employers' Chamber of Commerce*
Urlwyn Trebilco	*Waikato Regional Council*
Ken Tremaine	*Future Proof*
Michael Tucker	*Auckland Council*
Glen Tupuhi	*Te Rūnanga Ō Kirikiriroa*
Phil Twyford	*Labour Party, Parliament*
Martin Udale	*Property Development Consultant*
Chris Upton	*Upper Hutt City Council*
Ingrid van Elst	*Treasury*
Jacques Victor	*Auckland Council*
Celia Wade-Brown	*Wellington City Council*
Bill Wasley	*Greater Christchurch Urban Development Strategy*
Sue Wells	*Christchurch City Council*
Fran Wilde	*Greater Wellington Regional Council*
Harry Wilson	*New Zealand Transport Agency*
George Wood	*Auckland Council*
Paul Young	*Generation Zero*
Adrienne Young-Cooper	*Technical Advisory Group to Minister for the Environment*

Five other participants could not be named.

Organisations listed are those the participants were associated with at the time of events.

APPENDIX 3

Survey of public opinion, 2015, questions

1. **Were you born in the city or region where you are living now?**

   A. Yes
   B. No, I was born in New Zealand but not where I am living now
   C. No, I was not born in New Zealand

2. **Some people do not mind whether they live in a stand-alone house, a townhouse or an apartment; other people have strong preferences. What would you most prefer to live in? And which would you least prefer?**

   GRID: Most prefer — Least prefer

   A. A stand-alone house
   B. A townhouse
   C. An apartment
   D. Don't mind
   E. Some other type of dwelling (please tell us what that is)

3. **As our cities develop further, the choices available to city residents may come down to a larger house and section in a suburb away from the heart of the city, or a smaller house, townhouse or apartment close to the heart of the city or town nearest you. Which would you prefer?**

   A. Larger house, further out
   B. Smaller house, townhouse or apartment in the city/ town
   C. Don't mind
   D. Other (please tell us what that is)

4. **For some people a house and garden in the outer suburbs is more important than the time spent commuting to work; for other people a shorter commute to work and other activities is the most important issue. In your opinion...**

   A. Having space is more important to me than a longer commuting time

B. Having a short commute to work or other activities is more important to me than the house I live in
C. I don't mind
D. Other (please tell us what that is)

5. Would you prefer to live within walking and/or cycling distance of some of the destinations you need to get to most often, like work, shops, parks, schools and public transport stops?

	Yes	No	Not a concern for me	Don't know
Work				
Food/grocery Shopping				
Other shopping				
Schools				
Public transport stops				

6. Rather than planning that promotes residential subdivisions and separate commercial areas, do you approve in principle of mixed-use developments that put housing within walking and cycling distance of offices, shops, parks, schools and public transport routes?

A. Strongly approve
B. Approve
C. Disapprove
D. Strongly disapprove
E. Not sure

7. The Auckland Plan promotes a vision of a quality, compact city, which includes increasing the density of dwellings in residential areas, with more provision for apartment and townhouse living, and strengthening public transport. Generally speaking, do you support such a vision for <u>your</u> city?

A. Yes
B. No
C. Not concerned either way / don't know.

8. **How comfortable would you be with a greater density of residential development in your own neighbourhood, if this development was of the following types:**
   [scale of 1–5 from not comfortable at all to perfectly comfortable with this, + I'm not sure option]

   A. Townhouses, up to two storeys
   B. Apartments, up to two storeys
   C. Medium-rise apartments
   D. High-rise apartments

9. **Some people say that if new apartments and townhouses were built in your neighbourhood, the market values of existing properties would go down. Others say that it would not make much difference. What would you say?**

   A. Building new apartments and townhouses would lower property prices in this neighbourhood
   B. Building new apartments and townhouses would *not* make a significant difference to the value of existing properties here
   C. Don't know

Questions 10–11 ask about zoning rules

Zoning rules are often imposed by councils to control the height and appearance of townhouses and apartment buildings, and to require a minimum floor area and a minimum number of car park spaces.

10. **To what extent do you agree or disagree with the following statements about these zoning rules?**

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	I'm not sure
10.1. In my neighbourhood, these zoning rules aren't needed	☐	☐	☐	☐	☐	☐
10.2. These zoning rules would have a desirable and important effect on how my neighbourhood looks	☐	☐	☐	☐	☐	☐
10.3. These zoning rules would have a desirable and important effect by limiting the type of people who might come to live in my neighbourhood	☐	☐	☐	☐	☐	☐

11. For those respondents who strongly agree with Question 10.3: (follow on question)

Why is it desirable for zoning rules to limit the type of people who might come to live in my neighbourhood? (please tick all that apply)

A. I have paid a lot to be in this neighbourhood and/or school zone, and if people are allowed to buy or rent here at low prices, the value of what I have paid for will be reduced
B. I would prefer to avoid having people of different backgrounds or beliefs in my neighbourhood
C. I would prefer to avoid the risk of people moving into the neighbourhood who might not look after it
D. None of the above
E. Some other reason (please tell us what that is)

12. Some people say that the central government should provide opportunities by encouraging affordable housing policies for renting or owning. Others say these policies are not needed. What do you say?

A. Yes, the government should have housing policies that encourage affordable housing
B. No, government intervention is not necessary, the market can provide affordable housing
C. Don't know

13. Some people say councils should set urban limits, to protect rural land and encourage compact cities; other people say this constrains economic development. In your opinion:
Please select the option that best describes your opinion

A. Councils, elected by residents, should have the key role in defining the limits and form of the city
B. Market forces should have the key role
C. Don't know

14. Some people say cities need urban limits and intensified housing in the city; other people say urban limits force up the price of housing. In your opinion:
Please select the option that best describes your opinion

A. Urban limits are necessary so that cities develop more sustainably
B. Urban limits unnecessarily limit city development
C. I'm not sure

15. Some people say building more roads is important to reduce traffic congestion; other people say new roads simply lead to more car trips and roads fill up. In your opinion:

A. Building more roads will succeed in reducing traffic congestion
B. Building more roads will just lead to more car trips, with roads filling up again
C. I don't agree with either of these
D. I don't know

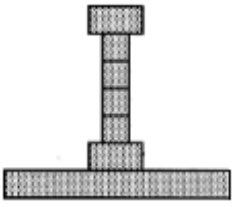
16. Do you agree or disagree with the statement that *"There is an urgent need for policies to reduce greenhouse gas emissions in New Zealand"* **?**

A. Strongly agree
B. Agree
C. Disagree
D. Strongly disagree
E. Don't know

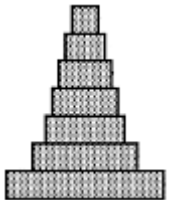
17. Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?

A. Most people can be trusted
B. You can't be too careful in dealing with people
C. Don't know

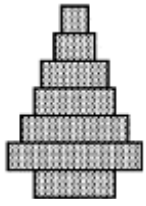
These five diagrams show different types of society. Please read the descriptions and look at the diagrams before you answer the next two questions.



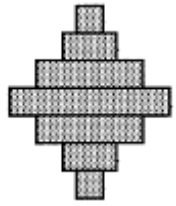
Type A
A small elite at the top, very few people in the middle, and the great mass of people at the bottom.



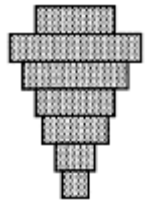
Type B
A society like a pyramid with a small elite at the top, more people in the middle, and most at the bottom.



Type C
A pyramid except that just a few people are at the bottom.



Type D
A society with most people in the middle.



Type E
Many people near the top, and only a few near the bottom.

18. First, what type of society is New Zealand today — which diagram comes closest?

A. Type A
B. Type B
C. Type C
D. Type D
E. Type E
F. Don't know

19. What do you think New Zealand ought to be like — which would you prefer?

A. Type A
B. Type B
C. Type C
D. Type D
E. Type E
F. Don't know

20. To what extent do you agree or disagree with the statement that 'Differences in income in New Zealand are too large'?

A. Strongly agree
B. Agree
C. About right
D. Disagree
E. Strongly disagree
F. I'm not sure

21. Do you pay rates directly to a local authority (council) in New Zealand?

A. Yes
B. No

22. Do you have any final comments on this survey or the issues raised in it?

APPENDIX 4

Other ways of looking at drivers of urban change

Urban change is a complex and far-reaching subject which can be considered in a multitude of ways. Our report focused on the themes discussed by key participants during interviews. There are other ways that topics related to urban change in New Zealand have been addressed.

Our futures: Te pae tāwhiti: The 2013 census and New Zealand's changing population[1]

This report published by The Royal Society of New Zealand examined data from the 2013 census to gather a picture of demographic change, and reflect on what these changes might mean for politics, culture and society. The authors considered the event of a census to be an optimal time for a national stocktake and discussion of the country's possible futures.

Regional economies: Shape, performance and drivers[2]

This New Zealand Institute of Economic Research report examined regional economies with the aim of untangling the complex regional narratives that contributed to economic growth, and to understand what made regions tick.

Ministry of Business, Innovation and Employment (MBIE) reports

MBIE's *Regional economic activity report*[3] provided a comprehensive economic analysis of each of New Zealand's diverse regions. In addition, MBIE undertook a research programme on Auckland's economic development, producing nine reports from 2007–11.[4] This research primarily addressed determinants of population, household and firm location, as well as issues of economic interconnectivity with other cities, agglomeration and Auckland's competitive advantages.

MBIE collaborated with Local Government New Zealand (LGNZ) as part of the Core Cities Project to produce the *NZ core cities research summary*.[5] As the name suggests, this report summarised research on the growing importance of cities within New Zealand and within the global economy. It investigated issues and trends concerning transport, the Internet, education, innovation, diversity and specialisation, community and the ageing population, the business

environment, the built environment (including housing affordability) and the natural environment.

Local government funding review 2015[6]

LGNZ's review outlined the nature and extent of challenges facing local councils, and considered alternative options for responses. The review looked at issues relevant to councils, including the relationship between local and central government, the diverse nature of communities, rates and alternative sources of income.

Quality of life in New Zealand's cities[7]

This was a project undertaken through collaboration by city councils in response to the perceived impacts of urbanisation on citizens' quality of living. The first report in 2001 examined issues and indicators around housing, health, education, the economy and more, in order to measure and compare the quality of life in New Zealand's six largest cities. The reports of 2003 and 2007 expanded upon these efforts, examining the largest eight and twelve cities respectively.

Local council research units continue to produce excellent research on related topics.

Productivity Commission reports

The Productivity Commission published a number of relevant reports. The draft report, *Using land for housing: Draft report June 2015*,[8] and its predecessors, *Housing affordability*[9] in 2012, and *Towards better local government*[10] in 2013, explored issues around land use, housing and the regulatory environment.

Future demand: How could or should our transport system evolve in order to support mobility in the future?[11]

Future Demand examined key drivers of change and critical uncertainties to produce four plausible depictions of New Zealand society and transport for 2042. This report for the Ministry of Transport concluded that we should acknowledge uncertainty about future transport trends, build flexibility into our infrastructure and systems, embrace technology, and ensure that people are provided with good accessibility by investing in not only the transport system, but also our physical environment and digital communications. Rather than predict and provide, we might think about what we want to happen in the future and how we can make this a reality.

This is just a sample of the diverse approaches to work of this nature, which are important to enable understanding of complex issues. The work undertaken in our report is complementary to the work acknowledged here.

ACKNOWLEDGMENTS

Thank you to the interview participants, and their assistants, without whom this report would not have been possible. A full list of participants who agreed to be named is in Appendix 2.

We greatly appreciate the insights and assessment of our two reviewers, Len Cook and Geoff Fougere.

This report was funded by the Ministry of Business, Innovation and Employment. Environment Canterbury, Christchurch City Council and Ministry of Transport are acknowledged for their permission to reproduce material.

We would also like to acknowledge and thank the following for their assistance in the preparation of this report: Matthew Adams, Kate Amore, Matthew Bartlett, Jean Beetham, Ralph Chapman, Elinor Chisholm, Megan Cook, Document Doctor, Nadine Dodge, Rosemary Goodyear, Maria Graves, Arthur Grimes, Michael Keall, Biddy Livesey, Sarah McDermott, Grant McInman and Horizon Research Ltd, Gavin Middleton, Jonathan Moores, Gustavo Olivares, Nick Preval, David Price, Ed Randal, Pattern Reid, Graciela Rivera-Muñoz, MK Roney, Grace C. Russell, John Ryks, Dalice Sim, Adrian Slack, James Stratford, Keriata Stuart, Keith Tallentire, Anaru Waa, Nick Wilson, Karen Witten, Jasmine Xu, all the researchers of the Resilient Urban Futures research programme and our colleagues at the University of Otago, Wellington.

NOTES

One: Introduction

1. Martinot, E. *Renewables global futures report*. (REN21, 2013) <http://www.martinot.info/REN21_GFR_2013.pdf>
2. Chapman, R., Howden-Chapman, P. & Capon, A. Understanding the systemic nature of cities to improve health and climate change mitigation. *Environment International* (2015) (submitted for publication).
3. Preval, N., Chapman, R. & Howden-Chapman, P. in *Sizing up the city: Urban form and transport in New Zealand* (eds. Howden-Chapman, P., Stuart, K. & Chapman, R.) 34–51 (Steele Roberts Publishers, 2010).
4. Hawke, G. *et al. Our futures: Te pae tawhiti*. (The Royal Society of New Zealand, 2014) <http://www.royalsociety.org.nz/expert-advice/papers/yr2014/our-futures/>
5. *NZ core cities research summary*. (Ministry of Business, Innovation & Employment, and Local Government New Zealand, 2012) <http://www.med.govt.nz/sectors-industries/regions-cities/pdf-docs-library/core-cities-research/Core%20Cities%20Research%20Summary.pdf>
6. Statistics New Zealand. *Subnational population projections: 2013(base)-2043*. (2015) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx>
7. Statistics New Zealand. *Subnational ethnic population projections: 2006(base)*. (2010) <www.stats.govt.nz/browse_for_stats/population/ estimates_and_projections/subnational-ethnic-population-projections.aspx>
8. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
9. Eaqub, Shamubeel & Stephenson, John. *Regional economies: Shape, performance and drivers*. (New Zealand Institute of Economic Research, 2014) <http://nzier.org.nz/static/media/filer_public/e4/1f/e41f5c81-2d63-4548-8859-2dad5c8e213f/nzier_public_discussion_document_2014-03-regional_economies.pdf>
10. Statistics New Zealand. *2001 Census*. (2001) <http://www.stats.govt.nz/Census/2001-census-data.aspx>
11. Statistics New Zealand. *New Zealand business demography statistics*. (2013) <http://www.stats.govt.nz/browse_for_stats/businesses/business_characteristics/nz-business-demography-statistics-info-releases.aspx>
12. Department of Internal Affairs. *Local Councils* <www.localcouncils.govt.nz>
13. *Local Government New Zealand* <www.lgnz.co.nz>
14. McKinlay, P. & Selwood, S. *Local government, governance and raising the quality of public debate*. (2014) <http://www.mdl.co.nz/site/mckinley/Treasury-presentation-paper-June2014.pdf>

Two: Auckland

1. Mees, P. & Dodson, J. *Backtracking Auckland: Bureaucratic rationality and public preferences in transport planning*. 7, 8 (Griffith University, 2006) <http://www98.griffith.edu.au/dspace/bitstream/handle/10072/12666/41358.pdf?sequence=1>

2. *Auckland Regional Council v North Shore City Council NZRMA 424*. (1995).
3. Local Government (Auckland Council) Act 2009 section 79 (2). (2009) <http://www.legislation.govt.nz/act/public/2009/0032/latest/DLM2044909.html>
4. Blakeley, Roger. Three hot issues for Aucklanders. *The New Zealand Herald* (2011) <http://www.nzherald.co.nz/opinion/news/article.cfm?c_id=466&objectid=10758600>
5. Auckland Council. *Auckland Unleashed*. (2011).
6. Auckland Council. *The Auckland plan*. (2012) <http://theplan.theaucklandplan.govt.nz/>
7. Auckland Council. *What is the Unitary Plan?* at <http://aucklandcouncil.custhelp.com/app/answers/detail/a_id/501>
8. Orsman, B. Govt rejects city's tolls, fuel tax ideas. *NZ Herald* (2012) <http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10820846>
9. The Consensus Building Group. *Funding Auckland's transport future: Final report*. (Auckland Council, 2013) <http://static.stuff.co.nz/files/CBGTransportfundingfinalreport.pdf>
10. Sinclair Knight Merz. *City centre future access study: Study technical report — Executive summary*. (2012) <http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/representativesbodies/MayorofAuckland/Documents/CCFASexecsummary.pdf>
11. Auckland Transport. *Regional land transport plan 2015–2025*. (2015) <https://at.govt.nz/media/1191335/Regional-Land-Transport-Plan-Adopted-Version-July-2015.pdf>
12. Slade, M. Len Brown cool on light rail in Auckland transport plan. (2015) <http://www.stuff.co.nz/national/65317005/Len-Brown-cool-on-light-rail-in-Auckland-transport-plan>
13. Auckland Council. *Draft Auckland Unitary Plan — March 2013*. (2013) <http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/plansstrategies/unitaryplan/march2013draftunitaryplan/Pages/home.aspx>
14. Auckland Council. *The proposed Auckland Unitary Plan*. (2013) <http://unitaryplan.aucklandcouncil.govt.nz/Pages/Plan/Book.aspx?exhibit=PAUPSept13>
15. Adams, A. *Government submission on the proposed Auckland Unitary Plan*. (2013) <http://www.aucklandcity.govt.nz/UPSubs/UPASEP000318.pdf>
16. New Zealand Government. *Local Government (Auckland Transitional Provisions) Act 2010*. (2010) <http://www.legislation.govt.nz/act/public/2010/0037/latest/whole.html#DLM5600691>
17. Auckland Council. *Auckland housing accord*. (2013) <http://www.aucklandcouncil.govt.nz/en/ratesbuildingproperty/housingsupply/pages/aucklandhousingaccord.aspx>
18. The New Zealand Productivity Commission. *Housing affordability inquiry*. (The New Zealand Productivity Commission, 2012) <http://www.productivity.govt.nz/inquiry-content/1509?stage=4>
19. Statistics New Zealand. *Housing in Auckland: Trends in housing from the census of population and dwellings 1991 to 2013*. (2014) <http://www.stats.govt.nz/browse_for_stats/people_and_communities/housing/auckland-housing-1991-2013.aspx>
20. Auckland Council. *Housing action plan stage 1*. (2012) <http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/plansstrategies/theaucklandplan/Documents/finalhousingactionplanstage1.pdf>
21. Ministry of Business, Innovation & Employment. *Housing affordability: Residential land available in Auckland*. (2013) <http://www.building.govt.nz/userfiles/file/publications/sector/pdf/residential-land-available-in-auckland-report.pdf>
22. English, Bill. *Introduction: 9th annual Demographia international housing affordability survey 2013*. (2013) <http://demographia.com/dhi2013.pdf>
23. Nunns, P. *Population-weighted densities in New Zealand and Australian cities: A new comparative dataset*. (MRCagney Pty Ltd, 2014) <http://transportblog.co.nz/wp-content/uploads/2014/09/Nunns-2014-NZ-Aus-population-weighted-density-small.pdf>
24. Ministry of Business, Innovation & Employment & Auckland Council. *Auckland Housing Accord third report for Accord year 2: October 2014 to June 2015*. (2015) <http://www.beehive.govt.nz/sites/all/files/3_Auckland_Housing_Accord_Monitoring_Report_7.pdf>
25. Housing Accords and Special Housing Areas Act 2013 section 50. (2013) <http://www.legislation.govt.nz/act/public/2013/0072/latest/DLM5369001.html>

26. Resource Management Act 1991 section 123. (1991) <http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html>
27. Rush, A. Auckland property values rise at fastest annual rate in 11 years. (2015) <https://www.qv.co.nz/resources/news/article?blogId=195>
28. Murphy, L. The politics of land supply and affordable housing: Auckland's Housing Accord and Special Housing Areas. *Urban Studies* (2015) <http://usj.sagepub.com/content/early/2015/07/07/0042098015594574.abstract>
29. Ingerson, J. No sign of a slowdown in Auckland yet. (2015) <https://www.qv.co.nz/resources/news/article?blogId=197>
30. Ministry of Transport. *Data and spreadsheets — Household travel survey*. (2015) <http://www.transport.govt.nz/research/travelsurvey/data-and-spreadsheets-household-travel-survey/>
31. Statistics New Zealand. *Internal migration of New Zealand's 65+ population*. (2009).
32. Howie, Cherie. Maori history undermines home renovations. *New Zealand Herald* (2013) <http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11161899>
33. Urban technical advisory group. *Report of the Minister for the Environment's urban technical advisory group*. 31 (2010) <http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/plansstrategies/unitaryplan/Documents/Section32report/Appendices/Appendix%203.1.4.pdf>
34. The New Zealand Productivity Commission. *Using land for housing: Draft report*. (New Zealand Productivity Commission, 2015).
35. PricewaterhouseCoopers. *Weathertightness — Estimating the cost*. 1–76 (2009) <http://www.dbh.govt.nz/UserFiles/File/News/WHRS/pdf/PWC-weathertightness-estimating-cost-full-report.pdf>
36. Easton, B. in *The leaky buildings crisis: Understanding the issues* (Brookers Ltd., 2011).
37. Gray, J. Wanted: Good builders to rescue industry reputation. *BUILD* **119,** 38–39 (2010).
38. *Body Corporate no. 207624 v North Shore City Council*. (2012) <http://www.bellgully.co.nz/resources/resource.03340.asp>
39. The Law Commission. *What has happened*. 1–82 (2012) <http://ip32.publications.lawcom.govt.nz/Chapter+5+-+What+has+happened/Leaky+homes>
40. Stock, R. Lawsuit on leaky claddings planned. *The Dominion Post* B4 (2015).
41. Office of the Auditor-General. *Local government: Results of the 2011/12 audits*. 1–114 (Controller and Auditor-General, 2010) <http://www.oag.govt.nz/2013/local-govt/part7.htm>
42. Vaughan, G. Three years in, Govt's financial assistance package has coughed up to fix just 249 leaky homes. *interest.co.nz* (2013) <http://www.interest.co.nz/property/65279/three-years-govts-financial-assistance-package-has-coughed-fix-just-249-leaky-homes>
43. Ministry of Business, Innovation & Employment. Councils participating in the financial assistance package. *Building Performance* at <http://www.building.govt.nz/fap-participating-councils>
44. Office of the Auditor-General. Local authority exposure to liabilities from leaky home claims. *Controller and Auditor-General* (2010) <http://www.oag.govt.nz/2010/2008-09/part4.htm>
45. Bagrie, C., Edwards, S., Croy, D. & Smith, M. *Trickle-down economics*. 1–16 (ANZ, 2010) <http://www.anz.co.nz/resources/1/7/1712e9004349371 49c6f9e5b4fbd8721/PropertyFocus-20102007.pdf>
46. Chapman, R., Howden-Chapman, P. & Wilson, N. in *Do damp and mould matter? Health impacts of leaky homes* 121–134 (Steele Roberts Publishers, 2009).
47. Morris, B. Leak crisis will hit every pocket. *The New Zealand Herald* (2011) <http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10735864>
48. Murphy, C. in *Across: Architectural research through to practice* (eds. Madeo, F. & Schnabel, M. A.) 123–133 (The Architectural Science Association & Genova University Press, 2014) <http://anzasca.net/wp-content/uploads/2014/12/02_10_7.pdf>
49. The new economics foundation. *Briefing 5: Discounting and time preferences*. (2013).
50. Statistics New Zealand. *Regional gross domestic product: Year ended March 2014*. (2014) <http://www.stats.govt.nz/browse_for_stats/economic_indicators/NationalAccounts/RegionalGDP_HOTPYeMar14.aspx>

51. The Taxpayers' Union & Fairfax NZ. *Ratepayers' report*. (2014) <http://ratepayersreport.co.nz/>
52. Local Government New Zealand. *Local government funding review: A discussion paper*. (2015) <http://www.lgnz.co.nz/assets/Uploads/Our-work/Local-Government-Funding-Review.pdf>
53. Key, John. Address to National Party conference. (2015) <https://www.national.org.nz/news/news/media-releases/detail/2015/07/25/address-to-national-party-conference>
54. Statistics New Zealand. *Subnational population estimates: At 30 June 2014 (provisional)*. (2014) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationEstimates_HOTPAt30Jun14.aspx>
55. Statistics New Zealand. *Mapping trends in the Auckland region*. (2009) <http://www.stats.govt.nz/browse_for_stats/Maps_and_geography/Geographic-areas/mapping-trends-in-the-auckland-region/population-change.aspx#>
56. Auckland 2040 & Character Coalition. *Joint letter to the mayor*. (2013) <http://www.scoop.co.nz/stories/PO1305/S00370/auckland-2040-group-meet-mayor-for-talks-about-unitary-plan.htm>
57. Reich, Robert B. Secession of the successful. *The New York Times* (1991) <http://www.nytimes.com/1991/01/20/magazine/secession-of-the-successful.html?pagewanted=all>
58. Hawke, G. *et al. Our futures: Te pae tawhiti*. (The Royal Society of New Zealand, 2014) <http://www.royalsociety.org.nz/expert-advice/papers/yr2014/our-futures/>
59. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
60. Larsen, C. A. *The rise and fall of social cohesion: the construction and de-construction of social trust in the US, UK, Sweden and Denmark*. (Oxford University Press, 2013).
61. Auckland Transport Alignment Project. *Terms of reference*. (2015) <http://www.transport.govt.nz/assets/uploads/land/documents/atap-terms-of-reference.pdf>
62. Salmon, Guy. *Interview with Jim Bailey, planning department, Vancouver*. (2015).
63. Spencer, G. *Investors adding to Auckland housing market risk*. (Reserve Bank of New Zealand, 2015) <http://www.rbnz.govt.nz/research_and_publications/speeches/2015/investors-adding-Auckland-housing-market-risk.pdf>
64. OECD. *Compact city policies: A comparative assessment*. (OECD Publishing, 2012) <http://www.oecd.org/greengrowth/greening-cities-regions/compact-city.htm>

Three: Hamilton

1. Statistics New Zealand. *2001 Census*. (2001) <http://www.stats.govt.nz/Census/2001-census-data.aspx>
2. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
3. Statistics New Zealand. *Subnational population projections: 2013(base)-2043*. (2015) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx>
4. Jackson, N. & Pawar, S. *Waikato region and districts: Demographic profile 1986–2031*. (National Institute of Demographic and Economic Analysis, 2013) <http://www.waikato.ac.nz/__data/assets/pdf_file/0004/178132/No.-9-Waikato-Region-ISSN-final-Jul-2013.pdf>
5. Jackson, N., Camerson, M. & Cochrane, B. *2014 Review of demographic, households and labour force projections for the Waikato region for the period 2013–2063*. (University of Waikato, National Institute of Demographic and Economic Analysis, 2014) <http://www.futureproof.org.nz/file/nidea-2014-demographic-households-and-labour-force-projections-for-future-proof-sub-region-2013-2063.pdf>
6. Statistics New Zealand. *Subnational ethnic population projections: 2006(base)*. (2010) <http://www.stats.govt.nz/browse_for_stats/population/ estimates_and_projections/subnational-ethnic-population-projections.aspx>
7. Immigration New Zealand. *Refugee quota factsheet: Hamilton* <http://www.immigration.govt.nz/migrant/general/generalinformation/refugee-protection/factsheetsvideosforrefugeesandfamilymemberssettlinginNZ.htm>

8. Thompson, A. *Housing affordability and demand in Hamilton City, Development Economics for HCC*. 18 (2011).
9. Ihaka, J. Regional council votes in Maori seats but city against. *The Herald* (2011) <http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10762152>
10. Waikato Regional Council. *Priority Area — Iwi Māori co-governance* <http://www.waikatoregion.govt.nz/Council/About-us/WRC-strategy/Priority-area---Iwi-Mori-co-governance/>
11. Waikato Regional Council. *Representation arrangements* <http://www.waikatoregion.govt.nz/representation/>
12. Hamilton City Council. *The Waikato river: Deed of settlement* <www.hamilton.govt.nz>
13. Waikato Regional Council. *Waikato River and Waipa River co-management* <http://www.waikatoregion.govt.nz/Community/Your-community/iwi/Waikato-River-co-management/>
14. *Waikato River Authority* <http://www.waikatoriver.org.nz/>
15. Waikato-Tainui. *Waikato-Tainui annual report 2014*. (2014) <http://s3.documentcloud.org/documents/1211344/waikato-tainui-annual-report-2014.pdf>
16. *Waikato-Tainui Deed of Settlement*. (1995) <http://nz01.terabyte.co.nz/ots/DocumentLibrary/WaikatoTainuiDeedOfSettlement.pdf>
17. Te Kauhanganui o Waikato Inc. *Whakatupuranga Waikato-Tainui 2050*. (2007) <http://www.waikatotainui.com/wp-content/uploads/2013/10/WhakatupurangaWT2050.pdf>
18. Trustee. Waikato-Tainui College for Research and Development. (2014).
19. Infometrics. *Hamilton city economic profile* <http://ecoprofile.infometrics.co.nz/Hamilton%2bCity>
20. Statistics New Zealand. *Geographic units by employee count size, industry and area unit 2000–14* <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7602>
21. Balvert, L. Golden highway vision welcomed. *The Sun* (2014) <http://www.sunlive.co.nz/news/77266-golden-highway-vision-welcomed.html>
22. Paling, R., Sanderson, K. & Berl economics. *Economic linkages between New Zealand cities*. (Ascari, Richard Paling Consulting and Berl economics) <http://www.med.govt.nz/sectors-industries/regions-cities/research/pdf-document-library/auckland-research-programme/Economic-linkages.pdf>
23. Future Proof. *Growth strategy and implementation plan 2009*. (2009) <http://www.waikatodistrict.govt.nz/Documents-Library/Files/Documents/Plans,-reports,-publications/District-Growth-Strategy/Futureproof-Entire-Document-24-July-2009.aspx>
24. KiwiRail. *2015–2017 Statement of corporate intent* <http://www.kiwirail.co.nz/uploads/Publications/SCI.%202015-2017%20Final.pdf>
25. Ministry of Transport. *Data and spreadsheets — Household travel survey* <www.transport.govt.nz/research/travelsurvey/data-and-spreadsheets-household-travel-survey/>
26. Leaman, A. Council plans pensioner housing shake-up. *Waikato Times* (2014) <http://www.stuff.co.nz/waikato-times/news/9910771/Council-plans-pensioner-housing-shake-up>
27. Hamilton City Council. *Social housing for older persons review — Frequently asked questions following decision* <http://www.hamilton.govt.nz/our-services/housingfortheolderperson/Documents/Social%20housing%20-%20FAQs.pdf>
28. Radio New Zealand. *Hamilton council to sell pensioner units*. (2014) <http://www.radionz.co.nz/news/regional/260427/hamilton-council-to-sell-pensioner-units>
29. Wilson, L. Social housing project gets $900,000 bill. *Stuff.co.nz* (2014) <http://www.stuff.co.nz/national/10622245/Social-housing-project-gets-900-000-bill>
30. Alexander, T. No Dent in the Market. *New Zealand Property Investor, ANZ* (2013) <https://www.bnz.co.nz/static/www/docs/property-investment-trends/bp2013-06.pdf>
31. Page, I. Residential construction and costs. in (BRANZ, 2009) <http://www.chranz.co.nz/pdfs/branz-residential-construction-and-costs.pdf>

32. Taylor, P. House of the rising sum. *The New Zealand Herald* (2014) <http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11244355>
33. Smith, N. & Foss, C. Duties and tariffs on building products removed. *beehive.govt.nz* (2014) <http://www.beehive.govt.nz/release/duties-and-tariffs-building-products-removed>
34. Hickey, B. Govt proposes lower import tariffs on building materials and fewer anti-dumping duties in effort to cut house building costs. *interest.co.nz* (2013) <http://www.interest.co.nz/property/67190/govt-proposes-lower-import-tariffs-building-materials-and-fewer-anti-dumping-duties-e>
35. The New Zealand Productivity Commission. *Housing affordability inquiry*. (2012) <http://www.productivity.govt.nz/sites/default/files/Final%20Housing%20Affordability%20Report_0_0.pdf>
36. Shamubeel, E. *Construction productivity*. (New Zealand Institute of Economic Research, 2013) <https://nzier.org.nz/static/media/filer_public/6e/73/6e73e3ad-7973-42ed-8b30-aa57df2bba78/nzier_report_to_productivity_partnership.pdf>
37. Ministry of Business, Innovation & Employment. *Residential construction sector market study*. (2013) <http://www.mbie.govt.nz/pdf-library/about-us/consultations/residential-construction-sector-options.pdf>
38. Commerce Commission. Carter Holt Harvey fined for 'classic' price fixing breaches. *Scoop News* (2014) <http://www.scoop.co.nz/stories/BU1403/S00865/carter-holt-harvey-fined-for-classic-price-fixing-breaches.htm>
39. Fletcher Building Limited. *Submission in response to the Ministry for Business, Innovation & Employment*. (2013) <http://www.mbie.govt.nz/what-we-do/housing/residential-construction-sector-market-study/pdf-document-library/issues-paper-submissions/fletcher-building.pdf>
40. Nunns, P. *Population-weighted densities in New Zealand and Australian cities: A new comparative dataset*. (MRCagney Pty Ltd, 2014) <http://transportblog.co.nz/wp-content/uploads/2014/09/Nunns-2014-NZ-Aus-population-weighted-density-small.pdf>
41. Hamilton City Council. *Variation 21* <http://www.hamilton.govt.nz/our-council/council-publications/operativedistrictplan/Pages/Variation-21.aspx>
42. Hamilton City Council. *Hamilton urban growth strategy: A compact and sustainable city*. (2010) <http://www.hamilton.govt.nz/our-city/city-strategies/hamiltonurbangrowth/Documents/Finalised%20Hamilton%20Urban%20Growth%20Strategy.pdf>
43. Hamilton City Council. *3.6 Rotokauri* <http://www.hamilton.govt.nz/our-council/council-publications/districtplans/proposeddistrictplan/chapter3/Pages/3-6-Rotokauri.aspx>
44. Future Proof. *Future Proof submission on the New Zealand Productivity Commission's 'Using land for housing — Issues paper'* <http://www.futureproof.org.nz/file/future-proof-submission-nz-productivity-commission-using-land-for-housing-22-dec-2014.pdf>
45. Adams, D. Hamilton's urban sprawl a danger, warns professor. (2012) <http://www.stuff.co.nz/waikato-times/news/7478888/Hamiltons-urban-sprawl-a-danger-warns-professor>
46. Hamilton City Council. *Rating review — Statement of proposal*. 6 (2014) <http://www.hamilton.govt.nz/our-services/property-and-rates/rates/Documents/2014%20Rating%20Review%20-%20Statement%20of%20Proposal%20-%20PDF%20for%20Consultation%20Website.PDF>
47. Hamilton City Council. *Development contributions policy*. 13 (2013) <http://www.hamilton.govt.nz/our-services/planningguidanceandresourceconsents/development-contributions/Pages/default.aspx>
48. Waikato Regional Council. *Proposed Waikato regional policy statement decisions (November 2012) — Annotated with Environment Court Appeals (1 February 2013)*. (2013) <http://www.ew.govt.nz/PageFiles/10522/2320314_RPS_Decisions_1_Feb_2013.pdf>
49. *Smart water starts with you* <http://www.smartwater.org.nz/>
50. Waikato Regional Council. *How clean is the Waikato River* <http://www.waikatoregion.govt.nz/Environment/Natural-resources/Water/Rivers/Waikato-River/How-clean-is-the-Waikato-River/>
51. NIWA. *New Zealand historic weather events catalogue* <http://hwe.niwa.co.nz/>

52. Future Proof. *Three waters strategy* <http://www.futureproof.org.nz/page/86-three-waters-strategy>
53. Hamilton City Council, Waikato District Council & Waipa District Council. *Waikato water study* <http://www.waterstudywaikato.org.nz/home>
54. White, M. & Future Proof Technical Implementation Group. *Future Proof monitoring report 2015*. (2015) <http://www.futureproof.org.nz/file/future-proof-monitoring-report-april-2015-final.pdf>

Four: Wellington

1. Statistics New Zealand. *Subnational population projections*. (2013) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx>
2. Hutt City Council. *Urban growth strategy*. (2012) <http://www.huttcity.govt.nz/Your-Council/Plans-publications-and-bylaws/an-integrated-vision/urban-growth-strategy-2012---2032/>
3. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
4. Hawke, G. *et al. Our futures: Te pae tawhiti*. (The Royal Society of New Zealand, 2014) <http://www.royalsociety.org.nz/expert-advice/papers/yr2014/our-futures/>
5. Hallahan, M., Cowlishaw, S., Rutherford, H. & Chapman, K. Prime minister side-steps 'dying' comment. *The Dominion Post* (2013) <http://www.stuff.co.nz/national/politics/8639116/Prime-minister-side-steps-dying-comment>
6. Hubbard, A. The Wellington report: Yes, Wellington is open for business. *The Dominion Post* (2014) <http://www.stuff.co.nz/dominion-post/news/10313228/Yes-Wellington-is-open-for-business>
7. Wellington Regional Strategy Committee. *Wellington regional strategy 2012 — growing a sustainable economy*. (2012) <http://www.gw.govt.nz/assets/council-publications/Wellington%20Regional%20Strategy%202012%20%28Web%29%28abstract%20in%20doc%29.pdf>
8. Statistics New Zealand. *Regional gross domestic product: Year ended March 2014*. (2014) <http://www.stats.govt.nz/browse_for_stats/economic_indicators/NationalAccounts/RegionalGDP_HOTPYeMar14.aspx>
9. Statistics New Zealand. *Subnational population estimates: At 30 June 2014 (provisional)*. (2014) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationEstimates_HOTPAt30Jun14.aspx>
10. Statistics New Zealand. *Local authority financial statistics: Year ended June 2013*. (2013) <http://www.stats.govt.nz/browse_for_stats/government_finance/local_government/LocalAuthorityFinancialStatistics_HOTPyeJun13.aspx>
11. Infometrics. *Labour market and economic profile: Wellington*. (Infometrics Limited, 2011) <http://www.infometrics.co.nz/reports/regional/TEC/Wellington-Revised-Jun2012.pdf>
12. Norman, R. & Oakden, J. *Wellington's knowledge economy — coming to grips with technology change*. (Victoria University of Wellington, 2014) <http://www.victoria.ac.nz/som/researchprojects/working-capital/publications/Report-June-2014.pdf>
13. Swinney, P. & Thomas, E. *A century of cities: Urban economic change since 1911*. (Centre for Cities, 2015) <http://www.centreforcities.org/wp-content/uploads/2015/03/15-03-04-A-Century-of-Cities.pdf>
14. Statistics New Zealand. *2013 Census QuickStats about housing*. (2014) <http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-housing/types-occupied-dwellings.aspx>
15. Porirua City Council. *Porirua social wellbeing report 2012*. (2012) <http://www.pcc.govt.nz/DownloadFile/Community/Community-Outcomes/Porirua-Social-Wellbeing-Report-2012>
16. Nunns, P. *Population-weighted densities in New Zealand and Australian cities: A new comparative dataset*. (MRCagney Pty Ltd, 2014) <http://transportblog.co.nz/wp-content/uploads/2014/09/Nunns-2014-NZ-Aus-population-weighted-density-small.pdf>
17. Department of Internal Affairs. *Development contributions review discussion paper*. (2013).

18. New Zealand Parliament. *Local Government Act 2002 Amendment Bill (No 3)*. (2014).
19. Wade-Brown, C. Sensing cities seminar. (2015).
20. Hymel, K. M., Small, K. A. & Van Dender, K. Induced demand and rebound effects in road transport. *Transportation Research Part B: Methodological* **44,** 1220–1241 (2010).
21. Local Government New Zealand. On the road to improving transport funding. (2014) <http://www.lgnz.co.nz/home/news-and-media/frontpage-news-april/>
22. New Zealand Transport Agency. Funding assistance rates (FAR) review. (2013) <http://www.nzta.govt.nz/planning/investment/far-review/index.html>
23. Hulme-Moir, A. Making way for the car: Minimum parking requirements and the Porirua city centre. (Victoria University of Wellington, 2010) <http://sustainablecities.org.nz/wp-content/uploads/Angus-Hulme-Moir.pdf>
24. Greater Wellington Regional Council. Public support lifts public transport and cycling up priority list for transport improvements in the Wellington region. (2015) <http://www.gw.govt.nz/public-support-lifts-public-transport-and-cycling-up-priority-list-for-transport-improvements-in-the-wellington-region/>
25. Greater Wellington Regional Council. *Our water history — on tap: Water supply in the Wellington region 1867–2006*. (2007) <http://www.gw.govt.nz/assets/Our-Environment/Water-Supply/PDFs/Our-water-history-on-tap-complete-document.pdf>
26. Palmer, G., Driver, S., Gardiner, W. & Jackson, B. *Future Wellington — proud, prosperous and resilient*. (Local Government Review Panel: Wellington Region, 2012).
27. Forbes, M. Emphatic no for Wellington super-city in voter poll. *The Dominion Post* (2015) <http://www.stuff.co.nz/national/66623937/Emphatic-no-for-Wellington-super-city-in-voter-poll>
28. Department of Internal Affairs. Local authority election statistics. (2013) <http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Services-Local-Elections-Local-Authority-Election-Statistics-2013?OpenDocument>
29. *Wellington Region Emergency Management Office: WREMO*. (Accessed June 2015) <http://www.getprepared.org.nz/welg>
30. Porirua City Council. Earthquake-prone and dangerous and insanitary buildings policies. (2011) <http://www.pcc.govt.nz/Publications/Earthquake-Prone-and-Dangerous-and-Insanitary-Buildings>
31. Kapiti Coast District Council. *Long term plan 2012–2032*. (2012).
32. Upper Hutt City Council. *Upper Hutt City sustainability strategy 2012–2022*. (2012).
33. Wellington City Council. *Climate change action plan 2013*. (2013).
34. Greater Wellington Regional Council. *Draft climate change strategy*. (2014) <http://www.gw.govt.nz/assets/Climate-change/WGNDOCS-1439979-v1-GWRCDraftClimateChangeStrategy.PDF>
35. New Zealand Transport Agency. Resilience response framework. (2014) <http://hip.nzta.govt.nz/technical-information/resilience>

Five: Christchurch

1. Christchurch City Council, Environment Canterbury, Transit New Zealand, Selwyn District Council & Waimakariri District Council. *Greater Christchurch urban development strategy and action plan 2007*. (2007) <http://www.greaterchristchurch.org.nz/Strategy/UDSActionPlan2007.pdf>
2. Ansell, C. *Pragmatist democracy: Evolutionary learning as public philosophy*. (OUP USA, 2011).
3. Greater Christchurch urban development strategy. Frequently asked questions <http://www.greaterchristchurch.org.nz/FAQ/index.aspx>
4. Ministry of Business, Innovation & Employment. *Regional economic activity report*. 85 (2014) <http://www.mbie.govt.nz/info-services/business/business-growth-agenda/regions/documents-image-library/Regional%20Economic%20Activity%20Report%202014%20Part%201.pdf>
5. Salmon, Guy. Canterbury water management strategy: A case study in collaborative governance. (2012) <http://www.mfe.govt.nz/sites/default/files/canterbury-water-management-strategy-a-case-study-in-collaborative-governance.pdf>

6. Canterbury Regional Council v Waimakariri District Council NZRMA 208. (2002) <http://www.mfe.govt.nz/publications/towns-and-cities/review-urban-design-case-law/appendix-1-case-law-summaries#canterburywaimakariri>
7. Banks Peninsula District Council, Christchurch City Council, Environment Canterbury, Selwyn District Council, Waimakariri District Council, Transit New Zealand. *Greater Christchurch urban development strategy: So many options...which will you choose?* (2005) <http://www.greaterchristchurch.org.nz/Background/Options/Options.pdf>
8. NV Interactive. Share an Idea <http://www.nvinteractive.co.nz/our-work/share-an-idea>
9. Christchurch City Council. Share An Idea, Christchurch City Council <http://www.ccc.govt.nz/homeliving/civildefence/chchearthquake/shareanidea.aspx>
10. Canterbury Earthquake Recovery Authority. *Canvas: Your thinking for the red zones*. (CERA, 2014) <http://cera.govt.nz/sites/default/files/common/Summary-of-findings-for-the-Waimakariri-District-December-2014.pdf>
11. Public consultation 'a farce', say MPs. *Stuff.co.nz* (2012) <http://www.stuff.co.nz/the-press/news/8031904/Public-consultation-a-farce-say-MPs>
12. Carlton, S. Share an Idea, spare a thought: Community consultation in Christchurch's time-bound post-earthquake rebuild. *Journal of Human Rights in the Commonwealth* **1,** (2013).
13. Italy, a test lab for participatory democracy. *TechPresident* at <http://techpresident.com/news/wegov/24489/italy-test-lab-participatory-democracy>
14. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
15. Statistics New Zealand. *2006 Census*. (2006) <http://www.stats.govt.nz/Census/2006CensusHomePage.aspx>
16. Ministry of Transport. *Data and spreadsheets — Household travel survey*. (2015) <www.transport.govt.nz/research/travelsurvey/data-and-spreadsheets-household-travel-survey/>
17. Statistics New Zealand. *2001 Census*. (2001) <http://www.stats.govt.nz/Census/2001-census-data.aspx>
18. Statistics New Zealand. *Subnational population projections: 2013(base)-2043*. (2015) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx>
19. Westpac Institutional Bank. *Peak or plateau? Update on the Canterbury rebuild*. (2015) <https://www.westpac.co.nz/assets/Business/Economic-Updates/2015/Bulletins-2015/Update-on-the-Canterbury-Rebuild-July-2015.pdf>
20. Donnell, H. Christchurch will be 'world's most quake-safe city'. *New Zealand Herald* (2011) <http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10715686>
21. Canterbury Earthquake Recovery Authority. *Recovery strategy for Greater Christchurch: Mahere haumanutanga o waitaha*. (2012) <http://cera.govt.nz/sites/default/files/common/recovery-strategy-for-greater-christchurch.pdf>
22. Canterbury Earthquake Recovery Authority & Academic Consulting. *Community workshops report*. (2011) <http://cera.govt.nz/sites/default/files/common/cera-community-workshops-report-20110801.pdf>
23. Environment Canterbury *et al. Preliminary draft land use recovery plan*. (2013) <http://www.developingchoices.org.nz/docs/draft-lurp-200313.pdf>
24. Canterbury Earthquake Recovery Authority. *Land use recovery plan addendum (May 2015)* <http://cera.govt.nz/sites/default/files/common/lurp-amendments-may-2015.pdf>
25. Canterbury Earthquake Recovery Authority. *Questions and answers about the land use recovery plan* <http://cera.govt.nz/recovery-strategy/built-environment/land-use-recovery-plan/questions-and-answers>
26. Christchurch City Council. *Christchurch City Council supplementary agenda*. (2013) <http://resources.ccc.govt.nz/files/TheCouncil/meetingsminutes/agendas/2013/November/Council28November2013SupplementaryOpenAgenda.pdf>

27. Christchurch City Council. *Christchurch City Council agenda, Extraordinary meeting*. (2013) <http://resources.ccc.govt.nz/files/TheCouncil/meetingsminutes/agendas/2013/November/COUNCILEXORD21NOVEMBER2013-AGENDAFULL.pdf>
28. University of Otago. *Socioeconomic Deprivation Indexes: NZDep and NZiDep, Department of Public Health*. (2013) <http://www.otago.ac.nz/wellington/departments/publichealth/research/hirp/otago020194.html>
29. Carter, Tom & Polevychok, Chesya. *Comprehensive neighbourhood studies: Characterizing decline*. (University of Winnipeg, 2003).
30. Environment Canterbury. *Draft Canterbury regional public transport plan 2014*. (2014) <http://ecan.govt.nz/publications/Plans/draft-rptp.pdf>
31. Statistics New Zealand. Commuting by car in Christchurch continues to increase. (2015) <http://www.scoop.co.nz/stories/AK1503/S00238/commuting-by-car-in-christchurch-continues-to-increase.htm>
32. Bui, L. Cycling in Christchurch: Then and now. (2015) <http://www.stuff.co.nz/the-press/news/70365737/cycling-in-christchurch-then-and-now>
33. NZ Transport Agency. *City rides/urban cycleways programme: Christchurch and Waimakariri*. (2015) <http://www.nzta.govt.nz/assets/Walking-Cycling-and-Public-Transport/docs/urban-cycleways/Cycling-fund-regional-factsheet-Christchurch.pdf>

Six: Dunedin

1. Statistics New Zealand. *2013 Census*. (2013) <http://www.stats.govt.nz/Census/2013-census.aspx>
2. McKinnon, M. *Story: Otago places*. (Te Ara: The encyclopedia of New Zealand, 2014) <http://www.teara.govt.nz/en/otago-places>
3. Statistics New Zealand. *2001 Census*. (2001) <http://www.stats.govt.nz/Census/2001-census-data.aspx>
4. Statistics New Zealand. *Subnational population projections: 2013(base)-2043*. (2015) <http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx>
5. Statistics New Zealand. *Subnational ethnic population projections: 2006(base)*. (2010) <http://www.stats.govt.nz/browse_for_stats/population/ estimates_and_projections/subnational-ethnic-population-projections.aspx>
6. Kiernan, G. *Moving around New Zealand: evidence from the 2013 census*. (Infometrics Limited) <http://www.infometrics.co.nz/Forecasting/ForecastArticle.aspx?id=63>
7. Statistics New Zealand. *International migration to and from Otago region: 1996–2013*. (2014) <http://www.stats.govt.nz/browse_for_stats/population/Migration/international-travel-and-migration-articles/international-migration-to-from-otago.aspx>
8. Statistics New Zealand. *Permanent & long-term migration by country of residence, citizenship and NZ area (Annual-Jun)* <http://www.stats.govt.nz/infoshare/SelectVariables.aspx?pxID=46b4dccb-df08-4d36-b75b-38e74c96db44>
9. Lewis, J. Migrants boost primary school rolls. *Otago Daily Times* (2015) <http://www.odt.co.nz/news/dunedin/341369/migrants-boost-primary-rolls>
10. Cox, M. & Khan, M. A. *2014 economic profile of the Otago region and Dunedin city*. (BERL, 2015) <https://www.dunedin.govt.nz/__data/assets/pdf_file/0017/511433/2014-Economic-Profile-of-the-Otago-Region-and-Dunedin-City-FINAL.pdf>
11. Mackenzie, D. Dunedin economy lags behind regions. *Otago Daily Times* (2013) <http://www.odt.co.nz/news/business/258441/dunedin-economy-lags-behind-regions>
12. Statistics New Zealand. *Geographic units by employee count size, industry and area unit 2000–14* <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7602>
13. Statistics New Zealand. *Business growth activities 2005–10: Experimental release*. (2013) <http://www.stats.govt.nz/browse_for_stats/businesses/business_characteristics/longitudinal-business-database-tables.aspx>
14. Elder, V. Saddle Hill issue to return to court. *Otago Daily Times* (2015) <http://www.odt.co.nz/news/dunedin/333618/saddle-hill-issue-return-court>

15. McNeilly, H. Public service jobs disappear in the South. *Otago Daily Times* (2015) <http://www.odt.co.nz/news/dunedin/327972/public-service-jobs-disappear-south>
16. University of Otago. *Quick statistics* <http://www.otago.ac.nz/about/quickstats.html#1>
17. University of Otago. *About the University of Otago* <http://www.otago.ac.nz/humanresources/join-otago/about/>
18. Tertiary Education Commission. *Crown asset transfer and disposal policy*. (2015) <http://www.tec.govt.nz/Tertiary-Sector/Crown-Interest/Asset-management/crown-asset-transfer-and-disposal-policy/>
19. Chorus. *Gigatown: The prize* <http://gigatowndunedin.co.nz/>
20. Lyons, G. *et al. Future demand: How could or should our transport system evolve in order to support mobility in the future?*. (Ministry of Transport, 2014) <http://transport.govt.nz/assets/Uploads/Our-Work/Documents/fd-final-report.pdf>
21. Ministry of Transport. Transport volume: Vehicle travel. *Transport Indicators* (2014) <http://www.transport.govt.nz/ourwork/tmif/transport-volume/tv033/>
22. Curran, M. *Peak car: Does it exist and is it evident in New Zealand*. (Ministry of Transport, 2014) <http://transport.govt.nz/assets/Uploads/Our-Work/Documents/fd-peak-car.pdf>
23. Lyons, G. & Goodwin, P. *Grow, peak or plateau: The outlook for car travel*. (Ministry of Transport, 2014) <http://transport.govt.nz/assets/Uploads/Our-Work/Documents/fd-outlook-for-car-travel.pdf>
24. Donovan, S. Trends in vehicle travel in NZ. *Transportblog.co.nz* (2013) <http://transportblog.co.nz/2013/04/30/trends-in-vehicle-travel-in-nz/>
25. Booz Allen & Hamilton Ltd. *Research Report 331: Impacts of fuel price changes on New Zealand transport*. (New Zealand Transport Agency, 2007) <http://www.nzta.govt.nz/resources/research/reports/331/>
26. Polkinghorne, J. High fuel prices mean we are travelling less. *Transportblog.co.nz* (2013) <http://transportblog.co.nz/2013/12/10/high-fuel-prices-mean-we-are-travelling-less-ready-to-publish>
27. Kole, A. & MacDonald, E. *Future demand: A youth perspective*. (Ministry of Transport, 2014) <http://transport.govt.nz/assets/Uploads/Our-Work/Documents/fd-youth-perspective.pdf>
28. Ministry of Transport. Future demand. *Strategic Policy Programme* (2015) <http://transport.govt.nz/ourwork/keystrategiesandplans/strategic-policy-programme/future-demand/>
29. Ministry of Transport. *Data and spreadsheets — Household travel survey* <www.transport.govt.nz/research/travelsurvey/data-and-spreadsheets-household-travel-survey/>
30. Census Shows Big Rise in Wellingtonians Cycling & Walking. *Wellington City Council* at <http://wellington.govt.nz/your-council/news/2014/03/census-shows-big-rise-in-wellingtonians-cycling-and-walking>
31. Lyons, G., Goodwin, P., Lyons, G. & Goodwin, P. Grow, peak or plateau — the outlook for car travel. (2014) <http://eprints.uwe.ac.uk/23277/>
32. Nunns, P. *Population-weighted densities in New Zealand and Australian cities: A new comparative dataset*. (MRCagney Pty Ltd, 2014) <http://transportblog.co.nz/wp-content/uploads/2014/09/Nunns-2014-NZ-Aus-population-weighted-density-small.pdf>
33. Dunedin City Council. *The spatial plan and 2GP* <http://www.dunedin.govt.nz/whats-on/2gp/issues-and-options/review-of-the-district-plan/the-spatial-plan-and-2gp>
34. Otago Regional Council. *Regional policy statement review*. (2014) <http://www.orc.govt.nz/Documents/Publications/Regional/RPS/RPS%20Consultation%20Draft%2026%20November%202014.pdf>
35. *Rate my flat* <http://www.ratemyflat.org.nz/about>
36. Dunedin City Council. *Community housing* <http://www.dunedin.govt.nz/facilities/community-housing>
37. Housing New Zealand. *Personal communication*.
38. Hutchinson, D. Shake-up for social housing. *Otago Daily Times* (2014) <http://www.odt.co.nz/news/dunedin/304895/shake-social-housing>

39. Dunedin City Council. *Medium density zones* <http://www.dunedin.govt.nz/whats-on/2gp/medium-density-zones2/medium-density-zones>
40. Rekker, J. *The South Dunedin coastal aquifer & effect of sea level fluctuations*. (Otago Regional Council, 2012) <http://www.orc.govt.nz/Documents/Publications/Research%20And%20Technical/Groundwater/South%20Dunedin%20Coastal%20Aquifer%20Study%20FINAL.pdf>
41. Dunedin City Council. *Natural hazards approach being revised*. (2015) <http://www.dunedin.govt.nz/your-council/latest-news/april-2015/natural-hazards-approach-being-revised>
42. The Department of Internal Affairs. *Rules reduction taskforce*. (2015) <http://www.dia.govt.nz/Rules-Reduction-Taskforce>
43. Dunedin City Council. *2013/2014 Annual report* <http://www.dunedin.govt.nz/__data/assets/pdf_file/0009/477387/Annual-Report.pdf>
44. Goodwin, E. Hospital food decision a bitter pill. *Otago Daily Times* (2015) <http://www.odt.co.nz/news/dunedin/341514/hospital-decision-bitter-pill>
45. Dunedin City Council. *Guide to iwi consultation* <http://www.dunedin.govt.nz/__data/assets/pdf_file/0003/147486/Guide-to-Iwi-Consultation.pdf>
46. Dunedin City Council. *Maori business support* <http://www.dunedin.govt.nz/services/business-support/support-for-industries-and-across-otago/maori-business-support>
47. Otago Regional Council. *Memorandum of understanding and protocol between Otago Regional Council, Te Rūnanga o Ngāi Tahu and Kāi Tahu ki Otago for effective consultation and liaison*. (2003) <http://www.orc.govt.nz/About-us-and-the-Region/About-the-Region/Local-iwi/Memorandum/>
48. Otago Regional Council. *Local iwi — Kai Tahu* <http://www.orc.govt.nz/About-us-and-the-Region/About-the-Region/Local-iwi/>
49. Otago Regional Council. *Working relationship between local authorities and iwi strengthened*. (2012) <http://www.orc.govt.nz/News-and-Notices/Media-Releases/Media-releases---2012/Working-relationship-between-local-authorities-and-iwi-strengthened/>
50. Ngai Tahu Property. *Government* <http://ngaitahuproperty.co.nz/investment/government>
51. Dunedin City Council. *Draft local alcohol policy hearings underway*. (2014) <http://www.dunedin.govt.nz/your-council/latest-news/november-2014/draft-local-alcohol-policy-hearings-underway>
52. Harper, B. & Ioannou, M. *Emissions management and reduction plan*. (Dunedin City Council, 2015) <http://www.dunedin.govt.nz/__data/assets/pdf_file/0011/492563/DCC-Emissions-Management-and-Reduction-Plan-2015.pdf>
53. McCorkindale, W. Dunedin divided over deep-sea oil drilling. (2014) <http://www.stuff.co.nz/business/industries/9600471/Dunedin-divided-over-deep-sea-oil-drilling>
54. Morris, C. To drill or not to drill, that is the question. *Otago Daily Times* (2013) <http://www.odt.co.nz/elections-2013/dunedin/275358/drill-or-not-drill-question>
55. Te Rūnanga o Ngāi Tahu. *Environmental management plan*. (2007) <http://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/papatipu-runanga/kaikoura/environmental-management-plan/>
56. Burck, J., Marten, F. & Bals, C. *The climate change performance index: Results 2015* <http://germanwatch.org/en/download/10407.pdf>

Seven: Survey of sentiments about cities

1. Parliamentary Commissioner for the Environment. *The cities and their people. New Zealand's urban environment*. (Parliamentary Commissioner for the Environment, 1998) <http://www.pce.parliament.nz/publications/all-publications/the-cities-and-their-people-new-zealand-s-urban-environment>
2. Department of Internal Affairs. *Building sustainable urban communities*. (2008) <http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Resource-material-Sustainable-Urban-Development-Index>
3. The New Zealand Productivity Commission. *Housing affordability inquiry*. (The New Zealand Productivity Commission, 2012).

4. The New Zealand Productivity Commission. *Using land for housing: Draft report*. (New Zealand Productivity Commission, 2015).
5. Litman, T. *Analysis of public policies that unintentionally encourage and subsidize urban sprawl*. (Victoria Transport Policy Institute, 2015) <http://static.newclimateeconomy.report/wp-content/uploads/2015/03/public-policies-encourage-sprawl-nce-report.pdf>
6. Durand, C. P., Andalib, M., Dunton, G. F., Wolch, J. & Pentz, M. A. A systematic review of built environment factors related to physical activity and obesity risk: Implications for smart growth urban planning. *Obesity Reviews* 12, 173–182 (2011).
7. Kenworthy, J. R. The eco-city: Ten key transport and planning dimensions for sustainable city development. *Environment and Urbanization* 18, 67–85 (2006).
8. IPCC. *Climate change 2014: Mitigation of climate change. Contribution of working group III to the fifth assessment report of the intergovernmental panel on climate change*. (Cambridge University Press, 2014) <https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_full.pdf>
9. OECD. *Compact city policies: A comparative assessment*. (OECD Publishing, 2012) <http://www.oecd.org/greengrowth/greening-cities-regions/compact-city.htm>
10. UN Department of Economic and Social Affairs. *Chapter III Towards sustainable cities*. (United Nations, 2013) <http://www.un.org/en/development/desa/publications/world-economic-and-social-survey-2013-sustainable-development-challenges.html>
11. WHO. *Why urban health matters*. (World Health Organization, 2010) <http://www.who.int/world-health-day/2010/media/whd2010background.pdf>
12. Zhao, P., Chapman, R., Randal, E. & Howden-Chapman, P. Understanding resilient urban futures: a systemic modelling approach. *Sustainability* 5, 3202–3223 (2013).
13. Sallis, J. F. *et al.* Co-benefits of designing communities for active living: An exploration of literature. *International Journal of Behavioral Nutrition and Physical Activity* 12, 30 (2015).
14. Chapman, R., Howden-Chapman, P. & Capon, A. Understanding the systemic nature of cities to improve health and climate change mitigation. *Environment International* (2015) (submitted for publication).
15. Global Commission on the Economy and Climate. *Seizing the global opportunity: The 2015 new climate economy report*. (World Resources Institute and Overseas Development Institute, 2015) <http://2015.newclimateeconomy.report/wp-content/uploads/2014/08/NCE-2015_Seizing-the-Global-Opportunity_web.pdf.>
16. Nunns, P. *Location affordability in New Zealand cities: An intra-urban and comparative perspective working paper*. (MRCagney Pty Ltd, 2014).
17. Mattingly, K. & Morrissey, J. Housing and transport expenditure: Socio-spatial indicators of affordability in Auckland. *Cities* 38, 69–83 (2014).
18. Dodson, J. & Sipe, N. Shocking the suburbs: Urban location, homeownership and oil vulnerability in the Australian city. *Housing studies* 23, 377–401 (2008).
19. Preval, N., Chapman, R. & Howden-Chapman, P. in 'For whom the city? Housing and locational preferences in New Zealand', *Sizing up the city* (eds. Howden-Chapman, P., Stuart, K. & Chapman, R.) (Steele Roberts Publishers, 2010).
20. Statistics New Zealand. *Building consents issued: April 2015*. (Statistics New Zealand, 2015) <http://www.stats.govt.nz/browse_for_stats/industry_sectors/Construction/BuildingConsentsIssued_HOTPApr15.aspx>
21. Horizon Research. *Housing in New Zealand*. (Prepared for the New Zealand Centre for Sustainable Cities, University of Otago, Wellington, 2015).
22. *The international social survey programme*. (2009) <http://zacat.gesis.org/webview/index.jsp?object=http://zacat.gesis.org/obj/fStudy/ZA5400>
23. Larsen, C. A. *The rise and fall of social cohesion: the construction and de-construction of social trust in the US, UK, Sweden and Denmark*. (Oxford University Press, 2013).
24. World Values Survey. *Time series: A165.- Most people can be trusted* <http://www.worldvaluessurvey.org/WVSOnline.jsp>

Conclusion

1. Commerce Commission New Zealand. *Commission releases further draft decisions on prices of copper lines and broadband service for consultation*. (2015) <http://www.comcom.govt.nz/the-commission/media-centre/media-releases/2015/commission-releases-further-draft-decisions-on-prices-of-copper-lines-and-broadband-service-for-consultation/>
2. OECD. *Compact city policies: A comparative assessment*. (OECD Publishing, 2012) <http://www.oecd.org/greengrowth/greening-cities-regions/compact-city.htm>

Appendix 4: Other ways of looking at drivers of urban change

1. Hawke FRSNZ, Professor Gary *et al. Our futures: Te pae tāwhiti: the 2013 census and new zealand's changing population*. (The Royal Society of New Zealand: Te Apārangi, 2014) <http://www.royalsociety.org.nz/expert-advice/papers/yr2014/our-futures/>
2. Eaqub, Shamubeel & Stephenson, John. *Regional economies: shape, performance and drivers*. (New Zealand Institute of Economic Research, 2014) <http://nzier.org.nz/static/media/filer_public/e4/1f/e41f5c81-2d63-4548-8859-2dad5c8e213f/nzier_public_discussion_document_2014-03-regional_economies.pdf>
3. Ministry of Business, Innovation & Employment. *Regional economic activity report 2014*. (MBIE, 2014) <http://www.mbie.govt.nz/what-we-do/business-growth-agenda/regions/documents-and-image-library/rear-regional-report-part1.pdf>
4. Ministry of Business, Innovation and Employment. Auckland research programme <http://www.med.govt.nz/sectors-industries/regions-cities/research/auckland-research-programme>
5. Ministry of Business, Innovation and Employment, and Local Government New Zealand. *NZ core cities research summary*. (MBIE and LGNZ, 2012) <http://wellington.govt.nz/~/media/about-wellington/research-and-evaluation/economy/2012-NZ-core-cities-research-summary.pdf>
6. Local Government New Zealand. *Local government funding review*. (LGNZ, 2015) <http://www.lgnz.co.nz/assets/Uploads/Our-work/Local-Government-Funding-Review.pdf>
7. Quality of life project. Quality of life in New Zealand's cities <http://www.qualityoflifeproject.govt.nz/report.htm>
8. New Zealand Productivity Commission. *Using land for housing: draft report*. (Productivity Commission, 2015) <http://www.productivity.govt.nz/inquiry-content/2060?stage=4>
9. New Zealand Productivity Commission. *Housing affordability inquiry*. (Productivity Commission, 2012) <http://www.productivity.govt.nz/sites/default/files/Final%20Housing%20Affordability%20Report_0_0.pdf>
10. New Zealand Productivity Commission. *Towards better local regulation — final report*. (Productivity Commission, 2013) <http://www.productivity.govt.nz/inquiry-report/towards-better-local-regulation-final-report>
11. Lyons, G. *et al. Future demand: How could or should our transport system evolve in order to support mobility in the future?* (Ministry of Transport, 2014) <http://transport.govt.nz/assets/Uploads/Our-Work/Documents/fd-final-report.pdf>