



Understanding trade-offs in urban planning: What can we learn from economics?

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With gratitude for assistance from Jonathan Cutler (MRCagney), Stuart Donovan (MRCagney) and Hadyn Hitchins (Auckland Council)

Wednesday 15th April – 1.30-3.15pm

Keywords: Planning, economics, trade-offs, cost-benefit analysis

Abstract

Urban planning is coming under the spotlight in New Zealand. Trends in house prices in Auckland and Christchurch have led some to ask whether planning regulations constrain housing supply and drive up prices. At the same time, changes to the Resource Management Act have added new requirements for cost-benefit analysis of proposed regulations.

In this paper, the authors draw upon their experience designing, evaluating, and researching planning regulations to analyse trade-offs in urban planning. It argues that land use regulations have both costs and benefits that can be defined and quantified. It presents an economic framework for understanding and communicating planning trade-offs. The paper discusses how planning regulations can:

- Impose costs by limiting development and hence the supply of dwellings in areas
- Generate benefits by limiting the negative effects, or externalities, associated with some land uses and encouraging other uses that have positive effects.

The paper argues that there can and should be a productive dialogue between planners and economists. Planners are often best-placed to understand the details and nuances of

decisions about land uses. Economists, on the other hand, can provide greater focus on quantitative analysis and empirical rigour. The authors illustrate this point by discussing specific projects in Auckland and other New Zealand cities, including cost-benefit analyses of planning regulations. Finally, the paper discusses some further opportunities to improve our understanding of the trade-offs involved in urban planning.

Introduction and context

Urban planning has been the target of stiff criticism over the last few years. For example, in October 2014, finance minister Bill English stated that:

“Our planning processes have probably done more to increase income inequality and poverty in New Zealand than most other policies¹.”

He is drawing too long of a bow when he credits planning with the rise of child poverty in New Zealand. But even if his tone was hyperbolic, his arguments are consistent with a larger body of research. So, for example, here’s the Productivity Commission (2012) on the topic:

“Urban planning policies force people to pay more for housing than they otherwise would have.”

And economists Glaeser, Gyourko and Saks (2005):

“The social costs of binding development restrictions lie in the misallocation of consumers, and having them live in less productive, less attractive places.”

It’s tempting to conclude that economists have it in for urban planning. But, in my professional experience, urban planning and economics can complement each other. Each discipline can bring valuable information and perspectives to the table when addressing the issue of urban growth:

- Planners typically engage more deeply with the workings of urban places – the messy localised interactions between people in close proximity and between people and the natural environment
- Economists often take a more quantitative focus on urban issues – they can employ empirical data and analytical frameworks to examine what people value in cities and how they may trade off different options. This can be a valuable input into planning decisions.

My aim, in this paper, is to illustrate how that engagement can work, by:

- Presenting a framework for understanding (and, if need be, quantifying) the costs and benefits. Economists have traditionally focused more energy on accounting for the costs of regulations, while planners have paid more heed to the benefits. We

¹ Bernard Hickey (2014), “English says council land restrictions worsen poverty”, Interest.co.nz. Available online at <http://www.interest.co.nz/news/72342/english-says-council-land-restrictions-worsen-poverty-govt-focused-more-private-sector-ca>.

suggest that there are opportunities to bring both perspectives together through better cost-benefit analysis (CBA).

- Presenting two relevant case studies where a CBA framework can be applied, or where it has previously been applied. In both cases – minimum parking requirements (MPRs) and heritage protection rules – it is necessary to apply some economic reasoning (and quantitative analysis) to identify what people value. However, it is also important to understand the aims and implications of the policies.
- Discussing implications for the future of New Zealand cities – in particular, for home affordability in growing cities.

Identifying costs and benefits

An urban plan is a set of rules that establish where and how people can construct buildings and carry out activities. It might, for example, define where people can build factories and where they can build houses. It may enable intensive development in some areas – city centre and medium-density housing zones, for example – while limiting it in suburban or rural areas.

Consequently, planning regulations can have significant long-term impacts on the shape of our cities and the quality of the places where we live. And, like any other policy, they can impose trade-offs between different parties, or between people and the environment.

These trade-offs are especially acute in cities, where population density puts a lot of people in proximity with each other and concentrates their impact on the environment. The impetus to use planning regulations to mitigate or avoid these impacts is therefore higher... but so is the cost of doing so. A city is, by definition, a place where a lot of people want to locate, and rules that keep them from doing so can be costly.

The good news: planning can generate benefits for society

How can urban planning benefit society? What do we gain from a well-thought-out plan? Or, to put the question a slightly different way: why can't we simply leave urban development up to the market?

In answering these questions, I'd observe that developers and land-users do not always bear the full cost of their activities. There may be impacts on society or the environment that are not accounted for in developers' calculations, or impacts that will be felt by future generations. For example, a developer seeking to construct a new subdivision on a greenfield site would take into account factors like:

- The cost to buy land, subdivide it, and construct houses
- Up-front development contributions or other infrastructure costs required by council

- The price that buyers are willing to pay, which may depend upon the location, size, and quality of houses.

However, there are other factors that the developer would not have to take into account, such as:

- Long-term costs associated with maintaining and operating transport and water infrastructure
- Vehicle emissions resulting from residents' travel patterns, which may have a negative impact on human health or climate change
- Negative impacts on soil or water quality resulting from earthworks and run-off from new roads.

As this example illustrates, planning regulations can benefit society by managing various “externalities” associated with land uses and by providing “public goods” that developers may not otherwise choose to provide (Chung, 1994).

Our understanding of land use-related externalities is suggestive but incomplete. Some empirical evidence, summarised in Nunns and Rohani (2015), suggests that a more compact urban form is associated with fewer negative externalities (e.g. transport emissions, health issues related to inactivity) and more positive externalities (e.g. agglomeration economies). Urban plans that enable people to have good access to employment and amenities can therefore provide broader benefits.

However, land use-related externalities are often highly location-dependent. Features of the natural environment (e.g. erosion-prone soil and waterways near greenfield growth areas) or built environment (e.g. capacity constraints in existing water or transport infrastructure) may make it desirable to build in some areas but not in others.

Table 1 goes into more detail about different types of land use-related externalities. It's worth considering these categories when thinking about the potential benefits of planning regulations.

Table 1: Five categories of land use-related externalities (Adapted from Nunns and Rohani, 2015)

Economic externalities – agglomeration and congestion	Urban structure and scale may influence economic efficiency and productivity in two ways. First, agglomeration economies enable firms in larger or denser cities to be more productive due to increased specialisation, labour market pooling, and knowledge spillovers (Fujita, Krugman and Venables, 2001). On the other hand, congestion can reduce the efficiency of transport systems in larger or denser cities, with a potential impact on firm performance and labour market efficiency. Importantly, there is often some degree of “feedback” between these effects (Brinkman, 2013).
Environmental	Some land uses can have negative effects on soil, air, and water quality.

externalities	They may also contribute to negative global outcomes such as climate change. Empirical evidence suggests that household energy use varies within urban areas as a result of population densities, mixes of activities, and dwelling characteristics. Consequently, environmental externalities associated with transport and household energy use will also vary between locations. These externalities include greenhouse gas emissions and emissions with an impact on local air quality (e.g. particulate emissions).
Health and social externalities	Urban form can affect health and broader social outcomes in several ways. First, the shape of cities and neighbourhoods can make walking and cycling more or less viable. For example, if people live within walking distance of local shops, they are likely to make more retail trips on foot, which will in turn tend to reduce public health costs. Second, dwelling characteristics can affect health and wellbeing. For example, excessively small, dark, or damp dwellings may worsen residents' health. The health effects of cold and damp housing provide a potential justification for policy to improve the quality of the dwelling stock. There may also be some broader effects on social and community wellbeing, but these are less well understood.
Public goods and residential amenities	Public goods are characterised by their non-excludable, non-rival nature. Markets tend to under-provide public goods as it is difficult to internalise all of the benefits they create. Some land uses or built form outcomes can be considered as public goods. For example, public parks and street trees typically increase the amenity and value of surrounding properties. Built and natural heritage may also have a similar effect. Conversely, incompatible land uses can reduce the amenity of a neighbourhood. Anas, Arnott, and Small (1998) observe that "cities are awash in very localized externalities, from the smells from a fish shop to the blockage of ocean views by neighbors' houses." These externalities can have negative influences on property values.
External infrastructure and public service costs	Infrastructure networks and public services such as hospitals are often characterised by strong economies of scale. In other words, it is easier to serve people who live relatively close together. In principle, it is possible to charge new developments for the full cost of providing infrastructure and public services. In practice, this is difficult due to information gaps and administrative difficulties. As a result, some

	developments may obtain a subsidy for their infrastructure costs. Empirical evidence suggests that infrastructure costs vary significantly between new developments in different areas. Broadly speaking, developments in greenfield areas have higher per-unit infrastructure costs than development within existing urbanised areas – although this will not always hold true in practice.

The bad news: there ain't no such thing as a free lunch, either

In the introduction, I referred to several critiques of the costs of planning regulations. But how, exactly, should we think about these costs? How do they arise, and who pays them?

In the first instance, planning regulations impose costs on individual property owners and developers. We can break these costs into two broad categories:

1. Compliance costs: Planning policies and processes may impose a range of financial costs on developers. These range from costs associated with preparing and processing resource consent applications, paying development contributions for infrastructure costs, or complying with planning rules or consent conditions.
2. Opportunity costs: Planning regulations can also limit the amount of development that can happen on a site. This can impose an “opportunity cost” by reducing the value or viability of developments. While these are not direct financial costs, they are often larger than the compliance costs. For example, McDonald and McMillen (2003) suggest that limiting building heights can impose significant costs on property owners who would like to develop tall buildings.

Whether and how these costs apply will depend upon choices made by developers and property owners in response to regulations. A recent paper commissioned by the New Zealand Treasury described how planning policies and processes can alter people's choices about whether and what to develop by imposing added costs and uncertainty (Grimes and Mitchell, 2015).

Table 2 summarises several potential outcomes that may result from binding planning rules. In some cases, developers may simply choose not to apply for consent – which would result in an opportunity cost but no compliance costs. In others, they may choose to apply for consent to develop, which would result in added compliance costs but – unless their application was declined – no opportunity costs.

Table 2: Relationship between compliance and opportunity costs

(Adapted from MRCagney, 2014)

1	Do not proceed to consent application	No	Yes

2	Apply for consent; consent granted	Yes	No (unless conditions placed on consent)
3	Apply for consent; consent not granted	Yes	Yes

However, it is important to recognise that developers do not, ultimately, bear these costs. They are passed on to residents and businesses. Consequently, it we must consider the indirect costs resulting from supply constraints, which can push up the cost of living for residents.

Glaeser, Gyourko and Saks (2005) describe this as a “regulatory tax” imposed by binding planning regulations. They argue that regulations that limit development can push up the price of housing to above what it would be in an unconstrained market. The outcome is that households must choose between:

1. Paying more for housing in their preferred location; or
2. Paying higher transport costs, or accepting lower amenity, to live in an area with lower housing costs.

Moreover, planning regulations can become increasingly costly over time as spatial patterns of demand change. Regulations that make it difficult to develop more intensively or open up new land for development can reduce the market’s ability to provide more dwellings in response to higher demand. Economists have found evidence that more restrictive regulations reduce the “elasticity of housing supply” in US, Australian, and Californian cities (Mayer and Somerville, 2000; McLaughlin, 2011; Quigley and Raphael, 2005).

Case studies

In this section, I apply these principles to two case studies that illustrate some important aspects of planning regulations:

- Minimum parking requirements (MPRs), which illustrate how well-intentioned rules can have significant unintended consequences
- Heritage protection rules, which illustrate how complex the trade-offs can be between current and future generations and in the presence of “highly localised externalities” and long-term values.

Minimum parking requirements – a case of unintended consequences

Minimum parking requirements are planning regulations that require new developments to have a defined minimum amount of parking. These rules originated in the United States in the 1950s, when road travel was growing rapidly and creating challenges for parking management. They spread to New Zealand fairly rapidly – by 1961, Auckland’s first District Scheme required one off-street carpark per dwelling (MRCagney, 2013).

MPRs can be bewilderingly prescriptive. My favourite example of this is from Houston, Texas – which, in defiance to its reputation for laissez-faire urban planning, has an extensive parking code. Table 3 summarises some of these rules. It’s hard to understand the rationale for requiring one carpark per mini-golf hole, let alone requiring bars to have more parking than restaurants.

Table 3: Some of Houston’s minimum parking requirements (Source: City of Houston, 2013)

One-bedroom apartment	1.333 parking spaces for each unit
Funeral home or mortuary	0.5 parking spaces for every chapel seat
Miniature golf	1.0 parking space for each hole
Small restaurant	8.0 parking spaces for every 1,000 square feet of GFA and outdoor decks, patio and seating areas in excess of 15% of GFA
Small bar	12.0 parking spaces for every 1,000 square feet of GFA and outdoor decks, patio and seating areas in excess of 15% of GFA

What’s happened as a result of these rules?

MPRs aim to reduce parking “search costs”, or the amount of time that people spend circling around looking for a carpark, and preventing parking overspill onto neighbouring properties. They accomplish this by requiring developers to provide an oversupply of parking. This means that there is almost always a free parking space available, but at a large cost to businesses and residents.

Overseas evidence suggests that these rules can result in parking being oversupplied by 40% or more. In London, the amount of parking provided with new residential developments reduced by 40% after the city removed its MPRs (Guo and Ren, 2012). A more recent study of parking occupancy in mixed-use areas in 27 US cities found that, on average, parking was oversupplied by 65% (Weinberger and Karlin-Resnick, 2015)². While comparable figures are not available for New Zealand cities, satellite imagery suggests that we also devote large areas of land to parking. Figure 1 shows that only a minority of land in Manukau Central is used for buildings – the remainder is carparks (coloured blue) and roads (orange).

² <http://www.citylab.com/cityfixer/2015/01/just-because-you-cant-find-a-place-to-park-doesnt-mean-there-arent-way-too-many-parking-spots/384509/>

Figure 1: “Parking craters” in Manukau central (Source: Transportblog)



MPRs have a number of unintended negative consequences. MRCagney (2013) observes that they “effectively act as an indirect tax on floor space, which in turn lowers land use density and provide a subsidy for vehicle ownership and travel. This contributes to a range of negative externalities, such as congestion.”

Table 4, from a Portland (US) study of the impact of MPRs on the viability and cost of apartment developments, shows how these rules can hamper the development of affordable dwellings. Requiring parking for mid-rise apartment buildings can raise the cost of housing by 19% to 63%, depending upon how parking is provided.

Table 4: The impact of parking requirements on housing costs (Adapted from Portland Bureau of Planning and Sustainability, 2012)

Four storey building with no parking	50	0	-	-
Surface parking on site	30	19	-40%	50%
Parking on ground floor with apartments on a podium above	42	22	-16%	19%
Underground parking	44	33	-12%	63%

What could we do differently?

Empirical evidence suggests that the costs of MPRs far outweigh the benefits. MRCagney (2013) studied property sales in three medium-density commercial areas in Auckland³ and found strong evidence that parking was crowding out higher-value commercial

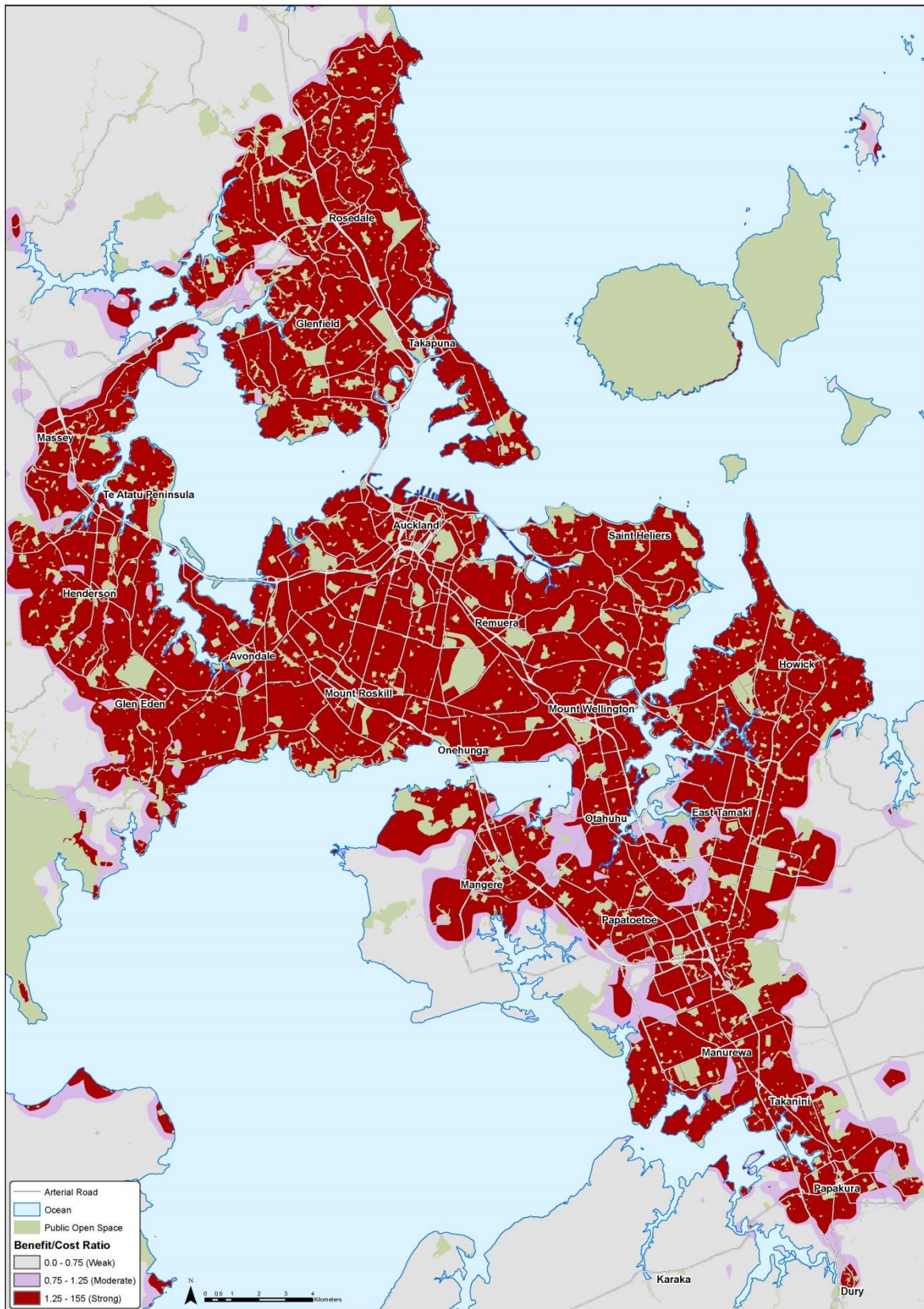
³ Takapuna, Dominion Road, and Onehunga.

floorspace. The authors concluded that the costs of MPRs were 6 to 12 times higher than the benefits from avoiding parking management costs.

They extended this analysis to the rest of Auckland, finding that there is a “strong case” for removing MPRs in the areas highlighted in red in Figure 2.

Figure 2: The case for removing minimum parking regulations in PAUP zones

(Source: MRCagney, 2013)



In short, we could make ourselves better off by removing MPRs altogether. Rather than relying upon a rigid set of rules to manage parking problems, we could achieve better outcomes using more flexible tools, such as metred parking and residents-only parking.

Removing MPRs will, over time, free up land for higher-value uses. As Galina Tachieva observes in the *Sprawl Repair Manual*, oversized parking lots can provide us with fantastic opportunities for innovative redevelopment. The “parking craters” in Manukau central, which sit empty most of the time, have helped to drain the vitality out of that centre. But, as illustrated in Figure 3, Manukau’s seas of asphalt could be reused for new businesses, new dwellings, and vibrant public spaces.

Figure 3: Plans for redeveloping mall parking lots (Source: Tachieva, 2010)



This is already happening in Auckland. In the city centre, where MPRs were removed in the late 1990s, many parking spaces have been reused in innovative ways. This includes Auckland Council’s programme of shared spaces, which reduce parking in order to create spaces for pedestrians and businesses. But the removal of MPRs is also an under-appreciated but crucial key enabler of the city centre’s mid-2000s apartment boom. As Table 4 above suggests, those apartments may not have been financially viable to develop if they were all required to include parking.

Heritage preservation rules – managing complex trade-offs

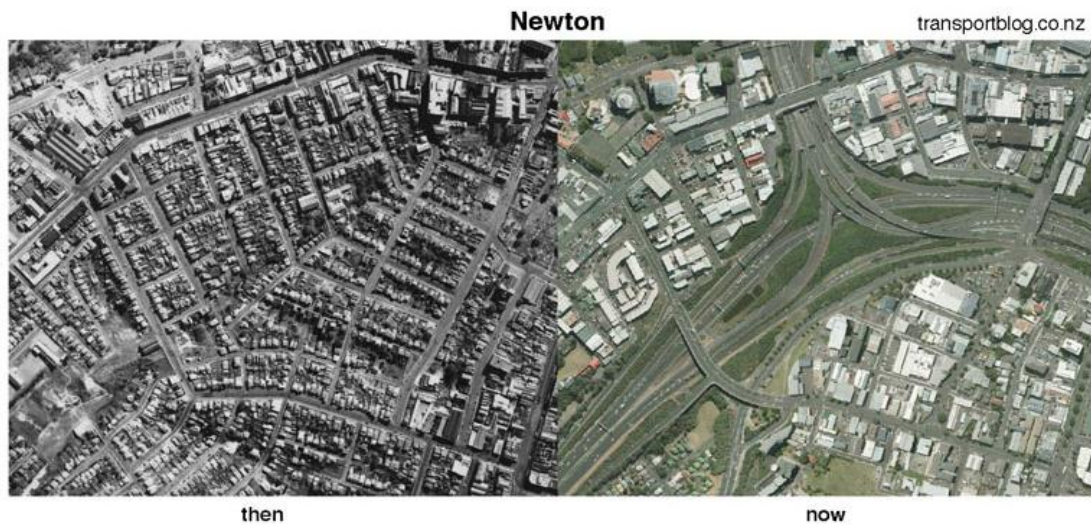
Heritage preservation policies aim to prevent (or manage) the demolition of buildings with significant aesthetic or historical value. They can accomplish this in a number of ways. In some cases, heritage preservation entails controlling the demolition or alteration of specific, listed properties. In others, rules about demolitions or alterations may be applied to entire areas of the city that were built at a certain time.

Heritage preservation is an important issue for Auckland both as a result of what we still have and what we have already demolished. Some areas of the city, such as Devonport and Ponsonby, feature relatively well-preserved neighbourhoods that were all built in the early days of Auckland’s development⁴. But as Figure 4 shows, we’ve previously demolished some similar areas, such as Newton, Freemans Bay, and parts of the city centre, to make way for motorways or new housing and offices.

⁴ Ponsonby illustrates an important fact, which is that built heritage is often preserved by low property values and urban neglect. In the mid-20th century, Ponsonby was considered to be a “slum”. As it gentrified in the 1990s and 2000s, new residents discovered that the suburb contained many run-down but sound heritage properties.

Figure 4: The demolition of Newton to build Central Motorway Junction

(Source: Transportblog)



What are the benefits of heritage preservation?

Economists have studied how people value the characteristics of heritage buildings by analysing house sale prices. The intuition of these studies is that the price paid for housing can reveal peoples' preferences for different features of a building or neighbourhood⁵.

The first key finding is that owners of heritage buildings internalise many of the benefits of heritage. Buyers are willing to pay higher prices for heritage buildings, which suggest that they value the amenity associated with heritage. Nijkamp (2012) reviewed a wide range of international studies on the value of heritage, summarised in Table 5. He finds that historic properties (or properties within historic areas) were worth 5-27% more than non-heritage properties. Analysis of residential property sales in Auckland, Wellington, and Christchurch has also found a positive relationship between the age of dwellings and sale prices (Bourassa et al, 2005).

⁵ These are often described as "hedonic price studies", which apply regression analysis to a large number of property sales to identify what share of overall property values can be attributed to particular features of buildings and neighbourhoods.

Table 5: Overview of studies of the value of heritage properties (Source: Nijkamp, 2012)

Authors	Study	Study area	Key findings
Narwold et al. (2008)	Effect of designated historic houses on sale price	San Diego, California, U.S.	Historic designation of single-family residences creates a 16 percent increase in housing value, which is higher than the capitalization of the property tax savings due to designation.
Noonan (2007)	Effect of landmarks and districts on sale price	Chicago, Illinois, U.S.	Designated property has a positive effect on both itself and neighboring properties.
Ruijgrok (2006)	Effect of authenticity, ensemble, and landmark designation on house prices	Tiel, The Netherlands	Authenticity and façade elements account for 15 percent of sale prices in the Hanseatic city of Tiel.
Deodhar (2004)	Effect of heritage listing on sale prices	Sydney, Australia	On average, heritage listed houses commanded a 12 percent premium over non-listed houses. This premium is a combined value of the houses' heritage character, their architectural style elements, and their statutory listing status.
Leichenko et al. (2001)	Effect of historic designation on house prices	Nine different Texas cities, U.S.	Historically designated properties in Texas enjoy 5–20 percent higher appraised prices than other property.
Asabere and Huffman (1994)	Effect of federal historic district on sale prices	Philadelphia, Pennsylvania, U.S.	Owner-occupied property located in national historic districts in Philadelphia sell at a premium of 26 percent.
Schaeffer and Millerick (1991)	Impact of historic district on sale prices	Chicago, Illinois, U.S.	Properties with national historic designation have a premium and local historic designation have a discount over non-designated properties. Properties near a historic district may enjoy positive externalities.
Asabere et al. (1989)	Effect of architecture and historic district on home value	Newburyport, Massachusetts, U.S.	Historic architectural styles have positive premiums. The historic district of Newburyport does not have positive external effects.
Hough and Kratz (1983)	The effect of architectural quality on office rents	Chicago, Illinois, U.S.	Tenants are willing to pay a premium to be in new architecturally significant office building, but apparently see no benefits associated with old office buildings that express recognized aesthetics excellence.

Some studies also find that the presence of heritage buildings is associated with higher value for neighbouring properties. Lazrak et al (2011) studied property sales in Zaanstad, The Netherlands, finding that each additional listed heritage dwelling raises the value of other properties within a 50-meter radius) by 0.24 to 0.28%.

In other words, people are willing to pay more to live next to heritage buildings even if their own properties do not have heritage value. This suggests that heritage preservation policies may benefit society by ensuring that we continue to benefit from the “highly localised [positive] externalities” associated with old buildings.

While the value of heritage properties to neighbours has not been studied in Auckland, we know that other neighbourhood characteristics influence property values. Bourassa et al (2003) find that attractive immediate surroundings and good landscaping are associated with higher sale prices in Auckland, Wellington and Christchurch, while Rohani (2012) finds that views of the Hauraki Gulf are associated with higher sale prices.

Finally, there may also be an “option value” associated with heritage preservation. As Nijkamp (2012) observes, “in many cases there are also non-users—certainly in the case of externalities of goods—who may attach a possible value to a cultural asset, even though this asset is not actually visited by them. Economic actors may be willing to leave the option of use or enjoyment open, now and in the future.”

What trade-offs are associated with heritage preservation?

The cost of preserving heritage will vary depending upon what specific policies are adopted. In general, a broad-brush approach that imposes demolition controls on a large number of properties will tend to be costlier than a more targeted policy such as heritage listings.

We can think about the costs of specific heritage preservation policies using the framework described in Section 0. If, for example, we are considering requiring building owners to apply for resource consent prior to demolishing or altering properties, we know that:

- Some property owners will face added compliance costs associated with preparing consent applications or, in some cases, preserving and strengthening old buildings
- Other property owners may simply choose not to redevelop their sites. In areas with high demand for housing, this can impose a large opportunity cost.

Is heritage preservation worth it?

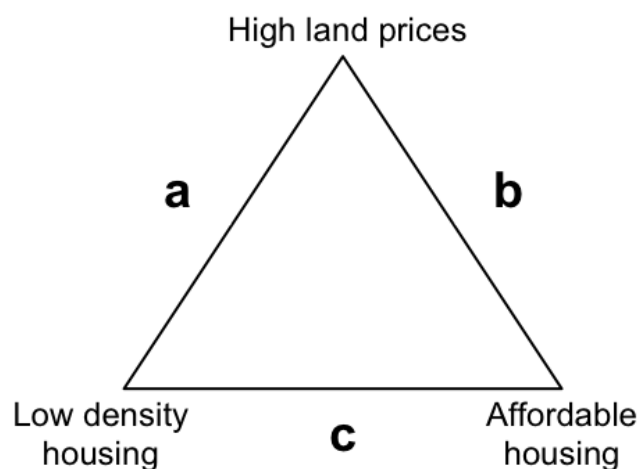
Should urban plans seek to preserve heritage properties? And how?

In my view, these are not questions that economists (or urban planners) can answer in isolation. While economics may help illuminate and (to an extent) quantify the trade-offs that we face, it can't tell people what to value. As a result, planning processes must have some mechanism for getting representative input from communities.

Concluding thoughts

I'd like to close by discussing one major trade-off we face: the choice between low-density cities and affordable cities. It is simply mathematically impossible to combine high land prices, low densities, and home affordability. In areas with high land prices – which we would expect to see in any economically successful city – we need to ask: would we prefer to have affordable housing or low densities?

Figure 5: The urban policy “trilemma”: Choose two, and only two



We can think of real-world examples of places that conform to each edge of the triangle. It's easy to find low-density, affordable housing in (say) Pokeno or Huntly, as land values are low enough to sustain it. But in inner-city Auckland, high land prices mean that we must choose between our desire for space and our need for affordable housing. We've resolved these trade-offs differently in different areas. In Ponsonby, we've preferred to maintain lower-density heritage housing, which has priced many people out of the suburb entirely. By contrast, building many apartments at all price points has allowed the city centre itself to remain affordable.

Can we deliver affordable housing in central Auckland?

Some people argue that Auckland should aim to bring land costs down in order to improve housing affordability. In my view, this view ignores the market realities. High land prices are an indicator of urban success – they demonstrate that people and businesses want to be there. We may be able to lower them through, say, a deep and prolonged recession or years of net emigration. But it's unlikely that the benefits of reduced land prices would justify the economic and social costs of doing so.

Greenfield land supply won't solve our problems either. While land does tend to be cheaper on the edge of the city, households that locate there tend to incur higher transport costs. Previous empirical work has shown that higher commuting costs entirely offset savings on housing cost in fringe suburbs (Mattingly and Morrissey, 2013; Nunns et al, 2014). As a result, if we want affordable housing we have no choice but to deliver it in places that are accessible to employment, education, and amenities.

Fortunately, we have choices. Technological innovations – steel-framed buildings, indoor plumbing, and elevators – have freed us from the tyranny of horizontally. We have the option to build up, if we are willing to take it.

A worked example

We can illustrate this with a hypothetical example. Let's assume, for a moment, that we are property developers who have just purchased a vacant 400 square metre section on the isthmus or the lower North Shore. Let's say we got a bargain and bought the land for \$600,000⁶.

We'd like to build affordable dwellings on this site in the expectation of profiting by serving the widest market possible. But we are constrained in our ability to do so by the costs that we face – in particular, land, construction, and consenting costs. If we can't make the numbers add up, we can't supply affordable dwellings.

We also have a range of choices about what to build. I've focused on the two shown in Figure 6. We could either build typical suburban detached houses, or we could develop midrise apartments along the lines of those seen in New York, London or Paris.

⁶ Land prices in these areas are currently in the range of \$1,500 to \$2,000 per square metre.

Figure 6: Alternative dwelling typologies (Source: Google Maps, Planetizen)

Detached houses (East Tamaki)



Midrise apartments (Greenwich Village)



Table 6 presents a simple model of the costs to supply each type of dwelling, based on:

- A land cost of \$1,500 per square metre
- Construction cost estimates from *Rawlinsons Construction Cost Handbook 2013/14*
- Subdivision rules, site cover ratios, and building height limits that roughly approximate Auckland's suburban housing and high-density residential zones

While this excludes some of the other costs faced by developers, including design and consenting costs and development contributions, it provides a rough indication of the relative cost to provide different types of dwellings.

The key finding is that it is much, much cheaper to build a single apartment than a detached house. Based on these prices, developers would not be able to supply new detached houses in these areas for any less than \$590,000. By contrast, midrise apartments could be built for more like \$225,000 apiece, putting them in an accessible price range for many more Aucklanders.

There are undoubtedly some quality differences between these dwelling options. Detached houses are larger and offer moderately-sized yards. But both options offer the same access to jobs, education, and amenities.

Table 6: A simple cost model for alternative residential dwelling typologies

Scenario		Detached houses	Midrise Apartments
A	Lot size (m2)	400	400
Building size parameters			
B	Site coverage ratio (%)	40%	80%
C	Storeys (#)	2	6
D	Dwellings per site	2	24
Land and build costs			
E	Land cost (\$/m2)	\$1,500	\$1,500
F	Construction costs (\$/m2)	\$1,800	\$2,500
G	Area lost for internal services (%)	0%	25%
Building size and cost			
H	Building size (m2 floor area) [=A*B*C]	320	1920
I	Living area (m2 floor space) [=H*(1-G)]	320	1440
J	Total cost to buy land and build (\$) [=A*E+H*F]	\$1,176,000	\$5,400,000
Costs per dwelling			
K	Dwelling size (m2) [=I/D]	160	60
L	Build cost per dwelling (\$) [=J/D]	\$588,000	\$225,000

The political economy of planning

Finally, let's step back from this specific example and ask a broader question: What development outcomes should we enable via planning rules?

I don't think this question is easy to answer. As I've attempted to show in this paper, planning regulations come with both trade-offs and unintended consequences. Our understanding of the effects of rules is sometimes limited, although economic techniques can help to illuminate them. In addition, choosing between alternative outcomes often requires us to make value judgments.

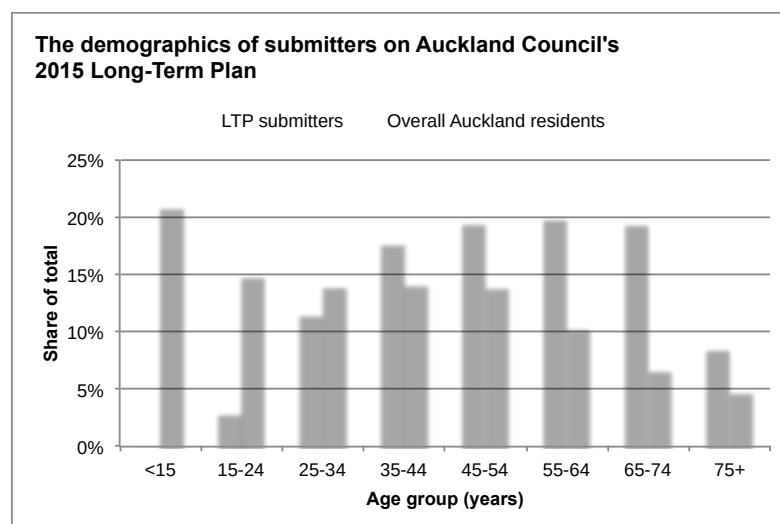
It's difficult, as a professional, to be asked to do this. I am keenly aware that preferences are heterogeneous – i.e. that I might value a different set of things than my neighbours or fellow residents. That's part of the fun of living in a city. But it does make it challenging to understand what we, as a city, want from urban development.

Understanding that requires us to delve into what I like to call the political economy of planning. It's essential to have consultation and feedback processes that are able to gather representative input from the people that urban plans will affect.

Frankly, we could do better in this regard. Data from previous Auckland Council consultations, some of which is summarised in Figure 7, suggests that submitters are more likely to be older and less diverse than the city as a whole. Some groups – people aged 55 and up – are overrepresented by 90% or more, while others – Maori, Pasifika, and Asian residents, and people under 25 – are underrepresented by 70% or more.

As I'm an economist rather than a consultation specialist, I don't have any concrete ideas about how to address this. But in light of the fact that community input is needed to resolve urban planning trade-offs, I am convinced that it's absolutely necessary to do so.

Figure 7: Who are we consulting, anyway?



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