

3 A rationale for planning

Key points

- Urban planning involves governments exercising coercive regulatory powers over land use. This is the most important difference between urban planning, and people and businesses making plans.
- The practice of urban planning covers different activities and objectives. The views and definitions on what is the essence of, and best approach to, planning are varied.
- Urban planning is justified if it yields benefits that exceed its costs relative to other options. Urban planning seeks to address three distinct problems of urban development:
 - to regulate external (spillover) effects on others and on the natural environment from the use of land by people and businesses;
 - to make fair and efficient collective decisions about the provision of local public goods; and
 - to plan and implement investments in transport and water infrastructure, and coordinate these investments with land use and investments in other infrastructure controlled by other parties.
- Private bargaining, and taxes or charges to make parties pay for damaging effects they impose on others, are alternatives to direct regulation of land use. They are appropriate in some circumstances, but in most countries and systems land-use regulation does the heavy lifting.
- All three main functions of urban planning interact with private property rights and can therefore create tensions and controversies. The tensions and controversies tend to be greater in regulating land use and investing in infrastructure than in providing local public goods.
- Land-use regulation should conform to the principles and practices of good-quality regulation in the interests of efficiency, effectiveness, innovation and fairness.
- Investment in local public goods and local infrastructure can enhance local economic performance and liveability, as well as raise property values.
- Land-use plans and planning systems vary in the following important dimensions:
 - the extent the plans focus on outcomes versus prescriptive and detailed rules;
 - the extent that regulations use directive, place-specific rules versus general rules that prohibit types of effects on other property owners;
 - the distribution of responsibilities and powers between levels of government and local communities; and
 - how well plans are integrated vertically and horizontally from the point of view of both administering agencies and customers.
- The type of plan and planning process selected should match the rationale for having them – either regulating land use, or facilitating and implementing collective decisions about local public goods and services, and local infrastructure.
- The complexity, diversity and unpredictability of cities raise serious challenges for urban planning beyond a certain point. Two broad responses that have merit are: (1) a few simple, non-directive, relational rules to regulate externalities; and (2) a collaborative, participative approach.

This chapter explains what planning is all about – its nature, what problems it is trying to solve, its scope and the different forms it can take. It examines how land use regulation interacts with private property rights and the challenge of planning cities – given their unpredictable, complex and adaptive nature. These topics are essential building blocks for the Commission’s analyses, findings and recommendations about better ways to undertake urban planning in New Zealand.

Individuals and groups commonly make plans. The activity of planning – it could be a project plan, a savings plan, or a vacation plan - has the purpose of setting out a series of sensible steps to achieve a desired goal. The steps likely include actions that are within the control of the planner (the individual or group) and actions that will require cooperation and input from others. However, no coercion is involved; all actions are voluntary. Many actions will involve market transactions.

The plans of individuals and businesses are made in a decentralised and “bottom-up” manner, yet they rely on the coordinating capabilities of markets for their realisation. Markets, working well, have the striking ability to deliver outcomes without any central agent using a top-down grand plan to direct activities.

Urban planning is similar to and different from this sort of everyday planning by individuals and organisations. It is similar because urban areas are led by councils that make plans for how best to, for example, deliver goods and services, and invest in capital assets – just like any other organisation. It is also similar in that delivering on these plans relies on the existence of markets. But an important difference is that urban planning also involves the exercise of regulatory powers that are coercive in setting limits or requirements on how residents use their privately owned land (or conduct other activities such as driving or using public facilities).

This chapter begins by examining the problems that might require the tools of urban planning to generate solutions. One question is what problems provide reasons for the exercise of regulatory or other government powers (eg, setting rates and other charges) by councils? The chapter then examines the interplay and tensions between planning, regulation, property rights and allowing outcomes to emerge spontaneously from individual decisions and their interactions.

As Chapter 2 describes, cities are complex systems that are adaptive and unpredictable in how they evolve and develop. So this chapter also examines the debates among the proponents of different approaches to urban planning in the context of this characteristic of cities. Which approach is more likely to produce successful urban areas? The conclusions will inform future chapters on urban planning and specific topics such as housing, business growth, job growth, environmental management and infrastructure.

3.1 Rationales for planning in an urban setting

The practice of urban planning covers several different activities and objectives. In its issues paper for this inquiry (NZPC, 2015c), the Commission noted that views and definitions of planning vary widely (Box 3.1). The Commission received further views in submissions on the issues paper.

Box 3.1 What is planning? A range of views and definitions

A fellow of the UK Royal Town Planning Institute (RTPI), Kelvin MacDonald wrote that he is “unsure about what planning actually is” (2005, p. 25).

MacDonald offered two definitions:

[Informally, a planner is a] post-modernist, moderator, politician, rationalist, advocate, realist, economist, critic, risk-taker, developer, healer, geographer, sage, critical thinker, environmentalist, urbanist, manager, technocrat, strategist, statistician, negotiator, economist, ruralist, deconstructionist, internationalist, administrator...

[More formally, planning concerns] the better use of land, shaping space, community and safety, improving the quality of the environment, sustainable development, encouraging growth in the economy, housing, improving the historic environment, the best use of resources and quality.
(p. 25)

The RTPI summarises the work of planners as “mediation of space – making of place” (2016).

The American Planning Association says:

Planning means housing choice. Planning means safe communities and a better commute.
Planning means communities of lasting value...

When government officials, business leaders, and citizens come together to build communities that enrich people’s lives, that’s planning...

Planners help government officials, business leaders, and citizens create communities that offer better choices for where and how people work and live. (2016)

Adams and Watkins in *The Value of Planning* (2014) say:

A useful way to understand planning is to start by thinking about its broad purposes, in other words, to concentrate first on its ends rather than its means. At a high level, planning can be seen as helping to create the kind of places where people want to live, work, relax and invest, while acknowledging that different people will interpret concepts of place differently according to their own particular interests and experiences. ... planning is a collective endeavour that is about more than the mere sum of individual interests. (p. 9)

Waikato District Council’s stated in its submission:

As indicated in the Issues Paper, planning should be ‘place- and vision-based’ in the sense of enabling the creation of places people desire to be in. Like Mayor Brown’s vision for Auckland being the ‘world’s most liveable city’. The starting point should be a community-supported vision for developing great urban places. (sub. 2, p. 2)

While these views throw light on what planning is and what planning is for, they do little to explain the problems it is trying to solve and why some form of planning should be the preferred means. Yet to fulfil the inquiry terms of reference “to review New Zealand’s urban planning system and to identify, from first principles, the most appropriate system for allocating land use” there is a need to clearly understand these two questions. The problem definition and how planning might help solve the problem are at the heart of the inquiry because the terms of reference also ask it to “look beyond the current resource management and planning paradigm” and “consider fundamentally alternative ways of delivering urban planning, and subsequently, development”.

As noted in the chapter introduction, the exercise of coercive powers through regulation or other means is an important additional feature of urban planning compared to the everyday planning undertaken by individuals, families and businesses. It is appropriate to ask for a justification for the use of regulatory power. A convincing justification would be along the lines that the benefits of regulating outweigh its costs compared to the best alternative that does not involve regulating. Even where regulation may yield a net benefit, much will depend on the quality of its institutional arrangements and practices (see Box 3.3).

This section will examine three distinct problems that urban planning seeks to address, and whether its use, including the use of regulation, is likely to produce benefits that exceed its costs, relative to other options.

- **Problem 1:** In the course of urban development external (spillover) effects of individuals and businesses on others and on the natural environment are common. How can these best be managed and mitigated?
- **Problem 2:** How to make fair and efficient collective decisions about the provision of local public goods within urban areas?
- **Problem 3:** Urban development involves large investments in infrastructure, often by different parties and involving projects that are broader than the jurisdiction of a single local authority. What are the best arrangements to ensure efficient investment, including by reducing uncertainty and improving coordination between the various parties?

Problem 1 – spillover effects

Negative spillover effects occur when the actions of one person or business cause harm to another person or business without any compensation. In an urban context this could be property owner John extending his house to his boundary, and so blocking his neighbour Jill's sunlight and view. Other common nuisances that have local effects in urban areas are noise, fumes or risks of dangerous materials from an industrial activity, or the reduction of water quality in local streams and coastal areas from increased urban stormwater run-off (harming those who value natural amenity).

Economists have long recognised that free-market outcomes in the presence of negative "external effects" are often inefficient and sub-optimal. The root of the problem is that the person or business fails to take into account the harm their actions cause to others. The person whose new large building blocks an existing neighbour's sunlight does not pay for taking it. In contrast, if the person wanted a small strip of the neighbour's land for the edge of a new driveway, a reasonable negotiation including payment, would see both parties emerge feeling better off. This sort of outcome is possible and likely.

The inefficiency in the sunlight case comes about because a negotiation between the parties (assuming neither could be coerced by the other) could make each better off relative to either the person taking no sunlight or the person taking as much as wanted with no compensation to the neighbour.

As noted by Dr Douglas Fairgray (sub. DR 109, p. 3) the number and intensity of negative spillover effects are likely to increase with greater urban density. Indeed, this is one reason why many people prefer to live in less dense areas.

One critical issue is that urban economies are characterised by many externalities, which are driven by the co-location of private, business and government activity. In order to avoid negative outcomes, the effects of these externalities need to be examined at both the specific and the aggregate level, into the medium and longer term.

How could urban planning solve or mitigate the problem?

Three different government-led remedies could help offset the negative external effects in an urban setting.

- The first remedy is to instigate or let private bargaining (or a market) develop by clearly defining the relevant property rights (in the example given, either Jill has the property right to the sunlight she currently enjoys, or the right to block the sun belongs to John as owner of the planned extension). According to the well-known result of Coase (1960), either allocation of the property rights is likely to result in an efficient outcome (the taking of a certain amount of sunlight and a certain payment to the holder of the property right).
- The second remedy is to incentivise people's land use through a system of charges that will signal the harm that actions with external effects will have on others. The incentive will be just strong enough to restrain the action to an efficient level. The revenue from the "pollution charge" may or may not be actually paid to those adversely affected.
- The third remedy is to regulate land use by a system of urban planning that specifies permitted and prohibited actions. Effectively, the regulations are development controls that fetter the property rights of owners in the cause of limiting the harmful external effects of development. In practice, planning systems are based on a variety of principles, degrees of prescription, consent processes and appeal rights. The chapter examines this variation below. Yet a big part of almost any variant will focus on mitigating harmful external effects on neighbours, the natural environment or on populations more generally.

All three remedies are standard in the policy maker's toolkit. The first two are used to some extent in urban settings but have significant limitations. The third is used in nearly all urban environments.

The limitations of private bargaining are:

- its high transactions costs;
- the difficulties and controversies in defining just where property rights begin and end;

- possible power imbalances among the parties; and
- the great difficulties in negotiating and striking deals when the external effects harm many people at once.

Charges to reflect external effects are feasible and have been successful in dealing with some types of harmful emissions (eg, greenhouse gases), and to influence drivers to take account of the harm they cause to other road users through increased congestion. Yet, for some urban externalities, the costs of setting up, operating and enforcing a charging regime are likely to outweigh the benefits.¹³

The limitations of private bargaining and “pollution” taxes/charges have left the direct-regulation arm of urban planning to achieve a reasonable balance when the activities of residents cause harm to other residents living in close proximity.

Yet regulation is neither a tension-free nor problem-free solution. Situations in which direct clashes of interests occur between owners of neighbouring properties or between a business and a group of residents are common. Box 3.2 describes a real example. Further, discretion exercised by the regulator (planner) can have large distributional effects through changes in asset values. The discretion not only creates uncertainty, but also opens the door for contest, lobbying and litigation. This is understandable given that much can be at stake depending on the regulator’s decision. The resources involved in influencing the decision can be large and would be better put to other more valuable uses if they can be avoided.

Box 3.2 **Mushroom farm odour stops prospective new housing near Havelock North**

Odour from an existing mushroom farm recently forced a rethink on how the Hawke’s Bay settlement of Havelock North might expand. Landsdale Developments, a development company, requested Hastings District Council to change the zoning of 3.09 hectares of land on the eastern fringe of Havelock North and adjacent to the farm so the land could be used to develop up to 220 new houses.

A report by council staff said odour from the mushroom farm had always been identified as a potential constraint for the area, but it had been thought the issue could be overcome by using buffers, no-complaints covenants (meaning anyone moving to the area agreed not to complain) and an upgrade of the mushroom plant as required by the Hawke’s Bay Regional Council.

However, following an expert report casting doubt on the likely effectiveness of these measures, the staff recommended that the rezoning request be declined. A major fear was the creation of “reverse sensitivity” defined as “the potential for the operation of an existing lawfully established activity to be constrained or curtailed by the more recent establishment of other activities which are sensitive to the effects of the existing activity”.

Another potential solution would be to relocate the mushroom farm. This was not something the Council could require given the farm’s prior existence and the property rights attached to that. Yet it would be open to Landsdale Developments to pursue private negotiation and come to a deal with the farm to relocate and so remove the source of the problem.

Source: Sharpe, (2015).

A common form of direct regulation in urban planning is zoning that aims to avoid negative external effects among adjacent land users by requiring incompatible activities to locate in separate areas. For example, chemical factories may be required to locate in a heavy industrial zone well away from residential zones. Sections 3.2 and 3.3 further analyse different approaches to planning regulation, including zoning, and how such regulation affects property rights and market-based decisions.

¹³ Charges to reflect external effects are an example of “market-based instruments”. Chapter 9 covers their use to tackle spillovers that cause adverse effects on the natural environment.

David Caygill, an Environment Canterbury Commissioner, told the Commission that while land use regulation is needed to resolve inevitable clashes of interests and values, it is not the cause of those clashes (pers. comm. 12 February 2016). Even so, it is important that the planning system has efficient and equitable means to address conflicts of interests and values (Chapter 13).

Problem 2 – providing local public goods

“Public goods” are goods or services with two specific characteristics:

1. the good or service is *non-rival*, which means that many people can benefit from it simultaneously (such as well-lit city streets, or sewerage systems that preserve public health); and
2. the good or service is *non-excludable*, which means that it is impossible (or at least highly impractical) to exclude people from using and benefiting from it.

Given the second characteristic, it is not practical to charge users and, accordingly, private firms will choose not to supply it (except in rare cases)¹⁴. Like the problem of external effects, the challenge of producing public goods is a type of “market failure” of a private-enterprise, free-market system.

To be clear, services such as health and education are *not* public goods in the above sense. Both services require resource inputs in proportion to users, and it is entirely possible to disallow entry to school or medical treatment for failing to pay fees. So both services are *rival* and *excludable*. Yet governments may still wish to provide such services for equity reasons and because of wider social benefits.

The geographical reach of public goods varies – at one end of the spectrum, national defence simultaneously benefits all citizens of a country; at the other end, street lights in a suburban cul-de-sac benefit only the street’s residents. Accordingly, *local public goods* are those with a relatively local effect across a region, city or town.

Local public goods include a broad spectrum of objects, facilities and endeavours that local governments provide and maintain on behalf of their residents for their enjoyment. Examples include parks, reserves, gardens, squares, public monuments and works of art, waterfront development, and the design and layout of streetscapes and pedestrian areas. These “goods” can contribute much to the social, economic, environmental and cultural character of towns and cities and to the wellbeing of their residents. Some submitters to the inquiry’s draft report failed to appreciate that local public goods cover this broad set of amenities and consequently accused the Commission of taking an overly narrow view of the role of planning (subs DR 72, p. 5; DR 78, p. 2; DR 79, p. 2; DR 83, p. 8; DR 88, p. 2).

Local or regional councils are well placed through planning to provide local public goods

Because local public goods benefit many people at once, and are non-excludable, markets struggle to determine how many or how much of them to provide, or to raise the funds to pay for them. In contrast, markets do a good job of providing efficient quantities of private goods and in ensuring they are paid for – individual choice, willingness to pay and competition among firms in free markets are the keys to this.

The optimal quantity of a local public good occurs where the marginal benefit of one more unit of it would be equal to its marginal cost. For example, the marginal benefit of one more streetlight is the additional value it yields to all the people who benefit from it. This could be measured in dollars of “willingness to pay”. To illustrate, among 1 000 users, 250 might be willing to pay \$2 and 750 might be willing to pay \$1. This would add up to \$1 250. The streetlight should only be provided if it costs less than this. In addition, people could be “taxed” just enough to pay for it in proportion to their willingness to pay.

If all the users of the streetlight could get together and perform this calculation of marginal benefits and costs, the problem would be solved. Two obstacles stand in the way of this approach. First, the transaction costs of a large number of people getting together to undertake this sort of calculation, make a decision and

¹⁴ Ronald Coase (1974) drew attention to one example that is consequently well-known among economists. Prior to a public lighthouse service, some British private insurance companies built lighthouses. It was in their interests to do so because it reduced shipwrecks among the ships of their clients, even though ships not insured with the companies were able to free-ride and also gain the benefit of the lighthouse service.

implement it are very high (although perhaps modern information and communications technology (ICT) and social media have somewhat lowered these costs).

Second, the tendency of at least some people not to reveal the true benefit they would obtain from the streetlight is likely to undermine a simple process of asking people their willingness to pay. Each individual could reason that their individual, willingness-to-pay (their “vote”) is unlikely to make a difference to the decision (being only one person in one thousand). A rational response is to state therefore a zero willingness to pay. If the streetlight goes ahead (a decision out of their control), then they will get the benefit without having to pay. But many people behaving like this will lead to no streetlight being provided even though it may have a large net benefit.

The approach that is typically used to determine a community’s investment in local public goods (eg, parks, reserves, streetscapes and sculptures, playgrounds, fireworks displays, foreshore and beach access) is to have the local council make the decisions. Essentially, councillors, often taking advice and informed by local government plans and public consultation, make decisions about the basket of local public goods they will invest in, on behalf of all residents.

Funding the costs of local public goods is also typically managed collectively. This is logical given the impracticality of asking people to honestly reveal their true willingness to pay. Councils typically take collective decisions on local public goods, accepting that the cost will fall on the local authority’s budget - funded largely out of local rates and charges. It is accepted that this only imperfectly accords with the “benefit principle” of people paying according to the benefit they receive. It is also partly a system of taxation according to “ability to pay”.

Some goods and services provided by councils, such as libraries and swimming pools, are partial public goods in that they are (mostly) non-rival, but their use is excludable. This gives councils the opportunity to require users to pay a charge. However, the revenue collected is mostly insufficient to pay the full cost of the good or service, with the balance coming out of general funds.

Local public goods create external (spillover) effects in the sense that, once they are provided for one person, they benefit many others. The external effects are positive rather than negative. Indeed an architecturally beautiful, privately owned building could provide these sorts of widespread positive effects in the same way as an attractive civic square or fountain. As indicated in Box 3.1, planners often describe their role as “place making” or “city shaping” or fostering high-quality “urban design”. It is quite possible to regard each of these, done well, as local public goods – subject to the important caveat that the making, shaping or designing involves only public space and resources.

A planner or urban designer may well wish to require, or at least encourage, private owners to build to a high aesthetic standard because of the positive spillover effects, but they would then have stepped into a regulatory role. This is an important boundary. A related example is where the owners of historic buildings are required to preserve them for the value they represent to the community. An interesting question is whether the community collectively should pay the owners for providing and maintaining the positive spillover effects (or local public goods) arising from the buildings’ valuable historical features and significance. This can be considered a reverse instance of “pollution charges” for negative externalities.¹⁵

Problem 3 – investments in major infrastructure

Infrastructure for essential services

Local councils typically invest in and maintain infrastructure that provides essential services for their residents. The most common are transport, water supply, stormwater and wastewater infrastructure. While it is difficult to generalise, private firms can sometimes fund investments such as these and provide services to customers and do it more efficiently and with more innovation. The existence of debate along these lines points to the need for a clear understanding of the pros and cons of the options for commissioning, funding and managing infrastructure services (Chapters 9 and 10).

¹⁵ For instance, councils and governments sometimes provide such payments to owners of heritage buildings for their repair or earthquake strengthening.

The difficulty with leaving the market to supply infrastructure services is that they are often natural monopolies. Natural monopolies have large, upfront capital costs, low marginal costs of use and have the character of networks.¹⁶ Having several competing road, rail or water networks is likely to be extremely costly and not in the long-term interest of consumers.¹⁷

The option of a single, private provider of infrastructure that is a natural monopoly is possible, but faces challenges. It would need to be regulated to avoid the inefficiency of monopoly prices and profits. And the regulation of a private monopoly provider is a major and difficult undertaking, and the outcome may be no greater or less efficiency and innovation than under a public provider.

A further challenge for private providers of some infrastructure services is charging individual users. As with public goods, charging directly for use could be impractical because the costs of excluding users who do not pay could be very high. Examples are local roads and stormwater services.

The option most commonly observed is a council or “council controlled organisation” (CCO) directly providing these infrastructure services. Potential problems with public provision are lack of consumer choice, low responsiveness to consumer needs, and poor incentives for productive, allocative and dynamic efficiency.¹⁸ For example, public providers, lacking competitors, may not minimise costs, or invest or innovate in ways that maximise long-term benefits of consumers. Unresolved, these problems could result in poor-quality and expensive services.

CCOs such as Auckland Transport and Watercare are aimed at promoting efficiency through transparent measures of performance, requirements to run the business on commercial lines, and by putting business decisions at arm’s length from political influence.

In addition to transport infrastructure and water, stormwater and wastewater infrastructure, residents and firms demand and depend on other essential infrastructure services. These include energy (electricity and gas), communications (fixed and mobile telephony, broadband, television and radio), education, health and social housing. As set out in Table 3.1, local governments (at least in New Zealand) are less involved in providing these types of infrastructure services. Yet, as explained in the next section, local government has a role in coordinating all types of infrastructure investment with land-use planning.

Table 3.1 Essential infrastructure services associated with land use

Infrastructure service	Provided or funded by (in New Zealand)	Natural monopoly?	Funding
Transport – roads, footpaths, cycleways	Local and regional councils; New Zealand Transport Agency (NZTA); construction by private contractors	Yes; strong network effects, low marginal costs when uncongested	Fuel taxes, road user charges, rates, bus fare subsidies, tolls (minor)
Public transport – rail and bus services	Local and regional councils; KiwiRail (owned by central government)	Yes; strong network effects, low marginal costs when uncongested	Passenger fares, central and local government investments and fare subsidies
Fresh water, stormwater and wastewater	Local and regional councils and/or their subsidiaries (known as CCOs - council controlled organisations)	Yes; strong network effects, low marginal costs	Users pay either via fixed water rates, or water metering of actual use

¹⁶ Networks can be many-to-many (eg, road and telephone networks), many to one (eg, a sewerage network) or one-to-many (eg, fresh water supply).

¹⁷ Networks competing side by side may drive prices down and give consumers a choice, but this scenario has significant downsides. The downsides arise because (i) marginal costs tend to be much lower than average costs, and so price competition will cause the individual networks to become commercially unviable, (ii) separate, smaller networks often have less value to consumers than larger ones, and (iii) strong scale economies mean that smaller networks are productively inefficient.

¹⁸ Productive efficiency is achieved when goods or services are produced at the lowest cost of production. Allocative efficiency is achieved when goods or services produced correspond best to what people want. Dynamic efficiency is achieved when optimal decisions are made on investment, innovation and market entry and exit by firms to create productive and allocative efficiency in the longer term.

Infrastructure service	Provided or funded by (in New Zealand)	Natural monopoly?	Funding
Energy (electricity and gas)	Largely private provision, including by state owned enterprises	Pipe and wire networks are natural monopolies. Multiple, competing generators and retailers	Providers charge customers; natural monopoly parts subject to regulation under Part 4 of the Commerce Act 1986.
Communications (voice and data)	Private provision	Fixed network is a natural monopoly, owned by a structurally separate entity (Chorus). Multiple, competing retail and wholesale service providers.	Providers charge customers; natural monopoly part subject to regulation.
Education	Central government; some private provision	No; however specialised and expensive institutions such as universities are subject to economies of scale.	Central government taxation; student fees.
Health	Central government; some private provision	No; however specialised facilities such as hospitals are subject to economies of scale and scope.	Central government taxation; private-patient payments and insurance premiums
Social housing	Central and local government; some not-for-profits	No	Central and local taxes; rents; various not-for-profit funding sources
Ports and airports	Council and private provision via port and airport companies	Substantial degree of natural monopoly; some competition and some regulation under Part 4 of the Commerce Act 1986.	Equity investment by owners; user charges; profits from subsidiary activities (eg, commercial and retail landlord)

Coordinating infrastructure investments

The lumpy and irreversible nature of much infrastructure investment, and complementarities across different sorts of infrastructure and land use create difficult problems for decentralised, individual decision making based on market signals. One problem is the uncertainty created by not knowing if other decision makers are going to invest. For example, the returns to a potential investor in a possible resort complex in an attractive but isolated area may depend on the government co-investing in a large road upgrade and whether other operators decide to invest.

This situation creates a coordination problem. No investor will be keen to proceed without reasonable assurance that others will also invest. If one alone did, they would be at risk of having a “stranded asset” worth little if the others did not invest. They would also risk being in a weak bargaining position with other investors because of having committed a lot of money to an irreversible decision (a variety of hold-up and hold-out scenarios are possible). Government too can be at risk if they invest large amounts on transport and water infrastructure and then private developers do not go ahead.

When hold-up or hold-out situations occur, the delay to infrastructure investments can have significant negative consequences beyond the big players. Other urban actors (firms and households) are continually making their own independent location and investment decisions based on a host of complex factors, including the current and future availability of infrastructure in different areas. Unnecessary delays in infrastructure decisions create costly uncertainty and delay for many others.

Coordination problems of the type described create risks of over-investment and under-investment in infrastructure and the impairment of dynamic efficiency. Urban planning is a common way of attempting to overcome these coordination problems. Different approaches exist, some of which are likely to result in better outcomes than others.

The problems with a full free-market approach have already been noted. At the other end of the spectrum, it is well understood that directive central planning (by central or local governments) gives rise to other problems. For example, a central planner's decisions tend to be based on poor information. The information gaps are compounded by some parties having an interest not to disclose private information, and to indulge in various forms of gaming and rent-seeking.

Planning works best to solve coordination problems with large, complementary investments when it provides a process for "facilitated discussions" among the key public and private parties. Such a process can build relationships, facilitate information sharing and lead to a fuller consideration of different options. Together these are likely to reduce uncertainty, improve confidence and coordination, and the quality of decisions by the different private and public parties involved in major urban infrastructure and land-use investments (NZPC, 2012a, pp. 160–172).

Developing "spatial plans" is increasingly common among councils in growing cities and regions (NZPC, 2015a, pp. 276–282). As a process, it can take the form of "facilitated discussions". The council should lead the process, but not in a heavy-handed, overly directive way. Developers, transport operators, local firms, health and education providers, mana whenua and infrastructure investors, as well as residents, should all participate in developing a high-level picture of the city's future development. Chapter 10 further examines the merits of spatial planning, particularly as a means to better integrate infrastructure investment with land-use planning.

The rationales for urban planning: summary and review

In the Commission's view, there are three main rationales for urban planning.

- The first rationale is to regulate negative spillovers when people build structures and conduct activities while working and living in proximity to one another. Residents can cause negative effects on other residents. Businesses can cause negative effects on residents (and vice versa). Either residents or businesses can cause adverse effects on the natural environment.
- The second rationale is to make decisions about funding and providing local public goods to best meet the needs of residents. The local, non-rival and non-excludable character of local public goods makes their supply by local governments a logical option.
- The third rationale is to invest in and operate local and regional infrastructure to provide essential services for residents and businesses. The natural-monopoly character of some local infrastructure services makes their supply by local authorities a logical, but not inevitable, option. Where, in addition, some types of infrastructure are provided by others (private or public), local authorities also play an important role, through planning processes, to coordinate infrastructure investments with land-use development.

Each of the three rationales is distinct and important. Each is mentioned as part of the purpose of local government in the Local Government Act 2002 (as amended in 2012). Alongside enabling "democratic local decision-making and action by, and on behalf of, communities", the purpose of local government is "to meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses." (Section 10 (1)).

Some participants in the inquiry have argued that the urban planning has broader purposes than the three rationales put forward by the Commission, namely promoting wider social, economic, cultural and environmental wellbeing (the "four wellbeings"). Ngā Aho & Papa Pounamu argue from a Māori perspective against an "effects-based" approach to planning, and for a "values and outcomes based approach".

They note (Ngā Aho and Papa Pounamu, 2016x, p. 45) that:

- Māori worldviews are holistic;
- it is entirely artificial, and therefore unreal, to separate people and economics from the natural world and environmental, social and cultural well-beings; and
- any such 'separation' will elevate private property rights above the right to exercise kaitiakitanga;

The Commission notes these views and acknowledges that others see a broader role for planning. Later in the report it recommends several significant ways in which a future planning system could better incorporate Māori perspectives and meet Treaty obligations (Chapter 7).

In addition, the Commission emphasises that the three of rationales for planning it sets out are each of fundamental importance to enhancing the four wellbeings. This was noted above in relation to the broad compass of local public goods. Dealing effectively with externalities is critical to protecting the natural environment, while infrastructure provides essential services that underpin economic and social wellbeing. After all, one of the original rationales for urban planning was resolving public health and hygiene problems created by people living closely together. The solution lay in new forms of urban infrastructure.

Yet several submissions argued that the planning system can and should do more to resolve social problems such as obesity, climate change, and inequality (Hill Young Cooper, sub. 6; Canterbury District Health Board, sub 11; Toi Te Ora Public Health Service, sub. 15; Auckland Regional Public Health Service, sub. 30; Regional Public Health and the New Zealand Centre for Sustainable Cities, sub. 35). For example, Brenna Waghorn commented that:

[l]ocal land use planning can support the delivery of government policy objectives e.g. health, recreation, alcohol, obesity. Rather than being concerned that the scope of the planning system is expanding, the role that local government can play in joined-up policy and delivery should not be underestimated. For example while the council is not responsible for health policy, its local land use, transport and recreational planning can make a significant impact on the health of communities. (sub. 9, p. 2)

Councils can play a role in achieving a number of social, environmental and economic goals. However, as noted by Waghorn, this is best done in a coordinated and considered manner, alongside central government. The problem with current practice is that some councils appear to be taking on these roles in the absence of discussion with central government about relative responsibilities and the most efficient and effective allocation of them. Moreover, making these wider social, environmental or economic objectives formal priorities or responsibilities of the planning system – such as by including them in planning legislation – would risk creating inefficiencies and lack of focus in relation to the three rationales.

The Commission has previously noted the need to improve the coordination of local government and central government in developing policy, and provided a framework for considering how to allocate roles and responsibilities of local and central governments (NZPC, 2013 and section 3.3). To the extent that councils wish to play a more active role in resolving social and other problems, both central and local government should work through each issue by issue.

F3.1

The three main and well-founded rationales for urban planning are to:

- regulate negative spillovers when people build structures, work and live near each other;
- make decisions about the provision and funding of local public goods to best enhance the wellbeing of residents; and
- invest in and run local and regional infrastructure to provide essential services for local residents and businesses; and to coordinate different infrastructure investments with land development.

Local authorities in New Zealand and other countries very commonly address all three rationales through their planning activities. In the Commission's view a central focus of this inquiry is to examine *how* an urban planning system (in its legislation, regulations, institutions, culture and practice) can best address these rationales.

The next section examines tensions that can arise when using planning to address the three key rationales. Notable examples are the tension between land-use regulation and private property rights, and the risk that planning fails to strike the right balance with market processes and so suppresses market dynamism.

3.2 Planning, property rights, regulation and markets

Plan making, granting consents and resource management more generally are often marked by clashes of interests, disputes, and the need for processes (including the courts) to settle these. Major battles may rage for many years (eg, over residential densification). These clashes are mostly about the property rights of landowners or others. The parties can include business owners and groups representing specific or wider public interests. Clashes of rights or interests, but also enhancements to them, can occur in relation to all three rationales for planning: regulating external effects, providing local public goods, and the provision of infrastructure.

Property rights and the regulation of negative spillovers

All regulations involve the exercise of the state's coercive powers and set limits on the rights and freedoms of individuals, businesses and property owners. Pluralist democracies that place a high value on individual rights and freedoms avoid regulation limiting these rights and freedoms, except where less intrusive options yield lower net benefits.

Almost no property rights are absolute. For example landowners are not unlimited in what they can do, even strictly within their property boundaries. Farmers cannot mistreat their animals, use certain chemicals/sprays, discharge run-offs into local waterways, or perhaps allow their animals to wander in or near these waterways.

Landowners in cities and towns are subject to planning rules about plot coverage, building heights, access to services, and the use of their land and the buildings on it. The rationale for planning rules and regulations is to limit negative external effects on others while giving property owners certainty about what they can and cannot do on their properties.

The Commission in its 2014 report on *Regulatory institutions and practices* (NZPC, 2014b) developed a set of principles of good regulatory institutions and practices (Box 3.3). In this inquiry the Commission will assess the extent that land use regulation in New Zealand conforms to these principles and practices of successful regulation. It will ask what this regulation is trying to achieve, the extent it is needed (as opposed to more effective or less intrusive options), whether the regulation is efficient and proportionate (or is overreaching in its scope), and whether it is subject to appropriate consultation, monitoring, review and appeal procedures.

Unnecessary, overly prescriptive or overbearing regulation not only intrudes on individual rights and freedoms; it also risks adverse effects on the efficient workings of the economy.

- Regulatory systems that prescribe in detail the means that firms must use to reduce harmful emissions undermine the incentive for businesses to innovate to discover lower-cost and, potentially, more effective solutions.
- Land use regulations typically require businesses to apply for consents to develop land or operate businesses in certain places. These processes can be extremely time-consuming and costly. If so, they will prompt some investors and entrepreneurs to decide not to invest, or invest in another jurisdiction.

These potential costs point to the need for planning regulations and institutions to balance the objectives of regulation against respect for individual rights and freedoms, and with the objective of an efficient and vibrant local economy. A lot of value can be at stake. For instance, decisions about land use regulation can increase or decrease the value of land, such as when councils rezone areas from rural to residential or commercial use.

These decisions can lead to rising house prices if councils fail to ensure sufficient development capacity for new housing in the face of strong demand. Rising house prices have distributional effects because they benefit existing homeowners and disadvantage those who do not own their home.

Resolving clashes of interests is not easy. The trick is to have an urban planning and resource management system that eases rather than exacerbates those clashes without being any more complex or intrusive than necessary to achieve the outcomes sought.

Box 3.3 Principles of successful regulation

The Productivity Commission (NZPC, 2014b) reviewed much research and experience to identify the features of regulatory architecture, institutional design and practice that need to be present, and working well, for regulation to be effective and achieve its objectives.

Regulatory institutions need to be designed to provide:

- clarity of role – clear regulatory roles and objectives are critical to regulator accountability and focus, for compliance by regulated parties, and the legitimacy of the regulatory regime;
- an appropriate institutional form and degree of independence to enable the regulator to function as intended;
- good governance and decision-making arrangements, appropriate allocation of decision rights, including where and how discretion is exercised;
- appropriate mechanisms for the review of regulatory decisions;
- adequate funding; recovery of the costs of regulatory activities according to good principles; and funding mechanisms that do not create perverse incentives for either the regulator or regulated parties; and
- strong monitoring and oversight arrangements to ensure that regulatory agencies are effective, efficient and accountable and that regimes are working as intended.

To be successful, regulators need to have:

- regulatory practices based on a sophisticated understanding of risks, the regulated parties and changes in the regulated environment;
- organisational leaders that foster a culture of operational flexibility, adaptation to changes in the regulatory environment, continuous learning, and willingness to challenge and “speak up”;
- capability across all levels of the organisation and a purposeful, structured and integrated approach to achieving a professional workforce;
- communication and engagement processes that promote the legitimacy of the regulatory regime; and
- the ability to fulfil regulatory objectives within constitutional and statutory requirements – such as appropriately considering in regulatory practice the principles of the Treaty of Waitangi.

Management of the overall regulatory system needs to have:

- systematic and cost-effective approaches to keeping the stock of regulation up to date, so ensuring that outcomes are still achieved, and unnecessary or inefficient rules are removed;
- information and tools to enable the centre to understand and better manage the whole system; and

- strong institutions and leadership, particularly from government but also from the legislature and the judiciary.

Source: NZPC (2014b), p. 3.

Local public goods, property rights and the market

The provision of local public goods may not directly impact private property rights or the success of the local economy. Yet, indirect effects are important and should be considered.

- Meeting the cost of local public goods usually requires the use of the coercive power of local government to raise local taxes. In New Zealand, this is the power to levy rates on local property owners. An excessive rate burden to fund high spending on local public goods could sap business resources, and drive away businesses and residents. Each business or individual will make decisions based on many factors, including the value they receive from the local public goods provided.
- Local public goods, because they provide desirable amenities in a specific location, typically raise the value of nearby properties (although sometimes they can decrease them because of crowds, noise and traffic congestion).
- Local public goods can provide indirect value to local businesses by making a city or town a more attractive place for people to live and work. Businesses benefit by having a greater choice of potential employees. This raises productivity because of better matches between firms and workers. A well-chosen set of local public goods might also help trigger agglomeration economies within a city, leading to a virtuous, productivity-enhancing circle of growth of high-value businesses, research activities and skilled people (Chapter 2).

Provision of infrastructure, property rights and the market

Central and local governments can impair property rights when they compulsorily acquire land for transport, water and other infrastructure. Western democracies and other countries heavily circumscribe such powers to limit the encroachment on property rights. Typically, laws require just compensation and the demonstration of a net public benefit in the exercise of such powers.¹⁹

Even where compulsory purchase is not in the frame, some types of infrastructure investments can have large negative spillover effects on neighbouring properties (eg vehicle, train or aircraft noise and fumes). At the least, affected property owners are important stakeholders in collective decisions about where and what infrastructure investments should go ahead. Mitigating the spillovers from infrastructure investments is a special case of regulating the negative spillovers from land use.

In contrast, properties served with good transport and communication services increase in value because this infrastructure has positive effects on productivity, incomes and economic growth (Grimes, 2014; Grimes & Liang, 2010; Serven, 2010). The resulting “value uplift” to property owners can be a legitimate source of funding for infrastructure (Chapter 11).

Section summary

All three planning functions (section 3.1) operate alongside and within a market economy. Planning does not replace markets, but complements and modifies them in areas where they are relatively weak (eg, collective goods and externalities). All three functions interact with private property rights and so create tensions and controversies.

In particular, land use regulation involves use of the coercive power of the state and so impinges on property rights. These rights are the basis of private investment decisions in a market economy and are intimately

¹⁹ Well before a compulsory purchase of land, a planning authority may place “designations” or easements on land corridors to protect the option to purchase at a later date.

connected to its vitality and performance. A challenge for planning is to perform its functions without sapping entrepreneurship, innovation or the dynamism of markets in general.

Yet planning can also create and reinvigorate markets. For example, urban planning can open up areas for regeneration by the private sector, and it can reduce risks for capital markets by creating greater certainty (Adams & Watkins, 2014).

Planning may also protect people's collective interests in important ways. These include protecting ecosystem services (Chapter 9); the interests of residents who do not own property in living in attractive, convenient surroundings; and national interests that stem from the effects on the country as a whole of what happens in individual cities, towns and regions (Chapter 2).

The next section examines different types of plans and approaches to urban planning.

3.3 Types of plans

Urban planners at different times and places use different types of plans. This section describes some of the main dimensions in which plans can vary – creating a broad plan typology. Such a scheme can provide clarity about which types of plans are suitable to which tasks and rationales, and promote awareness of different planning philosophies that can lie behind – consciously or unconsciously – different approaches to planning. Differences of view about urban planning have a long history (Box 3.4). The dimensions covered are:

- Outcome / performance-based plans versus prescriptive plans
- “Rules for a made order” versus “rules for a spontaneous order”
- Top-down versus bottom-up planning
- Levels of plans and links between them.

Box 3.4 Competing views about what is an ideal urban plan

The earliest ideas of urban planning go back to the Greeks, and to Hippodamus (498–408 BC) who is widely credited as the inventor of formal city planning, and the system of dividing up cities into different parts for different purposes. The Hippodamian plan – a rectangular grid – called for a neatly arranged, ordered, organised city of lined-up wide streets. Indeed, Hippodamus is credited with creating the division of public, sacred, and private land. That division is the earliest example of the practice we now know as zoning. But, as is the case today, opinions differ fiercely about how to conceive and evolve urban forms. For example, even Aristotle was a strong critic of Hippodamus' idea of straight streets and a gridded layout. Aristotle preferred a city of curves, twists, dead ends and unorganised streets. Such a layout makes it much harder for a stranger to navigate, and so serves as a protective measure. In Aristotle's words:

The arrangement of private houses is generally considered to be more sightly, and more convenient for peacetime activities, when it is regularly planned in the modern style introduced by Hippodamus. For reasons of military security, however, the very reverse is preferable — they should follow the old-fashioned manner, which made it difficult for strangers to make their way out and for assailants to find their way in.

Source: Aristotle, *Politics*, n.d.

Outcome/performance-based plans versus prescriptive plans

Plans vary in the extent they specify the effects or outcomes they seek versus the detail of what needs to be done, where, when, how and by whom to get there. *Outcome-based* or *performance-based* plans do not

need detail on the intermediate steps to achieve the desired outcome or level of performance. *Prescriptive plans* specify the detailed steps.

Both approaches to planning have strengths and weaknesses. Their advantages depend on:

- the ease in defining and measuring desired outcomes;
- the degree to which planners/regulators and those regulated trust each other;
- the diversity within the sector or industry;
- the capabilities of regulators and those regulated; and
- the extent that standardisation is desired or required.

In practice, *outcome-based or performance-based plans* will include some prescription or guidance, and prescriptive plans will be based on some underlying desired outcomes.

In the context of land-use planning, outcome-based plans give greater freedom and flexibility to the parties – council staff, developers, entrepreneurs and residents – to find their own way to achieve the outcomes. This is important in a complex, shifting environment. Outcome-based planning has economic-efficiency benefits because the regulated party will have the incentive and the opportunity to choose the least-cost means to achieve the outcome. This includes innovative approaches that others could then adopt. Participants may also achieve a greater sense of ownership and control that can drive better performance and outcomes.

Prescriptive plans are perhaps easier to administer, monitor and enforce, and create greater certainty, particularly when outcomes are difficult to observe and measure. For example, a zoning plan defines in detail the permitted and prohibited land-use activities of private agents in those zones. Prescriptive plans can be more practical when levels of trust between the regulator and regulated parties are low or capabilities are weak.

Even when plans vary in their prescriptiveness regarding means, they should be clear on their objectives. A city engineer's plan to build a new sewage treatment plant to meet the needs of population growth has a specific objective, but will also require the detailed spreadsheets and workflow tools of project management. An outcome-based plan to achieve specific noise-level or air-pollution outcomes also has a very specific goal but no detail on how to achieve them.

A high-level, strategic and aspirational plan could aim to get the agreement and cooperation of various parties that have an interest in the medium-term future development of a city or region. The parties could be a mix of local and national government agencies as well as residents, private developers and other businesses. A *spatial plan* is the solution that some cities and regions use to promote transparency about what the future might look like. It reflects what the various parties have in mind given the interdependence between their individual plans and actions, the need for confidence to invest, and the risks of coordination failures. The Ministry for the Environment has described spatial planning in the following terms:

A 20–30 year strategy that sets the strategic direction for a community and which serves as the basis for the coordination of decision-making, infrastructure, services and investment. It is a means of aligning other council plans. A spatial plan provides a visual illustration of the intended future location and mix of residential, rural and business areas, along with the critical infrastructure required to service those areas and any relevant environmental constraints (for example, hazards or areas that need to be protected from development). (MfE, 2010, p. 72)

Spatial plans are a mix of high-level, strategic directions and desired outcomes, and concrete plans for key pieces of infrastructure (particularly for transport connections). In New Zealand, spatial plans do not have regulatory force (except in Auckland under the special Auckland legislation). The regulatory implications of a spatial plan will typically be picked up in a lower-level "rule book" consisting (in New Zealand) of regional, district or unitary plans under the Resource Management Act 1991 (RMA). Chapters 10 and 13 further discuss spatial plans.

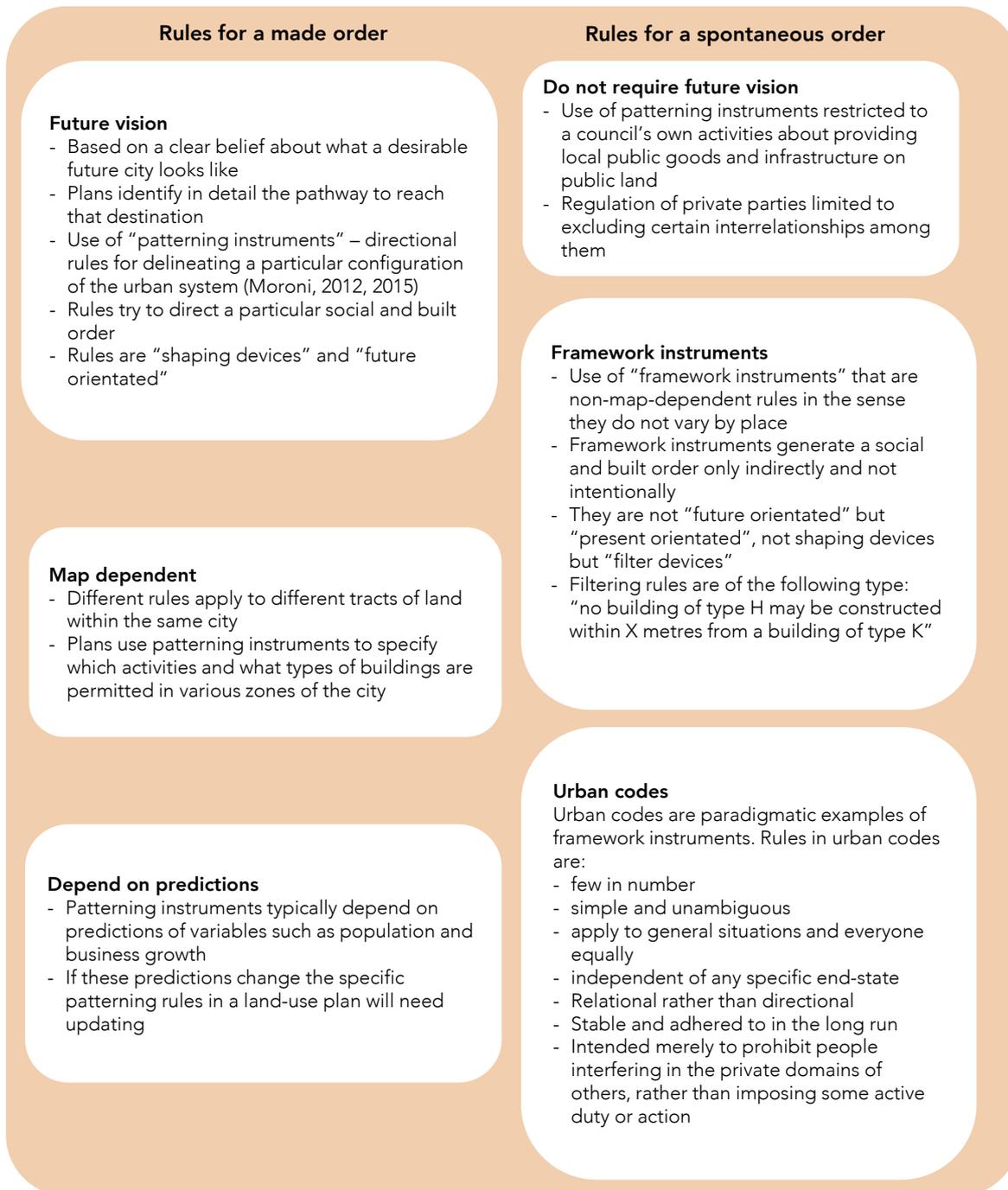
Rules for a made order versus rules for a spontaneous order

In its research and engagement meetings the Commission has been struck by two contrasting planning philosophies based on quite different assumptions about the role and mission of planners. On the one hand, “activist” planners have a vision of what a good city looks like, how it should function and, to a certain extent, how its residents should live their lives. Urban form and design, place making and city shaping are the currency of this school of planners. On the other hand, other planners and planning scholars resist being activist in this way. They view cities as complex, adaptive systems, whose evolution cannot be predicted (Chapter 2). As a result, they believe cities are more successful when planners largely allow the independent plans of individuals and businesses to take their course.

A famous example of this clash of philosophies occurred in the 1960s between the urbanist Jane Jacobs and Robert Moses, a powerful figure in the planning establishment in New York City. Jacobs was a passionate advocate for allowing people spontaneously through their lives to create a diverse city of bustling, pedestrian-friendly streets. Moses used his power to implement his vision of city refurbishment through major road, bridge, park and housing projects, often involving the destruction or isolation of poor but vibrant neighbourhoods in the old city (Paletta, 2016).

More recently, Moroni has written on this philosophical dichotomy. He distinguished between plans based on rules for a made order from plans based on rules for a spontaneous order (Figure 3.1).

Moroni does not oppose regulation as such and accepts that governments sometimes need to limit private property rights. But he argues against using patterning instruments to regulate private agents by directing them down a concrete path to a specified end-state. Patterning instruments, sometimes evident in ambitious and prescriptive urban plans, run counter to Moroni’s preference for clear limits on state powers and respect for private property rights. They also risk suppressing the diversity, adaptability and dynamism of cities (section 3.4).

Figure 3.1 Approaches to planning: rules for a made order vs rules for a spontaneous order

Top-down versus bottom-up planning

The distinction between top-down planning and bottom-up planning raises the important questions of who owns plans and what is the allocation of decision rights to make plans and act under them? These are questions about the political and social organisation of a country.

- What are the relative powers and roles of central and local government?
- Which parties have the best information to make decisions?
- Which parties will be most affected by plans and decisions (ie, where do the benefits and costs fall)?
- Where does capability exist to create, implement and administer plans?
- Should the source of funding be national, regional or local?

- Who is best held accountable for plan outcomes?
- What are the economies of scale in providing certain goods and services versus customisation to suit local preferences and conditions?
- What is the sense of ownership of plans, and buy-in to them that flows from involvement in making them, versus resentment to plans imposed from above?

Central and local governments in New Zealand are partners in planning and land use regulation. Central government – Parliament and the Executive together – are sovereign and therefore the senior partner determining the legal framework within which local authorities operate. The framework recognises the dual roles of local authorities as enablers of local democracy and providers of local public services. The purposes of local authorities, defined in legislation, are to:

- enable democratic local decision making and action by, and on behalf of, communities; and
- meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost effective for households and businesses (NZPC, 2013).

In this system, as in many other countries, the relative roles and planning responsibilities of central and local governments are governed by the *principle of subsidiarity*: Unless there are good reasons not to do so, decisions should be taken at lower levels of government close to the people affected. Reasons for taking decisions as close as possible to local communities include:

- it is more democratic;
- decisions will be based on local (and therefore usually better) information;
- decisions can be better customised to local preferences; and
- people most affected by decisions gain greater power to make those decisions, which is not only more just but also more conducive to better decisions (because they have more at stake).

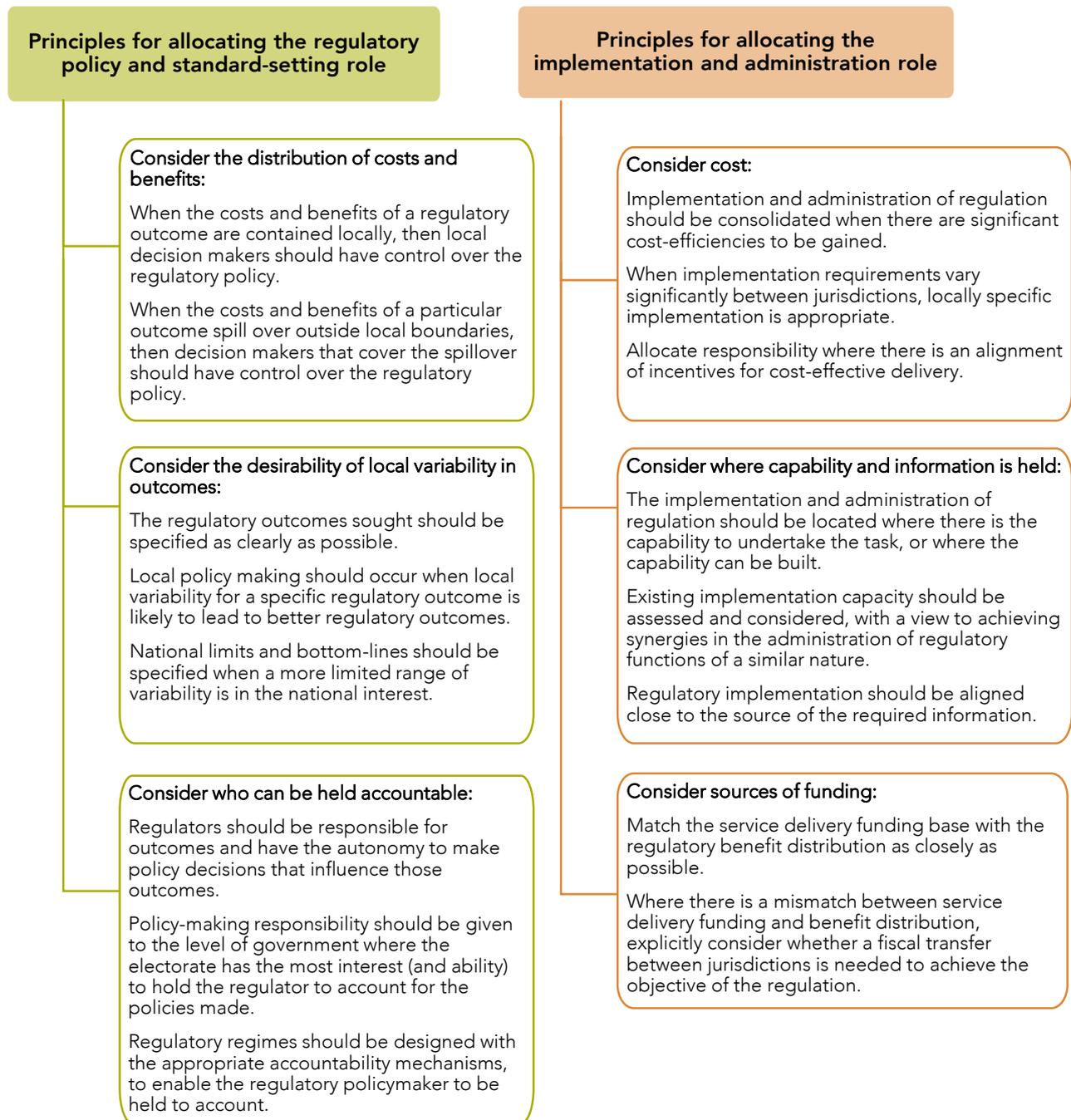
A number of economics scholars have depicted the allocation of responsibilities and decision rights between central and local governments as a trade-off between the benefits of centralisation and the benefits of decentralisation. The benefits of centralisation include:

- dealing with externalities or spillovers that extend beyond local boundaries;
- achieving scale economies in the provision of public goods such as national defence and public health; and
- providing an integrated regulatory environment and equal access to standard levels of service;

The benefits of decentralisation, as noted above, include:

- local autonomy; and
- the ability to tailor public services and policies to the specific needs, characteristics and preferences of local communities (Oates, 1999; Besley & Coate, 2003; Alesina & Spolaore, 2003).

The Commission's inquiry into better local regulation identified a framework for allocating regulatory roles between central and local government (Figure 3.2).

Figure 3.2 Summary of principles for allocating regulatory roles

Source: NZPC, 2013.

Translated to plans, central governments will usually reserve powers to plan or impose limitations on lower levels of planning when national interests are at stake, or when economies of scale dictate it would be costly to risk fragmentation flowing from many different local choices. In contrast, it makes sense to delegate planning powers and responsibilities to lower levels of government:

- on matters that affect those areas and communities the most;
- on matters that do not significantly affect people outside those areas and communities; and
- where local preferences vary across areas and communities.

For a successful partnership between central and local government within the overall planning system, the senior partner needs to be careful to act reasonably and within a well-articulated and stable framework. As Wellman and Spiller (2012, p. 111) describe for state and local governments in Australia:

If State interests are not reasonably well articulated in advance (in principle if not in detail), and if State Governments are seen to intervene on a whim, either in the introduction of overriding policies or by calling in particular development applications, local governments and the community generally can lose confidence in the integrity of the planning system.

And facilitating the involvement of the community at the grass-roots level is also important:

Genuine public involvement in the plan making process is critical to an efficient and effective planning system. Where there is substantial public involvement, better outcomes for both local communities and the planning system can be secured through a mutual understanding of needs, interests, and priorities. Community involvement is often particularly important to reinforce local communities' sense of ownership of, and identification with, their local area. (Wellman & Spiller, 2012, p. 112)

Interest in community involvement in local resource management led Elinor and Vincent Ostrom to research the governance of water provision in US cities (Ostrom, 2007; McGinnis & Ostrom, 2012). They found that the most effective and resilient arrangements seem to occur under overlapping and multi-level layers of governance, with both government and non-government players involved in taking collective action to manage water as a "common-pool resource".

The use of limited urban space could, like the use of water sources, be regarded as a "common-pool resource" – a good whose use by one person subtracts from the use available to others, but which is difficult to exclude potential beneficiaries from enjoying (Ostrom, 2010). Such research is relevant to the governance of communities and cities.

Elinor and Vincent Ostrom analysed the conditions that help collective-action institutions succeed in dealing with common-pool resource use (Ostrom, 2010; McGinnis & Ostrom, 2012). To isolate these, they focused on the rules (implicit or explicit) and design principles "that characterized the long sustained regimes as contrasted to the cases of failure" (Ostrom, 2010, p. 13). They found that local, non-government governance arrangements for taking collective actions were often (but not invariably) more successful in improving outcomes than top-down approaches. In addition, top-down regulation could, at times, crowd out "voluntary behavior to cooperate" (p. 16).

Elinor Ostrom (2010) also emphasised that a diverse range of institutions can work in practice, so long as they are "well matched to local settings and involve the active participation of local users" (p. 24):

We need to ask how diverse polycentric institutions help or hinder the innovativeness, learning, adapting, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes at multiple scales... (p. 25)

While the Ostroms looked behind the veil of formal to informal institutions and practices (where things happen at the coalface), it is also instructive to examine formal planning laws, how they relate to each other, and how well they work from the perspective of regulators and customers.

Levels of plans and links between them

Most countries and most land-use planning systems have many plans and pieces of legislation that mandate and govern those plans. The terms of reference for this inquiry explicitly request the Commission to examine the relationships between different planning laws, whether lack of integration across them and the plans they generate is a problem and, if so, how this could be fixed.

New Zealand's RMA mandates a three-tier hierarchy of planning documents relating to the sustainable use, development and protection of natural and physical resources nationally, regionally and locally. This hierarchy is detailed in Chapter 5. Briefly, under the RMA each regional council has to prepare a regional policy statement and a regional coastal plan. It can voluntarily also prepare regional plans.

Each district and city council must prepare a district plan setting out its objectives, policies and rules governing land use.

Each plan must give effect to those further up the hierarchy. The RMA also authorises the central government (represented by the Minister for the Environment) to set out and issue *national policy*

statements and *national environmental standards*²⁰ which also must be given effect to by the plans lower in the hierarchy. The point to note is that a whole system of plans exists with the overall objective to manage the physical and natural environment, and regulate land use, that is consistent and ordered across levels of government. This minimises the risk of conflict and confusion. The authors of the RMA and other commentators have noted this integration as one of the RMA's most notable achievements (G. Palmer, 2013a).

District and city councils sit at the base of this neat, integrated hierarchy and actually possess considerable power and discretion to manage their local natural and physical resources because the system is relatively decentralised. Yet local councils do not find their planning process neat and orderly. As set out in Chapter 5, this is because they are also caught up in planning processes and requirements under the LGA and the Land Transport Management Act 2013, together with elements of the Building Act, Reserves Act and Conservation Act. Many provisions, timelines, requirements for consultation, and other aspects included in these statutes are not particularly well integrated with the RMA system.

Several submitters – with councils prominent among them – noted another difficulty. It is increasingly common for various players with an interest in land development and the associated infrastructure needs of an area to work together to produce a spatial plan. This is because infrastructure needs may encompass several local-authority jurisdictions. While this plan is potentially a valuable signalling and integrating device, it may well have little or no status under any of the statutory regimes. This means that opportunities to reduce duplication and inconsistencies, and achieve important planning goals, are not realised.

The integration of plans and processes needs to be looked at from the point of view not only of plan administrators but also the customers – the people or businesses who require authorisation for a land use development. A customer-unfriendly planning system would force applicants to “do the rounds” of multiple agencies and go through their separate yet often similar processes.²¹ The development can only proceed when all agencies have “ticked off” and consented to each stage. Empirical research demonstrates that these sorts of processes incur costs in time and project delays from dealing with large but fragmented organisations. Internally, teams within such organisations can hold different viewpoints and coordinate poorly (Grimes & Mitchell, 2015).

In a streamlined and integrated planning system, the customer should experience a single application process. While behind the scenes, several agencies may be involved, the applicant has an efficient “one-stop shop” experience. This may sound simple and sensible, but achieving it involves complex inter-agency cooperation and systems – both horizontally and vertically - that elude many government bureaucracies.

²⁰ Technically, the head of state – the Governor General – issues national policy statements and national environmental standards. The Minister for the Environment makes the New Zealand Coastal Policy Statement.

²¹ This sort of complexity and frustrating experience can and does exist elsewhere – even within the “integrated” RMA system.

F3.2

Land-use plans and planning systems vary on dimensions such as:

- whether plans focus more on outcomes than on prescriptive, detailed rules;
- whether land-use regulations use directive, place-specific rules; or rules that simply prohibit types of effects on other property owners;
- the distribution of responsibilities and powers between the central government and local communities;
- the balance struck between local and national interests; and
- the extent that plans are integrated (vertically and horizontally).

3.4 Planning for cities as complex, adaptive systems

Chapter 2, describes how cities are composed of a large number of diverse and connected elements that adapt and rearrange themselves in unpredictable ways over time. The complexity, diversity and adaptability of cities are sources of strength, not least the ability of cities to seed creativity and innovation. At the same time, complexity and unpredictability raise serious challenges for urban planning. This section examines which types of planning, if any, are appropriate for cities as complex, adaptive systems.

Complex systems and prediction

Formal analytic models of complex systems are not tractable because of a combination of adaptive behaviour that responds to system-level features as they emerge, non-linear relationships between the variables, and the difficulties in fully specifying initial conditions. Adaptive behaviour means that system parameters are not stable (Moroni, 2012). As a result, deductive approaches do not work well as a way of understanding complex systems.²²

Researchers in complexity have shown that models in which agents interact using simple rules can generate complex patterns (Colander & Kupers, 2014, p. 127). The patterns indicate the sorts of outcomes possible or likely as a result of particular changes; they do not predict detailed outcomes. As Moroni (2015) states: “[W]hen we are dealing with structures of essential complexity (such as social phenomena), it is not feasible to provide *explanations of detail*, but only an *explanation of the principle...*” (p. 250). Explanations of principles deal with typical kinds of events “that arise when certain general conditions are satisfied” (p. 250).

The history of Petone, Wellington from 1847 to the present illustrates the impossibility of predicting the twists and turns in the future course of a complex mix of social, economic and geographical factors (Box 3.5).

Box 3.5 The evolution of Petone

Before European settlement in New Zealand, Pito-one was the site of a large Te Ātiawa Pa. The New Zealand Company’s surveyor, Captain William Mein Smith chose the Heretaunga (Hutt) river valley for the site of its planned settlement “Britannia”, and the company’s ships began arriving in January 1840. Relations between Māori and the settlers were positive in large part due to the hospitality and mana of local chief Te Puni. The grid street plan drawn up in England was soon abandoned. In March the river flooded the settlement, and a fire and earthquake followed in May. Britannia was largely abandoned by the end of 1840. Most settlers had moved to Pipitea/Thorndon, which Colonel William Wakefield had long favoured for the settlement.

²² As an observation, the RMA is arguably based on a deductive model in which councils identify objectives, consider options to achieve them and apply policies and rules.

By 1847 probably no more than 20 settler households were living in Britannia, and it remained almost wholly deserted until 1875. The land was poor quality for grazing, and the Hutt River flooded at least once a year. Pito-one Pa, with a population of 136, remained the largest and best-fortified pa in the Wellington area. In 1855 a major earthquake lifted the area, draining a portion of the lower valley.

In 1874 the train line between Wellington and Wairarapa opened. A large railway workshop was built in Petone. That same year James Gear, a butcher, began to buy and lease land around the Petone foreshore to establish a slaughterhouse. The land was attractive because it was cheap and flat, near to the harbour and railway line, and there was only a small local population to be offended by the waste and smell of the facility. In 1883 the Gear meat company built a 380m long wharf, which was demolished in 1901. The Petone Woollen Mill was established at the base of Korokoro hill in 1886. It operated on the site until 1968.

Petone grew rapidly, and was gazetted as a town in 1881. A series of factories and breweries were built. Schools, churches, newspapers, sports and social clubs were established in the 1880s, many of which survive today.

Edwin Jackson, a local farmer, sold portions of his land piecemeal with unsurveyed rights-of-way. The result was that by 1885 locals were concerned that Jackson Street was an embarrassing series of dog-legs, of varying width along its length. Jackson Street was extended when the borough solicitor bought the land on behalf of the Crown in 1888. As blood and offal went straight into the harbour, attracting sharks, Jackson built a swimming pool near the waterfront. Plans for a gasworks were abandoned in 1897, with the council buying the land to create a recreation ground. But the council declined to buy Jackson's pool, and a ratepayers poll in 1901 also decided against a purchase. The pool closed.

By the early 1900s Jackson Street was the hub of Hutt Valley commercial activity, with notable stores such as McKenzies, McDuffs and Liebezeits. The Grand Theatre opened in 1916. But Jackson Street's haphazard alignment was still a problem and between 1927 and 1938 the council widened and straightened Jackson Street, with buildings shifted back on rails or demolished. Meanwhile the Pito-one Pā had been abandoned. The associated cemetery in Te Puni Street is still there.

The Government built New Zealand's earliest state houses in Patrick Street from 1906, although it sold them in the 1930s. Council chambers were built in 1903 and a town clock erected in 1913. A new wharf was constructed in 1907. Industrialisation continued: the Lever Brothers factory opened in 1919, the Sunlight Factory in 1924, and a number of car plants in the 1920s and 1930s. Three of every four cars in New Zealand were said to come from Petone until the 1950s. The town produced many successful sportspeople and the Petone Rugby Club numerous All Blacks:

Petone, by local standards, was densely populated and heavily industrialised, ugly, grimy, lively and close-knit, more like an English industrial town than a New Zealand one. (Butterworth, 1988, p. 13)

But from the 1950s the area began to decline, as some industries closed and residents moved to the new suburbs of the Hutt Valley. A number of state housing flats were built from the 1950s to the 1970s on the eastern part of Jackson Street. The Borough Council designated an area north of Jackson Street as an industrial zone, and

[t]he result of this was that no one was allowed to improve their properties, which meant many fell into disrepair and were sold off to developers. It was impossible for young Petone people to get a loan to buy property in their hometown so many left for Wainuiomata or Upper Hutt. The town became a place of rented properties owned by absentee landlords. By the mid-seventies and eighties Jackson Street was pretty much derelict. (Johnston, 2015, pp. 93–95)

The Council proposed building a ring road around central Jackson Street, to create a mall in the centre of town at a cost of \$10 million and the demolition of 80 houses. But significant local opposition stopped the project, and many councillors were voted out.

Petone wharf took its last cargo in 1976. The Gear meatworks closed in 1981. Long-established stores closed and the council chambers were demolished in 1986. Deregulation of the New Zealand economy resulted in many of the remaining factories closing. Developers who were demolishing and rebuilding in Wellington regarded Jackson Street as a place of little commercial potential, so its old buildings were left untended. In turn, “this stagnation ironically preserved the historic CBD as a desirable social and economic centre” (Johnston, 2015, p. 177). Petone recovered in the 1990s as industrial land uses gave way to big box retailing in the west of Jackson Street. Petone again became a retail destination, and this benefited the smaller shops along Jackson Street. A burgeoning bar, café, gallery, and retail sector followed. In 1996 the Historic Places Trust recognised Jackson Street as an Historic Area, but this had no regulatory force. A number of battles between local heritage groups, developers and the council took place over the next decade.

The Wellington Tenths Trust was established in 1977 to represent the interests of Te Ātiawa and other Taranaki tribes as beneficiaries of land reserves set up at the time of the New Zealand Company’s purchases. The Trust now has offices in Hikoikoi on the Petone waterfront. Among other activities, Ngā Tekau Health Services provides alcohol and drug services from the site.

The “character homes” of Petone and its proximity and transport links to Wellington made Petone a desirable residential neighbourhood. A number of apartments were built or converted, consistent with council design guidelines. In 2014 it was announced that many of the state housing flats on the eastern part of Jackson Street were to be demolished, but the Patrick Street cottages survive and are protected. The Grand Theatre, which closed in 1964, was used as an electrical shop, furniture business, and in the 1990s was converted to an apartment complex with boutique shops below. Today, the site of the Gear meatworks is a supermarket, and the Petone wharf is a popular fishing location, with fewer sharks than in the past. Te Ātiawa again launch their waka ama (outrigger canoes) from Hikoikoi – now as part of a national sport. A weekly weaving group (Te Roopu Raranga o Manaia) make a wide range of designs from harakeke (flax) at Hikoikoi. The weavers source their own flax, which is abundant in the region.

Source: Butterworth, 1988; Johnston, 1999, 2009, 2015; Love, 2015; MoH, 2016a; Wellington Tenths Trust, 2015; Te Roopu Raranga o Manaia, 2016.

A wide range of factors shaped Petone, including:

- its geography, and natural forces;
- the ongoing commercial, cultural and social interaction between Māori and later settlers;
- infrastructure investment;
- planning action;
- benign neglect;
- private entrepreneurship;
- wider economic conditions; and
- community action.

Together such influences produce path dependence in how urban areas evolve, yet the significant changes are not foreseeable.

The inherent complexity of urban areas and the diverse factors that shape them are central to understanding the role of planning and land use regulation in restricting or enabling those influences on an urban area. Batty and Marshall (2012) and, more broadly, Colander and Kupers (2014, p. 154) called for an eclectic, multi-disciplinary approach to understanding such systems, based on “educated common sense”.

The implications of complexity for plans and planning

Complexity has significant implications for the practice of planning. In particular, the difficulty with predicting the detailed effects of interventions raises questions about the purpose and scope of planning, and what approaches achieve the best outcomes:

The idea of the planned city as a knowable utopia is a chimera. Nevertheless, we continue to try to plan in the belief that the world will be a better place if we intervene to identify and solve issues that are widely regarded as problematic. But this must be tempered with an awareness of the limitations of planning, not least through an awareness of the evolutionary nature of urban change. (Batty & Marshall, 2012, p. 44)

The types of planning and plans that define and seek a future end-state are at the most risk of tripping over the reality of urban complexity and its unpredictability. Indeed, trying to direct land use, building design and infrastructure networks along a specific, detailed path to a destination defined as desirable and optimal is likely to do harm. In particular, harm is likely from suppressing the adaptive and diverse character of cities as well as from the risks of an over-enthusiastic use of coercive regulatory power.

The types of planning most likely to be useful in the face of complexity and unpredictability are those that do not overreach. These types recognise that government and planning are themselves elements among the many others that make up the dynamic, evolving environment of a city that itself sits within a broader natural ecosystem.

Two broad approaches to planning in complex urban systems

While urban theorists agree that complexity poses a problem for planning, they split into two broad approaches in response.

A few simple, universal rules to guide city development

The first approach is typified by Moroni (2015) (section 3.3). This approach proposes that the government sets a few simple, universal, spatial rules to regulate city land use and guide urban agents who then, within the rules, are free to realise their own plans as they think best. It leads Moroni (2015) to prefer plans using “urban codes” rather than zoning:

The urban code is thus concerned solely with the impersonal and impartial framework of social activities, not with their concrete trajectory. It accommodates the unforeseen, giving ample space to the city’s adaptive and self-organizing capacities, to its emerging features and potentialities.

.... The recognition of complexity in a radical way therefore seems to suggest a shift from patterning-instruments used as whole-coordinating devices – such as ‘urban plans’ centred on some form of zoning and differentiated land-use regulations – to framework-instruments used as filter devices – and, in particular, to what I call ‘urban codes’ based on uniform and impartial rules of conduct. (pp. 258–59)

Yet one aspect of Moroni’s approach – the uniformity and universality of the rules across entire cities – may be too extreme. For example, it might be efficient to have different rules for high-density urban areas in the CBD than in less-dense urban areas further out.

Moroni (2015) explicitly argued against a “participative, communicative, collaborative process” as a way to solve the problem of planning in complex systems:

[I]f explanations of detail and specific predictions are intrinsically impossible in the case of a complex system like a city, any participative, communicative, collaborative process – no matter how extensive, transparent and shared it may be – cannot solve the root problem. (p. 260)

Yet a second broad approach to the problem of planning in complex systems is indeed to use a participative, collaborative, iterative approach to engage urban actors in the development of a city.

A participative, collaborative approach to city development

A participative, collaborative approach to city development would engage a diversity of urban actors – private and public, business and residential, property owners and non-property owners – in the evolutionary development of a city. Planning is essentially provisional and adjusts, through collective action, to emerging city form and behaviour.

This approach recognises that no one actor (including government) can control system outcomes. Because actors together shape outcomes, they need to develop a shared understanding of, and commitment to, the planning objectives and the trade-offs across those objectives. The system needs feedback loops so that, through shared understanding of what is happening, actors can adjust plans as the system evolves.

Recognising that actors within the system play an important part in shaping outcomes means that planners cannot rely on general and broad approaches alone. They will often need to look at particular circumstances and engage with actors in a fine-grained way to find the best (or even just feasible) solutions. Colander and Kupers (2014) describe how this worked for the French post office in designing postal routes (Box 3.6). A collaborative, participative approach to planning might well follow an analogous process.

Box 3.6 **Designing new postal routes – the French experience**

The French post office engaged Icosystem (a data analytics company specialising in complex systems) to help design postal routes for its tens of thousands of mail deliverers. Designers have standard techniques to optimise the routing if the mail deliverers have no relevant information in addition to that held by the designers, and the goal is solely efficiency. “Unfortunately for the standard techniques, neither assumption holds” (Colander & Kupers, 2014, p. 210).

To overcome this problem, Icosystem used a computer algorithm to design an initial set of routes, based on minimising the time spent delivering mail. Each mail deliverer was asked to rate their preferences across an initial set, and these, in turn, were analysed by another algorithm to produce a new set of routes. The algorithm worked by recombining “successful” bits of a solution and dropping less successful bits. The new routes deviated from the efficiency optimum, but took account of the local knowledge and preferences of each mail deliverer. The process was repeated several times, to produce the final routes:

The result is that this process generated an evolving set of routes that were optimized not from a classic cost efficiency perspective, but from a perspective that reflected the desires of the individual postal workers, as well as the interaction between individual and collective choice. (p. 211)

Colander and Kuper point out that

optimality in a complex environment requires bottom-up feedback into the design of the system to use the local information available only to the agents on the ground. Any attempt to collect that will fail since the preferences of the individual postal workers are not fixed and are affected by the relative routings as well. (p. 212)

De Roo & Rauws (2012) also emphasised the importance of accounting for local circumstances in planning in complex spatial systems:

[A]rea-specific characteristics and local stakeholders have been increasingly integrated in planning processes... Here we see the increasing need for an open planning process in which actors work together to reach consensus on an area-oriented strategy, and share responsibility for the system. (p. 209)

They identified a spectrum of complexity that spatial planning faces. At the more complex end of the spectrum (where the outcomes of interventions are uncertain) “values and opinion play an important role and ... making agreements is an important part of constructive planning action” (p. 211).

Yet participation and collaboration are not a simple panacea for solving urban planning problems. Collective action institutions need careful design to succeed in overcoming entrenched differences in values and inherent conflicts of interest.

For instance, urban planning has many examples of diffuse costs and concentrated benefits, or concentrated costs and diffuse benefits. Parties with diffuse costs or benefits have lower incentives to be involved than those with concentrated costs and benefits. Some people with an interest in effective planning in a particular

urban area – such as potential residents kept out by price barriers – are much less likely to be represented in local decision making (NZPC, 2015a; Chapter 8). Dealing with these issues requires leadership and vision, as well as well-defined performance objectives relating to such things as the availability of land for development.

According to Colander and Kupers (2014), government has an important role in building consensus in policy and planning for a complex system:

In the complexity frame engaging widely is not only logical but also essential. [This involves] a continuous exploration of evolving goals and the means to achieve those goals. (p. 254)

It also involves

careful and creative consensus building, with only a general specification of the goals, lest the discussions get bogged down in frozen polarization. (p. 255)

Colander and Kupers argued that defining the role of government (in policy and planning) must start with perceiving government as just one of the many adaptive/evolving elements in the complex system:

Government is simply an institution built by people to help solve collective choice problems. If current government structures are not reflecting people's will as well as they should, then they will evolve and become better able to do that. (p. 179)

It is worth noting that the participative, collaborative approach to “making agreements” in complex systems relies on a genuine devolution of some decision rights. It is very different to using consultation as a means to bolster planning decisions, where the decision rights rest largely or solely with a planning authority.

Spatial scale is relevant to thinking about the scope of collective action. For instance, Brisbane has processes that allow neighbourhoods to work through and make trade-offs about how broader city-wide decisions on densification will apply. In a similar vein, Kelly and Donegan (2015) argue for planning to start with engagement on citywide scenarios and the need to allocate responsibility for managing population growth and new housing across the city. To distribute growth fairly, each local district would have realistic housing targets as its share. Each district would then work out how it will meet its housing target. Higher tiers of government play roles in keeping districts to their targets (using a “carrot and stick” approach) and contributing needed new transport infrastructure.

Auckland has no neighbourhood-level mechanisms of this type and has struggled to build consensus on planning issues. Copenhagen has institutions and processes that support planning trade-offs between competing interest groups, both citywide and in neighbourhoods or suburbs (Guy Salmon, pers. comm. 5 April 2016).

Understanding relevant norms and values (such as those underlying NIMBYism), and how they might shift in response to the planning environment and the co-evolution of new collective-action institutions, are likely to yield important insights for developing a more effective urban planning system.

A hybrid approach to urban planning

The two approaches to urban planning – universal rules versus participative-collaborative – to deal with the uncertainties and complexities of urban systems are not mutually exclusive – but the proper ambit of each needs to be understood and agreed (NZPI, sub. 27).

A key point of this chapter is that planning has several distinct rationales. Planning as land use regulation (sometimes termed “development control”) aims to stop harmful spillover effects of land users on each other and the natural environment. The dangers of planning overreach and hubris are greatest in this sphere. For this reason Moroni (2015) advocates limiting regulatory planning to simple, universal, non-place-dependent rules that are independent of place. Such rules instead define the types of external effects that land users must avoid everywhere (Figure 3.1; section 3.3). Beyond that, each land user acts autonomously, responding as they see fit to the many other complex elements in the city environment.

The other main rationales of planning are two types of collective decision problems that sit in the public domain:

- planning (and funding, building and managing) widely used infrastructure, such as transport and water; and
- planning (and funding, building and managing) local public goods, such as parks, foreshores and street amenities.

In these cases, making plans does require conceiving outcomes for the location of urban activity, land-use densities and types of use. Detailed planning over quite long time horizons – perhaps 30 to 50 years in the case of large transport investments – is likely to be needed. Moroni (2015) readily concedes this important point:

This does not mean that patterning-instruments (such as land-use plans) should be discarded in their entirety, rather, that they should only be used to control circumscribed public sector activity, and the general working of the city and the activities of the private urban actors ... Land-use plans may be used only to constrain the public parties to creating infrastructure (e.g. roads) and services (e.g. school buildings) on public soil with public resources.

In short, I think that local governments must *regulate* the actions for the private actors (allowing landowners, developers and so on to make free use of their lands and buildings within a framework of relational rules that apply equally to everyone, and as long as such use does not create negative externalities), and *plan* their own actions (trying to coordinate the use of public resources at their disposal in a responsible and efficient manner, to guarantee infrastructures and services). (p. 260)

A participative, collaborative approach may well be best for long-lived infrastructure, local public goods and other developments that have large effects on multiple parties. Here the optimal timing of infrastructure development and the option value of waiting are important considerations. Yet much of the planning system could rely on simple, common-sense rules guiding the actions of private parties.

Marshall (2012) also argued for such a mixed system:

[A] system of planning that involves not only design (master-planning) but coding and development control (involving increments of generation and selective feedback) ... more like evolution than design. (p. 192)

Under a rules-based approach of the type advocated by Moroni (2015), the issue of who would determine the few, simple and universal rules, and how, would arise. Moroni suggests introducing or changing these rules “only through some kind of super-majority” (p. 258). Yet such rules can also arise through negotiation during planning processes – though it is likely that the rules that emerge reflect culturally based norms and values. Participative, collaborative processes might assist in identifying a minimum effective set of rules. However, careful design of processes would be needed to lean against any tendency towards a very large rather than modest number of rules.

F3.3

Cities present a challenge for urban planning, given that it is not possible to predict or control in a fine-grained manner their development paths. An overly directive approach to regulating land use in cities risks suppressing the diversity, creativity and entrepreneurship that successful cities display.

One response to the complex, adaptive nature of cities, is for planners to use a relatively few, simple rules that prohibit certain types of harmful spillover effects. Planners would otherwise leave households and businesses free to develop private land as they wish.

Another logical response is a collaborative, participative approach to city development in which local communities, within envelopes set by higher levels of government, work out their own provisional and adaptive solutions to emergent opportunities and threats that arise as cities develop.

Hybrids of these approaches are possible and may be optimal.

3.5 Conclusion

The three main rationales for urban planning are regulating negative spillovers from the use of land by people and businesses; providing for local public goods; and providing for infrastructure. All three planning functions interact with property rights and can create tensions and controversies. The three purposes of planning are closely linked, and need to be considered together. Yet the types of planning process that best suit each of the purposes differ. Planning for infrastructure and local public goods likely requires a view about outcomes for the location of urban activity, likely land use-densities and types of use. Particularly for trunk infrastructure, plans need to provide for a time horizon of 30 to 50 years (Chapter 10).

Decisions on regulating spillovers from land use are particularly likely to be contested. On the one hand, local groups may use the design of regulation to pursue their interests; on the other hand, people and firms may challenge regulatory decisions that restrict their ability to use their land as they please (Chapter 8).

The dangers of planning overreach are greatest in regulating spillovers. There is a risk that overly intrusive and restrictive planning will sap the dynamism of cities that are continually evolving in complex and unpredictable ways. As a result, some theorists propose restricting the regulation of spillovers to a relatively few rules that prohibit types of effects on the environment and on other property owners. These rules would not be place specific.

Other theorists propose a participative approach to planning, that helps urban actors to develop a shared understanding of, and commitment to, the planning objectives and the trade-offs across objectives. Plans would be updated as the form and function of the city evolves. A participative approach may well be best for long-lived infrastructure, local public goods and other developments that have large effects on multiple parties. The right combination of approaches will depend in part on history; and the development of institutions and processes that help address conflicts of interests and values.

Another important issue is the relative interests and responsibilities of central and local governments and how they interact through the urban planning system. Central governments may reserve powers to plan or place limitations on lower levels of planning when national interests are at stake, or to take advantage of economies of scale (Chapter 8; Chapter 13). Yet in most cases local governments are in a better position to take account of local preferences and circumstances, especially where the effects of planning are also local.