

PLAN IMPLEMENTATION AND MEDIUM DENSITY HOUSING OUTCOMES:
MEASURING THE EFFECT OF WELLINGTON CITY DISTRICT PLAN CHANGE 56

BY

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ABSTRACT

The Wellington City District Plan, operative since the year 2000, set goals for housing intensification. Residential development is encouraged within the existing footprint of the urban area of Wellington City. Intensification means housing development must incorporate a greater mix of housing typologies denser than the currently predominant low density single detached dwellings. To deliver intensification, planning in Wellington aims to incorporate medium density housing typologies that result in more dwellings while using less land.

In 2007 *Plan Change 56: Managing the Quality of Infill Housing* was introduced. The plan change responded to concerns about the quality of housing outcomes being delivered by intensification. The implementation framework was amended through changing and adding a number of policies and rules and the *Multiunit Developments Design Guide* was replaced with the *Residential Design Guide*. The Plan Change kept policies for intensification, while policies controlling quality of medium density housing were amended.

This research measured the effect of Plan Change 56 on the quality of medium density housing outcomes. Success in planning was found to be defined by the way plan implementation contributes to built outcomes meeting a plan's goals and objectives. To measure outcomes, a method of assessing case studies was applied based on a range of prior New Zealand research.

The Ministry for the Environment's *Medium-density Housing Case Study Assessment Methodology* was used to assess and compare Wellington case studies of medium density housing from the periods before and after Plan Change 56. The selected case studies give evidence that Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes.

The key finding is that the treatment of open space is significant in defining the quality of medium density housing outcomes. Plan Change 56 made a number of amendments to the District Plan in terms of the way open space is treated around dwellings. Despite this, it was the most significant reason for post-Plan change case studies achieving low quality outcomes. Detailed comparison showed that changes to the District Plan rules for open space did not cause the quality of outcomes to improve.

The application of the *Residential Design Guide* was compared to the superseded *Multi Unit Developments Design Guide*. The most significant amendments by Plan Change 56 related to guidelines for the design of building along street frontages in terms of volumes, orientation, and façade treatments. The case study results showed there was little difference in the way each design guide was used to assess Resource Consent applications.

The results conclusively show that Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes in Wellington.

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Joseph Sturm, 2nd February 2014

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1. INTRODUCTION

Housing intensification is a key planning strategy in Wellington, New Zealand. The *Wellington City District Plan* (referred to in this thesis as *the district plan*) aims to contain the majority of future housing development within the existing footprint of the urban area. As part of intensification of the urban area, development of *medium density housing* typologies in Wellington has increased since the 1990s. Medium density housing predicted to be a significant part of future housing development (CityScope Consultants, 2011; Wellington City Council, 2006, 2007a). Medium density housing is defined as housing development of four or more dwellings at net density of greater than 30 dwellings per hectare, and between two and four stories in height. Typical typologies are single detached houses on lots of less than 350 square metres, semi-detached houses, terraced housing, and low-rise apartments (Ministry for the Environment 2012; Turner et al 2004).

At the same as time encouraging intensification, the goals of the District Plan seek to maintain a minimum standard of 'amenity', and to retain the existing 'character' of residential areas (Wellington City Council, 2007b). This creates significant tension with intensification goals (McIntosh & Gray, 2011). Concerns have been raised over the quality of outcomes of the intensified housing since the District Plan was made operative in 2000. As a result the Wellington City Council undertook a review of infill development in 2006 (Wellington City Council, 2007a). In 2007 *Plan Change 56: Infill Housing Review* (referred to in this thesis as *the plan change*) was passed, which amended the District Plan with the aim to better manage the implementation of housing intensification (including medium density housing). Plan Change 56 was made operative in 2009 (Wellington City Council, 2009). However there has been criticism of Plan Change 56. Some argue that the implementation of the District Plan means that the goals for housing intensification cannot be met, and that the quality of outcomes is being compromised (McIntosh & Gray, 2011; Wellington City Council, 2007b, 2013b).

1.1 CONTEXT OF THE STUDY

The following section briefly introduces the context of this research. Wellington City will be defined as a territorial unit which serves as the setting for this research. The New Zealand planning situation, and its relationship to the Wellington City District Plan will be introduced. This creates a basis from which the aims of this research will be established.

WELLINGTON CITY

Wellington is a small city at the southern tip of New Zealand's North Island. Planning for land-use in Wellington is the responsibility of the Wellington City Council (WCC) which has jurisdiction over the area of Wellington City (shown in Figure 1) as the 'Territorial Authority' under the *Local Government Act*. This includes the city centre focused on Wellington Harbour, suburbs to the south, and the eastern suburbs of the Miramar Peninsular. To the west it stretches to the suburb of Karori, with rural land beyond. To the north it extends toward the suburb of Johnsonville, and concludes at Tawa, where it adjoins Porirua City. To its northwest lies Hutt City. Wellington City has a population of 202,200 as of 2013 estimates (Statistics New Zealand, 2013).

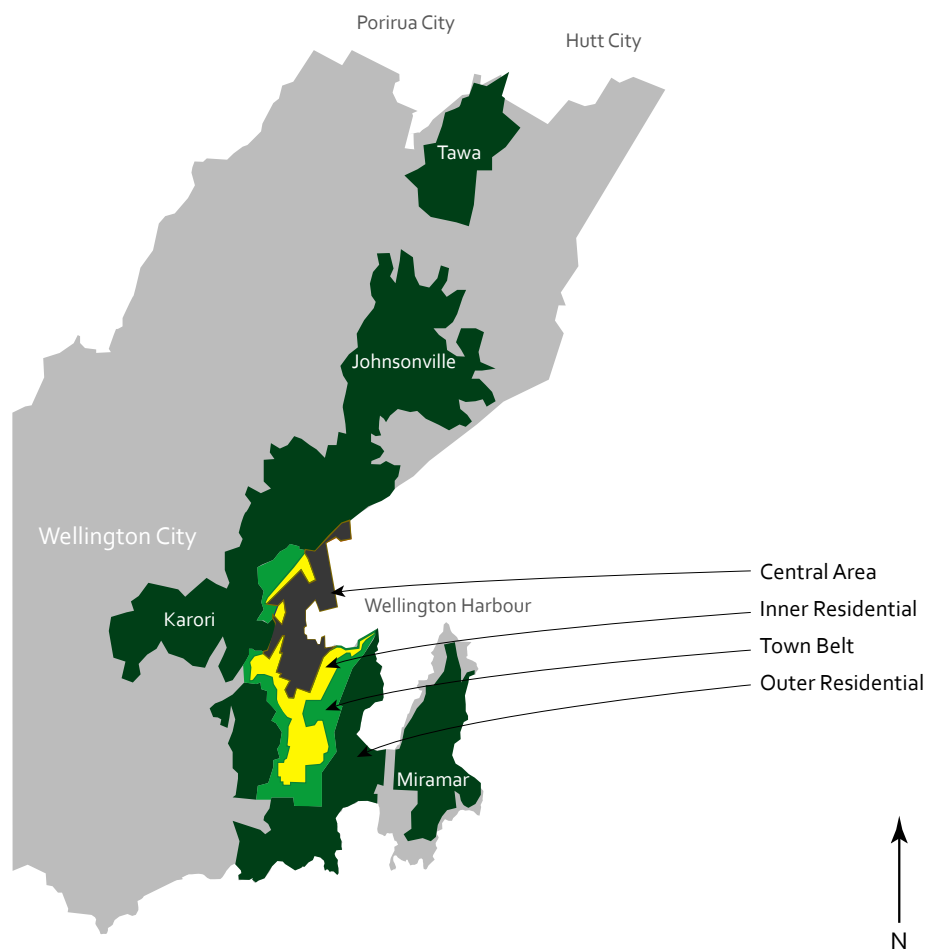


Figure 1: Map of Wellington City. The inner suburbs are enclosed by the Town Belt with the outer suburbs beyond. Author's image based on **Wellington City Council District Plan Volume 3**.

The city is characterised by steep topography, with little flat land. The majority of the population resides in the urban area which is comprised of the city centre, inner suburbs and outer suburbs. The city centre, located in the *Central Area* adjacent to the Wellington Harbour is surrounded an inner ring of suburbs developed in the 19th and early 20th century and referred to as the *Inner Residential Zone* by the District Plan. The inner suburbs are enclosed by the Wellington Town Belt, a green belt on the hills surrounding the central city. Beyond this, the outer suburbs of the district plan's *Outer Residential Zone* are the result of development over the 20th century and former outlying towns absorbed into the urban area (Wellington City Council, 2007d)

BACKGROUND ON PLANNING THEORY

In New Zealand the *Resource Management Act* (The RMA) determines in statute that land-use planning falls under the responsibility of Territorial Authorities. Under the RMA the Wellington City Council is required to produce a district plan. One function of a district plan is to govern the development of land for residential purposes. This directly governs the outcomes of housing development.

A district plan categorises land-use activities. Other than those in the *Permitted Activity* category, all land-use activities require a *Resource Consent*. A Resource Consent is planning permission granted by the Territorial Authority, and approval is subject to meeting the conditions listed by a district plan.

The formulation of planning documents included in a district plan is completed in response to public consultation. The formulation process is designed to address the issues faced in the area at the time, and to manage development incorporating anticipation of future issues (*Resource Management Act 1991*; Wellington City Council, 2000).

Planning documents are arranged in a hierarchy from goals to objectives to a means of implementation. This builds an increasing level of detail that ultimately provides a means of assessing proposed housing developments and controlling development outcomes (Carmona & Sieh, 2004; Hopkins, 2001). For medium density housing, outcomes are the dwellings built and associated site development such as vehicle parking and landscaping.

A key contemporary planning principle evident in Wellington is to increase the density of urban areas. This was developed in response to widespread concerns about the effects of urban sprawl, and a desire to reduce negative effects of development of land areas surrounding cities. In addition, the benefits of density are widely regarded to be based on improving accessibility by increasing the range of facilities, services and transport options in close proximity to residential areas (Campoli, 2007; Gillham, 2002; Hopkins, 2001; Lozano, 1990; Punter, 1999).

Beyond increasing density, planning goals now also incorporate considerations of liveability and amenity which are essentially factors relating to the quality of life of housing and the surrounding neighbourhood (Haarhoff et al., 2012).

THE 'WELLINGTON CITY DISTRICT PLAN'

The Wellington City District Plan is steeped in the language of the RMA, with frequent references to the minimisation of 'adverse effects' and preservation of 'amenity'. For housing, the plan refers to amenity in terms of preserving access to outdoor space and sunlight, maintaining privacy, accessibility, and protection of the 'character' of neighbourhoods.

Implementation of the District Plan has a direct effect on medium density housing outcomes. This is through quantitative 'bulk and location' standards by the *Residential Area Rules* (also referred to in this thesis as *the rules*) which set requirements for car parking, building height, sunlight access control planes, site coverage and access to ground level open space. As part of a resource consent application, proposed medium density housing developments must be assessed according to the *Residential Design Guide* (also referred to in this thesis as *the design guide*). The design guide provides a qualitative form of assessment (Wellington City Council, 2007b).

1.2 AIM, SCOPE AND SIGNIFICANCE

The aim of this research is to investigate the effect of Plan Change 56 on the quality of medium density housing outcomes. This covers the District Plan in terms of its theoretical background, a context of calls for increased housing density, and the role of goals and objectives for quality, liveability and amenity in planning. A definition of medium density housing and a means of assessing quality within the parameters of the planning goals must be established. While planning outcomes are influenced by a diverse range of social, economic and environmental factors, the scope of this study is limited to the direct effect of the District Plan. This focuses the assessment of outcomes to consider only what the implementation of the District Plan is able to directly influence or control.

The significance of this research is that real case studies of plan implementation in Wellington are used to examine the effect on built outcomes of the specific plan implementation measures. It is important to consider the results of previous plan implementation as part of drafting and updating planning documents (Calkins, 1979; Carmona & Sieh, 2004; Hall, 2002; Hopkins, 2001; Talen, 1996b). This is to prevent what Calkins (1979) terms new plan syndrome. New plan syndrome is a situation where plans are frequently revised and replaced without learning from the results of the previous plan. The Wellington City District Plan is continually evolving, and medium density housing is predicted to have a large role in Wellington's future development. Study of outcomes to assess the success of plan implementation is an important contribution to future district plan drafting, revision and implementation. Given the nationwide focus on medium density housing with similar goals and objectives, and a common planning approach established by the RMA, the research has significance for formulation and implementation of district plans across urban areas in New Zealand.

1.3 HYPOTHESIS AND RESEARCH APPROACH

This research will identify how the implementation of the district plan affects medium density housing outcomes. Studying the effectiveness of plan implementation is best conducted through assessing outcomes with regard to the goals and objectives of the plan (Hopkins, 2001; Loh, 2012; Talen, 1996a).

The hypothesis of this research is that Plan Change 56 has not improved the quality of medium density housing outcomes.

The research approach of this thesis is to investigate case studies of built outcomes before and after the introduction of Plan Change 56. This involves identifying the goals and objectives for medium density housing outcomes under the District Plan and how they were changed by Plan Change 56. The case study assessment results will allow comparison of outcomes before and after the Plan Change. These results will be compared in terms of the changes to implementation. To guide this line of investigation, the research approach is summarised in four key research questions:

1. What is quality in planning outcomes for medium density housing?

The issue of defining quality, and related concepts of liveability and amenity will be framed by the goals and objectives of the plan with regard to a wider context of planning theory. This provides the basis for what will need to be measured to identify if implementation improved the quality of medium density housing outcomes.

2. How is planning for medium density housing implemented in Wellington?

The specific planning measures to control the development of medium density housing will be identified from the District Plan. The outcomes will be assessed in order to assess the success of these planning measures.

3. What did Plan Change 56 amend about the way the District Plan is implemented?

The research must identify what was amended, to be able to consider the relationship between changes in quality of outcomes and changes in implementation.

4. How is quality in planning outcomes measured?

This research must develop a method of assessing the quality of medium density housing outcomes to undertake the comparison in terms of the effect on quality. The research will develop a means of comparison suitable to the definitions of quality and medium density housing, and appropriate to the way the District Plan is implemented.

The summation of the questions is the ability to identify the *effect* of Plan Change 56 on outcomes. After presenting the results of this research, the discussion will identify reasons for the way implementation has affected the outcomes. Specific aspects of the implementation framework will be linked to specific case study outcomes. The way the implementation framework was applied to the case studies will be discussed through review of resource consent

documentation that was used to assess outcomes against the district plan. This links the planning documents, theory and outcomes.

The final stage of the discussion will look ahead to *Wellington City District Plan Change 72: Residential Area Review*. This plan change further amends the implementation of the District Plan for medium density housing. Drawing from the case study results, discussion will speculate on the suitability of the recently passed planning measures for improving the quality of medium density housing outcomes in Wellington.

1.4 RESEARCH OUTLINE

This thesis is arranged into six following chapters. Chapter 2 will complete a literature review of the driving pressures and theories that led planning to pursue an increase of housing density. This will be considered in conjunction with the recent increase in concern over the quality of outcomes. Medium density housing will be specifically discussed and defined in terms of building typology and qualitative and quantitative definitions. The process of developing planning documents and the hierarchical structure of the District Plan will be outlined with a brief discussion of the goals, objectives and implementation framework. The chapter will then conclude with a brief discussion of the ongoing development of the District Plan, and the process of evolution that resulted in Plan Change 56 being enacted. This will establish the required background to detail the line of investigation.

Chapter 3 will explain the methodology and methodological steps. Firstly the chapter will establish the background of assessing implementation and defining quality of planning outcomes. Addressing the planning hierarchy from goals to objectives to implementation and outcomes, this will build a basis for a methodology to assess case studies of medium density housing outcomes. The chapter will use the definition of quality, and research questions to establish a criteria for developing a case study assessment method. The chapter will then use these criteria to critique medium density housing assessment methods developed in recent New Zealand literature. This will be used to adopt a case study assessment method for testing the hypothesis of this research.

In Chapter 4 the District Plan will be discussed in greater detail through the lens of goals, objectives and implementation for medium density housing. This identifies the relevant aspects of the District Plan, and the amendments made by Plan Change 56. Next the case study selection process will be explained. The selected case studies will be described and the assessment results presented. This will use the scoring attributed by the assessment framework to compare the quality of outcomes before and after Plan Change 56. It will break down results by aligning individual assessment factors with specific implementation policies of the District Plan. Quality of outcomes before and after Plan Change 56 can then be compared with regard to policies that were changed, and those that were not. Overall this will show the effect of Plan Change 56 on the implementation of goals for medium density housing.

Chapter 5 will encompass detailed discussion of factors contributing to specific planning

outcomes. This allows exploration of the reasons for the effect of the Plan Change by exploring quality of outcomes in relation to specific rules and guidelines. Resource Consent documentation will be used to show the way these were applied to achieve specific outcomes.

Chapter 6 describes the development of the District Plan since Plan Change 56. Specifically this will cover Plan Change 72, which significantly alters the implementation framework for medium density housing. The new measures will be discussed in terms of the lessons learned from the critique of Plan Change 56 in this research. The potential impact of Plan Change 72 on the quality of future medium density housing outcomes will be considered.

Chapter 7 returns to the original research questions, and will determine within the scope of this research what effect Plan Change 56 had on the implementation of goals for medium density housing. It then reflects on the on the key findings in terms of quality of outcomes, and looks ahead to the future of plan implementation in Wellington.

2. BACKGROUND ON PLANNING: FROM SPRAWL TO INTENSIFICATION TO LIVEABILITY. MEDIUM DENSITY HOUSING, THE DISTRICT PLAN AND PLAN CHANGE 56

Plans control and influence urban development outcomes. Planning is a response to common societal issues - both local and global - which define outcomes expected by a plan. In Wellington planning exists under the influence of particular planning theories and practices with common characteristics and approaches. This chapter will describe the current Wellington planning situation with regard to the international contexts and practices in which the Wellington City District Plan was developed.

This chapter will provide a definition of *planning* to discuss the background to current practice. A background will be established from rapid urban development in the postwar period to the more recent reaction against urban sprawl. The recent shift to encouraging higher density development and the relationship of higher density to the recent inclusion of *liveability* goals in planning will be explored. This provides a context for discussing the rise of medium density housing typologies in New Zealand, their role in achieving the benefits of housing intensification, and the expectations for the quality of built outcomes. Medium density housing will be defined quantitatively and in terms of building typology. This will provide a context for the later discussion of the District Plan's goals for liveability, the relationship to the quality of medium density housing outcomes in Wellington, and the approach for plan implementation.

2.1 DEFINITION OF PLANNING

Planning is the practice of determining what is acceptable for future development in a particular administrative area such as a city. A plan is the product of planning and encompasses one or more official planning documents. The goals of a plan stem from an intent to further the social, economic and ecological wellbeing of the inhabitants of the geographic area concerned. A plan sets out the vision and framework for future development within an area for a predetermined

timescale. Plans include discussion of the issues that led to the forming of the goals that make up the vision and codifies objectives as a means to implement that vision (Hall, 2002; Hopkins, 2001; Talen, 1997).

Planning is carried out to control development at all scales – from site specific upward to street, neighbourhood, district, metropolitan, regional and national levels. It is a function of governance and managed by central, regional and local governments (Hall, 2002; Lozano, 1990; Punter, 1999). Ultimately planning governs and controls the nature of development and sets the minimum standard for outcomes (Hall, 2002; Rydin, 2011).

2.2 PLANNING THEORY AND PLANNING IN WELLINGTON

The *Resource Management Act 1991* (The RMA) is New Zealand's overarching planning statute that guides the formation of all planning documents in New Zealand. It was founded on the principle of the "sustainable management of natural and physical resources". The RMA is described as an "effects based" system. The main approach guiding implementation is to avoid "adverse environmental effects". This means land-use activities are considered in terms of what impact the outcomes will have in regard to the principles of sustainable management. When any form of land use development is proposed, it must be shown to "avoid, mitigate or remedy adverse environmental effects".

The RMA was set by central government and empowers Territorial Authorities (local government) to control land use through planning policy. Under the RMA territorial authorities have the responsibility to form district plans to assist in the role of meeting the sustainable management objectives of the Act. Each territorial authority sets out an approach to managing land-use in their jurisdiction. District plans also categorise types of land-uses, and stipulate when *Resource Consent* (planning permission) is required. District plans are the primary planning documents in New Zealand with authority over residential development. It is against a district plan's requirements that any proposed development is assessed. A district plan must explain how compliance should be demonstrated, and how it will be assessed (Berke et al., 2006; *Resource Management Act*, 1991).

Under the requirements of the RMA, the primary planning document for Wellington is entitled the *Wellington City District Plan*. It has been in effect since 30th July 2000 with some ongoing modification (Wellington City Council, 2013b). The District Plan provides a vision and strategy for sustainable development in Wellington. For residential development it seeks to "enhance the quality of the built environment", maintain the "quality of living environments" and protect open space and amenities. In addition to these social sustainability goals, an approach to residential development aiming to avoid development outside existing urban areas recognises environmental and economic sustainability aims (Wellington City Council, 2000).

DRAFTING OF PLANNING DOCUMENTS

Formulation and drafting of the District Plan and its documents follows a similar process to that followed Internationally. Firstly the local context for the development to take place is established through a number of means involving public feedback, research, and detailed study of the area. The aim is to establish the needs of the community for the environment they live in (Carmona & Sieh, 2004; Hopkins, 2001; Punter, 1999). Planners model anticipated outcomes to determine the best approach, and use the process of comparison to alternative outcomes to show the chosen plan will be the best option. The final plan states the desired future form of development. The plan should then provide a feasible means of achieving this in a coherent and consistent document (Carmona & Sieh, 2004; Hall, 2002; Punter, 1999; Talen, 1996b).

The next step when writing a plan is public notification, negotiation and feedback. This allows public input into the draft form of the final document, and ensures the initial public consultation has been correctly interpreted (Carmona and Sieh; Punter). Once finalised, the plan moves to the regulatory process. This is the implementation of the plan to control development. Formulation of the Wellington City District Plan followed this process as required by the RMA. Identification of the major issues for the plan “formed the basis for sustainable management goals” (Wellington City Council, 2000, p.12). Identifying the issues, and subsequent plan development involved targeted consultation with particular stakeholders, as well as enabling public submissions and hosting public meetings (Wellington City Council, 2000). Upon becoming operative the District Plan took effect, and moved to the implementation stage.

The District Plan has provisions for evolution and amendment, with the council terming it a ‘live document’. This is said to allow responsiveness to changing community needs and expectations, and the influence of new research and information (Wellington City Council, 2000). In effect this means the plan development process is continuously ongoing.

STRUCTURE OF PLANNING DOCUMENTS

Planning theory shows that plans are structured in a hierarchical way. The purpose is to identify the issues, and define the strategy for implementation that and how this will be translated into encouraging and controlling development outcomes. At the top of the hierarchy is a vision, with goals for future state of the urban area and provide the basis for developing all that following planning documents. Goals and Visions show an aspiration of what could be, are generalised, and arranged into broad categories or ‘areas of concern’. At the next level, objectives refine visions and goals into a greater level of detail. While goals are highly aspirational, an objective identifies a more specific aim. The direction of a specific agenda and programme of work can be set for their realisation. Objectives carry a level of detail that means they can only be set after study of the area in terms of the issues identified in the goals. Below the objectives lies the remainder of the plan to give quantitative detail and clarity on objectives and guide a programme of implementation (Hall, 2002; Hopkins, 2001; Rydin, 2011).

THE STRUCTURE OF THE WELLINGTON CITY DISTRICT PLAN

The District Plan follows this hierarchical structure. Figure 2 shows the relationships between sections of the document and associated documents; and the path to outcomes. The vision for a 'sustainable city' is the first step in the arrangement of the document. Moving to provide greater detail of the vision, the document explains *Significant Issues* facing the "sustainable management of resources" in Wellington. There are two categories: *Qualities and Values*; and *Specific Issues* which were categorised by the council as "judgements or opinions" and "tangible features" (Wellington City Council, 2000, p.13-16).

At the next level of the planning hierarchy of the District Plan are the *Objectives*. These define the goals specific to different types of

land-use. In the first step of the implementation stage, each objective has a number of supporting policies to define appropriate actions to achieve the objectives. Finally, the rules have highly specific detail to assess and control activities and development. The rules define the extent of activities allowed under the *Permitted*, *Controlled* and *Discretionary* activity classes of the RMA and define the assessment criteria for showing compliance. Design guides are commonly used as assessment criteria in conjunction with the rules (Wellington City Council, 2000).

IMPLEMENTATION OF PLANNING

For assessing proposed development, there are two primary approaches to showing compliance with a plan: prescriptive, and performance-based. Prescriptive approaches specifically describe what is allowed, and how it should be achieved. It is also known as the conformance approach. Implementation of the objectives is through assessment against specific quantitative rules and policies. (Berke et al., 2006; Carmona & Sieh, 2004; Hopkins, 2001; Talen, 1996).

Performance-based assessment is where compliance with a particular standard or criteria must be demonstrated, but the actual means of achieving this are not determined. It is designed to allow flexibility. Assessing compliance is more qualitative and open to a higher level of subjectivity. Decision making is guided by how the standard will be met, and how this will meet the objectives (Berke et al., 2006; Carmona & Sieh, 2004; Hopkins, 2001; Punter, 1999).

While useful as classification, few planning systems exist using only one approach. They are the opposite ends of a spectrum (as shown in Figure 3), and most planning systems incorporate



Figure 2: The Wellington City District Plan shown in relation to the goals-objectives-implementation Planning Hierarchy

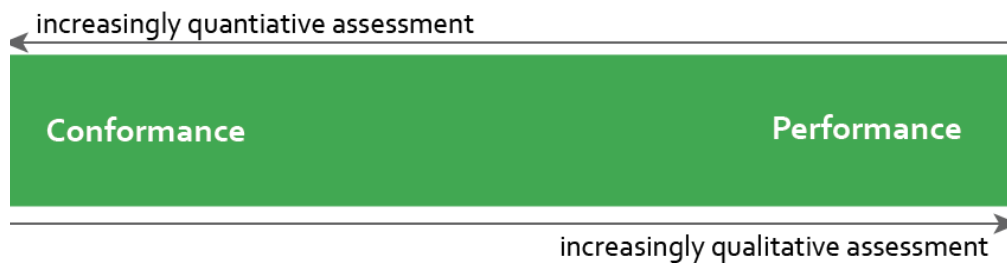


Figure 3: Spectrum of plan implementation approaches. Author's image.

elements from both approaches. While performance-based system offer improved flexibility, this also means there is greater dependence on the skill and training of decisions makers, and their level of understanding of the objectives. With increased subjectivity, there is also increased risk of inconsistency and lack of accountability in decision making (Berke et al., 2006; Carmona & Sieh, 2004; Talen, 1996b).

IMPLEMENTATION OF THE WELLINGTON DISTRICT PLAN

The practice of *zoning* is widely used as a means for implementation, and it typically sits toward the prescriptive end of the spectrum. Under zoning cities are divided into multiple areas or *zones*. Each zone has differing rules for development in terms of types of activities permitted, and the form of buildings allowed (Campoli, 2007; Gillham, 2002; Hall, 2002).

In Wellington, the District Plan uses zoning to set out the objectives and implementation framework. Beyond the city centre the majority of Wellington's dwellings are in land zoned for primarily residential uses. The District Plan places residentially zoned areas in Wellington in two broad categories. The Inner Residential area, is contained approximately within the established inner ring of suburbs immediately surrounding the central business district of Wellington City. This area has a higher level of density than the surrounding Outer Residential suburbs with a greater number of multi-unit developments (Wellington City Council, 2000).

THE 'RESIDENTIAL AREA RULES'

The District Plan's *Residential Area Rules* give the specific detail for assessment of residential development. They detail 'bulk and location standards' with maxima for height, encroachment on sunlight access to neighbours, and site coverage. Minima are listed for building setbacks from the street and access to ground level open space. These rules represent application of the prescriptive or conformance approach. They detail that the objectives should be achieved through a specific approach (Wellington City Council, 2007c).

As well as the Residential Area Rules, implementation is also guided by additional documentation. Specific plans are developed for certain geographic areas to apply the vision and objectives of the plan in way that is suited to the local context. They can be extremely detailed at the neighbourhood, street, and site scale. They aid in giving a strategic framework for

implementation. Some are agendas with actions to be completed by the council, while others are referred to by the rules as assessment criteria (Wellington City Council, 2000).

THE 'RESIDENTIAL DESIGN GUIDE'

For housing development in Wellington the *Residential Design Guide* is used as assessment criteria. It is intended to “facilitate new residential development that is of good design, and responds to its neighbours and local context as well as to the needs of the people who live in it” (Wellington City Council, 2009b, p.2.) This allows extra guidance in achieving the intent of the objectives and policies. The intention is for greater flexibility to achieve the intentions of the plan. The Design Guide is used in situations where a proposed development goes beyond what is permitted under the rules and is used for all medium density housing proposals.

The Design Guide is grouped into three categories: *Building Form, Location and Site Planning*; *Building Design*; and *Open Space Design*. Each has a further series of objectives relating to the built form, spaces surrounding the building, and integration with the neighbourhood context. The design guidance is in the form of 57 'guidelines' which qualitatively give specific detail on what outcomes should achieve (Wellington City Council, 2009b).

2.3 THE RISE OF PLANNING FOR HIGHER DENSITY

In recent times the focus of planning goals for housing has shifted to achieving *liveability*. Liveability is associated with the concept that housing and neighbourhoods should contribute to good 'quality of life' (Alves, 2004; Haarhoff et al., 2012; NARC, 2012). This is a progression from the smart growth and new urbanist movements. Both are planning theories that can trace their origins to the United States, cities such as Portland, Oregon in the 1970s, Jane Jacobs' highly influential book *The Death and Life of Great American Cities* published in 1961, and early reactions against urban sprawl in the late 1950s (Haarhoff et al., 2012; Hall, 2002; Knaap & Talen, 2005; Larice & Macdonald, 2007). Concurrently, the call for increased density of residential development continues and many of its benefits, such as walkability, and a greater mix of land uses and closely interlinked with descriptions of liveability (Alves, 2004; Buys, Vine, & Miller, 2013; Haarhoff et al., 2012; NARC, 2012).

RESIDENTIAL DEVELOPMENT IN THE 20TH CENTURY, FROM SPRAWL TO SMART GROWTH AND ONWARD

The increase in density comes under the common term *intensification* which represents an increase in the number of dwellings in a given area (Auckland Regional Council, 1999). The move to increase the density of residential development was in response to urban sprawl causing significant environmental concerns, and placing pressure on existing infrastructure (Gillham, 2002; Whyte, 1958). Urban development across New Zealand, Australia, Canada and the United States in the postwar period was rapid and was characterised by low density development

of single detached dwellings on generously sized lots. Urban sprawl was a reaction against overcrowded conditions in the time following the industrial revolution, and was enabled by low land costs, rising incomes and rising rates of car ownership (Campoli, 2007; Churchman, 1999; Gillham, 2002; Girardet, 2008; Haarhoff et al., 2012). In New Zealand low density single detached dwellings became entrenched with cultural values and aspirations. This is typified by the 'quarter acre dream' of owning a detached dwelling on a 1042 square metre plot within a primarily residential area (Auckland Regional Council, 2010; Gjerde, 2010; Van Reenan, 2007). However, the rapid development meant that the land area occupied by cities increased significantly. A consequence was further development of roads, highways, and an associated increase in traffic congestion and air pollution. The location and timing of development was relatively unplanned and uncontrolled. Consequently the provision of infrastructure, and community facilities and services did not always match the location of development, was inefficient, and placed considerable burden on local authorities' financial resources (Auckland Regional Council, 1999; Gillham, 2002; Knaap & Talen, 2005).

The negative effects of low density urban sprawl were quickly identified and debated, and the benefits of increased density began to be discussed. Knaap & Talen note in a 2005 literature review of Smart Growth and New Urbanism that reactions against urban sprawl began already as early as 1958, with it being strongly criticised as "bad aesthetics" and "bad economics" (Whyte, 1958). Shortly after in 1961 Jane Jacobs' *The Death and Life of Great American Cities* was published. Jacobs argued strongly against urban sprawl. Jacobs established the benefits of higher residential densities citing the possibility for a diversity in activity mix, and highly interconnected streets and neighbourhoods. Jacobs' work is considered a pivotal turning point in the field of planning and has directly influenced recent theories such as New Urbanism and Smart Growth (Grant, 2009; Larice & Macdonald, 2007; Macdonald, 2005; Wendt, 2009)

As means of intensification the concepts of *smart growth* and *new urbanism* gathered pace in the United States during the 1990s. However the first notable examples of smart growth date to the 1970s, and in particular, in Portland, Oregon (Aurand, 2010; Haarhoff et al., 2012; Knaap & Talen, 2005; Larice & Macdonald, 2007; Marshall, 2000). Smart Growth is based on the principle that urban development should be primarily concentrated within existing urban areas to protect surrounding land areas and open space, and carefully planned to take advantage of existing infrastructure, facilities, services and transportation links. A boundary is defined beyond which urban development is discouraged or prohibited. Other terms covering similar principles include *compact city theory* and *urban consolidation* (Filion, 2003; Gordon & Vipond, 2005; Knaap & Talen, 2005; NARC, 2012; Song, 2005). New Urbanism originates from a desire to revive traditional pre-sprawl forms of development with a greater level of walkability and reduced car dependence. New Urbanism is noted for its stronger focus on building form, and trust of market forces, while Smart Growth relies on greater levels of regulatory oversight (Congress for the New Urbanism, 1996; Hall, 2002; Larice & Macdonald, 2007; NARC, 2012; Song, 2005). A related planning theory is *transit oriented development*. This is where the location of development coordinated with

existing, and future planned transport routes. Intensification is encouraged, alongside a greater mix of non-residential land-uses around transport 'nodes'. The purpose to maximise the number of inhabitants in walking distance of major transit stations as well as a range of shops and employment opportunities (Haarhoff et al., 2012; NARC, 2012). Internationally various forms of these approaches to intensification have been widely adopted across Canada, the United States and Australia (Buxton & Tieman, 2005; Dixon & Dupuis, 2003; Filion, 2003; Grant, 2009; Haarhoff et al., 2012; Macdonald, 2005; NARC, 2012).

On a similar timeline in New Zealand acknowledgement of the problems of urban sprawl is evident in Auckland as early as the late 1950s. However community resistance to intensification, and examples of poorly designed higher density housing, meant that low-density sprawl continued to be the dominant approach (Auckland Regional Council, 2010). In 1999 the former Auckland Regional Council adopted the *Regional Growth Strategy* which set a strategy for intensified growth across the Auckland region. Under this strategy the cities of Waitakere, North Shore, Auckland City and Manukau developed strategies within their respective district plans for intensification, and the Auckland metropolitan area's urban growth boundary was redefined. As per the theory of Smart Growth, it defined the outer most extent of the urban area, and urban development outside the boundary was not permitted (Auckland Regional Council, 2010). At a similar point in time, the Wellington City District Plan was made operative in 2000. The District Plan states a goal for a "managed approach to development at the edge of the city" and follows a strategy of intensification by acknowledging that development should be prioritised within the existing areas of the city (Wellington City Council, 2000, p.15). Implementation of this goal requires an increase in housing density (Wellington City Council, 2000). Similarly other main cities including Christchurch, Dunedin and Tauranga adopted policies for intensification. At a national level, the Ministry for the Environment adopted the *New Zealand Urban Design Protocol* in 2005 which also acknowledged and encouraged the benefits of higher density housing development (Ancell & Thompson-Fawcett, 2008; Ministry for the Environment, 2005; Van Reenan, 2007)

2.4 MEDIUM DENSITY HOUSING IN A NEW ZEALAND CONTEXT

In New Zealand an increase in *medium density housing* development resulted from the changed planning and regulatory context in the 1990s and early 2000s. New building typologies resulted in densities higher than those achieved by typical low density single detached dwellings (Dixon & Dupuis, 2003; Haarhoff et al., 2012; Wellington City Council, 2006). However medium density housing does not have a universally accepted definition. This section will discuss recent attempts to classify and define the term medium density housing in New Zealand.

In 2004 a study entitled *Best Practice in Medium Density Housing Design* was completed by Turner et. al for Housing New Zealand Corporation. The study noted a lack of substantial prior research into medium density in New Zealand, and a lack of any common definition of the term. The study focused primarily on Auckland, and using case studies identified typologies as a means to define medium density housing. A supporting literature review related New Zealand practice to

an international context . In terms of density, medium density was defined as between 30 and 66 dwellings per hectare (dph), or a site density of between 150 and 350 square metres of land per dwelling. This definition was selected on the basis of being the definition used a number of territorial authorities as well as Housing New Zealand Corporation (Turner et al., 2004).

Medium density housing typologies were described as being up to three stories in height, and horizontally attached to neighbouring units. Turner et. al noted direct access to ground level open space, direct entry to dwellings from ground level public space, and direct access to car parking as part of the definition. This relied primarily on references to British and Australian literature, and stressed the lack of any universally accepted common definition.

Following the adoption of the *New Zealand Urban Design Protocol*, the Ministry for the Environment commissioned research into a range of urban design issues. There was significant research into Medium density housing. In 2012 the *Medium-Density Housing Case Study Assessment Method* was published (Boffa Miskell, 2012d). The method was developed in acknowledgement of the growth in medium density housing development, the need for a high quality of outcomes, and lack of common definition of the term. The document incorporated a literature review and defined medium density housing as multi unit development with a site density of on average at least one dwelling per 350 square metres (Boffa Miskell, 2012d). Similar to the 30dph definition of Turner et. al, this corresponds to approximately 29 dwellings per hectare.

The qualitative definition makes reference to a greater range of specific typologies than Turner et al, and includes a more broad range of criteria. Provided the minimum density is met, a range of typologies were listed as examples of medium density housing. Semi-detached and terraced housing of up to four stories (Figure 4 and Figure 5), are essentially the same as the definition by Turner et al: horizontally attached with individual ground level access. Detached housing is also included (provided it is on smaller plots of less than 350 square metres)

The Ministry for the Environment also includes the *low-rise apartment* typology, which Turner et. al does is not . The low-rise apartment typology is characterised by buildings of between two and four stories which include multiple dwellings sharing a common



Figure 4: Example of semi-detached housing. Note two separate units sharing one common wall. Image from Boffa Miskell (2012d)



Figure 5: Example of terraced housing in Wellington. Multiple units are horizontally attached each with separate ground level access. Author's image

entranceway and stairwell (Figure 6). The Ministry for the Environment makes no mention of proximity to car parking in its definition. The same lower threshold as Turner et al is set for density, however the Ministry for the Environment does not set an upper quantitative threshold. The upper limit for density is constrained by the design outcomes possible under the definition of each typology (Boffa Miskell, 2012d).



Figure 6: Example of low-rise apartment development in Wellington. The relationship to open space is notably different, and units no longer retain individual ground level access. Author's image

Two conclusions can be reached regarding the definition of medium density housing from these two government sponsored research publications, which undertook significant international literature review. Firstly, that the figure of 30 dph is an important threshold acknowledged by all definitions as the transition point from low to medium density housing. Secondly, beyond the lower threshold, 'typical' typologies and the upper limit of medium density housing are not universally or quantitatively defined. **For this research medium density housing is defined as least 30 dwellings per hectare, and up four stories in height.** This provides the most broad definition possible, and does not seek to impose specific typologies. This is because definitions of typology vary, and because the District Plan does not govern typology.

2.5 THE RISE OF LIVEABILITY AND THE RELATIONSHIP TO INTENSIFICATION

As intensification became more commonplace, there was also an increase in the call for increased consideration of *liveability* in planning. This was to establish that planning should not only deliver an increase in density, but also directly seek to ensure housing and neighbourhoods contribute to quality of life (Boyko & Cooper, 2011; Haarhoff et al., 2012; Howley, 2010; NARC, 2012).

In New Zealand the new focus on liveability has recently gained considerable attention with the newly developed Auckland Plan. This plan has a stated goal of becoming 'the world's most liveable city by 2040' (Auckland Council 2012 p10).

However, an intention to create a liveable city was also incorporated in the 1999 Auckland Regional Growth Strategy, and the former Auckland City Council's *Liveable Communities 2050 Strategy* (Auckland Regional Council, 1999). At a similar point in time in Wellington, the *Multi-Unit Development Design Guide* of the District Plan in 2000 listed among its objectives a requirement to "plan and locate dwellings and open spaces together as a coherent whole in a way that compliments neighbouring development and optimises amenity and liveability" (Wellington City Council, 2004, p.5). The design guide noted the effect of the arrangement of dwellings and spaces on the quality of outcomes, although did not supply a definition of liveability.

The term *liveability* was formally defined at a national level in 2005 when the Ministry for the Environment published the *New Zealand Urban Design Protocol*. While the Urban Design Protocol acknowledged the benefits of housing intensification, it also made reference to the quality of urban design expected. The Urban Development Protocol is a voluntary agreement which is a partnership between central government, local government, property developers, practitioners and researchers. The Urban Design Protocol encourages 'best practice' in urban design, and aims for signatories to take action to further this aim. Many local authorities, including Wellington City Council were signatories. The Urban Design Protocol raised liveability as crucial to quality in urban design, and the success of cities. The protocol's definition of liveability is:

Liveable places provide choices in housing, work, transport and lifestyle opportunities. They are easy to move around, with accessible services and a variety of integrated transport options that include walking and cycling. Their public spaces are accessible, well used and safe. Liveable places are healthy places to live, and they have low levels of crime (Ministry for the Environment, 2005).

The goals of the Wellington City District Plan are broadly consistent with this definition of liveability. The District Plan makes frequent reference to 'amenity', and the use of methods to 'preserve and enhance amenity values'. It refers directly to the RMA and defines amenity as "an expression of how people value the environment they live in" and it elaborates on this in terms of quality of life (Wellington City Council, 2000, p.13). The District Plan notes the importance of the influence of factors such as the quality of housing, public space, streets, accessibility and economic success (Wellington City Council, 2000, p. 13). This shows that without specifically mentioning the term *liveability*, the plans goals were developed with to embody the characteristics of liveability.

The Wellington Urban Development Strategy was adopted in 2006 as long term strategy document. With regard to urban development in Wellington, the strategy lists increased liveability as a key goal. In defining liveability the strategy refers to capacity for sustainable growth, providing 'safe and healthy places', sustainable development and facilitating a range of household types. Additionally, the strategy includes goals aspiring to encourage more compact development to provide access to open space, facilities and transport (Wellington City Council, 2006). This shows a continued focus on liveability goals, and the rise of the use of 'liveability' as a specific term to describe those goals. The trend is toward greater prominence of, and definition of the concept of liveability.

THE RELATIONSHIP BETWEEN LIVEABILITY AND INTENSIFICATION

Despite the increase in planning for increased housing density at a national and local policy level, there is some public perception that liveability goals cannot be reconciled with an increase in housing density. In researching negative perceptions of higher density housing, Howley Scott

and Redmond (2009) identified literature showing a pattern of public perception that there is an inverse relationship between density and liveability: that increased density causes decreased liveability. Their study of intensified housing in Dublin had similar findings. In New Zealand, surveys of the Auckland market also matched these findings. The preference remains for low density suburban housing (Haarhoff et al., 2012). However, there is no direct relationship between liveability and housing density. Density is a mathematical calculation (Boyko & Cooper, 2011; Churchman, 1999; Jacobs, 1961). Density describes “the number of units in a given area” (Boyko & Cooper 2011, p.4). By itself, the level of density is not a measure of the quality. This means that density alone cannot be blamed for low quality outcomes. Conversely, density alone does not deliver high quality outcomes (Churchman, 1999; Jacobs, 1961; Lozano, 1990).

Simple mathematics is also the reason for the benefits of intensification. A greater concentration of people has long been argued as the catalyst for numerous benefits, that increase liveability. Once a sufficient density is reached, there will be sufficient population and interactions and transactions among that population to justify the existence of a service – for example the minimum number of customers needed for the financial viability of a shop, or the number of patrons to justify frequent public transport (Campoli, 2007; Jacobs, 1961; Lozano, 1990). Lozano (1990) describes this in terms of a hierarchy of increasing *urbanity thresholds*, of which certain characteristics exist and ever greater facilities and services are viable. Lozano’s first urbanity threshold is the point at which the viability of community and retail services within residential neighbourhoods begins. In the American context, Lozano defines this point as approximately 30 dwellings per hectare. The increased diversity in mixtures of land-use increases activity, and contributes to greater liveability (de Roo & Miller, 2000; Gillham, 2002; Girardet, 2008; Jacobs, 1961; Lozano, 1990). Notably, this is the same point at which New Zealand housing transitions from low to medium density.

The link between transportation planning, and residential development is a significant underlying reason for the benefits of intensification. The cost, capacity, and technology able to be used in city’s a public transport network is closely tied to the density of the urban area. Greater numbers of people in a walking distance of each stop or station means that public transport services increase in viability. Increased density triggers the thresholds that lead to a greater variety and frequency of services becoming possible. Conversely low density areas of urban sprawl have little or no viable forms of public transport, and few facilities and services within walking distance of dwellings leaving residents highly car-dependent (Gillham, 2002; Lozano, 1990).

Despite the potential for a higher liveability of neighbourhoods associated with increased density, it is still possible for intensified neighbourhoods to suffer from a low level of liveability. The design and layout of space in and around each dwelling also contributes to the level of liveability. As well as intensifying residential development, to achieve liveability a certain standard of quality in housing outcomes must also be met (Campoli, 2007; Haarhoff et al., 2012; Howley, 2010; Macdonald, 2005).

A primary reason for the misconception that density causes a loss of liveability is that density is often mistaken for crowding. Crowding is a psychological condition, triggered when a person perceives a lack of sufficient space and to meet their needs for safety and privacy. This perception is not created by an increase in housing density alone, but rather the perceived condition of the dwelling, and the surrounding neighbourhood. This is caused not so much by the number of dwellings or number of persons, but rather the number of persons per room in each dwelling, the level of privacy, and the availability of open space (Campoli, 2007; Churchman, 1999; Jacobs, 1961; Lozano, 1990)

The physical layout of the dwelling and its relative occupation of space contributes to an induced sense of crowding. At increased densities the design and layout of space must be more carefully considered. As density increases, the management of people's access to open space becomes ever more challenging, as does the management of car parking, storage, and access to daylight and sunlight (Lozano, 1990; Turner et al., 2004). Specifically in Wellington, the importance of the design and layout of dwellings can be further established from Bennett, (2010). In defining a criteria for assessing liveability in the Wellington apartment market, Bennett noted prospective occupants gave a higher weighting to the internal configuration of dwellings than any other criteria.

Previously studied examples of New Zealand practice show the potential for liveability from increased density; but also the need for quality in design outcomes. In Auckland, residents of medium density housing were found to have overall positive perceptions of their dwellings and neighbourhoods. The benefits of being located close to shops, and community facilities was considered especially beneficial. However, in some cases dissatisfaction existed with the design and layout of housing units. (Haarhoff et al., 2012). This matched earlier findings regarding Auckland (Dixon & Dupuis, 2003). In Dunedin Van Reenan found in 2007 that residents were generally satisfied with medium density housing. The results were similar to Auckland. Where dissatisfaction was expressed, this was largely attributed to negative perceptions of the quality of the design of dwellings.

The examples show it is possible for intensification to deliver the benefits of increased liveability. While there are examples of issues with the quality of housing at higher density, it is not the increase in density that causes a reduction in quality. Careful attention must be given to design. The design of housing must ensure the locational benefits of higher density neighbourhoods are supported by high quality dwellings. Intensification must be carefully managed by encouraging quality in housing outcomes. The Implementation of planning for medium density housing must ensure the benefits of density are realised, while not inducing ills such as crowding that compromise quality and liveability.

2.6 PLANNING IN WELLINGTON AND THE IMPLEMENTATION OF LIVEABLE MEDIUM DENSITY HOUSING

The approach to implementation of the plan has been evolving, with a number of changes significant to medium density housing implementation (Figure 7). As part of the ongoing process of development of the District Plan, there have been modifications to the strategies, policies and rules used for medium density housing and amendment of the design guide.



Figure 7: Timeline of significant steps in evolution of the District Plan in terms of factors influencing quality of medium density housing outcomes. Author's Image

In a context of this ongoing development of planning documents, and in a context of discussion of Wellington City Council planning, there are three main types of housing intensification. Firstly, apartment high density development which occurs in the central city area. Outside the city centre, 'infill' development is split between *backyard infill* and *multi-unit development*. Backyard infill is the addition of one or more additional dwellings within existing plots. Typically this takes on the form of an additional dwelling on the same site as an existing detached dwelling, or the conversion of a single building to add additional dwellings. Multi-unit development is three or more dwellings on a single site (Wellington City Council, 2007c, 2007d).

THE 'URBAN DEVELOPMENT STRATEGY'

In July 2006 Wellington City Council released the *Urban Development Strategy* which alongside the District Plan is now considered a key document for defining the council's approach to urban development. The Urban Development Strategy was developed to set long term goals for the development of Wellington's urban form. The strategy assumes long term population growth of 50,000 additional residents by the year 2055. The strategy proposes directing growth to existing centres and along key transport routes, and anticipates this will increase liveability, safety, connectivity, productivity and sustainability. Consequently the strategy anticipates continued growth in demand for high and medium density housing, and acknowledges concern over the quality of housing outcomes. (Wellington City Council, 2006).

The Urban Development Strategy provides desired outcomes over a 10 year period - including increased liveability by aspiring to a compact urban area as well as good transport. The three year priorities to the year 2009 were to improve the management of infill development, as well as the quality of urban design in housing developments, and to direct the location of development along a 'growth spine'. The priorities focus on liveability of medium density housing outcomes and acknowledge the benefits of appropriately located intensification (Wellington City Council, 2006). The focus on keeping within the existing area shows an adoption of smart growth principles, while the focus on the 'growth spine' around existing transport networks shows the influence of transit

oriented development theories. Finally, this is combined with an aim to manage the quality of housing outcomes resulting from the intensification strategy.

THE 'INFILL HOUSING REVIEW'

Following on from the aspirations of the Urban Design Strategy, a review of infill and multi-unit development took place in 2006. The review was in response to concerns raised over the quality of outcomes (such as those in Figure 8) of intensification (Boffa Miskell, 2008; Wellington City Council, 2007a). As part of review, in May 2007 the Wellington City Council released the discussion document *Promoting a Quality of Place – a targeted approach to managing infill development in Wellington City*. The discussion document names the underlying reason for the review as “being smarter about the way we manage growth in the city” (p.2). As rationale, the document discusses a policy of focusing growth to benefit from efficiency of resource and infrastructure use, and as a part of increasing environmental sustainability. This continues the use of smart growth principles, and in adopting the theory of transit oriented development, it details a need to target development in areas that are accessible to public transport. For intensification of housing, the discussion document stated a need to consider “what processes should be in place to ensure good quality development” (Wellington City Council, 2007a, p.2.). The discussion paper notes a problem that despite an anticipation of increased medium density housing development, there was an insufficient capacity to handle this form of development (Wellington City Council, 2007a). Part of the strategy in the discussion document involves a proposal to identify ‘areas of change’ where increases in density would be ‘facilitated and encouraged’. The areas of change were to be located in areas with good accessibility to employment, services and public transport. Combined with this, the discussion document identifies a need to control the quality of outcomes, and ensure ‘good amenity and quality urban design outcomes’ (Wellington City Council, 2007a).



Figure 8: Example of low quality medium density housing development in Wellington (Boffa Miskell 2008). Author's image.

THE INTRODUCTION OF 'PLAN CHANGE 56'

Alongside the discussion document, *Plan Change: 56 Managing Infill Housing Development* was publicly notified, and after a period of public consultation, approved by the Wellington City Council on 21st November 2007. Following an appeals process it was made operative in 2009 (Wellington City Council, 2009a). Plan Change 56 was a response by the council to concerns raised over the quality of infill housing development. There were significant implications for multi-unit (and therefore medium density) development. Particularly relevant to medium density housing are changes to policies regarding ‘residential amenity’ and ‘residential streetscape’;

the introduction of minimum open space requirements; and the replacing of the Multi Unit Developments Design Guide with the new Residential Design Guide. These changes, and the effect in relation to medium density housing will be described in Chapter 4 and 5.

The purpose of the Plan Change was to improve the quality of housing outcomes being developed as part of the goals for intensification. In the 'decision document' discussing the passing of the Plan Change the Wellington City Council committee overseeing the Plan Change states that it is "satisfied that the Plan Change must ensure that both multi-unit housing and smaller scale infill housing are better managed" and goes on to state that it anticipated that the improved planning system would incentivise good design outcomes (Wellington City Council, 2007b, p.5). From a contradictory viewpoint, McIntosh and Gray (2011) strongly criticise the rules of the District Plan, and argue that the rules actively work against achieving objectives for medium density housing. In particular, they name Plan Change 56 as "a step in the wrong direction" (p.141). This matches a number of public submissions during the consultation phase of the Plan Change (Wellington City Council, 2007b)

ONGOING PLAN DEVELOPMENT: 'PLAN CHANGE 72' AND THE NEED FOR FURTHER STUDY

In 2013 Wellington City Council passed Plan Change 72. The plan change identifies specific new *Medium Density Residential Areas* in the suburbs of Johnsonville and Kilbirnie which are located along the 'growth spine'. Recognising proximity to existing transport links and existing commercial and community facilities, the Plan Change is intended to permit increased medium density housing development in these areas (Wellington City Council, 2010b).

Planning for medium density housing continues to evolve, some time has passed since the approval of Plan Change 56. The council has identified a need for "analysis of on the ground results is required to determine if the District Plan has been effective at regulating good quality development (as desired by Plan Change 56)" (Wellington City Council, 2013b, p.10). Similarly McIntosh and Gray conclude the need for further quantitative study of the effect of planning rules in Wellington. A clearly expressed need exists for study of the effect of Plan Change 56 on the quality of medium density housing outcomes. Together with explicit criticism of the plan change, and further amendments to the district plan, this shows the significance of investigation of the effect of Plan Change 56.

2.7 PLAN CHANGE 56 AND IMPLEMENTATION OF THE DISTRICT PLAN

In this chapter the ongoing development of the District Plan has been shown to be part of a system of plan formation which generates a hierarchical document. As has become common place internationally, and in other New Zealand cities, Wellington has pursued a strategy of increasing density of residential development through intensification of existing urban areas. A

common form of intensification is medium density housing which has been defined as having a net density of at least 30 dwellings per hectare and encompassing a variety of typologies of up to four stories in height. This form of development is governed by the District Plan as 'multi-unit development'.

Recently a focus of quality of life – specifically liveability – has been used to set the goals of planning. Wellington City council adopted the Urban Development Framework with a clear intent to follow pursue liveability goals. These are to achieve the benefits of intensification achieved from people's greater physical proximity to their daily requirements, while maintaining quality of housing outcomes. While intensification is required to generate liveability, the design outcomes of higher density dwellings must also be carefully managed. Quality of medium density housing outcomes is required to for liveability goals to be met, and for negative outcomes such as crowding to be prevented. Plan Change 56 was introduced to address issues with the quality of outcomes of intensification, and amended the implementation framework affecting medium density housing. There has however been some criticism of Plan Change 56 in terms of its ability to achieve the liveability goals, and a need is stated for more detailed study of outcomes.

3. DEFINING AND ASSESSING THE QUALITY OF PLANNING OUTCOMES

Plan Change 56 amended the way the District Plan is implemented, aiming to improve the quality of outcomes (Wellington City Council, 2007b). This chapter establishes a method for measuring the quality of medium density housing outcomes. The purpose is to measure the effect of Plan Change 56 on the quality of those outcomes. This chapter will discuss definitions of *success* in planning in relation to the goal-objective-implementation-outcome hierarchy. A methodological approach to assessing plan implementation through case studies of medium density housing outcomes will be developed. Drawing on the a range of sources, the result will be a method for assessing the implementation of the District Plan before and after Plan Change 56. Assessment results will be used to determine the effect of the Plan Change on quality of medium density housing.

3.1 THEORY ON SUCCESS IN PLANNING

In 1996 Talen completed a well-regarded literature review of approaches to evaluating plans titled *Do Plans Get Implemented? A Review of Evaluation in Planning* (Berke et al., 2006; Haarhoff et al., 2012; Hopkins, 2001; Loh, 2012). Talen identified a gap in the knowledge, and found that there was a lack of methods and research into assessing plan implementation (1996b). This was part of a wider discussion of the definition of success in planning. Building on earlier sources such as Alexander & Faludi (1989) the literature review concluded by arguing that the success of a plan is determined by its outcomes. Outcomes in turn depend on the way a plan is implemented, and that therefore identifying success in planning must assess plan implementation.

DEFINITION OF 'SUCCESS' IN PLANNING

There are a number of ways to define the success of a plan. The definition of success ranges over a spectrum (Figure 9). At one extreme, simply drafting a plan is considered success by allowing discussion of planning issues. Under this definition provided that the plan was *consulted* during decision making, it is considered successfully implemented (Alexander & Faludi, 1989; Talen, 1996b). At the other extreme a plan is only successful where it has been literally interpreted and all outcomes conform to the exact wording of the plan (Hopkins, 2001; Talen, 1996b). Berke et al (2006) links this spectrum to the performance and conformance approaches to plan implementation described in Section 2.5. Consultation of the plan is linked to the performance-based end of the spectrum, and strict adherence to the plan linked to the conformance-based approach.

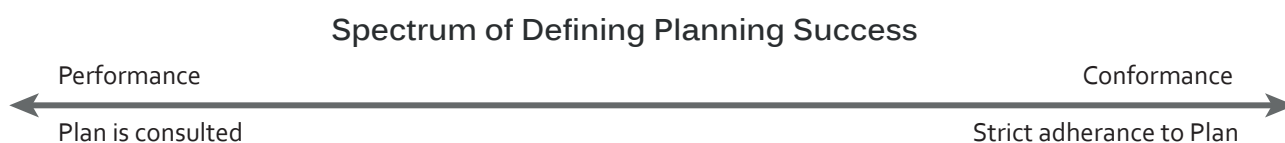


Figure 9: Spectrum of defining planning success, from consultation to literal interpretation, and from performance to conformance. Author's Image.

Talen (1996b) proposed a definition somewhere between the two extremes: that planning success is where the goals and objectives of the plan are met by the outcomes. By this definition it is not essential that the outcomes follow the plan literally, but rather that outcomes contribute positively toward meeting the intentions of the plan relative to the issues the goals and objectives sought to address. Hopkins (2001) endorses the definition and approach taken by Talen, and elaborates by proposing three requirements for success:

1. That the plan was used
2. That the intended actions identified by the plan were taken
3. That the intended outcomes of the plan were achieved

By this definition, for a plan to be successful, the outcomes must meet the objectives. Furthermore, the plan must be used, and implemented. The key to Hopkins' argument is that the plan should have had some effect on decision making that led to a beneficial impact on outcomes. The use of the plan to bring about positive outcomes *in terms of the objectives* rather than strictly conforming to the exact wording is most important to success.

However, the consensus of both authors is that only assessing outcomes to define the success of a plan in achieving its goals and objectives is insufficient. This is because it relies on the assumption that the plan was used. To truly assess the success of a plan, its implementation must also be assessed. This means evaluation of the success of a plan must establish that the outcomes met the objectives *because of* the plan being used.

Both Talen (1996b) and Hopkins (2001) were referred to in research assessing plan implementation in New Zealand under the planning system of the RMA (Berke et al., 2006). A

further 2011 literature review completed as part of a study by Loh discusses studies on evaluation of plan implementation that have emerged since Talen's work in 1996. Loh noted Talen's definition and approach had been used in a number of studies evaluating planning outcomes. The work of Talen (1996b, 1997) to define methodological approaches to evaluating plan implementation has been referred to as a key document by subsequent authors, including in a New Zealand context under the RMA.

LIMITATIONS TO IDENTIFYING SUCCESS IN PLANNING OUTCOMES

There are numerous interlinked social, economic and environmental factors that influence urban development. Most of these influences are beyond what it is possible for planning to control or influence (Carmona & Sieh, 2004; Hopkins, 2001; Rydin, 2011). This is termed *multicausality*. The effect of multicausality is reduced by assessing planning outcomes in terms of plan implementation. The measure of success considers only the areas that the plan is directly able to control. This keeps the definition of success within the scope of a plan's goals and objectives (Hopkins, 2001; Loh, 2012; Talen, 1996b)

Another issue that affects plan-making is the large number of uncertainties that arise. Due to the long-term approach of planning, issues of the past and present are used to predict the requirements of the future (Carmona and Sieh, 2001; Hall, 2002). As situations change, the originally proposed planning response may no longer be appropriate. The definition from Talen and Hopkins allows for these changes. Provided the implementation keeps to the intention and logic by which the plan was created, implementation and outcomes that deviate from the original plan can still be considered successful.

3.2 RESEARCH APPROACH AND OUTLINE OF METHOD

Building on the definition of planning success by Talen (1996b), the methodological approach of this research is based on Talen's six step process (Figure 10) to evaluating planning success. These originate from *Success, failure and conformance: an alternative approach to planning evaluation* (Talen, 1997). The research method will be developed to measure the quality of planning specifically assessing the success of implementation.

TALEN'S SIX STEPS TO IDENTIFYING SUCCESS IN PLANNING

The **first step** according to Talen's approach is to *define planning*. For this research, planning is defined as the application of the Wellington City District Plan for development of medium density housing.

The **second step** is to *define success in planning*. As discussed in Section 3.1 planning success is where the outcomes realise the goals and objectives because the plan was used. For this research planning success is where quality of medium density housing outcomes was improved because of Plan Change 56.

The **third step** is to *establish criteria* for measuring success. This will determine the information required from assessment of outcomes.

The **fourth step** is the *assessment framework*. A method will be developed to assess case studies of medium density housing outcomes before and after Plan Change 56.

The **fifth step** is to *identify success* in planning. The assessment results will be used to identify the quality of case studies of outcomes in medium density housing. The relative level of quality before and after the plan change gives some indication of whether improvement occurred following Plan Change 56.

The **sixth step** is to *identify reasons for success* in planning. More detailed analysis of the assessment results will be used to identify where Plan Change 56 was the reason for any change in the quality of planning outcomes.

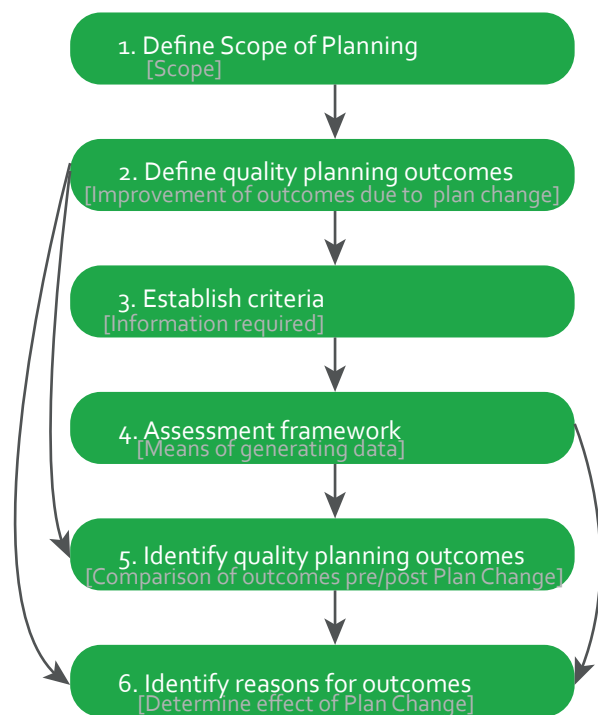


Figure 10: The six step approach to identifying success in planning according to Talen (1997). Author's image.

3.3 ESTABLISHING CRITERIA FOR MEASURING 'SUCCESS IN PLANNING'

Using the definition established in Section 3.1, three criteria for the information required to determine planning success were developed for the purposes of this research:

1. Assess the quality of planning outcomes for medium density housing as defined by the goals and objectives of the District Plan

The definition of quality has been established as being in terms of meeting the goals and objectives of the District Plan. For Criteria 1 this means that the assessment method must be able to assess case studies of medium density housing outcomes in terms of the goals and objectives for medium density housing identified in the District Plan.

2. Objectively compare outcomes to determine if there was improvement in quality

Under criteria 2 it must be possible to compare outcomes before and after the plan change with the purpose of identifying improvement in quality. The assessment framework must have the ability to rank, classify and compare the quality of the case studies. It must allow direct comparison of the quality of medium density housing outcomes before and after the Plan Change.

3. Establish the level of improvement directly as a result of Plan Change 56

The definition of successful plan implementation also states that improvement in outcomes must be because of the plan. Under criteria 3 this means that the method must be possible to determine if the changes made by Plan Change 56 contributed to changes in the quality of the case studies of medium density housing outcomes. This means that the results of the assessment must be in sufficient detail to be attributed to specific parts of the implementation framework of the District Plan that were amended by the Plan Change.

3.4 A METHOD FOR ASSESSING CASE STUDIES

The assessment framework is the specific method of gathering information from case studies of medium density housing outcomes according to the three criteria. It provides the basis of gathering and ordering data to identify the quality of planning outcomes.

A number of methods have been used in recent New Zealand research to assess, compare and critique quality of case studies of medium density housing outcomes through case studies. For the purposes of this research, the assessment approaches have been classified according to their methods of gathering data as set out in Figure 11.

Methods for measuring quality of medium density housing outcomes

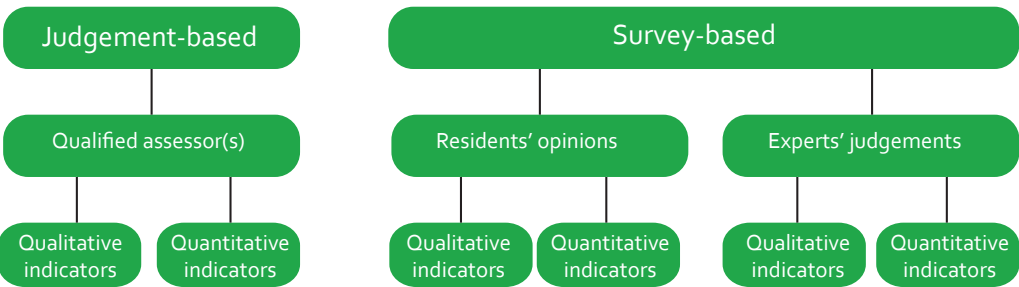


Figure 11: Comparison of the characteristics of methods for assessing planning outcomes grouped according to judgement and survey-based approaches. Author's image.

The first has been termed the *judgement-based* approach for the purposes of this research . The judgement-based approach relies on the judgement of an assessor (or multiple assessors) to assess all case studies of outcomes according predefined indicators. The assessments can be through use of qualitative or quantitative indicators.

The second has been termed the *survey-based* approach for this research. Survey-based methods rely on gathering the opinions and judgements of the persons directly involved with each medium density housing case study using a predefined questionnaire or interview. This is broken into two sub-categories. Firstly those who have direct ongoing interaction with the medium density housing outcomes. This is typically residents of case studies and residents of the surrounding neighbourhood. The second group are those with some form of professional expertise that had direct engagement with the case study development such as planning officials, architects

and designers, and property developers. Assessment can be against qualitative or quantitative indicators.

The primary difference is that the judgement-based methods rely on the same assessor or assessors to evaluate all outcomes, while the survey-based uses different assessors for each outcome with the aim to select those with the most project-specific knowledge.

Both approaches can use a qualitative or quantitative approach to describing the quality of outcomes. The difference is that the quantitative approach uses a numerical ranking scale, while the qualitative approach is based on open-ended questions.

PRECEDENTS OF METHODS FOR ASSESSING MEDIUM DENSITY HOUSING CASE STUDIES IN NEW ZEALAND

The following paragraphs will review methods used for assessing the quality of outcomes in housing intensification, and planning outcomes from recent New Zealand research. The purpose is to select, create or adapt a method to assess medium density housing outcomes in Wellington before and after the Plan Change. For each assessment method, the approach to gathering data will be described. The methods will then be compared for suitability of gathering information according to the three criteria identified in Section 3.3.

BEST PRACTICE IN MEDIUM DENSITY HOUSING DESIGN

The first method for assessing case studies was developed as part of *Best Practice in Medium Density Housing Design*, a report by researchers at Unitec University in Auckland for Housing New Zealand Corporation (Turner, et. al 2004). The objective was to identify common medium density housing typologies with a focus on housing affordability. The method comprised of analysis of plans submitted for Building Consent, and field assessment of built outcomes. The method used a judgement-based methodology with the same group of researchers undertaking all plan and field assessments according to seven quantitative indicators (Figure 12).

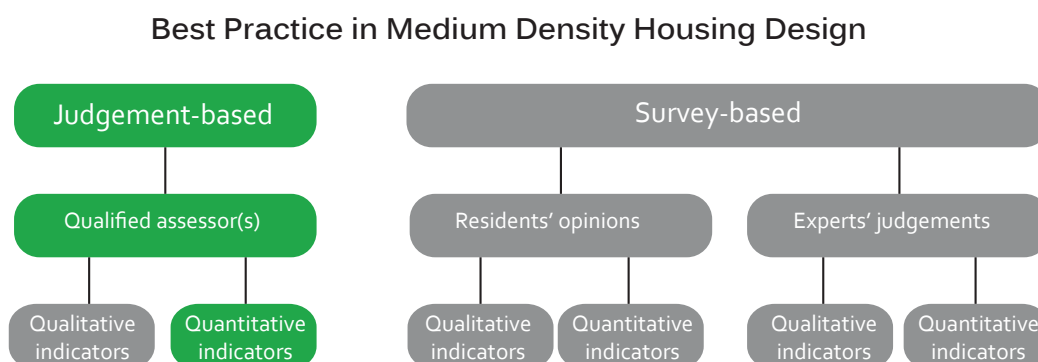


Figure 12: The **Best Practice in Medium Density Housing Design** method uses a judgement-based approach with quantitative indicators. Author's image based on information from Turner et. al (2004)

VAN REENAN

Van Reenan (2007) assessed plan implementation for housing intensification in Dunedin. The result was a number of recommendations regarding future implementation of planning. The work used the survey-based method with a face to face interviews with a mixture of residents and experts through both qualitative and quantitative methods (Figure 13).

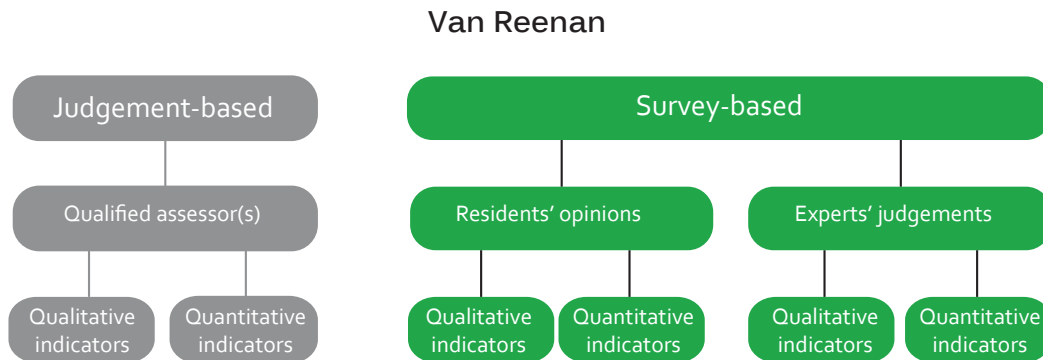


Figure 13: Van Reenan's method uses a survey-based approach with both residents and experts surveyed for qualitative and quantitative information. Author's image based on information from Van Reenan (2007)

The method was to survey residents and neighbours of intensified housing in Dunedin regarding their opinions of the acceptability of outcomes of intensification. Developers, architects and council officials were interviewed regarding their judgements on effectiveness of the implementation of the district plan for housing intensification.

GJERDE

Gjerde developed assessment method for proposed medium density housing as part of the 2010 research paper *Analysis of Medium Density Housing Competition Entries: What Does it Reveal About Designers' Abilities*. This was part of assessment of competition entries for a proposed development in Auckland by Housing New Zealand Corporation. For the assessment 14 indicators were used, which Gjerde classifies in three categories: *Planning and site layout*, *Building Design* and *Private & Common Area Design*. These were developed with reference to planning documents and design guides used in Auckland at the time as well as internal requirements and design guides by Housing New Zealand Corporation. The method is judgement-based with a quantitative approach (Figure 14).

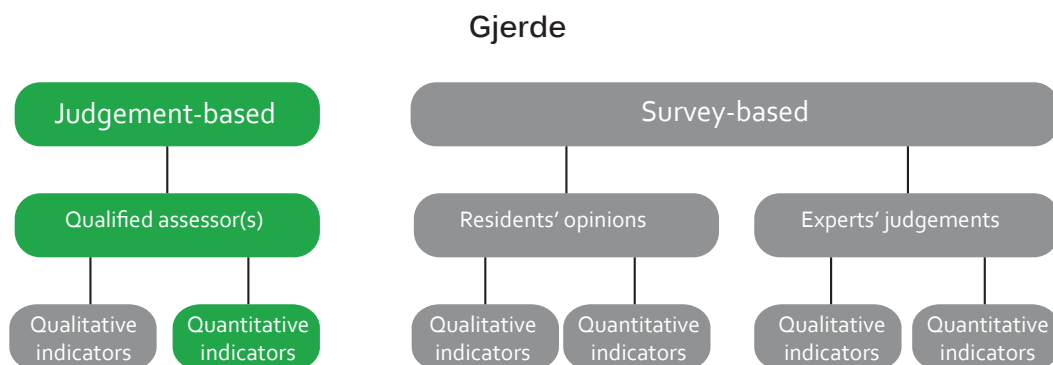


Figure 14: Gjerde's method uses a judgement-based approach with quantitative indicators. Author's image based on information from Gjerde (2010)

The method utilised a standard scoring sheet with a 1-5 ranking scale. Three investigators calibrated their standard of assessment, and agreed a final score after independent evaluations. The assessors were considered to have 'appropriate expertise' as an experienced academic and practitioner in the field of architecture and urban design guiding two final year architecture students.

NZ ALI

Bennett (2010) developed *NZ ALI* (the New Zealand Apartment Liveability Index) as a method of assessing apartment dwellings for liveability to give information to prospective tenants and buyers. While the method is aimed at the high density housing typology, it is discussed as it was developed specifically in terms of liveability in a Wellington context.

The assessment is in the form of a ranking scale based on quantitative data input from plan review or site analysis. A series of questions require input relating to the form and dimensions of buildings, the surrounding neighbourhood, the internal environment of the dwelling, and the management of the building. The indicators provide a ranking scale, and the output is a single liveability score based on a weighted scale.

The method is judgement-based, although it could also be distributed as a survey. The data output is quantitative (Figure 15).

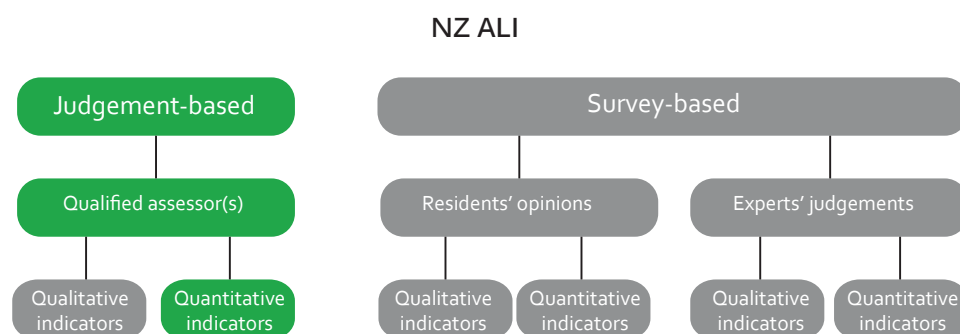


Figure 15: NZALI uses a judgement-based approach with quantitative indicators.
Author's image based on information from Bennett (2010)

MINISTRY FOR THE ENVIRONMENT

The New Zealand Ministry for the Environment commissioned development of an assessment methodology for assessing and comparing medium density housing case studies. This was in response to concerns about the quality of medium density housing outcomes, and as part of the implementation of the Urban Design Protocol. The *Medium-Density Housing Case Study Assessment Methodology* is comprised of three parts which mix the judgement-based and survey-based methods (Figure 16).

The judgement-based components utilise a quantitative 1-5 scale against 20 indicators, and qualitative assessment against seven criteria. The survey based component mixes a 1-5 scale and

qualitative open-ended questions in a post occupancy evaluation to survey residents' opinions. Qualitative open-ended questions are used to survey planning officials and property developers (Boffa Miskell, 2012).

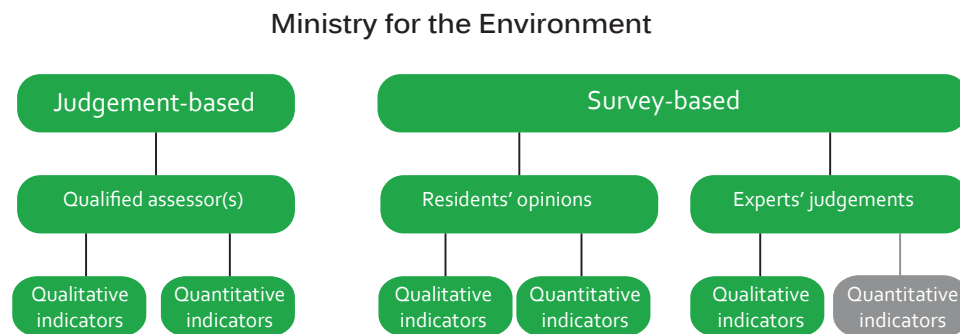


Figure 16: The **Ministry for the Environment Medium-density Housing Case Study Assessment Method** uses all methods in some form with the exception of survey-based expert judgement with quantitative indicators. Author's image based on information from Boffa Miskell (2012)

FUTURE INTENSIVE

As part of the *Future Intensive* study of housing intensification in Auckland, Haarhoff et al. (2012) assessed plan implementation under two former Auckland district plans. The purpose was to identify the effect of planning on medium density outcomes in terms of achieving the objectives.

The methodology is made up of two parts. The first is to utilise the 20 judgement-based indicators of the Ministry for the Environment's case study assessment methodology. The second is to interview planning officials in semi-structured interviews. The method represents a mixture of the judgement-based and survey-based systems (Figure 17). Haarhoff et al do not use the scoring system of the MfE indicators, but rather used the categories to guide qualitative discussion. The interview questions are qualitative open ended questions.

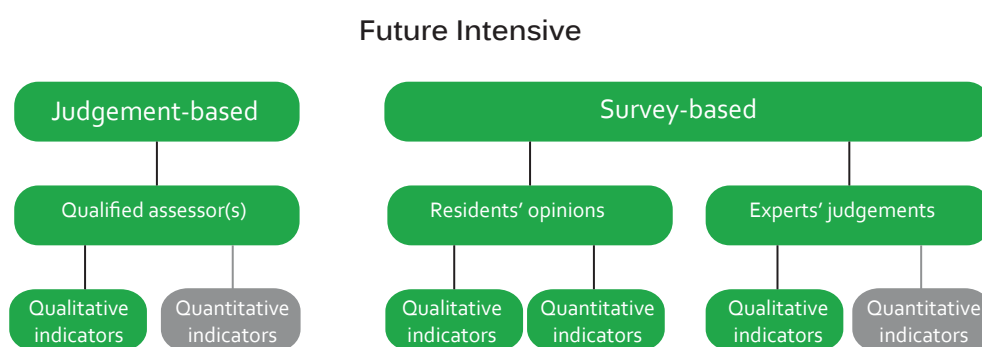


Figure 17: The method of the **Future Intensive** Study uses a range of approaches, although quantitative indicators are used for residents' surveys only. Author's image based on information from Haarhoff et. al (2012)

DISCUSSION AND COMPARISON OF ASSESSMENT METHODS

The judgement-based approach is more suitable than the survey-based approach for carrying out the assessment for this research. This is because single assessor allows for a greater degree of consistency when comparing outcomes as the assessor will be familiar with the intent of the assessment process, and apply a consistent 'bias' when completing assessments (Carmona &

Sieh, 2004; Hopkins 2001; Talen, 1996b). Additionally, laypersons' understanding of planning issues, and the goals and objectives of planning documents can be limited. For example, Van Reenan noted methodological difficulties in this aspect as during face to face interviews respondents were noted as having some difficulty in interpreting the questions, and lacking in awareness of planning issues.

Furthermore, planning goals are concerned with development over a long time period, while the residents may only be in a particular neighbourhood for a much shorter period of time. In New Zealand the median time spent living at one dwelling was 3.7 years, while at the 2006 census, 57.7 per cent of the population had moved house one or more times in a five year period (Statistics New Zealand, 2008). In terms of the long-term perspective this limits the effectiveness of resident surveys.

Survey based methods involving experts with project-specific knowledge provide useful information on how outcomes were shaped, and can be useful for attributing reasons for specific aspects of decisions. However there are a number of issues. The bias, and knowledge is geared toward the profession being interviewed (Carmona & Sieh, 2004; Grant, 2009; Hopkins, 2001). It is often difficult to locate the persons involved due to the time that has passed since the beginning of the project. This also causes difficulty due to lapses in memory and it is difficult to recreate the situation from the time of the original decision, and recall what bearing specific influences have (Hopkins, 2001).

SUITABILITY OF METHODS ACCORDING TO CRITERIA 1

The first criteria considers whether the research method is able to be aligned with the objective-outcome definition of quality in planning described in Section 2.5. This will determine whether the method can assess outcomes in terms of the content of District Plan goals and objectives for medium density housing.

The Gjerde, Van Reenan, Ministry for the Environment and Future Intensive methods all aligned well to this criteria as they were developed to at least in part of assess meeting plan goals and objectives for housing intensification. The Best Practice in Medium Density Housing Design method was consistent with the criteria in terms of assessing what was required within developments. However it gave little consideration to assessing the relationship of case study developments to the surrounding neighbourhood. The focus of the research also gave considerable attention to establishing common medium density housing typologies over assessing the quality of medium density housing case studies.

The method of the Future Intensive study was developed for the purpose of assessing implementation of goals and objectives for housing intensification by comparing outcomes to objectives, making it highly relevant to this research. The Ministry for the Environment method is also highly relevant as Future Intensive's method was based on its indicators and interpretation of quality of planning outcomes.

NZ ALI did not align well to the criteria due to a primary focus on the quality within individual apartments. The assessment indicators did not address integration with the neighbourhood due to a focus on the high-density apartment typology. This misses a key aspect of Plan objectives related to medium density housing, and the issues raised when drafting the Plan Change.

SUITABILITY OF METHODS ACCORDING TO CRITERIA 2

Criteria 2 requires the data of case study assessments to be used to comparatively discuss outcomes to determine the level of improvement in the quality of outcomes following the Plan Change. A quantitative scoring system is best for comparative analysis of outcomes before and after the Plan Change. This allows comparison of the relative performance of each according the definition of success (Talen, 1996a).

All methods except Future Intensive used a quantitative scoring system as at least part of the method. Best Practice in Medium Density Housing Design used a negative-neutral-positive scale. NZ ALI used a large range of indicators which contained a mix of yes/no categorisations, quantitative scales based on factors such as building dimensions, and 1-7 scales based on assessors' interpretations. The remaining methods used a five point ranking scale for the judgement-based components. These were supported by descriptions of what should be expected in order to allocate each score.

The scale used by the Best Practice in Medium Density Housing Design method is deemed to have an insufficient level of detail. In particular, there may be a range of 'positive' outcomes, and the assessment and not being able to distinguish the 'level of positivity' limits the ability to show improvement. A 1-5 scale allows a greater variation, more specific guidance on what is expected for each score, and has a large number of established precedents.

SUITABILITY OF METHODS ACCORDING TO CRITERIA 3

The third criteria considers the suitability of each assessment method for attributing changes in specific aspects of case studies to specific plan implementation measures. The outcomes must have been assessed in terms of the relevant goals and objectives for medium density housing, and the level of improvement identified. The purpose is to be able to identify which if changes in quality were due to the changes in plan implementation made by Plan Change 56. To meet this criteria, there must be a sufficient range of distinct indicators to consider detailed aspects of each outcome. This is because the changes made by Plan Change 56 were to the policies, rules and Design Guide, which are used to assess proposed development at a high level of detail.

The Best Practice in Medium Density Housing Design method used seven indicators, each with a broad focus which did not allow for detailed analysis of results. Gjerde used 14 indicators (broken into 67 more detailed sub-elements) which are consistent in subject matter to the focus of the Rules and Design Guide. Van Reenan, and Ministry for the Environment (and therefore Future Intensive) used a similar number of indicators (19 and 20). Bennett used the most with more than 100 indicators with highly detailed evaluation.

The similar number of indicators used by the methods most aligned with the goals and objectives of the District Plan, and the aim of this research suggest the range of 14-20 indicators is sufficient for Criteria 3. Furthermore Van Reenan and Future Intensive were both used as parts of research designed to assess plan implementation through outcomes. Both were focused on recent District Plans in New Zealand with objectives for intensification, and both assessed medium density housing outcomes. Additionally the Ministry for the Environment method was specifically designed to assess and compare quality of medium density housing outcomes under the Urban Design Protocol, which Wellington City Council has agreed to follow.

SELECTION OF ASSESSMENT METHOD

Table 1 shows a summary of the suitability of each assessment method. Assessment of outcomes using the judgement-based approach with quantitative methods is most appropriate to this research. It allows comparative discussion of outcomes to show the relative level of improvement in quality of outcomes before and after Plan Change 56.

Table 1: Comparison of methods for assessing quality of medium density housing outcomes. Fields shaded green represent suitability for the purposes of undertaking this research.

	Data collection method	Judgement or survey?	Qualitative or quantitative?	1 alignment to plan	2 means of scoring	3 number of indicators	Overall
Turner et al	Plan review and field assessment	Judgement	Quantitative	Not aligned	3 point scale	7	Not suitable
Van Reenan	Questionnaire of residents + experts	Survey	Mixed	Aligned	5 point scale	19	Not suitable
Gjerde	Plan review of competition entries	Judgement	Quantitative	Aligned	5 point scale	14	Suitable
NZ ALI	Plan review/field assessment to input answers to a spreadsheet	Judgement	Quantitative	Not aligned	Mixed scale	108	Not suitable
Ministry for the environment	Plan review and field assessment + questionnaire of residents and experts	Mixed	Mixed	Aligned	5 point scale	20	Suitable
Future Intensive	Plan review and field assessment + questionnaire of experts	Mixed	Qualitative	Aligned	Qualitative	20	Not suitable

Van Reenan's method was excluded on the basis that the method used an entirely survey-based approach not suitable for use by a single assessor. Future Intensive was excluded as the method was entirely qualitative, which limits objective comparison.

In terms of information requirements, Turner et. al is unsuitable according to all three criteria due to a different alignment of focus, and a low number of assessment indicators, and little room for detailed comparison and was therefore excluded.

NZ ALI was ruled out under the first criteria due to a focus not sufficiently aligned to assessing medium density housing or plan implementation.

The methods developed by Gjerde and the Ministry for the Environment remained as the only judgement-based methods to give quantitative data outputs and meet all three criteria. Of the methods reviewed, the Ministry for the Environment method has been selected to form the assessment method of this research. Gjerde's method is primarily designed for assessing competition entries with regard to a specific site while the Ministry for the Environment method is an assessment methodology that was designed for the assessment of medium density housing outcomes in New Zealand under the context of the Urban Design Protocol (discussed in Section 2.5). As the Wellington City Council is a signatory of the Urban Design Protocol, its goals are aligned to achieving the same aims. The Ministry for the Environment method has precedent in being used for assessment of plan implementation through case studies by the Future Intensive study (Haarhoff et al., 2012). The Ministry for the Environment method is designed with regard to site visits and analysis of plans with a larger level of detail as it is designed for completed projects, while Gjerde's method is aimed at a lower level of available information (Three A2 size panels at the concept design stage). Overall these factors show the Ministry for the Environment method is a better fit to the goals and objectives of the plan than the Gjerde method. Alignment to the objectives is important because as discussed in Section 3.1, it is in terms of objectives that planning success is defined and assessed.

LIMITATIONS

While the a judgement-based approach using quantitative data has been ruled as most appropriate for this research, there are some limitations. A primary limitation of the method is that the bias or interpretation of the assessor is carried through in each assessment, and therefore the results are subject to the level of understanding of the assessor. The use of the Ministry for the Environment method by the Future Intensive study as well as three published case-study examples by the Ministry for the Environment allows greater potential for calibration of assessors to ensure the method is used as intended (see Section 4.4). This aligns the results of the assessment with the New Zealand Urban Design Protocol as well as research on plan implementation in Auckland (Haarhoff et. al, 2012). The makes the results less subject to the interpretations of a single assessor.

Additionally, judgement-based assessment does not assess the inhabitants' perceptions of medium density housing outcomes. This means it does not consider those with the highest level of interaction with the outcomes. However, the focus of the District Plan goes beyond individual inhabitants, and is concerned with the collective impact of development on the wider neighbourhood. Additionally, the focus of planning is long term in the collective interest, while the residents' focus is more short term and individualistic.

Finally the purpose of obtaining the assessment data is for comparison. Where a different

assessor is used in each case, there can be large differences in interpretation of each assessment indicator, and how each score should be applied as was experienced by Van Reenan (2007).

Surveying of experts can provide project-specific knowledge, and the rationale for decisions that drove the outcomes. In the case of planning officials, it can provide explanation of how the goals and objectives were implemented with regard to specific outcomes. However Hopkins (2001) notes the difficulty in relying on surveying of experts, particularly where the planning decisions occurred some time ago. To compensate, the documentation from each Resource Consent application will be used. Resource Consent documentation gives a record of the rationale used by the Council at the time of decision making and is written in terms of interpretation of the goals and objectives of the district plan. The method for obtaining information will be discussed in section 3.6.

Taking into account the limitations noted, in the following section the Ministry for the Environment method is described in greater detail and developed to provide the assessment framework for this research.

3.5 THE ASSESSMENT FRAMEWORK

The Ministry for the Environment method is comprised of 20 assessment indicators under the four categories of Site Context and Layout; Building Form and Appearance; Street Scene; and Internal Configuration. Figure 18 shows the detailed makeup of the assessment categories and their component indicators. Site context and layout Building form and appearance Street scene Internal configurations Ministry for the Environment Assessment Indicators

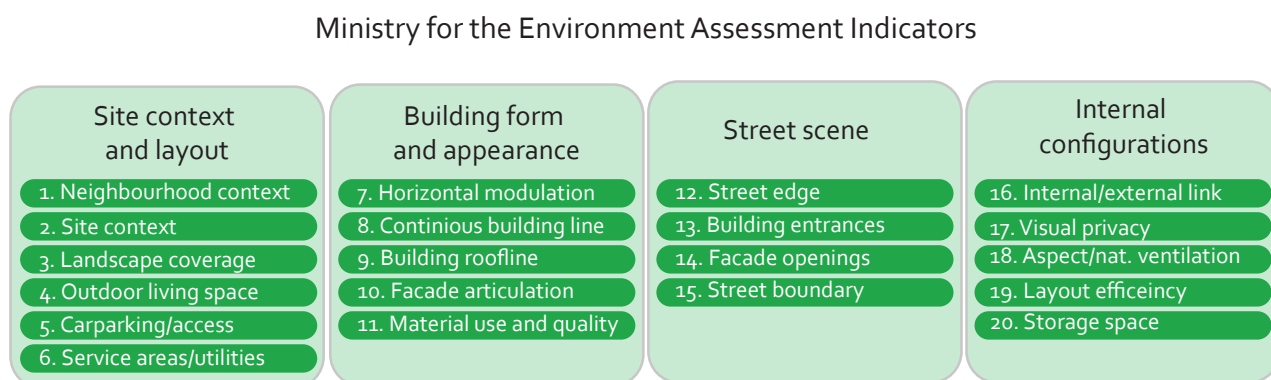


Figure 18: Ministry for the Environment Case Study Assessment Method indicators grouped by category. Image generated by author, content from Boffa Miskell (2012)

The *Site context and layout* indicators assess the external elements of the site, and the way in which its layout has been integrated with the surrounding neighbourhood. It considers the proximity and accessibility to shops, town centres, open space and public transport.

The *Building form and appearance* category is primarily concerned with the external appearance of buildings with regard to the treatment of facades, and the overall appearance created by the way the buildings relate to one another and the street.

The *Street scene* category assesses the public-private interface between the developments, and surrounding streets and open space. This includes how entrances front to the street, the contribution this makes to the streetscape, and the level of safety and security provided by 'passive surveillance'.

The final *Internal configurations* category considers the quality of the internal areas of outcomes. This is in terms of layout for flexibility in ongoing use, and access to daylight and natural ventilation. It considers the relationship to the outdoors in terms of access to open space and the privacy of inhabitants.

THE RANKING SCALE OF THE MINISTRY FOR THE ENVIRONMENT METHOD

The 20 indicators of the assessment criteria assesses individual dwellings, the quality of the overall development and its integration with the wider neighbourhood. For each of the indicators the development is ranked on a 1-5 scale. This generates a final score out of 100.

The Ministry for the Environment assessment method provides a qualitative definition for scores of the 1-5 ranking scale. This gives qualitative guidance for how points are allocated under the 20 indicators and are summarised in Table 2. These address the way the Ministry for the Environment's urban design principles have been addressed; consideration of the amenity of the public, neighbours and those within the development; and overall quality and function of the design outcome.

Table 2: Qualitative criteria guiding the allocation of each score under the assessment indicators of the Ministry for the Environment Case Study Assessment Method (Boffa Miskell 2012d)

	1	2	3	4	5
Urban design principles	Little consideration	Inadequately addressed	Satisfactorily addressed	Successfully addressed	Best practice
Amenity	Little consideration	Inadequately addressed	Imbalanced response	Balanced response	Good balance
Overall design of development	Functional at a basic level	Predominantly functional	Base level of achievement	Well considered	Responsive to site, contributes to wider city

On the scale of 5, a score of 1 represents the lowest possible score with a basic functional development, but little consideration of urban design principles, or amenity. A score of 3 represents the 'base level of achievement' with urban design principles being 'satisfactorily addressed' but the approach to amenity not balancing the needs of the public, neighbours and residents. At the highest end of the scale is a score of 5 which is a well-balanced scheme that is 'most representative of urban design best practice'.

ALLOCATION OF SCORES

The Ministry for the Environment provides more detailed guidance regarding criteria for awarding each score under each of the 20 indicators (See Appendix I). Following the majority of methods described in Section 3.4, a combination of site visits, and approved plans will be used to allocate

rattlesnakes according to the Ministry for the Environment indicators. The assessor used in research calibrated the scoring system against previous examples of case study assessment (described in Section 4.4). This will aid in addressing the issues of subjectivity of the scoring system identified by Haarhoff et al (2012), and increase consistency.

WEIGHTING OF INDICATORS

Haarhoff et al. (2012) note that the Ministry for the Environment criteria does not apply weighting to each indicator, and treats each with equal importance, and in developing NZ ALI, Bennett applies a range of weightings to the indicators due to large variations in perceived importance across different factors. Weighting however has less importance in this research. This is because discussion will consider specific policies, rules and guidelines of the District Plan, rather than the overall score attributed to each outcome. This means the relative performance under each separate indicator across all outcomes before and after the Plan Change is more important than the overall score. Furthermore the goals and objectives of the District Plan are not weighted, and the District Plan does not stipulate the relative importance of each. This makes any weighting difficult to apply in a way that is consistent to the intentions of the District Plan.

3.6 IDENTIFYING SUCCESS IN PLANNING, AND REASONS FOR SUCCESS

Using the results of the assessment of case studies of medium density housing outcomes, the scores awarded will be able to give an indication of the quality of case studies of outcomes. This allows completion of the fifth step: to identify success in planning.

Each indicator will show quality of outcomes relating to specific aspects of the outcomes achieved. This leads into more detailed analysis in Chapter 5 to determine reasons for the quality of outcomes achieved as part of the sixth step. The scope of assessment for each indicator will be aligned with the wording of the policies of the District Plan to draw conclusions on the effect of implementation. The process is shown in Figure 19, and will be detailed in the following paragraphs.

IDENTIFYING SUCCESS AND THE EFFECT OF PLAN CHANGE 56

The goals, objectives and implementation strategies affecting the quality of medium density housing outcomes will be identified from the content and wording of District Plan documents. After identifying the relevant objectives, at the implementation level of the planning hierarchy, the policies, rules and guidelines will be matched to the 20 indicators of the Ministry for the Environment Medium-density Housing Case Study Assessment Method. This means the effectiveness of each policy, rule and guideline of the implementation framework is able to be assessed individually.

Comparison of the quality of outcomes of case studies taken from before and after Plan Change 56 will be used to demonstrate the effect of the Plan Change. Talen (1996a) argues that in terms of

planning, “success is not an absolute notion; rather it is a comparative concept measured in degrees”. By this definition, Plan Change 56 has successfully improved implementation of the District Plan if the post-Plan Change outcomes show an *improvement* in quality relative to the pre-Plan Change outcomes.

To satisfy the requirement under the definition of success developed in Section 3.2, it must additionally be determined if the difference in quality was *because of* the Plan Change. Wellington City Council documents will be used to show which of the policies, rules and guidelines of the implementation framework were amended by the Plan Change. The case study assessment results will show the relative difference in quality of pre and post-Plan Change outcomes according to each District Plan policy. This means the effect on quality can be compared in terms of amended and unamended policies. Plan Change 56 can be identified as the reason for the improvement in quality if the improvement in quality of outcomes is more significant under the policies that were amended by the Plan Change.

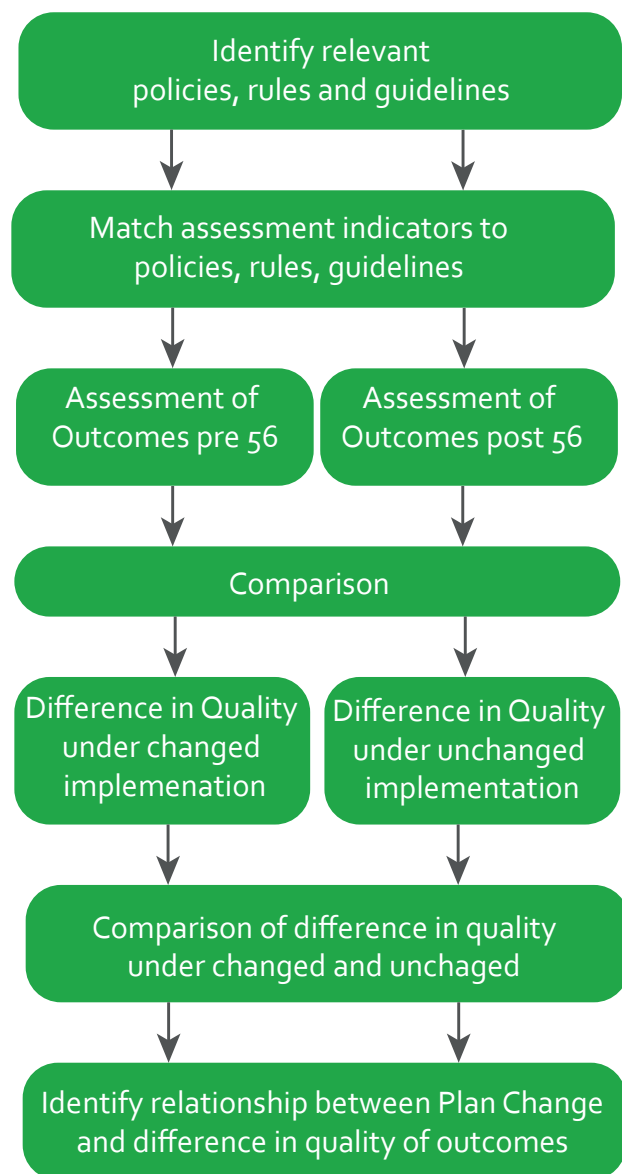


Figure 19: Process to identify the effect of Plan Change 56 on the quality of medium density housing outcomes. Author's Image

To further investigate the reasons for changes in quality of outcomes, the documentation from Resource Consent applications will be reviewed. Resource Consent applications specifically describe how the designers of a housing proposal have considered, and sought to meet the requirements of the policies, rules and guidelines of the District Plan. Under the subsequent *Notification of Decision* and *Urban Design Assessment* for each case study, comprehensive written information is provided explaining how proposed developments were assessed. These are written specifically with regard to the requirements of the District Plan at the time of a development proposal. This provides the best representation of the way the District Plan has been implemented, and how this influenced the quality of the case studies of medium density housing outcomes. This provides additional qualitative information on how the plan was implemented, and will allow discussion in Chapter 5 of the reasons for the level of success of Plan Change 56 in improving the quality of medium density housing outcomes.

3.7 PLANNING SUCCESS AND MEDIUM DENSITY HOUSING

Building on the background to planning described in Chapter 2, this chapter has established a definition of *success* in planning. Success is defined by the quality of outcomes. The District Plan influences the quality of outcomes through its implementation. Drawing from the literature, it has been established that success is where the *purpose and intent* of a plan's goals and objectives are met by the outcomes *because of* its implementation. For this research, Plan Change 56 will be determined successful if it has enabled improved quality of medium density housing outcomes through implementation of the District Plan.

The method for assessing quality of medium density housing outcomes has been developed through comparison of recent research evaluating quality of housing intensification in New Zealand. The Ministry for the Environment method includes a number of strong precedents, and the method approach shares similarities with many aspects from prior research.

The results case study assessment under the method will deliver quantitative information that forms a strong basis for in depth qualitative discussion based on comprehensive documentation of the reasons for planning decisions. Together these will show the level of relative improvement of quality of medium density housing outcomes because of Plan Change 56.

4. ASSESSMENT OF MEDIUM DENSITY HOUSING CASE STUDIES

The purpose of this chapter is to identify the change in quality of medium density housing outcomes that occurred as a direct result of Plan Change 56. This chapter will identify the policies of the District Plan that influence the quality of medium density housing outcomes. The changes made by Plan Change 56 will be highlighted. The process used for identifying the case studies of medium density housing outcomes to be assessed will be described. Case study assessment results will be presented, and the effect of Plan Change 56 on the quality of outcomes will be shown in for each policy change.

4.1 MEDIUM DENSITY HOUSING AND THE WELLINGTON CITY DISTRICT PLAN

The documents of the *Wellington City District Plan* are arranged in three volumes. Volume 1 contains objectives, policies and rules which state the desired outcomes of future development, and how its implementation will be controlled. Volume 2 is a collection of design guides, which allow control of development in a more performance-based 'discretionary' approach. Volume 3 is comprised of maps to show the application of zoning and other features (Wellington City Council, 2010c, p. 22). The first volume is most significant to this research as it contains the majority of the material relating to goals, objectives and implementation. The second volume includes the *Residential Design Guide*, which is significant to the implementation of medium density housing.

The District Plan documents were reviewed for content which governs medium density housing outcomes. Based on the definitions of intensification and medium density housing established in Chapter 2, three criteria were used to identify the relevant goals, objectives and implementation frameworks:

A - An increase in housing density

Provisions that directly seek to implement housing intensification

B - Improved access to facilities, services and transport

Provisions that seek improved liveability in terms of the benefits of increased proximity to daily requirements – and thereby are required an increase in density.

C - Quality of housing outcomes

Provisions to control the way goals for intensification are achieved to avoid crowding and other negative effects of increased density.

GOALS RELATING TO DEVELOPMENT OF MEDIUM DENSITY HOUSING

At the goals level of the hierarchy the District Plan identifies 13 *Significant Issues* split between five *Qualities and Values*, and nine *Specific Issues*. These are described in the Introduction to the first volume of the District Plan. Five of these goals were identified as affecting the quality of medium density housing outcomes. These are summarised in Table 3.

Table 3: Goals of the District Plan identified as relevant to quality of medium density housing according to the three criteria identified (Wellington City Council, 2000. P. 12-18)

Goal	Name and purpose of the Goal	Criteria
Q2	<i>Amenity</i> To provide a minimum standard of quality of life and enjoyment of the surrounding environment	C
Q4	<i>Accessible City</i> The ability for all groups of the population to meet their needs	A, B
S1	<i>Managing urban development at the edge of the city</i> Intensify development within the established footprint of the city	A
S4	<i>Maintaining the quality of life of living environments</i> Ensure development maintains a good standard of amenity in residential areas	C
S6	<i>Maintaining and enhancing the quality of the built environment</i> Ensuring buildings provide a good standard of amenity for those living in them, and in relation to the surrounding neighbourhood	B

Q2, the goal of *amenity* states that the implementation of the District Plan should “maintain and enhance amenity values”. The District Plan states that the success of outcomes is dependent on residents’ enjoyment of life from living in the city. Amenity values play an important part of defining many objectives and policies. This means the goal has a significant impact on the implementation of the District Plan. In terms of quality of medium density housing outcomes, this goal has a strong influence on the requirement for ‘quality of life’ and ‘liveability’ in defining successful outcomes.

Q4, the *accessible city* goal requires that “people can achieve access to destinations which enable them to meet their needs”. The District Plan goes on to state the importance of planning in achieving development where multiple destinations have a close proximity to one another. **S1**, the goal of *managing urban development at the edge of the city* aims to prevent urban sprawl, and specifically states the need for intensification.

S4, *maintaining quality of living environments* sets the need for residential development to meet a certain baseline in terms of quality in the way it relates to the surrounding neighbourhood. Viewed in combination with the other goals, this shows a need for intensification to occur without a compromise of quality and the ills of crowding.

Goal **S6** of *maintaining and enhancing the quality of the built environment* combines to show the importance of quality of the buildings developed as part of achieving liveability in medium density housing.

These goals show the Wellington City District Plan follows an approach of intensification for the purposes of realising the benefits of increased accessibility to facilities, services and transport options. This is consistent with the benefits of intensification described in Chapter 2. Concurrently the goals require quality of those medium density housing outcomes that allows residents to expect a minimum level of amenity, quality of life and accessibility.

OBJECTIVES RELATING TO DEVELOPMENT OF MEDIUM DENSITY HOUSING

The first volume of the plan is arranged to cover 13 categories of development arranged by zone to outline the objectives and implementation framework. There are two chapters for each zone. One chapter covers the objectives and policies, and the other lists the rules. Chapter 4 of the first volume of the District Plan entitled *Residential Areas* describes the *Residential Area Objectives* and *Residential Area Policies* for residentially zoned land. Chapter 5 covers the *Residential Area Rules*. It is in the Residential Areas that the majority of medium density housing is located, and in Chapters 4 and 5 of the District Plan that the majority amendments were made by Plan Change 56 (Wellington City Council, 2007b)

There are 11 Residential Area Objectives. Five are objectives that relate to medium density housing. These are summarised in Table 4. The residential area objectives remained unchanged by Plan Change 56.

Table 4: Wellington City District Plan Objectives affecting quality of outcomes of medium density housing (Wellington City Council, 2007d)

Objective number	Objective	Criteria
4.2.1	To promote the efficient use and development of natural and physical resources in Residential Areas.	A, B, C
4.2.2	To maintain and enhance the amenity values of Residential Areas	C
4.2.3	To maintain and enhance the physical character of Residential Areas and identified areas of special streetscape or townscape character.	A, C
4.2.9	To enable efficient, convenient and safe access for people and goods within Residential Areas	B
4.2.10	To promote the development of a safe and healthy city.	C

The Residential Area objectives carry through the goals for medium density housing from the Significant Issues and Qualities and Values, and detail them specifically in terms of residential development. However, the District Plan does not specifically state which goals each objective is

aligned to achieving. This has been judged using the three criteria identified and the wording used in explaining each objective.

Objective 4.2.1 *efficient use of natural and physical resources* carries through the requirements of **S1** to contain development within the city's existing footprint. This combines with the accessibility requirements under safe and convenient access requirements under **Objective 4.2.9** to encourage intensification. The District Plan's goal for amenity (**Q2**) is carried through to **Objective 4.2.2**, with a specific focus on amenity in residential areas. **Objective 4.2.3** requires 'maintaining and enhancing of residential areas and streetscapes'. These show the objectives' requirements for quality of outcomes in the residential areas where medium density housing is developed. This carries through goals **S4** and **S6** regarding the quality of 'living environments' and the built environment.

POLICIES RELATING TO MEDIUM DENSITY HOUSING

At the first level of the implementation stage, a number of Policies are grouped under each Objective. These give more detail on how the objectives will be enacted and realised. Typically three to five policies are grouped under each objective. There are area 50 Policies in Chapter 4 of Volume 1 of the District Plan. Each Policy details methods for meeting its aims and is followed by an explanation of its intent in terms of the goals and objectives. Of the 50 Policies, 10 relate directly to the implementation of medium density housing. These are listed in Table 5.

Table 5: Wellington City District Plan Policies affecting quality of outcomes of medium density housing. Based on information from Chapter 4. Policies amended by Plan Change 56 are highlighted.

Objective	Policy	Policy	Criteria
4.2.1	4.2.1.1	Encourage development within the existing urban area	A, B
	4.2.1.2	Provide a greater mix of activities in residential areas while protecting character and amenity	B, C
4.2.2	4.2.2.1	Control potential adverse effects of residential activities	C
	4.2.2.1A	Control siting, scale and intensity of development to be compatible with the surrounding area and protect amenity	C
4.2.3	4.2.3.1	Control siting, scale and intensity of development to reflect differences between residential areas	C
	4.2.3.1A	Require open space to assist integration with the surrounding area	C
	4.2.3.1B	Minimise hard surfaced areas to assist with integration with the surrounding area	C
	4.2.3.3	Control potential adverse effects of infill and multi-unit development	A, C
4.2.9	4.2.9.3	Appropriate parking, loading and site access in residential areas	B
4.2.10	4.2.10.1	Increase personal safety through design of developments	B

POLICIES AMENDED OR ADDED BY PLAN CHANGE 56

Four policies were created or significantly amended by Plan Change 56. **Policy 4.2.2.1A** *siting, scale and intensity of residential development* was added by Plan Change 56 to attempt to clarify **Policy 4.2.2.1** *adverse effects of residential activities*. The policies fall under **Objective 4.2.2** of *amenity in Residential Areas*. The addition of **Policy 4.2.2.1A** by the Plan Change define controlling 'adverse effects of residential activities' as managing the 'siting, scale and intensity' of residential development. While specifically mentioning multi-unit development, the policy

also discusses appropriateness of location, scale and relationship to the surrounding context for buildings developed in Residential Areas (Wellington City Council, 2007d. p.6-8). Plan Change 56 significantly extended the explanatory text from three short paragraphs to in excess of two pages. The wording discusses rules relating to bulk and location, and the need to be 'consistent' with the character of the surrounding neighbourhood.

POLICIES 4.2.3.1; 4.2.3.1A AND 4.2.3.1B – CHARACTER OF RESIDENTIAL AREAS

Under **Objective 4.2.3** *maintaining and enhancing the character of Residential Areas*, **Policy 4.2.3.1** requires proposed development to consider integration with the character of the surrounding residential area through use of open space. The policy requires giving regard to the existing development patterns in terms of scale, location within a site, when designing the size, configuration and access to open space (Wellington City Council, 2007d. p.11). **Policies 4.2.3.1A and 4.2.3.1B** were added by Plan Change 56 to develop further detail on how open space should be designed.

Policy 4.2.3.1A adds a requirement for onsite ground level open space to 'reduce the impact of development on the surrounding neighbourhood'. The explanatory text details the need for front gardens, landscaping, and a balancing of green space with vehicle parking requirements (Wellington City Council, 2007d. p.12). Similarly **Policy 4.2.3.1B** seeks a reduction of hard-surfaced areas and increase of planting with the aim of increasing 'amenity' and integration with the neighbourhood. The explanatory text seeks a reduction in hard surfaced areas for functions such as car parking and manoeuvring (Wellington City Council, 2007d. p.12-13). The intentions of the policies are particularly relevant to managing the quality of medium density housing development, and to protect neighbourhood amenity through provision and management of the spaces between dwellings.

POLICY 4.2.3.3 – ADVERSE EFFECTS OF INFILL AND MULTI-UNIT DEVELOPMENT

Also fitting under the 'character' objective for residential areas, **Policy 4.2.3.3**, to *Control the potential adverse effects of infill housing and multi-unit residential development* is significant as it refers specifically to medium density housing and a large amount of additional policy wording was added by the Plan Change. While the rules discussed in the preceding paragraphs deal with the effect of buildings and the spaces between buildings, **Policy 4.2.3.3** addresses the combined effects of a larger collection of buildings as part of a multi-unit development. The policy begins by identifying multi-unit development as critical to delivering the intensification needed for meeting the District Plan's intensification objectives, and moves to discussion of the expected quality of outcomes. The explanatory text speaks of maintaining amenity, and that "Council seeks to promote excellence in the design of multi-unit residential developments" (Wellington City Council, 2007d. p.14). The Policy continues the theme of 'fitting in' with the surrounding character. Specific mention is made of the use of the 'bulk and location standards' and car parking rules, to controlling the form of development. The Policy refers to the Design Guide as a means of assessment (Wellington City Council, 2007d. p.14-15). The Policy offers considerable scope to control implementation of medium density housing outcomes.

POLICIES UNAFFECTED BY PLAN CHANGE 56

The remaining Policies relating to medium density housing were left unamended by Plan Change 56. Under **Objective 4.2.1** *promoting efficiency in use of resources*, **Policy 4.2.1.1** *encourage development within the existing urban area* recognises the environmental and public transport benefits of intensification and provides policy support for the implementation of medium density housing (Wellington City Council, 2007d. p.4). Under the same Objective, **Policy 4.2.1.2** *greater activity mix* recognises the locational benefits of density in terms of providing a greater proximity to non-residential activities in residential areas (Wellington City Council, 2007d. p.4). **Policy 4.2.9.3** *appropriate parking and access* comes under the objective for accessibility. The policy is written from the perspective of maintaining proper vehicular and pedestrian access to dwellings by managing street congestion through appropriate provision of car parking (Wellington City Council, 2007d. p.26). Finally, **Policy 4.2.10.1** requires that developments be designed to minimise threats to personal safety, and prevent crime under the 'safe and healthy city' objective (Wellington City Council, 2007d. p.28).

ALIGNMENT OF POLICIES RELATING TO MEDIUM DENSITY HOUSING TO THE INDICATORS OF THE ASSESSMENT METHOD

The policies identified as relating to medium density housing development were aligned to the 20 indicators of the assessment method. This was completed by comparing the explanatory wording of each policy, to the supporting description on the interpretation of each assessment indicator. Table 6 shows a matrix of the District Plan's policies compared to the relevant assessment indicators of the Ministry for the Environment Medium-density Housing Case Study Assessment Method.

Table 6: Relationship between policies for medium density housing and assessment method indicators. Based on information from the Wellington City Council (2007d) and Boffa Miskell (2012d)

	Assessment method indicators																			
	Site context + layout						Building form					Street Scene				Internal Configuration				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
4.2.1.1	x																			
4.2.1.2	x																		x	
4.2.2.1		x		x												x				
4.2.2.1A		x		x								x				x	x			
4.2.3.1																				
4.2.3.1A				x	x										x					
4.2.3.1B			x																	
4.2.3.3	x				x		x	x	x	x		x			x			x		
4.2.9.3					x															
4.2.10.1														x	x					

The majority of links identified were in relation to the *site context and layout* category of the assessment method. This is due to the frequent discussion by the Policies related to 'fitting in' with the surrounding neighbourhood 'character'.

The category of *Building Form* assess specific details such as rooflines and treatment of facades, The primary focus is on the image presented to the street edge and its impact on the surrounding streetscape. This relates to the Policies considering 'siting, scale and intensity'.

Under the category of *Street Scene* assessment considers the relationship between the boundary of the development and the surrounding streetscape and public open space. This aligns with requirements to consider the effect on the surrounding neighbourhood under the policies.

The *Internal Configuration* category is linked to some policies due to requirements for direct connection to outdoor space and privacy. This relates to the policies covering amenity.

THE RELATIONSHIP BETWEEN POLICIES AND ASSESSMENT METHOD INDICATORS

A number of goals, objectives and policies that control the quality of medium density housing outcomes have been identified. The policies support the intent to intensify development within the established area of Wellington City. Additional policies are in place with a number of requirements for the quality of development outcomes. There is a strong focus expecting a minimum standard of 'amenity', and a recognition and requirement to achieve the benefits of intensification from greater proximity to a more diverse mix of activities.

At the top of the planning hierarchy, the goals and objectives were left unchanged by Plan Change 56. At the implementation level, there were some amendments and additions to the Policies. In particular, among the amendments there was a strong focus on 'fitting in' with the surrounding 'character'. The use of the rules and design guide to better control outcomes with the intent of improving quality, and meeting the objectives for amenity was mentioned a number of times. The additional text to explain the intent of the new and amended policies is significantly more substantial than prior to the Plan Change. Among the added text there were frequent mentions of better managing 'siting, scale and intensity' of development and the treatment of open space in achieving these. Among the changes, there were specific mentions of 'multi-unit development' showing specific provisions to control medium density housing. In this regard a critical Policy is **Policy 4.2.3.3 Control the Potential Adverse Effects of infill development and multi-unit residential development** which underwent substantial revision as part of the Plan Change. The Policy states a number of issues the policy is intended to address at some length (Wellington City Council, 2007d).

Each of the Policies were aligned to at least one indicator from the assessment method. Most link to multiple indicators. This is because indicators are grouped according to assessing specific characteristics of buildings and sites, while Policies address issues that may be prevalent across multiple areas. The indicators will allow assessment of the cumulative effects of policies across

each development while also providing detail to identify the reasons for those effects.

The policies identified as controlling medium density housing outcomes cover both aspects of achieving liveability identified in Chapter 2, Section 2.4. However, all amended policies were all in terms of managing the treatment of buildings and spaces between buildings. The policies encouraging intensification to achieve the benefits of a greater concentration of people were those not amended.

4.2 SELECTION OF CASE STUDIES

Moving from implementation to outcomes, this section will identify medium density housing developed in Wellington under the District Plan in the periods before and after Plan Change 56. Applying the definitions developed under this research, it will allow selection of case studies of outcomes to be assessed and compared.

DATA USED FOR SELECTING OUTCOMES FOR ASSESSMENT

Data was obtained on request from Wellington City Council listing Resource Consent applications for multi-unit housing development from 2003 to 2013. The data provided listed all resource consent applications received under **Rule 5.1.3.1 Number of Household Units**. The rule requires Resource Consent applications to be filed for all developments of three dwellings or more. The sample provided 111 Resource Consent applications across the specified period. This provides data for outcomes in the period leading up to the Infill Housing Review during which time the concerns over quality of outcomes were raised; and outcomes following the implementation of Plan Change 56.

The Ministry for the Environment definition of medium density housing used in this research (see Chapter 2, Section 2.4) defines medium density housing as developments of at least four units. The assessment method selected for this research is stated as being unsuited to assessment of outcomes with a number of units smaller than this (Boffa Miskell, 2012d; Ministry for the Environment, 2012). This is in line with Turner et al (2004) who note that as the number of dwellings decrease, site specific issues begin to increase in significance which weakens the comparison. On the basis of these requirements, Resource Consent applications for development of four units or more were selected from the sample. The title of each Resource Consent application stated the number of units proposed. This information was used to eliminate Resource Consent applications for developments of less than four units. After applying these criteria, 25 Resource Consent applications for potential case studies remained.

REQUIREMENTS FOR DETERMINING APPROPRIATENESS FOR FURTHER STUDY

Initial assessments were undertaken of the 25 selected Resource Consent applications. This was to ensure suitability for assessment both in terms of consistency with the aims of this research, and practical considerations for field work. Assessment took the form of site visits undertaken to confirm suitability according to the following three requirements:

1. Realisation of at least four units

This was defined as developments where at a minimum construction had begun for at least four units at the time of assessment. Those not yet underway could be subject to change in design, or not be completed due to other external influences, meaning that their completion as outcomes of the planning process is less certain. The purpose is to ensure the assessments will provide data of outcomes in their final completed form. These represent the final outcomes of the District Plan. The number of post boxes visible from the street was used as an indicator for the number of units, as well as visual assessment of the development.

2. Meeting the definition of medium density housing in terms of typology

This is in terms of the definition established in Chapter 2, Section 2.4 including, detached, semi-detached or terraced housing on smaller lots; or low rise apartment buildings at a height of up to four stories. The minimum net density is 30 dwellings per hectare.

3. Accessibility for field assessment from public areas

This requirement exists due to ethical considerations to ensure legal access to developments without intruding on private property rights.

IDENTIFICATION OF MEDIUM DENSITY HOUSING CASE STUDIES

Site visits were undertaken across 2nd and 3rd November 2013 to each of the 25 locations identified. This included recording of photographs at each site, and initial notes in regard to the assessment indicators in a standard form template.

The results of the initial site visits showed that of the developments, 14 were not realised as per the original resource consent application and classified as unsuitable for further study according to the first requirement.

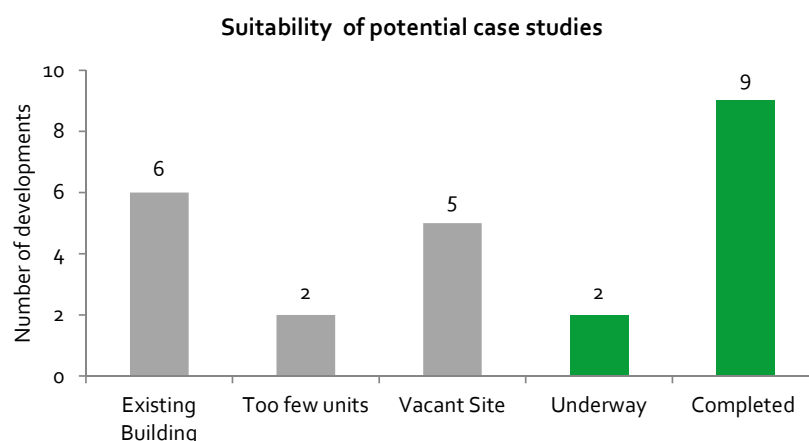


Figure 20: Comparison of the completion status of the 25 potential case study sites. Development of medium density housing had not been realised across many sites. Author's image.

Further break down of these numbers (graphed by Figure 20) shows that of the developments not realised, most retained a prior existing building onsite, or the site was still vacant and

undeveloped. This suggests the development applied for has yet to proceed to the construction stage. Two developments were completed, but the field observations ruled them unsuitable as they appeared to have less than four completed units. This suggests the developments were scaled back from the original Resource Consent application, or development is across more than one stage. Of the 11 developments suitable for study, two were under construction at the time of field observations, but appeared set to be completed according the requirements.

The remaining developments met the requirements of the remaining two requirements. This leaves 11 developments suitable for study in line with the aims of this research and definition of medium density housing. The details of these are summarised in Table 7.

Table 7: Developments selected for further study by date approved showing location and characteristics of each. Grey fill shows outcomes prior to the plan change, green fill denotes outcomes after Plan Change 56.

Date approved	Address	Suburb	No. Units	Completion Status	Typology	Density (dph)
24/09/2003	142 Onslow Road	Khandallah	5	complete	Terraced	59
9/02/2004	7 Cheyne Walk	Newlands	4	complete	Terraced	54
9/08/2004	32 John Sims Drive	Broadmeadows	4	complete	Terraced	40
24/06/2005	112 Rintoul Street	Newtown	70	complete	Terraced	70
24/11/2005	63 Darlington Road	Miramar	4	complete	Semi-detached	58
20/12/2005	344 Queens Drive	Melrose	9	underway	Terraced	54
17/10/2006	59 Mortimer Terrace	Brooklyn	7	complete	Apartment	126
12/22/2009	26 Wright Street	Mount Cook	20	complete	Terraced	68
23/09/2010	80 Queens Drive	Lyall Bay	6	complete	Apartment	52
21/03/2011	199 McIntock Street Nth	Johnsonville	4	complete	Detached	34
16/08/2012	76 Brougham Street	Mount Victoria	8	underway	Apartment	142

4.3 THE SELECTED MEDIUM DENSITY HOUSING CASE STUDIES

142 ONSLOW ROAD, KHANDALLAH

Number of units: 5	Site area: 847m ²	Net residential density: 59 dph
Typology: Terraced		Plan Change 56 Status: pre-Plan Change

142 Onslow road, Khandallah, is a development of five terraced houses. Each is three stories in height with a roof garden. Four units front the street with small gardens. At ground level each has one bedroom and a rear-access garage. Living areas are located on the first floor with balconies to the front and rear. Two bedrooms are located on the second floor, with a deck accessed from the street facing main bedroom. The fifth unit shares the same layout, but is located to the rear of the site.



Figure 21: 144 Onslow Road Case Study as viewed from the main street frontage. Author's image

7 CHEYNE WALK NEWLANDS

Number of units: 4	Site area: 744m²	Net residential density: 54 dph
Typology: Terraced		Plan Change 56 Status: pre-Plan Change

7 Cheyne Walk, Newlands, was a redevelopment of two semi-detached units. A first floor was added, and the development was reconfigured to four two bedroom units. Dwellings are accessed directly from the common driveway and vehicle parking area. At the rear each unit has ground level open space, accessed from the main living area or main bedroom. Two units have upper level living areas which are connected to balconies.



Figure 22: 32 Cheyne Walk Case Study as viewed from the main street frontage. Author's image

32 JOHN SIMMS DRIVE, BROADMEADOWS

Number of units: 4	Site area: 993m²	Net residential density: 40 dph
Typology: Terraced		Plan Change 56 Status: pre-Plan Change

32 John Simms Drive, Broadmeadows is a development of four terraced units. The frontages of the units are oriented 90 degrees from the street, and face onto a large driveway and parking area. The garage doors dominate over with the main entrances recessed behind. Each unit is over two stories. Living areas are on the ground floor, connected to north-west facing outdoor living areas. Each has three bedrooms on the first floor. Most bedrooms have good aspects, and the main bedrooms have a small balcony located over the garage. However, the middle units each have bedroom with no exterior outlook. Each has only a highly placed clestory window.



Figure 23: 32 John Simms Drive Case Study as viewed from the main street frontage. Author's image

108 RINTOUL STREET, NEWTOWN

Number of units: 70	Site area: 10 000m²	Net residential density: 70 dph
Typology: Terraced		Plan Change 56 Status: pre-Plan Change

108 Rintoul Street, known as The Altair is by far the largest development of the selected case studies at 70 terraced units. The development is made up of eight blocks of between seven and nine three-storey units. Two blocks face the street with small front gardens. A vehicle accessway runs between which connects to rear laneways. The majority of dwellings are three bedrooms, with a garage and bedroom on the ground floor. The living areas are located on the first floor connected to a balcony overlooking each dwelling's rear courtyard. The second floor has the remaining two bedrooms.



Figure 24: 108 Rintoul Street Case Study as viewed from the main street frontage. Author's image

63 DARLINGTON ROAD, MIRAMAR

Number of units: 4	Site area: 684 m²	Net residential density: 58 dph
Typology: Semi-detached		Plan Change 56 Status: pre-Plan Change

63 Darlington Road is located on a long, narrow site. The first two dwellings are three-storey detached houses, with a shared vehicle accessway to one side, and private open space to the other. Each has an internal access garage and flexible living space at ground level, three bedrooms on the first floor, and the main living areas on the second floor. The main bedroom and living area has access to balconies. The two two-storey units at the rear share a party wall, and have private open space at the rear of the site. Each has living areas on the ground floor with three bedrooms on the first floor above. A small detached garage is located in the space between the front and rear units.



Figure 25: 63 Darlington Road Case Study. Author's image

344 QUEENS DRIVE, LYALL BAY

Number of units: 9	Site area: 1658 m²	Net residential density: 54 dph
Typology: Terraced		Plan Change 56 Status: pre-Plan Change

The 344 Queens Drive case study was under construction at the time of assessment. The development consists of seven three-storey terraced apartments along the street frontage, and a smaller building at the rear with two additional units. At the street frontage, the development is split in two smaller buildings of three and four units. Three units have driveways accessed from the main street frontages. The remaining four have front gardens. The units are a mix of three and four bedrooms. Each has an internal access garage at ground level, and in some cases a bedroom. The main living areas are at the first floor, with two decks accessed from the main living area. The second floor has two to three additional bedrooms.



Figure 26: 344 Queens Drive Case Study as viewed from the main street frontage. Author's Image

59 MORTIMER TERRACE, BROOKLYN

Number of units: 8	Site area: 554 m²	Net residential density: 126 dph
Typology: Low-rise apartment		Plan Change 56 Status: pre-Plan Change

59 Mortimer Terrace is classified as low-rise apartment because units are vertically stacked. The building 'steps' down five levels across a steep site (Figure 27). The structure consists of four three bedroom units 'terraced' along the upper three levels. These are accessed from the street which corresponds to the fifth level. This includes a garage and main bedroom. The floor below (level 4) encompasses the main living areas, with two further bedrooms the below (level 3). Stepping down the slope, four one and two bedroom units are located below on levels 1 and 2. Each has bedrooms on the upper level, and living areas below. Due to the steps in plan caused by topography, all levels have private open space in the form of decks accessed from main living areas and some bedrooms. The site has a north facing aspect. On the southern street facing boundary the development appears as single-storey due to the topography of the site (Figure 28).



Figure 27: 59 Mortimer Terrace Case Study. The development 'steps' across five levels. Author's image



Figure 28: Southern street facing elevation. Author's Image

26 WRIGHT STREET, MOUNT COOK

Number of units: 20	Site area: 2936 m²	Net residential density: 68 dph
Typology: Terraced		Plan Change 56 Status: post-Plan Change

26 Wright Street, Mount Cook is a development of 20 terraced units arranged around a central area of open space which also accommodates vehicle circulation and visitor parking (Figure 29). The majority of dwellings are three stories with a single attached garage and bedroom at ground floor, a living area with attached deck at the first floor and two further bedrooms on the second floor. Four dwellings include an additional bedroom on a third floor. The development is withdrawn from the street on a rear section, and accessed via a long driveway (Architecture + Ltd, 2009; Stratum Management Ltd, 2009).



Figure 29: 26 Wright Street Case Study. Image source: Tommy's Real Estate (2013)

80 QUEENS DRIVE, KILBIRNIE

Number of units: 6	Site area: 1150 m²	Net residential density: 52 dph
Typology: Low-rise apartment		Plan Change 56 Status: post-Plan Change

80 Queens Drive, Kilbirnie, comprises six units over three levels. It was converted from an existing dwelling, with no visible change to the external envelope of the building (Brown & Hall, 2010). Given each dwelling is on a single level, and there is a shared entrance and stairwell, the development is classified under the 'apartment' typology.



Figure 30: 80 Queens Drive Case Study as viewed from the main street frontage. Author's image

The building forms an 'L shape'. The segment nearest the street is across two levels. The rear segment is raised due to the slope of the site, and sits on the first and second floor. A one bedroom unit is located at the front of the site on the ground floor. A second unit of two bedrooms is located above, completing the front segment of the building. The rear of the first floor is made up of a one, two and three bedroom unit accessed from a common lobby. A four bedroom unit sits above on the second floor.

199 McLINTOCK STREET NORTH, JOHNSONVILLE

Number of units: 4	Site area: 1187 m²	Net residential density: 33 dph
Typology: Detached		Plan Change 56 Status: post-Plan Change

The development at 199 McIntock Street North is made up of four detached dwellings located as part of a greenfield subdivision in the suburb of Johnsonville. Each dwelling is comprised of an internal access garage and living areas on the ground floor; and three bedrooms on the first floor. Two units are located along the street frontage, and two at the rear. The rear units are accessed via driveways that run adjacent to the front units.



Figure 31: 199 McIntock Street North Case Study as viewed from the main street frontage. Author's image

76 BROUGHAM STREET, MOUNT VICTORIA

Number of units: 4	Site area: 564 m²	Net residential density: 142 dph
Typology: Low-rise apartment		Plan Change 56 Status: post-Plan Change

At the time of assessment 76 Brougham Street, Mount Victoria was under construction. It is located on a corner section and in the low-rise apartment typology, with eight units across three stories.

The development is split across two buildings. The main building, along the Pirie Street frontage is comprised of six two-bedroom units with two single-storey apartments on each level. The smaller building, on the Brougham Street frontage is made up of a single bedroom ground floor apartment, and a two bedroom apartment across the remaining two levels (Parsonson Architects 2012).



Figure 32: Anticipated development of 76 Brougham Street Case Study. Image Source: Parsonson Architects (2012)

Parking is located underground, leaving the open space on the site to be developed with paving and planting. Ground level units have access to private outdoor space accessed from the main living area, while the upper units each have access to two balconies.

TYPOLOGY, DENSITY AND NUMBER OF UNITS OF SELECTED CASE STUDIES

Figure 33 sorts the case studies by number of units. The majority of developments are on a small scale of less than ten units. The largest of 70 units is significantly larger than any other, with the second largest having 20 units.

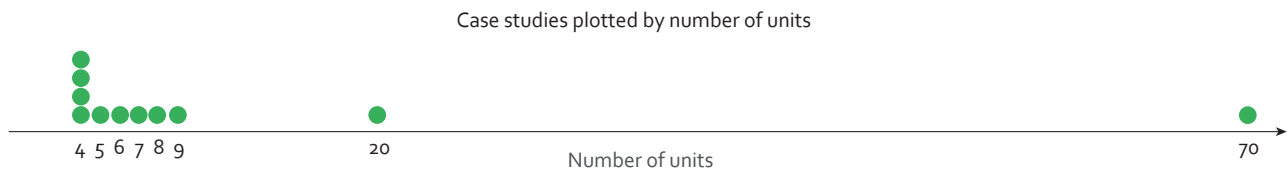


Figure 33: The selected case studies have a range of sizes in terms of number of units. The majority are small scale. Author's image

Figure 34 shows the spread of density of the selected case studies. There is a large range from 34 to 142 dph. All outcomes are at least 30dp in line with the quantitative definition of medium density housing from Section 2.3.

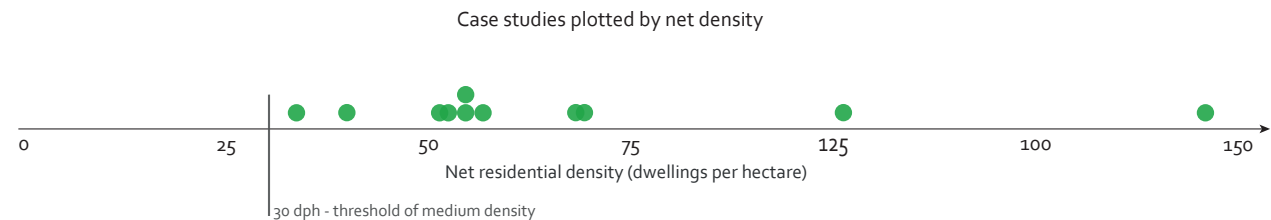


Figure 34: The selected case studies show a range of densities going well beyond the 30dph threshold. Author's image

Figure 35 shows typology of the selected case studies according to those identified in Section 2.3. The majority of those selected (6) are terraced housing. One semi-detached and one development is comprised of two-storied detached houses on small sites. Three are categorised under the low-rise apartment typology.



Figure 35: The Majority of developments are in the terraced typology. Author's image

The developments selected represent a range of outcomes. Developments represent all typologies of medium density housing, while the level of density goes well beyond the minimum of 30 dph required by the definition of medium density housing. The variation in number of units with the majority at a smaller scale is consistent with recent development trends in Wellington (Wellington City Council, 2013b)

PLAN CHANGE 56 STATUS OF THE SELECTED CASE STUDIES

Seven case studies had Resource Consent applications submitted prior to Plan Change 56. Four Resource Consent applications were submitted after the Plan Change. The number of outcomes for comparison is low, particularly the number of case studies following the Plan Change. The small sample size limits the generalisability of results due to the strong potential influence of 'outliers'. However, the developments do provide examples of all medium density housing typologies. The range of number of units is consistent with the recent pattern of development, and provides a range of types of outcomes.

The four post-Plan Change case studies encompass a range of typologies, densities, and a range of sizes in terms of number of units. This allows the implementation of the plan to be considered in terms of a broad range of potential outcomes. In terms of improvement of quality of outcomes; if it is possible for *any development* to occur which results in a lower quality outcome, the plan change has not improved quality. This would indicate it is possible for a lower quality of development to be approved, and therefore, the improvement in quality seen in other outcomes is not due to the implementation of the plan, but rather due to other influences.

4.4 CALIBRATION OF SCORING UNDER THE ASSESSMENT METHOD

The scoring system of the assessment method was calibrated before assessing case studies began. Calibration was to ensure the scoring system was applied objectively. As discussed in Chapter 3, this was to address the limitations of a single assessor's interpretation when carrying out subjective assessments. The calibration comprised of assessing a case study that was documented as an exemplar published as part of guidance for use of the assessment method. Calibration in terms of the exemplar ensured the scoring was aligned to the established definitions of quality. In preparation the interpretation of the assessment scoring by Haarhoff et al, and the application of scoring in other exemplars completed in Auckland and Christchurch were reviewed (Boffa Miskell, 2012a, 2012b). The example case study site selected was located in Wellington at 108 Rintoul Street, Berhampore (Boffa Miskell, 2012c). It was selected from the available exemplar case studies as it was the only Wellington-based case study. The example was developed during the period prior to the Plan Change and approved under the Wellington District Plan, the outcome is relevant to the planning system addressed by this research. A site visit was undertaken on 13 August 2013 and with the addition of Resource Consent documents including approved plans, the assessment was completed using the Ministry for the Environment scoring sheet and associated guidance.

The results of the calibration scoring were compared to the scoring awarded in the exemplar. The results are shown on Figure 36. Of the indicators, the assessment resulted in a score equal with the exemplar across 15 of the 20 indicators. The remainder differed by one point higher or lower. The high level of similarity, and lack of any large differences where they occurred despite the subjective nature of the assessment constitutes sufficient alignment in interpreting the assessment method as intended.

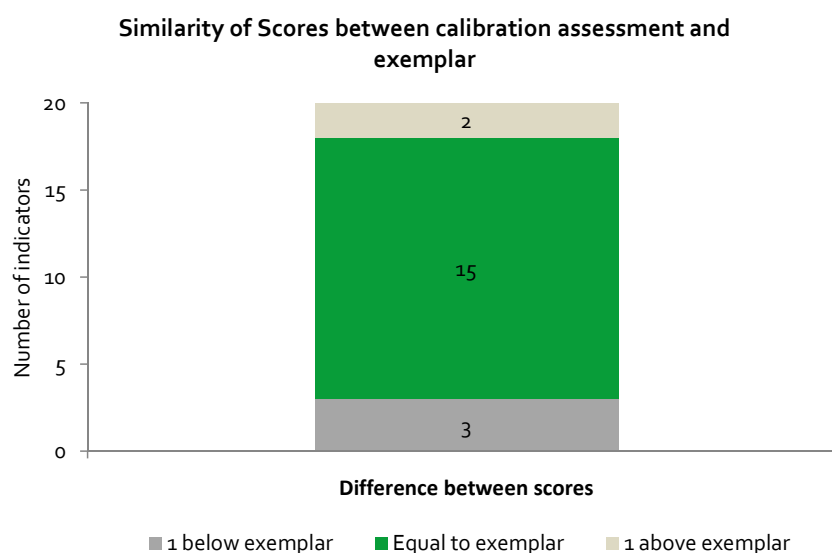


Figure 36: Results of the calibration assessment. Scores matched across 15 of 20 indicators. Author's image

4.5 QUALITY OF MEDIUM DENSITY HOUSING OUTCOMES IN THE SELECTED CASE STUDIES

In this section the results of assessment of the case studies are shown. Follow-up site visits and the recording of further photographs was completed across the selected case study developments in November and December 2013. The approved design documentation that formed part of the resource consent approval were then used in conjunction with photographs and field observation to allocate scoring according to the assessment method. Where clarification was needed, a further site visit was undertaken. On completion, to ensure scoring had been consistently applied across all developments, the scores were reviewed a second time.

The assessment results have been grouped in relation to each of the policies altered by the Plan Change. This allows results to compare quality of outcomes before and after the Plan Change from the perspective of the implementation framework.

The quality of outcomes will be considered in terms of the average (mean) of the scores awarded for the indicators relevant to each policy of the District Plan (as identified in Section 4.1). This takes into account the cumulative effect of each policy across all aspects of medium density housing outcomes. The average (mean) score will be calculated across the seven pre-Plan Change 56 case studies for each policy. This will give an indication of the overall level of quality of outcomes prior to the Plan Change. The pre-Plan Change average will be the baseline against which each of the four post-Plan Change outcomes will be compared. An improvement in quality of outcomes will be defined as a score greater than the average pre-Plan Change score.

Each post-Plan Change case study will be individually compared to the seven case studies prior to the Plan Change. This will allow consideration of the effect of the Plan Change across all outcomes at an individual level. Individual comparison of all case studies reduces the potential effect of 'outliers' in qualitative discussion, and addresses some of the limitations of the sample size.

OUTCOMES ACCORDING TO POLICY 4.2.2.1A – SITING, SCALE AND INTENSITY

According to the indicators relevant to Policy 4.2.2.1A the pre-Plan Change outcomes scored an average of 3.8 from 5 (Figure 37). Following the plan change, outcomes received scores ranging from 3.1 to 4.2. The Policy was linked to five indicators (Table 8).

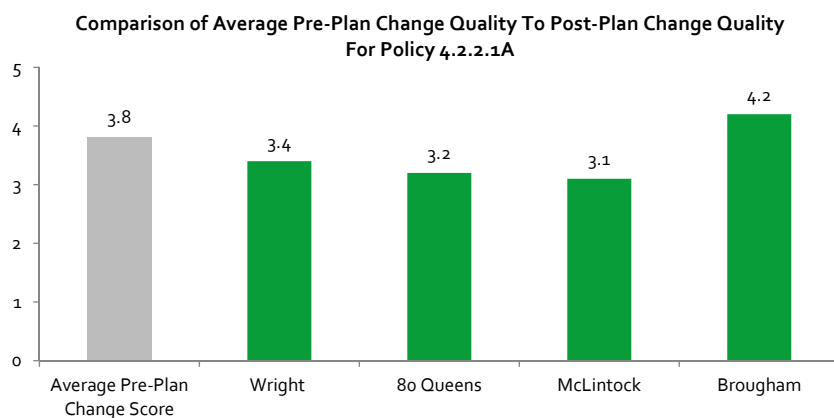


Figure 37: Post-Plan Change scores compared to the pre-Plan Change average for policy 4.2.2.1A. Author's image

Table 8: Assessment method indicators relating to Policy 4.2.2.1A

Site context and layout	Building Form and appearance	Street scene	Internal configurations
2. Site Context		12. Street Edge	16. Internal/external link
4. Outdoor living space			17. Visual Privacy

At an individual level, Figure 38 shows the Wright Street, 80 Queens Drive and McLintock Street North case studies all were assessed as having higher scores than only one of the seven pre-plan change case studies. The Brougham Street case study managed an improved score compared to six of the seven pre-Plan Change case studies.

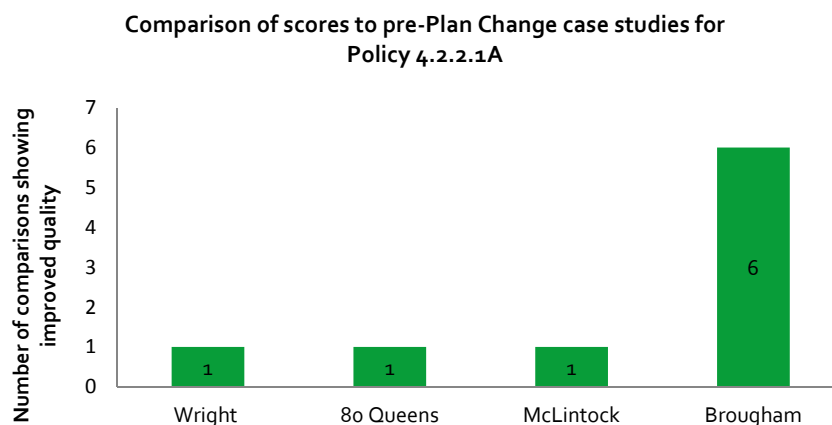


Figure 38: Individual comparison to of post-Plan Change outcomes to pre-Plan change scores for Policy 4.2.2.1A. Author's image

The results show that under Policy 4.2.2.1A there was no consistent pattern of improvement in quality of outcomes caused by Plan Change 56. In the majority of cases, the quality of outcomes was lower than prior to the Plan Change.

OUTCOMES ACCORDING TO POLICY 4.2.3.1A – MANAGEMENT OF OPEN SPACE

According to the indicators relevant to Policy 4.2.3.1A the pre-Plan Change outcomes scored 3.4/5 on average (Figure 39). Following the plan change, outcomes received scores ranging from 2.3 to 4.7. The Policy was linked to three indicators (Table 9).

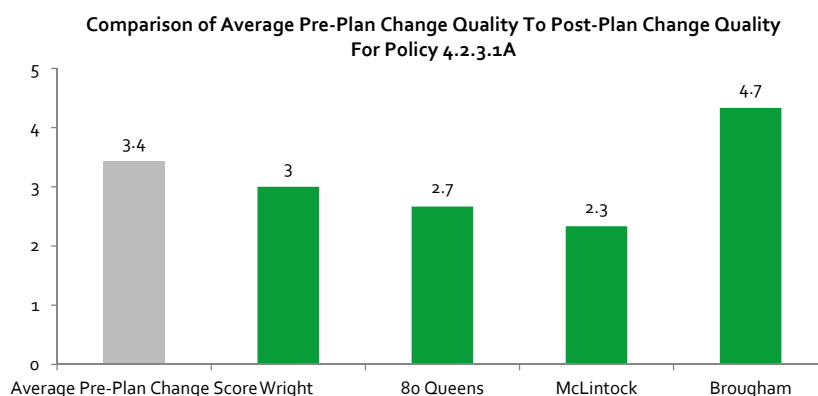


Figure 39: Post-Plan Change scores compared to the pre-Plan Change average for policy 4.2.3.1A. Author's image

Table 9: Assessment method indicators relating to Policy 4.2.3.1A

Site context and layout	Building Form and appearance	Street scene	Internal configurations
4. Outdoor living space		15. Boundary treatment	
5. Car parking/access			

Following the Plan Change, the 80 Queens Drive and McLintock Street North case studies scored lower, while the Wright Street development obtained a similar score. The Brougham Street development showed improvement. At an individual level the 80 Queens Drive and McLintock Street North developments both scored notably lower than all pre-Plan Change case studies (Figure 40).

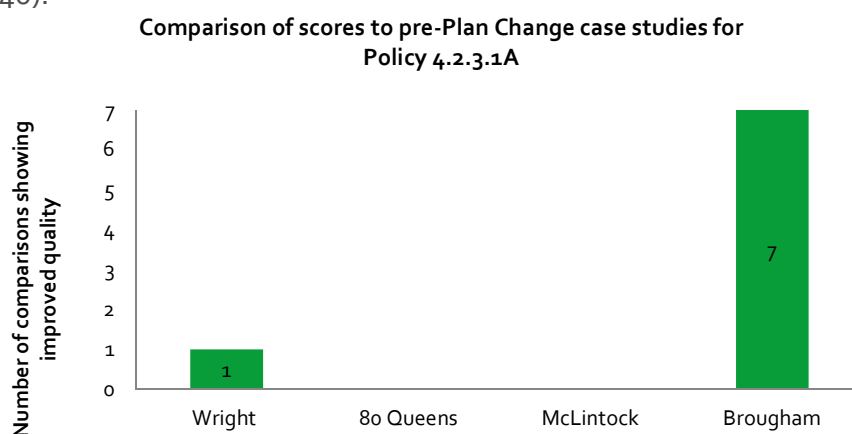


Figure 40: Individual comparison of post-Plan Change outcomes to pre-Plan change scores for Policy 4.2.3.1A. Author's image

Wright Street was a mixture result of similar numbers scoring lower, equally and higher, showing improvement in relation to some outcomes, but not others. The Brougham Street case study scored equally against one development, and at least 0.6 higher than all others. The results are similar to those of the Policy 4.2.2.1A. In all but one case the results show a drop in quality of outcomes following the Plan Change. Under Policy 4.2.3.1A, there is no pattern of improvement of quality of outcomes due to the Plan Change.

OUTCOMES ACCORDING TO POLICY 4.2.3.1B – MINIMISATION OF HARD SURFACING

Figure 41 shows the results of outcomes under Policy 4.2.3.1A. The Policy was linked only to indicator 3 ('landscape coverage').

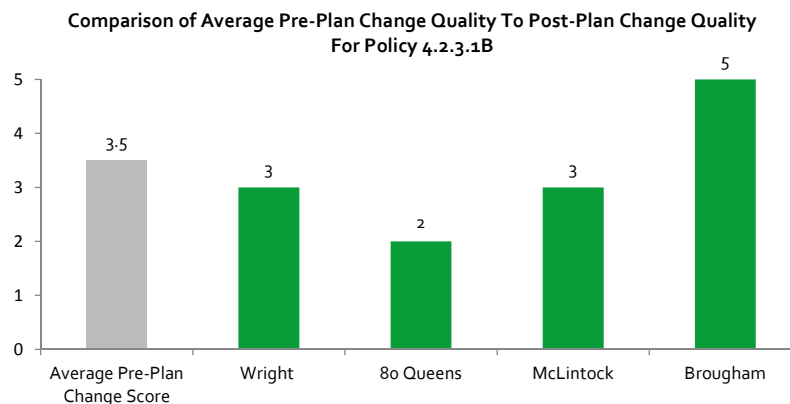


Figure 41: Post-Plan Change scores compared to the pre-Plan Change average for policy 4.2.3.1B. Author's image

The average score awarded to case studies before Plan Change 56 was 3.4 from 5. For case studies following the plan change, all except Brougham Street scored lower than the average. Wright Street, and McLintock Street North presented a mixed result at the individual level, with results higher than only two pre-Plan Change outcomes. 80 Queens Drive scored significantly lower compared to most pre-plan change outcomes, and equalled one.

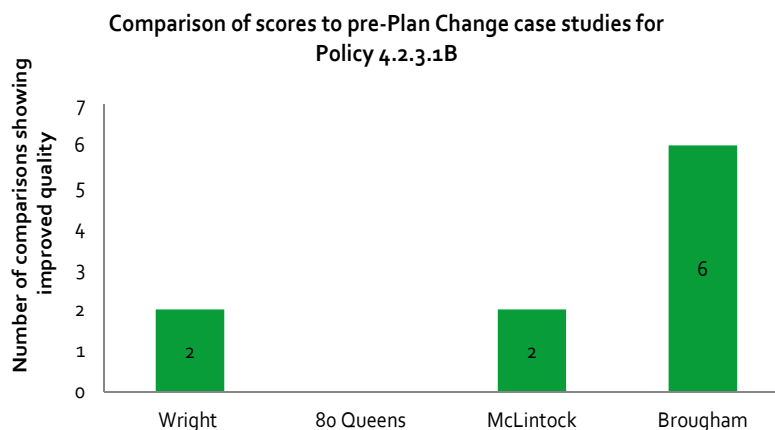


Figure 42: Individual comparison to of post-Plan Change outcomes to pre-Plan change scores for Policy 4.2.3.1B. Author's image

Again a similar pattern emerges to Policies 4.2.3.1A and 4.2.3.1B. The Brougham Street case study shows a notable improvement in quality compared with the majority of pre-Plan Change case studies, while the remaining three do not. The Plan Change does not appear to have improved quality of outcomes.

OUTCOMES ACCORDING TO POLICY 4.2.3.3- ADVERSE EFFECTS OF INFILL AND MULTIUNIT DEVELOPMENT

Figure 43 shows the results of outcomes under Policy 4.2.2.3. The policy was linked to nine indicators (Table 10). On average, before the Plan Change outcomes scored 3.5. Following the plan change, two scores of 80 Queens Drive and McLintock Street North are lower, Wright Street approximately the same, and Brougham Street is again significantly higher.

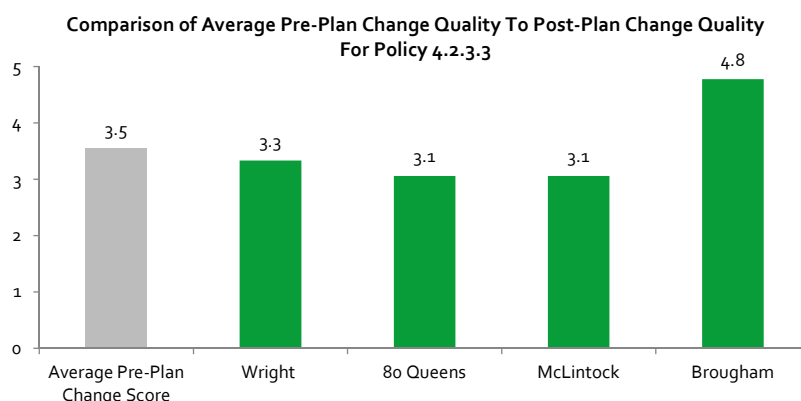


Figure 43: Post-Plan Change scores compared to the pre-Plan Change average for policy 4.3.3.3. Author's image

Table 10: Assessment method indicators relating to Policy 4.2.3.3

Site context and layout	Building Form and appearance	Street scene	Internal configurations
2. Site context	7. Horizontal modulation	12. Street edge	17. Visual privacy
5. Car parking/access	8. Building line	15. Boundary treatment	
	9. Building roofline		
	10. Facade articulation		

Compared individually (Figure 44), the Wright Street case study scored higher than three pre-Plan Change outcomes, and lower than four, again presenting mixed results. The 80 Queens Drive and McLintock Street North developments obtained identical scores (3.1) and each scored better than only one pre-plan change outcome. The pattern established is continued. The Brougham Street case study shows notable improvement, while the remaining case studies achieve lower scores. In this case the Wright Street development scores at a similar level to the outcomes prior to the plan change.

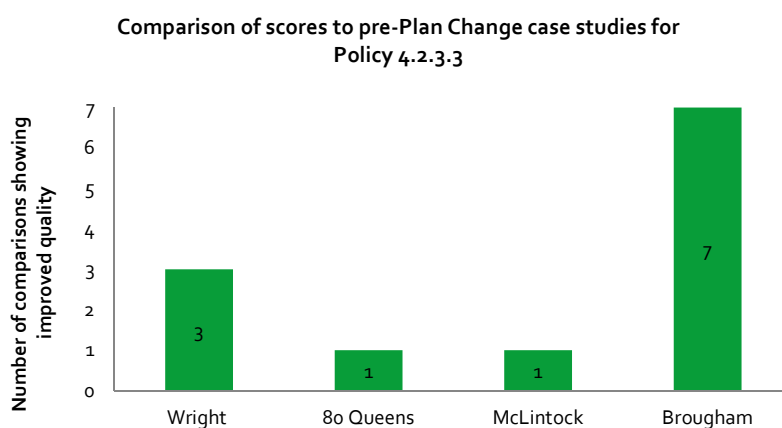


Figure 44: Individual comparison to of post-Plan Change outcomes to pre-Plan change scores for Policy 4.3.3.3. Author's image

THE EFFECT OF POLICIES AMENDED BY PLAN CHANGE 56

The case studies also show little variation in the quality of planning outcomes among the policies not amended by Plan Change 56. Figure 45 compares the effect on the quality of the four post-Plan Change case studies in relation to policies influencing medium density housing. For each outcome the change in quality is compared in terms of Policies amended and Policies not amended.

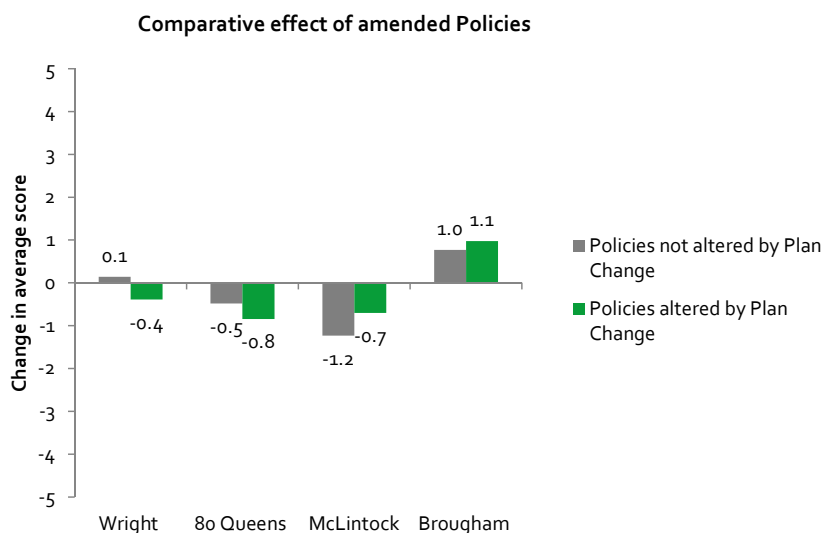


Figure 45: Change in quality of outcomes compared for changed and unchanged policies across post-plan change case studies.. Author's image

For the Wright Street case study, the policies not amended by Plan Change 56 showed a very marginal increase in quality in comparison to the pre-Plan Change average. The amended policies caused a slight decrease in quality. A similar result occurred at 80 Queens Drive, where on average the unamended policies show a drop in quality of 0.5. Quality is on average 0.8 lower across the amended policies. In both cases the negative effect on quality of outcomes was greater under the policies amended by the Plan Change. For these case studies Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes.

The McLintock Street North development demonstrates the reverse effect. Across all policies the scores show a drop in quality relative to the pre-Plan Change outcomes. However, the drop in quality is less severe under the policies amended by the Plan Change. The result is still that Plan Change 56 did not improve the quality of medium density housing.

The Brougham Street case study shows a notable improvement in comparison to pre-Plan Change outcomes averaging approximately one point. The level of improvement is marginally more under the policies amended by the Plan Change. While the case study shows an improvement in quality of medium density housing, the comparison does not show that Plan Change 56 caused that improvement.

Overall there is no consistent pattern suggesting that the quality of outcomes improved because of the amendments to policies made by Plan Change 56. The effect of the amended policies is not linked to an improvement in the quality of medium density housing outcomes.

4.6 THE OVERALL EFFECT OF PLAN CHANGE 56

The goals and objectives of the District Plan have a number of provisions for housing intensification, as well as a focus on maintain a certain level of quality in residential areas. The goals and objectives were not amended by Plan Change 56. At the first stage of the implementation framework a number of policies define the approach to intensification to specifically include medium density housing. These policies also state expectations of quality in terms of amenity and the relationship to the surrounding neighbourhood 'character'. The policies amended or added by Plan Change 56 all relate to the quality expected of medium density housing, while the policies encouraging intensification remained unchanged.

In selecting the case studies, the majority of developments seeking Resource Consent approval as 'multiunit' developments were not suitable. A large proportion were developments of only three units, which is outside the definition of medium density housing for this research. Approximately half of the remaining Resource Consent applications did not at the time of assessment result in developments of four or more units of medium density housing. In total 11 examples were completed (or under construction) to have four or more units, and meet the definition of medium density housing. The case studies selected represent a range of outcomes in terms of typology, number of units, and density.

The findings of the assessments show that for the policies amended under Plan Change 56, the quality of outcomes did not improve compared to average pre-plan change outcomes. When compared individually to the seven pre-Plan Change outcomes, the four post-Plan Change outcomes scored lower in the majority of cases.

In three cases the quality of outcomes measured in relation to the amended policies, the quality decreased. Furthermore the negative effect on quality of outcomes was more substantial under the amended policies in two cases. When comparing the quality of outcomes in with regard to the amended policies, the results do not show an improvement in quality of medium density housing outcomes caused by Plan Change 56.

5. HOW PLAN CHANGE 56 AFFECTED THE QUALITY OF MEDIUM DENSITY HOUSING OUTCOMES

The case study results have established that Plan Change 56 did not cause an improvement in the quality of planning outcomes for medium density housing. The purpose of this chapter is to explore the link between implementation of the District Plan and the quality of outcomes. Following the final step of Talen's approach to identifying planning success, this chapter will explore the reasons for the results. Discussion will begin with the four post-Plan Change case studies, and identify the factors that contributed most strongly to the quality of those outcomes. The issues identified will be expanded and discussed in terms of application of the Rules and Design Guide.

The wording of each policy will be used to identify the relevant rules and guidelines that apply to its implementation. These will then be discussed in terms of the changes made to those rules and guidelines by the Plan Change. Drawing on specific examples in from the case studies, the reasons given for planning decisions in Resource Consent documentation will be discussed in terms of specific rules, policies and guidelines.

The available documentation is comprised of applications for Resource Consent submitted by developers and their professional consultants, Urban Design Assessments utilising assessment against the Design Guide by a qualified urban designer, and the final notification of the decision outcome in which proposals are discussed in terms of the objectives, polices, and rules of the District Plan.

5.1 ISSUES IDENTIFIED FROM THE POST-PLAN CHANGE CASE STUDIES

This section will discuss the post-Plan Change outcomes in turn, and the principal reasons contributing to the scores allocated by the assessment method for the four amended policies.

26 WRIGHT STREET MOUNT COOK

The Wright Street development provides a good level of private open space for each dwelling. This is in the form of a courtyard to the rear of each unit, as well as the first floor decks (Figure 46). These are landscaped with a range of planting, and use a mix of screening, fences, setbacks and pergolas to maintain privacy. The orientation appears to allow sufficient sunlight access. Individual units are easily distinguishable through variation in materials, setbacks across the façade and strong vertical elements (Figure 47).



Figure 46: Units at Wright Street have access to private ground level open space, and balconies at first floor level at the rear of each dwelling. Author's image



Figure 47: The Wright Street Case Study is oriented around a central area of open space. The space is somewhat car dominated. Author's image

The primary issues faced by the development that affected the scores attained was the treatment of open space and hard surfaced areas for vehicle access and parking (Figure 47). The central open space is dominated by vehicular access. This means the 'internal streetscape' on which the development is focused has reduced amenity. Contrary to the Design Guide, entrances to the units are directly off this hard-surfaced area, lack prominence and the remainder of the main ground level façade is dominated by garage fronts.

80 QUEENS DRIVE

In the character of a suburban detached dwelling, the site at the 80 Queens Drive case study has a front, side and rear yard. However, much of the front yard has been dedicated to a hard surfaced vehicle parking area (Figure 48). This has affected the way the development relates to the surrounding street context, and the effect is further compounded by its adjacency to the right of way of a rear section. The balance of hard surfaced areas along the streetscape differs



Figure 48: The quality of the 80 Queens Drive case study is particularly affected by the front parking area. Author's image



Figure 49: The interface of two units' ground level open space. There are some issues with privacy. Image source: Jsk Group Ltd (2010, p.10)

significantly to the surrounding area, planting to lessen the impact of this discussed in the application and notification of decision (WCC Property, Housing, Consents and Licensing, 2010, p. 5) appears not to have eventuated.

The remaining space has been divided among the units as private open space. Due to the sloping nature of the site, most have ground level access, however in comparison to the pre-Plan Change outcomes, there is a less direct relationship between units and their outdoor area. This division has also resulted in some 'left over spaces'. Privacy between some open space areas appears to be limited in some cases such as shown in Figure 49.

McLINTOCK STREET NORTH

The McIntock Street North development fits well with the character of the surrounding area which is primarily two-storied detached housing near to the street frontage. Due to the development being the lowest density of those selected, there is sufficient ground level open space and each has a patio and garden area at ground level and well connected to living areas. However these areas are primarily at the rear of the development, and the street frontage is dominated by hard surfaced areas for driveways.



Figure 50: Garage fronts and driveways dominate at McIntock Street North. Ground level openings and planting are lacking. Author's image

At the streetface, frontages are dominated by prominent garages (Figure 50). Both have a low level of glazing, very limited planting, or open space and do little to generate visual interest or connect to the streetscape. The poor relationship to the street limits the level of amenity and connection to the surrounding area and compromises the overall level of quality.

BROUGHAM STREET

The open space provided is able to be of a high quality, as there is a diverse mix of planting and paving. The underground parking means no ground level open space is taken up by vehicle circulation and parking. The street frontages are free from garages, and the facades have a high level of visual interest. This is generated by breaking up the building form through setbacks, buildouts and a variety of pitched roof forms (Figure 51).



Figure 51: The lack of vehicle parking at grade gives a high level of freedom to the treatment of facades and open space. Image source: Parsonson Architects (2012)

ISSUES EMERGING FROM THE POST-PLAN CHANGE CASE STUDIES

The District Plan lists the four policies relevant to medium density housing amended by the Plan Change under two objectives. These are **Objective 4.2.2**, to 'maintain and enhance amenity' and **Objective 4.2.3**, to consider the integration with the surrounding 'character' of the neighbourhood. Across the post-Plan Change outcomes studied, common issues have emerged as affecting the quality of outcomes in relation to Plan Change 56.

OPEN SPACE AND AMENITY

The explanatory wording of the four policies highlight the importance of open space for providing amenity, as well as to manage the integration of the development to its surrounding neighbourhood (Wellington City Council, 2007d). All developments after the Plan Change except Brougham Street had access to significant areas of ground level open space. Brougham Street provides ground level open space for ground floor units, as well as shared open space, and balconies for upper units. In most cases (except 80 Queens Drive) the open space provided a good level of quality in terms of privacy, access to sunlight, and connection to the dwelling.

There were two predominant issues with open space affecting the quality of outcomes. The first is the treatment of open space in defining the relationship of the spaces between buildings. The second is in terms of the relationship of the overall development to the boundaries of the site. Specifically, this relates to the effect of the development on the surrounding streetscape and neighbourhood. This proved to limit the quality of most developments due to large driveway and parking areas visible from the street, or within the development.

RELATIONSHIP TO THE STREET

A related factor was the relationship between the street facing façade of dwellings and the street. In terms of the size, location and configuration of units, again the greatest effect on quality was the relationship to the surrounding streetscape. All developments avoided being visually dominant in terms of scale, however, the level of amenity generated creating visual interest and a relatable human scale from placement of entranceways, windows, steps in plan and avoidance of blank walls varied. Garage fronts linked to driveways dominated in some cases (Wright Street and McLintock Street North) and prevented greater variation.

VEHICLE PARKING

A significant factor that impacts the quality of outcomes under these issues is the management of vehicle parking, access and circulation. This has a direct relationship on the level of hard surfacing required, which in turn affects quality of open space, and integration with the surrounding streetscape. Vehicle parking requirements strongly affected the placement of front entrances, front gardens and the form of the façade. This is because parking requirements dictated the need for extensive garaging on the street facing façade. The cumulative effect can significantly change the quality of outcomes. The potential for open space and incorporation of planting is diminished. Notably, the Brougham Street case study consistently scored the highest, and outperformed the pre-Plan Change case studies under all policy categories. Brougham Street was also the only

development that utilised underground parking. This design solution means open space areas were freed from dealing with parking requirements, and facades were free from dealing with garaging. The result was a variation in forms, volumes and alignment along both street frontages.

5.2 PLAN CHANGE 56, THE RULES, AND THE DESIGN GUIDE

This section considers the issues identified in the previous section related to the four amended policies in terms of the *Residential Area Rules*. The rules provide the quantitative assessment criteria for considering proposed development, and outline the situations when an application for Resource Consent is required.

AMENDMENTS TO RULES FOR MEDIUM DENSITY HOUSING DEVELOPMENT UNDER PLAN CHANGE 56

The Policies of the District Plan do not refer to specific rule numbers, meaning the link between policies and rules is not explicitly stated. To identify the rules relevant to the medium density housing policies, the rules of the district plan have been matched to policies based on the descriptive content of the policy wording. Rules are organised by the activity classes defined under the RMA (described in Section 2.5). Those applicable to medium density housing fall under the *Permitted* and *Discretionary Restricted* rule categories.

The four Policies amended by the Plan Change all discuss the use of the Permitted Activity requirements under the 'bulk and location standards' in achieving development that provides sufficient amenity as well as complimenting the neighbourhood character. These refer to **Rules 5.1.3.2 to 5.1.3.5** which control the size and location of yards through minimum building setbacks from boundaries, maximum site coverage, minimum open space area, maximum height and sunlight access planes. Additionally the policies refer to requirements of rules for car parking and vehicle access (Wellington City Council, 2007c).

Under the rules, medium density housing is automatically classified as a Discretionary Activity requiring Resource Consent under **Rule 5.3.4**. For all developments of three units or more, the rules require consideration of amenity, privacy, overlooking, sunlight and daylight, particularly in instances where the bulk and location standards are breached. In regard to car parking, consideration must also be given to the overall spatial and visual dominance of parking and manoeuvring. Under these rules all multi-unit developments must be assessed according to the recommendations of the *Residential Design Guide* (Wellington City Council, 2007c). The rules also note that the bulk and location standards as well as parking requirements should still aim to be met under the permitted activity class in addition to complying with the design guide (Wellington City Council, 2007c).

The bulk and location standards list quantitative requirements as to the extent of development allowable as a Permitted Activity. Rules under the Discretionary Activity category allow these requirements to be exceeded within certain quantitative limits. However, the effect of going beyond the Permitted Activity must be considered in comparison to the effect on amenity of

development within the Permitted Activity rules (the *permitted baseline*). The effect is assessed using the Design Guide and in reference to the character and amenity requirements of the District Plan (Wellington City Council, 2007d). In referring to the bulk and location standards, the explanation of **Policy 4.2.2.1** states that the effect of breaching multiple permitted activity standards are “more likely to result in developments that are out of scale with the surrounding environment and more likely to generate adverse effects on the surrounding properties” (Wellington City Council, 2007d, p.7).

INTRODUCTION OF THE RESIDENTIAL DESIGN GUIDE

The *Residential Design Guide* (RDG) is crucial to the implementation of the District Plan for medium density housing as a result of the requirements of **Rule 5.3.4**. The design guide was introduced by the Plan Change, and replaced the earlier *Multi-unit Design Guide* (MUDG). The RDG reorganised the structure of the document. The MUDG had seven categories of *design elements*, which then discussed a number of guiding principles followed by objectives and guidelines for that element. The RDG restructured this into three broad categories listing a number of objectives, which are then followed by guidelines grouped under subheadings. The reorganisation and restructure moved some of the explanatory wording from the beginning of each section of the MUDG to align with specific guidelines (Wellington City Council, 2004; 2010b).

The RDG keeps much of the original wording of the MUDG. For the majority of guidelines, the RDG elaborates on the original guideline with additional explanation of the intent and interpretation of that guideline. In some cases additional quantification was added, and in some cases quantifications removed and replaced with more qualitative definitions. Two guidelines were removed. The RDG includes 12 additional guidelines which contain new material that was not directly addressed by the wording of the MUDG (Wellington City Council, 2004; 2010b).

5.3 THE EFFECT OF RULE CHANGES

Despite the bulk and location standards being referred to frequently as a means to manage the quality of medium density housing outcomes, the only notable change is the requirement for open space. For ground level units this is a minimum of 35 square metres which must contain a four by four metre *principal area* directly accessible from the dwelling’s living area. An alternative provision is made for units above ground level. The alternative requirement is 10 square metres of balcony space above ground level with a minimum dimension of two metres (Wellington City Council, 2007c, p.4).

Where areas and dimensions of the permitted activity are not met, **Rule 5.1.3** refers to the Design Guide as an alternative form of assessment under the Discretionary Activity class (Wellington City Council, 2007c, p.36). The Design Guide however, provides exactly the same quantitative definitions under guideline **G1.12**. Furthermore, these provisions are unchanged from the MUDG prior to the Plan Change (Wellington City Council, 2009b, p.6). The MUDG also stipulated the same dimensions with the exact same wording (Wellington City Council, 2004, p.12). Therefore,

despite significant changes at the policy level, the rules and guidelines referred to at the lower levels of the planning hierarchy as assessment of compliance with those policies remained virtually unchanged.

EFFECT OF RULE 5.1.3.2B AND 5.3.3.4B – OPEN SPACE

Under the Discretionary Restricted rule category for open space, (5.3.3.4B) the District Plan states where the quantitative limits are not met, assessment should give regard to the 'quality' of the open space provided. Quality is to be assessed in terms of the design guide and the degree to which the proposed development fits the surrounding neighbourhood character (Wellington City Council, 2007c, p.36). The rule refers directly to **Policy 4.2.3.1A** *provision of open space* as stating the requirements for this. Therefore the case study assessments in terms of **Policy 4.2.3.1A** can be considered to give an indication of the effect of **Rule 5.3.3.4B** on the quality of outcomes.

To assess the effect of **Rule 5.1.3.2B** and **5.3.3.4B**, which were introduced by Plan Change 56 to deal with open space, the case studies were sorted according to their compliance or noncompliance with **Rule 5.1.3.2B** under the Permitted Activity class. This was on the assumption that all pre-Plan Change case studies already meeting the open space requirements would be allowed to achieve the same outcome following the introduction of the rule. For the post-Plan Change case studies noncomplying case studies were sorted on the basis of information from the Resource Consent decision document for each. The decision documents specifically noted where the Permitted Activity requirement was not met. For the pre-Plan Change case studies, the approved plans were used to assess the area and dimensions of open space according to the dimensional requirements of the rule. For each case study the compliance status for **Rule 5.1.3.2B** is compared to the score awarded according to **Policy 4.2.3.1A** in Table 11.

Table 11: Comparison of Rule 5.1.3.2B (Open Space) compliance and Policy 4.2.3.1A score

Case study name	Rule 5.1.3.2B compliance	Policy 4.2.3.1A score
Onslow	noncompliant	3.7
Cheyne	noncompliant	3.0
John Sims	compliant	3.0
Rintoul	noncompliant	4.0
Darlington	compliant	3.3
344 Queens	noncompliant	4.2
Mortimer	noncompliant	2.8
Wright	noncompliant	3
80 Queens	compliant	2.7
McLintock	compliant	2.3
Brougham	noncompliant	4.3
Average score compliant with rule		2.8
Average score not compliant with rule		3.6

The results show four case studies met the open space requirements as a Permitted Activity when assessed against the post-Plan change rule, while seven did not. Viewing outcomes in terms of the case study assessment results aligned to **Policy 4.2.3.1A**, those case studies that met **Rule 5.1.3.2B** scored on average 2.8. Those not meeting the rule scored 3.6 on average. The case studies complying with the rule as a Permitted Activity on average scored notably lower than those case studies that did not. The developments that scored lowest of in this category were 80 Queens Drive and McLintock Street North. Both are post-Plan Change outcomes. Of the developments meeting the **Rule 5.1.3.2B** for open space, all except the Darlington Road case study were cited for issues concerning over-dominance of hard surfaced areas for vehicle parking compromising the relationship between the dwellings and the street edge.

The results show that the principal bulk and location rule amended by Plan Change 56 is not linked to increased quality in medium density housing. In the selected case studies provision of enough open space in line with the quantitative definition of **Rule 5.1.3.2B** is not linked to increased quality of outcomes. More important is how that open space is located, and how it is used to define the relationship between the development and the street edge. In particular open space provision needs to be coordinated with the treatment of vehicle access and parking to prevent excessive hard surfacing on the street facing areas of the development rather than meeting specific dimensional requirements imposed by the rule.

5.4 EFFECT OF DESIGN GUIDE CHANGES

This section will address the guidelines added to the Design Guide by Plan Change 56, and discuss them with specific regard to their application on post-Plan Change outcomes. Comparison will be made with specific examples of the way the same issues were treated on pre-Plan Change outcomes by drawing on evidence from Urban Design Assessments and Decision Documents. This will be framed in terms of the issues raised for car parking, open space, and the relationship of building configuration and massing in relation to the amenity and character of the neighbourhood. In this regard two of the guidelines added to the RDG are most relevant: **G1.13** and **G2.6**.

G1.13- BUILDING FORM AND ALIGNMENT

G1.13 provides guidance on the alignment and form of buildings stating “use variation in alignment and form, or both as required to achieve a scale relationship between multi-unit development and neighbouring small scale detached dwellings” (Wellington City Council, 2009b, p.7). The guideline suggests that the overall bulk and scale of larger developments be broken up through offsets in alignment, separation of dwellings into groups of smaller buildings, or giving the appearance of separation, and ‘transitioning’ from larger to smaller scale at the edge of developments. The text explains that this is to integrate better with surrounding smaller dwellings, to avoid visual dominance of nearby buildings, and to avoid monotony from repeated forms. In terms of Policies, this guideline aligns strongly to **Policy 4.2.3.3** (effects of infill and multiunit development) due to a focus on the effect of the overall composition of multiunit

developments on the surrounding environment. In addition, the wording of the guideline relates very strongly to indicators 7-10 of the assessment method under the *Building Appearance* category (Boffa Miskell, 2012d).

The Brougham Street development is broken into two separate buildings, has a variety of façade treatments, and vertical and horizontal modulation in form (Figure 52). The form is broken up through a number of setbacks and buildouts in relation to the street edge, and when viewed from Pirie Street appears like a number of smaller forms (Figure 53). This follows the intent of the new guideline, and this is taken into account in the final decision to grant Resource Consent, as well as the Planner's recommendation. To a lesser extent this has also occurred in the Wright Street development, where gaps between units along the front façade break up the units. This was again acknowledged in the Urban Design Assessment, and the final decision (WCC Property, Housing, Consents and Licensing, 2012a, 2012b).

When viewed in this context, the new guideline appears to have contributed positively to the quality of outcomes. However, a similar process occurred in pre-Plan Change outcomes. Notably, the development at 108 Rintoul Street is complemented in the Urban Design Assessment for breaking up the building volume through façade treatment, and differences in alignment between units. This was discussed in terms of the same issues as **G1.13** regarding neighbourhood character (Blunt, 2005). The development notably 'steps down' in scale at the boundary to connect with neighbouring units (Figure 54).

The first Resource Consent Application of the 344 Queens Drive case study was rejected due to strong criticism in the Urban Design Assessment of the overdominance of the building volume. This was caused by an uninterrupted single mass of



Figure 52: Anticipated Brougham Street Elevation of the Brougham Street case study. (Parsonson Architects, 2011)



Figure 53: Anticipated Pirie Street frontage of the Brougham Street case study. The building appears as three volumes. (Parsonson Architects, 2011)



Figure 54: Variation in facade alignment at Rintoul Street. At the far left the development 'steps down' in scale. (Architecture +, 2005)



Figure 55: The initially proposed development at 344 Queens Drive rejected by urban design assessment. (Geoff Fletcher Architects 2006b)

seven units at a height of three stories along the main street frontage (Figure 55). Due to the recommendations of the Urban Design Assessment under the MUDG the development was broken down into separate volumes with some steps in plan along the façade (Gjerde, 2006a). This means the effect on the outcome was the same as the intended effect of Guideline **G1.13**.

The case study development at Mortimer Terrace was approved despite an Urban Design Assessment suggesting the bulk of the building was an overdominance of the site in terms of massing and volume. The planner granting the decision noted and accepted the recommendation of the Urban Design Assessment, but argued that the building bulk as a whole did appear smaller, the was assisted by vegetation and 'steps back' into the hillside. On this basis, and because other requirements of the plan were met, the decision was made to accept the proposed development (Gjerde, 2006b; WCC Property, Housing, Consents and Licensing, 2007).

Overall the pre-Plan Change outcomes were assessed in terms of the issues addressed by Guideline **G1.13**, and in the case of 344 Queens Drive had a notable effect in improving the quality of the final outcome. All scored well (four or higher) according to assessment of case studies under **Policy 4.2.3.3** with the exception of Mortimer Terrace, which managed only 3 – the 'base level of achievement' (Boffa Miskell, 2012d). The case studies indicate that the introduction of G1.13 by Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes.

G2.6 FREQUENT CONNECTIONS TO THE STREET

Guideline **G2.6** requires a integration with the neighbourhood by requiring that "developments with wide street frontages provide frequent connections to the street" (Wellington City Council, 2009b, p.10). The intention of this guideline is to avoid buildings with blank walls with little visual interest. The guideline defines this as contributing to the amenity of the streetscape. The majority of developments studied did not have broad street frontages. This applies primarily to larger developments as part of comprehensive site planning. Of the selected case studies the Brougham Street, Rintoul Street and 344 Queens Drive case studies will be discussed in regard to Guideline **G2.6**.

The Brougham Street case study shows the post-Plan Change application of Guideline **G2.6**. Along its Brougham Street frontage there is a large opening from the street through to the outdoor area, and two other connections through access paths to ground level dwellings. In this way the proposal generates a strong level of interaction with the surrounding streetscape.



Figure 56: Relationship of the Rintoul Street case study to the street. The driveway to the rear units is integrated with the street scale, with two terraces of street-facing units to each side. Image source: Google (2013)

The Rintoul Street development manages connections to the street relatively well through a number of street facing dwellings with a primary entrance facing over the street (Figure 56). The development was commented on favourably in the Urban Design Assessment for mitigating the effect of the long driveway, and preventing the development being withdrawn from the surrounding streetscape (Blunt, 2005). One of the two street facing 'blocks' is somewhat dominated by driveways and garaging, however there is somewhat offset by planting.

The 344 Queens Drive Case Study has a number of front gardens and dwellings accessed from along the street frontage, and takes advantage of its corner location, including anticipation of a future footpath along the edge of the development. This was commented on favourably in the Urban Design Assessment (Gjerde, 2006a).

Overall the pre-plan change outcomes again showed the possibility for the intent of the guideline to be met through Urban Design Assessments using the pre-Plan Change design guide. In terms of the overall effect on quality of outcomes, the design guide used prior to the Plan Change already addressed the issues raised by the two most significant guidelines added by Plan Change 56. The examples discussed show further evidence that Plan Change 56 did not cause an improvement in the quality of medium density housing.

5.5 LIMITATIONS

The discussion of the issues must be qualified in terms of some limitations. Firstly, the sample size has limited the discussion, particularly where it is in terms of more specific issues related to a scale, configuration or typology of development. The two guidelines discussed (**G1.13** and **G2.6**), they have only been applied on one of the Post-Plan change case studies. This is because the guidelines apply primarily to larger scale developments with broad street frontages, at a larger scale. The Brougham Street development represents an outcome that achieves a high level of quality in regard to the objectives of amenity and character. However, the decision process used in the pre-Plan Change case studies show the issues raised in the new guidelines already being addressed before the Plan Change. The results from the pre-Plan Change case studies do not suggest this high level of quality was caused by Plan Change 56.

Secondly, from the information available it is also not possible to determine the full effect of the District Plan on outcomes, as the 'design decisions' made by designers and architects is not available. Prior research suggests however that designers behaviour is affected by the rules and design guide, with the majority holding the opinion that it is overly prescriptive in determining the design outcomes possible (Wellington City Council, 2013b).

Finally, to some extent the relationship between the issues, and the policies, rules and guidelines has been left open to interpretation. Except for the Objectives and Policies, the District Plan does not specifically link the levels of the planning hierarchy, and the various sections of each document. This leaves scope for misinterpretation of the intended application of the District Plan.

5.6 RETURNING TO THE OBJECTIVES AND THE ISSUES

Objectives and policies, such as **Policy 4.2.2.1** and **Policy 4.2.2.2** encourage intensification, and state a need to improve the access to public transport, mixture of land uses and associated accessibility to public transport, shops, and other facilities and services (Wellington City Council, 2007d, p.6). The policies acknowledge that, as was demonstrated in Chapter 2, these require intensification of housing development. Furthermore Wellington's Urban Development Strategy acknowledges this requires new forms of development that move away from a predominance of single detached housing (Wellington City Council, 2006).

However, other policies discuss at some length the need for "compatibility with surrounding residential development patterns" to "safeguard the amenity values of that area" (**Policy 4.2.2.1A**). They speak of a "traditional development pattern" of a single dwelling on each site, with surrounding open space (**4.2.3.1A**). Of the bulk and location standards **Policy 4.2.3.3** remarks that they are "reflective of the area's predominant development type, which is typically one dwelling per site" (Wellington City Council, 2007d, p.4, 12, 14). Such wording throughout the policies relating to character and amenity are hostile to the prospect of increasing density. There is some conflict between this and other objectives and policies relating to medium density housing, particularly those policies seeking the benefits of intensification.

Despite the intent of Plan Change 56 to 'better manage the quality' of intensification, a number of issues were identified in the post-Plan Change case studies that compromised the quality of outcomes. The 80 Queens Drive and McLintock Street North case studies presented street frontages which were compromised by vehicle parking arrangements. This resulted in lower quality outcomes in terms of the use of ground level open space to define the relationship to the street. Despite changes to the rules and design guide to better serve the 'character' requirements in terms of the scale of buildings, and more rigorous requirements in terms of open space, case study assessment of outcomes before and after the Plan Change do not show an improvement in the quality outcomes. The issues raised which compromised the quality of post-Plan Change outcomes were connected to policies amended by the plan change in terms of open space and 'siting, scale and intensity of buildings. This shows the effect of Plan Change 56 was limited.

Rule, 5.1.3.2B, was the only rule related to open space significantly amended by Plan Change 56. The quantitative minimum requirements for the area and dimensions of open space were shown to have little effect on the quality of outcomes. Case studies which complied with the requirements of the rule were not shown to have a higher quality outcome compared to noncomplying case studies. This shows the rule change by Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes.

Despite replacing Multi Unit Developments Guide with the updated Residential Design Guide, analysis of the content showed for the majority of policies little wording had changed. Of the nine new guidelines, two were significant in terms of the open space issues identified from the post-

Plan Change case studies. The way Resource Consent applications were assessed in terms of those two policies was compared across pre and post-Plan Change case studies. The Resource Consent documentation from the case studies showed that there was little difference in the way the intent of both guidelines was applied before and after Plan Change 56. These findings reinforce the results found in Chapter 4, and further show that Plan Change 56 did not cause an improvement in the quality of medium density housing outcomes.

6. ONWARD TO PLAN CHANGE 72: RESIDENTIAL AREA REVIEW

Plan Change 72: *Residential Area Review* built on Plan Change 56 and undertook a full review of the Residential Area Objectives, Policies, and Rules. Plan Change 72 continued on from the *Infill Housing Review*, and Plan Change 56 seeking to address issues of quality, and appropriateness of location of infill and multiunit development (Wellington City Council, 2010b). Following public consultation to develop the proposed plan change, Plan Change 72 was first publicly notified on 29 November 2009 (Wellington City Council, 2010b). After a process of further consultation, public submissions and public hearings it was recommended in August 2010 that the plan change be accepted. The decision to Accept Plan Change 72 was passed in September 2010 (Wellington City Council, 2010a). Appeals against Plan Change 72 were lodged to the Environment Court. The Environment Court ruled in favour of Plan Change 56 in July 2013 (Wellington City Council, 2013a). Plan Change 72 is presently partially operative, and has one unresolved appeal (Wellington City Council, 2014).

This chapter will briefly set out the changes to the District Plan under Plan Change 72 and discuss the potential effect on quality of medium density housing outcomes. This is based on the findings made regarding Plan Change 56 in Chapters 4 and 5 of this thesis.

6.1 CONTENT OF PLAN CHANGE 72

Plan Change 72 restructured Chapter 4 and Chapter 5 of Volume One of the District Plan (the same chapters amended by Plan Change 56). This included a rewrite of the Residential Objectives, Policies and Rules. Some amendments were also made to the Design Guide (Wellington City Council, 2010b). At the Objectives level of the planning hierarchy, the first four revised objectives of *Containment and Intensification*, *Character and Sense of Place*, *Urban Form* and *Residential Amenity* are most applicable to medium density housing outcomes.

Key to Plan Change 72, is that *Areas of Change* were identified. These became a new zoning for within Residential Areas named *Medium Density Residential Areas* (MDRA). Two MDRAs are located in the suburbs of Johnsonville and Kilbirnie. Plan Change 72 suggests more MDRAs will be added in future. In the introduction to the revised Chapter 4 the District Plan notes that “moderate to significant increases” in density will occur (Wellington City Council, 2010b, p.1). In the MDRA zoned areas the District Plan accepts that intensification will bring a change in the character of the area, and moves the focus of the Policies to ensuring that “new development is of a high quality, both in terms of the impact on townscape character, and the level of amenity afforded to residents” (Wellington City Council, 2010b). This represents a significant shift away from the Policies introduced by Plan Change 56 requiring conformity to the established low density ‘character’. At the Policy level, the explanatory wording to a number of Policies is structured according to zoning, and specify different requirements for MDRAs. These do not mention preservation of existing ‘character’. This addresses the conflict between objectives for intensification, and objectives for quality. Quality is no longer defined by retaining a ‘character’ that discourages intensification.

Under the new **Objective 4.2.1** *containment and intensification* **Policies 4.2.1.2 to 4.2.1.4** are written specifically for controlling MDRAs. The Policies encourage intensification in a ‘comprehensive and coordinated way’. This means the Policies discourages smaller scale ‘piecemeal’ development, and encourage larger developments (Wellington City Council, 2010b). In the selected case studies smaller scale developments had a greater range of issues in managing the quality of open space, and this affected the quality of outcomes. Based on the findings of this research, discouraging smaller scale medium density development aligns well with objectives for increasing the quality of outcomes.

The explanatory wording of the MDRA Policies state that front gardens must be provided to “provide space for planting that can help to ‘soften’ the visual impact of new building works”. Additionally the policy explanation notes less focus on providing a specified amount of open space, and points toward better managing the quality of the buildings in defining the relationship to the surrounding space. In relation to the Open Space rule discussed in Chapter 5, the MDRAs remove the quantitative 35 square metre requirement. The Kilbirnie MDRA does not specify any minimum level, and the Johnsonville MDRA reduces the requirement to 20 square metres (Wellington City Council, 2010b).

The quantitative open space requirements introduced by Plan Change 56 were shown in Chapter 5 to not cause any improvement in quality of medium density housing outcomes. The findings confirm that the design of open space is more significant than the amount provided. Open space was significant in determining the overall quality of outcomes, as it defines the space between buildings, and the relationship to the street frontage. The new emphasis on providing open space with front gardens is likely to lead to improved quality of medium density housing. However, implementation must ensure that open space is not taken over by vehicle parking and circulation at the street edge.

6.2 CHANGES TO THE DISTRICT PLAN DOCUMENT STRUCTURE

In Chapters 4 and 5 it was noted the links across the planning hierarchy from objectives to policies to rules and guidelines were not clearly defined. As part of Plan Change 72 the rules now explicitly state relevant policies to guide preparation of Resource Consent applications. This addresses the issue of ambiguity across the planning hierarchy and strengthens the implementation framework. The Rules have been substantially altered through restructuring into two separate documents. The 'bulk and location standards' and parking rules have been moved to a document titled *Residential Standards*. This improves the readability of the rules, while locating the quantitative standards in a more accessible way. The increased clarity means those applying for Resource Consents gain increased certainty of what is expected, and how to gain approval. This has been identified as important to increasing quality of outcomes, and a lack of clarity in the structure of the District Plan has previously been identified as problematic (Grant, 2009; Hopkins, 2001; Punter, 1999; Wellington City Council, 2013b).

6.3 EFFECT OF PLAN CHANGE 72

The amendments made by Plan Change 72 acknowledge the findings discussed in Chapter 5 through shifting the focus from maintaining a low-density character through quantitative requirements, to a stronger focus on the quality of outcomes. The Policy wording now acknowledges the possibility of a fundamental change in the character of neighbourhoods, and allows greater flexibility in the treatment of open space. The provisions for MDRAs made by Plan Change 72 are more likely to allow a greater range of medium density housing outcomes by reducing the need to fit to a 'character' of development fundamentally different from it. When considered in terms of the findings from case studies of the effect of Plan Change 56, Plan Change 72 will improve the quality of medium density housing outcomes.

7. CONCLUSION

This research began with the aim to investigate the relationship between plan implementation and quality of medium density housing outcomes with respect to Plan Change 56. The purpose was to test the hypothesis that Plan Change 56 did not contribute to an improvement in the quality of medium density housing outcomes. In this chapter the research aim will be revisited, and drawing from the completed research, the research questions defined in Chapter 1 will be addressed. Finally, the research will be concluded with discussion in response to the hypothesis and frame the result in a context of the continuing development of the *Wellington City District Plan*.

DEFINITIONS – PLANNING, MEDIUM DENSITY HOUSING AND QUALITY

To answer the first research question *What is quality in planning outcomes for medium density housing* this research began by setting the scope of the terms *planning* and *medium density housing*.

Planning was established as the act of codifying the acceptable form of future development as a function of governance over an administrative area. The output of planning is a plan. Planning for the scope of this research is defined under New Zealand's *Resource Management Act* (The RMA), which requires local government to develop plans for land use for the *sustainable management of natural and physical resources*. Under this system planning in Wellington is carried out by the Wellington City Council which drafts, maintains and enforces the District Plan.

Medium density housing was shown under prior New Zealand research to be subject to a number of definitions. This research mixed qualitative and quantitative definitions to define medium density housing. Quantitatively the definition requires a development of at least four dwellings,

and sets a minimum threshold of 30 dwellings per hectare and a height of between two and four stories. Qualitatively this gave rise to a number of possible typologies. The most common are single detached (with a site area of 350 square metres per unit or less), semi-detached, terraced and low-rise apartments.

In this research, *quality* was defined in terms of a plan's goals objectives. This means quality has been measured in terms of the degree to which the built outcomes achieve the intentions of the District Plan set out in its goals and objectives. *Quality* is interlinked with the incorporation of terms such as *liveability*, *amenity* and *quality of life* in the practice of planning. As part of goals for liveability of planning outcomes an increase in housing density was shown in a context of international and New Zealand literature to trigger beneficial outcomes through increasing proximity to, and accessibility of, a range of facilities, services, and public transportation choices as well as ecological benefits in terms of reduced land-use and emissions. This approach is followed in Wellington under the District Plan. The goals and objectives require development to be intensified within the established urban area.

While capitalising on the benefits of density, to achieve quality, the design, configuration and layout of buildings and spaces needs to be carefully managed to avoid the negative outcomes associated with crowding. In this respect, under the District Plan quality is defined in terms of *Amenity* in residential areas, which includes privacy, sunlight and daylight and access to private open space. This takes into account the overall size, configuration, and volume of the built environment in relation its surrounding context under objectives for *character*.

PLAN IMPLEMENTATION FOR MEDIUM DENSITY HOUSING

Question 2 asked how planning for medium density housing is implemented in Wellington. The literature shows that the District Plan arranges planning documents in a hierarchical system. The documents begin with broad goals for the future state of the city, and moves to more specific objectives for how residential development will meet those goals. Finally, an implementation framework provides the specific detail that applies the principles of the goals and objectives to control proposed development. It is the use of the implementation framework that determines if the goals and objectives are realised by the outcomes.

To identify planning for medium density housing in Wellington, the definitions of *planning* and *medium density housing* were used to identify the relevant material in the District Plan that ultimately influenced the quality of outcomes.

Under the District Plan the implementation framework is made up of policies, rules and guidelines. The policies are grouped under each objective and contain explanatory wording on how the principles of the objectives should be met. The rules give specific quantitative requirements that limit development. In conjunction with the rules, the *Residential Design Guide* is required to give guidance on medium density housing development with a more qualitative and discretionary

focus. The District Plan requires that the Design Guide be consulted in all medium density housing proposals.

Plan Change 56 arose from public concerns over the quality of housing outcomes that were resulting from intensification. In particular, concerns were raised over multiunit and infill developments in terms of their interaction with the surrounding neighbourhood context, and concerns over visual and physical amenity of outdoor spaces. The Plan Change amended the District Plan by changing or adding a number of policies and rules, as well as modifying the Design Guide. This represented a shift in the way the District Plan is implemented.

AMENDMENTS TO IMPLEMENTATION UNDER PLAN CHANGE 56

Question 3 required identification of amendments to the District Plan made by Plan Change 56. The research identified nine policies influencing medium density housing outcomes, four of which were created or amended by the Plan Change. These were in relation to two objectives concerning amenity and integration with neighbourhood character.

Under the objective for 'amenity', **Policy 4.2.2.1A** requires treatment of overall building form to be considered in terms of 'siting, scale and intensity'. Plan Change 56 added a large amount of wording requiring consideration of the composition and layout of buildings, and treatment of open space – particularly concerning the definition of open space in relation to integration with the street edge and surrounding neighbourhood.

Under objective for 'character', **Policies 4.2.3.1A and 4.2.3.1B** focused specifically on the treatment of open space, particularly in terms of minimising hard surfaced areas when defining developments' relationship to the street edge. **Policy 4.2.3.3** required the overall massing and configuration of multiunit development to respect the existing development patterns of the surrounding neighbourhood and 'compliment' the existing character. The explanatory wording under these policies gave considerable emphasis to maintaining the established character of neighbourhoods. This character is primarily single detached dwellings with larger areas of open space and a smaller scale of development than medium density housing.

At the rules level of the hierarchy, there was little change. The existing 'bulk and location standards' were not changed. The primary change was the addition of a rule prescribing minimum dimensions of open space for each dwelling under the permitted activity category. However, these were copied from the pre-Plan Change design guide, and continued to be stated in the post-Plan Change Design Guide.

Finally, Plan Change 56 replaced the *Multiunit Development Design Guide* with the *Residential Design Guide*. With the exception of some minor amendments, the provisions of the MUDG were retained. The RDG represented a change in structure, and added additional explanatory wording to each guideline. Nine new guidelines were added.

The amendments made were all in terms of managing the quality of medium density housing outcomes. Policies and rules encouraging intensification were not amended.

MEASURING THE QUALITY OF PLANNING OUTCOMES

Question 4 asked *How is quality in planning outcomes measured* with the purpose of determining the effect of Plan Change 56. This is underpinned by the definition of *success* in planning established by Talen (1996b), and reinforced by further research. It maintains that the success of a plan is determined by whether the outcomes have improved in quality relative to the intentions of the goals and objectives *because of* the implementation of the plan.

Following this definition, the method was developed to identify the quality of medium density housing outcomes in Wellington before and after Plan Change 56 in terms of the effect of the District Plan on medium density housing. This required the development of a method to assess the quality of planning outcomes in a context of the objectives of the District Plan. The method required that the case study outcomes before and after the Plan Change be able to be compared, and to establish whether the difference in quality of outcomes was caused as a direct result of Plan Change 56.

In Chapter 3 recent methods for assessing planning outcomes from New Zealand research were compared. From these it was found that ranking systems with a quantitative scale best aligned to the requirements of this research due to the ability to compare outcomes to identify the relative performance between them. The discrete categorisations under separate indicators allowed for attribution of reasons for difference in quality. The Ministry for the Environment's *Medium-density Housing Case Study Assessment Methodology* was selected as most suitable to the requirements of this research, as it had precedent in being used in a similar application, and was well aligned to the definitions of medium density housing and quality.

THE EFFECT OF PLAN CHANGE 56 ON THE QUALITY OF MEDIUM DENSITY HOUSING OUTCOMES

Examples of medium density housing in the period preceding, and subsequent to the Plan Change were identified from Resource Consent data. This yielded 11 examples, seven before the Plan Change, and four after.

The assessment method was applied to the selected case studies. Assessment results were arranged first in terms of each of the four policies amended or added by the Plan Change. For each policy, the content of the policy wording was aligned to the explanatory wording of the 20 assessment indicators of the method. The relevant indicators in each case were used as the assessment of the quality of each case study. This meant that the results of outcomes were able to be used to assess the implementation of the plan.

The average score across the pre-Plan Change case studies was established across each policy and

set as the benchmark for the post-Plan Change case studies. The post-Plan Change case studies were then each compared to the pre-Plan Change average. There were a variety of outcomes, in some cases the quality decreased, while in others it increased. The overall effect across the post-Plan Change case studies was that there is no consistent pattern of improvement in the quality of medium density housing outcomes that are evident as a result of Plan Change 56.

Of all the post-Plan Change outcomes, only the Brougham Street case study consistently showed an improvement in quality. The Wright Street case study showed mixed results – a higher quality of outcome than some pre-Plan Change outcomes, but a lower quality than some others. The 80 Queens Drive and McLintock Street North case studies both consistently showed outcomes assessed at a lower level of quality than pre-Plan Change outcomes in most instances. This alone suggests that it is possible for the planning system to approve outcomes that show a lower quality than before the Plan Change, and the relative success of plan implementation has not improved.

The effect on outcomes of the amended and unamended Policies was compared. The findings showed in two cases the amended policies had a worse effect on quality of outcomes than those that were not. In one case there was no discernible difference in the effect of amended and unamended policies, and in the other, the Plan Change had a slight positive effect. Again, this does not point toward an improvement in quality of outcomes, nor does it point toward Plan Change 56 having any notable effect.

Returning to the hypothesis, the combined evidence confirms that Plan Change 56 did not improve the quality of medium density housing outcomes.

FACTORS INFLUENCING THE QUALITY OF MEDIUM DENSITY HOUSING OUTCOMES

In Chapter 5 the findings were further explored by detailed study of the rules and design guide and justifications for planning decisions in the Resource Consent documentation of the case studies.

Treatment of open space emerged as the critical issue in implementing the District Plan, in particular in the way it is used to define the relationship to the street edge, and surrounding neighbourhood. This also relates to the way the building frontages are integrated with this open space and the 'public face' presented by the developments. Related to this, the principal change in the rules with regard to medium density housing outcomes was the inclusion of a minimum requirement for ground level open space. However this rule represented very little change in the way the District Plan is implemented as it was copied directly from the previous iteration of the design guide. Notably the Design Guide refers to the same wording. Viewed in terms of compliance with the Permitted Activity standard of the Rule, the case study results did not show an improvement in the quality of outcomes.

Another key change made was the incorporation of new guidelines in the Design Guide regarding

the treatment of facades at the street edge, and the connections between developments and the street. However, the Resource Consent decision documents for the case studies showed that the issues raised by the new guidelines were already being addressed in the Urban Design Assessments of pre-plan change outcomes, and contributing positively to the quality of outcomes.

Across the Policies, rules and guidelines the implementation of the District Plan has been shown to be restricted by the policy wording frequently referring to the established single detached low density style of development. The protection of this 'character' is at odds to the objectives for intensification which requires a fundamental shift in the character of development. Despite the substantial additional policy wording added by Plan Change 56 in this regard, the quality of outcomes did not improve.

ONWARD TO PLAN CHANGE 72

Moving forward to the implementation of Plan Change 72, policies of the District Plan are moving toward better allowing development of medium density housing. Policies for the newly established Medium Density Residential Areas removed many of the references to maintain the existing low-density 'character'. There is a stronger focus on quality of outcomes, and a recognition of medium density housing typologies. In contrast to Plan Change 56 the Policies, and revised bulk and location standards introduced to the *Wellington City District Plan* by Plan Change 72 are less focused on quantitative minimum levels of open space. The rules are clearly linked to policies, which are in turn linked to the objectives.

The revised Policies for MDRAs are beginning to address the issues with Plan Change 56 identified from the case studies in this research. With a greater emphasis on quality, and less on maintaining a 'character' of development that disregards medium density housing typologies, Plan Change 72 is likely to succeed where Plan Change 56 did not.

EPILOGUE – QUESTIONS FOR FUTURE WORK

While this research addressed a number of issues related to Plan Change 56, the area of plan implementation is complex, and subject to numerous influences. This section identifies areas of future research to build on the findings of this research, and speculates on potential lines of investigation.

ON WHAT GROUNDS IS A RESOURCE CONSENT APPLICATION REJECTED?

This research studied medium density housing developments in terms of outcomes. The selection of case studies was based on developments that have been completed. However another measure of the effectiveness of plan implementation is the proposed developments that were rejected. Further work could explore the relationship between the quality of rejected proposals, and those that were completed – in particular, identifying how the policies, rules and guidelines contributed to preventing low quality proposals, or hindering the realisation of high quality proposals. The case study of 344 Queens Drive discussed in Section 5.2 shows the District Plan acting to shape medium density housing outcomes by requiring a change in massing before resource consent was issued. Points raised in the xxxx also showed frustration by designers who perceive the provisions of the district plan as being overly prescriptive, and disuading 'good' design (Wellington City Council, 2013b).

HOW MUCH EFFECT DO DESIGNERS HAVE ON THE QUALITY OF OUTCOMES?

Despite designers' feelings that the District Plan constrains the design process, much is noted in the District Plan on the need for 'good' design. While the District Plan states a focus on quality, the rules and guidelines are in effect the minimum standard of acceptable development. Quality that exceeds this baseline is subject to other influences including the skill of the designer. Future work might consider the quality of 'what might have been' should designers not be 'hindered' by planning rules and guidelines, and quantify the effect of 'good design' on quality of outcomes.

SUNLIGHT ACCESS CONTROL PLANES: ARE THEY A BLUNT INSTRUMENT AND DO THEY DO MORE HARM THAN GOOD?

The sunlight access plane rule of the bulk and location standards (Rule 5.1.3.5) is the most often breached rule of the District Plan in terms of applications for Resource Consent as a Discretionary Activity (Wellington City Council, 2013b).

The decision document on Plan Change 72 suggests a review of sunlight access control planes (Wellington City Council, 2010c). McIntosh and Gray (2011) were also highly critical of sunlight access control planes. They noted these serve to favour north-facing sites, and ignore the significant effect of vegetation and topography. Quantitative research is needed on what effect these have had on the quality of outcomes in terms of open space within developments, and shading and privacy issues for neighbours. The Resource Consent documentation, including approved plans, decision reports, and Urban Design Assessments provides qualitative and quantitative information to follow this line of investigation.

HOW DO THE BUILT OUTCOMES DIFFER FROM THE APPROVED PLANS?

During this research, field observations showed the realities of the built outcome differed from the approved plans, particularly in the treatment of planting and paving design. The variety of paving, and extensiveness of planting was often lesser than specified in the approved plans. This has some effect on the quality of outcomes, particularly in terms of defining the quality of open space and much importance is placed on the treatment of open space in terms of planting and paving to reduce the effect of hard surfaced areas. Future work should identify the 'as built' realities, and quantify the effect on quality in comparison to the outcomes expected from the approved documents.

CAR PARKING AND OPEN SPACE

A significant finding of this research was the relationship between car parking and open space. Accommodating vehicle parking has a significant effect on a development's relationship to the surrounding streetscape, and the placement of ground level open space. Further work should investigate the relationship between density, parking arrangements and quality of outcomes. Particularly noteworthy is that the Brougham Street case study was the only case study to utilise underground car parking to increase the provision of ground level open space and planting. The Brougham Street case study also consistently scored the highest level of quality across all 11 case studies, yet also had the highest net residential density.

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The references are arranged in three parts. Firstly *Works Cited* lists literature referred to throughout this research. Works referred to arranged in the standard author-date format of the American Psychological Association (APA) referencing style. Secondly references specifically relating to sections of the *Wellington City District Plan* are listed followed by references to associated documents such as decisions, strategies and design guides. Thirdly, *Resource Consent Documentation* incorporates all resource consent applications, decision documents, approved plans, urban design assessments and other associated documents which formed the basis of case study assessments in Chapter 4 and discussion in Chapter 5 . This is arranged under headings for the 11 case studies by the date the Wellington City Council first received the resource consent application.

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APPENDIX I

MINISTRY FOR THE ENVIRONMENT MEDIUM-DENSITY HOUSING CASE STUDY ASSESSMENT METHOD ASSESSMENT CRITERIA

The following pages show the scoring sheet used for assessing the medium density housing case studies used in this research. They form part of the Ministry for the Environment's *Medium-Density Housing Case Study Assessment Methodology*. The scoring sheet can be found in its complete form in pages 11 to 18 of the document and is freely available at the url <http://www.mfe.govt.nz/publications/urban/medium-density-housing-case-study-assessment-methodology/methodology.pdf>

Table A: Site context and layout

These assessment criteria (left-hand column) assess the design of communal and private outdoor spaces in a development, including vehicle access ways and parking arrangements.

Criteria	1	2	3	4	5	Site photo (✓)
Neighbourhood context: <i>The location of the development relative to meeting residents' needs (eg. access to community facilities such as leisure centres, health care, and schools.).</i>	No shops and community facilities within comfortable walking distance. No accessible public transport and sole reliance on car-based travel.	Close proximity to public open space. No shops and community facilities within comfortable walking distance. No regular public transport and high reliance on car-based travel.	Close proximity to public open space and a comfortable walking distance to a local shop. Neighbourhood centres and community facilities accessible by cycle and/or regular public transport.	Close proximity to public open space and a comfortable walking distance to neighbourhood centres and community facilities. Regional centres accessible by cycle and/or regular public transport.	Close proximity to public open space and a comfortable walking distance to regional centres and community facilities. Development specifically designed to minimise car-based travel (eg. remote car parking, car share scheme).	
Site context: <i>Integration of the development into the existing and/or planned site and local context. This includes consideration of existing features (eg. heritage buildings, vegetation, land forms, and materials), environmental conditions (eg. sunlight, winds) and views (eg. open space, distant features).</i>	<p>Designed in isolation with no evidence of retaining and/or responding to existing features, predominant environmental conditions.</p> <p>Poor quality outlook for most units. Difficult pedestrian access to existing movement networks and no consideration of future connections.</p>	<p>Some evidence of retaining existing on-site features or responding to predominant environmental conditions. Some confined outlook for units. Limited or restricted pedestrian access to existing movement networks and no consideration of future connections.</p>	<p>Retains some significant existing features and responds to predominant environmental conditions. Provides a good outlook for units.</p> <p>Convenient pedestrian access to existing movement networks and/or considers future connections.</p>	<p>Retains and responds to significant existing features, predominant environmental conditions and views. Some design references to local qualities.</p> <p>Safe and convenient access into existing pedestrian movement networks and considers future connections.</p>	<p>Retains and responds to significant existing features, predominant environmental conditions and frames key views. A richness of design with references to local qualities.</p> <p>Enhances existing pedestrian movement networks and facilitates future connections.</p>	

Criteria	1	2	3	4	5	Site photo (✓)
Landscape coverage: <i>The relative balance of impervious surfaces and the ability of the site to provide vegetation that improves, outlook, privacy and softens building forms. The degree of consideration given to greater intensity of use and maintenance requirements.</i>	Use of extensive and uniform paving areas with minimal planting areas and/or narrow strips. Low quality and/or inappropriate choice of planting and paving materials for intensive use and maintenance.	Large areas of uniform paving and an imbalance of planting across the site (ie. some parts of the site remain 'hard edged'). Poorly considered choice of planting and paving materials for intensive use, maintenance and visual amenity.	<p>Paving areas and built forms are balanced across the site and softened by planting coverage.</p> <p>Paved areas are visually broken-up using different paving materials. Planting and paving materials are selected for intensive use, maintenance and visual amenity.</p>	Paved areas are efficiently laid out, to enable larger planting areas, and are visually broken up. Paving materials are high quality for flexible use and visual amenity. Planting is thoughtfully designed and located (eg. taller screening vegetation).	A comprehensive approach is taken to paving and planting design and quality. Consideration is given to sustainable drainage techniques and sourcing vernacular materials in locally appropriate plants.	
Outdoor living space: <i>The provision, location, size and quality of communal and private space.</i>	No private ground level spaces or no adequately sized upper storey balconies (eg. only 'Juliette' balconies that cannot accommodate table and chairs).	Small private ground level spaces or upper storey balconies / roof gardens. Majority of spaces have significant shading and/or exposure of spaces to adverse winds.	Adequately sized private ground level spaces or upper storey balconies / roof gardens. Majority of spaces receive sunlight at least part of the day for most of the year and are sheltered from adverse winds.	Adequately sized private ground level spaces and/or upper storey balconies / roof gardens. Provision of usable communal open space and front gardens for ground level units. Majority of spaces receive sunlight at least half of the day for most of the year and are sheltered from adverse winds.	Generously sized private ground level spaces and/or balconies / roof gardens. Provision of usable communal open space with high quality facilities and front gardens for ground level units. Spaces will receive sunlight for most of the day and throughout the year.	
Car parking and access: <i>The visual dominance of car parking and associated access ways.</i>	Surface, undercroft and/or garage car parking dominating the street frontage.	Surface and/or undercroft car parking within the development, but visible from the street or garages flush with building frontages along the street frontage.	Surface, undercroft or garage car parking visually screened from the street or garages recessed behind building frontages along the street frontage.	Surface, undercroft or garage car parking visually integrated internally within the development with discrete rear laneway access or side/central covered access way.	Car free or safe and secure rear laneway parking or underground car park with discrete entrance and internal access way.	

Criteria	1	2	3	4	5	Site photo (✓)
Service areas and utilities: <i>The extent to which service areas (eg. washing lines, rubbish bins) and utilities (eg. air conditioning units, meter boxes satellite dishes) are efficiently provided, accessible and screened from view.</i>	No service areas and utilities are provided for. Or Service areas and utilities are in inappropriate locations and/or positioned in highly visible locations without screening.	Minimal private service areas and utilities provided for in inappropriate locations and/or inadequately screened where placed in highly visible locations.	Basic private service areas and utilities provided for in appropriate locations and are fully screened and/or positioned away from public views only.	Coordinated provision of private and communal service areas in convenient locations where they are fully screened and discretely located away from public and neighbouring views. Utilities are located along secondary facades.	Coordinated provision of private and communal service areas in convenient locations where they are fully screened and discretely located away from public and neighbouring views. Utilities are integrated into the building design.	
Sub-total						

Table B: Building form and appearance

These assessment criteria assess the perceived building bulk, including the visual relationship with the skyline, and the detailing added to the basic building form to create visual interest.

Criteria	1	2	3	4	5	Site photo (J)
Horizontal modulation: <i>The way a building 'sits' on the ground and perception of its vertical height and horizontal rhythm.</i>	Deep ground floor inset / first floor overhang with vertically stacked upper floor levels . Or Single storey buildings.	Vertically stacked across all floor levels with no consistent horizontal elements (eg, roof eve, string course, window head / sill lines).	Vertically stacked lower floor levels with consistent horizontal elements (eg, roof eve, string course, window head / sill lines).	Some set-backs in vertical façade (eg, inset roof terraces, porches, balconies) and consistent horizontal elements (eg, roof eve, string course, window head / sill lines) without dominant banding.	Varied set-backs in vertical facade to clearly define base, middle and upper building levels and to identify key architectural features.	
Continuous building line: <i>The perception of building length and depth through use of vertical detailing steps in plan and/or building separation.</i>	Long building forms with monotonous facades and no steps in plan.	Long building forms with small and infrequent steps in plan. Or Large offset units with no other vertical relief.	Long building forms with generous and frequent steps in plan and regular recesses and/or build-outs that create vertical relief.	Short or diverse building forms with visually distinct units and recesses and/or build-outs that create additional vertical relief.	Short or diverse building forms with visually distinct units and recesses and/or build-outs that reference the internal layout of units and emphasise key architectural features.	
Building roofline: <i>The contribution roof forms provide to the perceived vertical height and bulk of buildings (excluding services and utilities).</i>	Long, monotonous rooflines without any roof pitch, parapet, offsets, vertical steps and/or breaks in the skyline.	Long, monotonous pitched rooflines without any offsets, vertical steps and/or breaks in the skyline. Or Continuous parapets without any architectural detailing.	Long, pitched rooflines with some offsets, vertical steps and/or breaks in the skyline. Or Continuous parapets with simple architectural detailing.	Short, pitched rooflines or parapets that provide some diversity of roof form and/or some form of intermediate relief.	Short pitched rooflines or parapets that visually separate units and/or tie-in with other building forms and emphasise key architectural features.	
Facade articulation: <i>The level of detail provided on building façades that adds to a sense of depth, visual interest and human scale.</i>	No façade relief other than external services.	Shallow façade relief.	Shallow façade relief with the use of detailed architectural features (ie, sun screens, porches and balconies).	Deep façade relief with the use of detailed architectural features (ie, sun screens, porches and balconies).	A coordinated use of deep façade relief and detailed architectural features that prioritise the street frontage over other secondary façades.	

Table C: Street scene

These assessment criteria assess the design of the development along the road boundary with the public space, including the level of social interaction with pedestrians, and safety.

Criteria	1	2	3	4	5	Site photo (✓)
Street edge continuity and enclosure: <i>The contribution to the definition of public space and achieving a sense of enclosure of the street through building width and height and set back from the road boundary.</i>	Poorly scaled building heights with deep road boundary setback.	Poorly scaled building heights with a shallow road boundary set back. Or Appropriately scaled building height with a deep road boundary setback.	Narrow, appropriately scaled building heights with a shallow road boundary setback. Or Broad frontage and appropriately scaled building heights with a deep road boundary setback.	Broad frontage and appropriately scaled building heights with a shallow road boundary setback.	Broad frontage and appropriately scaled building heights with a shallow road boundary setback. Street frontage is well considered to avoid left-over spaces and complement the existing character of the street.	
Building entrances: <i>The contribution of developments to the level of pedestrian activity and safety adjacent to the street and way finding of visitors and occupants.</i>	No entrances on the front façade.	Secondary entrances on the front facade or main entrances with no direct pedestrian connections to the street.	Main entrances on the front facade with pedestrian connections to the street. Entrances are poorly defined and/or indistinct from each other.	Main entrances on the front façade for each street-facing unit with a direct pedestrian connection to the street and legible entrance (eg, porch).	Main entrances on the front façade for street-facing and upper level units with a direct pedestrian connection to the street and legible entrance (eg, porch). Ability for the occupants to individualise their entrance.	
Façade openings: <i>The potential for informal surveillance and interaction with the street for safety and sense of community (excludes garages).</i>	No windows or small/opaque windows on the front façade.	A low proportion of transparent windows.	A good proportion of transparent windows .	A good proportion of transparent windows evenly distributed across the façade or with a predominance at lower levels linked to active internal uses (eg, kitchens).	A good proportion of transparent windows evenly distributed across the façade or with a predominance at lower levels linked to active internal uses (eg, kitchens). Additional use of bay windows for wide angle street views.	

Criteria	1	2	3	4	5	Site photo (✓)
Material use and quality: <i>The texture, colour, modular patterns, durability and treatment of façade materials that provide visual interest, particularly in relation to the size of a person.</i>	Use of one or two low quality materials with no fine grain pattern, texture or colour variation.	Uncoordinated mix of low quality materials with some fine grain pattern, texture and/or colour variation.	A coordinated, basic mix of robust materials using different patterns, textures and colour variation.	A coordinated, mix of high quality materials with fine grain patterns, textures and colour variation.	A coordinated mix of high quality materials of fine grain patterns, texture and colour variation that provide design richness and distinguish different parts of the building.	
Sub-total						

Criteria	1	2	3	4	5	Site photo (✓)
Street boundary treatment: <i>The degree of physical and visual separation from the street at ground level with regard to public safety considerations balanced with the provision of boundary planting to improve street amenity and soften development forms.</i>	A continuous solid fence/wall greater than 1.6 m in height with no visible planting or tall and dense planting (eg, hedge) along the majority of the street boundary.	A predominant solid fence/wall of greater than 1.6 m in height with small visually transparent sections or low isolated planting providing poor boundary definition.	A predominant fence/wall height of 1.6 m or greater with at least half visually transparent (eg, railings) with some low shrub and groundcover planting and/or trees visible.	A predominant fence/wall height of 1.6 m or greater with at least half visually transparent (eg, railings), which is complementary to the building design. Low shrub and groundcover planting and/or limbed up trees visible in front or through fencing.	A solid fence/wall height no greater than 1.2 m, which provides some boundary demarcation, which is complementary to the building design. Low shrub and groundcover planting and/or limbed up trees coordinated with the building design and street scene.	
Sub-total						

Table D: Internal configurations

These assessment criteria assess the internal design of units, including relationships with external spaces.

Criteria	1	2	3	4	5	Site photo (f)
Internal / external relationships: <i>The level of coordination between the internal layout of units and external features, such as private open space.</i>	All habitable rooms separated from private outdoor space.	Main living areas separated from private outdoor space.	Main living areas connected to private outdoor space.	Main living areas extend into private outdoor space with large openings for other habitable rooms (eg, Juliette balconies).	All habitable rooms extend onto private outdoor space(s) and space/access.	
Visual privacy: <i>The degree that upper level windows directly overlook into neighbouring buildings and outdoor living spaces where there is minimal building set back distance. (This assumes that ground level windows can be adequately screened).</i>	Buildings of three or more storeys with direct facing upper level windows or balconies on main façades oriented to internal (ie, side and rear) boundaries.	Buildings of less than three storeys with direct facing upper level windows or balconies on main façades oriented to internal (ie, side and rear) boundaries.	Direct facing upper level windows or balconies only on secondary or short façades oriented to internal boundaries (ie, side and rear) boundaries.	Only small or high strip windows located on upper level façades oriented to internal (ie, side and rear) boundaries or direct facing windows and balconies technically screened.	Only small or high strip windows located on upper level façades oriented to internal (ie, side and rear) boundaries or direct facing windows and balconies technically screened. Consideration also given to visual privacy within the development.	
Aspect / natural ventilation: <i>The relationship between depth, width and ceiling height of units and associated openings that allow daylight to penetrate and fresh air to circulate.</i>	<p>Deep and extensively partitioned floor plan.</p> <p>Habitable rooms with narrow external frontages and/or internalised within the building and dependant skylights.</p> <p>All non-habitable rooms (eg, bathrooms, kitchens) internalised within the building and dependant on mechanical ventilation/ artificial lighting.</p> <p>Minimum floor to ceiling heights (ie, 2.4 m).</p>	<p>Deep partitioned floor plan.</p> <p>All habitable rooms on external walls with either poor aspect or small/ high-level window openings.</p> <p>All non-habitable rooms (eg, bathrooms, kitchens) internalised within the building and dependant on mechanical ventilation/ artificial lighting.</p> <p>Minimum floor to ceiling heights (ie, 2.4 m).</p>	<p>Shallow , fully partitioned floor plan .</p> <p>Habitable rooms on external walls with standard window openings and good aspect for living areas. Some bedrooms with poor aspects.</p> <p>Non-habitable rooms (eg, bathrooms, kitchens) internalised within the building with dependence on mechanical ventilation/ artificial lighting.</p> <p>Standard floor to ceiling heights (ie, 2.7 m).</p>	<p>Shallow floor plan with open plan areas extending through the unit.</p> <p>All habitable rooms on external walls with large window openings and good aspect for living areas and main bedroom.</p> <p>Non-habitable rooms (eg, bathrooms, kitchens) with direct access to external openings or passive ventilation/ natural lighting systems.</p> <p>Flexible floor to ceiling heights (ie, 3.3 m).</p>	<p>Shallow floor plan with open plan areas extending through the unit.</p> <p>Coordinated layout with all habitable rooms, kitchens and bathrooms on external walls with large window openings, shade controls and good aspect for living areas and main bedroom.</p> <p>Flexible floor to ceiling heights (ie, 3.3 m) / double height voids / mezzanine floors.</p>	

APPENDIX II

RAW DATA OF CASE STUDY SCORING

The data presented in Table A1 is the scoring attributed for each of the case studies described in Chapter 4, Section 4.3. The data formed the basis of the results presented and discussed in Chapter 4, Section 4.5 and continued throughout Chapter 5.

The method was applied and followed as described in Chapter 3, Sections 3.5 and 3.6. Scoring was guided by the Boffa Miskell's criteria for the Ministry for the Environment's *Medium-Density Housing Case Study Assessment Methodology*.

Guidance for criteria 19 and 20 were not provided in any published version of the methodology. However these criteria were not linked to factors assessed in relation to the effect of Plan Change 56 - as detailed in Chapter 4, Section 4.1. For these reasons the scores allocated during fieldwork are not presented.

Table A1 Scoring of case studies used in this research according to the assessment method.

	<i>Site context and layout</i>						<i>Building form and appearance</i>					<i>Street scene</i>				<i>Internal configurations</i>				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Onslow	3	3	2	5	4	4	4	4	2	5	3	4	4	4	2	5	5	3		
Cheyne	3	3	3	4	3	4	3	4	4	3	3	2	4	3	2	5	4	5		
John Sims	3	2	3	4	2	4	3	2	4	2	3	3	1	2	3	4	2	2		
Rintoul	4	4	5	4	3	3	5	5	5	3	5	5	3	4	5	3	4	3		
Darlington	4	4	4	4	4	4	5	4	5	4	5	3	1	3	2	4	5	5		
344 Queens	3	4	4	4	4	4	4	4	3	5	5	4	4	4	5	3	4	4		
Mortimer	4	4	4	5	1	4	4	4	3	2	2	2	3	1	3	5	5	4		
Wright	4	2	3	4	3	3	4	4	5	3	5	2	1	3	2	4	5	4		
80 Queens	4	4	2	3	1	3	2	3	4	4	2	3	2	2	4	3	3	4		
McLintock	2	3	3	3	2	3	3	5	4	2	3	3	4	2	2	3	4	3		
Brougham	4	4	5	4	4	5	5	4	5	5	5	5	2	3	5	3	5	5		

End of docuement - Last words.