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1 Introduction

1.1 Purpose of this report

- 1.1.1 This report has been prepared in accordance with section 32 (**s32**) of the Resource Management Act 1991 (**RMA / Act**) to support proposed Plan Change 14 Housing and Business Choice (**Plan Change 14**) to the Christchurch District Plan (**Plan**). Plan Change 14 is an Intensification Planning Instrument (**IPI**), which the Council is required to progress to provide for urban intensification pursuant to the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021. This report relates to the residential provisions proposed by Plan Change 14.
- 1.1.2 The overarching purpose of s 32 of the RMA is to ensure that plans are developed using sound evidence and rigorous policy analysis, leading to more robust and enduring provisions.
- 1.1.3 Section 32 requires that Christchurch City Council (**the Council**) prepares an evaluation report of the changes proposed in Plan Change 14 to the Plan. This report must examine whether the proposed objectives are the most appropriate way to achieve the purpose of the RMA, and whether the proposed provisions are the most appropriate way to achieve the objectives. This report must also consider other reasonably practicable options for achieving the objectives, and assess the efficiency and effectiveness of the provisions in achieving the objectives. This will involve identifying and assessing the benefits and costs of the environmental, economic, social and cultural effects anticipated from implementing the provisions. The report must also assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.
- 1.1.4 Section 77J of the RMA contains additional requirements for evaluation reports prepared in respect of IPIs. These requirements relate to qualifying matters in the IPI, and the implementation of the medium density residential standards (**MDRS**) set out in Schedule 3A of the RMA. These matters are addressed as relevant in this report and in Part 2 of the s 32 report on qualifying matters.
- 1.1.5 The purpose of this report is to fulfil the s32 requirements for proposed Plan Change 14, in respect of the residential provisions. In addition, the report examines any relevant directions from the statutory context including higher order documents.

2 Resource management issues

2.1 Council's legal obligations and strategic planning documents

2.1.1 Sections 74 and 75 of the RMA set out Council's obligations when preparing a change to its District Plan. The Council has a responsibility under section 31 of the RMA to establish, implement and review objectives and provisions for, among other things, achieving integrated management of the effects of the use, development, or protection of land and associated resources. One of the Council's functions is to control the actual and potential effects of land use or development on the environment, and to do so in accordance with the provisions of Part 2 of the RMA. Critical to Plan Change 14 is section 77G of the Act, which directs the Council to progress an IPI to incorporate the objectives, policies and MDRS set out in schedule

3A of the RMA and to give effect to Policy 3 of the National Policy Statement for Urban Development (**NPS-UD**).

- 2.1.2 As required by s74 and s75 of the RMA, a plan change must give effect to any national policy statements, New Zealand coastal policy statement, national planning standard and regional policy statement, must not be inconsistent with a regional plan, and must take into account any relevant planning document recognised by an iwi authority. The following "higher order" documents are relevant to Plan Change 14:
 - a. NPS-UD;
 - b. Canterbury Regional Policy Statement (CRPS):
 - i. Objective 6.2.1 Recovery framework;
 - ii. Objective 6.2.1a Targets for sufficient, feasible development capacity for housing;
 - iii. Objective 6.2.2 Urban form and settlement pattern;
 - iv. Objective 6.2.3 Sustainability;
 - v. Objective 6.2.4 Integration of transport infrastructure and land use;
 - vi. Policy 6.3.1 Development within the Greater Christchurch Area;
 - vii. Policy 6.3.2 Development form and urban design;
 - viii. Policy 6.3.4 Transport effectiveness;
 - ix. Policy 6.3.7 Residential location, yield, and intensification;
 - c. Christchurch Central Recovery Plan (CCRP) have regard to:
 i. The Blueprint Plan
 - d. Mahaanui Iwi Management Plan (IMP) have regard to:
 - i. Issue P3;
 - ii. Policy P3.1;
 - iii. Policy P3.2;
 - iv. Issue P4; and
 - v. Policy P4.1.
- 2.1.3 As explained above, Plan Change 14 is the Council's IPI under s77G of the Act. As such, there are a number of bespoke sections of the Act that Plan Change 14 seeks to address. These are summarised below:

IPI-related Sections of the Act	Direction to Council
Section 77G	 Incorporate MDRS into relevant residential zones in an urban environment and give effect to policy 3. The equivalent residential zones that should incorporate the MDRS are: Low density residential; General residential; Medium density residential; High density residential – as permitted standards across all zones. Must use the IPI (defined under s80E) and intensification streamlined planning process (ISPP) to implement Plan Change 14.

IPI-related Sections of the Act	Direction to Council
	 Must insert the MDRS regardless of any inconsistency with relevant regional policy statement.
Section 77H	 In order to allow greater development, Council may choose to make MDRS controls more lenient or omit any of the MDRS density standards (but cannot implement a supplementary standard that would prevent a specified density standard from being achieved). Any additional control does not have immediate legal effect under s86BA.
Section 77I	 Can choose to restrict MDRS intensification or Policy 3 intensification under the NPS-UD to accommodate specified "qualifying matters".
Section 77T	 The IPI can include provisions requiring financial contributions.
Section 80E	 Defines the scope of an IPI. Provides that an IPI must incorporate the MDRS and Policies 3 and 4 of the NPS-UD. Provides that an IPI may include provisions relating to financial contributions, to enable papakāinga housing, and "related provisions" that support or are consequential on the MDRS or Policies 3, 4, and 5 of the NPS-UD. Specifies, in a non-exhaustive list, several matters which may be provided for as "related provisions".
Section 80H	• The IPI must show how MDRS and objectives and policies are incorporated.
Section 86BA	 Directs that any MDRS density standard included in the IPI will have immediate legal effect upon notification. Exemptions are where an area is newly zoned as a residential zone or within a qualifying matter area (currently or proposed). Any rule in the operative Plan that is inconsistent with a rule permitting an MDRS-

IPI-related Sections of the Act	Direction to Council
	 compliant development ceases to have legal effect. Any proposed controls that would be more lenient or omit MDRS will not have immediate legal effect.
Schedule 3A	 Contains MDRS, specifically providing for: Requirement for plans include the MDRS Subdivision standards Activity status requirements Objectives and policies Residential density standards

2.1.4 MDRS

2.1.5 The higher order documents broadly identify the resource management issues relevant to the district and provide direction in resolving these issues. The most wide-reaching of these for the residential component of Plan Change 14 are those contained in the MDRS, as set out in Schedule 3A of the RMA. Section 77G of the RMA requires the Council to include these objectives and policies in its IPI. These are discussed in the table below:

MDRS: Objectives and policies included in Plan Change 14		Direction
Objective 1 A well-functioning urban environment that enables all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future:		Provides a link to the "well-functioning urban environment" terminology used in the NPS-UD, which directs that the housing market should have options and diversity, be accessible to services and amenities, and climate resilient.
Objective 2A relevant residential zone provides for avariety of housing types and sizes that respondto—(i)housing needs and demand; and(ii)the neighbourhood's plannedurban built character, including 3- storey buildings.		Defines the outcome sought that MDRS implement for all relevant residential zones in urban environments, resulting in an enabling framework that provides for choice and is responsive to market demands. Housing should also be seen to provide for a form anticipated by planning direction, namely three storey development as a permitted level of enablement.
Policy 1 Enable a variety of housing types with a mix of densities within the zone, including 3-storey		Sets the direction of how Objective 2 is to be achieved, as a basis for MDRS density standards, which implement an enabling regime to allow

MDRS: Objectives and policies included in Plan Change 14	Direction
attached and detached dwellings, and low-rise apartments:	the housing market to respond to different densities and typologies.
Policy 2 Apply the MDRS across all relevant residential zones in the district plan except in circumstances where a qualifying matter is relevant (including matters of significance such as historic heritage and the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga):	Provides policy direction that MDRS is required except in response to qualifying matter constraints identified through the IPI.
Policy 3 Encourage development to achieve attractive and safe streets and public open spaces, including by providing for passive surveillance:	Implemented by density standards that enable development close to the front boundary, set a requirement for street-facing glazing, and a requirement for outlook space that can be over public areas.
Policy 4 Enable housing to be designed to meet the day- to-day needs of residents:	Allows territorial authorities to provide for additional standards that respond to the requirements of residents, such as waste management and the general functionality of units.
Policy 5 Provide for developments not meeting permitted activity status, while encouraging high-quality developments.	Sets the framework for assessing non- compliances with density standards, implemented in part by the restricted discretionary activity status limit for residential units established in clause 4 of the MDRS. The term 'encourage' reflects this limit on the degree of additional matters of discretion territorial authorities can apply through a consenting response.

2.1.6 NPS-UD

- 2.1.7 The next most significant higher order documentation is the NPS-UD. The NPS-UD establishes a framework for urban development across all Aotearoa New Zealand's town and cities. It establishes the goal of achieving well-functioning urban environments for all urban areas, with specific direction for larger centres, known as "Tier 1 urban environments". The Council is identified as a Tier 1 territorial authority and is therefore required to give effect to most of the directives of the NPS-UD.
- 2.1.8 The principal directive of the NPS-UD (Objectives 1-3) is to enable urban intensification around centres and other amenities, services, and transport corridors. The intention is to provide for a sustainable intensification response (Objective 8) that improves housing supply, choice, and in doing so, increasing housing affordability (Objective 2). The outcomes of the NPS-UD facilitate a paradigm shift in housing delivery across larger urban centres, which is recognised to be transformative in nature and will require a step change in how people perceive infill development (Objective 4).

- 2.1.9 Several policies under the NPS-UD are relevant to the IPI and can be categorised as follows:
 - Providing direction on the form and density of intensification (Policies 1, 3, 10)
 - Supply-driven direction (Policies 1, 2)
 - Factors relevant to decision making processes (Policies 4, 6, 9)
- 2.1.10 Form and density-based policies establish what local conditions need to be considered for intensification and the scale and extent of intensification. Policy 1 sets the overarching framework by defining a Well-functioning urban environment, with housing choice being a key pillar. The policy anticipates that different densities and building heights will be enabled throughout the urban environment, particularly when in close proximity to areas of employment, containing services, amenities, open space, and connectivity to public or active transport in an effort to reduce impacts on the climate.
- 2.1.11 Policy 3 has a strong and specific direction for intensification. This anchors on a 'centres-based approach' where intensification is directed within and around specific centres and rapid transport stops, aligning with national planning standards terminology for centres, or those that are seen to be their equivalents. Of particular relevance, Policy 3 directs that at least 6 storey building heights should be enabled within at least a walkable catchment from the edge of the city centre and metropolitan centre zones (c). This is a highly directive policy that is complemented by the last part of the policy 3(d), which requires a similar response to specific suburban centres, at a scale that is proportionate to the level of commercial activity and community services provided within each centre. While directive, both of these policies require a degree of evaluation to determine the scale of intensification. For Policy 3(c), this centres on whether Christchurch has "metropolitan centre zones", and 'at least' for both height and extent (walkable catchment), meaning that territorial authorities must consider the other spatial and form directive policies of the NPS-UD. For Policy 3(d), it means that each suburban commercial centre must be evaluated in accordance with the hierarchy of centres through national planning standards and an intensification response provided accordingly. Lastly, the requirement in Policy 10 is to ensure that any intensification response is consistent across the urban environment, recognising opportunities for infrastructure optimisation and relative land development opportunities.
- 2.1.12 Policies 1 and 2 contain the supply-driven directions of the NPS-UD. Policy 1(a), (b) and (d) establish a direction to provide for a diversity of housing choices. Policy 2 directs that all Councils must provide sufficient development capacity to meet expected demand for housing and for business land over the short, medium, and long term. This aligns with other directives in the NPS-UD to monitor housing and business development capacity through assessments (HBAs) every three years, and the requirement to include housing bottom lines within district plans and regional policy statements (Policy 7). There is an underlying strong direction to increase housing supply through both the policy and the monitoring requirements of the NPS-UD.
- 2.1.13 Policies 4, 6, and 9 establish what kinds of constraints are able to be considered through the required intensification response. The NPS-UD introduces the concept of 'qualifying matters' (as defined through Clause 3.32) that detail specific features that are able to be considered to modify any intensification directed by Policy 3 (Policy 4). The Act now continues this directive through s77I for when applying MDRS standards across the urban environment, meaning that it extends beyond those intensification areas directed through Policy 3. Policies 6 and 9 specify specific matters that territorial authorities must have regard to or take account of. Policy 6 highlights the change that should be anticipated through the wider intensification direction

(which is not considered in itself an adverse effect), its benefits of delivering further housing, and how development may impact the climate. In giving effect to the intensification direction, authorities must also develop in accordance with any future development strategies (FDSs), the values and aspirations of local hapū and iwi, involving them in policy development.

2.1.14 **CRPS**

- 2.1.15 Chapter 6 of the CRPS is relevant to the residential component of Plan Change 14. Of particular significance are objectives 6.2.1 and 6.2.2.
- 2.1.16 Objective 6.2.1 establishes priority areas for development, specifying that Key Activity Centres (KACs) should be the area of focus and other development should seek to concentrate around strategic and other infrastructure to help optimise the existing network.
- 2.1.17 While the CRPS generally envisions that higher densities will be concentrated around KACs and areas sufficiently supported by infrastructure, the MDRS is applied across all urban residential zones in Christchurch irrespective of whether sufficient supporting infrastructure or supporting services and amenities exist in an area. This approach relies on qualifying matters to identify areas where incorporation of the MDRS is not appropriate.
- 2.1.18 Objective 6.2.2 takes a similar approach, specifying the centres where higher densities should occur. This objective provides that sufficient development land should be provided for rebuild and recovery needs, focusing new areas of development within greenfield priority areas (as shown in Map A of the CRPS). Intensification through infill development is also referred to. Objective 6.2.2 aims that between 2022 and 2028, infill development will make up the majority of all development (55%). Several aspects of this objective are supported by the requirements of the MDRS and the NPS-UD. However the MDRS and NPS-UD require intensification to occur at an increased scale.
- 2.1.19 Objective 6.2.3 of the CRPS sets out the sustainability outcomes that development should seek to achieve. This emphasises the integration of development as a priority, thereby promoting active and public transport use and reducing dependence on private vehicle use and the generation of emissions. This direction is strongly supported under the NPS-UD.
- 2.1.20 Policies 6.3.1 and 6.3.7 of the CRPS support the centres direction contained in objective 6.2.2. These policies reiterate the importance of mapped areas for development (as shown in Map A of the CRPS), by referring to these areas in respect of the maximum extent of urban development for Greater Christchurch, and the location of KACs and associated development. The direction of the MDRS, to leverage existing residential zones, therefore supports development within the urban boundaries shown on Map A of the CRPS. As is the case with objective 6.2.2, the MDRS and NPS-UD are largely in line with these policies, except that they require a greater degree of intensification and in additional centres, noting the qualifiers of Policy 3(d) of the NPS-UD. Policy 6.3.7 also states that developments should achieve specific yields based on being in either a greenfield area (15 households/ha¹), central city area (50 households/ha) or infill development elsewhere (30 household/ha). Such developments are likely to be provided for under Plan Change 14, with the MDRS expected to achieve a gross of 100 households/ha in some areas and six storey developments (as per the NPS-UD) capable of achieving a gross density of 200 households/ha in areas.
- 2.1.21 Policy 6.3.2 of the CRPS directs that residential development gives effect to good urban design protocols in redevelopment, with a specific focus on local place making, reflecting historic

¹ Households per hectare (seen as gross)

heritage, character and quality of the existing built and natural environment, and cultural values of an area. Other residential development matters to be given effect to under this policy include Crime Prevention Through Environmental Design (CPTED). Requiring these matters be "given effect to" in residential development may not be in line with the MDRS and NPS-UD. However, the direction of the NPS-UD to concentrate development strongly aligns with directions in the CRPS. Therefore, the high-density development framework proposed under Plan Change 14 is strongly aligned with CRPS (albeit that the approach under Plan Change 14 is at a different scale), with medium density response through MDRS across the urban environment, rather than higher densities within select areas.

2.1.22 Other parts of policy 6.3.2 of the CRPS are supported by the MDRS and NPS-UD, being the focus to barrier free multimodal transport (linked to policy 6.3.4), and the increasing choice and diversity of housing types to adapt to changing housing needs. Policy 6.3.2 also notes that residential development should reflect the appropriateness of the development to its location including by reference to local features and character.

2.1.23 Christchurch Central Recovery Plan (CCRP)

- 2.1.24 The CCRP (2012) provides a spatial framework for the recovery and rebuild of central Christchurch. It describes the form in which the central city is to be rebuilt, and defines the locations of 'anchor' projects, proposed to stimulate further development and investment.
- 2.1.25 Of particular relevance, the CCRP set building heights and density controls as part of a package of amendments to the Christchurch District Plan, to support recovery of the central city and promote a low rise city form. This included a central city height plan and provisions which limited the type and size of commercial tenancies in the commercial zones outside of the Central City Business Zone (CCBZ), to support the recovery and role of the CCBZ as the principal commercial centre for the City.
- 2.1.26 The key focus of the CCRP was the inclusion of the 'blueprint' which sought to consolidate commercial activity in a central area of the Central City so that it would function more effectively. The spatial blueprint was produced based on design principles that addressed the specific challenges posed in a post-natural disaster urban setting, including the significant areas of vacant land in an already 'oversized' commercial zone, public preferences for a lower rise (perceived as safer) city, development feasibility and the desire for a high amenity central city.
- 2.1.27 Key elements of the CCRP included:
 - An overall design concept for development of a greener, more accessible city with a compact core, more greenspace and a stronger built identity.
 - Identification of a new central city "core", where a high quality of design and active frontages was sought through specific urban design controls.
 - Introduction of the "frame" concept, to reshape central Christchurch with its three components East, South and North each having its own distinct character and serving to contain the commercial area. It was considered that containing the available land area in this way would address the issue of too much development capacity and potentially unconstrained development, whilst also adding high quality urban open space to the centre.
 - Incorporation of five key changes emanating from the community's responses during the 'Share an Idea' campaign, including stronger built identity and a compact CBD. Recast as aspirations, these five key changes ultimately translated into the concept of

a lower-rise city with safe, sustainable buildings that look good and function well.

- Key to the CCRP's recovery response to the central city were the principles of 'compress' and 'contain'; 'compressing' the size and scale of expected development to generate a critical mass in the Core, and 'containing' the core to the south, east and north with a frame.
- 2.1.28 The CCRP states that, "the Frame in tandem with zoning provisions, reduces the extent of the central city commercial area to address the oversupply of land. This is purported to help increase the value of properties generally across the central city in a way that regulations to contain the central core, or new zoning decisions, could not. The Frame helps to deliver a more compact core while diversifying opportunities for investment and development. The Frame allows the Core to expand in the future if there is demand for housing or commercial development"².
- 2.1.29 The Plan states that, "lower buildings will become a defining central city feature in the medium term and that a lower rise city fits in with the community's wishes and takes into account of the economic realities and market demand for property in the Core. It also recognises the character and sensitivity of certain areas, such as New Regent Street, and reduces wind tunnels and building shade"³.
- 2.1.30 A key part of the CCRP was an appendix which set out statutory directions for amendments to the then Christchurch City Plan, to give effect to the CCRP. This was given effect to, and the provisions carried over into the operative District Plan, relatively unchanged. The operative provisions for the central city commercial zones therefore derive directly from this recovery planning process, led by central government.
- 2.1.31 When the District Plan was reviewed in 2017, the CER Act required that the District Plan must not be inconsistent with the CCRP. That legislation has since been revoked with the effect that lesser weight is now afforded to the Recovery Plan. PC14 must still *have regard to* the directions of the CCRP under s74(2)(b)(i) of the RMA.

2.1.32 IMP

2.1.33 Issues P3 and P4 of the IMP are most relevant to Plan Change 14. These issues relate to the planning, development, and subdivision of urban areas. Associated policies highlight the importance for Ngāi Tahu whānui and Papatipu Rūnanga to continue to be part of planning to ensure the protection of areas of cultural significance and other interests. Plan Change 14 has been developed alongside Mahaanui Kurataiao.

2.1.34 Other plans

- 2.1.35 No other management plans or strategies prepared under other Acts are relevant to the resource management issue identified.
- 2.1.36 As outlined above, the RMA prescribes certain requirements for how district plans align with other planning instruments. Whether the District Plan objectives and provisions relevant to residential development achieve this alignment is discussed in section 3.2 of the report.

² <u>Christchurch Central Recovery Plan (2012)</u>, page 35.

³ Ibid, page 40.

2.2 Problem definition - the issues being addressed

2.2.1 ISSUE 1 – General application of MDRS to the operative District Plan

- 2.2.2 This is an issue because the framework and integration of MDRS within the existing district plan needs to ensure that MDRS controls are readily able to be utilised and how MDRS density standards are applied to relevant residential zones within the urban environment. This needs to be done in a manner where relevant policies of the NPS-UD are also given effect to and existing Plan provisions do not restrict their use or function.
- 2.2.3 Simply inserting Schedule 3A of the RMA into the current Plan is not an appropriate option. Notwithstanding the complexity of duplicating these standards across the seven residential chapters of the Plan that make up the Christchurch residential urban environment, Schedule 3A also lends itself to a full or partial integration of national planning standards.

2.2.4 ISSUE 2 – Residential intensification response around City Centre Zone – Policy 3 (c) under the NPS-UD

- 2.2.5 The issue is how to give effect to Policy 3(c) of the NPS-UD and to enable the most appropriate height limits within a suitable walking catchment.
- 2.2.6 Policy 3(c) of the NPS-UD states:

In relation to tier 1 urban environments, regional policy statements and district plans enable: building heights of at least 6 storeys within at least a walkable catchment of the following:

- (i) existing and planned rapid transit stops
- (ii) the edge of city centre zones
- (iii) the edge of metropolitan centre zones; and [to (d)]
- 2.2.7 It has been concluded that rapid transport stops and metropolitan centres are not applicable to the Christchurch context and are not further considered here. This means that only the distance from the city centre zone is of relevance.
- 2.2.8 This is an issue because consideration needs to be given to what is the appropriate intensification response within the Christchurch context. Factors that influence this are dominated by:
 - 2.2.8.1 the accessibility of services, employment, and multi-modal transport (both current and planned) surrounding the city centre;
 - 2.2.8.2 the propensity to walk in a given urban environment;
 - 2.2.8.3 demand for housing in the area surrounding the city centre;
 - 2.2.8.4 the urban form outcomes to help deliver a well-functioning urban environment.
- 2.2.9 For 2.2.6.1, important factors to consider are: the continuous rebuild efforts within the central city, including the influence of substantial anchor projects; the significance of the city centre and its surrounds as a focal point for both employment and multi-modal transport; and the degree to which development will be further enabled within the city centre through giving effect to Policy 3(a).

- 2.2.10 For 2.2.6.2, consideration needs to be given to the serviceability of the active transport routes; connectivity across city blocks and to other public transport corridors; local interest in active transport modes; accessibility and integration of public open space areas.
- 2.2.11 For 2.2.6.3, consideration needs to be given to population projections at a local level; the degree to which viable development opportunities exist; and how an intensification response can best respond to such housing demand within a specified catchment.
- 2.2.12 For 2.2.6.4, consideration needs to be given to the spatial relationship between walking catchments and existing urban form layout; how that relationship enhances (or otherwise) the connectivity of services and amenities; consolidation of urban form to achieve coherence; and responses to surrounding environmental features.

2.2.13 ISSUE 3 – Suburban commercial centres response – Policy 3 (d) of the NPS-UD

- 2.2.14 This issue relates to how areas adjacent to centres described in Policy 3(d) of the NPS-UD should be managed. It contemplates the relationship between the outcomes of the commercial evaluation of suburban centres (see commercial section of this evaluation report) and how residential intensification is applied around centres.
- 2.2.15 This requires consideration of the extent to which an intensification response is provided. The two concepts that need to be addressed are:
 - 2.2.15.1 The distance that 'adjacent to' implies;
 - 2.2.15.2 How to scale various centres.
- 2.2.16 Case law⁴ indicates that the phrase "adjacent to" may be extended beyond meaning places adjoining other places, to include places close to or near other places. In interpreting and applying Policy 3(d), it is reasonable for the intensification requirements to apply to areas (not necessarily entire zones) that are immediately adjoining the listed zones, but also areas that do not have a common boundary with the listed zones.
- 2.2.17 The degree and distance of any intensification should therefore be seen as an interrelated concept: both the scale of any intensification and its distance from the applicable centres should increase based on a commensurate response to the level of commercial activities or community services anticipated/ planned in a centre (rather than what exists in the centre now). The application at a parcel level should be seen through a similar policy lens as the considerations under Policy 3(c), taking into account the local urban form, walkability, and achievement of a well-functioning urban environment.

2.2.18 ISSUE 4 – Enabling residential intensification whilst providing for high quality residential environments

- 2.2.19 The issue is how to provide for development of housing that is well-designed and provides for a variety of typologies to support different generational needs through an enabling framework.
- 2.2.20 This issue is influenced by the following matters that Council must consider when giving effect to s77G (MDRS and Policy 3 of the NPS-UD) and how these influence residential environments:

⁴ Allen v Auckland City (Planning Tribunal 3/5/1991); Bisson & Ors v Queenstown Lakes District Council (EnvC Christchurch 4 April 2003.

- 2.2.20.1 Clause 10 of the MDRS density standards sets a threshold of up to 3 residential units per site as a permitted activity. Council must consider how development is managed beyond this threshold and how the activities are managed through the framework directed through Clauses 2-4 of the MDRS (activity status).
- 2.2.20.2 Section 77H(1) permits Council to modify the MDRS to make controls more lenient by permitting an activity that the MDRS would restrict, including through Section 77G(5)(b) consequential objectives and policies. In addition, Section 80E(1)(b) also allows for the consideration of additional controls that support or are consequence on the MDRS or policies 3...of the NPS-UD. Lastly, Clause 2(2) of Schedule 3A states that there are to be no other 'density standards' included in a Plan that are additional to those in Part 2 of Schedule 3A. Council must consider how any additional provisions that sit alongside MDRS density standards do not directly or indirectly modify or affect a matter that density standards address, or prevent a density standard from being achieved.
- 2.2.20.3 In achieving policy 4 of the MDRS, Council must consider how development standards ensure residential unit development is serviceable and practicable. The way in which prospective residential units are used on a daily basis should not be encumbered through their design; the functionality of daily use on offer should be the same within a higher density living environment as it is within a lower density equivalent at present. This means how servicing spaces are designed, their integration, and how they respond to development is important. This matter is particularly important because of the scale of intensification that will be provided for across the residential urban environment and therefore the likelihood of poorly designed developments negatively impacting on day-to-day living.
- 2.2.20.4 The contrast of most residential zones in the Plan to those contemplated by the MDRS and NPS-UD highlights the significant incentives at play in a rule framework intended to provide for a transition from a (broadly) lower density environment to a medium and high density residential environment. Rule incentives to encourage developments of greater height while still creating attractive residential environments that suitably manage sunlight access, privacy, habitable areas, and safety therefore play an important role.
- 2.2.20.5 Clause 4 of Schedule 3A directs that any residential activity where the MDRS would apply must not be considered beyond a restricted discretionary activity. This ceiling means careful consideration of how matters of discretion are applied is required, particularly considering matters for excessive building heights. Not doing so risks not achieving the well-functioning urban environment described in MDRS objective 1 and Policy 1 of the NPS-UD. The focus here should be on how distinguishable urban environments can be achieved that respond to the accessibility of services and transport whilst achieving a diversity in housing types and sizes.
- 2.2.20.6 Lastly, the building heights that provisions enable should practically provide for the number of storeys various zone controls and overlays seek to achieve in responding to Policy 3 of the NPS-UD. The baseline of 11+1mshould be applied accordingly, which is generally intended to provide for three storey development.

2.2.21 The Act requires this plan change to implement the MDRS permitted standards across all relevant residential zones. The desired outcome of Plan Change 14 is that both the MDRS and NPS-UD are implemented, streamlining the enablement of intensification to better assist in the transition to a higher density living environment and provide for housing choice. In order to achieve this, a substantial revisit of the residential framework is required, applying the direction in Clause 1(3) of Schedule 3A that National Planning Standards definitions apply. This means that new residential zones must be introduced. It is likely that a large amount of policy direction within Chapter 14 of the Plan will become redundant or be seen to conflict with the new direction. The final residential framework should therefore be able to accommodate the application of medium density development across the urban environment, enabling greater levels of intensification within and around commercial centres to address the Policy 3 direction of the NPS-UD, and modify outcomes to implement qualifying matters where appropriate.

2.2.22 ISSUE 5 – How to recognise operative density overlays in the District Plan through the IPI

2.2.23 The Plan current contains a series of density overlays that seek to manage site specific development outcomes, and with the introduction s77G, consideration must be given to what the equivalent underlying zoning should be alongside whether these act as qualifying matters.

3 Development of the Plan Change 14

3.1 Background

- 3.1.1 The resource management issues set out above have been identified through the following sources following legislative changes to the RMA through the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 in December 2021 and the NPS-UD in 2020.
- 3.1.2 The Council has commissioned technical advice (or considered existing technical advice) from various internal and external experts to assist with assessing the potential effects of the proposal on the environment, as well as the potential options for mitigating the adverse effects. This advice includes the following:

Report type	Author	Title	S32, Part 3, Appendix Number
Monitoring report	ссс	Evaluation of RMD/RSDT outcomes, incl. implications of MDRS ⁵	1
Provision assessment	CCC	Analysis of the MDRS against existing built form standards for residential zones in the Christchurch District Plan	2

Table 1: Technical Reports informing Plan Change 14

⁵ See Residential Urban Design Technical report

Urban design report	ссс	Residential urban design assessment	3
Economic feasibility	The Property Group	New Medium Density Residential Standards (MDRS) – Assessment of Housing Enabled – January 2022	4
Economic feasibility	The Property Group	High Density Residential Feasibility Assessment – May 2022	5
Provision assessment	Urban Edge Planning	Consent Testing: Plan Change 14	6
Walkability assessment	University of Waikato	A Summary of a National Survey on Living Locally in Aotearoa, New Zealand - White, I., Serrao- Neumann, S., Edwards, K., Mackness, K., Fu, X., & Reu Junqueira, J. (2022)	7
Wind assessment	Meteorology Solutions	Technical Advice for Wind Assessments in Christchurch City	8
Economic assessment	Property Economics	Christchurch City residential zones & intensification precincts economic cost benefit analysis	9
Government guidance	Waka Kotahi	Aotearoa Urban Street Planning & Design Guide	10
Government guidance	Ministry for the Environment	Understanding and implementing intensification provisions for the National Policy Statement on Urban Development	11
Analysis of walkable catchments	ССС	Map - PC14 Spatial overview of walking catchments and accessibility	12
Accessibility assessment	ССС	Density enablement model	13

3.1.3 The above areas are all considered relevant to the evaluation of the residential component of Plan Change 14. These areas are briefly summarised below:

- 3.1.3.1 **Urban design and provision advice**: considerable resources have been expended by the Council to better understand the implications of the MDRS/NPS-UD intensification direction and how well prepared the current residential framework is to cope with these changes. Council reporting on urban design, monitoring of zone outcomes, and a comparison of RMD (Residential Medium Density Zone) abd MDRS have all helped to frame the issues. Reporting from The Property Group and from Urban Edge Planning have helped to detail the feasibility of proposed controls and their application in comparison to the framework under the current Plan.
- 3.1.3.2 **Technical advice**: wind impacts were considered by Meteorology Solutions to help evaluate the current wind environment and appropriate thresholds to consider for residential development. Reporting from Waikato University and Council accessibility modelling has also helped to evaluate how walkability and the access to services and facilities can be considered when evaluating appropriate areas for intensification. The suitability of centres has been evaluated by Council, with input from consultants including The Property Group, Boffa Miskell, and Property Economics.
- 3.1.3.3 **Central Government guidance:** a large amount of central government guidance relating to implementation of the MDRS and the NPS-UD is now available. The Council has considered this guidance in developing Plan Change 14. The publications by the Ministry for the Environment and Waka Kotahi NZ Transport Agency listed in the table above in particular have had a substantive influence on the residential provisions of Plan Change 14.

3.2 Current Christchurch District Plan provisions

- 3.2.1 Residential development in the Plan is framed through Strategic Directions in Chapter 3 and the various residential zone/overlay outcomes in Chapter 14, with Chapter 8 outlining the subdivision elements across the territorial area. Chapter 3 Strategic Directions sets out the overarching outcomes to be expressed and achieved when preparing, changing, interpreting and implementing the District Plan. Chapter 14 sets the residential outcomes described in Chapter 3 at zone level, prescribing the methods used across sub-chapters to meet these intended outcomes.
- 3.2.2 Read alongside each other, the objectives and policies seek the following outcomes:
 - Clarity and concise language in preparation of District Plan provisions, and minimisation of the transaction costs, prescriptiveness, and notification requirements associated with the resource consent process (Plan Objective 3.3.2);
 - All people and communities are enabled to provide for their wellbeing through the provision of a well-functioning urban environment that provides for sufficient housing at all times (Plan Objectives 3.3.1, 3.3.4, 3.3.7 and 14.2.1, and Policy 14.2.1.1; MDRS Objectives 1 and 2);
 - Housing is intensified around areas with a high degree of accessibility to services and transport, aligning with the direction under the CRPS (Objective 6.2.2, Policies 6.3.1 and 6.3.7);
 - An integrated residential form that provides for consolidated residential development which is distinctive and reflects the local heritage and cultural values of the city (Plan Objective 3.3.7, Objective 14.2.1, Policy 14.2.1.1, Policy 14.2.4.1)

- Recognition that amenity values will develop to meet the changing needs of future generations (Plan Objectives 3.3.7, 14.2.1 and 14.2.4; NPS-UD Objective 4).
- 3.2.3 The objectives in Chapter 3 have been reviewed as part of Plan Change 14 in order to ensure consistency with the framing of MDRS and NPS-UD objectives, including consequential changes required. The evaluation of these objectives is considered separately in this evaluation report. As a result of those proposed changes to Chapter 3 objectives, the following objectives are considered relevant to residential development:
 - Objective 3.3.1: applies the well-functioning urban environment principles of MDRS and the NPS-UD, including the housing sufficiency measures through housing bottom lines, to ensure the rate of development matches housing demand.
 - Objective 3.3.3: outline the relationship between the Council and Ngāi Tahu mana whenua, including how Ngāi Tahu mana whenua are supported through residential development.
 - Objective 3.3.7: establishes how the built form shall be managed to provide areas of consolidation, distinction, and to ensure it remains relevant for current and future generations. This includes the concentration of development around centres to ensure people remain connected to services and public transport routes.
 - Objective 3.3.8: details the priorities for revitalising the city centre in order to increase inner city population and create an attractive and prosperous city centre.
- 3.2.4 Residential objectives and policies in Chapter 14 focus on the supply and distribution of housing across the district, detailing the different densities and characteristics that should be considered for specific localities. A total of nine zones are used to spatially manage various residential forms, including some commercial elements (such as Residential Guest Accommodation).
- 3.2.5 Existing Plan residential objectives and policies can therefore be seen to take a nuanced spatial approach to the distribution of densities across the urban environment and different housing types. For instance, Policy 14.2.1.2 in the Plan specifies that medium density housing should be focused in walking catchments around specific Key Activity Centres (KACs) and other commercial centres, with Objective 14.2.8 and associated policies specifying that high density (three to four storeys) shall only be focused within the central city, with heights varying based on local characteristics and amenity values. Various other policies specifically target certain housing types, such as older persons housing, minor residential units, social housing, workers accommodation and temporary housing relief for earthquake-related repairs.
- 3.2.6 Overall, a number of objectives and policies are contrary to achieving the direction of MDRS (enabling medium density and all residential housing types across the urban environment) and Policy 3 of the NPS-UD (enabling at least six storeys around significant centres and transport stops, with a commensurate intensification response around other larger commercial centres). In particular, the following specific objectives and policies are contrary to achieving the direction of the MDRS and NPS-UD, or are seen as redundant due to the new direction of higher order documentation:
 - Policy 14.2.1.2 Establishment of new medium density residential areas
 - Policy 14.2.1.3 Residential development in the Central City
 - Policy 14.2.1.6 Provision of social housing

- Policy 14.2.1.8 Provision of housing for an aging population
- Objective 14.2.2 Short-term residential recovery needs
- Policy 14.2.2.1 Short-term recovery housing
- Policy 14.2.2.2 Recovery housing high density comprehensive redevelopment
- Policy 14.2.2.3 Redevelopment and recovery of community housing environment
- Policy 14.2.4.3 Character of low and medium density areas
- Policy 14.2.4.4 Character of residential development on the Port Hills
- Objective 14.2.8 Central City residential role, built form and amenity
- Policy 14.2.8.1 Building heights
- Policy 14.2.8.2 Amenity standards
- 3.2.7 The above would therefore be removed and subsequently remaining objectives and policies reviewed for integrity and alignment with higher order direction. The proposals for these changes are detailed in the following section.

3.3 Description and scope of the changes proposed

- 3.3.1 The purpose of Plan Change 14 is to implement MDRS and the Policy 3 intensification direction of the NPS-UD, as directed by s77G of the Act. Plan Change 14 is an Intensification Planning Instrument (IPI), as described in the Act. Plan Change 14 gives partial effect to National Planning Standards through the introduction of zones described in standards.
- 3.3.2 Plan Change 14 also seeks to introduce related provisions in accordance with s77G(5)(b) and s80E of the Act, introducing additional standards that respond to the introduction of MDRS density standards. The proposed changes to the residential chapter seek to:
 - Amalgamate relevant residential zones under two core residential zones: medium density residential zone (MRZ); and high density residential zone (HRZ). This would result in changes to sub-chapters 14.4 (Residential Suburban Zone and Residential Suburban Density Transition Zone) and 14.7 (Residential Hills). Sub-chapter 14.12 (Residential New Neighbourhood Zone) would be transitioned to a Future Urban Zone (FUZ), which is discussed elsewhere in this evaluation report. Sub-chapters 14.5 and 14.6 would be updated to the MRZ and HRZ sub-chapters, respectively.
 - Remove sub-chapters 14.13 (Enhanced Development Mechanism) and 14.14 (Community Housing Redevelopment Mechanism).
 - Implement MDRS density standards across MRZ and HRZ zones.
 - Apply a consenting regime that gives effect to Clauses 2, 4, and 5 of Schedule 3A, increasing permitted level of development, limiting consenting assessment to a restricted discretionary activity status and using clause 5 notification thresholds.
 - Give effect to the NPS-UD's intensification direction (Policy 3) to enable intensification around applicable commercial centres across the urban environment.
 - Update associated definitions to align with terminology used in the National Planning Standards and MDRS, where applicable, including a number of new definitions.

- Address qualifying matter controls in accordance with s771 of the Act, noting this is addressed in Part 2 of the s32.
- Remove Plan objectives, policies, and provisions that are inconsistent with MDRS or NPS-UD intensification.
- 3.3.3 Alongside the above changes, the IPI will also implement those MDRS objectives and policies contained in Clause 6 of Schedule 3A, in accordance with s77G(1).
- 3.3.4 Consequently, changes are proposed to the following existing objectives:

Existing & New Objectives	Reason(s) for Proposed Change		
14.2.1 Objective – Housing Supply	 Minor changes to wording to better align with outcomes sought from MDRS and the NPS-UD. 		
14.2.2 Objective – Short term residential recovery needs	 Remove objective. Implementation of MDRS means that the outcomes that are sought are no longer relevant. 		
14.2.4 Objective – high quality residential environments	 Minor changes to wording to better align with outcomes sought from MDRS and the NPS-UD. 		
14.2.8 Objective – Central City residential role, built form and amenity	 Remove objective. This objective is inconsistent with the NPS-UD and inconsistent with MDRS as it seeks to maintain local character through targeted building heights and protection of existing amenity values, while only targeting high density areas surrounding the central city. 		
New Objective (14.2.2) – MDRS Objective 2	• MDRS Objective 2 of Schedule 3A, inserted as required by s77G of the Act.		
New Objective (14.2.5) – Medium density residential zone	 Inserted as a response to MDRS implementation and alignment with National Planning Standards. The objective outlines the purpose of MRZ and intended outcomes, linking to the implementation of MDRS and the phrasing used in MDRS Policy 1 (which sits beneath the objective). 		
New Objective (14.2.6) – High density residential zone	 Defines the purpose and outcomes sought for the HRZ under which Policy 3 of the NPS-UD sits. 		

3.3.5 Changes are also proposed to the following existing policies to achieve the above new or modified objectives:

Existing & New Policies	Proposed Change
14.2.1.1 Policy - Housing distribution and density	 Modify policy wording to be consistent with outcomes sought through MDRS and the NPS-UD, including removing of density targets for specific zones.

Existing & New Policies	Proposed Change	
	 Update Table 14.2.1.1a to reflect changes to specific zones and the extent of the urban environment and provide references to applicable zone purpose objectives. MRZ and HRZ descriptions linked with objective and National Planning Standard descriptions. Additions to Residential Large Lot Zone description to cover use of new area-specific precincts. 	
14.2.1.2 Policy - Establishment of new medium density residential areas	Remove policy.Inconsistent with MDRS and NPS-UD.	
14.2.1.3 Policy - Residential development in the Central City	 Remove policy. Elements (14.2.1.3.a.ii) are contrary to the NPS-UD; replaced by new Policy 3 response for HRZ. 	
14.2.1.6 Policy - Provision of social housing	 Remove policy. MDRS density standards mean these are no longer needed as this liberalises housing development across the urban environment. 	
14.2.1.8 Policy - Provision of housing for an aging population	 Remove Policy. MDRS density standards mean these are no longer needed as this liberalises housing development across the urban environment. 	
14.2.2.1 Policy – Short term recovery housing	 Remove Policy. MDRS density standards mean these are no longer needed as this liberalises housing development across the urban environment. 	
14.2.2.2 Policy - Recovery housing - higher density comprehensive redevelopment	 Remove Policy. MDRS density standards mean these are no longer needed as this liberalises housing development across the urban environment. 	
14.2.2.3 Policy - Redevelopment and recovery of community housing environments	 Remove Policy. MDRS density standards mean these are no longer needed as this liberalises housing development across the urban environment. 	
14.2.4.1 Policy - Neighbourhood character, amenity and safety	 Update wording to align with MDRS and NPS-UD direction, particularly in reference to changes in amenity values and character. Provide greater clarity for the achievement of high quality residential environments. 	
14.2.4.2 Policy - High quality, medium density residential development	 Minor wording changes to ensure alignment with MDRS and NPS-UD direction. 	
14.2.4.3 Policy - Character of low and medium density areas	Remove policy.Contrary to the NPS-UD.	

Existing & New Policies	Proposed Change	
14.2.4.4 Policy - Character of residential development on the Port Hills	 Remove policy. Contrary to the implementation of MDRS, through inclusion within the urban environment and being a relevant residential zone. 	
14.2.8.1 Policy - Building heights	Remove policy.Contrary to the NPS-UD.	
14.2.8.2 Policy - Amenity standards	Remove policy.Contrary to the NPS-UD.	
New Policies (14.2.2.1 to 14.2.2.4, 14.2.5.1): MDRS Policy 2 MDRS Policy 3 MDRS Policy 4 MDRS Policy 5	 MDRS Policies 1-5 of Schedule 3A, inserted as required through s77G of the Act. 	
New Policy (14.2.4.3) Quality large scale developments	 New policy inserted to express how the existing objective 14.2.4 is achieved, detailing how larger scale, more comprehensive, developments should be developed. This builds on the threshold established in MDRS whereby any development of three units or less (on a single site, subject to standards) is a permitted activity. Greater than this is a Restricted Discretionary activity. 	
New Policy (14.2.4.4) On-site waste and recycling storage	 New policy inserted to provide direction for expected levels of waste management, servicing, and storage space. The policy is in response to the significant degree of intensification enabled throughout the urban environment and the increased priority of adequate management of waste and storage in a more intensified urban environment. 	
New Policy (14.2.4.5) – Assessment of wind	 New policy inserted to address the increased potential for adverse wind effects within increased building heights around commercial centres. 	
New Policy (14.2.4.9) – Managing site-specific residential large lot development	 New policy inserted to address how to manage specific sites newly zoned as residential large lot and the use of precincts to better address issues requiring a site specific response. 	
New Policy (14.2.2.5) – Framework for building heights in medium and high density areas	 New policy inserted as a consequence of MDRS and Policy 3 of the NPS-UD, specifically addressing Clause 4 of Schedule 3A. Sets out how the RDA limit shall be applied and the two tiers of enablement that is applied in the framework (links to 14.2.2.6). 	
New Policy (14.2.2.6) – Management of increased building heights	 New policy inserted as a consequence of MDRS and Policy 3 of the NPS-UD, specifically addressing Clause 4 of Schedule 3A. Seeks to direct how building heights beyond those readily enabled in MRS and HRZ should be considered, applying 	

Existing & New Policies	Proposed Change
	enablement framework of the NPS-UD, including consideration of economic impacts on city centre in response to economic reporting.
New Policy (14.2.4.7) – Firefighting water capacity	 New policy inserted to reinforce standards contained within Chapter 14 to better strengthen the need for firefighting capacity to be met in light of enabled intensification across the urban environment.
New Policy (14.2.5.2) – Local Centre Intensification Precinct	 New policy inserted to detail how development around specific local centres shall be undertaken Policy is in response to intensification enabled under Policy 3(d) of the NPS-UD.
New Policy (14.2.6.1) – Provide for a high density urban form	 New policy inserted to provide direction for how and where high density areas should be developed. Responds to a large degree to direction in Policy 3(c) and (d) of the NPS-UD.
New Policy (14.2.6.2) – High density location	 New policy inserted to detail how walking catchments will be used as an input to directing where HRZ areas will be enabled around centres in response to Policy 3 (d) of the NPS-UD.
New Policy (14.2.6.3) Heights in areas surrounding the central city	 New policy inserted that provides for greater HRZ densities immediately surrounding CCZ. The policy responds to Objectives 1 and 3 of the NPS-UD and Policies 1(c), 2, and 3(c).
New Policy (14.2.6.4) – Large Local Centre Intensification Precinct	 New policy inserted to detail how development around specific larger local centres shall be undertaken Policy is in response to direction under Policy 3(d) of the NPS-UD.
New Policy (14.2.6.5) – High Density Residential Precinct	 New policy inserted to detail how high density heights surrounding CCZ will be managed in response to accessibility and the intended outcomes of Objectives 1 and 3 of the NPS-UD and Policies 1(c), 2, and 3(c).

- 3.3.6 The introduction of MDRS density standards means that there are substantial changes to residential standards contained within Chapter 14. S77G requires that MDRS density standards and associated activity status and notification controls are implemented across all relevant residential zones. Changes may only be made to make controls more lenient (s77H) or where they are in response to a qualifying matter identified through s77I. In addition, controls must be seen to provide for an enabling framework that responds to the specific intensification direction under Policy 3 and associated policy directions under the NPS-UD. Key changes are therefore summarised as follows:
 - Implementation of MDRS density standards under Part 2 of Schedule 3A of the Act across MRZ and HRZ;
 - Modification of some density standards to be more lenient;
 - Permitted building heights in HRZ increased to 14m, 20m around larger commercial centres and 17m immediately surrounding CCZ;

- Introduction of various intensification precincts to manage intensified development around centres enabled through Policy 3 of the NPS-UD.
- Implementation of an activity status ceiling at restricted discretionary for residential activities, in accordance with Clause 4 of Schedule 3A;
- Inserting site-specific precinct controls for new Residential Large Lot Zone precincts (86 Bridle Path Road, Redmund Spur, and Rural Hamlet); and
- Adapting Residential Guest/Visitor Accommodation Zone built form standards to correspond with associated MRZ or HRZ surrounding environs (Policy 3 (c) response).
- 3.3.7 Specific changes are addressed below, noting that this does not address changes from the Plan, but rather changes from MDRS density standards and the supporting rule framework proposed.

Rule Category	Proposed Change
More lenient MDRS standards (MRZ and HRZ only)	Building height: MR7: exemption for within Local Centre Intensification
	Precinct to permit up to 14m in height.
	 HRZ: increasing permitted height to 14m.
	Height in relation to boundary:
	 MDRS standards are adopted.
	 Only in HRZ and Local Centre Intensification Precinct (MRZ), are there more lenient controls proposed. Exceptions here focus on encouraging development along the front of a site and readily providing for height under specific conditions.
	 When constructing two or more residential units, recession planes will not apply along the first 20 metres of site depth, or 60% of a site – whichever is lesser. The rule is designed as an incentive (at two or more units) to encourage a strong presence along the street frontage, retaining the rear of the site for private amenity space.
	 Buildings that are setback at least 6 metres from side and rear boundary are exempt from height in relation to boundary controls. This provides a balance between openness and privacy expectations in the HRZ environment and the ready ability to develop to anticipated heights. Aligning with site boundaries also incentivises amalgamation of sites, largely seen as necessarily to see a ready transition to a HRZ living environment.
	Setbacks:
	 MRZ and HRZ: exemption of setbacks for accessory buildings when building no greater than 10.1m in length and is less than 3 metres in height, and for eaves and roof overhangs of a specific dimension that protrudes into the front boundary setback.
	Building coverage:

Rule Category	Proposed Change
	 MRZ and HRZ: exemption for eaves and roof overhangs of a specific dimension.
	Outdoor Living Space per unit:
	 HRZ: Smaller studio and single bedroom units are permitted to have a reduced outdoor living space, being 5m² lesser at the ground floor and 2m² lesser above ground.
	 MRZ: Existing exemption for smaller units modified to not conflict with MDRS.
	Outlook space:
	 MRZ and HRZ: clarity provided that doors opening into an outlook space from the principal living room are not considered to obstruct outlook space, as per j.i. of the standard (MDRS Clause 16(9)(a)).
	Windows to street:
	 MRZ and HRZ: exemption made for calculating glazing requirements, removing the area of the gable above upper floor ceiling height from the area calculation. Clarity is also provided that unglazed doors can contribute to area calculation, including specific exemption for a reduced glazing requirement of 17.5% when specific glazing is provided to habitable rooms and 20% of the ground floor is glazed.
Additional permitted	 Building separation:
standards (MRZ and HRZ only)	 HRZ only: standard controlling the separation of parts of buildings above 12m, aligning with the MDRS height threshold.
	Fencing standard:
	 MRZ and HRZ: standard for when fencing is provided for developments, addressing heights across specific frontages. Builds upon existing Plan fencing standard.
	 Fencing standard is specifically targeted to the front boundary, requiring that at least 50% of the fenced frontage is no greater than 1m in height. Greater fencing heights are permitted along side and rear boundaries and on frontages along arterial roads.
	Garaging and carport building location:
	 MRZ and HRZ: when establishing four or more units, standard for the placement of any detached garage or carport (accessory building) to be located behind the façade of residential units. Only in MRZ is this at a specified distance of 1.2m.
	Ground floor habitable room:
	 MRZ and HRZ: standard for the location of ground floor habitable rooms when fronting a road or public open space. Builds upon existing RMD habitable room standard.
	 Requirement only applies to ground floor units, ensuring habitable rooms front public areas and cover at least 50% of the ground floor space. However, an exemption is made in

Rule Category	Proposed Change
	HRZ when 25% of the development is above 14m in height. This better responds to the typology of that scale and the need for occupation at the ground level.
	 Service, storage, and waste management:
	 MRZ and HRZ: standard to require each residential unit to be provided with adequate waste management areas, servicing and storage space, when proposing four or more residential units. This aligns with the 'scale development' threshold throughout provisions.
	 Waste management standards direct minimum areas and dimension requirements, including screening. The standard ensures that areas are able to be serviced, appropriate for each unit, and recognise that such an area can be provided communally.
	 Controls for washing line areas are maintained, requiring a 3m2 area with a minimum dimension of 1.5 metres.
	 Storage standards prescribe a minimum volume of storage required based on the number of bedrooms each unit provides. Flexibility is also afforded in how this is provided, with up to 50% of storage space able to be provided external to the unit.
	Water supply for fire fighting:
	 This is an established Plan standard that has been carried over into the MRZ and HRZ framework.
	Building reflectivity:
	 Within MRZ only in the Residential Hills Precinct, rule restricting roof reflectivity to 30% light reflectance value (LRV). This carries over current Plan controls for the Residential Hills Zone, which the new precinct intends to capture.
	Location of outdoor mechanical ventilation:
	 Within MRZ and HRZ: the location of external ventilation units (i.e. heat pump units) limited to not be located within 3 metres of a boundary of a street or communal accessway.
	 This ensures that the street appeal is retained in a built form where building setbacks along boundaries and the street interface are reduced.
Restricted discretionary controls (MRZ and HRZ only)	Breaches of the following permitted standards are treated as restricted discretionary activity (as required by cl.4 of the MDRS in Schedule 3A of the Act):
	Number of units:
	 MRZ and HRZ: requires an assessment against the residential design principles. This builds upon the existing Plan framework as part of the RMD matters of discretion. The design elements that the residential design principles consider is to ensure an adequate degree of residential amenity, attractiveness, and safety is possible for developments of four or more units. The

Rule Category	Proposed Change
	baseline for assessment is the planned urban built character for each zone, as represented in associated objectives.
	Building height breach:
	 Matters of discretion for height breaches across MRZ and HRZ are very similar. The main differences are the thresholds at which they apply and the specific design standards that are included.
	 In MRZ, height is in breach when beyond 11m (or 12m for the part of the building where a pitched roof of at least 22 degrees is provided) in height (or when in breach of MDRS roof standards), except where in the Local Centre Intensification precinct, which anticipates a taller urban form. As previous, HRZ heights are permitted up to 14m, therefore RDA standards apply for height controls between 14-20m and then additional standards when between 20-32m in height.
	 Matters of discretion for breaches beyond permitted heights across MRZ and HRZ focus on bulk, dominance, privacy, need for extra height for more efficient site occupation, design and building modulation features, ground floor habitable rooms, and heritage features.
	 In HRZ, standards for building up to 20m require modulation of the upper 1m of the building and the inclusion of ground level communal areas to a scale that corresponds to the scale of residential units. Beyond 20m and up to 32m, HRZ standards require the building to be set back 6m from side and rear boundaries and the proportion of the building above 20m setback 3m from the street-facing building face.
	 A breach of these standards, or heights above 14m in MRZ is also treated as RDA. It requires assessment against much of the same matters previously, but also focuses on consideration of alignment with planned urban character, residential design principles, provision for greater housing choice, association with papakāinga / kāinga housing, accessibility to local amenities and services, and how the site contributes to (or provides for) a sense of place or place making.
	 In HRZ, the final RDA tier of controls focus on the effects associated with the breach of prescribed standards, amongst the effects of discretion.
	Wind standard:
	 Wind standard: MRZ and HRZ: A threshold of 20 metres is adopted in the residential environment, with any residential unit above this level requiring to demonstrate that wind effects do not adversely impact on surrounding areas of public and private space, retaining their overall safety and pleasantness. The height threshold is bespoke to the residential environment due to its level of residential occupation and degree of private amenity space.
	 A catchment of 100 metres surrounding a development site is adopted to evaluate wind effects. More sensitive environments, such as open spaces, outdoor living areas, and

Rule Category	Proposed Change
	footpaths are more stringently considered at 4m/s. This compares to areas where safety is more of a concern, being roadways and carparks, which have a 6m/s threshold. Any of these spaces much not exceed wind speeds for 5% annually (about 18 days a year).
	gust threshold of 15m/s that must not be exceeded more than 0.3% annually (about two days a year).
	 Any measurement must be demonstrated by a suitably qualified professional to ensure technical requirements are able to be demonstrated.
	 Breach of wind standards in both MRZ and HRZ are addressed though a new wind assessment matter of discretion. This assesses how safety and amenity is impacted due to wind changes, how landscaping is used to mitigate wind effects, and wind effects anticipated over those already present. The latter reflects that in some instances, the urban environments may already be at the thresholds described in the standard, therefore the degree of change is a matter of discretion.
	Height relation to boundary breach:
	 MRZ and HRZ: breaches are addressed through a new height in relation to boundary matter of discretion. This primarily focuses on effects on adjacent properties, in terms of how bulk and dominance can adversely impact on privacy and shading, particularly on habitable rooms and outdoor living spaces. Effects on heritage values are also recognised.
	Building separation (HRZ only):
	 Breaches in building separation are considered under the height in relation to boundary matter of discretion.
	 An additional matter is added, focusing on access ways, addressing some of the CPTED and privacy issues that may arise at a closer proximity.
	Setback breach:
	 MRZ and HRZ: breaches of setbacks are considered under the Impacts on neighbouring property matter of discretion.
	 While the assessment matters evaluate bulk and dominance effects on adjoining properties, the standard also considers whether the non-compliance is necessary to enable more efficient or cost effective use of the site, including any building design features used to manage visual impacts. The rule anticipates that breaches may be unavoidable in some circumstances.
	 Impacts on heritage values and the protection of significant trees or natural features are also considered.
	 Lastly, the rule also recognises how the configuration of a building can negate some of the adverse impact of setback breaches through the location of habitable rooms at the ground level.

Rule Category	Proposed Change
	Building coverage breach:
	 MRZ and HRZ: breaches of setbacks are considered under the Site density and site coverage rule.
	 This is an existing rule that is proposed to be modified to better address MDRS standards. Alongside building dominance and privacy effects, it also considers effects on character and amenity values for the local environment.
	 Specific design elements are now also considered, being how landscaping is used or site layout or building designed to mitigate effects. The practical use of the site is also considered, in terms of access ways or onsite outdoor living spaces, and how their configuration provides opportunities for planting.
	Outdoor living space breach:
	 MRZ and HRZ: breaches in outdoor living space are considered under a modified outdoor living space rule already contained in the District Plan.
	 Changes have been proposed to evaluate how residual spaces provide sunlight access and their connection between internal and outdoor living areas, and the usability of the space, as to whether other facilities are occupied within the remaining space.
	Outlook space breach:
	 MRZ and HRZ: breaches in outlook space are considered under a new outlook space occupation rule.
	 Matters of discretion focus on the degree to which openness is still achieved across the site, creating the sense of spaciousness that would otherwise be provided. Consideration is given to whether the area remains unobstructed, provides for daylight to windows of the primary living room, including any loss of privacy or amenity within these spaces.
	Breach of street-facing glazing:
	 MRZ and HRZ: breaches in glazing are considered under a new Street-facing glazing non-compliance rule.
	 Matters of discretion largely focus on design and CPTED measures, such as: whether glazing is for habitable rooms; passive surveillance opportunities that remain; and other building design features that add to the visual interest at the street-facing façade.
	Landscaping breach:
	 MRZ and HRZ: breaches in landscaping are considered under a new Residential landscaping rule.
	 The rule considers similar matters contained in 14.15. It evaluates the type of landscaping provided, its contribution to amenity, and whether it would be suitable for the local climatic conditions.
	 Positive effects are also considered, including whether planting could act to soften building effects and how it could enhance onsite and neighbouring amenity, or improve the

Rule Category	Proposed Change
	 overall safety and accessibility of a site with lesser landscaping. Consideration is also given to the practicalities of planting,
	whether a lesser amount of landscaping is needed for a more cost effective development form, where sites of cultural significance are not compromised, and whether a maintenance programme has been proposed to manage landscaping.
	Fencing breach:
	 MRZ and HRZ: this is now considered through a separate Residential fencing rule. The rule evaluates whether taller fencing is needed in the specific roading context, materials used, and whether passive surveillance is still possible.
	 Amenity and privacy effects of increased fencing is also considered and whether height would detract from the openness and coherence of the street scene.
	Garaging location breach:
	 MRZ and HRZ: any garaging is considered under the matters specific to the breach in Residential Design Principles, being 'Relationship to the street and public open spaces' and 'Safety'.
	Breach of ground floor habitable rooms:
	 MRZ and HRZ: any ground floor habitable room breach is simply considered under the matters specific to the breach in Residential Design Principles, being 'Relationship to the street and public open spaces' and 'Safety'.
	Waste, servicing, or storage breach:
	 MRZ and HRZ: any breach of this standard is considered under a modified Service, storage and waste management spaces rule.
	 Changes to the rule mean that consideration is also given to communal outdoor living spaces and how landscaping may instead be used as a form of screening.
	Building reflectivity breach:
	 Only in Residential Hills Precinct: Control is the same as per the current Plan breach within the Residential Hills Zone.
	 Matter of discretion is limited to the specific matters for small settlements and hilled areas within residential design principles.
	Breach of outdoor mechanical ventilation unit location:
	 MRZ and HRZ: any garaging is considered under the matters specific to the breach in Residential Design Principles, being 'Relationship to the street and public open spaces' and 'Built form and appearance'.

Rule Category	Proposed Change
New Residential Large Lot Zone built form standards	 Site density: Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct. These carryover Plan controls for these specific zones from the
	associated density overlays.
	• Site coverage:
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct.
	 These carryover Plan controls for these specific zones from the associated density overlays.
	Minimum building setbacks from internal boundaries:
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct.
	 These carryover Plan controls for these specific zones from the associated density overlays.
	Road boundary building setback:
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct.
	 These carryover Plan controls for these specific zones from the associated density overlays.
	Building reflectivity and colour:
	 Add exemption that the rule does not apply within the Rule Hamlet Precinct.
	 Minimum setback for living area windows and balconies facing internal boundaries:
	 New standard inserted to only apply to new precincts, reflective of existing Plan controls.
	Service, storage and waste management spaces:
	 New standard inserted to only apply to new precincts, reflective of existing Plan controls.
	 Street Scene amenity and safety – fences:
	 New standard inserted to only apply to new precincts, reflective of existing Plan controls.
	Tree and garden planting:
	 New standard inserted to only apply to new precincts, reflective of existing Plan controls.
	Outdoor living space:
	 New standard inserted to only apply to new precincts, reflective of existing Plan controls.

Rule Category	Proposed Change
Rule Category New Residential Large Lot Zone (RLL) restricted discretionary activities	 Proposed Change RD15 – updating naming of agency to 'Fire and Emergency New Zealand'. Breach of setbacks for living area windows and balconies facing internal boundaries: Inserted in response to new RLL site-specific precinct standards. This carries over the matter of discretion from the equivalent zone for the site specific standard in the Plan. Breach of service, storage and waste management spaces: Inserted in response to new RLL site-specific precincts. This carries over the matter of discretion from the equivalent zone for the site specific standard in the Plan. Breach of service, storage and waste management spaces: Inserted in response to new RLL site-specific precincts. This carries over the matter of discretion from the equivalent zone for the site specific standard in the Plan. Breach of fencing standard: Inserted in response to new RLL site-specific precinct standards. Breach of fencing standard: Inserted in response to new RLL site-specific precinct standards. Breach of tree and garden planting standard: Inserted in response to new RLL site-specific precinct standards. Breach of tree and garden planting standard: Inserted in response to new RLL site-specific precinct standards. Breach matters of discretion are the same as landscape area breaches under MRZ and HRZ. Breach of outdoor living space: Inserted in response to new RLL site-specific precinct standards. Inserted in response to new RLL site-specific precinct standards.
	zone for the site specific standard in the Plan.
Residential Guest/Visitor Accommodation Zone – Built form standards	 Maximum site coverage: Alignment with MDRS building coverage standard of 50% across all groups. Maximum building height: Alignment with MRZ and HRZ permitted building heights Minimum building setback from road boundaries Alignment with front yard standards under MDRS. Daylight recession planes: Alignment with MDRS standards and re-directing standards to align with MDZ and HRZ.
Residential Guest/Visitor Accommodation Zone – Restricted discretionary activities	 RD6 – Buildings that no not meet the maximum building height: Clarification added within standard and matter of discretion that the applicable MRZ or HRZ rule, as listed in Appendix 14.16.11 for each group, shall apply as if it were within that zone.

Rule Category	Proposed Change
	• RD10 – Updated reference to the new residential fencing matters of discretion. Applies same considerations as residential activities.
	• Various rule references updated with changes made to sub-chapter 14.15.

3.3.8 The residential component of Plan Change 14 also proposes to modify existing, or add additional, definitions to Chapter 2 of the Plan. This are addressed below:

Definition(s)	Proposed Changes
 Accessory building 	 Addendum added to existing chapter, applying the corresponding National Planning Standards definition.
 Building Building coverage Building footprint Ground level Height Residential unit Site 	• Changes only apply to MRZ and HRZ due to the application of MDRS.
Residential unit	 While the National Planning Standard definition has been inserted as per MDRS, further clarification of the definition has also been added. This ensures that activities captured in the operative definition are captured (emergency or refuge) and does not artificially increase expected levels of household occupation of residential sites. The addition states: For the purpose of this definition: a. <u>a building used for emergency or refuge accommodation shall be deemed to be used by a single household;</u> where there is more than one kitchen on a site there shall be deemed to be more than one residential unit; and <u>a residential unit may be used for hosted visitor accommodation or unhosted visitor accommodation.</u>
 Habitable room Height in relation to boundary 	 New definition inserted, as per corresponding National Planning Standards definition.

Definition(s)	Proposed Changes
 Net site area Outdoor living space 	 New definition inserted, as per corresponding National Planning Standards definition. This replaces the existing Plan definition.
Principal living room	 New definition inserted, in response to MDRS density standard for outlook space (Clause 16, Schedule 3A) Definition states: means the largest living room in a residential unit.
Larger commercial Centres	 New definition inserted to reinforce phrasing used in objective and policies, and to reflect the outcomes of centres analysis. Definition states: Means those areas zoned as:
Landscaped area / Landscaping	 Modifies existing Plan definition to exempt MRZ and HRZ area in response to MDRS density standard for landscaped area (Clause 18, Schedule 3A)
Community housing unit	 Removed due to proposal to remove Community Housing Redevelopment Mechanism, as MDRS makes this redundant.

3.3.9 Plan Change 14 does not propose to insert any discretionary or non-complying activity. The approach aligns with Clause 4 of Schedule 3A of the Act, which restricts any residential activity where MDRS density standards would apply to restricted discretionary activity status.

Notification

- 3.3.10 Clause 5 of Schedule 3A establishes the threshold for notification of residential activities where MDRS applies. It directs that resource consent applications for the construction of four or more residential units that comply with the other density standards are precluded from public and limited notification. A proposal for 1-3 residential units that breaches MDRS density standards may only be limited notified and is precluded from public notification.
- 3.3.11 In addition to the above, and in accordance with s77D, Plan Change 14 proposes that the breaches of the following standards are also precluded from limited notification:

- Front boundary setback standard;
- Building coverage;
- Windows to street;
- Landscaping;
- Outdoor living space;
- Outdoor mechanical ventilation;
- Garaging and carport building location; and
- Ground floor habitable rooms.
- 3.3.12 While Plan standards for water supply for fire fighting specify that written approval shall be required from the Fire Service regardless of whether they are identified as an affected party under s95E of the Act, such an approach would be seen as being ultra vires to the requirements under s95B of the Act and are no longer carried over for MRZ or HRZ controls.

3.4 Community/Stakeholder engagement

- 3.4.1 Pre-notification engagement and consultation on the proposed Plan Change 14 was open from 11 April 2022 to 13 May 2022 (i.e. five weeks). Various methods were used to encourage public feedback including:
 - Letters to affected properties sent to all residents and businesses.
 - Public advertising placed in The Press and Star and community newspapers, along with Newsline articles, and social media posts.
 - Hard copies of the consultation flyer provided to all Christchurch City Council libraries and service centres.
 - Have your Say online consultation webpage.
 - Staff engagement directly with the public via webinars and attending specific organisation or association meetings.
- 3.4.2 Council received feedback from about 700 respondents. Council heard from a wide range of organisations, including:
 - Crown and Council entities,
 - Residents Associations and Community Groups,
 - Professional associations/organisations, and Commercial entities.
- 3.4.3 For the pre-notification information provided for public feedback, specific questions were designed to help focus the feedback sought, and included the following questions:
 - Are we proposing the right areas for development above 12 metres? (Yes/No)
 - *Comments (free text)*

- Do you have any comments about the proposed Qualifying Matters that will restrict intensified developments or thresholds for needing a resource consent (free text)
- Does the proposed plan change allow for enough business intensification? (Yes/No)
- Any other comments about the proposed plan change (free text)
- 3.4.4 A summary of the feedback received was completed, and made publicly available here <u>link</u>. Whilst the pre-notification summary of feedback report provides a synthesis of comments received, this section of the report provides a further review of that with regards to the residential provisions. It states what changes have been made to the draft provisions as a result of feedback received.
- 3.4.5 When reviewing the specific feedback received in relation to proposed changes to the Residential Chapter of the District Plan, these related to:
 - Medium Density Residential Standards (MDRS)
 - High Density Residential Zone (HRZ)
 - Precincts (Greenfield, Centres Intensification)
- 3.4.6 General comments on residential matters were concerned about the following matters:
 - Application of the Medium Density Residential built form standards 169 comments

For all current residential areas in the city, the proposed Medium Density built form standards would apply. The majority of feedback received on the application of these standards opposed this increase in density as a wholesale approach for Christchurch. Reasons for opposition related to negative impacts on the community. This included impacts of shading and loss of sunlight on neighbouring properties, poor building design outcomes of permitted development, loss of privacy, loss of tree canopy as sites were cleared for developments, and the impact on quality of life and community functioning due to scale (i.e. bulk and location), and increased number of residential dwellings.

There was also support for the application of the Medium Density built form standards that would provide for more housing opportunities in the city. While the majority of the feedback on the application of these built form standards was in opposition, these were based on building design and impacts on neighbouring properties, if all sites developed were realised to the permitted built form standards.

• The right areas have been identified for development over 12m – 950 comments.

For residential development over 12m, there are two areas that would have these further height enabled areas; High Density Residential Zone, and the use of the centres intensification precinct. Of the 390 people who answered the yes/no question, 68% (i.e. 265 people) said no – the right areas had not been identified. When reviewing comments, feedback sought to have a reduced height due to negative impacts on the community. This included impacts on shading of larger buildings on neighbouring properties, concerns about parking and traffic congestion, and general loss of amenity as a result of higher buildings.

In contrast, there was also support for increasing residential development near the city centre and other commercial centres, which would have the benefits of access
to services and facilities, such as public transport, community facilities and retail/commercial activities, which these centres provide for nearby residents.

While the feedback around reduced heights received supported the use of other planning methods to control heights and density, such as the use of Qualifying Matters or Precincts, to protect character and amenity of residential areas, these will be discussed in part 2 of this report.

3.4.7 The following table provides a summary of the changes made to the residential chapter as a result of the feedback received:

Feedback received	Resulting change to the draft proposal		
Application of the Medium Density	 No changes to zoning extent; requirement of s77G. 		
	 Removal of exemption of height to boundary control along front of sites. 		
	 Insert new standard for outdoor ventilation units. 		
	Removed stormwater controls.		
	 Improved clarity of windows to street exemptions. 		
	 Changed threshold for controls for garaging and servicing for four or more units. 		
	 Significant overhaul of objectives and policies to align with Plan framework and increase ease of use. 		
	 Refinement of height breach control to increase specificity and clarity. 		
Areas identified for further intensification (i.e. over 12m in building height) through	 Changes made to improve and simplify the application of Residential Design Principles. 		
land use zoning of High Density Residential	 Better specify the application of wind standards. 		
	 Insert new standard for outdoor ventilation units. 		
	Removed stormwater controls.		
	 Significant overhaul of objectives and policies to align with Plan framework and increase ease of use. 		
	 Changed threshold for controls for garaging and servicing for four or more units. 		

	 Added exemption to ground floor habitable room controls to better align with operative Plan approach.
	 Modification of requirement for communal ground level outdoor living space to insert size threshold.
	 Refinement of height breach control to increase specificity and clarity.
	 Add notification exemptions to specific provisions
Areas identified for further intensification (i.e. over 12m in building height) through Centre intensification Precinct	• Large reduction in the extent of 10- storey enablement, concentrating only around City Centre, in response to economic evidence.
	 Insert consideration of economic impact on the city centre when in breach of height.
	• Change intensification response around some centres in response to further evidence.
	 Small scale precinct extent modifications: increasing in most instances; and reducing around the Shirley Centre along southern aspect.
	 Add notification exemptions to specific provisions.

3.5 Consultation with iwi authorities

- 3.5.1 Plan Change 14 has been developed alongside Mahaanui Kurataiao Limited (MKT). Discussions began in late 2021 to help frame overall thinking for the development of Plan Change 14 and involved discussing:
 - Strategic Directions development (Chapter 3);
 - Scope of relevant residential zones;
 - Scope of considerations for papakāinga / kāinga nohoanga development as part of MDRS;
 - Types of cultural significance features that should be considered as qualifying matters; and

- Broader strategic outcomes of Plan Change 14.
- 3.5.2 Following the release of the full draft proposal in April 2022, Council met with representatives from MKT to further discuss the above. Support was expressed for the approach undertaken thus far, and reiterated the importance of adequate qualifying matters to be captured in the proposal.
- 3.5.3 Draft evaluation reports and draft changes to residential sub-chapters were provided to representatives on 22 July 2022 prior to notifying the plan change, and we have had particular regard to their feedback in accordance with Clause 4A of Schedule 1 of the Act. A summary of the changes that we have made to residential reporting and provisions as a result of that consultation is provided below:

Summary of MKT requested changes / comments	How proposal has responded / adjusted Implemented, as requested.		
 Evaluation Report: Minor wording changes for references to iwi / Rūnanga 			
 Evaluation Report: Changes to section 4.1 – scale and significance 	Apply narrative as provided, as it applies to the residential proposal.		
 Modifying 'Degree of impact on or interest from iwi/Māori' from 'Low' to 'High', noting issues around housing affordability/accessibility, waterway impacts, and the proposed policy basis for Kāinga nohoanga/Papakāinga housing. 	Retain a 'medium' level of significance to this criterion as MDRS is considered part of the status quo, and while qualifying matters are not considered as part of this sub-section, qualifying matters of interest to mana whenua are those within the operative district plan that would be carried over.		
 Evaluation Report: Changes to summary of cultural costs and benefits of provisions in section 5.5. 	Implemented, with some modification to better reflect that MDRS is the status quo.		
 Evaluation Report: Changes to summary of cultural costs and benefits of provisions in section 6.3. 	Implemented, as requested.		
 Sub-chapter 14.15: Modification of 14.15.1c.ii.G to maintain the operative wording, also inserting 'removes' at the start before identifying features, including Sites of Ngāi Tahu significance. 	Retain the draft proposed changes to the matter of discretion. This better recognises the (separate) weighting of qualifying matters elsewhere in the plan, the purpose of the matter of discretion, and the limits to		

Summary of MKT requested changes / comments	How proposal has responded / adjusted	
	recognising existing character in light of the intensification direction of MDRS and Policy 3 of the NPS-UD.	

4 Scale and significance evaluation

4.1 The degree of shift in the provisions

- 4.1.1 The level of detail in this evaluation of the proposal has been determined by the degree of shift of the proposed objectives and provisions from the status quo and the scale of effects anticipated from the proposal. To this end, it is important to consider the unique position that the ISPP process under the Act places Council in, when considering the obligations under s77G and s80E of the Act to incorporate MDRS. In particular, under s77G and s86BA(1) a rule in an IPI "that authorises as a permitted activity a residential unit in a relevant residential zone in accordance with the density standards set out in Part 2 of Schedule 3A" must be included in the District Plan and has immediate legal effect. A rule that meets the criteria in s86BA(1) will therefore take effect from notification of the IPI⁶ and any operative District Plan rule that is inconsistent with the new rule thereafter ceases to have legal effect.⁷ It means that for the purposes of the status quo consideration, all applicable objectives, policies, and provisions under Schedule 3A of the Act are considered to be the status quo, rather than the comparable operative district plan.
- 4.1.2 Based on this, the scale and significance of anticipated effects associated with this proposal are identified below:

Criteria	Scale/Significance		ince	Comment	
	Low	Medium	High		
Basis for change			х	 Give effect to the MDRS and National Policy Statement for Urban Development 2020 requirements. 	
Addresses a resource management issue		x		 This addresses four resource management issues identified to give effect to s77G. This applies the MDRS direction across the urban environment, providing for greater housing 	

⁶ Note that s86BA(1) does not apply to rules applying in either a new residential zone or a qualifying matter area.

⁷ Under s86BA(2).

Criteria	Scale/Significance		ince	Comment	
	Low	Medium	High		
				choice (for both typology and supply), increasing accessibility to housing.	
				proposed around larger commercial centres, helping to deliver the well-functioning urban environment described in Policy 1 of the NPS-UD and delivering upon the Policy 3 direction.	
Degree of shift from the status quo		X		 The status quo provides for 12m high development across all urban residential areas (subject to qualifying matters), due to the implications of MDRS. Only in areas surrounding larger commercial centres is this anticipated to change beyond this, giving effect to directon in Policy 3 on intensification. Many of these areas already enable an increased level of density in response to direction in the CRPS and in recognition of the benefits of concentrating development around centres. Further development centres is therefore somewhat anticipated or expected. 	
Who and how many will be affected / geographical scale of effects		×		• The status quo (MDRS) will apply across all relevant residential zones, being a large geographic extent. However, greater levels of intensification beyond MDRS will be focused around larger centres, where there is a greater (by contrast) impact relative to the status quo.	

Criteria	Scale/Significance		ince	Comment	
	Low	Medium	High		
Degree of impact on or interest from iwi/ Māori		X		 The proposed provisions are of high interest to mana whenua who are concerned with housing affordability and accessibility. Whilst the proposed changes do not concern the development potential of Māori land, additional housing within urban areas is supported. This is subject to ensuring the protection of water quality and avoiding encroachment on waterbodies. Kāinga nohoanga/Papakāinga housing is recognised in strategic directions, providing a policy basis for urban kāinga nohanga and in matters of discretion for residential height breaches. 	
Timing and duration of effects		х		• Effects will be ongoing, with rules permitting MDRS-compliant developments applying at the time of notification. Other provisions will take effect from decisions, before 20 August 2023.	
Type of effects		x		 Changes to the built form, over time, are likely to be the most apparent changes. With greater degrees of intensification enabled, the contrast between MDRS development and further enabled development will increase. Increased intensification will also lead to greater concentrations of populations. This increases social connection in the public realm, market share for businesses with a greater residential catchment (including additional agglomeration benefits), 	

Criteria	Scale/Significance		ince	Comment	
	Low	Medium	High		
				 increased street surveillance opportunities, whilst also having the potential for greater social conflict. Increased intensification has the potential to diminish the amenity and privacy in some residential settings, including potential for reduced private sunlight access. A greater supply of housing supply and choice is likely to mean greater social and economic stability through the reduction in housing cost and better alignment with housing needs through different generations. 	
Degree of risk and uncertainty	x			• The proposed changes have a low risk and low uncertainty. The proposed changes are consistent with the expectations set within higher order documents	

- 4.1.3 The degree of shift in the objectives and provisions in Plan Change 14 from the status quo is not significant and seeks to give effect to both MDRS and relevant direction under the NPS-UD (notably Policy 3).
- 4.1.4 Overall, the scale and significance of the proposed provisions are assessed as a medium level. This is largely due to the requirements of the Act to implement MDRS across all relevant residential zones, which is therefore part of the status quo. The greatest change beyond this is the permitted 14m height limit that is proposed in high density areas around larger commercial centres. While only 2m higher than MDRS, proposed provisions do enable development of between 20m and 32m (the latter only around Central City Zone). This represents the most significant change beyond the status quo. The considerations for applications to breach height limits also differ, being different limitations on restricted discretionary activities. In some circumstances therefore, greater heights beyond those enabled in the medium and high density residential zones could be possible.
- 4.1.5 Given that the proposed changes to the mandatory direction under the Act are not significant, a high level evaluation of these provisions has been identified as appropriate for the purposes of this evaluation report.

5 Evaluation of the proposal

5.1 Statutory evaluation

5.1.1 A change to a district plan should be designed to accord with ss74 and 75 of the Act to assist the territorial authority to carry out its functions, as described in s31, so as to achieve the purpose of the Act. The aim of the analysis in this section of the report is to evaluate whether and/or to what extent Plan Change 14 meets the applicable statutory requirements, including the Plan objectives. The relevant higher order documents and their directions are outlined in section 2.1 of this report. Plan Change 14 has been prepared to give effect to the requirements arising from the implementation of the MDRS and the National Policy Statement for Urban Development.

5.2 Evaluation of options to address issues

5.2.1 The residential component of Plan Change 14 seeks to address four issues, as identified in section 2.2 above. The following tables provide an evaluation of the options, costs, and benefits for each of these issues, highlighting the preferred option to address the issue in the most efficient and effective manner.

Issue 1 – General application of MDRS District Plan framework

The integration of MDRS within the existing District Plan needs to ensure that MDRS controls are readily able to be utilised. This needs to be done in a manner where relevant policies of the NPS-UD are also given effect to and existing elements of the District Plan do not restrict their use or function.

Simply inserting Schedule 3A within the current framework is not considered an option. Notwithstanding the complexity of duplicating these standards across the seven residential chapters that make up the Christchurch residential urban environment, Schedule 3A lends itself to a full or partial integration of national planning standards through Clause 1(3) of the schedule. As per s77G, MDRS must apply to all 'relevant residential zones' which is defined in s2 of the Act as:

(a) means all residential zones; but

(b) does not include-

(i) a large lot residential zone:

(ii) an area predominantly urban in character that the 2018 census recorded as having a resident population of less than 5,000, unless a local authority intends the area to become part of an urban environment:

(iii) an offshore island:

(iv) to avoid doubt, a settlement zone

Section 2 of the Act also defines "residential zone" as "means all residential zones listed and described in standard 8 (zone framework standard) of the national planning standard or an equivalent zone".

The earlier assessment in this evaluation has demonstrated that this applies to all residential zones captured in Chapter 14 of the Plan, excluding Residential Banks Peninsula Zone (save for Lyttelton area), Residential Small Settlement Zone, Residential Guest Accommodation, and Residential Large Lot Zone.

Option 1 - Status Quo (MDRS), with modification of zone structure to align with National Planning Standards (being MRZ) across all relevant residential zones	Option 2: Applying MDRS to two new zones, MRZ and HRZ, responding to centres approach of NPS-UD and applying restricted discretionary rule framework (preferred option)		
 Benefits: MRZ framework best aligns with MDRS controls, objectives, and policies Significant degree of housing is further enabled across urban residential areas. Costs: Over-simplification of rule framework is likely to miss a number of additional controls needed to manage development in the residential environment. This includes those matters contained in s80E of the Act that are able to be inserted as part of the IPI. There is no consideration of breaches beyond the development standards contained within Schedule 3A, i.e. only permitted activities are provided for with no clear pathway for breaches. The zone framework does not consider Policy 3 intensification under the NPS-UD, which anticipates a built environment distinct from MRZ outcomes. 	 Benefits: Alignment with National Planning Standards descriptions for zone outcomes. Rules are better able to respond to the intended intensification outcomes of MDRS and the NPS-UD through the methods prescribed. A full framework increases the ease of consenting, increasing the propensity of uptake. Related residential provisions are inserted to better respond to residential requirements and features. Costs: Some complexity with localised nuance for zoning, however this is still considered simpler than the current spread of residential zones in the Plan. Some additional controls inserted as a result of related provisions being inserted. 		
 Efficiency: The permitted standards that are legislatively directed are inserted in a framework that also considers Clause 1(3) of Schedule 3A, being an efficient solution. However, it is inefficient at responding to breaches of permitted standards, related residential provisions, or the intensification direction of the NPS-UD. This would greatly add to the complexity of the rule framework, since 'at least six storey' areas would not be spatially defined by the zone. 	 Efficiency: Providing a full framework means that the efficiency of consenting is improved, with a clear cascade of rules for non-compliances. Using the National Planning Standards zone framework means that efficiencies are gained for developments across territorial boundaries through consistency in approach. Effectiveness: 		

Option 1 - Status Quo (MDRS), with modification of zone structure to align with National Planning Standards (being MRZ) across all relevant residential zones	Option 2: Applying MDRS to two new zones, MRZ and HRZ, responding to centres approach of NPS-UD and applying restricted discretionary rule framework (preferred option)		
 Adapting to the National Planning Standards zone framework means that efficiencies are gained for developments across territorial boundaries through consistency in approach. Effectiveness: Ease for plan users to understand where MDRS would apply upon notification of IPI. The approach would not be an effective means to address the application of a full MDRS framework, including breaches of standards. Additional intensification as directed by the NPS-UD would not be well captured within a MRZ zone and would set false expectations for plan users. Risk of acting, not acting: Acting this way would mean that additional intensification methods would be poorly captured within the zone framework. 	 Having a bespoke framework that is expressed spatially means that the provisions are more effective at addressing area-specific intended outcomes. A more logical framework of defining areas for medium and higher densities is also likely to improve understanding of the framework and result in greater uptake of intensification opportunities. Risk of acting, not acting: Not acting is likely to result in greater complexity and a lack of adoption to the intended urban form. Recommendation: This option is considered to be the most efficient and effective at addressing the issue of applying the MDRS framework and NPS-UD. 		
 Intensitication opportunities may not be realised. Recommendation: This option is not recommended as it is ineffective at addressing the issue of suitably adapting the Plan to apply MDRS and the NPS-UD. 			

Issue 2 – Central city residential intensification response (Policy 3(c) NPS-UD)

This issue addresses how to give effect to Policy 3(c) of the NPS-UD and to enable the most appropriate heights within a suitable walking catchment. Policy 3(c) of the NPS-UD states:

In relation to tier 1 urban environments, regional policy statements and district plans enable: building heights of at least 6 storeys within at least a walkable catchment of the following:

(iv) existing and planned rapid transit stops

(v) the edge of city centre zones

(vi) the edge of metropolitan centre zones; and [to (d)]

Previous reporting⁸ has concluded that rapid transport stops and metropolitan centres are not applicable to the Christchurch context and are not further considered here. This means that only the distance from the city centre zone is of relevance.

While Policy 3(c) is highly directive, this is not considered part of the 'status quo' as MDRS is. Applying the objectives and policies of the NPS-UD presents a different legislative scenario; provisions are not inserted into the District Plan. Council must instead change its District Plan "in accordance with" (s74(1)), and to "give effect to" policy 3 (s77G(2)). They are directive policies, but there are judgements required by Council on how to implement its direction.

The application of the policy is therefore an issue with consideration needed for what is the appropriate intensification response within the Christchurch context. Factors that influence this are dominated by:

- A. the accessibility of services, employment, and multi-modal transport (both current and planned) surrounding the city centre;
- B. the propensity to walk in a given urban environment;
- C. demand for housing in the area surrounding the city centre;
- D. the urban form outcomes to help deliver a well-functioning urban environment.

For A, important factors to consider are: the continuous rebuild efforts within the central city, including the influence of substantial anchor projects; the significance of the city centre and its surrounds as a focal point for both employment and multi-modal transport; and the degree by which development will be further enabled within the city centre through giving effect to Policy 3(a).

⁸ See commercial centres assessment reports and the commercial section of the s32.

For B, consideration needs to be given to the serviceability of the active transport routes; connectivity across city blocks and to other public transport corridors; local interest in active transport modes; accessibility; and integration of public open space areas.

For C, an appreciation for population projection at a local level is needed; the degree to which viable development opportunities exist; and how an intensification response can best respond to such housing demand within a specified catchment.

For D, consideration needs to be given to the spatial relationship between walking catchments and existing urban form layout; how it enhances (or otherwise) connectivity of services and amenities; consolidation of urban form to achieve coherence; and responses to surrounding environmental features.

In terms of defining an extent, guidance material on Policy 3(c) implementation from both Ministry for the Environment⁹ and Waka Kotahi¹⁰ state that 800m should be taken as a minimum for Tier 1 Councils. For larger centres, the walkable catchment should expand beyond this with consideration of other factors that could necessitate a greater walking catchment, as detailed above.

Walking propensity in Aotearoa New Zealand has been estimated to be up to 18.2 minutes (or about 1.5km) to local amenities, increasing in distance based on the mode of active transport, up to 4.9km. Amenities that attract the highest propensity in Christchurch were considered to be local shops and services, public open space, and public transport stops. There is a strong correlation between a walking catchment of 1.2km and the density of bus routes, with a strong concentration of both commercial activity and open space within the central city, the latter being exemplified by Hagley Park and the Avon River Precinct/Te Papa Ōtākaro that bisects the central city (see below).

⁹ Ministry for the Environment, 2020. Understanding and implementing intensification provisions for the National Policy Statement on Urban Development. ISBN: 978-1-99-003313-1

¹⁰ Waka Kotahi, 2021. Aotearoa Urban Street Planning & Design Guide: He Whenua, He Tangata. ISBN 978-1-99-004434-2



including other commercial zones.

Height has been considered alongside the other objectives and policies of the NPS-UD that influence an intensification response:

- Objective 1 a well-functioning urban environment
- Objective 3 Proximity to employment, public transport; housing demand
- Policy 1(c) good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport
- Policy 2 providing for sufficient housing
- Policy 3(c) heights of at least six storeys within at least a walkable catchment

Policy 3(c), the subject of this assessment, directs that district plans enable, at minimum, six storey developments within at least a walkable catchment (which, using Ministry of the Environment's and Waka Kotahi's guidance, is considered 800m) of the edge of the city centre zone. The use of 'at least' also contemplates that this baseline level of development could be expanded upon when achieving the overall direction of the NPS-UD.

Council has completed work to capture accessibility to local services, employment, and transport at a parcel level across the urban environment and used that information from the model to derive the appropriate number of storeys within a walkable catchment of the CCZ. Put simply, this has taken a scoring for accessibility within an area to derive the number of storeys, with six storeys representing the baseline (or zero) score, and an increase in the number of storeys as a response to the scoring of accessibility as a percentage. This approach has a natural limit, as 100% of the score - meaning, the highest rating for the modelled accessibility - would equate to 12 storeys of development. It highlights that this cannot happen in isolation and consideration of other factors is required, such as housing demand and urban form.

BASELINE (Storeys)	Score as percentage	Multiplier	Theoretical building height (storeys)
6	10%	1.1	6.6
6	20%	1.2	7.2
6	30%	1.3	7.8
6	40%	1.4	8.4
6	50%	1.5	9
6	60%	1.6	9.6
6	70%	1.7	10.2
6	80%	1.8	10.8
6	90%	1.9	11.4
6	100%	2	12

Evaluating the 2,133 residential parcels within a 1.2km walking catchment surrounding the CCZ produces an average accessibility score of 50.1%, which when calculated against the 6 storey baseline, suggests a 9 storey height limit (based on row 5 of the table above). It is worth noting that this assessment only evaluates current levels of accessibility, and with further development as well as further investment in public transport, one can anticipate the degree of accessibility to increase over time. Average scoring largely remains the same when focusing on 800m surrounding CCZ (433 residential parcels), being at 51%, a small increase in average accessibility.



In terms of demand, estimated population growth across Christchurch for the next 30 years shows that Central Christchurch has a high proportion of growth with almost 30% as per the table below. That is the single highest area of growth in Christchurch, and provides support for the increased height above the baseline.

Lastly, consideration must be given to how this intensification response would align with the current and future urban form. As noted earlier, the increasing development opportunities within the central city zone (as directed by Policy 3(a)) are likely to promote greater degrees of intensification and height.

Area	Summed Statistical Area (SA2) areas	Proportion of total growth
Christchurch Central	Christchurch Central-East; Christchurch Central-North; Christchurch Central-West; Christchurch Central-South.	28.5%
Southern Greenfields	Halswell West; Kennedys Bush; Halswell North.	12.1%
Northern Greenfields	Marshlands; Prestons; Regents Park.	10.0%

The concentration of services within the central city zone, and the likelihood of greater intensification within this zone, suggest that a proportionate response for the surrounding residential area is appropriate.

While the translation of accessibility scoring adopted a simplistic translation of score to number of storeys, that output supports these factors of housing demand and the concentration of increased development within the central city. The latter factors indicate that an increase in height beyond 9 storeys (the average score described above) is warranted.

In relation to the options provided below, refer to the appended spatial overview of different walking catchments.

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
Benefits:	Benefits:	Benefits:	Benefits:
 Large degree of additional capacity is enabled, improving housing choice and affordability. Additional housing is provided in close proximity to the city centre. Would capture almost all of the current Residential Central City zone, building upon areas where intensified residential living is expected. Housing would be provided within an easily walkable environment, both in terms of propensity and walkable environment. This could have positive flow-on effects in 	 Significant degree of additional capacity is enabled, improving housing choice and affordability. Providing 10 storeys in proximity to CCZ shows a strong response to the significance of the Christchurch CCZ area as a focal point (both currently and planned) for employment, the centre of public transport connectivity, accessibility to public open space and active transport. The Christchurch CCZ can be seen as a focal point of commerce and employment at a South Island scale. 	 Significant degree of additional capacity is enabled, improving housing choice and affordability. A catchment of 1.2km (about 15 minute walking distance) aligns well with walking propensity of 1.5km, better ensuring the chances of uptake within this area. Providing 10 storeys in proximity to CCZ shows a strong response to the significance of the Christchurch CCZ area as a focal point (both currently and planned) for employment, the centre of public transport connectivity, 	 Significant degree of additional capacity is enabled, improving housing choice and affordability. A catchment of 1.2km (about 15 minute walking distance) aligns well with walking propensity of 1.5km, better ensuring the chances of uptake within this area. Furthermore, this is only used as an input for considering where six storey areas should extend to: the periphery should be adapted to the local context in terms of established urban form and accessibility. This means that the intensification extent is

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
 terms of reduced private vehicle use, reducing emissions and improving climate resilience. Having more people at the street level also improves public safety, surveillance, social connection, and the potential for social capital within neighbourhoods. Costs: The transitionary effects of developing to this form are likely for a longer period as established sites become feasible to be developed and those which are developed are alongside established (lower density) sites. The flow-on consequences of this could be inconsistent and dislocated urban form. An increase in building height is likely to result in reduced sunlight access. privacy 	 10 storey areas will be provided within an easily walkable catchment and is strongly correlated to the location of public and active transport corridors. This could have positive flow-on effects in terms of reduced private vehicle use, reducing emissions and improving climate resilience. Having more people at the street level also improves public safety, surveillance, social connection, and the potential for social capital within neighbourhoods. Providing a height of 10 storeys means there is a stronger chance that development opportunities will be taken up. Reporting by The Property Group shows that only at 10 storeys does development return a profit. Although this is 	 accessibility to public open space and active transport. The Christchurch CCZ can be seen as a focal point of commerce and employment at a South Island scale. 10 storey areas will be provided within an easily walkable catchment that are well-connected to public and active transport corridors. This could have positive flow-on effects in terms of reduced private vehicle use, reducing emissions and improving climate resilience. Having more people at the street level also improves public safety, surveillance, social connection, and the potential for social capital within neighbourhoods. The areas identified for 10 storeys under this option correlates well to areas of 	 extended to nearby edges of main roads, nearby commercial areas, and areas with strong access to public open space and active transport (such as around Hagley Park). Lastly, the extent is also better integrated with areas identified for higher densities within a walkable catchment of local centres, being Merivale, Riccarton, and Sydenham. Providing 10 storeys in proximity to CCZ shows a strong response to the significance of the Christchurch CCZ area as a focal point (both currently and planned) for employment, the centre of public transport connectivity, accessibility to public open space and active transport. The Christchurch CCZ can be seen

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
 overshadowing, and building dominance. A walkable catchment of 800m is considered to be a minimum approach. This scale does not adequately consider significance of the Christchurch CCZ area as a focal point (both currently and planned) for employment, the centre of public transport connectivity, accessibility to public open space and active transport. The Christchurch CCZ can be seen as a focal point of commerce and employment at a South Island scale. This does not provide a proportionate response to population growth. The central city is modelled to account for over a quarter of all population growth in the district for the next 30 years, and requires a 	 below the commercial viable threshold of 20% profit, it is considered that much of this is due to current market conditions (building supply shortages, labour shortages, uncertainty in costings, inflation), which are temporary in nature. This option is a better response in urban form relative to building heights of 60m and 90m enabled in CCZ by providing a distinction of the central city from its surrounds and reducing the interface issues otherwise present at six storeys. Provides for a strong response to projected population projection within the central city. The catchment represents a good physical walking 	 intensification zoned RCC, aligning spatially with where higher density residential intensification areas are expected. This may achieve a consistent and higher density form of living. Providing a height of 10 storeys means there is a stronger chance that development opportunities will be taken up. Reporting by The Property Group shows that only at 10 storeys does development return a profit. Although this is below the commercial viable threshold of 20% profit, it is considered that much of this is due to current market conditions (building supply shortages, labour shortages, uncertainty in costings, inflation), which are temporary in nature. 	 as a focal point of commerce and employment at a South Island scale. The location of 10 storey areas reflects a symbiotic relationship between the adjoining CCZ and the residential environment. Interface issues between the two zones are better addressed through a more comparable height differential (representing a proportionally better response to building heights of 45m and 90m enabled in CCZ). Also, the extent of the area defined for 10 storeys is able to act as a contributor to the viability and vitality of the CCZ, rather than competing against opportunities provided within the CCZ. At this scale the

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 proportionate response to support further investment and development within the centre. While under the Plan, building heights within the Commercial Central City Business Zone are enabled to 28m (about nine storeys), the direction through Policy 3(a) of the NPS-UD means this is likely to substantially increase. The proposal through Plan Change 14 is for heights within CCZ (equivalent zone) to increase to 90m for much of the centre, with sites in the Cathedral Square surrounds and Victoria Street at 45m. It is considered that a 20m height control adequately provides for six storey residential development. As a contrast to proposed CCZ heights, this 	 environment, being mostly flat and even grade, with good physical infrastructure. Costs: Increasing height further increases sunlight access issues, dominance, overshadowing, and privacy. The height is also considered to be at the limits of human scale, diminishing the residential appeal and characteristics of these areas. Providing 10 storeys in the first 800m from the CCZ does not suitably respond to local context and accessibility. This would extend into suburban areas north of Bealey Avenue, representing a significant change and contrast to the existing environment. Bealey Ave is also a strong contributor to severance, with the 	 This option is a better response in urban form relative to building heights of 60m and 90m enabled in CCZ by providing a distinction of the central city from its surrounds and reducing the interface issues otherwise present at six storeys. Provides for a strong response to projected population projection within the central city. The catchment represents a good walkable physical environment, being mostly flat and even grade, with good physical infrastructure. Costs: Increasing height further increases sunlight access issues, dominance, overshadowing, and privacy. 	 impact on the CCZ is not significant. Providing for an area up to 10 storeys means there is a stronger chance that development opportunities will be taken up. Reporting by The Property Group shows that only at 10 storeys does development return a profit. Although this is below the commercial viable threshold of 20% profit, it is considered that much of this is due to current market conditions (building supply shortages, labour shortages, uncertainty in costings, inflation), which are temporary in nature. Provides for a strong response to projected population projection within the central city.

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
 represents a proportionately smaller response (between about a fifth to a half), diminishing the potential for a distinguishable transition from the core. At the interface of the boundary, the adverse effects of dominance, overshadowing, and loss of privacy would be exacerbated when developments are built to their full potential. Efficiency: A height limit of six storeys reduces the amount of new development that may occur relative to what may be enabled by other options, reducing the efficiency of being able to provide for greater housing choice and variety. This means that many of the intended outcomes of Policy 1 	 potential to diminish the propensity to walk from north of Bealey Ave. This could result in sporadic development opportunities being taken up, reducing the cohesion with other 10 storey areas. Economic analysis by Property Economics of development scenarios surrounding the central city has demonstrated that economic investment and development within the CCZ is sensitive and there could be an adverse impact on the CCZ, of opportunities for development being taken up outside the CCZ. The walking catchment is beyond the boundary of average walking propensity (1.5km). This means that there is potential for uptake at the fringes of the catchment to be 	 The height is also considered to be at the limits of human scale, diminishing the residential appeal and characteristics of these areas. Economic analysis by Property Economics of development scenarios surrounding the central city has demonstrated that economic investment and development within the CCZ is sensitive and there could be an adverse impact on the CCZ, of opportunities for development being taken up outside the CCZ. The location of 10 storey areas does not adapt well to areas of lower accessibility, increasing the chances of inconsistent development uptake. The transitionary effects of developing to this form are likely for a longer period as 	 The catchment represents a good physical walking environment, being mostly flat and even grade, with good physical infrastructure. Costs: Increasing height further increases sunlight access, dominance, overshadowing, and privacy. The height is also considered to be at the limits of human scale, diminishing the residential appeal and characteristics of these areas. The transitionary effects of developing to this form are likely for a longer period as established sites become feasible to be developed and those who do develop do so alongside established (lower density) sites. The flow-on consequences of this could

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
 of the NPS-UD are unlikely to be met. Effectiveness: Much of the RCC area is established and this means that there needs to be a worthwhile opportunity to redevelop with new provisions to see uplift. This can be measured in the relative difference between what is enabled in some areas (3 - 4 storey development) and the six storey development this option would provide for. The relative difference is not a sufficient incentive to redevelop, reducing the overall effectiveness of the option. Economic feasibility reporting from The Property Group demonstrates that the scale of 	 sporadic, further increasing localised issues of sunlight access, dominance, overshadowing, and privacy. The walking catchment is therefore considered as a poor singular input to considering areas for intensification. The location of 10 storey areas is not consistent with the lower levels of accessibility, increasing the chances of inconsistent development uptake. The transitionary effects of developing to this form are likely for a longer period as established sites become feasible to be developed and those who do develop do so alongside established (lower density) sites. The flow-on 	 established sites become feasible to be developed and those who do develop do so alongside established (lower density) sites. The flow-on consequences of this could produce an inconsistent and dislocated urban form. Efficiency: A wider degree of enablement increases efficiency of delivery through provision of a larger number of opportunities, however this expanse of intensification could result in some dislocation of communities through sporadic uptake and enablement in areas with lower levels of current accessibility. 	 lead to an inconsistent and dislocated urban form. Efficiency: Concentrating development in areas with the greatest degree of accessibility to services is likely to increase uptake in housing development opportunities. Areas beyond this are still proposed to have have greater heights enabled as a result of being within a walkable catchment, meaning there still remains a high degree of housing enablement. Greater concentration also means there is greater potential for a more distinguishable transition from the CCZ that helps to identify and respond to the CCZ.
six storeys residential development is unlikely to	consequences of this could	Effectiveness:	Effectiveness:

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
 cover the cost of development, meaning such development is unlikely to progress in the short to medium term. Site amalgamation is necessary to adequately develop at scale, therefore the level of enablement needs to be proportionate to the costs of land investment to make such development viable. Risk of acting, not acting: Acting this way may mean that only few development opportunities are realised, leading to an ad hoc urban form with isolated areas of intensification. Recommendation: This option is not recommended as it fails to provide for an intensification 	 lead to an inconsistent and dislocated urban form. Efficiency: The spatial extent of 10 storeys is a rather blunt response, with little to no consideration of local accessibility to services. The degree of accessibility is not considered uniform throughout this area, reducing the efficiency of this approach. A static walkable 1.8km catchment also fails to respond to areas of greater accessibility, reducing the efficiency of development through development in areas with lower accessibility. A wider degree of enablement increases efficiency of delivery through a large degree of opportunities, however this expanse of intensification 	 Intensification areas align well to areas of good to high accessibility, public and active transport corridors (including planned), however the enablement of housing across a larger area may reduce the effectiveness of business outcomes associated with a high concentration of population around business. Risk of acting, not acting: Potential for transition benefits to be diminished and for continued reduced viability of CCZ. Not acting may mean lesser options for housing, but increased vitality of CCZ. There is a risk that housing intensification is unequal and irregular across development extent. 	 Intensifying in the most viable areas is likely to see tangible housing outcomes that both respond to accessibility and housing demand, and reduce the potential for adverse effects on business outcomes within the CCZ. Concentrating development of 10 storeys adjacent to the CCZ means greater market exposure for businesses with an increased populous in close proximity to city centre businesses. Risk of acting, not acting: Some degree of enablement beyond 6 storeys around the CBD may reduce economic viability of CBD recovery. Potential that current parcel fragmentation and form reduces chances of

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
response that reflects the significance of the Christchurch CCZ, levels of current and planning accessibility, or anticipated housing demand. This does not adequately respond to the intensification direction of the NPS-UD.	 could result in greater dislocation of communities through sporadic uptake and enablement in areas with lower levels of current accessibility. Effectiveness: Responds well to intensifying in areas with good to high degree of accessibility, public and active transport corridors (including planned), however the enablement of housing across a larger area may reduce the effectiveness of business outcomes associated with a high concentration of population around business. Risk of acting, not acting: Potential for transition benefits to be diminished and for 	 Some degree of enablement beyond 6 storeys around the CBD may reduce economic viability of CBD recovery. Potential that current parcel fragmentation and form reduces chances of intensification coming to fruition. Recommendation: This option provides for a level of intensification that does not respond to local context, degrees of current or planned accessibility, or the sensitivity of commercial development in the CCZ, and is therefore not recommended. 	intensification coming to fruition. Recommendation: • This option is recommended as it provides for a level of development that responds to the significance of the Christchurch CCZ at a scale that is supportive of the centre, and responds to current and future degrees of accessibility. This is seen to be the most appropriate means to address the intensification direction of the NPS-UD, having regard to the range of factors including urban form, accessibility, demand while having regard to the effect on the CCZ.

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
	 continued reduced viability of CCZ. Not acting may mean lesser options for housing, but increased vitality of CCZ. There is a risk that housing intensification is unequal and irregular across the development extent, causing sporadic uptake of development and a poorly functioning urban form. Some degree of enablement beyond 6 storeys around the CBD may reduce economic viability of the CBD's recovery. Potential that current parcel fragmentation and form reduces chances of intensification coming to fruition. It result in an ad hoc uptake of high density housing in the HRZ, reducing outcomes 		

Option 1 – Applying the minimum direction from the NPS-UD, enabling six storey development within 800m from the city centre	Option 2 – Increasing walking catchment to 1.8km, with six storeys enabled throughout and 10 storeys within the first 800m from CCZ	Option 3 – Increasing walking catchment to 1.2km, with six storey enabled throughout and 10 storeys within the central city boundary and surrounding top end of Victoria Street	Option 4 – Increasing walking catchment to 1.2km, with six storeys enabled throughout (increasing extent based on accessibility and form), with 10 storeys only enabled in a concentrated form around the CCZ (Preferred option)
	 intended through Policy 1 of the NPS-UD. Recommendation: This option provides for a level of intensification that does not respond to local context, degrees of current or planned accessibility, or the sensitivity of commercial development in CCZ, and is therefore not recommended. 		

Issue 3 – Policy 3(d) – Suburban Centres residential response (Policy 3(d) of NPS-UD)

This issue addresses how areas adjacent to centres described in Policy 3(d) of the NPS-UD should be managed. Policy 3(d) states:

In relation to tier 1 urban environments, regional policy statements and district plans enable:

within and adjacent to neighbourhood centre zones, local centre zones, and town centre zones (or equivalent), building heights and densities of urban form commensurate with the level of commercial activity and community services.

Note that the Centres chapter will cover off the extent and height component of the Policy 3(d) response.

This requires consideration of the extent to which an intensification response is provided. The two concepts that need to be addressed are:

- A. The distance that 'adjacent to' implies;
- B. The height and density enabled around various centres.

Case law¹¹ indicates that the phrase "adjacent to" may be extended beyond meaning places adjoining other places, to include places close to or near other places.

The degree and distance of any intensification should be seen as an interrelated concept: both the scale of any intensification and its distance from the applicable centres should increase based on a commensurate response to the level of commercial activities or community services which is plan-enabled in a centre. This means that both current and planned services and facilities must be considered. The application at a parcel level should be seen through a similar policy lens as the considerations under Policy 3(c), taking into account the local urban form, walkability, and achievement of a well-functioning urban environment.

Accessibility and proximity are key concepts through the NPS-UD, with a strong correlation to walkability. Policy 3(c) is specific in referring to walkable catchments from the city centre and metropolitan centres (Policy 3(c)), with accessibility a key element to achieve well-functioning urban environments under Policy 1 of the NPS-UD. While not a Policy 3(d) requirement, we use the concept of 'walkable catchments' as a helpful reference for considering the scale of appropriate intensification responses for the various centres required under Policy 3(d).

¹¹ Allen v Auckland City (Planning Tribunal 3/5/1991); Bisson & Ors v Queenstown Lakes District Council (EnvC Christchurch 4 April 2003.

A centre evaluation has been completed as part of the commercial centres analysis and is not reiterated here (see section 3.1.2 of this report). It has translated the current centre hierarchy to equivalent planning standards definitions. In doing so, it has been concluded that there is still gradation in centre types, having regard to the level of commercial activity and community services as follows:

- 1. Neighbourhood Centres no commensurate response warranted;
- 2. 'Smaller' Local Centres no commensurate response warranted;
- 3. 'Medium' Local Centres a small degree of intensification surrounding centres is warranted;
- 4. 'Larger' Local Centres a moderate degree of intensification surrounding centres is warranted;
- 5. 'Standard' Town Centres a moderate degree of intensification surrounding centres is warranted;
- 6. 'Large' Town Centres a larger degree of intensification warranted.

Walkable catchments defined in the Waka Kotahi guidance¹² are divided into 200m increments, growing based on the scale of centres. Based on this approach, the following walking catchments have been identified as suitably responding to each type of centre:

- 1. Medium Local Centres 200m walking catchment;
- 2. Larger Local Centres and Standard Town Centres 400m walking catchment;
- 3. Larger Town Centres 600m walking catchment.

When viewed against the minimum walking catchment requirements of larger centres (recommended by the MfE as 800m), the above approach is seen to align well with this gradation of intensification response. The response for larger town centres reflects the significant scale and level of commercial activity and community services, albeit being less than the intensification that is warranted around a metropolitan centre.

It is important to remember that the above walking catchments need to be adjusted based on the specific local urban form context to ensure a consistent and cohesive application around the centre. In practice, this usually means that the extent of intensification is larger than the specified walking catchment, in some cases by several hundred metres (depending on the centre type). The extension of these intensification areas should therefore give rise to improved outcomes including uniformity of development patterns, having regard to physical infrastructure (severance, accessibility, pedestrian crossings, cycle infrastructure, safety, etc), availability of public transport, and the commercial function of the centre, including levels of employment.

¹² Aotearoa Urban Street planning & Design Guide, Waka Kotahi (2021, ISBN 978-1-99-004434-2), p45

Option 1 – Apply HRZ around all applicable centres, adapting extent commensurate with centre classification	Option 2 – Apply a precinct around all applicable centres (over MRZ), adjusting enabled height and extent commensurate with centre classification	Option 3 – Provide for a degree of intensification that corresponds to the level of commercial activity and community services identified in centres assessment, except for Belfast centre. (preferred option)
 This option would be applied as follows: Town centres: 20m height enabled to at least 600m walking catchment; Local centres: 20m height enabled to at least 400m walking catchment; Neighbourhood centres: 20 height enabled to at least 200m walking catchment. 	 This option would be applied as follows: Town centres: 20m height enabled to at least 600m walking catchment; Local centres: 17m height enabled to at least 400m walking catchment; Neighbourhood centres: 14m height enabled to at least 200m walking catchment. 	 This option would be applied as follows: Large town centres: 20m height enabled to at least 600m walking catchment (HRZ with Precinct); 'Standard' Town centres: 20m height enabled to at least 400m walking catchment (HRZ with Precinct), except for Belfast, being treated the same as 'Medium local centres' at a 400m walking catchment;
 Benefits Large proportion of housing enabled, in most cases more than doubling development capacity, providing for increased housing choice. At a local level, this is likely to have a positive influence on affordability. A six storey height is considered by the urban design assessment as residential in 	 Benefits Large proportion of housing enabled, in most cases more than doubling development capacity, providing for increased housing choice. At a local level, this is likely to have a positive influence on affordability. A six storey height is seen as residential in nature, being of a human scale and 	 Large local centre: 20m height enabled to at least 400m walking catchment (HRZ with Precinct); Medium local centre: 14m height enabled to at least 200m walking catchment (MRZ with Precinct); and Other local centres and neighbourhood centres: no intensification proposed beyond MRZ.
 nature, being of a human scale and accessible in a residential environment. The form is similar to that which is required to be enabled surrounding the CCZ, so will have a sense of familiarity and consistency once areas are developed. The extent used for each centre provides an escalating cascade of intensification in correspondence to the level of activities and services in each commercial centre. 	 accessible in a residential environment. The form is similar to that which is required to be enabled surrounding CCZ, so will have a sense of familiarity and consistency once areas are developed. Developing to this scale for the town centres is therefore likely to be experienced as a consistent urban form. Both heights and extents are adjusted to respond to each commercial centre. This 	 Benefits A large proportion of housing is enabled in most cases more than doubling development capacity, providing for increased housing choice. At a local level, this is likely to have a positive influence on affordability. A six storey height limit is seen as residential in nature, being of a human scale and accessible in a residential environment. The

Option 1 – Apply HRZ around all applicable centres, adapting extent commensurate with centre classification	Option 2 – Apply a precinct around all applicable centres (over MRZ), adjusting enabled height and extent commensurate with centre classification	Option 3 – Provide for a degree of intensification that corresponds to the level of commercial activity and community services identified in centres assessment, except for Belfast centre. (preferred option)
 For most centres, a large quantum of housing will be enabled in areas accessible to commercial activities and services, public and active transport connections, and open space availability. This helps promote localised living, which in-turn helps improve economic prosperity and viability of the centre, whilst also reducing dependence on private vehicle use and any associate greenhouse gas emissions. 	 provides for a response, more commensurate to each centre, including the commercial activities and services, public and active transport connections, and open space availability. This helps promote localised living, which in-turn improves economic prosperity and viability of the centre, whilst also reducing dependence on private vehicle use and any associate greenhouse gas emissions. This option may better reflect the degree of 	 form is similar to that which is required to be enabled surrounding CCZ, so will have a sense of familiarity and consistency once areas are developed. Developing to this scale for the town centres is therefore likely to be experienced as a consistent urban form. Both heights and extents are adjusted to respond to each commercial centre. This provides for a response, more commensurate to each centre, including the commercial activities and services public
 Increasing building heights for much of these centres represents a large change from the MDRS status quo or enabled heights under operative zones. The effects of this are most likely felt within smaller centres, where medium density opportunities are less likely to be taken up, resulting in a strong contrast between higher heights around centres and suburban surrounds. The transitionary effects of developing to this form are likely for a longer period as established sites become feasible to be developed and those which are developed 	 around centres. This helps to address transitionary effects to a higher form of residential living and to build distinction between centres while creating a recognisable urban form. Costs The uplift in development potential within established (lower density) areas may mean there is a disproportionate degree of feasible opportunities to intensify. This could mean that the temporary effects of overshadowing, dominance, and privacy are increased for adjoining lower density sites 	 and active transport connections, and open space availability. This helps promote localised living, which in-turn improves economic prosperity and viability of the centre, whilst also reducing dependence on private vehicle use and any associate greenhouse gas emissions. This means that larger local and town centres are treated differently to other equivalent centres, with smaller local and neighbourhood centres not having any additional intensification response over and above that directed by MDRS. For the Belfast centre, a bespoke approach is
do so alongside established (lower density) sites. The flow-on consequences of this	as the area transitions from a lower to higher density residential living	adopted to better respond to the level of services provided for within the centre. i.e.

Option 1 – Apply HRZ around all applicable	Option 2 – Apply a precinct around all	Option 3 – Provide for a degree of intensification
centres, adapting extent commensurate with	applicable centres (over MRZ), adjusting	that corresponds to the level of commercial
centre classification	enabled height and extent commensurate with	activity and community services identified in
	centre classification	centres assessment, except for Belfast centre.
		(preferred option)
 could lead to an inconsistent and dislocated urban form. An increase in building height is likely to result in reduced sunlight access, loss of privacy, overshadowing, and building dominance. Only the extent of intensification is considered, without any change in building heights. For a number of the local centres and all of the neighbourhood centres, this would enable a building heights greater than that provided for within the centre itself. This would amplify issues associated with overshadowing and dominance at the centre-residential interface, whilst also creating an urban form that would be seen as out of sequence from its surrounds. Retaining a static building height for all centres may result in undue pressure on smaller (local and neighbourhood) centres, with an increased local population in close proximity placing high demand on local businesses. This would reduce levels of accessibility to the services and amenities anticipated by the local population i.e. the level of demand is not met by the offer. In 	 environment. The flow-on consequences of this could result in an inconsistent and dislocated urban form. An increase in building height is likely to result in reduced sunlight access, privacy, overshadowing, and building dominance. While providing for a more nuanced response to centres, the 17m height limit proposed for local centres does not provide for a strong distinction in heights and sits awkwardly between heights enabled for town and neighbourhood centres. The addition of a single storey is also unlikely to make a material difference since the feasibility and development beyond three storeys is more influenced by increased cost of building compliance and economies of scale. For the Belfast centre, consent has been granted to develop the majority of the land south of Radcliffe Road for a retirement village, which would severely diminish the viability of the centre and ability for it to respond to the intended outcomes of a town centre zone. In addition, there are severance issues with Main North Road 	 (preferred option) accessibility to services and facilities, whilst also still recognising large housing development opportunities over nearby vacant land. The scale of intensification correlates with the anticipated feasibility of development, improving the chances of uptake and transition to a higher form of residential living. Costs The uplift in development potential within established (lower density) areas may mean there is a disproportionate degree of feasible opportunities to intensify. This could mean that the temporary effects of overshadowing, dominance, and privacy are increased for adjoining lower to higher density residential living environment. The flow-on consequences of this could lead to an inconsistent and dislocated urban form. An increase in building height is likely to result in reduced sunlight access, privacy, overshadowing, and building dominance.
addition, many of these smaller centres	separating the centre from its residential	
lack the other services, such as public	catchment. If developed to six storeys, new	

Option 1 – Apply HRZ around all applicable centres, adapting extent commensurate with centre classification	Option 2 – Apply a precinct around all applicable centres (over MRZ), adjusting enabled height and extent commensurate with centre classification	Option 3 – Provide for a degree of intensification that corresponds to the level of commercial activity and community services identified in centres assessment, except for Belfast centre. (preferred option)
 transport or community facilities, that would support intensification at this scale around each of these smaller centres. For the Belfast centre, consent has been granted to develop the majority of the land south of Radcliffe Road for a retirement village, which would severely diminish the viability of the centre and ability for it to respond to the intended outcomes of a town centre zone. In addition, there are 	 developed areas would have a poor degree of access to services, notwithstanding the strong private vehicle dependence the centre currently experiences with its dislocation from the city centre and lack of walking/cycling infrastructure. Reporting on Centres has highlighted that while centres zoning may be the same across some centres, the ability to provide for services and facilities is not equal. This is 	 Efficiency Providing for a more nuanced intensification response correlates with the degree of accessibility anticipated to be provided now and into the future. This efficiently responds to accessibility through aligning the intensification response in areas where this would likely be most viable and provides for walkable high density living environments
 severance issues with Main North Road separating the centre from its residential catchment. If developed to six storeys, new developed areas would have a poor degree of access to services, notwithstanding the strong private vehicle dependence the centre currently experiences with its dislocation from the city centre and lack of walking/cycling infrastructure. Reporting¹³ has highlighted that while centres zoning may be the same across some centres, the ability of each centre to provide services and facilities is not equal. 	 especially so for town centre zones and local zones, with some stronger centres, such as Riccarton, Papanui, Hornby, Bush Inn, Merivale, and Sydenham North. The static approach of responding based on centre types alone to provide a commensurate response does not acknowledge these differences, potentially discounting development opportunities within and around these centres. Reporting on Centres has also highlighted that smaller local centres and neighbourhood centres lack the degree of 	 Effectiveness This approach strongly aligns with the centres assessment undertaken as part of Plan Change 14. It is therefore an effective response to the degree of services provided for and enabled within each centre. Providing a more nuanced intensification response to centres (rather than linear response) could add to confusion for Plan users, however the use of precincts to manage/direct intensification is likely to assist.
This is especially so for town centre zones and local zones, with some stronger centres, such as Riccarton, Papanui,	services to warrant a suitable intensification response over and above that directed through MDRS. Intensifying beyond this	 Risk of acting, not acting Not acting to respond to identified differences between centres may lead to

¹³ Commercial Centres: Approach to Alignment with National Planning Standards

Option 1 – Apply HRZ around all applicable centres, adapting extent commensurate with centre classification	Option 2 – Apply a precinct around all applicable centres (over MRZ), adjusting enabled height and extent commensurate with centre classification	Option 3 – Provide for a degree of intensification that corresponds to the level of commercial activity and community services identified in centres assessment, except for Belfast centre.
 Hornby, Bush Inn, Merivale, and Sydenham North. The static approach of responding based on centre types alone to provide a commensurate response does not acknowledge these differences, potentially discounting development opportunities within and around these centres. Efficiency The application of this height response is simplistic, increasing understanding and efficiency of its application. Effectiveness The degree of intensification has a direct correlation to the type of centre under the zoning classification. However, reporting¹⁴ on centres has shown that the nature and type of services that each centre is able to provide does not directly correlate to centre type. This would therefore lead to an ineffective outcome by intensifying around centres with lower levels of accessibility to services and facilities. 	 within these centres may therefore result in a low degree of accessibility to services, facilities, and public and active transport connections. Efficiency The approach provides for a scaled response to centre types, however does not address the differences in anticipated outcomes for each centre in terms of the activity, services and access to public and active transport. Enabling intensification in this systematic linear fashion is likely to result in greater understanding for plan users, which improves the chances of development opportunities being realised. Effectiveness This option provides a proportionate response to each centre type, however the level of effectiveness is reduced through not providing for an intensification response that reflects local nuance in terms of accessibility to services and facilities. 	 (preferred option) areas being sporadically developed as opportunities become available, rather than providing a concentrated, cohesive, intensification response around each centre. As a consequence, there could be increased populations around lower order centres that cannot access the services and amenities they need in walking distance. For the Belfast centre, acting means that future intensification is provided around a centre that there are limited development opportunities around. Despite granting of consent for an alternative use, further enabling intensification may promote investment in the centre overall, including public transport options. Recommendation: This option is recommended as it will provide for a scaled response to each centre based on local context and will lead to an efficient and effective means to address Policy 3(d) of the NPS-UD.

¹⁴ Commercial Centres: Approach to Alignment with National Planning Standards

Option 1 – Apply HRZ around all applicable centres, adapting extent commensurate with centre classification	Option 2 – Apply a precinct around all applicable centres (over MRZ), adjusting enabled height and extent commensurate with centre classification	Option 3 – Provide for a degree of intensification that corresponds to the level of commercial activity and community services identified in centres assessment, except for Belfast centre. (preferred option)
Risk of acting, not acting	Risk of acting, not acting	
 higher densities of development in areas that have been shown to have a lower level of access to services. This may contribute to an environment where increased populations cannot access the services and amenities they need in walking distance. For the Belfast centre, acting means that future intensification is provided around a centre that there are limited development opportunities around. Despite granting of consent for an alternative use, further enabling intensification may promote investment in the centre overall, including public transport options. 	 development in areas that have shown to have a lower level of access to services. This means that there is a greater chance of ad hoc development being undertaken across centres that may contribute to an environment where increased populations cannot access the services and amenities they need in walking distance. For the Belfast centre, acting means that future intensification is provided around a centre that there are limited development opportunities around. Despite granting of consent for an alternative use, further enabling intensification may promote investment in the centre overall, including 	
Recommendation:	public transport options.	
 This option is not recommended as it does not provide for an efficient or effective means to enabling intensification around suburban centres. 	 Recommendation: This option is not recommended as it does not provide for an efficient or effective means to address intensification around suburban centres. 	

Issue 4 – Enabling residential intensification whilst providing for high quality residential environments

The development of housing that is well-designed and provides for a variety of typologies to support different generational needs through an enabling framework.

This issue is captured through the following elements within residential environments:

- The permitted MDRS threshold is 3 units; how to appropriately manage development beyond this;
- Different scales of development requires different responses;
- Provisions that sit alongside MDRS controls (related provisions) need to be carefully considered so that they do not control a matter that density standards address, or prevent a density standard from being achieved;
- The servicing and practicality of residential units;
- Management of incentives to stimulate height and uptake of development opportunities, while still creating attractive residential environments that suitably manage sunlight access, privacy, habitable areas, and safety;
- The requirement that breach of the MDRS standards must be not more onerous than restricted discretionary activity status (Clause 4 of Part 1 of Schedule 3A) requires careful consideration of restrictions on discretion when in breach of permitted standards and for excessive building heights;
- Legible and cohesive urban form, delivering well-functioning urban environments (Policy 1, NPS-UD); and
- What height should be applied to achieve the minimum storeys of development specified under the NPS-UD.

Council has considered a number of internal and external reports to help consider this issue. These are (see section 3.1.2):

- CCC PC14 Residential Urban Design Analysis, focusing on:
 - Site layout
 - \circ Landscaping
 - Number of residential units per site
 - Building form and function
 - Crime Prevention Through Environmental Design (CPTED)
- o Street-facing glazing
- o Residential fencing
- Private and communal living areas
- Site access and movement
- Building dominance and privacy
- Servicing and storage
- o Bulk and location
- Building height
- CCC RMD/RSTD monitoring report:
 - Shows what current controls are operating well in the RMD zone and influences what controls are considered suitable to carryover from the current framework
- CCC Cross-evaluation of DP controls with MDRS:
 - Review of which controls are compatible with MDRS density standards
- Feasibility of MDRS (The Property Group):
 - o Testing of provisions has shown how and where this will promote a viable development product.
- Feasibility of HRZ controls (The Property Group):
 - \circ Tested package of draft controls to consider suitability to deliver intended high density form
 - o Demonstrates the difficulty of achieving feasibility, fundamentally due to market conditions
- Wind impact assessment (Meteorological Solutions)
 - o Has evaluated existing wind environment in Christchurch and recommended building height thresholds
- Consideration of storey and building correlation (part of Residential Urban Design Analysis):
 - Calculating height based on an allocation of 3m per storey, plus 2m for roof elevation;
 - Minimum ceiling height is 2.4m, with up to 2.7m seen as desirable. The approach allows for a maximum of 0.3m for floor separation and insulation. Based on this, adopting the minimum ceiling height means that MDRS could achieve 4 storey development.

- However, adopting the above metric (and for the sake of consistency), four storeys is a total of 14m (including roof space), being 3x4m, plus 2m for the roof space.
- Six storeys is therefore set at 20m and ten storeys at 32m. In some instances a greater ceiling height at the ground floor will be desirable, which could total 3.5m. Such a development could still reasonably achieve six storeys, since options exist for a flat roof profile. Such an approach is seen as more desirable in a commercial or mixed use development, therefore slightly greater heights have been proposed in applicable zones.

Option 1 – Continue to apply RMD Residential Design Principles (14.15.1) to all residential zones where MDRS applies, at four or more units, and not make MDRS provisions more lenient or provide related provisions.	Option 2 – Re-evaluate existing Residential Design Principles, only applying this to four or more units, and apply a number of controls to be more lenient and related to, MDRS (preferred option).	
 Benefits Reporting¹⁵ has identified that the residential design principles have largely been successful at ensuring positive urban design outcomes within the RMD zone. Development controls in the RMD zone are comparable to those provided for in MDRS. Applying the same principles is likely to continue to provide a positive urban design outcome for larger medium density developments. Carrying over an established framework means that there is little change to the development model of local practitioners. Not introducing any additional related provisions means there is less compliance costs. 	 Benefits Modification of design principles means that the matter of discretion is better targeted to urban design matters as a result of the MDRS and Policy 3 of the NPS-UD. This means that potential adverse effects as a result of such development are better addressed and unnecessary compliance cost is avoided. Reduces overall compliance cost, whilst ensuring that an appropriate degree of residential amenity is attainable, when viewed against the MDRS baseline. Modifications to MDRS density standards mean increasing the propensity of intensification opportunities being realised. Modifications to the likes of height in relation to boundaries and 	
Costs	outdoor living space improve the chances of delivery of an intensified	
 The design principles have been designed primarily to manage the development of two or more medium density residential units of up to three storeys. Plan Change 14 proposes to enable a variety of 	urban form in a way that supports improved urban design outcomes (e.g, perimeter block development, greater street interface, greater privacy and amenity of outdoor living areas).	

¹⁵ See Residential Urban Design technical reporting.

Option 1 – Continue to apply RMD Residential Design Principles (14.15.1) to all residential zones where MDRS applies, at four or more units, and not make MDRS provisions more lenient or provide related provisions.	Option 2 – Re-evaluate existing Residential Design Principles, only applying this to four or more units, and apply a number of controls to be more lenient and related to, MDRS (preferred option).
 building heights beyond those provided for in RMD (14m, 20m, 32m) and the design principles may not therefore be able to adequately address high density development, artificially inflating compliance costs and complexity. Evaluations undertaken by Council¹⁶ note that some of the greatest areas of impact are not adequately addressed through principles or through the management of site layout. Carrying over the existing principles to address this means an opportunity to address these issues is lost. Requiring urban design input for four or more units adds to the cost of developing, potentially reducing the propensity to develop. Simply carrying over the established framework means that the opportunity to consider more lenient provisions than MDRS is lost, including any opportunity to further increase the ease of which intensified developments are undertaken. Applying the RMD residential design principles could act as a disincentive for larger scale high density developments, resulting in less housing yield and housing choice. 	 Additional standards for buildings at height improve overall urban form, sunlight access, improved social outcomes, and ensures that buildings retain a residential scale. Economic feasibility reporting from The Property Group¹⁷ and consent testing of draft provisions from Urban Edge Planning¹⁸ has demonstrated that the provisions themselves are not a limit on the feasibility of development (HRZ only), with new controls able to be complied with or easier to achieve in zones that anticipate similar forms of intensification under operative controls. Costs Introducing related provisions as permitted standards will increase consenting costs, potentially reducing propensity to develop. This may also be influenced by the potential complexity of new controls. Additional standards for higher density development may act as a disincentive to develop up to, or above, six storeys. Changes to make some MDRS standards more lenient will further increase transitionary effects, reducing sun light access. This is particularly so for building height and height in relation to boundary controls in HRZ.
	 Adapting the existing design controls to intensification enabled by MDRS and the NPS-UD means that consenting is improved and better
	responds to associated effects. More lenient controls further improve

 ¹⁶ See Residential Urban Design technical reporting.
 ¹⁷ Christchurch City residential zones & intensification precincts economic cost benefit analysis. Property Economics, 2022.
 ¹⁸ Consent Testing: Plan Change 14

Option 1 – Continue to apply RMD Residential Design Principles (14.15.1) to all residential zones where MDRS applies, at four or more units, and not make MDRS provisions more lenient or provide related provisions.	Option 2 – Re-evaluate existing Residential Design Principles, only applying this to four or more units, and apply a number of controls to be more lenient and related to, MDRS (preferred option).
 Efficiency Continuing with an established framework means that Plan users and the community are familiar with its mechanisms, increasing the efficiency of its application in a medium density setting. Applying a framework that is intended for medium density development may disincentives high density development, in turn resulting in a less efficient use of urban land. Effectiveness While the principles have been largely successful at managing RMD development, continuing with this framework does not recognise the further increased level of development that is enabled beyond that directed by MDRS density standards. Such an approach would therefore be ineffective at managing (and further enabling) high density development. 	 this, with many of the controls acting as an incentive to better realise opportunities for intensification. The introduction of additional controls ensures that the residential areas are able to adequately function in the face of greater intensification. A new regime for urban design controls will be new to Plan users and practitioners alike, however this is seen as minor when contrasted with the overall changes proposed through Plan Change 14. Many of the related provision controls build upon existing controls in the Plan, meaning that there is a degree of familiarity with proposed standards. Effectiveness The result of modifying design controls means they are better able to respond to the intensification directions in the MDRS and Policy 3 of the NPS-UD. This improves overall effectiveness of applying associated provisions and the ability to develop to a higher form of residential living.
 Risk of acting, not acting Acting in accordance with this option potentially jeopardises high density development, adds to the overall cost of consenting, and does not respond well to the new baseline of development across urban residential zones as a result of MDRS. Not acting in this manner means there remains an opportunity to streamline design principles, add additional incentives and more lenient MDRS controls, alongside those required to be inserted through s77G. 	 Risk of acting, not acting Not acting in this way would mean that the rule framework would be cumbersome and unwieldy, increasing complexity and reducing opportunities for intensification what would otherwise be apparent. Acting this way may lead to greater transitionary effects as lower density areas are developed. Recommendation: This option is recommended since more lenient and new related provisions enable a balanced outcome between enablement and

Option 1 – Continue to apply RMD Residential Design Principles (14.15.1)	Option 2 – Re-evaluate existing Residential Design Principles, only
to all residential zones where MDRS applies, at four or more units, and	applying this to four or more units, and apply a number of controls to be
not make MDRS provisions more lenient or provide related provisions.	more lenient and related to, MDRS (preferred option).
 Recommendation: This option is not recommended as it is unlikely to efficiently or effectively respond to the new height direction in either the MDRS or Policy 3 of the NPS-UD. 	quality urban environments that provides for current and future generations.

Issue 5 – How to recognise operative density overlays in the District Plan through the IPI

The Plan current contains a series of density overlays that seek to manage site specific development outcomes, and with the introduction s77G, consideration must be given for what the equivalent underlying zoning should be alongside whether these act as qualifying matters.

Density overlays and their relevance can be summarised as follows:

Density Overlay Title	Consideration & Applicability	
Kainga Overlay Area 1	Not applicable; not in a relevant residential zone / outside urban environment.	
Kainga Overlay Area 2	Not applicable; not in a relevant residential zone / outside urban environment.	
Spencerville Overlay	Not applicable; not in a relevant residential zone / outside urban environment.	
Moncks Spur/Mt Pleasant Density Overlay	 Underlying zone is Residential Hills. Density required per residential unit is 850m². This site is stated as having been subject to the LHA zoning (deferred) under the previous plan, which had a minimum net site area of 850m² and a minimum average of 1500m². It was recommended that the site be zoned RH with a density overlay.¹⁹ It therefore appears that the 850m² minimum area was rolled over from the previous Plan. In the previous District Plan, the densities for this area are described as being applied <i>"to minimise the visual effects of urban development and maintain the character of the adjacent residential area."²⁰</i> Criteria used does not align with sub-sections a) to g) of s77I, therefore cannot be a qualifying matter without meeting the tests under s77J. 	
Shalamar Drive Density Overlay	Underlying zone is Residential Hills.	

¹⁹ Stage 2 Residential Chapter Section 32 Report, Appendix 22, page 7, Area number 13 "Living HA Deferred on Planning Map 55A (Moncks Spur/Mt Pleasant)".

²⁰ Part 2 Living Zones, 16.2.4 Residential site density – critical standard.

	 Subject to a minimum net site area of 850m² and a minimum average of 1500m². The reassessment of this under the District Plan review noted that while the average was similar to the Living HA Zone, the minimum was closer to that of the LH Zone. Therefore it was recommended that the site be zoned RH with a density overlay.²¹ It therefore appears that the 850m² minimum area was rolled over from the previous Plan.
	• In the previous District Plan, the densities for this area are described as being applied "to minimise the visual effects of urban development and maintain the character of the adjacent residential area." ²²
	 Criteria used does not align with sub-sections a) to g) of s77I, therefore cannot be a qualifying matter without meeting the tests under s77J.
Upper Kennedys Bush Density Overlay	Underlying zone is Residential Hills.
	• Subject to a minimum net site area of 850m ² and a minimum average of 1500m ² . The reassessment of this under the District Plan review noted that subdivision had been completed in accordance with the relevant ODP, and that an overall allotment limit of 100 was registered on the title. It was recommended that the site be zoned RH with a density overlay. ²³ It therefore appears that the 850m ² minimum area rolled over the previous Plan.
	 The ODP, which was not rolled over, largely determined the layout of roads and reserve areas.
	• In the previous District Plan, the densities for this area are described as being applied "to minimise the visual effects of urban development and maintain the character of the adjacent residential area." ²⁴
	• Criteria used does not align with sub-sections a) to g) of s77I, therefore cannot be a qualifying matter without meeting the tests under s77J.

²¹ Stage 2 Residential Chapter Section 32 Report, Appendix 22, page 5, Area number 3 "Living HA on Planning Map 53A (Cashmere - Shalamar Drive)".

²² Part 2 Living Zones, 16.2.4 Residential site density – critical standard.

²³ Stage 2 Residential Chapter Section 32 Report, Appendix 22, page 6, Area number 8 "Living HA on Planning Map 59A and defined in Appendix 3d, Part 2 (Upper Kennedys Bush)".

²⁴ Christchurch City Plan, Volume 3, Part 2 Living Zones, 16.2.4 Residential site density – critical standard.

Akaroa Hillslopes Density Overlay	Not applicable; not in a relevant residential zone / outside urban environment.	
Allandale Density Overlay	Not applicable; not in a relevant residential zone / outside urban environment.	
Samarang Bay Density Overlay	Not applicable; not in a relevant residential zone / outside urban environment.	
Residential Large Lot Density Overlay	Not applicable; not in a relevant residential zone.	
Residential Mixed Density Overlay – 86 Bridle Path Road	 Underlying zone is Residential Hills. Number of lots capped at 9, with additional coverage controls for sites greater than 1,000m² - 25% or 250m² of ground floor area to a maximum of 350m² in total floor area. The overlay appear to be as a result of a submission made on the Replacement District Plan, where the reporting officer notes a request for rezoning from RLL to 'Residential Hill Mixed Density'. The officer considered the requested zoning to be generally appropriate, but noted that the specific standards that should be applied need further consideration. ²⁵ It is presumed that the limitation to 9 allotments and 	
	coverage controls resulted from this general recommendation. From a landscape perspective, the Council's expert considered that the " <i>mixed density approach will achieve a more abrupt and preferred transition between the urban and rural environments</i> ."	
	 This site potentially has specific characteristics, in that it is more closely related to the main surrounding zoning – being RLL. Removal of the overlay would enable development of a scale and density that would be out of character within the surrounding area – because more intensive development under the EHS Act is not enabled in this surrounding zone. 	
Residential Mixed Density Overlay – Redmund Spur	Underlying zone is Residential Hills.	
	 Overlay caps site to 400 lots maximum, and 30% of sites must have minimum net site area of 1,500m². Coverage controls for sites greater than 1,000m² - 25% or 250m² of 	

²⁵ Residential Stage 2 Hearing, Second statement of evidence of Sarah Oliver, Attachment B 'Evidence on Site Specific Rezonings', page 34.

	ground floor area to a maximum of 350m ² in total floor area. For sites less than 450m ² the maximum site coverage is 45%.
	 The majority of the overlay area is adjacent to Rural Urban Fringe Zoning (1-4ha density), with some at the western edge adjoining Residential Large Lot (RLL) and land across the road to the north zoned Residential New Neighbourhood.
	 The IHP decision notes that the zone would result in a similar net yield to the LHA – being the equivalent of the RLL Zone.²⁶ The discussion on the submission in the context of the District Plan review also notes that while a submitter requests a change from RLL to a new Residential Hills Mixed Density Zone, the proposed zone "would result in a similar net yield to the Residential Large Lot."²⁷
	 This site potentially has specific characteristics, in that the framework under the overlay is more closely related to RLL, which also reflects the transitional nature of this site between the Rural Urban Fringe Zone and the start of the denser urban area. Removal of the overlay would therefore enable development of a scale and density that would potentially be out of character within the surrounding area.
Residential Medium Density Lower Height Limit	Underlying zone is Residential Medium Density.
Overlay	 Height is restricted within the overlay to 8 metres. But on sites of 1500m² or greater, it can be increased to 11m, except where within 10m of RS or RSDT. It is 8m in all cases in Riccarton.
	 It appears that the lower 8m height restriction relates to any areas where the transition into the Residential Medium Density Zone is from a Living 1 or Living 2 Zone (in Plan as Residential Suburban or Residential Suburban Density Transition) – to remove potential for inconsistency between sides of a street.²⁸
	• Criteria used does not align with sub-sections a) to g) of s77I, therefore cannot be a qualifying matter without meeting the tests under s77J. The introduction of medium density across the residential urban areas means the overlay is redundant.

²⁶ Independent Hearings Panel, Christchurch Replacement District Plan – Decision 17: Residential (Part) (And Relevant Definitions and Associated Planning Maps), 11 March 2016, para [250].

²⁷ Residential Stage 2 Hearing, Second statement of evidence of Sarah Oliver, Attachment B 'Evidence on Site Specific Rezonings', page 33.

²⁸ Residential Chapter Stage 1 Section 32 report, Appendix 4 – Medium Density Analysis, page 10.

Diamond Harbour Density Overlay	Not applicable; not in a relevant residential zone / outside urban environment.	
Existing Rural Hamlet Overlay	 Underlying zone is Residential Suburban and overlaps with the Airport Noise Contou Density is restricted to a minimum of 2000m2. Site coverage restricted to the lesser of 40% or 300m2. 	
	• Within the previous District Plan, the overlay (then the Living 1E (Rural Hamlet – Gardiners Road) Zone) is described as having a semi-rural character, with the intention being to provide for some limited residential development at low densities, to develop a hamlet around a core base of existing dwellings. ²⁹ It is also noted that the lower density in the western part of the zone (i.e. 2000m ²) is intended "to send a clear signal about the importance of protecting the uncurfewed operation at the airport."	
	• The site potentially has specific characteristics, in that the framework under the overlay is more closely related to RLL – the density restriction (2,000m ²) is actually more restrictive than that of the RLL Zone (1500m ²). The hamlet is also in an isolated location that is not surrounded or adjoining any other residential zone. Removal of the overlay would therefore enable development of a scale and density that would potentially be out of character within the hamlet and the surrounding area.	
Medium Density (Higher Height Limit) Overlay	 Underlying zone is Residential Medium Density. Provides for a higher height limit of 20m (Deans Ave) 30m (Carlton Mill Road), 14m (North Beach) and 20m (central New Brighton). Each of these areas are proposed to be treated separately through new MRZ and HRZ standards and associated precincts, as applicable, or through identified qualifying matters. The overlay is therefore considered redundant. 	
Peat Ground Condition Constraint Overlay	 Restricts density and other bulk and location controls based on peat extent. Criteria used does not align with sub-sections a) to g) of s77I, therefore cannot be a qualifying matter without meeting the tests under s77J. 	

²⁹ Christchurch City Plan, Volume 3, Part 2 Living Zones, 1.2.4 Living 1E (Rural Hamlet - Gardiners Road) Zone.

Riccarton Wastewater Interceptor Catchment Overlay	Wastewater infrastructure upgrades have been completed and overlay is no longer applicable.
	 Cannot apply as qualifying matter; should be removed.
Stormwater Capacity Constrain Overlay	 This affects an isolated area on the northern corner of Sparks and Hendersons Roads. Vacant allotment size is restricted and number of units limited. Criteria used does not align with sub-sections a) to g) of s771, therefore cannot be a qualifying matter without meeting the tests under s77J. However, control of vacant allotment sizes can be retained under Schedule 3A. Intersects with identified flood hazard area.

To summarise, those shown in **bold** are considered to be within a relevant residential zone where progressing with the density overlay would have an influence upon density (and are not considered redundant). These can be categorised as follows:

Overlays that lack justification as a qualifying matter (qualifying matter sites):

- Monks Spur/Mt Pleasant Density Overlay
- Shalamar Drive Density Overlay
- Upper Kennedys Bush Density Overlay

Overlays (and associated controls) that have specific characteristics that align with Residential Large Lot Zone (specific characteristic sites):

- Residential Mixed Density Overlay 86 Bridle Path Road
- Residential Mixed Density Overlay Redmund Spur
- Existing Rural Hamlet Overlay

Option 1 – Continue to apply all density overlays identified as relevant to residential zones.	Option 2 – Only apply controls where specific characteristics have been identified that align with a compatible zone under National Planning Standards (Residential Large Lot), not being a relevant residential zone – 86 Bridle Path Road; Redmund Spur; Rural Hamlet. [preferred option]	Option 3 – Not managing development over any of the identified overlay areas.
Benefits	Benefits	Benefits
 All identified areas continue to be managed as per the operative controls, aligning with community expectations. Previously identified characteristics are protected. Costs Lesser development opportunities would be possible across these areas, reducing housing choice and accessibility within local areas. It is unlikely that qualifying matter sites would meet the statutory tests under s77J, justifying the same level of protection. For qualifying matter sites, controlling development to the level the operative Plan seeks to apply would result in development that would not align with the MRZ zoning that would apply. Sites lack specific characteristics that would 	 Identified areas continue to be managed as per the operative controls, aligning with community expectations for specific areas. Only those sites that have been identified as having specific characteristics are protected, limiting the impacts of capacity loss. The sum of controls for sites with specific characteristics mean that their equivalent zone better aligns with the intended outcomes for Residential Large Lot areas. The management of density over identified sites aligns with the density that would be progressed through the IPI for surrounding sites. All of the sites with specific characteristics are located within an area that is surrounded by a peri-urban zoning (Rural Urban Fringe or Residential Large Lot), which are not considered to be relevant residential zones. 	 Development is able to be progressed under the MRZ controls. Increased yield for development in these areas means both housing choice and accessibility are likely to increase. Costs Removing all density controls would mean that localised area characteristics would likely be lessened through intensified development. For sites with specific characteristics, development at the MRZ scale would not align with the zoning of surrounding areas and fail to align with what the equivalent zoning would be when factoring the sum of current controls. Allowing intensification across some of these sites would likely increase the urban footprint of Christchurch, reducing the appeal of rural areas and increasing the dependency of private vehicle use.

Option 1 – Continue to apply all density overlays identified as relevant to residential zones.	Option 2 – Only apply controls where specific characteristics have been identified that align with a compatible zone under National Planning Standards (Residential Large Lot), not being a relevant residential zone – 86 Bridle Path Road; Redmund Spur; Rural Hamlet. [preferred option]	Option 3 – Not managing development over any of the identified overlay areas.
distinguish them from their neighbouring	Costs	Efficiency
Efficiency • It is considered that only some of the	Lesser development opportunities would be possible across these areas, reducing housing choice and accessibility within local areas.	 The benefits of this proposal are not considered to be uniform across density overlay areas, with sites that have specific
overlay areas are likely able to be	Efficiency	characteristics being developed to a level
protected, and that restricting density in some areas would not align with the intensification that would be enabled for surrounding areas under the IPI.	 By limiting the extent of restrictions to only those sites identified with specific characteristics, more sites are able to be developed (compared to Option 1), with 	 that is consistent with the surrounding density that would be progressed through the IPI. Intensifying within rural areas will result in greater demand on infrastructure and other
Effectiveness	those identified sites aligning with their surrounds.	services on the periphery of urban
• It is unlikely that this approach will likely meet the requirements under the Act (for all areas) and therefore not effective.	 This continues current protections and naming conventions, improving the understanding or Plan users. 	areas and would be an inefficient use of resources.
Risk of acting not acting		Effectiveness
• Acting this way is likely to result in a	Effectiveness	The effectiveness of enabling medium
 Acting this way is likely to result in a degree of uncertainty due to the limited merits of the option under the Act for reduced density 	 Rezoning sites to Residential Large Lot ensures their ongoing protection. 	density development in rural areas is reduced by the likely impacts on some surrounding rural areas and the lack of
	Risk of acting, not acting	agglomeration benefits to service only select
Recommendation:	 Not acting in this manner would mean that sites with specific characteristics would be able to be intensified to a degree that does 	

Option 1 – Continue to apply all density overlays identified as relevant to residential zones.	Option 2 – Only apply controls where specific characteristics have been identified that align with a compatible zone under National Planning Standards (Residential Large Lot), not being a relevant residential zone – 86 Bridle Path Road; Redmund Spur; Rural Hamlet. [preferred option]	Option 3 – Not managing development over any of the identified overlay areas.
• This option is not recommended as it is unlikely to efficiently or effectively respond to the criteria to reduce density under the Act.	 not align with their respective settings post- IPI. This would have the potential to erode the rural or peri-urban appeal of surrounding areas, potentially leading to increased sprawl and private vehicle dependency. Recommendation: This option is recommended as it provides for a balanced response to only limiting density in areas that are within a peri-urban setting and the sum of controls are not considered to represent a relevant residential zone. It is recommended that overlay controls are transferred to a precinct to align with National Planning Standards. 	 Risk of acting, not acting Acting in this manner would mean that sites with specific characteristics would be able to be intensified to a degree that does not align with their respective settings post-IPI. This would have the potential to erode the rural or peri-urban appeal of surrounding areas, potentially leading to increased sprawl and private vehicle dependency. Recommendation: This option is not recommended as it is unlikely to efficiently or effectively respond to the criteria to reduce density under the Act.

5.3 Evaluation of objectives

- 5.3.1 Section 32 requires an evaluation of the extent to which the objectives³⁰ of the proposal are the most appropriate way to achieve the purpose of the Act (s 32(1)(a)).
- 5.3.2 The residential chapter of Plan Change 14 proposes to amend and add new objectives to the Plan. This section of the report, therefore, examines whether the proposed objectives in the residential chapter are the most appropriate way to achieve the purpose of the Act. It is again noted that s77G of the Act requires Council to incorporate the MDRS (Schedule 3A) and give effect to Policy 3 of the NPS-UD, and in doing so, Council is required, under s77G(5), to insert the objectives contained in Clause 6 of Schedule 3A of the Act. These specific objectives are therefore not considered any further as part of this evaluation.
- 5.3.3 For the purposes of changing the Plan, Rule 3.3.a (Interpretation) of the Plan imposes an internal hierarchy for the Plan objectives. Strategic Directions objectives 3.3.1 and 3.3.2 have relative primacy whereby all other Strategic Directions objectives are to be expressed and achieved in a manner consistent with those objectives. Furthermore, objectives and policies in all other chapters of the Plan are to be expressed and achieved in a manner consistent with the Strategic Directions objectives. In this case, select changes are proposed to strategic objectives and policies to ensure consistency with new higher order direction through MDRS and the NPS-UD. Consideration of these changes is addressed separately in this evaluation under 'Strategic Directions'. The residential component of Plan Change 14 proposes to introduce four objectives, modify two existing objectives, and remove two existing objectives.

Objective	Summary of Evaluation
Objective on Housing Supply	
 14.2.1 Objective - Housing Supply - Option 1 - changed objective (preferred option) 1. An increased supply of housing that will: enable a wide range of housing types, sizes, and densities, in a manner consistent with Objectives 3.3.4(a) and 3.3.7; 	 a. The intent of this change to objective 14.2.1 is to enable the increased supply of housing in a manner that aligns with the built form anticipated by Objective 2 of MDRS, Objectives 2 and 4 of NPS-UD, Objective 6.2.1a and Objective 6.2.2 of the CRPS. b. The objective could be seen as being inconsistent with the amenity direction of Objective 6.2.3.2 of the CPRS.
 meet the diverse <u>and changing</u> needs of the community <u>and future</u> <u>generations in the immediate</u> recovery period and longer term, including social housing options; and assist in improving housing affordability. 	 c. This objective provides for both supply and variety in housing typologies that responds to housing demands and changing needs of the community. d. The proposed amendment to this objective seeks to address the following resource management issues:

 ³⁰ Section 32(6) defines "objectives" and "proposal" in terms specific to sections 32 – 32A. "Objectives" are defined as meaning:
 (a) for a proposal that contains or states objectives, those objectives;
 (b) for all other proposals, the purpose of the proposal.

		i.	Issue 1 – General application of MDRS;
		ii.	Issue 2 – Surrounding City Centre response; and
		iii.	Issue 3 – Suburban Centres residential response.
	e.	Option 14.2.1 matter	n 1 (Proposed amended Objective would (in the context of Part 2 rs):
		i.	Ensure sufficient housing is enabled to meet the housing needs for current and future generations, providing for people's social and economic well-being;
		ii.	Provide for different housing types and styles to provide for different cultural and social needs within the community; and
		iii.	Seek to ensure sufficient housing choice at various price points are available, improving or maintaining economic well- being.
			-
14.2.1 Objective – Housing Supply –	a.	The ob	e bjective in the Plan seeks to:
14.2.1 Objective – Housing Supply – Option 2 – Status quo Retention of the existing objective as	a.	The ob i.	pjective in the Plan seeks to: Improve the supply of housing and housing of different types;
 14.2.1 Objective – Housing Supply – Option 2 – Status quo Retention of the existing objective as presently contained within the Plan. 	a.	The ob i. ii.	ojective in the Plan seeks to: Improve the supply of housing and housing of different types; Improve accessibility to the housing market;
 14.2.1 Objective – Housing Supply – Option 2 – Status quo Retention of the existing objective as presently contained within the Plan. 	a.	The ob i. ii. iii.	ojective in the Plan seeks to: Improve the supply of housing and housing of different types; Improve accessibility to the housing market; Stimulate the post-earthquake recovery;
14.2.1 Objective – Housing Supply – Option 2 – Status quo Retention of the existing objective as presently contained within the Plan.	a.	The ob i. ii. iii. iii.	ojective in the Plan seeks to: Improve the supply of housing and housing of different types; Improve accessibility to the housing market; Stimulate the post-earthquake recovery; Provide for social housing options.
14.2.1 Objective - Housing Supply - Option 2 - Status quo Retention of the existing objective as presently contained within the Plan.	a. b.	The ob i. ii. iii. iv. The ob provisi Ameno and wi earthq marke objecti specifi framin seeks t across than p	pjective in the Plan seeks to: Improve the supply of housing and housing of different types; Improve accessibility to the housing market; Stimulate the post-earthquake recovery; Provide for social housing options. Djective will not address the greater ion of housing enabled by the 2021 dment and the NPS-UD, generally, Il retain a focus on post- quake housing when the housing t has largely recovered. The ive also makes reference to c housing types, whereas the g in higher order documentation to enable all types of housing the urban environment, rather rioritising specific housing types.

 14.2.2 [New] Objective - Housing Variety <u>a.</u> <u>A relevant residential zone provides for</u> <u>a variety of housing types and sizes that</u> <u>respond to:</u> <u>i.</u> <u>housing needs and demands; and</u> <u>ii.</u> <u>the neighbourhood's planned</u> <u>urban built character, including 3-</u> <u>storey buildings</u> 	 a. This objective is provided in Clause 6(1)(b) of Schedule 3A (MDRS) and is required to be inserted by s77G(5) of the Act. It is therefore most appropriate. b. The objective applies to MRZ and HRZ, which have applied MDRS.
Objective for Medium Density Residential Z	one
14.2.5 [new] - Medium Density Residential Zone - Option 1 - insert a new objective <u>Medium density residential areas of</u> <u>predominantly MDRS-scale development</u> <u>of three- or four-storey</u> buildings, <u>including semi-detached and terraced</u> <u>housing and low-rise apartments, with</u> <u>innovative approaches to</u> <u>comprehensively designed residential</u> <u>developments, whilst providing for other</u> <u>compatible activities.</u>	 a. The intent of proposed new objective 14.2.5 is to provide for medium density development across MRZ, and is consistent with objective 2 of MDRS and the Zone Framework (8) and Format Standard (10) of National Planning Standards, Objective 2 of the NPS-UD, and Objective 6.2.1a of the CRPS. b. The objective can be seen as being inconsistent with the direction of Objective 6.2.2 of the CRPS for consolidation around centres. c. This objective provides for medium density development across the urban
	environment in areas with a lesser proximity to commercial centres. It builds on the existing Residential Medium Density Zone (RMD).
	d. Proposed objective 14.2.5 seeks to address the following resource management issues:
	i. Issue 1 – General MDRS Application
	ii. Issue 4 – Enabling residential intensification whilst providing for high quality residential environments
	e. Option 1 (Proposed objective 14.2.5) would (in the context of Part 2 matters):
	i. Provide a consolidated urban form by focusing intensification within the existing urban footprint, delivering an efficient and sustainable development form;
	ii. Enable large –scale residential development across existing urban areas, improving social

	well-being through the provision of additional housing; and iii. Improve housing supply across Christchurch, likely reducing costs and improving economic well-being.
14.2.5 – Medium Density Residential Zone – Option 2	a. Table 14.2.1.1a in the Plan describes the Residential Medium Density zone as to:
Retention of the existing Residential Medium Density Zone framework as presently contained within the Plan under Table 14.2.1.1a (not an objective): Located close to the Central City and around other larger commercial centres across the city. The zone provides a range of housing options for people seeking convenient access to services, facilities, employment, retailing, entertainment, parks and public transport. The zone provides for medium scale and density of predominantly two or three storey buildings, including semi-detached and terraced housing and low-rise apartments, with innovative approaches to comprehensively designed, high quality, medium density residential development also encouraged. Residential intensification is anticipated through well-designed redevelopments of existing sites, and more particularly through comprehensive development of multiple adjacent sites. Zone standards and urban design assessments provide for new rocidential development that is attractive.	 i. Provide for medium density housing only in areas surrounding commercial centres; ii. Enable a typology of two to three storey buildings with a strong emphasis on landscaping and design to create attractive environments. b. Existing Plan objectives will not address medium density housing being provided across the urban environment at a density and height anticipated by MDRS. Design details are also not well supported across higher order documents. Accordingly, this option is not the most appropriate way to achieve the purpose of the Act.
and delivers safe, secure, private, useable and well landscaped buildings and settings.	
14.2.5 [new] - Residential New Neighbourhood Future Urban Zone	Refer to Subdivision s32
a. Co-ordinated, sustainable and efficient use and development is enabled in the Residential New Neighbourhood <u>Future</u> <u>Urban</u> Zone.	
Objective for High Density Residential zone	

14.2.6 [new] - High Density Residential Zone - Option 1 - insert new objective High density residential development near larger commercial centres, commensurate with the expected demand for housing in these areas and the nature and scale of commercial activities, community facilities, and multimodal transport networks planned or provided in the commercial centres.	 a. The intent of proposed new objective 14.2.6 is to provide for high density development surrounding larger commercial centres, and is consistent with objective 1 of MDRS, Objectives 1, 2, 3, 4, and 8 of NPS-UD, Objective 6.2.1 and Objective 6.2.2 of the CRPS. b. This objective provides for high density development across the urban environment in proximity to larger commercial centres that provide for (or plan to provide for) a variety of services. c. Proposed objective 14.2.6 seeks to
	address the following resource management issues:
	i. Issue 2 – Surrounding City Centre response; and
	ii. Issue 3 – Suburban Centres residential response.
	d. Option 1 (Proposed objective 14.2.6) would (in the context of Part 2 matters):
	i. Provide a consolidated urban form by focusing intensification within the existing urban footprint, delivering an efficient and sustainable development form;
	ii. Enable intensified development surrounding larger commercial centres, improving social and economic well-being through a focused development form near established and planned businesses and community services; and
	iii. Improve housing supply across Christchurch, likely reducing costs and improving economic well-being.
14.2.6 [new] – High Density Residential	a. Objective in the Plan seeks to:
Retention of the existing Residential City Centre Zone objective as presently	i. Provide for high density housing within and surrounding the central city, only;
contained within the Plan under 14.2.8: a. A predominantly residential environment offering a range of residential opportunities, including medium to high density	ii. Enabling a typology of three to four storeys, with a height response that reflects localised character and maintains amenity values.

living, within the Central City to support the restoration and enhancement of a vibrant city centre;

- b. A form of built development in the Residential Central City Zone that enables change to the existing environment, while contributing positively to the amenity and cultural values of the area, and to the health and safety, and quality and enjoyment, for those living within the area.
- b. Existing Plan objectives will not address the requirement through the NPS-UD to provide for high density housing of at least six storeys surrounding the city centre, nor the need to intensify around relevant commercial centres to a degree commensurate to services provided or enabled (which may be larger than the medium density outcomes the Plan envisions). The objectives maintain current amenity values, which are instead anticipated to fluctuate under the NPS-UD in order to respond to the changing community needs for housing.

Objective for High Quality Residential Environments

14.2.4 – High quality residential environments – Option 1 – change objective 14.2.4 as follows:

High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, enhance local character and reflect to reflect the planned urban character and the Ngāi Tahu heritage of Ōtautahi.

- The intent of objective 14.2.4 is to provide for quality residential development to be achieved that supports the planned urban character of areas, and is consistent with objective 1 of MDRS, Objectives 1, 4, 5, and 8 of NPS-UD, and Objective 6.2.1 of the CRPS.
- b. This objective provides for a residential environment that develop to meet current and future housing needs in a manner that is sustainable and achieves quality living environments that consider the cultural heritage of Ōtautahi.
- c. Proposed objective 14.2.4 seeks to address the following resource management issue:
 - i. Issue 4 Enabling residential intensification whilst providing for high quality residential environments
- d. Option 1 (Proposed objective 14.2.7) would (in the context of Part 2 matters):
 - i. Provide a development form that is future-focused, providing long-term housing sufficiency that will improve social and economic well-being of local communities;
 - ii. Make efficient use of physical resource to deliver housing; and

	iii. Create housing in a manner that respects cultural values within the urban environment.
14.2.4 – High quality residential environments – Option 2 – retain	a. Retaining objective 14.2.4 unchanged seeks to:
objective 14.2.4 unchanged	i. Provide for high quality residential environments that prioritise the delivery of local amenity, character, and cultural heritage;
	ii. Protect local neighbourhood character by ensuring conformance for new developments.
	 b. Retaining the objective unchanged will not address the requirement through the NPS-UD or MDRS to provide for an urban development that delivers a housing typology that corresponds to the anticipated future housing needs of communities, including future amenity needs. Maintaining the current objective would be inconsistent with the amenity outcomes of the NPS-UD. Accordingly, this option is not considered to be the most appropriate.
Objectives proposed to be removed	
14.2.2 Objective - Short term residential recovery needs	Implementation of MDRS means that the outcomes that are sought are no longer relevant.
 a. Short-term residential recovery needs are met by providing opportunities for: an increased housing supply throughout the lower and medium density residential areas; higher density comprehensive redevelopment of sites within suitable lower and medium density residential areas; medium density comprehensive redevelopment of community housing environments; new neighbourhood areas in greenfield priority area; and temporary infringement of built form standards as earthquake repairs are undertaken. 	
14.2.8 Objective - Central City residential role, built form and amenity	This objective is inconsistent with the NPS-UD and inconsistent with MDRS as it seeks to maintain protection of local character through targeted

support the restoration and enhancement of a vibrant city centre; b. A form of built development in the Residential Central City Zone that enables change to the existing environment, while contributing positively to the amenity and cultural values of the area, and to the health and safety, and quality and enjoyment, for those living within the area.	ed by HRZ objective and ork.
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- 5.3.4 The above analysis indicates that the proposed changes to objectives and new objectives in the residential chapter of Plan Change 14 are consistent with the Plan objectives and higher order directions and therefore is the most appropriate way to achieve the purpose of the Act. In particular, it achieves this through aligning the framework with the intensification direction of both MDRS and the NPS-UD by recognising a wholesale medium density response, and high density response around commercial centres, which seeks to achieve the future planned character of areas, rather than preserving neighbourhood amenity and character. By comparison, retaining the status quo would not be consistent with higher order directions to provide for a future-focused enabling framework, and would not achieve the purpose of the Act.
- 5.3.5 It is therefore considered that the new and amended objectives of the residential chapter of Plan Change 14 are the most appropriate way to achieve the purpose of the Act.

5.4 Reasonably practicable options for provisions

- 5.4.1 In establishing the most appropriate provisions for the proposal to achieve the objectives of Plan Change 14, reasonably practicable options for provisions were identified and evaluated.
- 5.4.2 In considering reasonably practicable options for achieving the objectives of the Plan Change and the relevant higher order directions, the following options for policies and rules have been identified. Taking into account the environmental, economic, social and cultural effects, the options identified were assessed in terms of their benefits and costs. Based on that, the overall efficiency and effectiveness of the alternative options was assessed.
- 5.4.3 **Option 1** Status quo. As previously discussed, the 'status quo' option includes the MDRS because s86BA provides that rules permitting MDRS-compliant developments have immediate legal effect upon notification, and inconsistent rules to cease to have legal effect.
- 5.4.4 **Option 2** Alternative Plan Change Implement MDRS across existing residential zones, increase permitted building heights in the Residential Central City Zone (RCCZ) to 20m (six storeys). The existing Plan zones and boundaries would continue, however the density standards of MDRS would simply be inserted into the provisions of each relevant residential zone, alongside the objectives and policies of Clause 6 of Schedule 3A. Only heights for RCCZ would be updated from the current 11/14m maximums.
- 5.4.5 **Option 3** Proposed Plan Change Amalgamation of relevant residential zones within the urban environment to MRZ, with all intensified areas being zoned as HRZ. MDRS density

standards would apply across both zones, with HRZ being further enabled to respond to NPS-UD height limits and centre responses, managed through a series of precincts. This would result in the following provision changes:

- Amend Policy 14.2.1.1 to modify policy wording to be consistent with outcomes sought through MDRS and the NPS-UD, including zone descriptions changes in associated tables, aligning HRZ and MRZ with National Planning Standards and associated objectives;
- Insert Policy 14.2.2.5 to state how the overall residential enablement framework intends to operate, as a response to the restricted discretionary limit through MDRS;
- Insert Policy 14.2.2.6 to provide criteria to manage increased building height in MRZ and HRZ areas, aligning with MDRS and Policy 3 NPS-UD outcomes;
- Insert Policy 14.2.2.7 to better strengthen the need for firefighting capacity in light of enabled intensification across the urban environment;
- Insert Policy 14.2.6.1 to provide direction for how and where high density areas should be developed and align with the HRZ development response promoted through Policy 3(c) and (d) of the NPS-UD.
- Insert Policy 14.2.6.2 to detail how walking catchments will be used as an input to directing where HRZ areas will be enabled around centres in response to Policy 3(d) of the NPS-UD.
- Insert Policy 14.2.6.3 to provide for greater HRZ densities immediately surrounding the central city commercial area to address Objectives 1 and 3 of the NPS-UD and Policies 1(c), 2, and 3(c);
- Amend Policy 14.2.4.1 to update wording to align with MDRS and NPS-UD direction, particularly in reference to changes in amenity values and character, and provide greater clarity for the achievement of high quality residential environments;
- Amend Policy 14.2.4.2 to ensure references to amenity and character align with MDRS and NPS-UD direction;
- Insert Policy 14.2.4.3 to build upon the existing objective 14.2.4, detailing how larger scale, more comprehensive, developments around the City Centre Zone should be developed;
- Insert Policy 14.2.4.4 to provide direction for expected levels of waste management, servicing, and storage space in response to the significant degree of intensification enabled throughout the urban environment and the increased priority of adequate management of waste and storage in a more intensified urban environment;
- Insert Policy 14.2.4.5 to provide direction for how wind should be assessed to achieve pleasant and safe living and public environments;
- Insert Policy 14.2.4.9 to address specific sites newly zoned as residential large lot and the use of precincts to better address site specific development.
- Insert Policy 14.2.5.2 to detail how development around specific local centres shall be undertaken in response to intensification directed by Policy 3(d) of the NPS-UD;
- Insert Policy 14.2.6.3 to detail how high density heights surrounding the city centre zone will be managed in response to accessibility and the intended outcomes of Objectives 1 and 3 of the NPS-UD and Policies 1(c), 2, and 3(c).
- Insert Policy 14.2.6.4 to detail how development around specific larger commercial centres shall be undertaken in response to Policy 3(d) of the NPS.UD.
- Insert Policy 14.2.6.5 to detail how high density heights surrounding the CCZ will be managed in response to accessibility and the intended outcomes of Objectives 1 and 3 of the NPS-UD and Policies 1(c), 2, and 3(c).

- Create a medium and high density residential zone rule framework that:
 - Implements MDRS density standards across zones.
 - Provides for more lenient MDRS controls for the following standards: building height; height in relation to boundary (HRZ only); setbacks; building coverage; outdoor living space per unit (HRZ only); outlook space; windows to street.
 - Inserts additional development standards: building separation above 12m (HRZ only); fencing standards; garaging and carport building location; ground floor habitable room; service, storage, and waste management; water supply for fire fighting; wind standards; external ventilation units.
 - Introduces two tiers of enabled building heights in HRZ, being 20m (six storeys) and 32m (ten storeys), the latter only applying immediately surrounding the city centre zone.
 - Provides for any residential activity at no greater than restricted discretionary activity status.
 - Makes consequential amendments, including amending numbering and referencing, updating zone references, and minor changes for clarity or consistency with higher order documents not otherwise listed above.
 - Introduces new National Planning Standard definitions in Chapter 2 of the Plan where required to better give effect to MDRS, and other supporting amendments.
- Modify the Residential Large Lot Zone sub-chapter to give effect to new site specific controls for new precincts.
- Modify the Residential Guest/Visitor Accommodation Zone to better address the changes to residential zones and give effect to Policy 3(c) of the NPS-UD.

5.5 Evaluation of options for provisions

- 5.5.1 The policies of the proposal must implement the objectives of the Plan (s75(1)(b)), and the rules are to implement the policies of the Plan (s75(1)(c)).
- 5.5.2 In addition, each proposed policy or method (including each rule) is to be examined as to whether it is the most appropriate way for achieving the purpose of Plan Change 14 (s32(1)(b)).
- 5.5.3 Before providing a detailed evaluation of the policies and rules proposed in Plan Change 14, the alternative options identified have been considered in terms of their potential costs and benefits and overall appropriateness in achieving the objectives of the Plan and the relevant directions of the higher order documents.
- 5.5.4 The tables below summarise the assessment of costs and benefits for each option based on their anticipated environmental, economic, social, and cultural effects. The assessments are supported by the information obtained through technical reports and consultation (see 3.1.2).
- 5.5.5 The overall effectiveness and efficiency of each option has been evaluated, as well as the risks of acting or not acting.

Provisions Costs and benefits evaluation		
Option 1 - Status Quo	Option 2 - Alternative Plan Change	Option 3 – Proposed Plan Change (Plan Change 14)
 Benefits Environmental: increased development capacity provided for across much of the urban environment. Economic: lower consenting costs with an increased level of development enabled. Increased housing supply has potential to reduce local housing costs. Potential for reduced local housing purchase prices. Social: multiple residential units enabled over single parcels increases the ability for residents to provide for their housing needs. Improvements in well-being with potentially greater housing competition reducing costs and improving permanent housing tenure. Cultural: There are limited benefits for cultural housing options through MDRS development standards and existing district plan definitions of market driven housing typologies and combinations of activities. Environmental: lack of localised control to respond to identified features and accessibility. No consideration in framework of developments that do not comply with MDRS density standards. Social: lack of consideration for any associated controls to support day-to-day needs of residents. Cultural: culturally based housing options are subject to limited policy support and are only possible through 	 Benefits Environmental: increased development capacity provided for across much of the urban environment. Enablement of high density housing opportunities improves housing choice. Increasing intensification around the city centre has the potential to reduce private vehicle use and associate emissions. Economic: lower consenting costs with an increased level of development enabled. Potential for reduced local housing purchase prices. Additional level of development opportunities provided. Social: multiple residential units enabled over single parcels increases the ability for residents to provide for housing needs. Improvements in well-being with potentially greater housing costs and improving permanent housing tenure. Opportunities provided in the city centre for people to live close to places of employment and other services, reducing household transport costs. Cultural: culturally based housing options are subject to limited policy support and are only possible through expensive and contestable resource consent processes, providing a barrier for urban Māori housing options. 	 Benefits Environmental: increased development capacity provided for across much of the urban environment. Enablement of high density housing opportunities improves housing choice. Intensifying within and around all larger commercial centres aligns with public and active transport corridors, providing low- or zero-emission transport options. Greater amounts of higher intensification also means that there is potential for economies of scale for development projects, reducing waste. Economic: lower consenting costs with an increased level of development enabled. Potential for reduced local housing purchase prices. A focused area for higher densities around the city centre better responds to the economic recovery needs of the city centre, without taking away significant development opportunities. Intensifying around larger local centres provides for agglomeration benefits and captive local markets. Social: multiple residential units enabled over single parcels increases the ability for residents to provide for housing needs. Improvements in well-being with potentially greater housing competition, reducing costs and improving permanent housing tenure. Providing intensification around places of high accessibility means that

Provisions Costs and benefits eva	aluation	
Option 1 - Status Quo	Option 2 - Alternative Plan Change	Option 3 – Proposed Plan Change (Plan Change 14)
resource consent processes, providing a barrier to urban Māori housing option Efficient as it only provides for development at a permitted level. There is a lack of a supporting framework and little to no ability to address breaches beyond what is provided in MDRS. The establishment of MDRS across the existing zone framework also leads to a vast degree of repetition across the seven residential zones considered to be relevant residential zones. Effectiveness This option is considered to have a low degree of effectiveness. It is not effective at providing for developments greater than MDRS, failing to address the NPS- UD direction for high density. Additionally, inserting MDRS within the existing zone framework is likely to increase confusion for Plan users, reducing overall functionality and uptake of new development opportunities. Risk of acting, not acting Progressing MDRS in isolation has the risk of not addressing obligations under Policy 3 of the NPS-UD. Only applying MDRS across relevant residential zones means that local nuance is not possible, which risks diminishing local centres. Retaining the provisions as per Schedule 3A means that the opportunity for incentives through more lenient controls is not made possible, reducing the prospects of transitioning the existing urban	 overshadowing; dominance; outdoor living; privacy; building design (attractiveness). Economic: The scale of enablement across RCCZ has the potential to detract from relative opportunities within the central city. Social: adverse effects on privacy and private amenity in high density areas. Lack of environmental design considerations to manage the effects on populations in close proximity. Cultural: culturally based housing options are subject to limited policy support and are only possible through expensive and contestable resource consent processes, providing a barrier for urban Māori housing options. Efficiency This option is not considered to be effective, primarily because only the surrounds of the city centre would have higher densities. The degree of intensification also does not reflect this being a significant focal point for the city and South Island. Efficiency could also be improved if relevant residential zones were amalgamated to simplify how the framework was applied. Effectiveness of this approach is reduced due to the retention of the existing zone framework, which could lead to confusion for Plan users. Only enabling higher densities around the city centre is also considered to be an ineffective means to facilitate intensification close to 	 immediate access to services from their place of residence. Cultural: culturally based housing options are subject to explicit policy support, facilitating the possibility of mana whenua housing opportunities. Costs Environmental: intensification is likely to result in reduced privacy and onsite amenity, with a long transition period before intensification has wholesale adoption. Economic: some economic impact due to requirements of additional provisions, with some potential for intensification to remove developments otherwise progressed within commercial centres. Social: increased density and proximity of populations has the potential to increase social conflict. The transition period to an intensified urban form has the potential to cause conflict between high and low density areas as developments begin. Cultural: barriers to culturally based housing options are reduced. Efficiency The amalgamation of relevant residential zones into MRZ and HRZ is likely to increase the efficiency of applying intensification. The HRZ response best aligns with degrees of accessibility across the larger

Provisions Costs and benefits evaluation		
Option 1 - Status Quo	Option 2 - Alternative Plan Change	Option 3 – Proposed Plan Change (Plan Change 14)
environment to a MRZ/HRZ setting.	employment, services and amenities, with larger commercial centres missing out on such a response. Risk of acting, not acting The risk of this option means that the prosperity of suburban centres is reduced, by not considering enablement of higher densities around those centres. Not applying National Planning Standard zoning types alongside MDRS and the NPS-UD also means that real opportunities to intensify may not be apparent, with zoning references miss-aligned to the intensification outcomes that higher order documents direct.	commercial centres and the services provided within them. Effectiveness The application of two zones is likely to increase the effectiveness of achieving an intensified urban form, better articulating outcomes and readily defining development opportunities. HRZ intensification within areas of high accessibility, and within walkable catchments, means that opportunities are provided within the most feasible urban areas, improving the overall effectiveness. Risk of acting, not acting Not acting may mean that opportunities around commercial centres are not realised, potentially reducing viability and the ready transition to an intensified urban environment, and increasing emissions. Acting also means that there is a chance of only sporadic take-up of new opportunities, responding to local feasibility.
Recommendation: This option is not the most appropriate way to achieve the objectives of Plan Change 14, Schedule 3A or the NPS-UD as it fails to provide for a well- functioning urban environment.	Recommendation: This option is not the most appropriate way to achieve the objectives of Plan Change 14, or Policy 3 intensification under the NPS-UD and fails to provide for a well-functioning urban environment.	Recommendation: This option is the most appropriate way to achieve the objectives of Plan Change 14, the MDRS and Policy 3 of the NPS- UD.

5.5.6 Summing up, Options 1 and 2 are not as efficient and effective in achieving the objectives of the Plan and the NPS-UD and MDRS as the preferred option. The costs associated with Options 1 and 2 significantly outweigh the benefits and they have greater risks from acting/not acting. The detailed evaluation of **Option 3**, the preferred option, follows.

6 Evaluation of the preferred option for provisions

- 6.1.1 This section of the report provides an evaluation of Plan Change 14, and as required by section 77J of the RMA, describes below how Plan Change 14 allows for the same or greater development than the MDRS. Section 77J also required description of any modifications to the MDRS to accommodate qualifying matters. This is done in the s32 evaluation of qualifying matters.
- 6.1.2 **Option 3** is Plan Change 14, which:
 - Amends Objective 14.2.1 Housing supply to align wording with the terminology used to define residential outcomes in the MDRS and NPS-UD;
 - Amends Objective 14.2.4 High quality residential environments to align wording with the terminology used to define residential outcomes in the MDRS and NPS-UD;
 - Inserts new Objective 14.2.2 Housing Variety being Objective 2 of MDRS and being inserted as required through s77G of the Act;
 - Inserts new Objective 14.2.5 Medium density residential zone which establishes the intended outcomes of the zone and responds to National Planning Standards;
 - Inserts new Objective 14.2.6 High density residential zone which establishes the intended outcomes of the zone and responds to National Planning Standards;
 - Amends Policy 14.2.1.1 Housing distribution and density to modify wording to align with the outcomes of MDRS and NPS-UD, including consequential changes to zone descriptions appended to the policy;
 - Amends Policy 14.2.4.1 Neighbourhood character, amenity and safety provide greater clarity for how high quality living environments are achieved alongside the MDRS and NPS-UD direction;
 - Amends Policy 14.2.4.2 High quality, medium density residential development to modify wording to align with the outcomes of MDRS and NPS-UD;
 - Inserts new Policies 14.2.2.1 to 14.2.2.4 and 14.2.5.1 being MDRS policies 1-5, required to be inserted through s77G of the Act;
 - Inserts new Policy 14.2.2.5 Framework for building heights in medium and high density areas – in response to limiting activity status as imposed by MDRS;
 - Inserts new Policy 14.2.2.6 Management of increased building heights as a consequence of MDRS and NPS-UD to direct how increased building heights should be considered to achieve a well-functioning urban environment;
 - Inserts new Policy 14.2.4.7 Firefighting water capacity to provide a framework for firefighting standards contained across residential zones, in light of greater intensification and pressure on the water network;
 - Inserts new Policy 14.2.5.2 Local Centre Intensification Precinct to denote where specific local centres have an intensification response;

- Inserts new Policy 14.2.6.1 provide for a high density urban form to describe what conditions need to exist when high density development will be enabled;
- Inserts new Policy 14.2.6.2 High density location to detail how walking catchments will be used in response to Policy 3(d) of the NPS-UD;
- Inserts new Policy 14.2.6.3 Heights in areas surrounding the central city details how increased heights should be concentrated around the CCZ;
- Inserts new Policy 14.2.4.3 Quality large scale developments to provide direction for comprehensive developments s in response to the MDRS direction of three units per site;
- Inserts new Policy 14.2.4.4 On-site waste, recycling, and storage to detail how waste management servicing should be provided, alongside how storage space for units should be accounted for;
- Inserts new Policy 14.2.4.5 Assessment of wind to provide direction for how the wind environment should be evaluated, in light of increased height limits;
- Inserts new Policy 14.2.4.9 Managing site-specific residential large lot development to detail how new site-specific controls should support localised development outcomes;
- Inserts new Policy 14.2.6.4 Large Local Centre Intensification Precinct to denote where larger local centres would have an intensification response;
- Inserts new Policy 14.2.6.5 High density residential precinct to detail where building heights in response to Policy 3(c) would differ in response to Policy 1(c) of the NPS-UD.
- The following existing Plan objectives and policies will be removed as they are considered to be inconsistent with the direction of MDRS and the NPS-UD, or are irrelevant in light of the new intensification direction:
 - Policy 14.2.1.2 Establishment of new medium density residential areas
 - Policy 14.2.1.3 Residential development in the Central City
 - Policy 14.2.1.6 Provision of social housing
 - Policy 14.2.1.8 Provision of housing for an aging population
 - Objective 14.2.2 Short-term residential recovery needs
 - Policy 14.2.2.1 Short-term recovery housing
 - Policy 14.2.2.2 Recovery housing high density comprehensive redevelopment
 - Policy 14.2.2.3 Redevelopment and recovery of community housing environment
 - Policy 14.2.4.4 Character of low and medium density areas
 - Policy 14.2.4.5 Character of residential development on the Port Hills
 - Objective 14.2.8 Central City residential role, built form and amenity

- Policy 14.2.8.1 Building heights
- Policy 14.2.8.2 Amenity standards
- Creates the new MRZ and HRZ in response to MDRS and NPS-UD direction, implementing the density standards in Part 2 of Schedule 3A of the RMA in accordance with s77G of the RMA.
- Creates a number of new residential precincts to manage local development, being:
 - Local Centre Intensification Precinct;
 - Larger Local Centre Intensification Precinct;
 - Town Centre Intensification Precinct;
 - High Density Residential Precinct;
 - Residential Hills Precinct
 - Residential Mixed Density Precinct 86 Bridle Path Road;
 - Residential Mixed Density Precinct Redmund Spur;
 - Rural Hamlet Precinct.
- The following MDRS standards within HRZ and MRZ sub-chapters are also made more lenient, in accordance with s77H of the RMA:
 - Building height permitted to 14m in HRZ and within Local Centre Intensification Precinct;
 - Height in relation to boundary in HRZ and within Local Centre Intensification Precinct, exemptions for development of 2 or more residential units along the front boundary or for buildings setback 6m from side and rear boundaries;
 - Setbacks exemption of setbacks for accessory buildings of no greater than 10.1m in length and for eaves and roof overhangs of a specific dimension that protrudes into the front boundary setback;
 - Building coverage exemption for eaves and roof overhangs of a specific dimension;
 - Outdoor living space per unit in HRZ, smaller studio and single bedroom units are permitted to have a reduced outdoor living space, being 5m² less at the ground floor and 2m² less above ground floor;
 - Windows to street exemption for glazing requirement percentage required, including when doors or windows are provided that connect to ground floor habitable rooms.
- Additional permitted standards to the MRZ and HRZ are also proposed:

- Building separation in HRZ, standard controlling the separation of parts of buildings above 12m;
- Fencing standard modification to existing fencing standard to better align with outcomes anticipated, requiring that at least 50% of the fenced frontage is no greater than 1m in height, and greater fencing heights permitted along side and rear boundaries and on frontages along arterial roads;
- Garaging and carport location requiring that this be setback from the façade of any residential unit facing the street, when developing four or more units;
- Servicing, storage, and waste management modification of existing standard to better support new urban built form, including servicing areas and introducing storage areas for residential units, when developing four or more units;
- Water supply for firefighting carries over existing standard within the Plan to also apply to MRZ and HRZ;
- Wind standard introduces new wind thresholds for buildings above 20m in height;
- Building reflectivity in MRZ, adopts operative controls for Residential Hills Zone to the new Residential Hills Precinct.
- Outdoor mechanical ventilation units introduces new controls for the placement of external mechanical ventilation units.
- A new restricted discretionary framework is proposed for buildings in the MRZ and HRZ, which applies to:
 - Four or more residential units;
 - Any building height captured under this framework, with different thresholds set at 14m, 20m, and 32m, depending on the underlying zone or precinct.
- Within Residential large Lot Zone, new provisions added to support proposed precincts:
 - Site density, site coverage, setbacks, building reflectivity, servicing and waste management, fencing, landscaping, and outdoor living space – carryover applicable rules for Residential Suburban and Residential Hills zones for density overlay areas at 86 Bridle Path Road, Redmund Spur, and the Rural Hamlet area.
 - Activity status tables within chapter also updated in accordance with Plan controls for each site.
- Within the Residential guest/visitor accommodation zone standards modified to reflect changes to residential zones:
 - Maximum site coverage increased to meet MDRS standard;
 - Maximum building heights increased to match outcomes of MRZ and HRZ;

- Minimum building setbacks from roads reduced to match MDRS to ensure consistent street frontage;
- Daylight recession planes alignment with MDRS height in relation to boundary standard.
- Appendix 14.16.11 groups all adjusted to reflect new zones proposed around each site.
- Activity status tables updated within chapter to reflect new permitted controls.

6.2 Assessment of costs and benefits of policies

NOTE: new Policies 14.2.2.1 to 14.2.2.4 and 14.2.5.1 – being MDRS policies 1-5 - are not evaluated as they required to be inserted by s77G.

Benefit	S
Environ	mental:
•	The direction to intensify within MRZ and HRZ areas means that there is better use of finite urban land, focusing intensification within existing urban areas. This also means that the provision of servicing to those urban areas is better enhanced, reducing the dependence on new infrastructure assets.
•	The policy direction recognises that building design can be used to reduce significant impacts on sunlight access and building dominance.
•	The precinct policies provide for a greater distinction of urban areas (when compared to only applying MDRS, as per Schedule 3A), creating recognisable urban forms that better respond to levels of accessibility between areas across urban Christchurch. The direction to enable greater levels of intensification within these areas means there is a high degree of accessibility to public and active transport corridors, reducing propensity for private vehicle use and the potential for greenhouse gas emissions. This makes living environments more resilient to the current and future effects of climate change.
•	Policies have also recognised the need for intensified areas to be serviceable, reducing the potential for mismanagement of waste generation.
•	Large scale developments have greater recognition in policies, better ensuring that sites are more effectively managed and supporting sunlight access.
Econor	nic:
•	Better support for housing variety and supply means that local housing sufficiency is more likely to be met, thereby decreasing or stabilising housing costs.
•	Developing within the existing urban area means that infill intensification is more easily able to be realised, and costs for new infrastructure to deliver housing is reduced.
•	Policy direction to increase intensification around centres means that there is a larger population of local residents, stimulating local economic turnover and improving agglomeration benefits.
•	Recognition in policies for current and future generations means that the supply and development of housing is adaptable to contemporary demand

٠	Proactive approach to MDRS controls to make these more lenient where positive
	benefits are still attainable means that the threshold for consenting is lowered,
	increasing the propensity to develop. Economic reporting from Property Economics ³¹
	and the The Property Group ³² demonstrate that proposed provisions are feasible and
	potential adverse economic effects of provisions are reduced.

Social:

- The provision of greater housing choice means that access to housing is enhanced, increasing permanent tenure of housing.
- Safety is recognised within the policy framework in relation to building design features.
- The direction to ensure practical use of waste management areas and the provision for storage as part of residential unit design reduces the chances of social conflict within residential environments.
- The policy framework recognises the importance of managing large scale developments so that site layout is better considered and ensure the privacy and safety of residential areas.
- Policy direction to intensify around centres means there is a freer access for residents to local services and commerce.

Cultural:

- The policy framework recognises the importance of historic heritage and the need for its protection in light of increased intensification.
- Options for multigenerational living are made possible.

Costs

Environmental:

- Despite the introduction of various precincts to manage residential development, the dilution of residential zones to two core urban zones means there is still potential for a reduced distinction between urban areas across the city (when compared to operative Plan zones). Form outcomes are similar in nature for the different zones, with the main distinction being the degree of building height that is enabled.
- Greater enablement of urban intensification is likely to result in increased transitionary effects as some development opportunities are taken up. This means that where high density opportunities are taken up in isolated areas, effects will be disproportionately felt when compared to areas of large scale, neighbourhood or street level development.

Economic:

• Proposed new policies set new requirements for taller buildings, this increases the cost needed to address these new matters and has the potential to act as a deterrent to develop.

³¹ See: Christchurch central city and suburban centres economic cost benefit analysis; and Christchurch City residential zones & intensification precincts economic cost benefit analysis.

³² High Density Residential Feasibility Assessment – May 2022

• The enabling framework means there is an inherent risk that commercial centres may see lesser uptake of development opportunities.

Social:

• Policies do not recognise the transitionary effects of increasing intensification within areas that are at a lower density. This has the potential to increase social conflict at the interface of higher and lower density areas.

Cultural:

- No cultural costs have been identified.
- 6.2.1 Appropriateness of proposed policies to achieve higher order document directions:

Appropriateness in achieving the higher order document directions

Efficiency:

- Plan Change 14 reduces the number of policies contained within the residential chapter, enabling planning evaluations to be undertaken for new developments more easily.
- The proposed polices have purposefully been designed to be specific, targeting the areas of most concern when addressing development effects. This improves the overall application of the provision framework. Care has also been taken to appropriately integrate MDRS policies within the residential chapter.
- The proposal to only have two urban residential zones and sub-chapters means the simplicity of applying higher order direction is improved.
- While additional development controls have been introduced, including those managing high density development, no discernible economic impact has been identified that would impact their use.
- Existing policies that conflict with the MDRS or the NPS-UD direction have been proposed to be removed to avoid conflict with higher order documentation.

Effectiveness:

 Plan Change 14 establishes a clear framework to apply higher order documentation. This can be seen through the simplicity of the zone framework and reduced policy direction that needs to be applied to developments. It is a targeted approach that readily provides for an enabling framework to intensify development in urban areas of Christchurch.

Risk of acting/not acting:

• The risk of not implementing Plan Change 14 is that the intensification direction of higher order documentation is not sufficiently enabled, and as a result the Plan conflicts with the NPS-UD. This could result in a failure to transition to a more highly intensified urban environment in Christchurch.

6.3 Assessment of costs and benefits of the proposed rules

6.3.1 Proposed rules have been drafted to support the policy direction that is intended to achieve the objectives, including those from MDRS and Policy 3 of the NPS-UD, including where

Council has proposed to make rules more lenient or provide additional rules to manage development within residential areas. Reference is made to section 3.3 for an overview of the proposed framework.

6.3.2 **Note:** MDRS Density standards are not considered here as they are required to be inserted through s77G of the Act.

 Environmental: Proposals to make rules more lenient are likely to increase the likelihood that zone outcomes will be achieved and better ease the transition to a higher density environment. This includes HRZ rules to permit up to 14m building height and the height to boundary rule exemptions which allow for intensification along the front boundary or when setback from side and rear boundaries. While allowing for a more intensive urban form along the front boundary, the HRZ exemption threshold is still likely to ensure sufficient opportunity to provide for private amenity outdoor living space at the rear of sites. Exemptions for smaller one-bed units in HRZ's outdoor living space requirements mean that there is more efficient use of a site, providing more bespoke treatment of smaller typologies. Building separation and form standards in HRZ mean that potential adverse effects are addressed, specifically in relation to privacy, building dominance, and sunlight access. These controls mean buildings above 12m must be separated from one another, and the building form must be recessed inwards as height increases beyond 14m. Garage placement controls means that residential occupation remains the dominant form within residential areas, improving residential appeal at the street level. New controls on managing wind effects ensures that the enjoyment and safety of places of leisure and travel are retained. Economic: Greater permitted height limits in HRZ and leniency of recession planes means that there is a reduced need for consenting for four or five storey residential units. Exemptions for smaller one-bed units within the HRZ for outdoor living space requirements enables more efficient use of sites, providing greater opportunities for development. Controls proposed to manage HRZ development are not seen to reduce the overall economic feasibility of development (HRZ report on Feasibility, TFG). Exemptions for set	Benefits			
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	•	Additions to definitions add clarity to the application of standards and allow for consent applications to be made more easily. Many of the new definitions are also those contained within National Planning Standards, improving their ease of use for Plan users.		

٠	Economic reporting ³³ has stated that the following standards will have little to no
	economic impact on development: Fencing; garaging location; water supply for fire
	fighting; building reflectivity; breaches for street-facing glazing; and breaching in
	landscaped area.

Social:

- Creating an enabling framework means there is greater potential for housing choice, better addressing specific housing needs within the community.
- Practicality of development is considered through the control of waste management areas and ensuring adequate storage spaces are available, thereby reducing the chances of conflict within comprehensive developments.
- Improved controls on wind effects means that the wellbeing and enjoyment of public spaces near taller residential units is better maintained.
- Building separation controls in HRZ ensure better protection of privacy for residents. This is also further enhanced across MRZ and HRZ through the management of four or more units on a single site. This ensures that layout can better address how private space is used and overall accessibility for residents.
- Crime Prevention Through Environmental Design is considered throughout provisions, particularly for fencing, habitable room controls, exemptions for doors in glazing requirements, and the trigger for four or more units.

Cultural:

- The ability to construct more than one unit per site and increases to height limits, generally, supports opportunities for multigenerational housing options with respect to the concentration of housing.
- The recognition of papakāinga/kāinga nohoanga when considering height breaches enhances the ability to provide for urban papakāinga.
- Recognition of heritage values, in light of greater intensification, means that these features are better protected.

Costs

Environmental:

- Increases in HRZ permitted height, and the greater enablement of height across urban residential zones, is likely to decrease opportunities for sunlight access. This also applies to the exemptions for recession planes along front boundaries.
- The increase in density is likely to increase exposure to noise and pollution.
- The introduction of medium or high density housing within a lower density living area is likely to increase the chances of dominance or overshadowing on adjacent sites that have not been developed to a similar density.

³³ See economic reporting by Property Economics listed in section 3.1.2.
Econor	nic:
•	Specific building design standards are likely to increase development and design costs. This includes those for building separation, recessed building form, scale developments, and wind assessment.
•	Economic reporting ³⁴ has stated that the impact of following standards will be likely be limited to some capacity loss: height in relation to boundary; setbacks; outdoor living space per unit; outlook space; windows to street; building separation; servicing, storage, and waste management; number of units, wind standards; and site coverage. It is noted that reporting has identified that there are no economic benefits to proposed ground floor habitable room controls.
Social:	
•	Increased density and proximity of local populations has the potential to increase social conflict.
•	The uplift in development potential within established (lower density) areas may mean there is a disproportionate degree of feasible opportunities to intensify. The flow-on consequences of this could lead to an inconsistent and dislocated urban form.
Cultura	al:
•	Intensification near sites of cultural or historic significance has the potential to degrade sites.
•	Intensification involving encroachment on water bodies, adversely affects taonga status of water.
•	Intensification on its own does not provide for papakāinga/kāinga nohoanga which is distinctive from market driven zoning classifications.
L	

6.3.3 Appropriateness of proposed rules achieving the objectives:

Consistency with the policies and appropriateness in achieving the objectives								
 Efficiency: There is a strong correlation between the proposed rules and proposed policies – as summarised below: 								
Proposed Policies Proposed Provisions (built form) / spatial response								
14.2.2.1 Policy - MDRS Policy 2	 Analysis has been completed for what are considered relevant residential zones and zones in accordance with National Planning Standards have been proposed. This has amalgamated five residential zones into two (MRZ and HRZ), both with MDRS applied and modified in accordance with zone outcomes, greatly increasing the efficiency of its application. 							

³⁴ Christchurch City residential zones & intensification precincts economic cost benefit analysis, Property Economics.

14.2.2.2 Policy - MDRS Policy 5	 In both MRZ and HRZ, non-compliances are dealt with through a restricted discretionary (RDA) consenting framework. This readily provides for development beyond permitted standards when in accordance with the associated policy framework. Clarity has been provided about exemptions to notification triggers within activity standards. The need for consent has been eased through multiple changes to MDRS density standards to make these more lenient (building height, height in relation to boundary, setbacks, building coverage, outdoor living space, windows to street).
14.2.2.4 Policy - MDRS Policy 4	 Related provisions have been introduced to ensure that developments practically provide for residential living without impacting upon MDRS controls (building separation, fencing, garaging and carport building location, ground floor habitable room, service, storage, and waste management, water supply for fire fighting, wind standard, building reflectivity).
14.2.2.5 – Framework for building heights in medium and high density areas	 Provides direction for the enablement framework directed by Clause 4 of Schedule 3A and Clause 3.4(2) of the NPS-UD.
14.2.2.6 – Management of increased building heights	 Provides a framework for building heights in MRZ and HRZ, which is achieved through the RDA provisions.
14.2.2.7 Policy – Firefighting water capacity	 Direction to ensure adequate water supply for fire fighting is provided which is achieved through standards.
14.2.4.1 Policy - Neighbourhood character, amenity and safety ³⁵	 Provides policy direction which is achieved through : Residential Design Principles. Additional exemptions for windows to street. Ground floor habitable room controls. Communal outdoor living area standards for high density living.
14.2.4.3 Policy – Quality large scale developments	 Conforms to MDRS threshold of 3 units, by only applying at 4 or more units. Implemented through Residential Design Principle controls, which also apply to 4 or more units.

 $^{^{35}}$ This is an existing policy that is proposed to be substantially modified through Plan Change 14.

14.2.4.4 Policy – On-site waste and recycling storage	 Achieved through on-site servicing controls in both MRZ and HRZ, and builds on MDRS focus for day-to-day needs.
14.2.4.5 Policy – Assessment of wind effects	 Achieved through wind threshold standards used in both MRZ and HRZ.
14.2.4.9 Policy – Managing site- specific Residential Large Lot development	 Provides link to precincts used to manage site-specific controls for Rural Hamlet, Redmund Spur, and 86 Bridle Path Road.
14.2.5.1 Policy – MDRS Policy 1	• The enabling framework of MRZ means that a range of different housing types are possible, including beyond 3-storey development.
14.2.5.2 Policy – Local Centre Intensification Precinct	 Provides policy response to NPS-UD of intensification around specific local centres. Provisions increase permitted heights to 14m as a response.
14.2.6.1 Policy – Provide for a high density urban form	 A large amount of HRZ zone has been provided across urban Christchurch. This includes: around the central city, extending to Riccarton and Papanui, and around larger centres of: Linwood; North Halswell; Hornby; Church Corner; and Shirley. Rules increase the permitted building height to 14m to more easily provide for an increased building height, with an enabling framework providing development of up to 20m in most places, and 32m immediately surrounding the central city. Policy framing aligns with prerequisites used in the NPS-UD, providing a consistent policy application and consideration for additional HRZ development.
14.2.6.2 Policy – High density location	 Provides a policy response to the NPS-UD by the application of precincts to manage developments in areas defined for higher densities.
14.2.6.3 Policy – Heights in areas surrounding the central city	 Policy direction achieved through rules for further HRZ enablement of up to 32m immediately surrounding the central city.
14.2.6.4 Policy – Large Local Centre Intensification Precinct	 Provides a policy response to the NPS-UD by the application of a precinct to manage developments in areas defined for higher densities around larger local centres (and one Town Centre).

	 Provisions increase permitted heights to 14m as a response and enable development of up to 20m via consent.
14.2.6.5 Policy – High Density Residential Precinct	 Provides a policy response to the NPS-UD by the application of a precinct to manage developments in areas defined for higher densities around the central city, to spatially denote the change from 20m to 32m being enabled in HRZ. Provisions increase permitted heights to 14m as a response and enable development of up to 20m via consent.

Effectiveness:

• Rules establish a sufficiently enabling framework that respond to Clauses 2 and 4 of Schedule 3A and Clause 3.2 of the NPS-UD. The rules create a framework whereby any breaches are dealt with under a restricted discretionary activity status. There are no discretionary or non-complying residential activities in MRZ or HRZ, when considering intensification directed by MDRS or Policy 3 of the NPS-UD that is not subject to any qualifying matters.

Risk of acting/not acting:

• The risk of not acting in implementing Plan Change 14 is that the intensification direction of higher order documentation is not sufficiently enabled, and as a result the Plan conflicts with the NPS-UD. This could result in a failure to transition to a more highly intensified urban environment in Christchurch.

6.4 The most appropriate option

6.4.1 Progressing with Plan Change 14 is considered to be the most appropriate option to achieve the purpose of the Act. It is an efficient and effective means of achieving the requirements of Schedule 3A of the Act and the intensification requirements of Policy 3 of the NPS-UD, while achieving a wide range of environmental, economic, social, and cultural benefits while limited associated costs.

7 Conclusions

- 7.1.1 This proposed element of Plan Change 14 seeks to make changes to the Residential Chapter (Chapter 14) of the Christchurch District Plan to respond and implement the MDRS and Policy 3 of the NPS-UD.
- 7.1.2 The evaluation undertakes an assessment of the proposed provisions alongside realistic alternative approaches. The evaluation has been undertaken in accordance with s32 and s 77J of the RMA in order to identify the need, benefits and costs, in addition to the appropriateness of the proposal, having regard to its effectiveness and efficiency relative to other means in achieving the purpose of the RMA. The evaluation demonstrates that this proposal is the most appropriate option as it:
 - best gives effect to higher order documents, including the national planning standards;
 - is the most effective and efficient way to achieve the purpose of the Act and the Plan's objectives; and
 - addresses the identified issues.

Medium and High Density Housing in Christchurch Urban Design Review 2020

Prepared by Christchurch City Council Urban Design Team June 2020

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1 Introduction

This document is a technical review of the quality of recent medium density housing developments in Christchurch. Its purpose is to provide a summary of the effectiveness of Christchurch District Plan policy and provisions in delivering high quality residential medium density development within Christchurch, in respect to urban design outcomes.

The quality and supply of housing is an essential part of making Christchurch a liveable city. The importance of this to the Christchurch community is expressed through both the Community Outcomes for the city and the Christchurch District Plan:

Community Outcomes - Liveable City:

- Vibrant and thriving central city, suburban and rural centres
- A well-connected and accessible city
- Sufficient supply of, and access to, a range of housing
- 21st century garden city we are proud to live in

District Plan Objective 14.2.4 – High Quality Residential Environments High quality, sustainable, residential neighbourhoods which are well-designed, have a high level of amenity, enhance local character and reflect the Ngai Tahu heritage of Ōtautahi

The District Plan residential medium density provisions have been operative since 2016. A review of the effectiveness of these provisions in respect to urban design matters began in March 2019 and was completed in March 2020 and forms the basis for the information presented in this report.

2 Summary and Recommendations

2.1 Summary of Findings

This report provides the findings from a review of the design quality of new residential medium density housing in Christchurch, developed under the provisions of the Christchurch District Plan made operative in 2016.

There is a clear statement of expectation in the District Plan objectives and policies for "high quality" outcomes. This review has found that whilst the standard of developments was in most cases close to a basic satisfactory quality overall, there was a significant proportion of developments which were poor quality. Neither would be achieving the high quality outcomes set out in the District Plan.

The majority of the issues arising are related to poor site layout which impacts on many aspects of the site and building design, including the street interface. The root causes are:

- More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing;
- There has been insufficient space allocated to front gardens and accessway planting and the resulting environment is not as safe or as pleasant as anticipated.

Other recurring issues related to Crime Prevention Through Environmental Design (CPTED) and were caused by privacy conflicts that discouraged passive surveillance, and a lack of a sense of ownership, transition and territorial definition. A clear hierarchy of space is needed from private to public space.

Some positive trends were evident. These particularly related to the standard of private amenity on the site, such as good outdoor living space for occupants and good solar access. Developments achieving a basic satisfactory were often a mix of these high quality outcomes together with some aspects delivered poorly.

A tension was also identified between the existing character and the anticipated form of development, with smaller sites tending to better complement the existing character.

An issue unique to the central city was the scale of buildings, these tended to be one of two types. The first was suburban housing typologies, built at a higher density than in the inner suburbs. These higher density examples often had issues such as privacy conflicts. The second type was an apartment block, which were often monolithic in appearance. The first issue results from a reluctance to build a more intense typology (eg a three storey house or apartment) whilst the second is a matter of the design of higher densities.

Within the different District Plan Zones, the Residential Medium Density (RMD) zone produced more consistent outcomes than other zones and had a lower proportion of developments achieving a poor standard of design. The Residential Suburban Density Transition Zone (RSDT) most frequently produced outcomes that were unsatisfactory.

When compared to a previous survey carried out in 2009 (in the former L3 and L4 zones, equivalent to RMD and RCC), it is notable that density has increased over the period, particularly in the RMD zone. With regard to quality indicators, two trends are evident: improved outcomes in the RMD zone and a deterioration of quality in the Residential Central City (RCC) zone. In the

latter case, which performed well in 2009, this seems to be related to a change in typology from bespoke apartments towards townhouses.

2.2 District Plan

A detailed assessment was undertaken as to whether District Plan policy was an effective framework for urban design, against which the residential medium density developments were reviewed.

The design outcomes within the RMD zone are generally of a better quality than those in the remainder of the zones. RSDT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density, and central city developments were also less satisfactory on average. It appears that:

- Less thorough RCC assessment matters have led to inconsistent outcomes in the RCC zone in relation to the street, site and aspects of the built form, in conjunction with higher densities;
- The absence of design controls in the RSDT zone (for less than 5 units) has resulted in consistently poor outcomes in relation to the street and site.

The Central City Mixed Use (CCMU) zone is not included in the above due to the small sample.

There is good coverage of urban design outcomes across the District Plan provisions but often not the ability to translate this into outcomes through the application process. The policy framework is relatively wide-ranging, however there are gaps in the assessment matters and the built form standards do not always support good design.

The built form standards can set a baseline for what can be accommodated on the site, however if they exclude aspects of design (such as privacy, or the landscaping of accessways) it can lead to those being neglected. More rounded built form standards would help to promote these as fundamental design issues. They can ensure space is set aside to manage the amenity and street scene issues identified.

Some matters are well covered in the District Plan (in particular CPTED) but are still not fully achieved. Changes to design and consenting under the existing plan provisions could potentially produce better outcomes.

The Plan does not include an overarching consideration of site layout. Instead, issues are often addressed one by one and this can result in an attempt to trade-off outcomes such as privacy verses street-interaction. In order to solve the issues, there is often a need to revisit the site layout and make different choices (rather than mitigating issues). This reflects the iterative nature of the design process.

The District Plan contains policy relating to sustainability and innovation, but no methods. There was very little achievement in this area. The purpose of the policy is to promote these aims (and it may be this allows them to be included in the balance of an assessment), but achievement has been limited.

3 Review Methodology

3.1 Sample Developments

This survey was limited to developments consented and constructed post 2016, when the District Plan was made operative. A selection of 46 developments were identified across 4 medium density residential zones. These zones are shown below. The intention was to obtain a meaningful sample of developments undertaken since the introduction of the district plan, which was identified as being 25% of developments in each zone.

However, given the number of developments completed as at April 2019 when the study began, the sample is 100% of new medium density development in all zones except RMD. The small sample size and level of development that has occurred means that the study may not comprehensively identify all issues likely to arise into the future. One of the recommendations is therefore that more work is undertaken to confirm the results, in particular within the central city. This is due to the greater variety of buildings and outcomes expected in the two central city zones as well as the small sample size.



Figure 1: Residential zones and across the city

List of Assessments by zone:

Central City Mixed Use zone (CCMU - 3 sites, out of 3 completed in the zone) Residential Central City Zone (RCC - 12 sites, out of 12) Residential Medium Density Zone (RMD - 20 sites, out of 46) Residential Suburban Density Transition Zone (RSDT - 11 sites out of 11)

Two studies were carried out to collect data. The information for this report is drawn primarily from the data gathered in those studies, and informed by the initial reporting carried out on that data (CCC 2020 i and ii).

3.1.1 Density

The District Plan includes policies relating to minimum density requirements for the redevelopment of sites in the zone. The target density and average density for each zone is as set out below. For the sake of this analysis, the net density is assumed to be the site density multiplied by 0.66. The net density is a larger area including a proportion of local roads and parks as well as the site area. Development in all zones on average exceeds the minimum density requirements:

Zone	Target Net Density	et Net Density Site Density Net Density	
	(Households/ha)	(Households/ha)	(Households/ha)
RSDT	N/A	43	28
RMD	30	56	37
RCC	50	117	77
CCMU	N/A	139	91

3.2 Assessment Matrix and Criteria

For the purposes of this review, an assessment matrix for development was created by Boffa Miskell, adapting work they previously undertook for the Council in 2009 and the Ministry for the Environment in 2012.

Figure 2 shows the assessment matrix which allows each development to be scored on a fivepoint scale according to various urban design criteria. These were organised into four urban scales.

		BEST PRACTICE ASSESSMENT					
Urban Scales		Outcome	1	2	3	4	5
<u>г</u>	Δ.1	Integration into the existing and or planned site and local context	T	<u> </u>			<u> </u>
A. Neighbourhood	A.2	Meeting residents' needs and is designed to reflect its location and access to social infrastructure					
	A.3	Contributes positively to the wider neighbourhood and community					
	B.1	Creating an appropriate sense of enclosure along the street					
	B.2	Fostering a sense of ownership of the street.					
B. Street	B.3	Activation and articulation of the street façade through openings					
	B.4	Property boundaries are well defined and enable views of the street.					
-	B.5	Building layout and form appropriately responds to the urban context					
	C.1	An integrated and comprehensive approach to the layout of buildings and spaces					
	С.2	Provides for housing choice					
	С.3	Respectful and responsive design of neighbouring interfaces and activities					
	С.4	Comprehensive approach taken to the design and quality of paving, landscaped areas and open space.					
C. Site	С.5	Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety)					

C. Site		safety)			
	С.6	Appropriate provision and location of private outdoor living spaces			
	С.7	Appropriate provision, location and design of communal open space			
	С.8	Provide for the safe and efficient movement of pedestrians, cyclists and vehicles			
	С.9	A sound car parking strategy is utilised and the visual impact car parking where provided is minimised.			
	C.10	Efficient and effective provision of services and storage areas			
	C.11	Incorporation and promotion of sustainability across the site			

	D.1	A visually interesting and cohesive approach to the overall building form			
	D.2	Variation and steps in the building line			
	D.3	Sufficient breaks in the roofline			
	D.4	Designing to a domestic scale			
	D.5	Coordinated use of appropriate materials			
D. Ruilding	D.6	Coordinated internal/ external relationship			
D. Bunung	D.7	Provision of adequate storage			
	D.8	Logical and efficient layout			
	D.9	Protecting privacy and minimising overlooking			
	D.10	Enabling of natural ventilation, solar gain and daylight penetration			
	D.11	Promotes energy efficiency and incorporates sustainability features			
	D.12	Demonstrates innovation and creativity in build design, form and function			

Figure 2: Assessment Matrix

3.3 Urban Scales

The Matrix includes four Urban Scales: (i) Neighbourhood, (ii) Street, (iii) Site and (iv) Building.

Use of these scales allows consideration of the outcome of the development and its impact on the surroundings at a range of levels. It avoids concentrating on individual known issues and instead allows the focus to be on the impact of the development on the wider area or site. It takes into account that what may be advantageous at one level (for instance a sunny and private garden) may be detrimental at a different level (such as the impact of fencing on the street scene).

When considering the urban design outcomes of residential developments, whether it is for a small lot intensification or a larger more complex multi-unit development, it is important to consider and be informed by matters across all of the four scales. It is also important to note that the policies and objectives for each of the respective zones also seek outcomes beyond individual sites. Consideration of the four scales will ensure a thorough analysis and best represent the overall impact of each development.



3.4 Five Point Scoring

The five-point scoring system is as follows:

- 1. **Poor** A development with little consideration of urban design principles.
- 2. **Inadequate** A predominantly functional development with some simplistic design features that inadequately address urban design principles.
- 3. **Basic Satisfactory** A development that satisfactorily addresses basic urban design principles
- 4. **Well-considered** A well-considered development that successfully addresses urban design principles.
- 5. Best Practice Most representative of urban design best practice.

In broad terms, an average score of 3 indicated a satisfactory urban design response that addressed urban design considerations to at least a basic extent.

The District Plan policies seek a "high quality" development as distinct from "satisfactory" or "well-considered". The term "high quality" is not well defined in the plan and how it aligns to the scoring system is a matter for interpretation.

In a city of successful development with satisfactory design, it may be expected that basic satisfactory would be the minimum achieved. It would then be expected that the average would be higher than this. Whilst some developments would outperform due to higher quality design choices, none should under-perform.

For a city with high quality design, it would be expected that the minimum score for each development would be 4, and that the average would be between 4 and 5.

It is worth noting that the mid-point score is 3, with a range of 1-5 (with no 0). The expectation is that developments record a basic satisfactory score across the board to reach a threshold of 3. A score falling significantly below 3 has not reached the threshold. For this reason, a score of 2.8 is seen as "inadequate" – it has not reached the threshold in all categories, or there are no particularly good points to offset the areas of poor performance. When averaged over 46 developments, significant areas of performance under 3 indicate a possible systemic issue.

Notwithstanding the above, scoring involves an element of interpretation and is not an exact science. Therefore, developments close to 3 (e.g. scoring 2.9) are often interpreted as being satisfactory within the analysis and limited weight is given to individual property category scores or small samples, which may be affected by a small number of marginal scoring decisions.

4 Summary of Assessments

This section includes a description of the scores for each of the urban scales, narrative around the urban design outcomes, and a summary of key observations with respect to urban design best practice.

It contains analysis of results by zone, while noting the sample size for each zone, and the potential complexity and variation in development types. This is most notable in the RCC zone.



Apartment and townhouse typologies in the RCC zone

4.1 Overall Scoring

The table below shows the average scores for the urban scales for the 46 sites:

Urban Scale	Range (1-5)	Average	Median
Neighbourhood	1.7 – 5	3.5	3.5
Street	1.2 - 4.6	2.8	2.8
Site	1.6 - 4.2	2.7	2.8
Building	1.9 - 4.3	3.0	2.9
Overall	1.6 - 4.5	3.0	2.9

The average score is close to 3 throughout, but below this level for "street" and "site".

On an overall basis, it appears that the average development is basic satisfactory. However, this conceals two significant variations:

- The performance on the different scales (some aspects of developments are better than others).
- The performance of individual developments (some developments are above average and some are below).

When these issues are considered, a more complex picture emerges where a significant proportion of development is inadequate or poor.

4.2 Performance by Site

The performance of individual developments was variable, with some good examples that scored highly, and a larger group of developments that were rated in the inadequate category.



The range of development scores by site is shown below:

Figure 2: Overall Scores by development site

This chart illustrates that exactly half the developments achieve at least a basic satisfactory score and half do not achieve this level.

Of the underperforming group, some almost make the satisfactory level. Of greatest significance is a group comprising around a third of developments that fall well below this level. These developments are likely to be significantly unsatisfactory in some respects.

Of the best performing developments, there is a group which are higher performing. The top few would be "well considered" and they would meet the criteria for "high quality". A further nine score at least 3.5.

This shows that although the average score is close to a basic satisfactory grade, there are a high proportion of developments that do not reach this standard.

4.3 **Performance by Scale**

Performance across the scales was variable. Overall results were good at the neighbourhood scale and generally satisfactory at the building scale. However, performance at the site and street scale was below the basic satisfactory threshold.

These issues often have their root cause in the site scale. Outcomes were often unsatisfactory for the site scale and in particular the outcome in relation to Crime Prevention Through Environmental Design was poor.

Unsatisfactory outcomes relating to the street are often caused by site layout decisions (for example the location of outdoor living space at the front boundary leads to tall fencing on the street front). This is then reflected in the neighbourhood scale because the development does not contribute positively to the character. Some of the issues at the building scale are also an attempt to remedy site layout decisions, or are ultimately caused by the building envelope created by site layout choices.



Above: Site layout issues reverberate through the urban scales

Ultimately, this attempt to manage the effects of unsatisfactory site layout through mitigation has been moderately successful in many RMD developments, but has not succeeded in other zones.

In the Central City, this is likely to be due to the higher density development in the creating more challenges, such as privacy conflicts or a lack of building modulation. It may also be due to the more relaxed zoning provisions. For instance, there is no upper floor setback for bedroom windows in the RCC zone (but there is in the RMD zone).

4.3.1 Neighbourhood Scale

Key Points

- Overall development outcomes are mostly basic satisfactory or good for this urban scale.
- RMD developments are consistently positive, but RSDT and Central City sites are more variable and do not always make a positive contribution to the wider area.
- There has been limited development of apartments in the Central City. Instead, a more intense type of town house complex is the usual form of development. These complexes sometimes had issues like privacy conflicts that resulted from their close distance and a lack of space on the ground the limits of the typology have been reached. However, where apartments were built, they were often monolithic in appearance.
- There is a tension between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character.

Overview – Neighbourhood Scale

The neighbourhood scale is principally focused on location, integration, access to services and amenities, as well as the contribution that the development makes to the broader neighbourhood.

The average scoring for the scale is 3.5, with basic satisfactory average scores across the outcomes. Furthermore, the group of developments falling significantly below the basic satisfactory level is relatively small and a third of the sample displayed a well-considered outcome. The overall outcomes for this scale appear consistently satisfactory.

This picture does hide some variability and in particular, the central city developments perform less well and often do not contribute positively to the wider area (A3). By contrast, RMD developments were consistently good in this respect.

Ref	Outcome	Scoring Range	Average	Median
A1	Integration into the existing and or planned site and local context.	1 - 5	3.3	3
A2	Meeting residents' needs and is designed to reflect its location and access to social infrastructure	3 - 5	4.1	4
A3	Contributes positively to the wider neighbourhood and community	1 - 5	3.1	3
	Overall Score	2 - 5	3.5	3.5

Table 1: Neighbourhood Scores by category



Figure 3: Neighbourhood Scale Scores by Development Site

Analysis by Category

All categories displayed an average outcome that was at least basic satisfactory.

The outcome in relation to A2 (meeting residents' needs) was particularly strong with all examples achieving a basic satisfactory score of 3 and having an average of 4.1. This reflects the considered approach to zoning which accounts for a range of location criteria such as access to services, amenities and public transit. This success is therefore at least partly due to good planning practice.

Outcomes in relation to A3 (Contributes positively to the wider neighbourhood and community) were more variable. The overall score of 3.1 was satisfactory, but there is a group of 13 developments scoring below 3. This was the weakest category overall and this is due to variable performances in different zones as described below.

Analysis by Zone

Zone	Average Score
Residential Medium Density	3.7
Residential Suburban Density Transition	3.1
Central City Zones	3.1

Whilst all zones recorded a satisfactory outcome, The RMD zone performed significantly better than others. Performance of RMD sites was very consistent across the three categories with very few examples of poor outcomes to any development. The impact of RMD developments on the surrounding neighbourhood scale is consistently satisfactory and often well-considered.

The same is not true for other zones: 8 of the bottom 10 sites are either RSDT or RCC.

The central city developments performed poorly in category A3 (contributes positively to the wider neighbourhood), and in particular more than half the Residential Central City sites failed to reach a "basic satisfactory" score: RCC developments are not always making a positive contribution to the neighbourhood. They are often inward looking and either lacking in appropriate scale for the location, or where they do have scale they can be monolithic in appearance. The analysis indicates that RCC provisions may be failing to compliment the character of the surroundings.

The same is true for the RSDT sample. Where developments fell short, this was due to an unsympathetic impact on local character (for example setbacks are used for parking or development is oriented with its back to the street). This was caused by the layout of buildings

and fencing on the site rather than inherent to the scale of development, which was found to fit in with the surroundings.

Observations

Zone outcomes and existing character: An incompatibility was identified in some cases between the anticipated outcomes of the zone and the established character, with limited value placed on the existing built form where these clashed. This was notable for the RMD and RCC zones especially, but not for RSDT where the lower density form was usually absorbed into the existing character more easily.

Standardised Typologies are unable to reflect the local context and setting, for example the nature of streets and the character of the area. This requires a specific design response. For example, a typology that works well in a regular mid-block site is different to that which is required at a corner which may need a bespoke design to allow units to address the street and allow for outlook and privacy.

Few distinctive design outcomes in the Central City: There are few differences in the approach to development in the Central City compared to lower density zones, with the majority of developments being individual two-storey townhouse units of a type similar to the suburbs, but built at a higher density, rather than apartments.

The partial exception is a new prevalence of car-free townhouse development in the central city, which is a more intensive form of the same typology.

This may reflect the state of market demand in Christchurch and a perception that a house is more desirable than an apartment. This presents challenges with character and capacity (sufficient density) as well as whether these typologies can successfully address the more active and public central city street environment.

Increased Housing Choice: A variety of house types and sizes was observed, although not usually within the same development. However, the variety of dwelling sizes, which included one, two and three bedroom houses is leading to an increase in housing choice in the city overall.

4.3.2 Street Scale

Key Points

- A majority of developments fall below the "basic satisfactory" threshold, many of them significantly so. Developments are not always contributing to an attractive street scene.
- Tall front fencing and a lack of transition space (such as front gardens or substantial landscaping) was identified as a cause of the poor results.
- Where there is outdoor living space in front of the house it usually results in fencing and screening of the street front
- Other issues were related to the design of front façades and arrangement of internal spaces.
- Where there are poor outcomes with the street scale, these are often caused by poor site layout.

Overview – Street Scale

The average and median scores for this scale both stand at 2.8, indicating that on average, a basic satisfactory score is not achieved and well over half the developments are unsatisfactory. The overall performance is not sufficient to create high quality environments.

Ref	Outcome	Scoring Range	Average	Median
B1	Creating an appropriate sense of enclosure along the street	1-5	3.0	3
B2	Fostering a sense of ownership of the street.	1-5	2.5	3
B3	Activation and articulation of the street façade through openings	1-5	2.8	3
B4	Property boundaries are well defined and enable views of the street.	1-5	2.7	3
B5	Building layout and form appropriately responds to the urban context	1-5	2.9	3
	Overall Score	1.0 - 4.6	2.8	2.8

More tellingly, more than a third (16) of the developments score 2.5 or below, indicating a substantial proportion of development with a street scene response in the "inadequate" category.

At the top end of the scale, there was a small group of 7 developments in or close to the "well-considered" category, with none making it into the top category.

The overall performance is variable, but inadequate in most cases. This indicates that developers who are capable can create projects with a high quality street interface, but conversely that those who are not capable or interested can build poor quality.



Figure 4: Neighbourhood Scale Scores by Development Site

Analysis by Category

The categories with the poorest outcomes were B2 (fostering a sense of ownership of the street) and B4 (property boundaries are well-defined and enable views of the street). The root cause of this was often an ill-considered transition between public and private areas and activities. In the RSDT zone tall perimeter fencing was identified as a particular cause of these problems and scores in this zone were significantly below those elsewhere.

The best performing categories were B1 (creating an appropriate sense of enclosure along the street) and B5 (building layout and form appropriately respond to the urban context). This is an

indication that building height and road setbacks are generally appropriate, although performance in these categories is satisfactory rather than strong.

Activation of the street frontage (B3) was provided to a basic satisfactory standard in 28 of the 46 developments (just under two thirds). There was highly variable performance in this category with 12 developments scoring a four or above. The best examples had well considered frontages well oriented to the street with doors and glazing, the poorest examples had almost no openings, for example only high level windows facing the street.

Analysis by Zone

Zone	Average Score
Residential Medium Density	2.9
Residential Suburban Density Transition	2.4
Central City Zones	3.0

The street scale is particularly poorly resolved in the RSDT zone. Of the eleven developments, three met the basic satisfactory standard whilst the remaining 8 fell short, including two developments in the lowest category ("poor"). Reasons for this were identified as being tall fencing (often due to the location of outdoor living space) and prominent parking areas in the front setback.

RMD developments average 2.9 for the category and were highly variable in quality, including 4 that were well-resolved, and by contrast 7 that were inadequate. Strongest performances were in the B1 and B5 categories, and relatively good RMD performance will have driven the overall results here, noting that there are still a high proportion of unsatisfactory RMD developments.

Central City Zones scored 3 on average, although this was in part due to good performance of two CCMU properties (with the RCC zone scoring 2.8).

The relatively good performance of the RMD units in respect of street scene and building layout is an indication that the predominant two-storey typologies are more suitable for RMD than the inner city. This is reflected in the commentary around many of the central city developments and also reflects what is happening at the neighbourhood scale: the central city is being developed with suburban style housing, at higher densities.

RMD developments performed less well in relation to B2 (fostering a sense of ownership of the street) and the reasons for this are well documented above, relating to the prevalence of fencing, location of entrances and issues around transition space. Central city developments were also weak in this category and a common theme emerging is the lack of activity facing the street.



Examples of front fencing

Observations

A number of observations were made in relation to the street. There is a common theme, being that the space between public and private areas has not usually been well designed. This transition space is a fundamental design consideration that defines the appearance of the development and its relationship with the street. Whilst there are some good examples, in many cases, it appears to have been an afterthought. Increasing the importance of the street interface as a design consideration would substantially improve the quality of developments.

Public Interface with the Street – Failure to provide a satisfactory interface to the street, consisting of a front door and primary frontage facing the street, was common, with most developments facing either sideways to the accessway or internally to the site. This resulted in on-site and street space without sufficient passive surveillance and a limited sense of ownership.

Transition Between Publicly Accessible and Private Spaces – A transition space provides separation between houses and public areas, a space for planting and amenity and a sense of ownership and care towards the street. It provides for privacy, amenity and allows passive surveillance of the street and common property areas. A front garden would traditionally perform this role.

A consistent theme is that transitions are non-existent or not well resolved. Better performing properties often had a traditional interface with the street or driveway, consisting of front door and windows facing the street and associated with a front garden area.

There is a need to ensure that transition spaces are included in the development and welllocated in respect to the street and areas such as accessways. These could include small front gardens next to the street or enlarged landscaped areas creating separation between the fronts of houses and common areas and potentially allowing for personalisation.



Above: Use of the front setback as a separate planted front garden area allows street engagement, surveillance, space for planting and personalisation and transition space. Outdoor living space is behind the building line.

Hierarchy of Space – Linked to the provision of transition space, many developments do not have a clear hierarchy of space (private space – semi-private space – common property – street) and an understanding of the role of the different types of space. Semi private space is clearly in the ownership (curtilage) of a house, but is publically visible.



Above: Hierarchy of Space from private - public

Outdoor Living Spaces - The placement of primary outdoor living space directly adjacent to the footpath creates a stark transition of ownership and results in the need for screening on the street boundary. This may be "permitted" (for instance 1.8m front fencing is permitted by RSDT built form standards) or unofficial (such as post-occupancy installed brushwood screening).

Contribution from the Street - The quality and nature of streets, including the amount of vehicle traffic, has an impact on the street environment separate to the standard of buildings. Improving the desirability and outlook of the street greatly improves neighbourhood quality.



Left: Bishop Street, St Albans (with street trees); Right: Packe Street, St Albans (without)

4.3.3 Site Scale

Key Points

- The majority of developments did not have basic satisfactory site layout.
- An unexpected result is the poor performance of sites in relation to CPTED criteria, related to fencing and inadequate transition space.
- Adequate outdoor living space was consistently provided and internal private amenity usually good.
- Privacy issues sometimes resulted from the location of bedrooms and living areas within houses, and from the location of outdoor living space next to the street or accessways.
- There was consistent poor performance relating to communal spaces such as accessways, with the exception of car free central city developments. Landscaping was consistently under-provided and not enough space was allocated to it.

Overview – Site Scale

The average score of 2.7 indicates that developments do not achieve a basic satisfactory outcome in relation to site layout on average. This shows that poor or unsatisfactory site layout was evident in the majority of medium density developments sampled.

The top third of development records a basic satisfactory performance and there was only one example of a well-considered site layout.

The remaining two-thirds of developments were at least some way short of satisfactory with the bottom third clearly in the "inadequate" category and three being rated "poor".



Figure 5: Site Scale Scores by Development Site

Site	Outcome	Scoring	Average	Median
		Range	Score	
C1	An integrated and comprehensive approach to the layout of buildings and spaces	1-4	2.7	3
C2	Provides for housing choice	1-5	2.9	3
СЗ	Respectful and responsive design of interfaces and activities relating to neighbouring properties	1-5	3.1	3
C4	Comprehensive approach taken to the design and quality of paving, landscaped areas and open space.	1-5	2.3	2
C5	Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety)	1-4	2.5	2.5
C6	Appropriate provision and location of private outdoor living spaces	1-5	3.2	3
C7	Appropriate provision, location and design of communal open space	1-4	2.5	2
C8	Provide for the safe and efficient movement of pedestrians, cyclists and vehicles	1-5	3.1	3
C9	A sound car parking strategy is utilised, and the visual impact car parking where provided is minimised.	1-4	2.8	3
C10	Efficient and effective provision of services and storage areas	1-5	3.1	3
C11	Incorporation and promotion of sustainability across the site	1-4	1.8	2
	Overall	1.6-4.2	2.7	2.8

Analysis by Outcome Category

Across the outcomes, there were two areas which were in the inadequate category, with scores of around 2. These were C4 (Comprehensive approach taken to the design and quality of paving, landscaped areas and open space) and C11 (Incorporation and promotion of sustainability). A third area of weakness is C5 (Reduce opportunities for crime) which recorded 2.5.

Another observation is the good performance of C6 (outdoor living space) as opposed to the poor performance of C7 (communal outdoor space, which included common areas such as accessways). This poor performance of the communal space is also reflected in the more variable performance of sites against the criteria in C8-10. This indicates an under-allocation of space and resources to communal areas.

Finally, the proposals recorded a basic satisfactory score against C1 (increasing housing choice). Developments were often of a single typology, but did increase the choice of housing in the wider area.

The poor performance in C4 is in spite of relatively well-rounded provisions in the District Plan. In most cases the landscaping, particularly within communal or publicly accessible spaces was poorly considered and very limited. Generally very little space was given to landscape beyond that of the hardstand that formed the vehicle access. What was included had minimal impact, low visual amenity and little ecological value. There were only a few good examples.

With regard to C11, in the absence of comprehensive sustainability provisions within the District Plan, it was expected that this would be an area of weakness. Developments that performed well usually did so through the incorporation of stormwater management, landscape treatment, technological additions or food growing within communal areas. There were, however, very few examples of this and the majority of developments rated inadequate or below.

A particularly significant and unexpected finding is the poor overall score for C5 (Reduce opportunities for crime), which has some focus in the District Plan. This reasons for poor performance are often associated with fencing, and the interface between public and private areas either not providing opportunities for passive surveillance or not providing for privacy (so that people close their curtains). There is also a notable lack of transition space and front garden areas which support the principles of territoriality and image management (that a space has a legitimate use and is cared for). There appears to have been a narrow focus on surveillance and access control rather than the full spectrum of CPTED principles.



Above: CPTED strategies (Adapted from Cozens et al, 2005)

Scores relating to the appropriate provision of private open space stood out as a positive (C6). Gardens were generally well-proportioned and located and were usable and accessible. They worked well from a user perspective, but it is noted that they did often create issues with respect to the street interface when private space is located next to the street, instead of transition space.

This was in contrast to the score for C7 (Appropriate provision, location and design of communal open space). This includes the design of common space including accessways and recorded an inadequate outcome in the majority of cases. Limited amenity environments which were frequently car dominated were prevalent, with little effort made to create a quality accessway. This reflects the situation described under C4.

Scores for C8, C9 and C10 were generally satisfactory overall. These related to functional aspects of the development included car parking and servicing. The overall scores do hide some variability. For instance, the car-free developments in the central city tended to provided safe and high amenity access whilst some of the other accessways were found to be car dominated,

including with additional cars parking in common areas (eg in front of garages). Bin storage was sometimes poorly screened or reduced the usable garden areas.

A basic satisfactory score was recorded in relation to C3, the interface with neighbours, which was generally satisfactory, although the performance was variable with some good and some bad examples. Overlooking of private areas was identified as a problem in a minority of cases along with some issues of visual dominance. This may be an issue which some developers are aware of and considerate of, but it may not be being adequately managed where they are not.

Analysis by Zone

Zone	Average Score
Residential Medium Density	2.7
Residential Suburban Density Transition	2.7
Central City Zones	2.8

The scores for the different zones were very consistent, and did not meet the basic satisfactory threshold.

RMD properties averaged 2.7, in line with the overall score. They followed the general trends in the scale outlined above, with satisfactory private space and lower quality communal space.

RSDT properties also scored 2.7. They performed better than average in respect of C3 (interface with neighbours), likely because of a lower intensity and a higher proportion of single storey units. They performed worse with regard to housing choice (C2) because they often provided a similar outcome to the established dwellings in the area. They also under-performed with regard to C7 and C8 which relate to communal space and accessways, which were often unlandscaped.

The central city sites likewise tended to follow the general trends with certain exceptions. They averaged a respectable 3.5 for C8 (Provide for the safe and efficient movement of pedestrians, cyclists and vehicles), largely due to the influence of the car free developments, illustrating the adverse impact that cars have on developments if not well managed. They scored lower than other areas for storage and for the interface with neighbours. There were particular issues with privacy for some developments, and a lack of suitable space for servicing. This reflects the pressure on space: that the same houses are being fitted in closer together. This density creates more challenges and potential conflicts (such as smaller gardens or reduced privacy) which could be resolved with a different form. Developers may have reached the limit of what can be achieved with high density two-storey houses, but there were few good examples of the next level of density (3-4 storey houses and apartments).

Observations

Site planning is largely piecemeal and appears to be focussed on vehicle access, unit orientation and maximising yield, with little attention paid to creating high quality environments. This resulted in communal areas that were low quality, provided a poor sense of arrival and limited outlook for residents. The spaces functioned as service areas rather than a positive shared amenity. To a large extent this is due to a lack of space being provided as opposed to other design choices.

Over-reliance on off-site amenity – Many of the neighbourhoods lack smaller, more localised, offsite spaces to offset the intensity of development, and streets were often limited in amenity (for example no street trees). The developments (and rules) rely on a higher quality of public environment than is usually present.

Accessway design – There needs to be a greater focus on the overall design and amenity of accessways. These usually provide the principle access to each unit by foot and car but often lack a comprehensive landscape design, appropriate separation between the accessway and units or a clear pedestrian access. In some cases the driveway was used in ways that were not intended, but were foreseeable. Examples include bins stored on accesses where individual storage areas were inconvenient, and cars parked in manoeuvring spaces (in front of garages), sometimes blocking access to front doors.

Crime Prevention Through Environmental Design (CPTED) principles were not well implemented in the proposals. The developments usually provided windows overlooking streets and accessways but this did not always translate to oversight of public areas due to fencing obstructing views and a lack of separation meaning that privacy was compromised – occupiers responded to their environments by closing curtains. This tension between oversight and privacy is a key issue to resolve through site planning rather than mitigation which is often unsatisfactory. Other issues identified are a lack of a sense of ownership for the semi-private areas and not enough custodianship of the landscaped areas (which may lead to a lack of long-term maintenance). Most seriously, a number of developments contained entrapment spaces which can create risks for concealment and physical assault.

4.3.4 Building Scale

Key Points

- The RMD and RSDT sites scored much more highly in the visual appearance related outcomes than the central city sites. The Central City is not achieving a basic satisfactory score in these matters.
- The functional outcomes were consistently basic satisfactory or better.
- The outcomes relating to innovation and sustainability were almost never achieved.
- Detailed architectural design appears to be being used to attempt to mitigate problems caused by poor site layout.

Overview – Building Scale

The building scale covers a variety of outcomes, from functional aspects through to visual qualities. While some are based on aesthetics, they have been measured based on performance with respect to urban design outcomes rather than architectural merit or taste.

This category is made up of three distinct sets of outcomes: Appearance related matters (D1-D5), Functional outcomes (D6-D10) and Sustainability and Innovation (D11 and D12). There is a breadth of subject matter and it is not surprising that there is significant variation in the average scores and scoring ranges.



Both the average and the median were close to 3 in this category overall. The performance is quite variable with consistent good performance in some categories and under-performance in others.

Whilst performance is satisfactory on average, there is variation across the sites and zones. The most striking finding is the difference in the appearance related matters in the central city compared to the better performing RMD and RSDT zones. These outcomes are not being achieved in the central city, which may reflect the more intensive development or the relatively relaxed zoning provisions.

Sub - Category	Building	Outcome	Scoring Range	Average Score	Median
Appearance Related	D1	A visually interesting and cohesive approach to the building form	1-5	2.9	3
	D2	Variation and steps in the building line	1-5	3.2	3
	D3	Sufficient breaks in the roofline	1-5	3.2	3
	D4	Designing to a domestic scale	1-5	3.0	3
	D5	Use high quality materials	1-5	3.1	3
Functional	D6	Coordinated internal/ external relationship	2-5	3.3	3
	D7	Provision of adequate storage	2-5	3.6	4
	D8	Logical and efficient layout	2-5	3.6	4
	D9	Protecting privacy and minimising overlooking	1-5	3.0	3
	D10	Enabling of natural ventilation, solar gain and daylight penetration	1-5	3.7	4
Innovation and Sustainability	D11	Promotes energy efficiency and incorporates sustainability features	1-4	1.8	2
	D12	Demonstrates innovation and creativity in build design, form and function	1-4	1.3	1
		Overall	1.9 - 4.3	3.0	2.9

Meanwhile, the functional outcomes are met quite consistently and those for sustainability and innovation are almost never met.

Approximately half of the developments met the basic satisfactory threshold or were close to it, and satisfactorily addressed basic urban design principles, with a fifth being in the well-considered range. However, a third of developments fell significantly short of the threshold.

Analysis by Outcome Category

Appearance Related Outcomes (D1-D5)

Outcomes D1-D5 are focussed on the visual aspects of the building and are consistently close to the basic satisfactory threshold. The best performing are D2 and D3 which relate to steps in the building line and the roofline respectively. These matters that shape the building envelope were usually met satisfactorily, although there was variability across the zones. Performance in relation to D4 and D5 was somewhat lower overall. These matters relate to the more detailed resolution of the design.

The lowest score of these five outcomes was D1 "A visually interesting and cohesive approach to the building form". Scores in this category were much more variable, with a small number of "best-practise" scores balanced by some poor outcomes. Sites that scored poorly in D1 usually also recorded lower scores in some of the other categories. A common theme in the poorest performing sites is the use of tack-on features like variations in cladding to mitigate poor site layout or monolithic buildings, notably within the central city.

The relationship of D1, which is concerned with overall appearance, to the other appearance – related scores suggests that the individual rules and requirements are understood, but that the bigger-picture goal of cohesive design has not been so consistently met. Developers may be using the individual elements to mitigate more deep-lying issues (e.g. creating interest with steps) rather than dealing with the root cause.



Example of visual interest in a medium density development

Functional Outcomes (D6-D10)

Outcomes D6-D10 are focussed on functional aspects of the design. The developments performed relatively well, particularly with respect to the arrangement and proportions of living spaces, connection to outdoor living space and storage. This is a positive result given that space can be quite constrained on medium density sites, especially at the ground floor. These are all matters that directly benefit the internal private amenity of the occupants.

Sustainability and Innovation (D11-12)

Within the scale, two outcomes stand out with notably low scores. As within the Site category there is a shortcoming related to sustainability (D11), with an average of below 2 likely to be linked to the limited measures within the district plan.

The poorest performing outcome across the assessment was D12, the demonstration of innovation and creativity. Only one site recorded a basic satisfactory score in relation to this outcome, with the remainder of sites taking a more standardised and formulaic approach.

Analysis by Zone

Zone	Average Score	D1-D5	D6-D10
Residential Medium Density	3.1	3.3	3.5
Residential Suburban Density	3.0	3.2	3.4
Transition			
Central City Zones	2.8	2.7	3.4

There is a disparity evident in the visual appearance outcomes, between the performance of the RMD and RSDT sites which each averaged comfortably over 3, and the central city sites, which averaged 2.7.

This was particularly evident for D2 and D3, which indicates central city designs may be quite monolithic; and the low scores occur through both townhouse types and apartment blocks. The cause may be an increase in intensity compared to RMD sites, or the more relaxed zoning. These lower scores are reflected in a lower score for D1 visual coherence and the conclusion is that central city developments are unsatisfactory for the visual appearance criteria.

By contrast, RMD developments are comfortably in the satisfactory range, averaging 3.3 and the highest performing zone overall. For all zones the best performing outcome was D10 enabling natural ventilation, solar gain and daylight penetration. With the exception of D11 and D12, RMD sites scored 3.4, which is comfortably within the satisfactory range overall. This good overall performance does disguise some variability and some individual developments (around a quarter) which were significantly below the basic satisfactory threshold.

RSDT also scored well overall. RSDT typologies are often formed using standard group housing type plans joined together, which generally have more complex rooflines and feature steps in the walls. The lowest scores were from more standard medium density typologies which were often quite boxy (lacking variation in form) and appeared out of place when surrounded by low and moderate densities. These were a small part of the sample but this is a typology that is permissible and could become more prevalent depending on market trends.

Lower scoring RSDT categories were D4 and D5, designing to a domestic scale and use of high quality materials. For D4, there was very variable quality, with some developments including a good proportion of glazing and some providing very little. There was often the use of a single material with little in the way of detailing or visual interest or variation in colour. Developments that scored higher overall had a notably better use of materials.

Observations

Building architecture – There is an over-reliance on architectural detailing to act as mitigation for more fundamental site layout and building form issues. This is a predominant issue in matters relating to visual dominance and engagement with the street. For example, where a development has not appropriately addressed the street with its primary frontage and main entrance, this has been mitigated through incorporation of a secondary entrance towards the street and inclusion of additional articulation, such as changes in cladding, to break up the

façade. This however does not address the more fundamental issues of passive surveillance, activation and sense of ownership of the street.

The lower scores in the central city zones reflect higher densities where architecture is being used to mitigate issues with site layout. The higher densities make this a less effective approach than in other zones.

Standardised typologies – Standardised typologies may not take into account the context and result in a range of poor outcomes. Whilst standardised typologies are often appropriate, there will be sites that require a more bespoke approach. For example, typologies suitable for midblock locations may not be suited to corner sites, or suburban typologies delivered on more space constrained sites may result in a car dominated environment. An observation from the RSDT zone is that bespoke designs performed significantly better than standard types.

Mix of typologies – With a few exceptions, most developments have only a single typology on the site, with potentially some changes to articulation and layout. There may be some interest in the form, but on larger sites the uniformity of the architecture can create a bland outcome.

Creativity and innovation – Given the constrained nature of sites, there is a need and opportunity for creativity to craft individual solutions to suit the site. This was limited in the sample, although the potential was illustrated by one development with a bespoke typology that made best use of a rear section by using multi-functional spaces.

5 Design Issues

From the consideration of urban design outcomes presented in the previous section, a number of overarching design issues have been identified. These are as follows:

- There is a tension between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character due to the scale and form of development.
- Despite the more enabling zoning, there has been limited development of apartments and higher density in the Central City. More intense town house complexes are most common. Where more intense apartment development was built, it was often monolithic in appearance.
- RSDT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density. This is particularly in regard to the street interface and communal areas.
- Developments do not always contribute positively to the street scene. High front fencing and a lack of front gardens and front doors facing the street were identified as issues, along with outdoor living space located adjacent to the street.
- House layouts often had bedrooms adjacent to accessways and the street rather than kitchens or living rooms. This creates privacy conflicts and does not achieve passive surveillance.
- CPTED outcomes are not being achieved and there is a focus on surveillance (which was not always successful) and access management rather than a broad based CPTED approach.
- There was consistent poor performance relating to communal spaces such as accessways. Landscaping was consistently under-provided and the sense of arrival was undermined by dominance of car parking and service areas. There was no clear hierarchy of space and the purpose of space was not always clear.
- The majority of developments did not have basic satisfactory site layout. This was the root cause of issues including CPTED, the poor street interface and the poor amenity of communal areas. A lack of a clear hierarchy of space was a particular problem.
- Building scale outcomes were mostly met. However, Central city developments were often monolithic and RSDT developments sometimes lacked detail and human scale.
- The outcomes relating to innovation and sustainability were almost never achieved.

The majority of these issues are related to poor site layout and a particular theme is the street interface (and that with accessways). There has been insufficient space allocated to front gardens or communal space and the resulting environment is not as safe or as pleasant as anticipated. Developers also need to consider how the internal layout relates to public areas, to avoid privacy issues and ensure that good surveillance is achieved.

These issues are presented by zone in the table below:

SCALE	ISSUE (Problem)	RSDT	RMD	CC
Neighbourhood	Lack of suitable high density typologies	No	No	Yes
	Tension between existing and anticipated character	No	Yes	Yes
	Scale of development is not well matched to location (services/trans)	No	No	No
	Limited increase in housing choice	Some	No	No
	Tall fencing or screening	Yes	Some	Yes
	Prominent car parking	Yes	No	No
Street	Location of entranceways (developments without front door(s) facing the street)	Yes	Yes	Yes
	Insufficient landscaped threshold / transition	Yes	Yes	Yes
	Insufficiently engaging front facade	Yes	No	Yes
	Poor quality accessways	Yes	Yes	Yes
	No space for servicing	Yes	No	No
	Poor CPTED outcomes	Yes	Yes	Yes
Site	Poor indoor / outdoor private space	No	No	No
Cito	Indoor privacy issues	Yes	Yes	Yes
	No clear hierachy (and purpose) of space	Yes	Yes	Yes
	Outdoor living space location (privacy issues / fencing issues)	Yes	Yes	Yes
Building	Poor visual appearance (form)	No	No	Yes
	Poor visual appearance (articulation)	Yes	No	No
	Poor functional outcomes	No	No	No
	Innovation / sustainability outcomes not met	Yes	Yes	Yes
6 Comparison with Previous Studies

6.1 Overview

A previous study was carried out in 2009, using a similar methodology, and was the basis for amendments to the District Plan at that time, which were implemented in 2011 and operative until 2016 (when they were replaced by the current District Plan).

Whilst a direct comparison is not possible, there are some clear insights to be gained from comparing the studies.

The criteria used for the original study were geared towards amenity, with a focus on street scene and appearance. Whilst these matters are part of the new assessment, the current study is more comprehensive and better reflects what is now considered to be best practice.

Comparing the raw results is not meaningful but what is possible is a consideration of the narrative in the two studies and a conversion of the newer data into an approximation of the 2009 methodology – the earlier criteria generally have an equivalent in the new set.

Two diverging trends are evident: An improvement in outcomes in the RMD zone and a deterioration in the RCC zone.

The original study did not include consideration of the Living 2 zone (equivalent to RSDT), so any comments are restricted to Living 3 (RMD) and Living 4 (RCC).

Some observations in development trends between the two samples were:

Site layout – An increase in the use of standardised typologies was observed. These can be harder to integrate into smaller sites than bespoke designs.

Density – An increase in density between the two surveys:

For the L3 zone in 2009, 70% of sites were below 50 household/hectare (site density), with the most frequently occurring density being between 40 and 50hh/ha. In 2019, the equivalent for the RMD zone was 40% below 50 hh/ha with density being concentrated between 48 and 65 hh/ha.

For the L4 zone, the majority of 2009 developments (54%) were higher than 70 hh/ha. In the RCC the equivalent was 75%.

In 2009 it was observed that higher density was correlated with lower scores, however it is not possible to discern this trend in the recent data. This may be due to a more limited sample size.

Building form – Although there is an expectation in the current District Plan framework that the bulk of building is managed, outcomes have not necessarily improved. This may be related to the increase in density and a greater need to maximise the building envelope.

Street scene – New developments usually have a greater emphasis on frontages addressing the street and an improved approach to the street boundary, and the street interface has improved since 2009, in the RMD zone at least.

6.1 Comparison by Zone

6.1.1 Residential Medium Density Zone

Results in the RMD zone are significantly improved overall, with improvements in most categories.

In particular, all street scene criteria show at least some improvement as does *Material use and Quality* and *Elevation Setback* (although this is mapped to D1: A Visually interesting and coherent approach to the built form).

Of note is the improvement in Outdoor Living Space, a direct comparison and a focus of the previous study which noted particular problems in the L3 zone.

Under the translated criteria, RMD outcomes have improved from 2.6 to 2.9. Whilst not representing best practice, there has been positive progress. It is also important to remember that this has taken place in the context of increasing density. This factor may explain the lack of improvement for continuous building line and building roofline. Newer developments use more of the building envelope, with less scope for variation in form. The same is likely to be true of privacy (which has declined slightly) – higher density units are often more intrusive.



6.1.2 Residential Central City Zone

In contrast to the RMD outcomes, Residential Central City Developments appear to be lower quality than those in the 2009 study. This trend is most pronounced for building form outcomes, and more mixed for street scene matters.

The previous study results differed from the new ones in that L4 outcomes were better than those in the L3 zone. This position has reversed in the new survey with RMD significantly outperforming RCC.

One observation is that there has been a move away from apartment typologies for lower density developments towards townhouses. In a central city context, there is an increased desire to

maximise the built form within the context of the typology and a terrace is often a less efficient use of the site. This may be the cause of the poorer outcomes in relation to site layout – the new typologies are less suitable for their context.

It is also the case that the bigger drops in performance have come in the categories where scores were highest in 2009. Aspects of relatively good performance have become areas of poor or middling design quality.

The sample size in the residential central city is quite small and these results require further investigation to confirm the veracity of these trends.



7 Assessment against the Christchurch District Plan

6.1 **Objectives and Policies**

6.1.1 Policy Framework

The relevant objectives and policies in the Christchurch District Plan are outlined below. The principle design related objective in the District Plan is 14.2.4:

14.2.4 Objective - High quality residential environments

High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, enhance local character and reflect the Ngāi Tahu heritage of Ōtautahi

In implementing this objective, the most relevant policy is 14.2.4.1:

14.2.4.1 Policy - Neighbourhood character, amenity and safety Facilitate the contribution of individual developments to high quality residential environments in all residential areas (as characterised in Table <u>14.2.1.1a</u>), through design:

- *i.* reflecting the context, character, and scale of <u>building</u> anticipated in the neighbourhood;
- *ii.* contributing to a high quality street scene;
- *iii.* providing a high level of on-site amenity;
- *iv. minimising noise effects from traffic, railway activity, and other sources where necessary to protect residential amenity;*
- v. providing safe, efficient, and easily <u>accessible</u> movement for pedestrians, cyclists, and vehicles; and
- vi. incorporating principles of crime prevention through environmental design.

This policy is implemented through a framework of rules and assessment matters that vary by zone, and are discussed in the next section. The success of otherwise of the policy framework is dependent on successful application of an appropriate set of rules.

Of the policies above, nos. i-iii and vi are the most significant contributors to good urban design outcomes and the summary focusses on these.

Also relevant is policy 14.2.4.2. Whilst this policy is primarily concerned with the approach to planning and processing applications rather than outcomes, item (v) has some relevance. It seeks some sustainability related outcomes, however it is notable that there are no rules that would implement this aspiration:

14.2.4.2 Policy - High quality, medium density residential development

v. promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design;

Policy 14.2.4.4 (ii) is concerned with the character of low and medium density areas, with item (ii) being concerned with medium density areas:

14.2.4.4 Policy - Character of low and medium density areas

ii. medium density areas are characterised by medium scale and density of buildings with predominantly two or three storeys, including semi-detached and terraced housing and low rise apartments, and landscaping in publicly visible areas, while accepting that access to sunlight and privacy may be limited by the anticipated density of development and that innovative approaches to comprehensively designed, high quality, medium density residential development are also encouraged in accordance with Policy 14.2.4.2.

A detailed assessment of the response to policies is set out below, in which it is noted that the developments do not meet the policies because they do not consistently meet a "basic satisfactory" standard, let alone the "high quality" required by some of the policies.

A general observation is that the issues are related to site layout and that whilst there are policies which manage most of the aspects of development, there is no fundamental requirement for good site layout. This may encourage the use of mitigation measures to flawed designs, rather than an approach that unsuitable design should be tackled through changes to site layout.

Otherwise, the policies broadly describe good practice urban design, and the urban scales methodology provides a sound basis for assessing how effective their implementation has been.

There is clearly a balancing act to be achieved in ensuring good urban design outcomes and other matters that may be sought by the plan, that are beyond this report. However, in achieving this balance it is reasonable to assume that an overall "basic satisfactory" score is a reasonable minimum standard, and that in some cases, notably where "high quality" is required, a higher score, possibly in the "well-considered" range, is a more appropriate benchmark.

Given that the main Objective in the plan is for "High Quality Residential Environments" it would be expected that more than "basic satisfactory" outcomes would be obtained at least most of the time. With the average development sitting around this basic satisfactory level, and a substantial proportion being below it, it is clear that the policies are not being met.

Some amendments to the policy framework are suggested but in the main the failure to create consistent high quality is likely to be in the rules framework and its implementation, discussed in the next section.

Reflecting the context, character, and scale of building anticipated in the neighbourhood

This policy is generally equivalent to the neighbourhood scale.

The sample developments appear to broadly meet this policy to a large part due to their zoning. Developments in all four zones scored well with regard to neighbourhood level outcomes and in particular that the type and intensity of development was appropriate to the neighbourhood. This indicates that the approach taken in the Plan to zoning, which has matched density to the level of provision of facilities, has created appropriate outcomes.

There were some potential issues noted in respect of context and character:

- Whether the area is an established medium density area, or whether existing housing is of a more traditional stand-alone type, new medium density development is introducing a change in form. In the latter case it can look incongruous with a larger scale building with a greater visual impact and a different character. A similar issue was observed at the edge of neighbourhoods or zones, where new development fitted its underlying zone but could contrast with what had been built nearby.
- Conversely, in the central city, the scale of development was observed to be insufficient to fit the more intense urban environment because of the use of suburban typologies. In



these instances the developments may not have provided the scale of development anticipated but may have fitted the existing character better.

In an established medium density neighbourhood, new development fits the existing character

The above points highlight an obvious challenge with intensification where the anticipated character is different to the expected.

The policy appears to place little weight on the retention of any existing housing, regardless of its age and condition. The emphasis is on the type of building <u>anticipated</u> in the neighbourhood. This carries an implication that it should reflect the zone and rules rather than its surroundings.

There is a social and environmental value in retaining some existing housing stock (for example in terms of retaining a sense-of-place and also in the embedded resources used in its construction). This may conflict with the objective of increasing density but at present it does not appear to be given much weight at policy level. In effect this tension seems to have presently been resolved in favour of allowing new development without consideration of its impact on existing character. The impact on the ground is that new buildings can appear incongruous in their environments. However, it is not clear how easy it would be to resolve this tension in reality.

This issues were observed in the RMD and Central City zones, but was not so apparent in RSDT where new development was found to a more comfortable scale which sat well within its context.

Contributing to a high quality street scene

The quality of the street interface was identified as being unsatisfactory in a majority of developments throughout the sample and it is clear that development does not consistently contribute to a high quality street scene. It seems clear that this policy is not being met.

Creating a good street interface requires a well-considered approach to the whole development, not just the front façade. However, development is space-constrained and the use of space is contested. As noted in the RMD / RCC zone report (Boffa Miskell, 2020): "without an appropriate layout or proper consideration for access and order of space across the overall development, achieving a balanced outcome that delivers for both the street and the development is very difficult". This identifies that the issue with street interface is often an issue with site layout.

The approach used in the sample appears to be about boundary treatment, placement of habitable spaces and building articulation. These each can make contributions to a high quality frontage, but they are being used to mitigate problematic site layout.

In particular, the presence of outdoor living space at the front of the site was identified as a cause of poor-quality street frontages.

In essence the policy appears to be sound, but is not being realised in practice. The policy seeks "high quality" which certainly means at least a basic satisfactory response from each development. Given the clarity of the policy, the cause of the underperformance must lie with the rules and implementation.

Providing a high level of on-site amenity

This policy maps in part onto the site scale, although is more restricted to amenity on the site, as opposed to how the site affects its surroundings. The majority of developments did not have basic satisfactory site layout.

Whilst space is constrained on medium density developments, this places a greater emphasis on design to generate adequate amenity. It is also noted that developments generally achieve a much higher density than expected and as such space should not necessarily be a problem. There is an unwillingness to set space aside to achieve amenity aims, rather than a physical shortage of space.

There was generally a good level of private amenity within the developments, but they did not score highly for the amenity of common areas such as accessways, which are often treated like service entrances rather than front accesses.

The policy is quite directive in seeking a "high level of on-site amenity" which implies a positive response is required. This is clearly not being achieved. However, it is not clear what exactly is meant by "a high level". It is certainly likely to mean that every development should be at least basic satisfactory, but it is uncertain whether or not a higher standard is intended than what is a basic urban design response. Some clarification of this would be helpful.

Notwithstanding the above and as for the previous policy, the cause of the inconsistent performance in relation to this policy must lie with the rules and implementation.

Incorporating Principles of Crime Prevention Through Environmental Design

The urban scales assessment framework includes a matter directly related to CPTED (C5), which indicated an unsatisfactory response overall, with half the developments failing to rate as at least "basic satisfactory" on the assessment matrix. Given the existence of a specific policy for it, this was an unexpected finding.

Whilst CPTED matters appear to have been incorporated into designs, these measures often seem to be afterthoughts, to meet consenting requirements. This means that they often do not result in the best CPTED outcome. It also means that it compromises other outcomes such as privacy both within the house and of outdoor living spaces.

A typical example is when outdoor living space has been placed at the front of the site, and transparent fencing used to provide observation of the street. This creates a trade-off between privacy and street oversight when a high quality outcome requires both. In this case, the site layout is the cause of the problem and tenants often resolve it by retrofitting screening at the expense of CPTED outcomes. Another example is where bedroom windows are placed directly next to accessways to provide overlooking, but result in loss of internal privacy from people walking past. In this case, the result is often that curtains are drawn and CPTED outcomes again unrealised. In both cases, the site layout causes problems and the mitigation is unsuccessful.

The problem is identified by Boffa Miskell as a failure to undertake design in a comprehensive fashion and a need to have stronger District Plan provisions for site layout identified as a solution. In essence, without more thorough consideration of site layout, it is too late to get good CPTED outcomes.

The District Plan includes assessment matters in the RMD and RCC zones for CPTED, but not for other zones. Performance was poor in all zones, but marginally worse in RSDT where there is no management of the issue in the Plan.

The policy is not met, in this case by half the developments.

Promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design;

The policy is concerned with sustainability, but it has no methods associated with it that might achieve these aims in medium density environments. Scoring against these matters was consistently in the "poor" and "inadequate" categories. This policy is having little effect.

The way that the policy is worded ("promote") does not require compliance and as a result there are no rules associated with it. The policy may encourage these desirable elements in a development, and allow them to be weighed as positives in an application process. However, if widespread adoption of these aims is sought, a more directive policy is required.

Character of low and medium density areas

The policy clause is as follows:

medium density areas are characterised by medium scale and density of buildings with predominantly two or three storeys, including semi-detached and terraced housing and low rise apartments, and landscaping in publicly visible areas, while accepting that access to sunlight and privacy may be limited by the anticipated density of development and that innovative approaches to comprehensively designed, high quality, medium density residential development are also encouraged in accordance with Policy 14.2.4.2.

This policy contains a few considerations.

The first is concerned with scale (being medium scale) and lists some development forms which are generally met. Most development in medium density areas is two stories. There were a few examples in the central city that were higher density and this policy aspect is met by the sample.

However the central city also caters for higher densities, which the council clearly supports in its wider policies and by virtue of matters such as height limits in some areas. In general there seems to be a disconnect between what is meant by medium density housing and what is desired in the central city. There is a very wide range of developments encompassed by the term medium density, essentially being anything over 30 households per hectare up to a likely practical maximum of around 250 in parts of the central city. There is also no policy for this high density housing, when it is obvious that such housing is intended as part of the central city. It may be that a better framework would emerge if the difference between the central city density and surrounding areas was more explicit.

The second statement refers to landscaping in publicly visible areas. This has been notably problematic and it is clear that this aspect of the policy is not being fulfilled. There are assessment matters in the RMD zone which require landscaping so it is surprising it is not delivered given the framework that exists and the explicitness of the policy.

The next clause notes that access to sunlight may be limited by the anticipate density of development. This sets up a tension between this policy and 14.2.4.1 (iii) providing a high level of on-site amenity. Whilst questioning whether a high level of on-site amenity is provided if sunlight access and privacy is limited, it is also worth noting that the anticipated density does not necessarily require this compromise as is shown by the majority of developments that achieved a

basic satisfactory score. This may be a matter that should be applied to a high density environment only.

The final matter concerns innovative approaches to comprehensively designed, high quality, medium density residential development. This (D12) was the worst performing category in the assessment and the reliance on standardised houses rather than site specific design has been identified as a cause of site layout issues. This aspect is not being achieved.

Overall, the anticipated scale is mostly being achieved, however the landscaping is not, the privacy is often compromised (but probably unnecessarily) and innovative approaches have not been forthcoming.

6.1.2 Rules and Assessment Matters

Each of the four zones has a different set of rules and refers to different assessment criteria for a breach of those rules. A full assessment of the rules framework is not within the scope of this report, but some general observations can be provided.

A key difference between the zones is the assessment category that proposals are assessed under. This affects whether they are permitted "as of right" development, or whether some sort of discretionary consent is required (which may allow Council to influence the form of development). It also affects some of the bottom lines that must be considered (for instance window setbacks on internal boundaries to manage privacy).

Zone	No of units above which RD consent required
RSDT	4
RMD	2
RCC	2
CCMU	N/A

The activity status in the four zones is shown below:

CCMU is clearly the most relaxed zoning in regard of when applications are required. However, RSDT developments are often of a single site and undertaken by a small developer so in practice the limit of 4 units is permissive. For instance, none of the 11 RSDT developments assessed would have required restricted discretionary (RD) assessment.

6.1.3 Built Form Standards

RULE	RSDT	RMD	RCC	ССМИ
Landscaped Area	20%, 1 tree / 250m2	20%, 1 tree / 250m2	20%, 1 tree / 250m2	2m front strip (5%) 1 tree / 10m
Height	8m	11m	Varies - usually 11- 14m	Varies - 14-17m
Site Coverage	40%	50% (inc eaves)		
OLS size	30m2 / 4m dimension	30m2 (16m2 private)/ 16m2 (1 bed) / 4m dim	24m2 (8m2 private) / 4m	20m2 / 4m
Balconies		6m / 1.5m	8m2 / 1.5m	10m2 / 1.5m
Recession Planes	2.3m, Diag B (30-55)	2.3m, Diag C (35-55)	2.3m, Diag C (35-55)	
Upper floor window setback	4m	4m	4m	
Road Boundary Setback	4.5m (2m for garages)	2m (house - garage 1.2m behind)	2m (house - garage 1.2m behind)	0m or 2m
Setback from Accessways	1m	1m	1m	
Front fences	1.8m	50% transparent	1m, except where screening servicing or OLS	50% transparent
Overhangs		0.8m		
Ground floor habitable space		50%	30%	
Service spaces		Min dimensions	Min dimensions / screened	Behind principle building
Parking	1 space / unit	1 space / unit		

A comparison of urban design related built form standards is shown below:

Some observations are:

- The 20% landscaping seems like a generous coverage but has not resulted in welllandscaped development. It is often placed in private areas and does not implement policy 14.2.2.4 which seeks landscaping in publically visible areas.
- Height rules between the zones are generally an extra storey for each up-zone (2 in RSDT, 5 in CCMU).
- RMD includes a reduced size Outdoor Living Space for 1 bedroom units not provided in RCC. This is not consistent with the direction of policy to increase density in the central city. Similarly, balcony dimensions increase with the increase in zone density. Furthermore, there is no difference in recession planes in the central city compared to RMD (except for some of the special high height areas). Recession planes often limit density especially for narrow sites.
- The restrictions in fencing types have not overcome the street interface issues associated with outdoor living space at the street front. This rule is not sufficient to enforce policy 14.2.4.1 (ii).
- A 1m separation is required with accessways is almost never provided. The assessment matters include reference to landscaping but not CPTED. This has been identified as an issue and seems to be a matter for implementation.
- For RSDT the approach has been to use "traditional" bulk and location type zoning methods as used for single houses and not to introduce new rules for small unit

complexes. This does not recognise that there are unique challenges created due to the greater intensity of development and that pressure on the site results from the need to accommodate car parking, servicing and outdoor living spaces as well as an increase in built form.

- The CCMU zone was intended as permissive and does not have design provisions.
- In terms of built form standards, the main difference between RMD and RCC is the lack of site coverage and car parking as well as height. The reduction in car parking is the driver of higher density in many developments. Where taller buildings are established, they often also have reduced car parking. It is worth considering whether there is enough difference between the zones if the intention is to encourage more density in the central city beyond the row houses that currently dominate.

6.1.4 Assessment Matters

There are two sets of assessment matters which are triggered as a restricted discretionary (RD) activity when the minimum number of residential units is exceeded. These are the primary means of implementing the policies.

The CCMU zone has no RD threshold and developments are always permitted unless a built form standard non-compliance is triggered. Given the permissive built form standards there is clearly the potential for poor quality development to be established: although the sample size is small, two of the three developments scored quite poorly.

For the RMD zone (and on occasion in the RSDT zone where the less restrictive threshold is met), the Residential Design Principles (rule 14.15.1 may apply). For the Residential Central City Zone, a different set of assessment matters are in use.

The Residential Design Principles are a reasonably comprehensive framework for assessment but require some amendments to achieve improved design outcomes and should be better supported by built form standards. Site layout is the root cause of many problems and may deserve recognition through its own additional principle. CPTED matters appear to be comprehensive and this issue may be able to be addressed in part through design and consenting although a good CPTED is mostly achieved through a good site layout. The principles do not recognise existing character and there is no way to effectively consider this at application stage.

The Central City principles are less comprehensive and similarly limited. Residential amenity is limited to the narrow matters of outlook and privacy and only pedestrian safety is mentioned as opposed to wider matters of on-site amenity. These matters are not irrelevant to the central city and the framework is lacking elements that are anticipated by the policy.

Residential Medium Density and Residential Suburban Density Transition

For RSDT and RMD, rule 14.15.1 is triggered as set out below:

c. City context and character:

- *i.* Whether the design of the development is in keeping with, or complements, the scale and character of development anticipated for the surrounding area and relevant significant natural, heritage and cultural features.
- *ii.* The relevant considerations are the extent to which the development:

- a) includes, where relevant, reference to the patterns of development in and/or anticipated for the surrounding area such as building dimensions, forms, setbacks and alignments, and secondarily materials, design features and tree plantings; and
- retains or adapts features of the site that contribute significantly to local neighbourhood character, potentially including existing heritage items, Sites of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, site contours and mature trees.

It is of interest that this matter is framed around the anticipated character and scale and not the existing character. The secondary matters do include references to the characteristics of the area, but it is questionable how much weight can be given to these if not supported by the primary statement.

A strong application of a character principle could in theory help to address some of the character concerns in less developed medium density areas, but it would need to be clearer that this was the intention. This assessment matter does not appear to be managing the character of the areas and it is unclear what is intended from it.

d. Relationship to the street and public open spaces

- *i.* Whether the development engages with and contributes to adjacent streets, and any other adjacent public open spaces to contribute to them being lively, safe and attractive.
- *ii.* The relevant considerations are the extent to which the development:
 - a) orientates building frontages including entrances and windows to habitable rooms toward the street and adjacent public open spaces;
 - b) designs buildings on corner sites to emphasise the corner; and
 - c) avoids street facades that are blank or dominated by garages.

This assessment matter should ensure a high quality street scene, and that being reflected in consistent high quality in the RMD area. Whilst that zone out-performed the others, it did not meet the threshold for basic satisfactory quality on average.

This matter does expect that buildings are oriented to the front of the site, including front doors. However, it does not direct the location of gardens or the use of the setback. This means that the positive impact of good building orientation can be undermined by what occurs to the street front (such as fencing). This is reflected in the good scores for buildings even when site layout was poor.

The expectation of entrances towards the street has not always resulted in front doors being oriented to the street (sometimes ranchsliders are provided as part of a fenced outdoor living space that does not serve as point of entry from the street). The assessment matter on its own has not been effective in achieving this urban design outcome.

Improvements could be to:

- Include more specific reference to site frontage areas to reduce fencing in these areas as part of the requirement for engagement.
- Include specific reference to front doors (as opposed to garden access doors) being on the front, or to include a built form standard to achieve this.

e. Built form and appearance

i. Whether the development is designed to minimise the visual bulk of the buildings and provide visual interest.

- *ii.* The relevant considerations are the extent to which the development:
 - a) subdivides or otherwise separates unusually long or bulky building forms and limits the length of continuous rooflines;
 - b) utilises variety of building form and/or variation in the alignment and placement of buildings to avoid monotony;
 - c) avoids blank elevations and facades dominated by garage doors; and
 - d) achieves visual interest and a sense of human scale through the use of architectural detailing, glazing and variation of materials.

This matter relates to the appearance related matters in D1-D5 which scored quite well in the assessment. The matter appears to be succeeding in getting buildings that are not monotonous. It appears to be clear and quite directive. It may contribute to the issue of buildings being overly "fussy", potentially because the easiest way to comply is to add changes of cladding and variation in rooflines (and this is potentially a matter that adds cost). However, on the face of it this matter appears to be achieving what is intended. Some more education and information could be provided to advise developers to avoid "over-egging" their designs unnecessarily in the hope of providing what they think Council wants to see.

f. Residential amenity

- *i.* In relation to the built form and residential amenity of the development on the site (i.e. the overall site prior to the development), whether the development provides a high level of internal and external residential amenity for occupants and neighbours.
- *ii.* The relevant considerations are the extent to which the development:
 - a) provides for outlook, sunlight and privacy through the site layout, and orientation and internal layout of residential units;
 - b) directly connects private outdoor spaces to the living spaces within the residential units;
 - c) ensures any communal private open spaces are accessible, usable and attractive for the residents of the residential units; and
 - d) includes tree and garden planting particularly relating to the street frontage, boundaries, access ways, and parking areas.

The first two of these matters are concerned with the amenity of occupiers and it was found that this is consistently good. There were few communal private outdoor spaces in the sample.

This matter is related strongly to the key issue of communal amenity. Tree and garden planting is a particular weakness identified and so it cannot be said that clause d is being met effectively. The causes of this are varied and include:

- Planting is often in private areas. Even if it is next to the street it is not contributing any amenity.
- Planting strips are narrow and do not provide space for larger planting (ie trees) in communal areas.
- The planting areas do not have a purpose beyond contributing some greenery. For instance, they do not relate to entrances where they would create threshold and opportunity for personalisation. They are not wide enough to create effective separation which would contribute to privacy.
- It is not apparent how much planting is required in relation to the identified areas. The landscape requirement can be accommodated in the private outdoor areas and there is no equivalent standard that suggests an appropriate amount of publically visible landscaping, even though this is expected by policy.
- Trees are often undersize and it is not clear that compliance with appendix 6.11.6 is expected. Trees are not required to be planted in areas where they will grow and not cause a nuisance (eg shading of Outdoor Living Space). It may be better to have fewer

trees required but to ensure that they are well related to communal (especially parking) areas and have room to grow and spread.

g. Access, parking and servicing

- *i.* Whether the development provides for good access and integration of space for parking and servicing.
- *ii.* The relevant considerations are the extent to which the development:
 - a) integrates access in a way that is safe for all users, and offers convenient access for pedestrians to the street, any nearby parks or other public recreation spaces;
 - b) provides for parking areas and garages in a way that does not dominate the development, particularly when viewed from the street or other public open spaces; and
 - c) provides for suitable storage and service spaces which are conveniently accessible, safe and/or secure, and located and/or designed to minimise adverse effects on occupants, neighbours and public spaces.

This matter also relates to the key issue of communal areas and outcomes C7-C10.

RMD sites generally do not have car parking that dominates the street but parking often dominated the shared accessways. The effect of this was increased by the poor level of planting.

Whilst pedestrian access was convenient, it was not prioritised over parking and vehicle access. Doors were not always prominent. Matter (a) does not aim very high if it is designed to achieve pedestrian comfort and amenity and improve driveways from being purely functional.

Bin storage and servicing was generally adequate but was sometimes observed to be impractical where there was not good access - and this led to bins being stored on the accessway or in front of the house. This is likely to be something that can be addressed through implementation.

h. Safety

- *i.* Whether the development incorporates Crime Prevention Through Environmental Design (CPTED) principles as required to achieve a safe, secure environment.
- ii. The relevant considerations are the extent to which the development:
 - a) provides for views over, and passive surveillance of, adjacent public and publicly accessible private open spaces;
 - b) clearly demarcates boundaries of public and private space;
 - c) makes pedestrian entrances and routes readily recognisable; and
 - d) provides for good visibility with clear sightlines and effective lighting.

This relates directly to outcome C5 where RMD developments scored an unsatisfactory 2.65. The primary statement is very clear so it is surprising that good outcomes have not been achieved. This would appear to be a matter of implementation.

However, the secondary statements are not a complete summary of CPTED principles. If Council officers or developers are directed by these statements they may miss aspects of CPTED that should be implemented. It may be preferable to refer to an appropriate list of CPTED strategies (eg Ministry of Justice, 2005 or as previously listed in this document), or to delete the list entirely. A particular issue noted was about behaviour, that people will react to the environment they live in, particularly with regard to privacy. Open fencing was often screened and windows had closed curtains so that the expected observation was not present. This is the issue of retrofitting CPTED features onto a flawed layout.

Summary

The above matters apply in the RMD zone for most developments, and occasionally in the RSDT zone.

The matters address some of the key issues quite well. In particular CPTED and Street Interface have clear statements but these have failed to yield good outcomes. Communal amenity is covered in part but site layout is unaddressed. As site layout has been identified as the root cause of most issues, an effective re-evaluation of the matters must include consideration of an explicit matter of assessment relating to it. It is likely that other matters can be addressed by amendments to the matters where relevant.

Some matters may require reinforcement with built form standards to provide and illustrate a bottom line. This would apply to:

- Tree and garden planting (for instance minimum areas for front gardens and widths for landscaping strips between the house and accessway).
- Fencing (not in front of the house)
- Front doors (on the front façade, outside of any fenced area and not providing any access to an outdoor living space). Within the development, facing the accessway or the front of the site.
- Trees to be provided within communal areas, including a planting area and an area for canopy spread.

Residential Central City

For the Residential Central City zone, the following applies listed under 14.15.33:

The extent to which the development, while bringing change to existing environments:

- *i.* engages with and contributes to adjacent streets, lanes and public open spaces.
- *ii. integrates access, parking areas and garages in a way that is safe for pedestrians and cyclists, and that does not dominate the development.*
- *iii.* has appropriate regard to:
 - A. residential amenity for occupants, neighbours and the public, in respect of outlook, privacy, and incorporation of Crime Prevention Through Environmental Design principles; and
 - B. neighbourhood context, existing design styles and established landscape features on the site or adjacent sites.
- iv. provides for human scale and creates sufficient visual quality and interest.

With regard to the key policy 14.2.4.1:

- Clause (i) (reflecting the context, character and scale of building anticipated in the area) is implemented by matter (iii) B.
- Clause (ii) (contribute to a high quality street scene) is implemented by Matter (i) and (iv)

- Clause (iii) (providing a high level of on-site amenity) is implemented by matter (iii) but in a limited way.
- Clause (vi) (incorporating CPTED) is implemented by (iii) A.

The main omission in implementing the policy framework is that residential amenity is restricted to outlook and privacy. Matter (ii) regarding access for pedestrians is also restricted to safety and would not cover the outcomes identified regarding communal space.

Considering the clauses against the outcomes:

Character

With regard to the issue of character, it is worth considering how much importance should be attached to this in the Central City environment where it needs to be balanced with the desire for higher density. The matter is restricted to styles and landscaping and is therefore very superficial, although "neighbourhood context" does open up a wider consideration of issues. Considering the comments made in the sample, the relationship with neighbours in terms of a juxtaposition of scale may be important.

Street Scene

The impact on street scene is implemented explicitly in matter (i) but the outcomes are not being realised, for similar reasons to the RMD zone. There is no context around expectations and there are no built form standards to ensure an expectation that land is reserved to manage the street interface (rather than absorbed into outdoor living spaces). Where RCC differs is that larger developments were found to be monolithic which may be because the provisions are not as directive.

Site Layout

The zone exhibits the same issues as RMD with regard to site layout. It is the driver of the design issues but is rarely addressed in consenting, with patchwork fixes applied instead. The assessment framework should include a matter addressing it explicitly.

CPTED

As for RMD, the matters include an explicit reference to CPTED but the outcomes are poor. This may be a matter for implementation at the design / consenting stage. It does appear that the issues cannot be addressed without more fundamental site layout changes that are hard to obtain at consent stage at present.

Communal Accessways

The assessment framework is weaker in RCC than RMD and the outcomes are less successful. There is little implementation of the policy for landscaping of publically visible areas.

Density and Form

There were few developments which departed from the suburban townhouse model in the RCC zone. Those that did were monolithic. These findings, though based on a small sample, suggest that the plan is not encouraging of higher density and that when it occurs it does not do a good job of managing it.

Summary

The assessment matters are not as comprehensive as those in the RMD zone and this is reflected in outcomes. The zoning does not appear to be a sound planning reason for the difference because the policy framework is the same.

A more relaxed building envelope may be more effective at encouraging density than the present provisions.

As for the RMD zone, it would be useful to support the assessment matters with more comprehensive built form standards.

7 Conclusion

The research considered the quality of built outcomes and commented on how these related to district plan provisions. The conclusions of these processes are listed below.

7.1 Outcomes

The research has identified that the existing District Plan and consenting process is not resulting in high quality outcomes, especially outside of the RMD zone. These issues are mostly relating to quality and are generally caused by site layout. Separately, issues of character were identified in some circumstances.

Although these conclusions inevitably focus on areas of weakness to address, there are also some aspects of development where outcomes are consistently satisfactory and these are also noted below.

7.1.1 Quality

These issues particularly relate to the street scene and CPTED, and are generally caused by poor site layout.

There is a clear statement of expectation in the District Plan objectives and policies for "high quality" outcomes however this is not being achieved, with a few exceptions. For the most part, developments are around the "basic satisfactory" threshold overall, however:

- There is a significant proportion of development which is inadequate or poor
- Site layout and street interface outcomes were consistently less than basic satisfactory

The majority of the issues are related to poor site layout and a particular theme is the street interface (and that with accessways). The root causes are:

- More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing.
- There has not been sufficient space allocated to front gardens and accessway planting and the resulting environment is not as safe or as pleasant as anticipated.

The research indicates that whilst many developments had poor street interface, in the majority of cases, the cause was poor site layout and resolving the problems of street interface requires changes to the arrangement of buildings and internal spaces.

Other recurring issues related to CPTED and were caused by privacy conflicts that discouraged passive surveillance, and a lack of a sense of ownership, transition and territorial definition. A clear hierarchy of space is needed from private to public space.

The density of development is above the minimum requirements for each zone (as specified in the District Plan). As a result, there may be some scope for improving built outcomes even if it requires reductions in density. High density has not been identified as a cause of design issues in the sample per se, however, some of the identified issues may result in reductions in density because they require some space on the site.

7.1.2 Relationship to Established Character

A tension was identified between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character, although larger ones were found to provide better outcomes overall.

An issue unique to the central city was the scale of buildings, that tended to be either insufficient for the central city character and density (buildings were a suburban scale), or monolithic in appearance (where taller buildings were established). A more appropriate central city typology would be desirable.

7.1.3 Areas of Good Performance

As well as the issues described above, there were some areas where consistent good performance was recorded. These were:

- that the scale of development was well matched to its location, indicating that the approach to zoning in the District Plan appears appropriate.
- that there has been an increase in housing choice.
- that developments have consistently achieved a good standard of internal and outdoor private space.

7.2 District Plan

There is good coverage of urban design outcomes across the District Plan provisions but there is not the ability to translate this into outcomes. The policy framework is relatively wide-ranging, but there are gaps in the assessment matters and the built form standards do not always support good design.

The design outcomes within the RMD zone are generally of a better quality than those in the remainder of the zones. RSDT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density, and central city developments were also less satisfactory on average. It appears that:

- the more rounded assessment matters in the RMD zone have led to more consistent outcomes.
- The less thorough RCC assessment matters have led to inconsistent outcomes in the RCC zone in relation to the street, site and aspects of the built form.
- The absence of design controls in the RSDT zone has resulted in consistently poor outcomes in relation to the street and site.

The CCMU zone is not included in the above because of the small sample.

The built form standards do not always support the assessment matters. These can set a baseline for what can be accommodated on the site, but if they exclude some aspects of design (such as privacy, or the landscaping of accessways) it can lead to those aspects being neglected in design. More rounded built form standards would help to promote these as fundamental design issues. They can ensure space is set aside to manage the amenity and street scene issues identified.

Some matters are well covered in the District Plan (in particular CPTED) but are still not wholly realised in applications. Some changes to design and consenting under the existing plan provisions could potentially produce better outcomes.

The Plan does not include an overarching consideration of site layout as a cause of design issues. Instead, issues are often addressed one by one in the Plan. This can result in an attempt to trade-off outcomes such as privacy verses street-interaction, which means choosing which outcome to prioritise. In order to fix the issues, there is often a need to revisit the site layout and make different choices (rather than mitigating issues). This reflects the iterative nature of the design process.

The District Plan contains policy relating to sustainability and innovation, but no methods. There was very little achievement in this area. The purpose of the policy is to promote these aims (and it may be this allows them to be included in the balance of an assessment), but achievement has been limited.

8 Recommendations

A range of actions is recommended to address this report's findings. These include changes to the District Plan and its implementation as well as non-statutory guidance. Further research is also recommended in some areas.

1 Changes in Resource Consent Processing under the existing District Plan

Some incremental improvements in design could be achieved through changes to the interpretation of existing rules, where there is good coverage of the issue. This particularly relates to CPTED and planting of areas adjacent to streets and accessways.

2 Technical Guidance

Update technical guidance (eg design guides and notes) on plan interpretation and site layout.

3 Training

Provide urban design training and support for planning staff.

4 District Plan Changes

Changes to the District Plan could result in better outcomes, with an emphasis on improving site layout. Some possible changes are listed in Appendix 1. The broad intention of these is to:

- Allow for more density in the Residential Central City Zone
- Align the management of the RCC and RSDT zones with the RMD zone.
- To better manage issues identified in this report.

5 Financial Viability

Research implications of potential plan changes on financial viability.

6 Further Study

For some areas, the survey has identified trends in design but further research is recommended:

- A sample of higher density RMD developments.
- More central city examples (including a range of typologies and examples from the CCMU zone)
- More RSDT examples, including larger developments.

7 Character Studies

For each intensification area, investigate what contributes to the existing character and what measures could be taken to ensure development better fits the character.

8 Neighbourhood Planning

Neighbourhood planning for each higher density suburb in the city. Identify priority areas where development is most likely to occur and neighbourhood scale opportunities such as where there is a need for parks, new connections and improved streets.

9 Street Improvements

Target medium density areas in the capital works program and focus on improving the street appearance, particularly through tree planting. Investigate funding mechanisms for capital works, such as development contributions.

9 References

Boffa Miskell (2020): Residential Medium Density Monitoring: Urban Design Technical Review

Boffa Miskell (2009): Urban Design Review of Recent Residential Development

Christchurch City Council (2020): Residential Suburban Density Transition Zone: Urban Design Technical Review

Cozens et al (2005): Think Crime: CPTED for Safer Cities (Praxis Education)

Ministry for the Environment (2012): *Medium Density Housing Case Study Assessment Methodology*

Ministry of Justice (2005): National Guidelines for Crime Prevention Through Environmental Design

Appendix 1: Potential Plan Changes

The following are provisions that could potentially be included in the District Plan. These are suggested for further investigation on the basis of the findings in this report.

- Include a policy on high density housing in the central city, as distinct from medium density housing in other areas. Revise policy 14.2.4.2 to remove references limited privacy and sunlight access in medium density areas.
- Investigate recession plane requirements in the central city to facilitate development of taller buildings on narrow sites.
- Extend fencing and servicing provisions from RMD to RSDT zone.
- Extend restricted discretionary assessment in the RSDT zone to 3 or more units.
- Assess restricted discretionary central city developments against the Residential Design Principles (District Plan Rule 14.15.1).
- Include additional built form standards in all zones relating to:
 - front doors facing the street;
 - o a landscaped area between built frontages and the street;
 - \circ $\,$ a landscaped area between unit facades and accessways;
 - \circ $\;$ reserved space for trees(s) onsite (as opposed to a simple number of trees);
 - \circ $\,$ outdoor living space not to be located between the building and the street.
- Amend the residential design principles with regard to: CPTED (to emphasise wider CPTED strategies); residential amenity (to emphasise internal privacy and layout); relationship to the street (to include a hierarchy of space and a front door); character (to consider existing character in less-well-developed areas).

Table A1: Response to Identified Issues (refer to Section 5: Design Issues)

SCALE	ISSUE (Problem)	RSDT	RMD	CC	Options	
Neighbourhood	Lack of suitable high density typologies	No	No	Yes	Encourage (incentivise) apartments and 3 storey townhouses in the central city.	District Plan Change to ensure rules do not unduly discourage Central City apartments - eg recession planes.
	Tension between existing and anticipated character	No	Yes	Yes	Specific management of development in certain (less intensified) areas?	Amend Assessment Matters and extend to RSDT (3+ units)
	Scale of development not matched to location (services/trans)	No	No	No		
	Limited increase in housing choice	Some	No	No		
	Tall fencing or screening	Yes	Some	Yes	Built Form standard to restrict front fencing>1m	Address causes of fencing – site layout issues
	Prominent car parking	Yes	No	No	Require an area of landscaping at site front	Extend Assessment Matters to RSDT (3+ units)
Street	Location of entranceways (developments without front door(s) facing the street)	Yes	Yes	Yes	Include a built form standard for a street facing front door for each unit with street frontage	Amend Assessment Matters and extend to RSDT
	Insufficient landscaped threshold / transition	Yes	Yes	Yes	Include a built form standard for amount of landscaping on accessways or beside street	Changes to Consent Processing under existing plan provisions.
	Insufficiently engaging front facade	Yes	No	Yes	Extend Assessment Matters to RSDT / Amend 14.15.33	
	Poor quality accessways	Yes	Yes	Yes	Include Built Form standard for landscaping of accessways	Extend Assessment Matters to RSDT (3+ units)
	No space for servicing	Yes	No	No	Include a built form standard in RSDT	Extend Assessment Matters to RSDT (3+ units)
	Poor CPTED outcomes	Yes	Yes	Yes	Address with consent processing. Provide guidance.	Extend Assessment Matters to RSDT (3+ units)
Site	Poor indoor / outdoor private space	No	No	No		
	Indoor privacy issues	Yes	Yes	Yes	Include built form standards (landscaping / separation)	Amend Assessment Matters and extend to RSDT
	No clear hierachy (and purpose) of space	Yes	Yes	Yes	Amend Assessment matters	
	Outdoor living space location (privacy issues / fencing issues)	Yes	Yes	Yes	Include Built Form standards	Amend Assessment Matters and extend to RSDT
	Poor visual appearance (form)	No	No	Yes	Amend 14.15.33 (RCC) or replace with 14.15.1)	
Buildina	Poor visual appearance (articulation)	Yes	No	No	Extend Assessment Matters to RSDT (3+ units)	
	Poor functional outcomes	No	No	No		
	Innovation and sustainability outcomes not met	Yes	Yes	Yes	Do Nothing	Amend Assessment Matters and extend to RSDT

Analysis of the Medium Density Residential Standards (MDRS) against existing built form standards for residential zones in the Christchurch District Plan:

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Introduction

The following document is an analysis of select District Plans zone provisions against the outcomes sought by the National Policy Statement on Urban Development (NPS-UD) and more specifically the Medium Density Residential Standards (MDRS).

The NPS-UD outlines a series of policies, requiring urban environments across the country to make provision for greater intensification. To achieve the outcomes sought by the NPS, it is inevitable that changes will be required to both District Plans and Regional Policy Statements.

The following, is an analysis of the four most common residential zones under the District Plan against the MDRS to determine where there is alignment and conflict. This will help to determine where changes are required to the District Plan in order to give effect to the MDRS and NPS.

Background

In 2020, the new National Policy Statement on Urban Development (NPS-UD) was gazetted. The NPS has a focus on managing and enabling growth and intensification. The objectives of intensification are to support more sustainable compact urban areas and increase housing choice and affordability.

In October 2021, the Government announced the introduction of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill which accelerates the implementation of the NPS-UD and outlines new requirements for intensification. The Bill includes a requirement for every residential zone in an urban environment of specified territorial authorities (including Christchurch) to incorporate Medium Density Residential Standards (MDR Standards). In essence, the Bill creates a new 'bottom line' whereby more intensive residential development is permitted across urban environments.

Method

The four most common residential zones under the District Plan have been analysed: the Residential Suburban Zone, the Residential Suburban Density Transition Zone, the Medium Density Zone and the Central City Residential Zone. These zones account for the majority of residentially zoned land within the Christchurch district.

A colour coding system has been used (refer to attached table) to visually indicate where there is strong alignment. Red indicates that the District Plan built form standard and MDRS do not align (weak alignment), orange indicates that there is some alignment and green indicates that there is strong alignment.

 Weak alignment
 Some alignment
 Strong alignment

Findings

Overall, there is relatively poor alignment between the MDRS and the built form standards for the Residential Suburban and Residential Suburban Density Transition Zone. It is only the setback from internal boundaries and landscaping standards where there is some alignment. This poor alignment is reflective of the fact that the RS and RSDT Zones provide principally for low to medium density residential development whereas the MDRS provide for a higher density of development (more akin to medium density development).

There is slightly greater alignment between the MDRS and the built form standards for the Central City Residential Zone (RCC). Alignment is evident with regards to building height, landscaping and outdoor living (ground floor units only) standards.

Of the four zones analysed, the Residential Medium Density zone (RMD) built form standards have the greatest alignment with the MDRS. Alignment is evident with regards to site density, landscaping, building height, setback from internal boundaries, site coverage and outdoor living space (one bedroom units only).

Notification

As detailed below, under the District Plan, non-notification clauses are attached to specific breaches of built form standards.

- In the RS and RSDT zones, limited and public notification is precluded for non-compliance with site coverage (below a specific threshold), outdoor living space, road boundary setback, fencing, landscaping and service space standards.
- In the RMD Zone, limited and public notification is precluded for non-compliance with outdoor living space, fencing, minimum unit size, landscaping, building overhangs, ground floor habitable space, and service space standards. Limited and public notification is also precluded for the establishment of three or more units.
- In the RMD Zone, limited and public notification is precluded for non-compliance with road boundary setback, fencing, landscaping, minimum unit size, ground floor habitable room, outdoor living space, service space and minimum density standards. Limited and public notification is also precluded for the establishment of three or more units.

Notification regarding non-compliance with all remaining built form standards (not covered above) is determined on a case by case basis and will factor in the scale/extent of breach (activity status and matters of discretion) and the likely effects on the wider and immediate environment.

In contrast, under the MDRS notification is not tied to non-compliance with a specific standard. The notification rules are more simple and blanket rules apply. For up to three units where one or more standards are breached, public notification is precluded. For more than four units, limited and public notification is precluded if the proposal complies with all standards (with the exception of 9AA Number of Residential Units per site).

Residential Suburban Zone

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.4.2.3- Building height	The maximum height of any building shall be 8m.	Buildings must not exceed 11m in height, except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1m, where the entire roof slopes 15° or more.	The MDRS are more permissive and a compared to the existing District Pla
14.4.2.6- Daylight recession planes	Buildings shall not project beyond a building envelope constructed by recession planes, as shown in Appendix 14.16.2 Diagram A, from points	Buildings must not project beyond a 60° recession plane measured from a point 4m vertically above ground level along all boundaries. Where the boundary forms part of a	The MDRS are more permissive and a internal boundaries as compared to the second secon
	2.3m above ground level.	legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way.	Under the District Plan, current built recession plane angles range from 26 directly north) and are measured from
			Under the MDRS, a blanket angle of 6 andimportantly recession planes are
14.4.2.7- Minimum setback from internal boundaries	The minimum building setback from internal boundaries is 1m.	1m setback applies to side and rear boundaries.	The District Plan built form standard setback of 1m from internal boundar
			Under the District Plan, built form sta buildings abutting a rail corridor and
14.4.2.8- Minimum setback for balconies and living space windows from internal boundaries	The minimum setback from an internal boundary for balconies shall be 4m.	1m setback applies to side and rear boundaries.	The MDRS are more permissive. Ther the principle living area requires a 4n
nom memal boundaries	Where a wall of a residential unit is located	minimum dimension of 4m in depth and 4m in width.	Linder the District Plan built form sta
	any living space window located on this wall at first floor level and above shall only contain glazing that	All other habitable rooms must have an outlook space with a minimum dimension of 1m in depth and 1m in width.	from internal boundaries and living s boundary must be permanently obso
14.4.2.9- Road boundary building setback	The minimum road boundary building setback shall be 4.5m or 5.5m where a garage has a vehicle door that faces the road or shared access.	1.5m setback applies to front yards.	The MDRS are more permissive and a road boundary than the District Plan requirement for garages as parking s
14.4.2.1 Site density	Each residential unit shall be contained within its own separate site with a minimum net site area of 450m ² .	There must be no more than 3 residential units per site however there is no minimum site size requirement.	The MDRS are more permissive and a
		Instead the size/density of a site is shaped and determined by the various MDRS	through a higher site coverage thresh recession planes) and a reduced outo
14.4.2.4 Site coverage	The maximum percentage of the net site area covered by buildings shall be 35% <u>or</u> 40% for multi- units, social housing complexes and older person housing units where all the buildings are single storey.	The maximum building coverage must not exceed 50% of the net site area.	The MDRS are more permissive and a compared to the District Plan built fo
14.4.2.5- Outdoor living	Each residential unit shall be provided with an outdoor living space in a continuous area, contained within the net site area with a minimum area of 90m ² and dimension of 6m.	20m ² x3m at ground level 8m ² x1.5m when a balcony, patio or roof terrace Can be grouped cumulatively into a communal area	The MDRS require a smaller outdoor under the District Plan built form star
	Multi-unit residential complexes, social housing complexes and older person's housing units shall provide a minimum area of 30m ² and dimension of 4m.		
14.4.2.2- Tree and garden planting	For multi-unit residential complexes and social housing complexes only, a minimum of 20% of the site shall be provided for landscaping.	Units at ground floor level must have a landscaped area of a minimum of 20% of a developed site with grass or plants, and	Whilst the landscaping percentage re MDRS, the MDRS are less stringent ar plants.

low for an additional 3-4m of building height as built form standards.

low for more building bulk within proximity to ne District Plan built form standards.

form standards (Appendix 14.16.2 Diagram A), ° (a boundary directly south) to 55° (a boundary n 2.3m above ground level.

50° applies to all internal boundaries e measured at a higher height of 4m. and MDRS align with both requiring a building ries.

andard a greater setback does however apply for I the Avonhead Cemetery.

is no setback requirement for balconies and only x4m outlook space. All other habitable rooms

ndards, balconies are required to be setback 4m pace windows between 1-4m from an internal cured.

low for buildings to be located 3m closer to the built form standard. There is no setback baces are no longer required under the NPS-UD. low for a higher density of development.

n site size requirement and density is increased old, an increased building envelope (height, and oor living space requirement.

llow for an additional 10-15% site coverage as rm standard.

iving space (20m² x3m as compared to 90m² x6m dard).

equirement is the same under the District Plan and nd allow for the 20% landscaped area to be <u>grass</u>or

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.4.2.12- Service, storage and waste management	For multi-unit residential complexes and social housing complexes only, each residential unit shall be provided with at least 2.25m ² with a minimum dimension of 1.5m of outdoor or indoor space at ground floor level and at least 3m ² with a minimum dimension of 1.5m of outdoor space at ground floor level for washing	can include the canopy of trees regardless of the ground treatment below them. N/A	Under the District Plan built form star and shrubs (i.e. not grass), one tree is least one tree is required to be plante time of planting. There is no minimum service or stora District Plan built form standards, ser residential complexes and social hou
N/A	N/A	Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing. This can be in the form of windows or doors.	The MDRS require a 20% glazing alon does not have a comparable built for

andard at least 50% of the planting has to be trees s required for every 250m² gross site area and at ed at the road boundary. Trees must be 1.5m at the

ge space requirement under the MDRS. Under the vice and storage space is required for multi-unit sing complexes.

g the street facing façade whereas the District Plan n standard.

Residential Suburban Density Transition Zone

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.4.2.3- Building height	The maximum height of any building shall be 8m.	Buildings must not exceed 11m in height, except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1 metre, where the entire roof slopes 15° or more.	The MDRS are more permissive and a compared to the District Plan built fo
14.4.2.6- Daylight recession planes	Buildings shall not project beyond a building envelope constructed by recession planes, as shown in Appendix 14.16.2 Diagram A, from points 2.3m above ground level.	Buildings must not project beyond a 60° recession plane measured from a point 4m vertically above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way.	The MDRS are more permissive and a internal boundaries as compared to t Under the District Plan current built for recession plane angles range from 30 directly north) and are measured 2.3r Under the MDRS, a blanket angle of 6 recession planes are measured at a hi
14.4.2.7- Minimum setback from internal boundaries	The minimum building setback from internal boundaries is 1 metre.	1m setback applies to side and rear boundaries.	The District Plan built form standard setback of 1m from internal boundari Under the District Plan, built form sta buildings abutting a rail corridor and
14.4.2.8- Minimum setback for balconies and living space windows from internal boundaries	The minimum setback from an internal boundary for balconies shall be 4m. Where a wall of a residential unit is located between 1m and 4m from an internal boundary, any living space window located on this wall at first floor level and above shall only contain glazing that is permanently obscured.	 1m setback applies to side and rear boundaries. A principal living room must have an outlook space with a minimum dimension of 4m in depth and 4m in width. All other habitable rooms must have an outlook space with a minimum dimension of 1m depth and 1m in width. 	The MDRS are more permissive. There the principle living area requires a 4m require a 1x1m outlook space. Under the District Plan built form star from internal boundaries and living s boundary must be permanently obsc
14.4.2.9- Road boundary building setback	The minimum road boundary building setback shall be 4.5m or 5.5m where a garage has a vehicle door that faces the road or shared access.	1.5m setback applies to front yards.	The MDRS are more permissive and a road boundary than the District Plan requirement for garages as parking s
14.4.2.1 Site density	Each residential unit shall be contained within its own separate site with a minimum net site area of 330m ² .	There must be no more than 3 residential units per site however there is no minimum site size requirement. Instead the size/density of a site is shaped and determined by the various MDRS	The MDRS are more permissive and a Under the MDRS, there is no minimum through a higher site coverage thresh recession planes) and a reduced outd
14.4.2.4 Site coverage	The maximum percentage of the net site area covered by buildings shall be 35% <u>or</u> 40% for multi- units, social housing complexes and older person housing units where all the buildings are single storey.	The maximum building coverage must not exceed 50% of the net site area.	The MDRS ar more permissive and al compared to the existing District Plar
14.4.2.5- Outdoor living	 Each residential unit shall be provided with an outdoor living space in a continuous area, contained within the net site area with a minimum area of 50m² and dimension of 4m. Multi-unit residential complexes, social housing complexes and older person's housing units shall provide a minimum area of 30m² and dimension of 4m. 	20m ² x3m at ground level 8m ² x1.5m when a balcony, patio or roof terrace Can be grouped cumulatively into a communal area	The MDRS require a smaller outdoor l under the District Plan built form star
14.4.2.2- Tree and garden planting	For multi-unit residential complexes and social housing complexes only, a minimum of 20% of the site shall be provided for landscaping.	Units at ground floor level must have a landscaped area of a minimum of 20% of a developed site with grass or plants, and	Whilst the landscaping percentage re MDRS, the MDRS are less stringent an plants.

low for an additional 3-4m of building height as more standard.

low for more building bulk within proximity to ne District Plan built form standards.

orm standards (Appendix 14.16.2 Diagram B), ° (a boundary directly south) to 55° (a boundary n above ground level.

P° applies to all boundaries and importantly gher height of 4m.

and MDRS align with both requiring a building ies.

indard a greater setback does however apply for the Avonhead Cemetery.

is no setback requirement for balconies and only x4m outlook space. All other habitable rooms

idards, balconies are required to be setback 4m bace windows between 1-4m from an internal ured.

low for buildings to be located 3m closer to the built form standard. There is no setback baces are no longer required under the NPS-UD. low for a higher density of development.

n site size requirement and density is increased old, an increased building envelope (height, and oor living space requirement.

ows for an additional 10-15% site coverage as built form standards.

iving space (20m² x3m as compared to 50m² 4m dard).

equirement is the same under the District Plan and allow for the 20% landscaped area to be <u>grass</u> or

District Plan Built form standard		Medium Density Residential Standard	Commentary
		can include the canopy of trees regardless of the ground treatment below them.	Under the District Plan built form sta and shrubs (i.e. not grass), one tree is least one tree is required to be plante time of planting.
14.4.2.12- Service, storage and waste management	For multi-unit residential complexes and social housing complexes only, each residential unit shall be provided with at least 2.25m ² with a minimum dimension of 1.5m of outdoor or indoor space at ground floor level and at least 3m ² with a minimum dimension of 1.5m of outdoor space at ground floor level for washing lines.	N/A	There is no minimum service or stora District Plan built form standards, ser residential complexes and social hou
N/A	N/A	Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing. This can be in the form of windows or doors.	The MDRS require a 20% glazing alon does not have a comparable built for

andard at least 50% of the planting has to be trees is required for every 250m² gross site area and at red at the road boundary. Trees must be 1.5m at the

age space requirement under the MDRS. Under the rvice and storage space is required for multi-unit using complexes.

g the street facing façade whereas the District Plan n standard.

Residential Medium Density Zone

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.5.2.1- Site density	There is no site density standard in the Residential Medium Density Zone.	There must be no more than 3 residential units per site however there is no minimum site size requirement. Instead the size/density of a site is shaped and determined by the various MDRS.	The District Plan built form standard size requirement. Whilst the MRDS limit the number of a density is largely shaped by the rema space, height, recession planes and b
14.5.2.2- Tree and garden planting	A minimum of 20% of the site shall be provided for landscaping, where at least 50% of the landscaping shall be trees and shrubs, and a minimum of one tree for every 250m ² of gross site area. There should be at least one tree adjacent to the road boundary.	Units at ground floor level must have a landscaped area of a minimum of 20% of a developed site with grass or plants, and can include the canopy of trees regardless of the ground treatment below them.	Whilst the landscaping percentage re form standard, the MDRS are less stri <u>grass</u> or plants. Under the District Plan built form star and shrubs (i.e. not grass), one tree is least one tree is required to be planted time of planting.
14.5.2.3- Building height and maximum number of storeys	 The maximum height of any building shall be 11m provided there is a maximum of 3 storeys. There are a few overlays for specific locations including: 8m - Lower Height Limit Overlay at Central Riccarton 9.5m - Sumner Residential Medium Density Zone 13m - Sumner Master plan Overlay, on the two prominent corners 14m – St Albans in the Commercial Local Zone 20m – Higher height limit overlay at Carlton Mill Road 14m – Higher height limit overlay at Carlton Mill Road 11m – Salvation Army Addington Overlay All Residential Medium Density Height Limit Overlays (other than at Carlton Mill Road) shall not exceed 5 storeys. 	Buildings must not exceed 11m in height, except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1 metre, where the entire roof slopes 15° or more.	There is reasonable alignment betwe Plan built form standard. Both apply Plan limits buildings to three storeys MDRS. The MDRS also enable up to 50 the roof slopes 15° or more. The District Plan also has both lower locations/overlays across the city.
14.5.2.4 Site coverage	The maximum percentage of the site covered by building shall be 50%	The maximum building coverage must not exceed 50% of the net site area.	The District Plan built form standard building site coverage of 50%.
14.5.2.5 Outdoor living space	Each residential unit with two or more units shall provide onsite an outdoor living space of at least 30m ² , with a minimum of 16m ² of private space. The minimum dimension for an outdoor space provided at ground level is 4m, 1.5m if provided as	20m ² x3m at ground level 8m ² x1.5m when a balcony, patio or roof terrace Can be grouped cumulatively into a communal area	The MDRS require a smaller outdoor l units (as compared to units with two

and MDRS align with both having no minimum site

units per site to three, as with the District Plan, ining standards (site coverage, outdoor living puilding setbacks).

equirement is the same under the District Plan built ingent and allow for the 20% landscaped area to be

Indard at least 50% of the planting has to be trees s required for every 250m² gross site area and at ed at the road boundary. Trees must be 1.5m at the

een the MDRS for building height and the District an 11m height restriction however the District where there is no equivalent restriction under the 0% of the building's roof to be 12m in height where

and higher height limits which apply to specific

and MDRS align with both enabling a maximum

iving space for ground floor units and upper floor or more bedrooms under the District Plan).

District Plan Built form standard		Medium Density Residential Standard	Commentary
	a balcony and 4m if provided as a communal space.		For one bedroom units, the District P to the MDRS requirement of 20m ² .
	For one bedroom units there is a minimum private area of 16m ² (minimum dimension of 4m for ground floor units and 1.5m for upper floor units).		
14.5.2.6- Daylight recession planes	Buildings shall not project beyond a building envelope constructed by recession planes, as shown in Appendix 14.16.2 Diagram C, from points 2.3m above ground level.	Buildings must not project beyond a 60° recession plane measured from a point 4m vertically above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way.	The MDRS are more permissive and a internal boundaries as compared to Under the District Plan current built f recession plane angles range from 35 directly north) and are measured from Under the MDRS, a blanket angle of 6 recession planes are measured at a h
14.5.2.7- Minimum setback from internal boundaries and railway lines	 The minimum building setback from internal boundaries is 1m, except: Where a building on an adjoining site has a ground floor window within 1m of the common boundary, the building shall be setback 1.8m from the window. 4m from a rail corridor boundary 	1m setback applies to side and rear boundaries.	The District Plan built form standard setback of 1m from internal boundar Under the District Plan built form sta buildings abutting a rail corridor and window of a building on an adjoining
14.5.2.8- Minimum setback for balconies and living space windows from internal boundaries	The minimum setback from an internal boundary for balconies shall be 4m. Where a wall of a residential unit is located between 1m and 4m from an internal boundary, any living space window located on this wall at first floor level and above shall only contain glazing that is permanently obscured.	1m setback applies to side and rear boundaries. A principal living room must have an outlook space with a minimum dimension of 4m in depth and 4m in width. All other habitable rooms must have an outlook space with a minimum dimension of 1m in depth and 1m in width.	The MDRS are more permissive. Ther the principle living area requires a 4m require a 1x1m outlook space. Under the District Plan built form sta from internal boundaries and living s boundary must be permanently obse
14.5.2.9- Road boundary building setback	 The minimum road boundary building setback shall be: 2m in all other instances, except: A setback of 4.5m applies where a garage has a vehicle door facing the road, unless the garage door tilts or swings outwards in which case there should be a 5.5m setback. Where a garage has the vehicle door facing a shared accessway, the garage door shall be setback a minimum of 7m or 8m if the door projects outwards Street fronting residential units, garages, carports, and other accessory buildings shall be located at least 1.2m further from the road boundary than the front facade of any ground level habitable space of that residential unit. 	1.5m setback applies to front yards.	The MDRS are more permissive and a road boundary than the District Plan requirement for garages as parking s There is also no requirement for gara the unit.
14.5.2.10 Street scene amenity and safety - fences	The maximum height of any fence in the setback from a road boundary on a local road shall be 1.8m where at least 50% of the fence structure is visually transparent and 1m where less than 50% of the fence structure is visually transparent.	N/A	The MDRS do not prescribe any stand

Plan requires 16m² which is relatively comparable

llow for more building bulk within proximity to he District Plan built form standard.

orm standards (Appendix 14.16.2 Diagram C), ° (a boundary directly south) to 55° (a boundary n 2.3m above ground level.

9° applies to all boundaries and importantly gher height of 4m.

and MDRS align with both requiring a building ries.

andard, a greater setback does however apply for I buildings within proximity to a ground floor g site.

e is no setback requirement for balconies and only inx4m outlook space. All other habitable rooms

ndards, balconies are required to be setback 4m pace windows between 1-4m from an internal rured.

llow for buildings to be located 0.5m closer to the built form standard. There is no setback paces are no longer required under the NPS-UD. ges to be setback further then the front façade of

ards regarding fencing.

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.5.2.11 Building overhangs	No internal floor area located above ground floor level shall project more than 800mm horizontally beyond the gross floor area at ground level.	N/A	The MDRS do not prescribe any stand
14.5.2.12 Minimum unit size	 The minimum net floor area for any residential unit shall be: Studio 35m² 1 Bedroom 45m² 2 Bedroom 60m² 3 or more Bedrooms 90m². 	N/A	The MDRS do not prescribe any minir
14.5.2.13 Ground floor habitable space	 Where the permitted height is 11m or less: Any residential unit fronting a road or public open space, shall have a habitable space located at ground level. At least 50% of all residential units within a development shall have a habitable space located at ground level. At least one habitable space located at the ground level of a residential unit shall have a minimum floor area of 9m² and a minimum internal dimension of 3m. Where the permitted height limit is over 11m a minimum of 50% of the ground floor area shall be occupied by habitable spaces and/or indoor communal living space. 	N/A	The MDRS do not prescribe any requi
14.5.2.14- Service, storage and waste management	For multi-unit residential complexes and social housing complexes only, each residential unit shall be provided with at least 2.25m ² with a minimum dimension of 1.5m of outdoor or indoor space at ground floor level and at least 3m ² with a minimum dimension of 1.5m of outdoor space at ground floor level for washing lines.	N/A	There is no minimum service or stora District Plan built form standards, ser residential complexes and social hou
N/A	N/A	Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing. This can be in the form of windows or doors.	The MDRS require a 20% glazing alon does not have an equivalent built for

dards regarding overhangs.

num units sizes.

irement to have habitable spaces located on the

age space requirement under the MDRS. Under the rvice and storage space is required for multi-unit using complexes.

g the street facing façade whereas the District Plan n standard.

Residential Central City Zone

District Plan Built form standard		Medium Density Residential Standard	Commentary
14.6.2.1 Building height	 The maximum height of any building shall be in accordance with Central City Maximum Building Height planning map. A lower 11m height limit applies to a collection of small, unique, predominantly 'residentially intact' east to west streets in the following locations: To the east and west of Cranmer Square (Inner City West Neighbourhood). In the Victoria Neighbourhood (Peacock, Beveridge, Conference and Grace field Avenue). In the Moa Neighbourhood (Otley, Melrose, Moa Ely etc.). In the Avon Loop ad Chester Street East neighbourhoods. 	Buildings must not exceed 11m in height, except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1 metre, where the entire roof slopes 15° or more.	The District Plan is technically more p the majority of the zone with only son Overall however, there is reasonable a and the District Plan built form standa height. Neither the MDRS nor District
14.6.2.2 Daylight recession planes	Buildings shall not project beyond a building envelope constructed by recession planes, as shown in Appendix 14.16.2 Diagram E, from points 2.3m above ground level.	Buildings must not project beyond a 60° recession plane measured from a point 4m vertically above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way.	The MDRS are more permissive and all internal boundaries as compared to the Under the District Plan current built for recession plane angles range from 50° directly north) and are measured from Under the MDRS, a blanket angle of 60 and importantly recession planes are
14.6.2.3 Road boundary building setback	 The minimum road boundary building setback shall be: 6m for sites fronting Bealey Avenue 4.5m for sites located in the Central City Building Setbacks, on the Central City Active Frontages and Verandas and Building Setback planning map 2m in all other instances, except: A setback of 4.5m applies where a garage has a door facing a road, unless the garage door projects outward, in which case the door shall be setback a minimum of 5.5m Where a garage has the door facing a shared accessway, the door shall be setback a minimum of 7m or 8m if the door projects outwards For street fronting residential units, garages, carports, and other accessory buildings shall be located at least 1.2m further from the road boundary than the front facade of any ground level habitable space of that residential unit. 	1.5m setback applies to front yards.	The MDRS are more permissive and fo located 0.5m closer to the road bound standard. There is no setback require required under the NPS-UD. There is a further then the front façade of the ur
14.6.2.4 Minimum building setbacks from internal boundaries	 The minimum building setback from internal boundaries is: 1.8m or 1m for buildings that adjoin an access lot or strip. 	1m setback applies to side and rear boundaries.	The District Plan built form standard in to 1m under the MDRS). In addition, the balconies and living room windows at boundaries. There is no equivalent resources

permissive as it allows a 14m building height over me pockets of the zone having an 11m height limit.

alignment between the MDRS for building height ard. Both allow for a building of at least 11m in Plan impose a maximum number of storeys.

low for more building bulk within proximity to ne District Plan built form standard.

orm standards (Appendix 14.16.2 Diagram E), ° (a boundary directly south) to 65° (a boundary n 2.3m above ground level.

P° applies to all boundaries and recession planes measured at a higher height of 4m.

ar the majority of the zone allow for buildings to be dary than the current District Plan built form ment for garages as parking spaces are no longer also no requirement for garages to be setback hit.

requires a greater setback of 1.8m (as compared ne District Plan built form standard requires t first floor to be setback 4m from internal quirement under the MDRS.

District Plan Built form standard		Medium Density Residential Standard	Commentary
	A 4m setback applies to balconies and living area windows at first floor level.		
14.6.2.5 Fencing and screening	 Parking areas shall be screened on internal boundaries to a minimum height of 1.5m. Where this screening is by way of landscaping it shall be for a minimum depth of 1.5m. Fences shall not exceed 1m in height where they are located either: within 2m of the road boundary; or on the boundary with any land zoned Open Space Community Parks, Open Space Water and Margins and Avon River Precinct except that the maximum height shall be 2m if the 	N/A	The MDRS do not prescribe any stan
	whole fence or screening structure is at least 50% transparent.		
14.6.2.6- Tree and garden planting	A minimum of 20% of the site shall be provided for landscaping, where at least 50% of the landscaping shall be trees and shrubs, and a minimum of one native tree for every 250m ² of gross site area.	Units at ground floor level must have a landscaped area of a minimum of 20% of a developed site with grass or plants, and can include the canopy of trees regardless of the ground treatment below them.	Whilst the landscaping percentage re form standard, the MDRS are less str <u>grass</u> or plants. Under the District Plan built form sta and shrubs (i.e. not grass), one tree i 1.5m at the time of planting.
14.6.2.7 Minimum residential unit size	 The minimum net floor area for any residential unit shall be: Studio 35m² 1 Bedroom 45m² 2 Bedroom 70m² 3 or more Bedrooms 90m². 	N/A	The MDRS do not prescribe any mini
14.6.2.8 Ground floor habitable space	Any residential unit fronting a road or public open space, shall have a habitable space located at ground level. At least 30% of all residential units within a development shall have a habitable space located at ground level. At least one habitable space located at the ground level of a residential unit shall have a minimum floor area of 12m ² and a minimum internal dimension of 3m.	N/A	The MDRS do not prescribe any requ ground floor.
14.6.2.9 Outdoor living space	 Each residential unit shall provide onsite an outdoor living space of at least 24m². Each residential unit shall have private outdoor living space of at least 8m². The minimum dimension for an outdoor space provided at 	20m ² x3m at ground level 8m ² x1.5m when a balcony, patio or roof terrace Can be grouped cumulatively into a communal area	The MDRS for ground floor outdoor l the District Plan built form standard
	 ground level is 4m, 1.5m if provided as a balcony and 4m if provided as a communal space. 50% of the outdoor living space required across the entire site shall be provided at ground level. 		However for buildings above ground the District Plan requires 24m ² per u balcony and a ground floor commun balcony, patio or roof terrace.
14.6.2.10 Service space	Each residential unit shall be provided with at least 3m ² of indoor or outdoor service space at ground		There is no minimum service or stora

lards regarding fencing or screening.

equirement is the same under the District Plan built ingent and allow for the 20% landscaped area to be

andard at least 50% of the planting has to be trees is required for every 250m² gross site. Trees must be

num units sizes.

rement to have habitable spaces located on the

living space of 20m² x3m is relatively comparable to of 24m² x 4m.

floor level, the MDRS are more permissive. Where nit (which could be made up of a 8m² x1.5m al space), the MDRS only requires a 8m² x1.5m

ge space requirement under the MDRS.

District Plan Built form standard		Medium Density Residential Standard	Commentary
	floor level for the dedicated storage of waste and recycling bins.		
14.6.2.11 Minimum site density from development and redevelopment of residential units	The minimum residential site density to be achieved when a site is developed or redeveloped with a residential unit or units shall be not less than one residential unit for every complete 200m ² .	There must be no more than 3 residential units per site.	The MDRS do not prescribe a minimum maximum of 3 units per site.
N/A	N/A	The maximum building coverage must not exceed 50% of the net site area.	The District Plan does not prescribe a coverage is shaped and influenced by recession plane standard, setback sta the landscaping standard, the outdoo standard and the service space stand
N/A	N/A	Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing. This can be in the form of windows or doors.	The MDRS require a 20% glazing alon does not have an equivalent built for

n density requirement and instead imposes a

maximum building site coverage. Instead site other built form standards including the andards from the road and internal boundaries, or living space standard, the minimum unit size ard.

g the street facing façade whereas the District Plan n standard.

Plan Change 14

Technical Report - Urban Design Medium and High Density Residential Zones

Christchurch City Council

Technical Report

Date: 11 August 2022 Version: 03 Author: David Hattam Peer reviewed: Josie Schröder

DISCLAIMER:

Christchurch City Council has taken every care to ensure the correctness of all the information contained in this report. All information has been obtained by what are considered to be reliable sources, and Christchurch City Council has no reason to doubt its accuracy. It is however the responsibility of all parties acting on information contained in this report to make their own enquiries to verify correctness.

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1 Introduction

1.1 Background

New legislation and the National Policy Statement for Urban Development (NPS UD) requires that changes are made to the Christchurch District Plan through an expedited planning process. Further, the Resource Management (Enabling housing and other matters) Amendment Act requires that certain standards are introduced into residential zones to allow for 3 units to be built as-of-right at a permitted height of 12m (11m + 1m for roof).

The NPS UD additionally requires that higher density (mid to high rise) development, of at least 6 storeys, is permitted in key areas around larger centres and additional medium density (low to mid rise) development, between 3 and 6 storeys, is provided for around smaller centres. Further direction is given that residential densities should be maximised within a walkable catchment of the city centre. The Council's response has been to propose high density (high rise) development, with a ten storey height limit in certain areas.

This report is about the form, function and appearance of medium and high density development rather than its extent. It considers appropriate residential development forms for scenarios including:

- Medium density development of 3-4 storeys as envisaged by the Medium Density Residential Standards (MDRS) throughout the residential zone.
- Medium density development of 4 storeys within walking distance of local centres.
- Six storey development as required by the NPS UD around larger centres.
- Ten storey development as proposed by the Council in response to the NPS-UD, around the fringes of the City Centre Zone.

The MDRS control the planning of up to 3 units on a site. The report examines additional provisions for larger developments. The new Medium Density Residential Zone (MRZ) will apply to most of Ōtautahi Christchurch, and will have a scale and character similar to the operative Residential Medium Density Zone. The High Density Residential Zone (HRZ) will have a far more intense and built-up character than is currently experienced in the city, with the exception of parts of the central city and in the Carlton Mill Road area to the north of Hagley Park.

1.2 Research and Analysis

This report has been informed by research and analysis, including built form and wind modelling, which focussed on the potential impacts of residential development, whether adverse, neutral or positive, at a range of scales. In addition, a range of alternative approaches were considered to address these impacts, identified through best practice research and literature review. Design related pre-notification submissions were also considered.

Further, the report and responses to issues have been informed by research undertaken by Christchurch City Council and Boffa Miskell Ltd¹, and a subsequent 2021 follow-up study²; referred together as the "Design Outcomes Research", assessing the quality of design outcomes in



¹ CCC (2020): Medium and High Density Housing in Christchurch Urban Design Review

² CCC (2021): Medium Density Housing Research: Additional Case Studies

Ōtautahi Christchurch in the medium and high density residential zones of the city. The study was undertaken in the following zones which are referred to throughout this report:

- Residential Suburban Density Transition Zone (RSDT)
- Residential Medium Density Zone (RMD)
- Residential Central City Zone (RCC)
- Commercial Central City Mixed Use Zone (CCMU).

The Design Outcomes Research included a comparative analysis against an earlier study undertaken in 2010, prior to the introduction of urban design assessment in the then City Plan. In short, design outcomes had improved significantly as a result of regulatory interventions.

1.3 Summary of Research Findings and Issues

In respect to the Design Outcomes Research, in general it was found that the RMD Zone provisions resulted in urban design outcomes that are consistently satisfactory, indicating a basic level of design was usually achieved in these areas, but less consistently in other zones.

These results were related to the level and type of regulation in place, with small (permitted) complexes of 4 units in the RSDT Zone having the most inconsistent outcomes. The RMD rules and assessment framework also appears well understood by the development industry.

The main findings of the Design Outcomes Research were:

- Whilst the standard of developments was in most cases close to a basic satisfactory quality overall, there was a significant proportion of developments which were poor quality.
- The majority of the issues related to poor site layout which impacted on many aspects of the site and building design, including the street interface.
- More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing.
- Other recurring issues related to Crime Prevention Through Environmental Design (CPTED) were often caused by privacy conflicts that discouraged passive surveillance.
- Central city apartment blocks were often monolithic in appearance.
- Some positive trends were evident. These particularly related to the standard of private amenity on the site, such as good outdoor living space for occupants and good solar access.
- Looking at particular zones, the Residential Medium Density (RMD) Zone produced more consistent outcomes than other zones and had a lower proportion of developments achieving a poor standard of design.

In relation to the District Plan, the 2020 research noted that some matters are well covered (in particular CPTED) but were not achieved to a high standard in respect to the development outcomes. It was considered that changes to design and consenting under the existing District Plan provisions could potentially produce better outcomes. The 2021 study noted improvements overall and in particular with regard to CPTED, which may have been due to changes in consenting practice following the initial advice.



Overall the Design Outcomes Research demonstrates that the RMD Zone has been successful in ensuring that a satisfactory standard of development is achieved, although not necessarily the high standard described in District Plan policy.

Whilst the analysis treats the MDRS as an established baseline for analysis, the operative District Plan provisions have also been considered as context for the proposed revised provisions.

In addition to the research findings relating to design quality, the investigation and analysis indicated a series of potential issues from higher building heights and densities. These issues include:

- 1. *Visual dominance.* This is related to the overall size of buildings, particularly the impact on people at ground level, as well as how buildings relate to surrounding buildings (for example a larger building form surrounded by two and three storey buildings). It can be managed to some extent through design, including setting taller elements of the building back from the street and from side boundaries, and by breaking up the building form.
- 2. *Visual prominence.* This is related to how noticeable the building is in the context and is not necessarily a problem provided that the building is well designed. For example 15m high blank fire-walls would likely be detrimental to the visual quality of an area, but a well-designed building can be positive, for instance due to interesting architecture or by enclosing and enlivening the street. Managing prominence is largely a matter of good building design.
- 3. *Shading and privacy effects* (on neighbour's amenity). These issues can occur at most residential densities, but the impacts can be greater with tall buildings, and reach beyond the immediate neighbour's site. These issues increase with the size of the building and can be managed by orienting the buildings, including windows and outdoor living space, towards the street and the site interior, rather than to side boundaries.
- 4. *Human scale at street level*. Human scale is a comfortable scale of features and interest necessary to create an environment which is appealing to people. One definition is "dimensions and with details that can offer comfort and well-being to people living in and around the buildings and the spaces in between"³. A height of six storeys is considered a comfortable height that retains human scale. For instance it allows people on the top floor to recognise people at ground level⁴.
- 5. Wind effects. Taller buildings can divert faster flowing air to ground level and affect the comfort and usability of public and private outdoor space. Modelling of the Ōtautahi Christchurch wind environment⁵ demonstrates that buildings over 20m in height in the HRZ may have adverse impacts within a residential setting. These effects are discussed in detail below and can often be managed through building design and planting.
- 6. *Health and wellbeing.* Living in high rise buildings (and living in the higher levels of such buildings) can be associated with poor mental health, particularly in less suitable

³ Sims, D (2019): Soft City

⁴ Gehl, J (2010): *Cities for People*

⁵ Meteorological Solutions (2022): *Technical Advice for Wind Assessments for Christchurch City*

locations⁶ Reasons for these outcomes were social isolation, poor access to nature and the layout of the complexes.

The first three of the issues discussed above are also be associated with lower-rise high density housing, but the increase in height will increase the scale of impact. As implied by the NPS UD and its focus on a structured urban form, high-rise housing may not be suitable everywhere and more consideration of its impacts is appropriate.

The latter three issues are more associated with buildings higher than six storeys. There does appear to be a natural break between the more human-scale six storey typology (which is likely to be more widely appropriate) and taller forms (which may generate greater adverse impacts).

A positive outcome from taller buildings can be increased street enclosure, especially if there is a consistent scale of built form. A more enclosed street scene is common in Europe (and in some parts of North America) but is more unusual in New Zealand. Such a street has a different character and amenity to a suburban street but can be a well-designed environment that people feel comfortable in and appreciate.

1.4 Issue Categories and Report Structure

The key issues are grouped into categories based on the operative District Plan policy, which came into effect in 2016. These policies provide a robust and proven framework for achieving good design. Whilst amended policy has been proposed as part of Plan Change 14, it does not change the basis of this framework, which has been operating in the District Plan for some time, with results that generally result in design outcomes that support a well-functioning urban environment⁷.

Issues are grouped into the following categories and each addressed in this report:

- Context and site layout (section 2)
- Scale, form and appearance (section 3)
- Street scene (section 4)
- Good on-site living conditions (section 5)
- Safe and welcoming access (section 6)
- Servicing and storage (section 7)
- Crime Prevention Through Environmental Design (section 8)
- Building envelope (section 9)
- Landscaped area (section 10)

Issues are inter-dependent and addressing one issue will often mean addressing another issue. For example, the provision of an adequate width for accessways, including planting, also contributes to functionality, residential amenity and CPTED and may assist to avoid privacy conflicts. Achieving a good overall design outcome can therefore be complex and involve tradeoffs, but equally individual aspects should not be sacrificed one for the other, but will depend on the circumstance/context.



⁶ Larcombe D; Van Etten, E; Logan A; Precott, L and Horwitz, P (2019): *High Rise Apartments and Urban Mental Health – Historical and Contemporary Views* Challenges 10(2)

⁷ Ministry for the Environment (2020): NPS UD - Well-functioning Urban Environments Fact Sheet

While some prioritisation of design elements is expected depending on the context, a balanced approach that achieves effective on-site and neighbourhood design is required.

This report considers design approaches to address these matters. It is recognised that these may potentially impact on the amount of development that could occur on the site, and may reduce flexibility for site planning, or increase regulatory costs. This has been considered in the evaluation of the options, from an urban design perspective.

In addition, there are ancillary issues that are also discussed in respect to the matters listed, and proposed provisions incorporate consideration of this wider context. An example is weather-tightness, where it is desirable to allow for eaves (something that the current plan provides for in some zones) to ensure building longevity.

The recommendation for how to manage more than 3 units in the MUZ is to base it on the existing Residential Medium Density Zone, which is well established in Ōtautahi Christchurch and has resulted in consistent satisfactory outcomes. Some amendments to the regulatory framework for design are recommended based on monitoring and the impact of the MDRS framework.

1.5 Summary of Recommendations

It is recommended to continue with the established regulatory regime for MDRZ and HRZ where possible, and apply it more generally to the revised zone framework. In doing so, some consideration will need to be given to higher densities now permitted and encouraged, to ensure the provisions enable and manage this type of development.

Further, recommendations for changes to the District Plan are made in each section. These recommendations are summarised below:

- 1. More than three units to be subject to an urban design assessment in both the MRZ and HRZ, including implementing a standard assessment framework for multi-unit complexes, based on the Residential Design Principles from the current Christchurch District Plan.
- 2. The building envelope and assessment framework in the HRZ should enable perimeter block development. Manage the building bulk and the impact of larger continuous buildings on the interior boundaries of a site.
- 3. Retain the existing Residential Design Principles, with amendments. In particular revise the first principle (Context and character) to "Context and Site Layout" and include guidance to emphasise site layout as the pre-eminent driver of design outcomes.
- 4. Retain some built-form standards from the current District Plan in relation to:
 - Ground floor habitable space.
 - Garaging (to be behind the front façade).
 - Bin storage and washing lines.
- 5. Retain and modify the fencing rule so that tall fencing can occupy no more than 50% of the site frontage in total.
- 6. For higher density development, require communal space in proportion to the size of the site and the number of upper floor units.
- 7. Modify the MDRS as follows:



- Allow small eaves (<0.5m wide) to be excluded from site coverage and to protrude into the front setback.
- Allow inclusion of front doors as part of the 20% glazing, and provide for permitted reductions where glazing to ground floor rooms is provided.
- Continue to allow some garages and accessory buildings to be built to the interior boundaries (with zero setbacks).
- 8. In the HRZ, a building envelope as follows:
 - A maximum height of 20m.
 - 1m internal boundary setbacks.
 - No recession planes at the front of the site, on internal boundaries within 20m of a street boundary.
 - Elsewhere on the site, MDRS recession planes to a height of 12m, with a 6m setback applying above 12m.
 - For buildings above 4 storeys, a 1m setback for the top storey.
 - 50% site coverage.
 - A maximum building width or depth of 30m, except where directly adjacent to and parallel the street.
- 9. In the higher height areas of the HRZ, allow a maximum height of 32m, with 6m setbacks above 20m.

2 Context and Site Layout

Higher density development predominantly takes place in the context of an existing urban environment, and contributes to defining the future form and character of a neighbourhood. The introduction of medium density zoning implies a transition to a new urban character in lower density zones.

Similarly, high density zoning is a further increase in the intensity and scale of development. It is proposed in the context of existing medium density areas and will also be a transformation of the form, appearance and function of those areas.

2.1 Discussion of Issues

Site layout is regarded as the overarching issue that can determine the success of a development in terms of urban design outcomes. With a good site layout, other aspects of the design should fall into place. However, if the site layout is problematic it can be the cause of other issues (which are discussed in the sections that follow), leading to a poor design outcome overall for occupants, neighbours and the neighbourhood.

For the HRZ, with increasing heights and densities, there are increasing challenges in designing a high quality site layout. The current approach, relying on the building envelope to minimise effects on neighbours and surroundings, is not an effective way to manage the impacts of taller buildings. A range of approaches are well-established in other cities where higher height buildings are prevalent and some of these are discussed in this report.

2.1.1 Importance of Site Layout

Site layout is a key determinant of the quality, functionality and contribution of the development to the neighbourhood, and becomes more significant as the scale of development increases. To a large extent, how well a development scheme meets a wide range of design outcomes is driven by the layout of elements on the site, including buildings, landscape, internal space, access, car parking, private outdoor space, and servicing. If these elements are not well laid out on the site this has knock on effect to the whole of the development, with limited opportunity to create good overall development outcomes.

With regard to existing development, the Design Outcomes Research stated that:

The majority of the issues arising are related to poor site layout which impacts on many aspects of the site and building design, including street interface. The root causes are:

- 1. More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing.
- 2. There has been insufficient space allocated to front gardens and accessway planting and the resulting environment is not as safe or pleasant as anticipated.

For example, long rows of units, in close proximity to each other, can restrict light access, restrict safe, on-site pedestrian access, create privacy issues between units, and limit the opportunity for on-site amenity such as tree planting.





Figure 1: A poor site layout can cause negative flow-on effects to the street and neighbourhood⁸.

The location of private outdoor space at the street front can create privacy impacts for the occupants, or if fenced to prevent this, safety and amenity issues for people on the street, due to the lack of overlooking of the street. Access for visitors (i.e. visible a front door) is also likely to be unclear and overall the design of a development can create an inhospitable street environment.

Some examples of issues caused by poor site layout are set out below. These can sometimes be mitigated, but sometimes the mitigation may cause problems of its own:

- 1. Poor street engagement (location of outdoor living creates a conflict between desire for privacy and creating street engagement);
- 2. Poor quality accessways (no space for planting, or services and parking located in prominent positions);
- 3. Lack of passive surveillance due to interior layout of units (for instance bedrooms or bathrooms located next to accessway);
- 4. Lack of on-site legibility (for example doors hidden and not visible from the street);
- 5. Dominance of garages within the site, particularly if no ground floor living space;
- 6. Safety issues resulting from the layout of pedestrian accessways with inadequate width or tight bends and poor sightlines.

The above are examples of issues that can most easily be resolved through site design, but may be addressed through other forms of mitigation, but can be variable in the degree of success.



⁸ Design Outcomes Research, pp13



Figure 2: The arrangement and configuration of the units has resulted in a poor interface to the shared driveway which is also the pedestrian journey to the front door. Specifically there is no planting, doors are not visible, and there is no passive surveillance opportunities.



Figure 3: [left] The site layout creates a 'zig-zag' circulation pattern to access the back units which may create safety issues; [right] Site Layout offers direct sight lines between the street and the back unit which maximises the level of safety for residents and visitors.

The Design Outcomes Research noted that the current approach to medium density housing (in the RMDZ) results in many of the issues outlined above. However, the District Plan does not include explicit consideration of site layout as the overarching issue. As a result, issues are often explored individually as mitigations rather than tackling the root cause, which is often the site



layout. The Design Outcomes Research recommendations included more focus needed on the design of accessways.

This is an issue which has a public or communal benefit, rather than strictly accruing to an individual householder and is considered in detail under "A Safe and Welcoming Access" (section 6).

2.1.2 Site Layout for the High Density Residential Zone

Traditional zoning (such as the MDRS) adopts the conventional low density zoning approach of allowing for a building envelope defined by setbacks and recession planes. However, such an approach is largely aimed at managing impacts on individual neighbours, rather than an overall built-form that results in a good quality neighbourhood. The approach becomes progressively less effective as building densities increase. For instance, the MDRS recession planes allow for sun access for only three and a half months of the year at ground level in Ōtautahi Christchurch. With increases in height, the approach is no longer effective. Furthermore, the recession planes result in increasingly odd building forms, particularly roof forms, as designers attempt to use the full development opportunity and fit the building into the envelope.

The current higher-height RMD zone (Carlton Mill Road) takes a slightly different approach. The package of provisions uses recession planes that become vertical (as opposed to angled) at a certain height. This ensures that sunlight can be received at oblique angles, but will not project over the top of the building (which is unrealistic with greater heights). Meanwhile, if lower height buildings are constructed, there will be sun received over the roof.

Buildings that are constructed to a traditional recession plane envelope will generally be long thin buildings built perpendicular to the street. This form of development has a number of disadvantages as density increases:

- 1. Overlooking from windows and balconies is focussed onto neighbouring sites which creates privacy impacts.
- 2. The possibilities for breaking the building up in the middle of the site are reduced because the usable space is concentrated in the middle of the site (the only place where height can be achieved).
- 3. Buildings may have odd pyramidal shapes to meet the recession planes, which can add cost, lead to issues of weather tightness and be visually incongruous within a streetscene.
- 4. Long buildings will often create more shade on neighbouring sites.
- 5. It is difficult for consolidated open space to be achieved because the form encourages narrow spaces around the site boundaries.
- 6. A coherent street scene is less likely to be achieved because the buildings are focussed inward, with front entry points to units off an access rather the street, and only a narrow amount of building facing the street, often reading as the side rather than front of the building.

Whilst the RMD Zone, which is a similar density to the MDRS, generally results in satisfactory outcomes, the increased heights and density proposed for the HRZ creates different challenges which are best addressed through a different approach to site layout.





Figure 4: Long blocks perpendicular to the street can result in monotonous and visually dominant building forms

2.1.3 Alternative Site Layouts in the High Density Residential Zone

Some alternative site layouts are evaluated in Appendix 1. These are:

- A traditional approach, defined by setbacks and recession planes, as outlined above.
- A building envelope that allows for a centralised building, which is discussed in more detail in Appendix 1, but is not recommended.
- A perimeter block typology, which is recommended and discussed in more detail below.

A perimeter block approach is recommended for development in the HRZ. The perimeter block approach is a well-proven design response, common in Europe and North America that is suitable for the Ōtautahi Christchurch's climatic conditions and the design outcomes anticipated through the District Plan policy direction. Perimeter blocks are widely discussed⁹ as a solution in Aotearoa New Zealand in relation to the NPS UD, including by the Parliamentary Select Committee, who advised on the MDRS bill.¹⁰



⁹ See for instance Coalition for More Homes (morehomes.co.nz)

¹⁰ Resource Management (Enabling housing and other matters) Amendment Act 2021.



Figure 5: Plan and birds eye view of a perimeter block development, with duplex and multi -unit (including apartment) typologies11.

Characteristics of Perimeter Blocks

Some attributes of perimeter blocks are:

- 1. *Buildings are concentrated at the street edge.* The street is lined with a street wall, which may be continuous or have relatively narrow gaps between the buildings, depending on the context and density. The buildings may be quite high and will strongly frame the street. This creates a formal edge to the street and strong enclosure.
- 2. *Public fronts.* Buildings have public fronts, with an active and engaging interface with the street. The formal frontage, with windows and entrances to the street, will have a high quality of design and visual interest.
- 3. *Consistent street setbacks.* There is a consistent building setback from the street, which may be zero or up to several metres.
- 4. *Open space within the block. There is a predominance of open space at the rear of sites, usually co-located with neighbours' or communal to create an open central courtyard where sites borrow sunlight access and amenity from each other. There may be a lower level of building in this area, including garages.*
- 5. *Private Backs.* Private uses such as outdoor living space, servicing and parking are located to the side of buildings or at the rear in the central courtyard (separate to outdoor living space).



¹¹ Ministry of Housing, Communities and Local Government (2021) National Model Design Code



Figure 6: Illustrations of a perimeter block development (left) and the urban pattern at a neighbourhood scale (right)



Figure 7: Street view of a perimeter block development (with zero building setback) in Utrecht, Netherlands, illustrating the good levels of engagement and visual interest provided with the street (Source: Google Streetview)





Figure 8: Birds eye view of a similar perimeter block layout as Figure 7, illustrating the good extent of private green space to the rears (Source: Utrecht, Netherland - Google Earth).

Advantages of Perimeter Blocks

Some of the advantages of a perimeter block layout/building:

- Strengthens the built form relationship with the street, which creates better opportunities for human engagement and passive surveillance. This in turn contributes to creating safe and walkable neighbourhoods.
- Allows for good access to sunlight and open space within the centre of the block.
- Is an efficient use of space, allowing for high yields with modest site coverage (because most or all of the floorplate can be built to the full height).
- Allows narrow sites to be developed to the same height and density at large sites (because of small side setbacks and no recession planes).
- Provides good privacy (as windows are principally focused out to the street or inward into the site, rather than the side boundary).
- Provides space for large trees to be planted to support visual amenity and access to nature.
- Can easily be developed progressively, site by site.





Figure 9: [left] Perimeter block building which strengthens the street edge and provides a suitable gap between building forms for sunlight and trees. [right] a recession plane building which results in a long building form which faces the side boundary (can cause privacy issues) and does not include a break for tree canopy or visual mitigation of the long form.

The main disadvantage of a perimeter block is that it creates more shade for adjacent sites when the building faces to the north. However, there is less shading for sites located to the east or west (as discussed in Appendix 1).

European perimeter blocks are usually created by master-planning rather than being retro-fitted into an established area. The MDRS is based on the principle that effects can be contained within the site, with a permissive baseline, and does not actively promote comprehensive or perimeter block development, or oversight of an area as a whole.

In Ōtautahi Christchurch sites are often long and narrow (for example 15m x 50m) and are developed sporadically, predominantly to 2-3 storey houses, with the buildings perpendicular to the street. Where developed already, land assembly to create a perimeter block will be challenging. As such a full conversion to a perimeter block form is unlikely to occur in the near future. However, if sites are developed within the intention of creating a perimeter block, they could be completed over time.

However, in considering alternative development forms, it is important that they work with the existing paradigm and co-exist with the existing development forms, which will still be enabled. Consideration of effects on neighbours (shading and the impact of enclosure) and the wider area (visual impact of blank side walls) is needed. The perimeter block typology should (and can) complement existing built form as well as the potential future form.

To achieve a perimeter block form, the site layout must be reshaped to achieve the following for taller buildings (above 3 storeys):

- 1. Allow building across the full width of the site (or close to it), at the front of the site next to the street only.
- 2. Promote open space and lower-scale buildings only to the rear of the site to promote a degree of shared amenity.
- 3. Buildings should predominantly face front and back



4. Outdoor living space, parking and servicing located behind the building and not adjoining the street.



Figure 10: Illustration of a building utilising the full width of the frontage of the site. This offers the greatest potential to create a safe and engaging walkable neighbourhood.

2.2 Recommended Approach - Context and Site Layout

Below is a discussion of some of the options that would address the issues related to context and site layout. These may be implemented individually or as a combination. It is recommended that:

- 1. More than 3 units are a restricted discretionary activity in MDRZ and HRZ.
- 2. Assessment matters for Site Layout be included in the Residential Design Principles.
- 3. The Building Envelope for the HRZ is designed to enable perimeter block development.

2.2.1 Restricted Discretionary Assessment for More Than 3 Units

There is an increasing risk of poor outcomes for larger developments, both because they are more complex, and because their size means that any adverse impacts may be greater and affect a wider area (as well as have more on-site impact). The MDRS specifies that up to 3 units is a permitted activity and allows for restricted discretionary consideration of larger proposals (although it does not require it). It is open to the Council to change this threshold (for example to allow up to 6 units as a permitted activity). At present the threshold is 2 units in the RMD Zone and 4 units in the RSDT Zone.

The following points are relevant to the consideration of this threshold:

- Small sites usually have limited options for development there is a limited amount of ways to arrange three units on a site and the advantages and disadvantages are well understood. These are to some extent described in the National Medium Density Design Guide. For this reason, the risk of poor outcomes is lower than for larger sites. However, the experience of the Council in the RSDT Zone is that poor outcomes are still likely to sometimes occur on small sites.
- 2. The impacts of smaller developments are more confined. Although some developments may have poor outcomes, there may be satisfactory results in a neighbourhood overall,



when they are considered cumulatively. This indicates a higher level of risk with large developments.

- 3. Access is usually a simple matter for small developments. There is usually a direct footpath from the site to the front door with a direct line of sight.
- 4. Servicing issues are also usually simpler. Dominance of bin storage is usually avoided, and the creation of large car parking areas at the street front is unlikely in small development.
- 5. Privacy is an issue which is directly related to the number and density of units. Whilst some overlooking of private areas is inevitable in medium and high density areas, the impact that it has is related to the intensity and quantity.
- 6. With regard to site layout, there can be a much greater range of options for larger sites. This can create interesting and innovative developments with a range of spaces including communal spaces. However, it also creates opportunities for poor design outcomes, such as large car dominated spaces, which could be adjacent to the street.
- 7. Larger buildings on larger sites can have a much greater visual impact (because they are very visible), especially in medium density areas which do not have existing larger buildings. This can include 3 storey buildings in a continuous terrace form, for instance, which can appear monolithic. Longer runs of terraces without a break in the roof will have a greater visual impact, for example.

The Design Outcomes Report indicated that built outcomes were inconsistent for RSDT Zone sites with 4 units, and that satisfactory outcomes were not consistently achieved (and that the good outcomes anticipated by the District Plan policy were rarely achieved). This contrasted with the RMD Zone where there was much more consistency in achieving satisfactory outcomes. It was concluded that the restricted discretionary activity status in the RMD Zone (for developments with more than 2 units) had led to a higher quality of outcomes, aided by built form standards that were aimed at multi-unit complexes rather than individual houses.

Because of the risks identified above, and the quality of outcomes resulting from existing experience using a variety of thresholds, a change in the minimum number of units (currently 3+) is not recommended.

2.2.2 Permitted Number of Units in the High Density Zone

Consideration has been given to whether the same threshold is appropriate in the High Density Residential Zone, where larger scale buildings are anticipated and a greater degree of effect.

The importance of good design is not reduced in a higher density zone. The zone allows for a greater scale of buildings, which can create a different and more intense character, but this is not a reason for a lower standard of design. In some ways design is more important in this environment because:

- 1. There are more people living in it who are affected by the quality of design.
- 2. There is greater potential for a greater scale of effects.
- 3. A faster pace of development is expected in these areas because they are the most suitable and desirable for higher density. There is more potential for cumulative effects to be established in the short term.



Many of the issues discussed above (such as the safety of accessways and the appropriateness of servicing) apply equally in the high density zone. The main point of difference is the scale of buildings in the surroundings; residents would need to accept that they are in a higher density environment which is defined by larger and bulkier buildings that may compromise access to sunlight. People may choose to make this trade-off in exchange for access to services and amenities.

In the short term there is likely to be very little development of taller buildings in the high density zone, because it is not generally favoured in the marketplace or cost-effective to build¹². There is therefore a risk that high density areas establish as lower quality medium density areas. The risk of this is shown by the Design Outcomes Research, which finds that Residential Central City areas have a lower design quality than the RMD areas. It is for this reason that a relaxed threshold is not recommended in the high density zone.

2.2.3 Assessment Matters Relating to Site Layout and Context

The Residential Design Principles in the Christchurch District Plan are considered to be a fairly comprehensive assessment framework for higher density housing. However, a shortcoming has been that site layout is not highlighted as the driver of many (or most) of the issues, leading to a process of post-design mitigation of issues which often creates unsatisfactory outcomes and adds complexity to the consent process.

A new assessment matter is recommended to specifically address site layout. This approach would ensure that site layout could more effectively be considered as the root cause of many design issues and given primacy through the assessment process. This may be implied by making it the first matter, or its importance could be stated specifically. The new matter could replace the existing "character and context" matter as the NPS-UD directs that character is expected to change.

- 1. It would improve outcomes by reducing the tendency to trade-off one issue against another (without necessarily achieving an overall improvement)
- 2. It would assist applicants and provide more clarity as to where their focus should be in the design process, rather than the current approach where only small fixes can be made without redesigning the whole site or reducing unit numbers.



¹² The Property Group (2022): *High Density Residential Feasibility Assessment*

3 Scale, Form and Appearance

3.1 Discussion of Issues

Medium and high density development has a different scale to typical established residential areas in Ōtautahi Christchurch. Increasing the scale of development in residential suburban areas will lead to a change in the character of those suburbs over time. This is clearly intended by the NPS UD. However, scale, form and appearance impact on the quality of public and private space and on amenity.

As a result, the consideration of scale, form and appearance is not primarily concerned with fitting new development into an established context, which is generally expected to change over time as the city's population increases. The issues rather are in managing these more intense development forms to create a high quality living environment for residents, neighbours and the wider public, appropriate to the density. This has been a longstanding issue in the city's medium density neighbourhoods¹³.

This includes managing the bulk and scale of buildings, which becomes even more important in higher density, more complex environments, albeit recognising that residents may trade off amenity considerations for other benefits, such as the convenience of proximity to facilities.

This section does not consider permitted height, which is discussed in Section 9 - Building Envelope. The discussion below is concerned with the appropriate management of bulk and scale where it occurs.

Some of the issues relating to bulk and scale are:

- 1. Long Blocks in Medium Density Areas: In medium density environments long blocks, particularly when perpendicular to the street, can result in monotonous and visually dominant building forms, which may be prominent and contrast with existing development patterns. The impacts of these forms affect neighbouring sites and are not necessarily expected in medium density residential areas, even under the MDRS. Please refer to Figure 5.
- 2. *Monolithic Appearance of Taller Buildings:* Taller buildings can be monolithic in appearance if not well designed, especially if they are also long or broad. This is especially significant if they are widely visible in the neighbourhood (i.e. not obscured by existing buildings or vegetation).
- 3. *Uniformity:* Larger developments are sometimes proposed with a very uniform appearance. There can be benefits of this (i.e. identity and coherence) but can also be quite monotonous. Management of this issue is possible through variation in form and architectural detailing.
- 4. *Visual Interest* in articulation and detailed design. Issues of visual interest can be addressed by ensuring that the building includes features and detailing that are visually appealing to people. Such features are well understood and relate to a desire for visual



¹³ inspiring for example the St Albans Neighbourhood Plan

order and meaning, as well as legibility and human scale, rather than any particular architectural style. Concepts that contribute to visual interest are matters such as:

- a. Grouping of features;
- b. Expressing individual units in the façade;
- c. A visual hierarchy (building detail is apparent at different scales and viewing distances);
- d. A human scale and a fine grain of detailing and avoidance of areas of blank facades;
- e. Symmetry;
- f. Verticality (breaking down a long building into a series of shorter forms, usually through changes in materials, steps in the building line and clusters of features);
- g. Variation in building outline (for example pitched roofs with hips and gables rather than flat roofs);
- h. Organized Complexity (or variety in a pattern, the development is rich in detail with a coherent structure to organise the complexity). This can take the form of fractal components (repetition of similar shapes at different scales, such as a number of window panes forming a window, then a number of windows grouped together on the facade).





Figure 11: Visual interest is created here through the use of symmetry, good window proportions, balconies and visual hierarchy.



Figure 12: Individual units are clearly expressed through gates leading to the front doors and the modulation of the roofline.

A finding of the Design Outcomes Research is that larger developments used architectural detailing as a mitigation to address site layout issues (for instance changes in cladding to create visual interest in the absence of modulation) and that this could lead to poor quality visual outcomes without necessarily addressing the core issues. Significantly, the areas of poorest performance in the appearance related outcomes were related to detailed design.

5. *Recession Planes.* Buildings that respond to recession planes can appear visually awkward, particularly larger scale buildings if floors are stepped back progressively in response to the angled plane. Recession planes can result in unexpected changes in heights which disrupt the coherence of the street scene, and unbalanced buildings with unusual shapes as designers endeavour to keep the building within the angle of the plane.





Figure 13: Sections of the building adjacent to the boundaries have been shaped by the recession plane angles to maximise buildable area.

6. *Issues of transition.* There can be an awkward juxtaposition between new development and existing suburban houses due to the contrast in styles and the high degree of visibility of the higher density in the existing streetscene. The new buildings can be prominent and break the rhythm of the street, which may have been defined by its coherence due to the uniformity of scale and style of buildings within the street. This is a result of the transition to a higher density form, as distinct to the new buildings being poorly designed or where there is a change in character.

The issue is temporary, albeit that the transition can be lengthy. For example Manchester Street in Edgeware, is now a predominantly medium density area, having been substantially redeveloped over a 20 year period. Newer two storey development in this area is not especially prominent and does not contrast with the established streetscape.



Figure 14: Manchester Street, Christchurch where 2-storey medium density development is now predominant after a transition from standalone housing. The relationship between the ground floor, west facing outdoor living spaces and the experience walking along the street offers only mixed success.

As well as the issues described above, positive impacts may be created by higher density developments if they are well designed. These do to a great extent depend on the site layout, for instance that the bulk of the building relates to the street as described in Section 2.



3.2 Recommended Approach – Scale, Form and Appearance

Below is a discussion of some of the options that would address the issues listed in 3.1. These may be implemented individually or as a combination. It is recommended that:

- 1. In the MDRZ, longer buildings are broken into sections of 20m-25m.
- 2. In the HRZ, a greater degree of bulk is enabled and the building envelope is set to allow for perimeter block development.
- 3. In both zones the Residential Design Principles are employed to ensure a level of visual interest is achieved (similar to the current approach in the RMD Zone).

3.2.1 Medium Density Residential Zone

With regard to point 1 in the list of issues (Long Blocks in Medium Density Areas), limiting the length of buildings can reduce the potential impact of building bulk for both occupants of the developments and neighbours. This includes splitting up longer forms with a meaningful break between buildings.

The size of this break would need to relate to the location and scale of buildings. In MDRZ, a break of 4m every 20m (roughly every 4 units) would break the built form into blocks of a coherent residential scale that would allow views of sky and light penetration between buildings and provide for a break in the potential length of roof form.

Points 3 and 4 (Uniformity *and* Visual Interest) can also be helped by breaking up the buildings in shorter sections, or with a degree of modulation and adding features such as gables to the roofline. These matters have been managed successfully through the Residential Design Principles and it is recommended that this approach should continue. Point 4 lists a number of ways to manage the level of visual interest provided by a building. There is no fixed way to achieve the right level of detail and flexibility is appropriate to create variety.

In the MDRZ, the more relaxed recession plane angles (60%) of the MDRS should reduce the incidence of recession plane buildings discussed in point 5.

With regard to point 6 (Issues of Transition) this is regarded as being addressed in the NPS UD Policy 6, which makes it clear that this transition should not be considered an adverse effect.

3.2.2 High Density Residential Zone

In relation to points 1 and 2 (Long Blocks in Medium Density Areas *and* Monolithic Appearance of Taller Buildings), in a high density environment, there is more expectation of larger buildings. There is likely to be more tolerance for longer built forms, as these would have a similar impact in terms of impacts, to taller buildings. As a result, a longer low-rise terrace form is likely to be more appropriate (for instance 40m) because of the greater scale of buildings generally in the area.

However, for taller buildings which are more prominent, a more limited dimension of 25m width would be appropriate to avoid dominant monolithic buildings (similar to the approach taken to the City Centre Zone), and greater separation between taller buildings. An exception to this however, is where buildings are adjacent (and parallel) to the street. As discussed under site layout, the impact of bulk facing the street is different to where buildings face internal boundaries because the impacts are focussed onto the public realm.

Regarding points 3 and 4, and similar for the MRZ, a discretionary approach is recommended to manage issues of uniformity and visual interest.

In view of the above, some amendments to the MDRS have been suggested to allow for buildings at the front of the site in the HRZ, adjacent to a public street, to be exempt from recession planes. This would encourage taller buildings to be built next to the street and shape the building envelope to enable perimeter block buildings and reduce the incidence of building bulk deep within the site. It would also help to reduce the impacts of recession planes on built form described under (5).



4 Street Scene

4.1 Discussion of Issues

A key urban design principle is that development should be engaging from the street. This means that there should be a sense of activation and interest from the street edge to the building and its interior.

Aspects of establishing this relationship include the front façade of the building and its windows and doors, but also important is what happens both behind the façade (that there is an active part of the house or unit at ground floor) and in front of it (that there is a clear view from the street to the façade and that the area in front of the building is unobstructed and includes attractive elements, such as planting).

A traditional approach to managing a street scene is for developments to have a public front and private back. The front of the building is a transition space which allows for a welcoming public interface and forms a defined boundary between the public and private realms. Meanwhile, the side and back of the development is a more private and informal space which may be used for outdoor space, parking and servicing. This is the model that is used to create perimeter blocks and is widely recognised in local and international design guidance.



Figure 15: A successful site layout approach, which includes public faces to the street and private gardens to the rear of buildings (MfE, 2002)

An integrated approach is needed to the management of street scene issues. A successful street interface is functional – it provides for privacy - whilst also animating the street with doors and windows. As such, the primary driver of a good street interface is a site layout, which for instance, avoids too much outdoor living space and garaging next to the street.

Street engagement must be considered in conjunction with internal privacy. A building setback is helpful because it creates some separation, noting that this is controlled through MDRS density standards. As well as streets, the relationship of housing with internal accessways is important because these also present a public front to a development and should be similarly considered.

There is a difference in scale that occurs with density. Higher density building forms will usually be both taller and occupy a higher proportion of the site frontage. They may in some cases be built boundary to boundary. This can re-inforce a strong urban street appearance, but can create adverse impacts in terms of visual dominance, if not well designed.

4.1.1 Façade Treatment

Once site layout issues are resolved, the street interface components can be resolved. The most important of these is the presence of windows and a front door.

A front door is important as it increases the sense of ownership of the street boundary and activation more generally of the street, encouraging active transport (walking). Passers-by know that the occupant may come out at any moment; occupants must also walk past any landscaping and have an incentive to maintain and personalise it. It also contributes legibility (the intuitive understanding of the environment), and to safety in the form of activity on the street i.e. greater oversight of and presence on the street.

Windows establish a clear relationship between the inside and outside of the unit – again, the space will sometimes be occupied and there will be glimpses of the interior, lights will sometimes be on and the view changes all the time. This also contributes to the safety of the people on the street via overlooking of the street.

The MDRS standards require a minimum of 20% glazing to be provided on the front facade. This is a relatively crude control but is sufficient to provide for a level of interest and engagement. However, although the amount of glazing is large, it need not be grouped in a cohesive manner or evenly distributed (which provides for visual interest), and is not allocated to any particular part of the façade i.e. the ground floor, where it would have most impact.



Figure 16: A sense of stewardship is provided by the direct front access, and safety by the windows onto the street and shared driveway / access to back terraces.

20% glazing may also be higher than typically provided, particularly on south facing facades. Higher rates of glazing on the southern aspect could reduce the energy efficiency of the building, if the glazing is ineffective. More extensive glazing can create perverse outcomes, disrupting the



coherence of the façade, without necessarily leading to an improvement in the visual appearance of the development or the extent of oversight of adjacent public or semi-public space.

In some circumstances, better outcomes would be achieved through a lower proportion of glazing, if that glazing was functionally useful (for instance if it was from ground floor living areas), and if a front door was included. The MDRS is drafted such that there is an incentive to locate the front door on the side façade (to allow space for more glazing), which is a perverse outcome.

The example below has 17% glazing, plus a front door. It provides sufficient visual interest and engagement with the street, exhibiting many of the design attributes discussed under section 3.1. However, it would not meet the MDRS rule.



Figure 17: A multi-unit development, which provides only 17% glazing, while providing a sufficient level of engagement and visual interest.

4.1.2 Ground Floor Uses

In providing for meaningful engagement with the public space of the street, the presence of ground floor living adjacent to the street is especially important.

The RMD and RCC Zones were found to provide for good street engagement and this is in part due to the current rules around ground floor habitable space. The RMD Zone provisions require ground floor space for half the units (in association with location of garaging away from the front of the site). It ensures that the front unit will have habitable space at the street front, and any windows provided will have a function.

In contrast, a common typology in the RSDT Zone has a garage located at the street front, side on. This typology typically does not provide meaningful street engagement because any windows will result in only superficial dressing of an inactive façade as people are not usually present in garages spaces for long, or the garage is likely mostly used for storage.

Whilst often valued by occupiers, garages usually lack architectural detail or visual interest, as well as being associated with extensive paved surface at the street front. The location of garages and



car parking in front of residential buildings can disrupt the street interface in a similar way to fencing, by blocking views of the positive features of a building, in particular doors and windows. A succession of garages along a street can also become a dominant visual element.

For larger complexes, parking can be visually dominant if it is concentrated at the street front. This is currently managed by the residential design principles relating to *Street Scene* and *Access, Parking and Servicing* and it is recommended these are applied throughout the residential zones.



Figure 18: A parking area adjacent to the street reduces the potential for engagement and safety of the street, as well as negatively impacting on the overall amenity and coherence of the streetscene.

4.1.3 Treatment of Site Frontages

Fences

Tall fencing can have a significant impact on the way a building looks and engages with the street, including impacts for the potential safety of pedestrians. It can block views of the building (and its occupants) and obscure the appearance of landscaping and the transition between the public and private realms, as well as prevent sightlines to moving vehicles exiting a site. A fence in itself is also not in itself engaging.



The current rule in the RMD Zone for fencing (14.5.2.10) is that it should be limited to 1m; or else be 50% transparent. This is intended to ensure that there is some street engagement, whilst allowing for some privacy and security. A diagram is provided as follows:



Figure 19: Illustration of current 50% transparency fencing rule in the RMD Zone.

The Design Outcomes Research found that the fencing rule was not always successful, in particular where there are site layout issues such as outdoor living areas located at the street front. Whilst the transparent fencing would in theory allow for street engagement from the unit and garden, in practice it was often screened, with bamboo or plastic screening, to create privacy in the outdoor spaces. The result was often that there is much less street engagement than expected.

Solid fencing is permitted in the RSDT and RS Zones. The report found that street frontages were of a poor quality in this zone and fencing was regarded as a specific reason for this.

There are some circumstances where site planning becomes more difficult to combine with an engaging frontage – principally where narrow units are positioned to the south of the street and sun access for outdoor living is easiest to obtain at the front of the site. This is an instance of a site layout issue, rather than something that should be addressed through changes to fencing alone.

Many developments include fencing on one half of the site frontage, with the other unfenced. Existing practice is to encourage areas that are clearly "public" – for instance around front doors (refer to Figure 15), and areas that are clearly private which may have at least some solid fencing. This creates legibility on the site and activation and visual interest on the street whilst allowing for some privacy. This arrangement is commonly agreed in consenting processes. It is recommended that fencing rules should aim to facilitate this scenario (of a public threshold space over half of the frontage and private space over the remainder) rather than focussing on transparency.



Figure 20: A development with open frontage facing the street (includes a 1m high solid fence with bin storage).

4.2 Recommended Approach – Street Scene

The above analysis identifies three areas in relation to street scene. Potential management of these is addressed for each in turn below.

Recommendations are:

- Requirements for ground floor habitable space are retained as they are in the existing RMD Zone.
- Tall fencing (max. 1.5m) is restricted to half the width of the site.
- Garaging (including internal garaging) located 1.2m behind the front façade of the building.
- The MDRS glazing rule is amended to allow inclusion of front doors in the 20%, with a glazing reduction where there are ground floor windows to living rooms. The area of the façade is reduced through the exclusion of gable ends.
- The Residential Design Principles are retained to ensure continued consideration of the street scene more holistically.

4.2.1 Façade Treatment

Approaches to ensure that building facades are visually interesting, as described in Section 3, would also create a more positive street scene by ensuring that buildings have an engaging appearance. Otherwise, the key matter is to ensure that there are windows and doors that face the street and that this relates to habitable space.

This should be achieved through a mixture of rules and assessment matters, including retention of the Residential Design Principle relating to street engagement.

Glazing Rules

The MDRS specifies a minimum of 20% glazing. Disadvantages of this are:

- It is often more than needed for a high quality frontage;
- It may discourage front doors facing the street (which are not usually glazed);
- The glazing may not be functionally useful and may reduce thermal efficiency.

Alternative amounts of glazing have been considered in Appendix 2. There is no exact threshold where the percentage of glazing becomes appropriate in every case because it depends on the distribution of the glazing and the width of the façade. The conclusion reached is that 15% is usually not sufficient to ensure good street engagement, and that 20% is in some cases more than necessary. The more important consideration was that glazing was provided meaningfully. From this it is concluded that 17.5% is sufficient, provided there is plenty of glazing on the ground floor, and that this could include the front door (even if it is not glazed).

Reductions in the level of glazing would be available by consent. However, noting that it is desirable to avoid excessive consent processes for simple matters an alternative is that a reduction in glazing could be a permitted activity where certain conditions are met. These are:

- That there is a front door in the façade;
- That there is a high proportion of glazing on the ground floor (20% including the door, even if not glazed); and
- That there is at least one window facing the street from a living area.

A minor change has been suggested so that gable ends are not discouraged. Gables are often desirable features because they can add variety and interest to a street scene. As the rule is framed, it would require more glazing on gable fronted units than hip roof forms, because 20% of the whole front façade is needed (including the gable). The amendment would exclude gables from this calculation, so that such units are not disadvantaged.

4.2.2 Ground Floor Uses

Living Space on the Ground Floor

The current RMD Zone rule requiring ground floor living space contributes to ensuring a meaningful and engaging street interface. However, it is a bit inflexible and does not allow a mix of typologies to be provided over the site, or for low-rise apartments of up to 3 storeys which may be built one above another.

As a result, a less stringent standard, requiring 50% of the ground floor to be habitable space is recommended. This allows for areas of parking and garaging on site, but still requires that there is some ground floor accommodation to provide activation and opportunity for engagement.

The current RCC Zone rule is that 30% of the ground floor should be habitable space. However, the Design Outcomes Research identified that the RCC Zone provisions resulted in a lower quality of site layout than the RMD Zone, one reason for which was the lower quality of the interface with accessways.

A 30% standard would be appropriate for taller apartments of above three storeys, both because it is more challenging to find space for ground floor amenities and servicing for these typologies, and because it is often logical to separate the pedestrian access from the servicing. However, given the low proportion of developments that include apartments at present, retention of this blanket standard is not considered appropriate. Rather, reductions should be considered as part of assessment matters.

Garaging

The current RMD Zone requires garaging to be located 1.2m behind the front façade of the building, which ensures that there is some living accommodation fronting the street. Retaining this rule would ensure that this high quality street scene is replicated throughout the city as it redevelops.

A rule has also been proposed that would apply to detached garaging, which has a more intrusive impact on the street scene because it usually sits in front of an existing unit (and its fenestration). Detached garages can obstruct the positive aspects of street engagement that a residential building (often an established house) provides.

4.2.3 Site Frontages

The current rules have been only partially successful at creating engaging street frontages because of the conflict in use and desire for privacy in outdoor living spaces, discussed under Site Layout. This issue should be resolved through changes to site layout, to ensure that there is a good proportion of the site front that does not need to be screened for privacy.

The current fencing rules have been partially successful. They often ensure a high quality frontage, but they have often been undermined by post-occupancy screening, which indicates occupants don't find the balance is working well between openness and privacy. This is in part a site layout issue and the solution is to ensure that there is a separation between private space and the more public transition space on the site.

As a result, it is recommended that the fencing rules are amended to provide for this split between areas of the frontage which are fully public (and should not be fenced) and areas of the site which are private (and can be fenced). It is recommended that the fencing rule is amended to allow for 50% of the frontage to be fenced to a height of 1.5m and for fencing for the remainder of the frontage to be restricted to 1m (to allow clear views over). This creates a balance of fencing and openness along the street boundary, whilst allowing for some privacy to be created at the front of the site. This rule complements the changes to the site layout assessment matter.



5 Good On-Site Living Conditions

5.1 Discussion of Issues

These issues fall into two categories: Occupier Amenity; and Communal and Neighbours Amenity.

5.1.1 Occupier Amenity

Matters of occupant-focussed internal and external amenity are derived from the site layout and orientation, as well as ensuring there is adequate space for aspects such as outdoor living.

Issues include ensuring that

- There is good outlook from living space;
- Internal and external privacy is managed especially between adjacent developments; and
- Outdoor space is adequate and usable.

The functionality of internal space would also come under this heading (which was previously managed through the minimum unit sizes specified in the District Plan).

The Design Outcomes Research identified that these matters are usually well provided for in Ōtautahi Christchurch developments. This is most likely because there is a good market incentive for it, although results relating to outdoor living space may be in part due to the current requirement in the District Plan for 30m² minimum in the medium density zones.

Outdoor Living Spaces

Outdoor Living Spaces requirements in the MDRS (20m²) are a reduction to the requirements in the RMD Zone under the operative District Plan (30m²).

Generally a 20m² space allows for day-to-day activities such as outdoor dining (which usually requires around 3m x 3m to accommodate a table and chairs), and some planting. However, outdoor spaces are often used for other domestic activities, for example drying clothes and for storage. This can reduce the usable space and lead to a loss of amenity and functionality. There would also be limited space for other activities that might be expected including children's play, the keeping of pets, and vegetable growing. A 20m² outdoor space is therefore substantially less practical than a 30m² space. Furthermore, at 20m² there is also limited opportunity for larger scale planting such as trees, especially if these are to avoid compromising the interior or exterior space, for instance through shading.

It is likely that the forthcoming reduction in the size of required outdoor living space will result in a subsequent reduction in the quality of outdoor space compared to the Design Outcomes Research sample.

The current RMD Zone allows for one-bed units to have an outdoor living space of 16m² or 6m² for balconies. This has also been often permitted in the Residential Central City Zone and allows for higher densities, or sometimes to fit an additional unit on a site. It is a useful incentive for a typology that is not well provided for, and does reflect reduced usage of the space. It is noted that the reduction from 20m² is relatively small and that the incentive provided by this is likely to be marginal in future.


5.1.2 Communal and Neighbours Amenity

These are issues where benefits accrue only partially to the occupier, which the Design Outcomes Research identified as not always meeting a high standard; or where adverse effects were accrued to neighbours, but not to the occupier (for instance where upper floor windows from the new unit overlooked private outdoor space of neighbours).

Landscaping and design of accessways

This issue is also discussed in section 6. Communal access areas are experienced by occupiers and visitors as they enter the site and contribute to amenity in a number of ways. If well designed, and including planting and well-designed building frontages, they create a sense of legibility and distinctiveness to the development. Higher levels of landscaping, particularly including trees, create visual benefits and can also contribute some access to nature.

These benefits are undermined by dominance of hard-surface or prominent bin storage, for instance.



Figure 21: A well planted accessway with tree and shrub planting (left) and paved, car dominated access with minimal planting (right).

The importance of accessway design was highlighted by the Design Outcomes Research, while noting they were generally not of satisfactory quality in the original sample in 2020. The report noted that "very little space was given to landscape beyond that of the hardstand that formed the vehicle access".

There is a collective benefit in providing a high standard of access generally, and a community benefit because accesses are visible from the street (and potentially contribute to biodiversity). However, the benefits do not accrue to the individual landowner and there is therefore not a market incentive to provide for a high level of planting.

Communal Spaces

Communal spaces are especially beneficial for larger sites and for taller buildings where a high proportion of the residents will not have access to their own ground floor space. Communal space, if of a sufficient size and designed well, can allow access to space with larger planting and trees, as well as more formal and usable space which can supplement balconies and greatly improve the amenity of the site and shared spaces (and more widely the block and neighbourhood). If centrally located, communal spaces create opportunity to meet and greet neighbours, in more conducive surroundings than lifts and corridors, and provide incidental



amenity for residents passing through them on the way in and out of the site. They also create safe spaces for children and pets, which may otherwise be lacking in apartments.

Small communal areas which are large enough for trees to grow with some landscaping will provide some visual amenity for the site, but larger spaces will allow for a wider range of uses. A space of 100m² is comparable to a good size garden area and if well designed, would support a variety of activities. A size of 50m² would support a planting and seating area, the likely minimum usable communal space.

Overlooking

Even in a low density residential environment, it is not unusual or unexpected that there may be some windows overlooking from neighbouring sites, but a small number of balconies and windows facing an outdoor or interior living space has less impact than a larger number.

One reason is that where overlooking is limited it is possible to introduce screening (for example from trees). Overlooking is also related to the use of the interior space. Living rooms are used more intensively than bedrooms during the day so a larger amount of overlooking would be expected. Balconies can be quite intrusive because when people are out on them, they can be seen from next door. Multiple floors of living rooms and balconies would be especially intrusive. As a result, the impact from overlooking increases with the number of units.



Figure 22: Balconies facing side boundaries creating potential overlooking of neighbouring sites and loss of privacy.

5.2 Recommended Approach

The Design Outcomes Research has generally found that the internal amenity of developments is good, and there is a market incentive for this to be maintained. Meanwhile, Communal and Neighbours Amenity represents an externality which may need to be managed by regulation.



It is recommended that the existing operative District Plan approach is retained, with a focus on communal and neighbour amenity. This entails:

- Retaining the Residential Design Principle for Residential Amenity;
- Including MDRS outdoor living space standards but including a permitted standard for reduced size spaces in the HRZ only; and
- Requiring a communal space of a minimum size for higher density residential sites.

The issue of good quality access has emerged as being of importance in the monitoring work carried out for the Council, and this is explored under section 6 below.

5.2.1 Outdoor Living Spaces

Although the outdoor living space standards have generally been satisfactory under the operative District Plan, the MDRS is expected to result in a reduction in the quality of spaces, in association with reduced requirements. This is only partially a matter of occupier amenity as these spaces contribute more generally to amenity through open space and planting. Maintaining the contribution these spaces make to general amenity is regarded as significant in the new planning framework.

In the MDRZ, where there is expected to be a reduction in the standard of overall site amenity compared to the RMD Zone, it is not considered appropriate to retain the reduction in outdoor living space size for 1 bed units. However, in the HRZ, where a different balance is sought, the reduction (to 15m²) could be introduced.

The MDRS allow for communal outdoor living spaces. These can be successful and make a substantial contribution to collective amenity. However, the design of the spaces is important to their success – that they include usable space with a usable dimension and space for larger planting.

For the reasons discussed above, a space of 50m² is recommended as a minimum size, increasing with the scale of development on the site.

5.2.2 Communal Areas

The operative District Plan requires that a discretionary development "*includes tree and garden planting particularly relating to the street frontage, boundaries, access ways, and parking areas*". It also includes rule 14.4.2.7(v) which seeks separation between accesses and units, (ideally through a landscape strip) which is beneficial for internal privacy as well as outdoor amenity. However, as this matter applies to site boundaries following subdivision, it is not always applied consistently, and will not be included in the post MDRS standards.

Changes to site layout are often needed to prioritise some space for planting alongside accessways and in communal areas. The assessment matter should be retained, and consideration of these matters also included in the overarching site layout matter, to ensure that sufficient space is provided for planting at an early stage in the design process.

5.2.3 Overlooking

The operative District Plan provides for a 4m setback from windows to neighbouring boundaries to limit overlooking into neighbouring private space. Although windows that overlook from this distance may have some impact on neighbours' privacy, it does ensure that the level of



overlooking will be moderate. For larger developments, there is also an assessment matter in the Residential Design Principles.

The MDRS does not include the 4m setback and will result in a reduced expectation of privacy, compared to the existing situation. Consequently this may result in a lower level of residential amenity. Assessment matters can be retained to address privacy, recognising there is an increase in the level of privacy intrusion resulting from a larger development. This is especially evident for apartments, that may include many balconies and overlooking from living areas, in comparison to townhouses where overlooking may be from a small number of bedrooms.



6 Safe and Welcoming Access

6.1 Description of Issues

This issue primarily concerns the quality of access from the street to the front door of a unit ensuring that this semi-public environment is safe and welcoming for residents and visitors. This is an issue of safety and amenity and is an important element in the creation of high quality housing. The importance of this issue was highlighted by the Design Outcomes Research, which identified it as an area for improvement.

A shared access is used by residents and visitors alike and has many of the same requirements and attributes as a street. It is visible from public space and provides a transition to the public environment. It projects a sense of the quality and uniqueness of the development and the extent to which it is cared for. In the absence of direct street interface, the accessway is the public environment from which people will experience their homes. The functional design, appearance and maintenance of this area is important in the way that people interact with the shared environment of the city.

The Design Outcomes Research indicated that a particular issue for some medium density developments in Ōtautahi Christchurch (in the RSDT Zone in particular) is that the main access, leading to front doors of units within the site, is treated like a service lane and designed only around engineering requirements, without consideration of the quality of environment.

From a design perspective, the issue is distinct from whether appropriate vehicle access is provided that allows for easy manoeuvring, for instance (which is a transport issue). However if there is a vehicle access, then it access should not compromise the quality of the pedestrian access

Issues that arise with accessways include:

 Narrow pedestrian accesses, which may lead to these being unsafe or unpleasant for users. A total width of around 3m is required to allow for evasion of intruders or other parties and a reasonable width is also required for comfortable passing, to avoid touching and being forced into close proximity, especially if the access is also used for bikes and bins.¹⁴

It is not necessary to form the whole width and a formed width of 1.5m is usually sufficient. The remainder would usually be a landscaped buffer which provides for additional space at upper body level and for emergency escape.

2. *Wide vehicle accesses*, dominated by hardsurfaces. This often occurs next to collector and arterial roads (where a wide access is required to avoid queuing on the road). It may also occur when separate pedestrian access is provided. Whilst this is desirable in some ways, it often results in an increase in effective width of access, for example from 5.5m to 7m. If not carefully designed (for example with kerb separation) the resulting space is often colonised by informal parking or servicing. A more effective strategy is often to use patterned paving to indicate a shared space, and increase the amount of landscaping instead.

¹⁴ Secured By Design (2019)



Figure 23: This driveway from a collector road to 8 units has adjacent planting but is wide, with the pedestrian access at the same grade (un-dedicated) making it appear wider and providing the opportunity for parking over pedestrian access.

- 3. Access is dominated by parking or bin storage. This was a particular problem in the RSDT Zone where landscaping is not required and no urban design assessment applies. This results in a back of house appearance, which reduces legibility and the sense of ownership over the space, as well as the more obvious issues of poor amenity both for residents and for the immediate street environment. It is not apparent that the area is cared for and that someone is taking responsibility for managing the space.
- 4. Accessways dominated by garaging. Whilst garages are an expected component of access, if they are the dominant element in the built form, it can prevent a safe and welcoming access from being established. In many developments they are recessed (because this makes the best use of the site), which emphasises the units and reduces the degree of garage domination.
- 5. *A lack of visual interest* where fronted by fenced areas or the blank side walls of housing. As for a street, the quality of an accessway is determined by the quality of the buildings that front it.
- 6. Accesses with little or no landscaping. This results in a reduction in the quality of the environment and territoriality as discussed above. Planting improves the appearance of an accessway, creating amenity benefits and increased opportunities for personalisation of threshold spaces in front of units and the increased projection of ownership over the space.
- 7. *Safety and fear of crime issues* due to little meaningful passive surveillance, poor lighting and a lack of territorial control of space. These issues are discussed in detail in section 8.
- 8. *Issues of privacy* due to lack of separation with units or intrusive views into the private areas of units. Where windows are provided without adequate separation from accessways, they can create privacy conflicts because people find the ability of passers-by



to see in intrusive. This results in screening (by curtains or blinds) and a consequent reduction in engagement and passive surveillance.



Figure 24: The development has a wide planting strip which also creates and opportunity for a porch, creating a safe stepping out place for pedestrians and transition between communal and private space.

9. *Unsuitable Housing Typologies.* Some unit typologies create accessway issues because of their design and layout.

Where there is a continuous row of garages, or where garages are flush with the front of the units, they are more prominent and can become visually dominant. Continuous garaging can also result in increased hard-surface, to allow for reversing space which can create quite a harsh visual environment. In some unit types, there is only garaging and doors on the ground floor, meaning there is no ground floor interaction between the access and the unit.

Apartment buildings where the ground floor includes a high proportion of parking are also a problematic typology. This can often be managed by separating the pedestrian access from the parking areas, and ensuring that parking does not take place at the street front.





Figure 26: Ground floor living with garaging consolidated in between units minimises the visual and experiential impact of on site carparking.



Figure 25: No ground floor living with garaging dominating the ground floor reduces any opportunity for passive surveillance over the journey between the street to the front door.

The key to avoiding these issues is to provide an access with an appropriate width and elements of higher quality, including planting, lighting, and sense of address from the adjoining units. This starts with the site layout and for the unsuitable typologies, may involve changing the typology, or by mixing in a variety of housing.

6.2 Recommended Approach – Safe and Welcoming Access

The quality of accessways is the result of a combination of rules and assessment matters and traverses all the residential design principles. The aim should be to create a street-like environment that is high quality for residents and visitors, creating a transition space to the street over which there is a sense of ownership.



Some aspects of a good quality access have already been discussed in previous sections, notably site layout, and residential amenity matters, and the Residential Design Principles that relate to them. These will collectively contribute to creating a safe and welcoming access by ensuring that there is space set aside for the accessway, landscaping and that there is ground floor space that overlooks it.

A minimum width for accessways (likely through the Transport Chapter) would ensure that they were not too narrow (addressing issue 1). Wide accessways are sometimes encouraged by the transport chapter, but there is flexibility to reduce the width in some situations (for instance by implementing a shared surface). Mechanisms to encourage this outcome are supported and in particular a reduction in required width in relation to collector roads may be appropriate and would lead to improved outcomes.

Issues 3-6 are concerned with visual amenity or vehicle dominance. 3 and 4 are addressed by the existing *Access parking and servicing* assessment matter in the Residential Design Principles, whilst 5 and 6 are related to *Built form and appearance* and *Residential amenity*. This illustrates the way the principles work collectively to achieve good outcomes. Issues 8 and 9 are *Site layout* issues which manifest as accessway issues.

The existing assessment matter is concerned with the accessway itself rather than the access environment. It has been quite effective in ensuring higher quality outcomes, especially in the RMD Zone where it is backed up by rule 14.5.2.13 (ground floor habitable space). The rule is aimed at ensuring pedestrians are prioritised in design and that parking, garaging and other vehicle infrastructure is not visually dominant. It is recommended that this rule and design principle be adopted in all zones.

The MDRS rule for landscaped area will ensure there is space allocated for planting on the site. For larger sites, this should be associated with the public areas of the site, including the accessway, and the Residential Design Principle can be used as a method to achieve this outcome.



7 Servicing and Storage

7.1 Description of Issues

This issue is about essential servicing such as bin storage, as well as bike storage and general storage. These aspects take up space on the site and it is important to consider how they will be provided. If dedicated bin storage is not present, bins can be visible and unsightly both from public areas and within the site. Bike storage is important in encouraging active transport and reducing carbon emissions. Bike storage must be secure and accessible for it to be usable by residents. General storage is often not well provided in current developments, and the removal of minimum unit sizes means this issue may be more prevalent in future as smaller units are introduced.

7.1.1 Waste Storage and Washing Lines

Servicing is an aspect of housing that is often neglected in the design process, with the result that space must be found for it at the end of the construction process.

Unless a carefully considered bin storage area is provided, bins may end up being stored in prominent areas or in landscaping strips, or compromise access and safety, and undermine other aspects of the site layout and design. This includes creating nuisance effects and/or compromising overall site amenity for occupants and neighbours.

In larger complexes, the location of waste storage areas can be a significant issue in respect to the allocation of space, as well as functionality for occupants utilising them, and for ease of collection by providers, whether shared or individual bins. Where sites are long, with only pedestrian access to the street, bin storage and the distance to the street, as well as the impact on pickup days for the function of the street space (pedestrian and cycle ways included) can be very problematic with increased unit numbers.

For smaller outdoor living areas washing lines can occupy a significant proportion of the area of the outdoor living space and can compromise its usability.

7.1.2 General Storage

Storage areas, both internal and external, are often not provided or not well provided for in multiunit complexes. This includes space for larger items such as sports equipment, gardening needs, luggage or linen storage etc. With smaller unit and garden sizes, it is usually not possible to provide for extra storage post-development in a way that does not compromise the function and amenity of the dwelling.

Management of this issue was previously assisted through the use of minimum unit size areas. These are proposed to be removed in response to the MDRS and the result is that, compared to units built under the current plan, newer units could be smaller, with smaller outdoor living spaces. Providing for minimum storage spaces moves the issue of storage from one where it is assumed that some can be accommodated in a unit of a certain size, to one where it is expressed as a fundamental component of a dwelling.

7.2 Recommended Approach – Servicing and Storage

The above issues are often neglected in site planning which can lead to difficulty in finding appropriate space for them later on the in design process. Including clear district plan rules indicates the importance of considering matters at an early stage. It is therefore recommended to retain rules for bin storage and washing line areas, as well as bike storage (noting that this is part of the transport framework in the District Plan). It is furthermore recommended that minimum areas for internal storage are introduced.

The matters are supplemented by a design principle that aims to ensure the areas are well located and do not have adverse impacts on neighbours. This should be retained.

7.2.1 Bin Storage and Washing Lines

Including rules for bin storage ensures that it is considered at an early stage of the development and not left to the end when there is no space available. The Design Outcomes Research shows that in the RSDT Zone bin storage was often not provided and as a result bins were stored on the shared access, with no dedicated space or screening, which undermined the quality and safety of the access.

The current District Plan requires space be allocated for washing lines in addition to the 30m² outdoor living space requirement. This is to be reduced in line with the MDRS, meaning that there will be less usable outdoor living space for each unit. In order that the expected level of amenity and functionality is delivered, it is important to ensure that this space is not reduced by encroachments from servicing including washing lines.

The application of rules has been flexible in practice. Where applicants have proposed communal bin collection (which is more space efficient), this can and is routinely consented (larger units where this is viable would need to go through a consent process in any case), provided there is a viable rubbish collection proposal in place.

7.2.2 General storage

In order to address a shortfall of storage in residential dwellings, a minimum storage area could be required for each unit.

The proposed storage areas are derived from the New South Wales Apartment Design Guide (NSW Department for Environment and Planning, 2015, pp101), which is well regarded as a source of design guidance, and are consistent with other guidance:

- 1. New Zealand Guidance (eg North Shore City Council's Apartment Design Guide, which implements the NSW standard).
- 2. UK guidance¹⁵ which includes similar requirements.

The volumes specified may be combined with outdoor storage, including bike storage, provided that the totals are met and half the total is indoor storage. For example, in a one bedroom unit, a 3m³ storage cupboard may be combined with a 3m³ shed. A cupboard of this size is equivalent in size to a typical wardrobe (0.7m*1.8m, with a height of 2.5m).



¹⁵ MHCLG, 2015, Technical housing standards – nationally described space standard

The volumes are as follows:

- 1. 6m³ for studio or one-bed units.
- 2. 8m³ for two-bedroom units.
- 3. 10m³ for three-bedroom units, or greater.

Experience with existing rules (in the Central City Mixed Use Zone) is that indoor storage space is often only comprised of wardrobe space. This meets the existing rule, but does not provide for general storage and has not been effective in ensuring good levels of storage are provided. For this reason, it is recommended that storage which is accessed from bedrooms is not included in the above storage areas.

The storage areas would ensure that there was some general storage available in each unit. The amount is in proportion to the size of the unit and would be provided in combination with outdoor storage. This would allow some flexibility on the type of storage.

A less onerous alternative would be to provide for half the recommended amounts as internal storage and allow the issue of bike storage to continue to be managed as it is now, through rules in the transport chapter. This would provide for a basic level of storage for each unit, but would not provide for outdoor equipment.



8 Safety

8.1 Description of Issues

8.1.1 CPTED Principles

Crime Prevention Through Environmental Design (CPTED) principles are used to ensure that developments contribute to a safe city, where both crime and the fear of crime is reduced. CPTED principles are described in *Seven Qualities of Safer Places*¹⁶, and there is an extensive academic literature as to the efficacy of CPTED. Although there is not necessarily a universal set of principles, there is wide agreement on what contributes to a safe environment and that poor urban design results in increased perception of and opportunities for crime.

Principles listed in the Seven Qualities of Safer Places document are:

- Safe movement and connections
- Surveillance and sightlines
- Layout Clear and logical orientation
- Activity Eyes on the street
- Sense of Ownership Showing a place is cared for
- Quality Environments
- Physical Protection.

The Design Outcomes Research discusses CPTED in relation to the similar design principles from Cozens (2016) and these are the primary reference in this analysis. A similar set of principles was used in the earlier Safer Canterbury guidance prepared for Christchurch and neighbouring Councils:



Figure 27: CPTED Strategies (extract from Design Outcomes Research, adapted by Couzins 2005)



¹⁶ National Guidelines for Crime Prevention through Environmental Design in New Zealand, Parts 1 & 2, Ministry of Justice (2005)

Safety is this respect relates predominately to personal safety and in respect to property crime, rather than for example, getting hit by a car. Safety is particularly important because the potential costs of crime are high and the most affected people are those who are least able to recover from it, more specifically impacts people from lower socio economic groups. Fear of crime is equally recognised as a problem, because it affects the way people feel about and use public space.

To a large extent, CPTED measures re-inforce other urban design strategies – for example an engaging street scene creates opportunities for passive surveillance and high quality design in general and promotes a sense of ownership over streets and spaces.

The concept of passive surveillance is well understood, but this is only one of a suite of principles that contribute to a safer place (and is not sufficient in itself). A criticism of District Plan practice identified through the 2020 Design Outcomes Research was that it was too focussed on passive surveillance rather than a more broad based set of principles. The 2021 addendum report noted substantial improvements in CPTED outcomes and that a wider approach had been subsequently taken following the comments made in the original report.

Layout has been discussed under section 2 and a good, logical site layout will support CPTED principles. This includes reducing entrapment and concealment spaces, including fenced areas next to the street and providing clear paths to unit entrances. Similarly image management / quality environments is supported by good design and layout and provision of planting and quality materials. Other CPTED principles are discussed below.

8.1.2 Safe Movement and Connections

Indirect pathways with blind corners, potential for entrapment and poor visibility are a common issue in the processing of resource consents, on larger developments. The usual response is to ensure that pathways are quite wide with a minimum recommended safe width of 3m¹⁷ and well lit at these key points. The present assessment framework has been relatively successful in managing this issue in the RMD zone.



Figure 28: The 1m wide passageway between front doors and parking areas does not provide a welcome, safe or functional access to the four residential units in the building.



¹⁷ Secured by Design

Lighting is an existing requirement but has been lacking in proposals or is provided only through condition of consent. Lighting is a key aspect of ensuring safety, particularly in larger development proposals that have more extensive shared space.

The Council has been developing guidance for the level of lighting required in different situations based on AS/NZS 1158:2020 (Standards Australia Ltd, 2020). The issue is complex because there is a need to ensure that systems are switched on and maintained in the long term, as well as providing an appropriate amount of light. This usually requires a cabled system with a landlords supply, with ducting located in a landscape strip.

It would be useful to reference this standard in the District Plan for larger developments, so that it was clearer how lighting standards should be complied with.

8.1.3 Surveillance

Passive surveillance is as much about the relationship between the inside and outside space as it is about the provision of windows. To achieve it, there need to be views from a living space (ideally a kitchen or living room), but views into this space from the path should not be intrusive. The research found that whilst there were usually windows overlooking, these were often from bedrooms (which are not usually occupied in the day and are more privacy sensitive). As a result curtains were closed and there was no real passive surveillance, even though glazing was provided. This points to the earlier conclusion in section 2, that site layout is the key to resolving many urban design issues.

Having windows next to the street provides opportunity for passive surveillance, but it is very beneficial to also include a door, which allows for the projection of a sense of ownership, as well as increases the extent of activation of the street. Measures are discussed under street scene (section 3) to encourage front doors facing the street, rather than being internal to the site.

Similarly, ensuring there is only limited fencing at the street boundary assists with the opportunity for good surveillance and provides a transition space over which the occupant has stewardship. High fencing also provides opportunities for criminals to hide behind and surfaces for tagging and is discouraged in CPTED literature. Tall fencing is usually associated with outdoor living space being located by the street and there may sometimes be reasons this is beneficial (such as solar access), but these should be balanced against the implications for safety and security. Carrying out this type of nuanced analysis implies that an assessment regime with the ability to use some discretion is required.





Figure 29: Solid and tall fencing and garaging located adjacent to the street lacks opportunities for passive surveillance over the street, as well as an engaging and visually interesting street experience.

8.1.4 Territoriality and Target Hardening

An important concept is *Territoriality (or Sense of Ownership)*, which is concerned with the ownership and use of space, where people are motivated to manage and control space – people have a proprietary interest in their own property. This creates a sense of ownership over public and private space, with a level of implied responsibility for the care of that space. An important aspect of creating territoriality is defensible space (such as a planting strip) immediately outside the unit, to separate it from public areas and accessways.

Developments that are shut off from public and communal space do not create this sense of ownership and become more vulnerable to crime (with graffiti being the most obvious example).

Target hardening (managing risk through gating and CCTV, for instance) is often a response to security issues, but is not a CPTED strategy in itself because it can undermine other CPTED measures. Developers may implement target hardening strategies if they wish, but these are not in the public interest as such.

8.1.5 Larger Developments

Larger developments, such as apartment blocks, may have some increased CPTED risks compared to smaller complexes, if not thoughtfully designed. There are more complex design issues to consider and higher density is associated with higher rates of crime in any case. Issues noted in the Design Outcomes Research were:

- 1. The creation of isolated and unobserved spaces for parking and servicing. These are typically at the ground floor, with apartments above them. Areas such as this can create entrapment spaces and be intimidating for users, especially if there is no ground floor activity to increase the numbers of legitimate users of the space.
- 2. The creation of entrapment spaces relating to communal bin and storage areas. For instance there is a tension between screening bin areas and ensuring that they are safe.
- 3. Gallery access (sometimes known as breezeways) often precludes passive surveillance and territorial control because the access is directly adjacent to the unit. As well as privacy issues, there are often fire-suppression issues with installing glazing in this situation. A preferable solution is to include separation by means of a void.



- 4. Reduced space on the ground plane can reduce opportunities for planting and reduce the quality of communal areas and the sense of ownership projected over them.
- 5. There can be a reduced sense of ownership in streets in high density areas. This can result from housing that has fewer entrances onto the street or more fencing; and also because such areas can be more anonymous, with strangers routinely present.



Figure 30: Open gallery access is separated from apartments to allow for glazing and privacy (Source: WAPC, 2019)

Crime can be associated with communal areas (entranceways, corridors and elevators). These may be narrow with tight turns and can include access to parking areas, which creates further opportunities for entrapment. These areas are also usually poorly observed. Access control is one way to reduce this risk, for instance where an accessway can be fully enclosed and restricted to one entry with an automated door.

Where communal space is provided, it should be accessible and inviting for all residents, ideally with incidental use (for instance some people must pass through it on entering the complex) to increase the legitimate use of the space. This can reduce the risk of it being a venue for anti-social behaviour.





Figure 31: Vehicle access and parking dominates the ground floor, with overhangs creating CPTED issues due to a lack of overlooking and creation of entrapment spaces. There is a lack of stewardship of the space as a result.

For medium-size developments, the resolution of many of these issues is to focus on the space between the front door of each unit and the street. This is to ensure there is safe and high quality passage (refer to section 7). Lighting and access control is important, but should not be the only response.

8.2 Recommended Approach - Safety

CPTED matters will sometimes need to be considered in the round with a variety of other issues, with the use of fencing next to the street being one example. There is not a single best solution that can be codified into a rule.

The suite of measures listed below collectively contribute to a safe environment. They ensure that views of the street are available from units and that they would not usually be obstructed. Measures previously discussed to encourage front doors facing the street would also have CPTED benefits by encouraging a connection/activity to the street:

- Windows to street ensures there will be some passive surveillance of streets.
- Landscaped Area encourages a sense of ownership; may provide for separation and encourage passive surveillance.
- Fencing management of extent of fencing ensures that views are not blocked.
- Ground Floor Habitable Space ensures there is a living room adjacent to the street from which there will be views of the public space.

In addition, there is an existing Residential Design Principle for safety. This has been effective in the RMD zone in obtaining good outcomes in larger developments, with the changes to practice following the Design Outcomes Research appearing to result in improving practice through the resource consent process. This illustrates the value of the assessment matter. An additional clause is recommended to reinforce the concept of a sense of ownership, which is not currently referenced explicitly in the Residential design principles. A final clause to address quality



environments was also considered, but is not thought necessary as it is covered by the Residential Design Principles as a whole.

9 Landscaped Area

Landscaping, and more specifically planting is used to soften the appearance of buildings in the street setting and also provides access to nature. It is associated with reduced levels of crime and improved mental wellbeing.

Landscaping contributes to:

- Street Scene
- Built Form and Appearance
- Safe and Welcoming Access
- CPTED
- Good On-site Amenity

Access to nature is inherently beneficial for its own sake, and also induces more use of space and as a result can deter crime.

There is a lot of evidence for the benefits of biophillic design as a concept. This includes wellknown studies in Chicago that show lower levels of violent crime were correlated with views of greenery, with residents in low-income neighbourhoods with outlook over trees experiencing half the incidence of assault, robbery and murder¹⁸. The same study found evidence of reductions in stress associated with natural environments in residential settings.

The Design Outcomes Research found that whilst landscaping was usually provided, it was often insubstantial or located behind fencing where it was not visible from public areas. The provision of effective landscaping was a weakness in all the zones, but particularly in the RSDT zone, indicating that the current assessment framework is contributing to improved outcomes in the other zones. A conclusion of the research was that the RMD Zone did contain good assessment matters but (as for CPTED) they needed to be more consistently applied. The amount of landscaping (20%) was sufficient, but it was not always well distributed around the site.

For landscaping to be effective it needs to be provided in areas which are large enough for it to thrive and reach a substantial enough size to have a significant visual impact, in planting beds which are large enough to support plant growth with minimal maintenance so that it survives into the long term. In residential areas, this is usually considered to be 0.6m width planting strips, planted with shrubs (with a woody stem) which will grow to a height of 1m. These should be supported by trees in key locations such as at the end of driveways (to terminate views) or in parking areas (to offset the impact of hardsurface and taking advantage of the airspace). Where landscaping is needed to offset adverse effects (such as the visual impact of large parking areas or garages) it needs to be more substantial.



¹⁸ Montgomery, C (2013): *Happy City - Transforming Our Lives through Urban Design*, pp102

9.1 Recommended Approach - Landscaping

The required landscaped area required under the MDRS is the same as that currently required in the RMD and RSDT zones. It is noted that in the operative District Plan RMD Zone that provisions relating to landscaping included the specific provision of trees, both in the landscape definition and in respect to minimum number of trees planted. This has contributed positively to the overall quality of landscaping across the site. However, with the exception of a reference to canopy cover and landscaping, there is no requirement for trees under MDRS.

The cost of landscaping is not high and is less than alternative surface treatments like concrete.

Where four or more units are planned, a restricted discretionary assessment (against the Residential Design Principles) will allow consideration of the location and extent of planting and whether it relates to public areas. Whilst 20% is a sufficient amount of landscaping, it is important that it is used in a way that it will contribute to outcomes. Although a naturalistic environment will rarely result, it will soften the appearance of buildings and engage people's senses.

The proposed rule limiting the amount of fencing in relation to the street (to only 50% of the frontage being over 1m high) will increase the visibility of planting at the front of the site.

The use of the residential design principle for residential amenity to ensure there is planting in relation to accessways is also important in achieving good landscaping. In addition, where there is communal space provided, this is a beneficial place for tree planting to both thrive and be appreciated by residents.



10 Building Envelope

A building envelope is the allowable built form on a site, given the combination of planning rules such as height and setbacks.

This section considers the MDRS building envelope (and alternatives) and the contribution the building envelope makes towards management of the issues identified in the previous sections. It includes recommendations for:

- Fine tuning of the MDRS standards in the MDRZ.
- A building envelope based on setbacks and moderate site coverage for the HRZ.

10.1 Managing the Building Envelope

In the RMD Zone, the building envelope is comprised of a number of standards in the MDRS, which control the scale of development on the site. These are:

- Building Height
- Height in Relation to Boundary
- Setbacks
- Site Coverage

These standards relate to a number of the Residential Design Principles discussed above. This section provides a comprehensive assessment of their impact.

In the HRZ, the management of the building envelope is more complex, because it is not possible to prevent the establishment of adverse impacts in the same way. With taller buildings, an approach of using setbacks and height in relation to boundary rules does not encourage either good design or the optimum management of effects, as discussed in section 2 Site Layout. For this reason, a different approach is recommended to enable perimeter block typologies.

10.1.1 Management of Height in the District Plan

In the Christchurch District Plan, residential height is generally calculated as being 3m per storey plus 2m for a roof. This allows for a generous floor to ceiling height of 3m (with 2.7m being typical and 3m considered desirable for improved light access). The MDRS, by contrast allows 11m (+1m roof) for a 3 storey building and a sloping roof of 15 degrees or more. This approach does not reflect building or planning practice in Christchurch and has not been adopted more widely in the District Plan provisions for these reasons:

- 1. There is a gap between what the standards are aimed at providing for and what they allow. Although aimed at providing for 3 storeys, the MDRS would usually allow for 4 storeys (either where the span of the roof is less than 7m wide, or by using a coved roof). A four storey building can typically be accommodated in a building with a wall height of 10m or 11m whereas a 3 storey building requires only 8m-9m.
- 2. A 15 degree roof is also not commonly in use (with 23-28 degrees being more typical). For taller buildings, flat roofs or parapets are often more widely used and can provide a better sense of visual balance (the shallow pitched roof can look insubstantial and out of proportion).

3. The established Christchurch practice provides for building heights which are more directly related to floor heights. This methodology is clear and does not appear to have created any confusion or unintended consequences.

For this reason, heights in the plan change are usually specified as total heights, without a roof allowance, and are as follows

No of Storeys Intended	Height	Composition
4	14m	4 storeys + Roof (12m+2m)
6	20m	6 storeys + Roof (18m + 2m)
10	32m	10 storeys + Roof (30m + 2m)

10.2 Medium Density Zone

The implementation of the MDRS requires a height limit of 12m be included across most of the residential zones of the city, which will be rezoned to MDRZ in accordance with the National Planning Standards. This will allow for 3 storeys to be built in most areas (with some scope for an extra storey as described above).

The NPS UD also requires increased height to be provided around centres (in addition to at least six storeys within at least a walkable catchment from large centres and rapid transport stops). Additionally, it is open to the Council to specify an increased height in the medium density zones.

At present the height of houses and buildings is partly driven by building costs, which increase with additional floors. Three storey buildings are more expensive to build than two storeys but have proved to be feasible in the central city and in some inner suburban areas, where land prices are high enough to offset the additional construction cost. In time, the 3 storey townhouse typology may be utilised elsewhere in the city. This would provide for more residential density throughout the city than is currently built, especially in Residential Suburban zoned areas.

There may then be more desire for taller buildings (particularly in central areas). However, this is likely to involve a transition to an apartment typology that incurs a further increase in cost (because of the need to provide communal areas and in particular to the additional cost associated with fire suppression). The Council's economic analysis identifies that there is very little demand for apartments in the city in the foreseeable future¹⁹. Where these have been proposed to date, it has usually been in areas with a particularly high amenity, such as around Hagley Park.

A height relaxation has been considered for the MRZ zone at 14m to allow for 4 storeys more easily. However, it is not considered there is a strong case for increasing heights beyond the MDRS level. The high construction costs and lack of demand means that any taller apartments in the MDRZ would likely be highly unusual. If there was a more general demand, then it would be desirable that it be focussed on nodes as outlined in the NPS UD, or within the high density zone.

Meanwhile, additional height would impact on the expected quality of the environment in suburban areas, which includes a level of solar access and management of enclosure and privacy.

¹⁹ The Property Group (2022): *High Density Residential Feasibility Assessment*

Where additional density occurs, it is most suitable in areas where there is a trade-off for the reduced amenity, such as access to services. This is not the case generally in the city.

For these reasons above, an increase in height over the MDRS requirement is not considered necessary or appropriate.

10.2.1 Increased Building Heights around Commercial Centres

The NPS UD requires additional density to be provided around local and neighbourhood centres. As a consequence the proposed approach is to provide for a city form that integrates commercial and adjacent residential development, with commensurate building heights for residential activity around commercial centres, appropriate to the scale of the centre. In practice this means that for larger centres the surrounding area may be zoned for high density (6 storeys), but for smaller centres an intermediate height of 4 storeys is considered appropriate.

In making this recommendation, heights of 4 or 5 storeys were considered as options (14m or 17m). A height of 14m is recommended because of the potential for greater impacts on the surrounding area from five storey buildings, combined with the lack of demand for apartments, which could result in taller developments being visually isolated and dominant, in addition to effects they may have on amenity such as overlooking and shading.

The Local Centre Zone is proposed to have heights of 14m to allow options for 4 storeys as a step up from the surrounding residential areas. These are smaller centres and tall buildings are not usually constructed in these areas at present (although the height limit is 8m). As for residential zones, there is limited demand for apartments, and there is also limited demand for commercial uses because larger offices prefer more accessible locations.

Whilst it would be possible to enact a higher height in the adjoining residential area than the commercial centre, it does not make sense from an urban form perspective, which suggests locating the greatest density where it is most accessible. Local centres do not necessarily provide access to a wide range of facilities, and as such the emphasis is on higher amenity. Five storey forms are also more dominant in relation to the typical two storey houses that are likely to be built in the MDRZ in Ōtautahi Christchurch – being more than twice as tall and likely to be seen in isolation.

10.2.2 Height in Relation to Boundary

Recession planes traditionally manage the level of solar access received by neighbouring properties in respect to a development. In Ōtautahi Christchurch the recession planes were set to maximise solar gain for neighbouring properties to the south i.e. to receive north sun, with steepening recession planes to the east and west and north to compensate.

The MDRS recession plane of 60 degrees and 4m does not provide access to direct sunlight throughout the year in Canterbury, at least not on the boundary of a neighbouring site. It would provide for three and a half months of solar access on the ground in Canterbury between November and February (compared with 5 months in Auckland). This is shown in the diagram below (in which the area above the red line indicates solar access between mid-October and the start of February):



Figure 32: Sunlight planes between two sites in the MDRS zone.



Figure 33: Ōtautahi Christchurch sun paths with 60 degree recession planes marked in red. These show what times of the year the sun will rise above the recession plane20.

In the diagram, the blue lines show when there would be light entering the window (lower line) or shining on the full area (upper blue line). Full sun would be experienced between September and March in Ōtautahi Christchurch.

The space provided by the recession planes would contribute to a sense of openness. This is in itself an important component of a medium density environment, for example to avoid an oppressive sense of enclosure to outdoor living space.

²⁰ Derived from Wellington School of Architecture Sun Path Diagrams

Recession planes can also increase the separation distance between buildings and neighbouring properties, helping to reduce privacy impacts from overlooking.

Overall, changes to the MDRS recession planes are not recommended for the MDRZ. They are less restrictive than existing rules and they do not provide the same level of protection of solar access in Canterbury compared to North Island cities. It is not considered appropriate to liberalise them.

10.2.3 Side Boundary Setbacks

Side boundary setbacks provide some separation between adjacent sites to prevent a sense of enclosure and help to manage privacy. The MDRS allows for buildings to join where a common wall is to be built, but otherwise buildings are required to be set back 1m from the boundary.

Whilst having no setbacks can increase flexibility, this does come with risks of:

- 1. Impacts of neighbours for solar access and of enclosure.
- 2. Adverse visual impacts. Building built to boundaries must be fire rated, which means that many types of cladding cannot be used and few windows can be included. This can affect the residential amenity for neighbours as buildings can appear stark in the environment, as well as the general appearance of the neighbourhood.
- 3. Space less than 1m wide can become difficult to access. Reductions below 1m are not recommend except where zero setbacks are considered appropriate.

As a result, reductions in the MDRS setbacks are not generally proposed, apart from for single storey garages and accessory buildings at up to 10m in length per boundary. This is a carry-over from the operative District Plan which allows a limited intrusion, which has limited visual and privacy impacts, in exchange for more flexible use of the site. It is especially beneficial for narrow sites with garages as it allows for manoeuvring on the access (a typical garage and reversing space require 13.5m width in total) and makes site planning simpler and more flexible.

10.2.4 Front Boundary Setbacks

Front boundary setbacks provide some separation from the street. This aids privacy in the dwelling, which is desirable in its own right. They also provide some space for planting, which improves the appearance of the street and allows access to nature, and has CPTED benefits (encourages passive surveillance and territorial control), in particular where adequate glazing is incorporated to living areas.

Larger setbacks would provide space for trees to be planted, including space for canopy growth, which is especially beneficial on older streets where it can be impractical (or prohibitively expensive) to plant trees in the street corridor due to underground services. However, these are not an option given the MDRS.

Setbacks can have some impact on residential density. However, the MDRS front setback is very small and the main constraint on site utilisation will be site coverage in most cases.

Only one reduction in the standard is proposed. This is an allowance for eaves to project into the front boundary setback. This will not affect the benefits of setbacks (space for planting, privacy and consequent safety benefits), but would help to make it easier to install eaves, which are beneficial for weather-tightness and can add visual interest to a building. Note that this exception



is not proposed on side boundaries because of the visual impact of eaves so close to neighbouring boundaries.

10.2.5 Building Coverage

The MDRS provides for 50% building coverage, which is similar to the present RMD Zone. Other residential zones currently have more restrictive site coverage and there will be an increase in site coverage across most of the city (for instance from the current 40% in the Residential Suburban zone).

Site coverage is a way to manage the amount of building on the site. It is not the only means but it is quite flexible because it leaves the developer with options around how to lay out and apportion building across the site. The MDRS prescribes the use of site coverage and prevents alternative approaches that manage the intensity of building such as larger rear setbacks or outdoor living spaces. Site coverage is also a conventional mechanism in use in the District Plan.

Site coverage limits ensure that there will be some separation between buildings somewhere on the site, potential space for planting and views of the sky and help to manage the dominance of built form across a site and neighbourhood. It also helps to manage overlooking and maintain space on the site for other uses, such and outdoor living and servicing. These matters are important components of a residential living environment.

The existing RMD Zone is built in quite an intense fashion compared to other parts of the city. Site coverage is typically below 50% but this depends on the building typology. Where internal garages are used, or car-parking is not provided, site coverage is more likely to reach 50%. Where separate parking is provided, it is more likely to be below 40%.



Figure 34: An example of low (36%) site coverage.



Figure 35: An example pf moderate to high (50%) site coverage.

An increase in site-coverage to 50% in the lower density residential zones will represent a noticeable increase in density, which may have significant effects including on neighbourhood character and the amenity of neighbouring sites. However this is clearly expected by the MDRS.

In a medium density environment, the separation and visual relief provided by a moderate-to-high site coverage such as 50% contributes to the residential appearance of the neighbourhood as well as to a level of openness and sunlight access. It will also help to manage the bulk and dominance of buildings.

Site coverage is likely to be the limiting factor on site development capacity in some cases. It is worth noting that many current developments have quite low site coverage, especially where developers choose to provide car parking. This means that in many cases, the main constraint on site utilisation is not the site coverage, but the desire for parking (or the requirement that was in force until recently).

Where site coverage does exceed 50%, sites can have quite a cramped appearance, with relatively dominant buildings with little separation, limited access to the sky and little openness on outdoor areas, including living spaces. Because buildings are usually centralised on the site for practical reasons, there is relatively little opportunity for consolidated open space. Higher site coverage is therefore usually not consistent with a medium density environment.

In some residential zones in the operative District Plan, 500mm of eaves are excluded from site coverage. This is to allow for enhanced weather-tightness. These modest size eaves may increase site cover by around 5%, but would not greatly increase the visual dominance of the building, especially as internal boundary setbacks would still apply to the roof. It is recommended that this exemption be applied to the Medium Density Residential Zone.

10.3 High Density Zone

The NPS UD requires the Council to include areas enabling up to 6 storey buildings around large commercial centres and rapid transport stops²¹. This is a high density form of development which is different in scale, form and character from medium density as permitted by MDRS. Current zoning allows for taller buildings up to 30m in the Carlton Mill north of Hagley Park, but the extent of land zoned for high density is quite limited.

Some residential buildings of four and five storeys have recently been constructed in the central city and examples were reviewed in the Design Outcomes Research. The NPS UD direction would involve a significant increase in the amount of land which has higher-density zoning, to encompass a wider area than the current zoning pattern and the creation of a new HRZ.

The zone must allow for MDRS developments in the same way as the RMD Zone (since this is a relevant residential zone), and also enable for at least six storey residential buildings, which will be multi-unit apartment complexes of some type.

It is further understood that the MDRS development envelope (60 degree recession planes from 4m height at the boundary) must be allowed for. However there is flexibility to apply alternative standards above this level, and to allow for relaxations in the envelope if considered appropriate.

10.3.1 Building Envelopes

Section 2 on site layout (and Appendix 1) discuss different typologies and recommend that perimeter blocks are encouraged and enabled. These are well proven in climates similar to New Zealand's and provide both the best outcomes and capacity. It is recommended that this typology is encouraged, alongside some support for centre blocks typologies on wider sites.

As such, a building envelop with the following characteristics is recommended:

- A maximum height of 20m.
- 1m internal boundary setbacks.
- No recession planes at the front of the site, on internal boundaries within 20m of a street boundary.
- MDRS recession planes elsewhere to a height of 12m, with a 6m setback applying above this level.
- For buildings above 4 storeys, a 1m setback for the top storey.
- 50% site coverage.
 - A maximum building width or depth of 30m, except where directly adjacent to and parallel the street.

This building envelope is shown below, for wide and narrow sites:



²¹ Policy 3(c) NPS-UD



Figure 36: Recommended building envelope wide site – not limited by site coverage (left) and limited by 50% site coverage (right).



Figure 37: Recommended building envelope narrow site – not limited by site coverage (left) and limited by 50% site coverage (right).

The above illustration demonstrates the importance of site coverage as a way to ensure open space around the site and views of sky.

The illustration below also shows 50% site coverage. This is not a perimeter block typology but would fit within the development envelope. It may have a predominantly sideways orientation and some impacts on neighbours would result (privacy and shading). These could be managed by



a rule (such as a continuous length of building above 12m) or by assessment matters that looked at the impact of shading and privacy.



Figure 38: Potential building envelope – 50% site coverage, without using recession plane exemptions.

Due to the fragmented nature of Ōtautahi Christchurch city blocks, it is unlikely that a perimeter block would result from redevelopment, simply because the presence of rear blocks means there is sometimes no opportunity to orient development to the street. A potential development mix is shown below.



Figure 39: Potential variety of buildings within an Ōtautahi Christchurch street block as a result of the recommended provisions.

10.3.2 Height

It is recommended that the height limit for the high density zone be set at six storeys, in line with the NPS-UD and that higher heights are not generally enabled in the zone. The reasons for this are detailed above and include:

- 1. Increasing impacts of dominance, prominence and on surrounding residents, which increase with the scale of building.
- 2. Lack of human scale and connection to the street for taller buildings.
- 3. The increased risk of poor mental health outcomes where tall buildings are not well located.
- 4. Potential for increased wind effects, which may become problematic above 20m.

However, in areas that are particularly well located, such as the central city or potentially some areas around Hagley Park (including Carlton Mill), higher heights may be considered. Heights of ten and twelve storeys were considered, and an increased limit of ten storeys is recommended in these areas. Reasons for this are:

- 1. Ten storeys is a substantial increase over six storeys, allowing for a significant increase in floor area.
- 2. Ten storey buildings would relate better to six storeys (than 12 storey buildings would) because the height differential is more comfortable (being less than a 100% increase in height, which risks being visually dominant over a relatively wide area).
- 3. It is still expected that a substantial proportion of development would be 3-6 storeys and a building of less than ten storeys would sit more comfortably (visually) in this context.

The increase in height to 10 storeys will have more impact on the street and public space, and the scale of enclosure may be excessive. For this reason, the recession plane exemption is not proposed to apply above 6 storeys and buildings must be set back above this height. This will create separation between towers and preserve views of the sky along streets.





Figure 40: Recession plane envelope and complying building form for a 10 storey building.

10.3.3 Setbacks and Recession Planes

For tall buildings, recession planes can become a significant constraint as designers often attempt to fit the building within the permitted envelope. These can have the impact of creating buildings with odd pyramidal shapes. These can:

- 1. Appear incongruous in the street scene.
- 2. May add cost to the build.
- 3. The shape of the envelope encourages "sausage blocks" built perpendicular to the street (which can focus adverse impacts on neighbours rather than the street).



Figure 41: Stepped building form in response to recession plane angles.

Relying on recession planes for taller buildings is not an effective way to manage shading, because the angle of the sun is below the height of the building for much of the year.

For taller buildings on narrow sites, as is the case for most sites in Ōtautahi Christchurch, most sun access will be received via the gaps in the built form rather than over the top of buildings. The most effective way to manage sun access is to ensure that there are gaps in the buildings through which the sunlight can penetrate. The perimeter block layout is a very efficient way to manage this because it creates a large open area at the rear of the site.

Under this development envelope, for sites with no street frontage the 6m setback would apply to all boundaries (above the height of 12m). This is a more restrictive envelope than for front sites, because a tower on a rear site would have greater impacts because it disrupts the pattern of development and effects are unpredictable (for instance where the shade would fall). A moderate setback would help to mitigate this by ensuring there is still open space around the tower for solar access around the site. It is also noted that the 6m setback is generally less restrictive than 60 degree recession planes, as shown below:





Figure 42: Comparison of the space created by recession planes versus setbacks.

10.3.4 Site Coverage

The approach recommended for the high density zone is to facilitate the building of density at the front of the site next to the street, and to promote greater open space at the rear, to ensure some certainty around shared amenity and sunlight access within the block. This is a different approach to the current RCC Zone which does not have a site coverage standard, but instead limits capacity through recession planes and a stricter height limit.

Perimeter block building typologies would typically occupy less than half the site (usually a third). It is reasonably common for some of the interior of the block to be filled in with extensions and small scale buildings. 50% site coverage allows for the main perimeter building and some additional built form, which could take the form of garaging, rear extensions to the main building or some additional housing in a separate low scale building (e.g. some townhouses).



Figure 43: A 6 storey perimeter block in Berlin, Germany with a site coverage of approx. 33% across the entire block. (Source: Google Maps)

A moderate-high site coverage of 50% would allow for building at the front of the site, to fill the expected 6 storey envelope, and additional form within the site, but would not allow the site to be filled. If the developer takes advantage of the recession plane exemptions, it would allow a generous development envelope at the front of the site.



Figure 44: Limiting site coverage on a narrow site to 50% ensures there is some openness within and around the site. The recession plane exemption encourages this to be at the rear of the site and the two rules together facilitate perimeter block development.







Figure 45: Limiting site coverage on a wider site to 50% ensures there is some openness within and around the site. The recession plane exemption encourages this to be at the rear of the site and the two rules together facilitate perimeter block development.

created

10.4 Recommended Approach

The proposed building envelopes for the two zones are summarised below:

10.4.1 Medium Density Residential Zone

It is recommended to retain the MDRS envelope with the following amendments:

- A height limit of 14m around Neighbourhood Centres.
- Continuing the existing allowance for garages to be built on internal boundaries (for 10m of the boundary).
- Some relaxations to allow for eaves, within the front building setback and to breach site coverage.

10.5.1 High Density Residential Zone

In the High Density Residential Zone, it is recommended that a building envelope is adopted that supports a perimeter block model of development, as well as allowing for some flexibility to use the depth of the site. This would be created by:

- A maximum height of 20m
- 1m setbacks
- No recession planes on internal boundaries at the front of the site
- A 6m internal boundary setback above 12m (MDRS applies below this level)
- 50% site coverage
- A maximum building width or depth of 30m, except where directly adjacent to the street.



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Wellington School of Architecture New Zealand sun charts

Appendices



Appendix 1: Potential Building Typologies in the High Density Zone

Introduction

The potential outcomes generated by different building typologies have been considered, using various criteria. Three typologies have been assessed in terms of how they will impact on current residents of typical developments (as many of these will be in place for 50 years of more) as well as how well the ultimate environment created will function.

Each typology was modelled and assessed on the basis on the basis of the quality of environment they would provide, assessed against the matters largely denoted through the Design Outcomes Research, and identified below.

The typologies assessed were:

- 1. A perimeter block typology.
- 2. A centre block typology (with an apartment block located centrally on the site).
- 3. A sideways block typology (derived from recession planes).

The various options each distribute massing differently on the site and so are not mutually compatible. For instance, a perimeter block aims to facilitate shared amenity between sites in the block through an open centre, whereas a sideways block keeps the side boundaries of each site free.

The following criteria have been used to assess the appropriateness of each typology:

1. Privacy and Overlooking

Tall buildings can overlook neighbours intrusively if there are a lot of windows or balconies facing an internal boundary.

2. Solar Access

The shape of development affects the amount of sunlight received on neighbouring sites, and in particular within adjacent buildings. Existing houses are designed to take advantage of the existing provisions and the impact of different building shapes on these sites may be significant.

3. Appearance and Street Scene

Appearance matters concern the scale of the building, and measures taken to break down the bulk into a more visually appealing scale (such as modulation, articulation and detailing). They also concern the degree of interaction with the street, particularly on the ground floor. To a large extent, these factors are influenced by the shape and form of the building.

4. Capacity, flexibility and outdoor space

The proposals have also been tested using a single site (15m wide) and two sites (30m in total).

The floor space has been estimated for each, as well as the number of apartments possible under each scenario. A Floor Space Ratio has been calculated as a way to show yield from each of the typologies. An FSR is a way to express the amount of development considered appropriate on a site, usually to indicate to developers what yield they can expect. An FSR of 1:1 indicates that a



site can be redeveloped with its size in some form (e.g. a gross floor area of 1000m² on a 1,000m² site). This may take the form of 2 floors of 500m² each, or 4 floors of 250m²). In New South Wales planning guidance, an FSR of 2:1 is considered usual for a 6 storey building²².

Some site layouts lend themselves to outdoor living space better, creating a consolidated space with a good dimension (e.g. 8m), that will be more usable and lend itself to the growing of trees.

5. Safety

A broad level assessment has been carried out to ensure that there are not fundamental flaws with each typology, but much of the quality will be created by detailed design.

Typologies

1. Perimeter block typologies

Perimeter block typologies could be enabled on standard Christchurch sections (e.g. with dimensions of 15* 50). Because they would be building almost boundary to boundary, the width of the site is much less significant than for other typologies and sites would not need to be amalgamated to be used efficiently.



Above: Block model of perimeter block apartment building with a secondary building located to the rear

The above building shape would use the majority of the site coverage limit and would allow for a viable building depth of 18.5m. There would be options for how to use this depth, including



²² NSW Department of Planning and Environment (2015) *Apartment Design Guide* pp32

double loaded (central) corridors with apartment depths of 6-8m, or deeper single loaded apartments accessed from the rear. The depth would need to include balconies.

On wider sites, the building could project further to the rear, as long as 6m setbacks were met, or remaining site coverage could be used for a secondary building, which could take the form of townhouses, for instance. The use of moderate site coverage (50%) ensures there is a degree of openness somewhere on the site, most likely at the front, and this compensates for the lack of recession planes.



Above: Larger 6 storey envelope (left) or narrow site configuration (right)

The perimeter block typology manages privacy very well; has good solar access from most orientations; and creates an urban form with good solar access. It allows sun to reach the rear of sites, which will allow some outdoor space with solar access for all orientations and good interior sun access from the front and back of the building. It also supports a strong urban streetscape and provides good capacity on any site width. However, the perimeter block will cause some shading from some orientations (where it faces north towards a street.

Criteria	Notes
Privacy and Overlooking	Strong. Naturally manages privacy through Orientating windows
	to front and rear rather than side boundaries
Solar Access	Variable. Good access for when developed as a block but may
	have some impacts on neighbours which are not developed with
	perimeter block typologies: there will be good solar access for
	these sites when oriented to the south, medium for east and
	west but poor for north where bulk of the building will shade
	them.
Appearance and Street	Strong. Building is concentrated next to street and encourages
scene	visually interesting buildings.
Capacity, flexibility and	Strong. High capacity, flexible typology that can be built on a
Outdoor Space	variety of sites and suits re-use. High capacity on narrow sites.
	Focussing built form at the street front creates consolidated
	open space at rear, usable and large enough to achieve solar
	access.
Safety	Strong. Creates a strong street wall with clear delineation
	between public and private space, and overlooking of the street.



2. Centre block typologies

A centre block would be set back from side boundaries (potentially by 4m) with a larger rear setback, but would not create a near continuous street wall.



Centre Block in Brisbane



Above: Example of a Centre Block typology on a 30m wide site

The Centre Building generally has medium outcomes. It would have less impact in respect to shading of immediate neighbours than the perimeter block. It may also contribute quite positively to the current street form. However, it is less well suited to narrow sites because of the side setbacks and would not create a strong street scene over time (although it would fit more easily in an existing street scene). It also does not necessarily provide consolidated open space at the rear of the site.

Criteria	Notes
Privacy and Overlooking	Medium. Squarer floor plan will allow windows to face any
	direction and this may be determined by sun direction. Likely to
	be some privacy issues but less than sideways typology (because
	the buildings are not as long).
Solar Access	Good. The side setbacks allow solar access to neighbours at the
	side of the building and a rear setback creates space between
	buildings for light access within the street block.
Appearance and Street	Medium. Creates an inconsistent street scene with prominent
scene	side walls (although these may have some visual interest, they
	are less well articulated than street walls). Front facades will
	usually have good design attributes.
Capacity, flexibility and	Medium. High Capacity typology on wider sites, but side
Outdoor Space	setbacks mead capacity is limited on narrow sites.
Safety	Medium. There is usually a good street frontage with passive
	surveillance and clear entranceways, but may be poorly defined
	side access which provides opportunity for crime.

3. Sideways Buildings (Recession plane buildings)

A Sideways Building is a variation on the existing typology (sometimes known as a sausage block), with more relaxed recession planes to attempt to fulfil the intent of the NPS-UD.



Sideways Building Models 30m wide site (left) and 15m wide site (right)



Existing Sideways building typology



Development would be expected to run from the front of the site to the back, with windows primarily oriented to the side to take advantage of the best solar orientation. Buildings may step in as levels increase due to the recession plane, so the building may have a triangular form.

These typologies are often oriented to primarily face internal boundaries, which increases the amount of overlooking. It would be expected that under most scenarios, there would be windows and balconies from each apartment facing at least one internal boundary. This typology creates significant privacy issues.

Any open space is primarily at the sides, in long thin slivers, as the utilisation of the site is determined by the recession planes. These spaces are likely to be shaded and are less usable and flexible than more consolidated open space.

Shading analysis indicates that the Sideways Building performs well in winter for north and south oriented sites, but poorly for east and west oriented sites.

This typology often results in poor CPTED outcomes. The typology does not encourage passive surveillance of the street or that entrances are direct from the units to the street. The lack of a central staircore means that pedestrian access is often from within the car park rather than the street.

Criteria	Notes
Privacy and Overlooking	Poor. Overlooking and outlook is focussed on side boundaries
	and neighbouring sites.
Solar Access	Variable. Good for north-south orientations but poor for east-
	west.
Appearance and Street	Poor. Buildings designed to face sideways and often have
scene	superficial and bland front facades.
Capacity, flexibility and	Poor. High capacity on wide sites, but height is constrained on
Outdoor Space	narrow sites. Little consolidated outdoor space as is open space
	is located in narrow side setbacks.
Safety	Poor. Little overlooking of streets, from limited number of units
	and typology and site layout encourages vehicle dominated
	pedestrian access.

This typology has generally poor outcomes, with the main advantage being that it may have good solar access for residents, depending on the orientation. It also has low capacity for narrow sites.



Appendix 2 Glazing Study

Introduction

This paper describes a study into the amount of glazing on the front façade of houses. It is aimed at demonstrating whether there is a set amount of glazing that would ensure good quality outcomes for the front facade of a development. To do this, a number of model scenarios were tested, as well as some real built examples.

It is concluded that there is a relationship between the amount of glazing provided and the quality of the outcome, but only at a lower level of glazing. Once the proportion is increased beyond a certain level there is not necessarily any benefit. It also found that none of the built examples achieved a 20% glazing.

It is recommended that a front door should be included in the calculation whether glazed or not. Including a front door in the front façade is regarded as beneficial for its own sake, and requiring a high level of glazing (and not including a solid door) may dis-incentivise this outcome. There is a stronger relationship between the quality of outcome with a door, than using glazing alone.

The recommendation is that the requirement should be that 17.5% of the frontage should be glazed, including a solid door if provided (or 20% if not).

Method

The study consists of two parts.

Part 1 is a desktop study, looking at a wide range of potential window sizes and arrangements on typical façades and house orientations. These are:

- A house with the kitchen at the front. This typology supports good passive surveillance and allows good internal privacy, but windows are smaller than where living rooms are at the front of the house
- A house with a living room at the front. This typology usually has larger windows facing the front (potentially ranch-sliders).
- A house facing sideways to the street with a kitchen at one and living area at the rear.
- A sideways facing house with a garage positioned in front.

In almost all examples, a door faces the street because this is considered to be a desirable design feature, that should be able to be accommodate within the required proportion of glazing. This affects the amount of glazing that can be achieved. Whilst doors can be glazed, this is not usual for front doors and would be a somewhat artificial outcome.

No examples using ranch-sliders have been considered. This outcome is associated with outdoor living space at the front of the site, which is associated with front fencing. This arrangement usually results in reduced engagement and surveillance because the ground floor is not visible, even though the level of glazing may be high.

The houses were rated for three attributes considered to indicate aspects of frontage quality. These were:

• Passive Surveillance (that it would provide for views from inside the house)

- Visual Engagement (would be a visually interesting frontage, including allowing views of windows and the interior).
- Visual Coherence (a frontage that is appealing through conventional means such as grouping, symmetry, organised complexity). These may be facilitated or disrupted by too much / not enough glazing on the façade.

Part 2 looks at some examples that have been built and the proportion of glazing on these. Each has an assessment of whether the frontage allows for passive surveillance and supports a visually interesting and engaging façade, similar to Part 1. This provides an indication of the types of outcomes being achieved at present, the proportion of glazing used and how successful they have been.

For the calculation of glazing, fine grain details like mullions have been included in the percentage, but external frames have not.



Part 1 Desktop Examples

Type 1: Narrow House with a Kitchen at the Front







Type 2: Narrow House with a Living Room at Front





Type 3: Wide House





Type 4: Wide House with Garage





Results Table

						Ground			
		%	% inc	First	Ground	with	Passive	Visually	Visually
Туре	Diag	Glazed	Door	(m²)	(m²)	door	Surveillance	Engaging	Coherant
1	1	11.1	17.8	14.8	7.9	21.5	3	3	3
	2	10.6	17.6	16	5.3	19	1	1	2
	3	10.6	17.6	16	5.3	19	2	2	3
	4	6.6	13.6	8	5.3	19	2	1	2
	5	12	19	16	8.1	22	3	3	3
	6	8.5	15.4	8	9	18.5	2	1	2
	7	13	20.1	16	10	24.3	3	3	3
2	8	16.1	23.1	13.3	19	33	3	3	2
	9	13.5	20.4	5.3	19	33	3	2	1
	10	19	27	18.5	19	33	3	3	3
	11	21	28.3	18.5	23.4	37.4	3	3	3
3	12	13.6	18	11.1	16	24.8	3	3	3
	13	12.3	16.7	11.1	13.4	22.2	3	3	3
	14	8.3	12.7	8.3	8.3	17.1	2	1	1
	15	20.1	24.5	18.5	21.8	30.6	3	3	2
4	16	14.8	19.2	11.1	18.5	27.3	2	2	3
	17	20.4	24.8	18.1	22.7	31.5	2	2	3
	18	6.3	10.6	9.7	2.8	11.6	1	1	1
	19	11.3	15.7	9.7	13	21.8	1	1	1



Part 2: Examples

Example 1 – RMA/2021/750



Total Area of Front Facade:36.5m2Percent Glazed15.1%

% Including Door	20%
Top Floor	18.1%
Lower Floor	12.1%
Lower (inc door)	21.9%
Passive Surveillance	Good
Visually Engaging	Good
Visually Coherent	Good

Example 2- RMA/2021/525



Total Area of Front Facade: 28.1m2



Percent Glazed	7.5%
% Including Door	7.5%
Top Floor	3.6%
Lower Floor	11.4%
Lower (inc door)	11.4%
Passive Surveillance	Medium
Visually Engaging	Low
Visually Coherent	Low

Example 3 – RMA/2021/236



Total Area of Front Facade: 28.1m2

Percent Glazed	17.8%
% Including Door	19.6%
Top Floor	15.5%
Lower Floor	18.8%

Passive Surveillance	Medium
Visually Engaging	Medium
Visually Coherent	Good

Note this example has glazing within the door which is included in the calculations.



Example 4 - RMA/2019/2928



Total Area of Front Facade:		22.5m2
Percent Glazed % Including Door	10.7% 15.1%	
Top Floor Lower Floor Lower (inc door)	7.1% 14.2% 23.1%	
Passive Surveillance Visually Engaging Visually Coherent		Medium Low Medium

Note this example has glazing within the door which is included in the calculations.

Example 5 - RMA/2020/1696





Total Area of Front Fac	22.7m2	
Percent Glazed % Including Door	14% 21.9%	
Top Floor Lower Floor Lower (inc door)	13.4% 14.6% 30.4%	
Passive Surveillance Visually Engaging Visually Coherent		Good Good Good

Discussion

Whilst Part 1 is not an exhaustive survey, it does indicate the types of facades that are established and indicates how well they perform. There is a correlation between the percentage of glazed frontage and outcomes as shown below.

The three indicators used tend to be closely related and scores generally track each other to some extent. A basic standard of design would be achieved by a medium rating (or 2/3) on each indicator – translating into a score of 6/9.

It is also clear that whilst there is some correlation between the level of glazing and the quality of outcome, it breaks down after a certain point. Above a certain level of glazing (around 12%), there is only a weak relationship with quality. It appears that a moderate amount of glazing will ensure that the facade reaches a certain level (5/9) but that improved outcomes are not associated with higher rates of glazing than this.



If the door is included in the level of glazing (as shown below), then there is a stronger relationship. Good outcomes (6+) were always achieved where the level of glazing was above 17.5%. This is likely to be because these have a higher proportion of ground floor activation. This



view explains the dip in the graph at the top end. These facades (examples 1,5,12 and 13) are ones that have large ground floor windows despite a lower level of glazing overall. The windows relate to the position of rooms, they are at least quite large and do not have unusually high sills or low heads. This shows the importance of glazing that is well placed and allows clear views. Above a certain level of glazing, it is more important that it is well located and useful than to increase the overall amount of glazing.



Part 2 shows that there is a wide range of glazed frontage constructed in Christchurch. The highest proportion is 17.8%. As for the desktop sample, there is a link between the proportion of glazing and the standard of outcomes assessed. However, none of the sample reached the 20% standard required by the MDRS, including the examples that were assessed as good. This reinforces the trend of the desktop sample, that high rates of glazing are not needed to obtain good outcomes. It also shows that they are not usually built at present, meaning that that developers would have to increase the proportion of glazing to meet the rule, but that this would not lead to improved outcomes.

When considering the impact of including a front door, the higher scoring built examples did have a combined glazing of 20% or more, indicating that this is a more realistic requirement that would not result in unexpected outcomes to meet the rule.

Conclusion

Between them, the studies indicate that there is a link between a moderate level of glazing and higher quality outcomes. At higher levels of glazing, the placement of windows is likely to be more important than the total amount of glazing. Beyond a certain level, ensuring that a door can be placed on the front façade is regarded as more important than increasing the level of glazing, as is ensuring that the glazing is connected to living areas.

It is therefore recommended that a lower level of glazing than 20% is required, and priority is given to ensuring that high quality ground floor glazing is provided. This should comprise a door and a useful size window at an appropriate height for passive surveillance (eg not a high level window). To achieve this, it is recommended that the door be included in the calculation of the level of glazing, and that if a door is provided, a total of 17.5% glazing is sufficient, provided that there is a good proportion of ground floor fenestration. It is recommended that the rule should be:

- 20% glazing, including a front door (even if not glazed); or
- 17.5% glazing including a front door and a separate ground floor (non-high-level) window.





New Medium Density Residential Standards (MDRS) Assessment of Housing Enabled January 2022



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Quality control

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Executive Summary

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake an analysis of the impact of the recent policy direction for urban growth under the National Policy Statement on Urban Development (NPS-UD) and in particular the new Medium Density Residential Standards (MDRS) for Christchurch City.

The NPS-UD and subsequent MDRS will make changes to the planning framework that guides the future development of Christchurch City. The focus of this assessment is the changes imposed by the MDRS which allow for an increase in medium density residential development throughout existing residential areas. The purpose of this analysis is to understand how those changes will impact the location and type of housing development that is enabled across the city.

TPG's analysis has utilised a GIS platform to build a capacity model across the cities residential zones on a parcel by parcel basis to reflect where medium density development is deemed feasible. Development of the model has been based on a series of assessments undertaken to determine yields to be applied across each parcel. This has included a residential market assessment, typology development and testing, and development feasibility analysis.

The key findings of the capacity assessment and analysis are summarised below.

An increase in potential for medium density development

This assessment demonstrates that the new policy framework enables medium density development in the majority of the cities residential areas, creating an estimated plan enabled capacity of 222,478 medium dwellings.

Potential for medium density residential development					
Total plan enabled capacity	222,478 dwellings				
	(158,772 dwellings through comprehensive re-development and 63,706 through infill development)				
Projected feasible capacity	58,188 feasible dwellings				
	(37,441 dwellings through comprehensive re-development and 20,747 through infill development)				

Growth of the accessible suburbs

The financial feasibility analysis undertaken as part of this assessment demonstrates that whilst medium density is enabled across the cities residential areas it is generally more feasible in those areas where residential sales are high enough to offset the costs associated with land acquisition and construction.

The map provided below illustrates that, based on a review of land value and development costs, currently medium density tends to be feasible in those suburbs in the within good proximity to the central city. The catchments of Addington, Fendalton/St Albans, Greater Hornby, Addington, Northlands/Papanui, Riccarton, Shirley/Edgeware, Somerfield, St Martins and Sydenham show the

largest capacity for feasible medium density development. These catchments are generally one suburb back from the city located where land values are higher than some of the other surrounding suburbs.



When the capacity identified in these suburbs is taken into consideration, there is potential that under the provisions of the new planning framework, they will absorb a significant proportion of residential growth anticipated in Christchurch. This has implications for the planning of infrastructure to support increases in resident populations in these areas. It also should be considered in line with plans to increase densities around centres.

Factors influencing delivery of medium density

Whilst it can be assumed that development will generally follow the order in which infrastructure is provided, evidence suggests the triggers for development differ depending on the type of project and the nature of the existing urban structure/land ownership. Based on the market evidence, the suburbs

with good connectivity and amenity are currently experiencing the higher numbers of medium density residential development.

Using Christchurch City Council's assessment of residential areas with a high degree of accessibility and (October 2021) the sites with feasible development potential an good accessibility ratings are shown below.



1. Introduction

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake an analysis of the impact of the recent policy direction for urban growth under the National Policy Statement on Urban Development (NPS-UD) and in particular the new Medium Density Residential Standards (MDRS) for Christchurch City.

Scope of the Capacity Assessment

The assessment has included analysis of how medium density dwelling typologies could be developed across the city under the new policy framework including infill development and comprehensive town house development.

The objectives of the assessment include the following:

- To review and quantify the capacity for an increase in medium density development across the city's catchments under the new policy framework
- Identify the areas likely to see an uplift in medium density residential development based on analysis of the development feasibility.

The analysis has included the preparation of a capaciity model to demonstrate how meduim density housing could be achieved on each lot with development potential under the differing set of planning controls that would apply and exisisting market conditions across the city. Development of the model has been based on a series of assessments undertaken to determine yields to be applied across each parcel. This has included a residential market assessment, typology development and testing and development feasibility analysis. These assessments are included as appendices to this report.

Report Structure

Following this introduction, this report provides an overview of the results of the capacity assessment and an analysis of the impact of the new policy framework. The report is structured under the following sections:

- Sections 2 and 3, The Strategic Context and the Changing Policy Framework puts the capacity assessment into context by providing a review of relevant strategies, plans and policies and what they mean for residential development in Christchurch.
- Sections 3 and 4 provide a review of current residential densities and population growth. They provides an analysis of trends in the residential market to establish current and future residential demand
- Section 5 and 6 provide a review of the results of the capacity analysis and an assessment of what this means for the potential for residential development across the city.

2. Strategic Context

Under the governments Urban Growth Agenda (UGA) and direction of the former National Policy Statement on Urban Development Capacity, providing for population growth and enabling sufficient residential development in urban areas has been a key component of Christchurch City Council's planning framework over the last 11 years. Coupled with the earthquake recovery efforts, this focus on growth in urban areas has seen Christchurch undergo a period of change with redevelopment of the city centre as a focal point and residential growth occurring in the surrounding suburbs with a focus of growth around the local centres.

The new National Policy Statement on Urban Development (NPS-UD) which now replaces the National Policy Statement on Urban Development Capacity and The Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill 2021 (the subject of this assessment) will have a further impact on the planning framework that guides future urban development in Christchurch. These policies aim to further increase densities in the city centre and allow for more medium density residential development across the cities residential areas.



Figure 1: Policy Framework

Assessing the impact of the new policies has been undertaken within the context of how they will integrate within the existing policy framework. An overview of the relevant strategies, plans and policies that currently guide residential development is provided in the following sections with a more detailed overview provided in Appendix 1.

Planning for urban growth

Canterbury Regional Policy Statement

At the regional scale, the Canterbury Regional Policy Statement (CRPS) incorporates objectives to enable recovery and accommodate population growth, by providing for development (new land use, subdivision, infrastructure, housing) in a way that achieves the purpose of the RMA.

A settlement pattern for the region is identified in Map A of the CRPS. This map identifies the location and extent of urban development that will support recovery, rebuilding and planning for future growth and infrastructure delivery. The urban areas relevant to this assessment are shown in Figure 2.



Figure 2: Greater Christchurch greenfield priority areas and future development areas (Map A CRPS)

Greater Christchurch Urban Development Strategy 2007

The Greater Christchurch Urban Development Strategy 2007 (UDS) sets a vision for Greater Christchurch and provides a broad settlement pattern for Greater Christchurch for the next 35 years. This provides the primary strategic direction for the Greater Christchurch area by identifying the location of future housing, development of social and retail activity centres, areas for new employment and integration with transport networks. It promotes an integrated and intergenerational approach to planning for urban growth, and seeks to ensure that development is managed in a manner that protects environments, improves transport links, creates liveable areas and sustainably manages population growth.

The UDS also establishes clear strategies, policies, and processes for organisations and the community to work collaboratively to manage growth. Guiding principles shape and guide decisions on planning, transport and infrastructure investment, while the strategic directions underpin and provide context for the specific actions listed in the Action Plan.

Our Space 2018-2048 – Christchurch Future Development Strategy

Our Space 2018-2048 complements the Greater Christchurch Urban Development Strategy (UDS) and has been prepared in order to satisfy the requirement to produce a future development strategy, outlined in the NPS-UD. This responded to the first HCA for Christchurch (discussed later in this document) and is implemented under Chapter 6 to the Canterbury Regional Policy Statement and relevant District Plans.

The document outlines land use and development proposals to ensure there is sufficient development capacity for housing and business growth across Greater Christchurch to 2048. The proposed settlement pattern is based upon maintaining the distinction between urban and rural areas by concentrating development at and around existing urban areas, both large and small.

The document was developed by the Greater Christchurch Partnership, which has worked collaboratively for more than a decade on planning and managing urban growth and development across Greater Christchurch (Christchurch City, Waimakariri District and Selwyn District). This Partnership brings together the leadership roles of local government, Te Rūnanga o Ngāi Tahu, the district health board, and Government agencies, and is guided by the vision, principles and strategic goals outlined in the UDS.

The UDS continues to provide the roadmap for growth planning in Greater Christchurch. Our Space therefore does not seek to replace this comprehensive strategy, but rather builds on it by considering and updating many of the key settlement pattern matters.

Redevelopment of the city centre

Christchurch Central Recovery Plan

In the past 11 years following the earthquake, Christchurch has undergone significant redevelopment, particularly in its city centre. This redevelopment has been driven by the Recovery Strategy for Greater

Christchurch - Mahere Haumanutanga and the Christchurch Central Recovery Plan (CCRP), which were developed in line with the Christchurch Earthquake Recovery Act 2011 (the Act).

The CCRPs overarching design concept is the development of a greener, more accessible city with a compact core and a stronger built identity. The CCRPs Blueprint provides a spatial framework for central Christchurch, or the "Frame". It describes the form in which the central city can be rebuilt as a whole, and defines the locations of 'anchor' projects, which will stimulate further redevelopment.

Residential development in the City centre is provided for in the CCRPs and this has been reflected in the District Plan provisions.

The Core

Te Pokapū

The Core of Christchurch will become a more concentrated area focused on commercial and retail development, vital for economic prosperity.

The Frame wraps around part of the commercial and retail area framing part of the Core. The Core encompatises an area from Tuam Street in the south, to Manchester Street in the east, Kilmore Street in the north and Montreal Street in the west.

The right size

Historically the central city commercial area has been too large, with variable building quality and occupancy. A compact Core provides better outcomes for buainesises and investors.

Concentrated development

The Core will concentrate commercial and retail development in the central city, It will assist economic growth in the long term by providing investors and the community with greater certainty.

Living options

A variety of residential development is provided for within the Core, giving people the option of living close to where they work.

Implementation

One part of implementing the Core will be to coordinate charges to public transport facilities, transport access corridors and pedestrian areas. It may be some time before commercial activities return in full to the centre. However, with the anchor projects carefully located to stimulate commercial development around them, some unass should be redeveloped and repopulated relatively quickly.



The Care, Frame and cantral city arms are defined in Appondix 1 to the Oristchenth Control Recovery Plan

Figure 3: Christchurch Core (CCRP)

Density around the centres

The Christchurch District Plan has a policy to recognise and manage commercial centres as the focal points for the community and business through intensification within centres that reflects their functions and catchment sizes, and in accordance with a framework that:

- gives primacy to, and supports, the recovery of the Central City, followed by Key Activity Centres, by managing the size of all centres and the range and scale of activities that locate within them
- supports and enhances the role of District Centres; and
- maintains the role of Neighbourhood Centres, Local Centres and Large Format Centres.

Key Activity Centres are the existing and proposed commercial centres identified as focal points for employment, community activities and the transport network, and which are suitable for more

intensive mixed-use development. These are identified in Chapter 6, Map A of the Canterbury Regional Policy Statement as Papanui, Shirely, Linwood, New Brighton, Belfast/Northwood, Riccarton, North Halswell, Spreydon and Hornby.

Density around public transport

The National Policy Statement on Urban Development (NPS-UD) requires Tier 1 authorities to enable a minimum of 6 storeys in areas within a walkable catchment of existing and planned rapid transit stops. Whilst Christchurch does not currently have a mass rapid transit system, improvements to Christchurch's existing public transport network or the implementation of a mass rapid transit system could have a significant impact on the density of development that is enabled through the NPS-UD.

The NPS-UD defines rapid transit service as an existing or planned frequent, quick, reliable and highcapacity public transport service that operates on a permanent route (road or rail) that is largely separated from other traffic

Greater Christchurch Public Transport Futures Programme and Mass Rapid Transit Business Case

Greater Christchurch partners are collaborating on a study to understand the implications of a Mass Rapid Transit solution for Greater Christchurch as part of its Public Transport Future's Programme. This is in response to high growth and changing travel demand in the sub-region.

The Public Transport Futures programme consists of three packages: Foundations, Rest of Network, and Mass Rapid Transit (MRT). The first two packages outline the priority opportunity for improving Greater Christchurch's current public transport network. The development of these two packages was finished in late 2020; they are now in the implementation phase with Greater Christchurch councils' Long-Term Plans deciding the appropriate phasing and timing of investment.

The third package – Mass Rapid Transit – is a transformational package that lays the foundation for significant urban development and land use changes and transformation in transport accessibility. This work is required under the Government Policy Statement for land transport and listed in the Canterbury Regional Land Transport Plan (RLTP). In 2021, work was undertaken to identify and protect the corridors and to enable policy changes that support intensification and regeneration in key areas. The implementation of MRT is currently mode agnostic and it is anticipated that the MRT business case will determine the timing and methodology for MRT implementation.

Potential corridors for mass rapid transit and high frequency public transport services are identified in the Canterbury RLTP's 30 year vision.

3. The Changing Policy Framework

A summary of the polices in the NPS-UD and MDRS that will have a direct impact the provisions given for residential development in the Christchurch City District Plan are outlined in the following section. These are the changes that have been assessed through TPG's capacity analysis.

The National Policy Statement on Urban Development

Under the National Policy Statement on Urban Development (NPS-UD) Christchurch is identified as a Tier 1 urban environment. Tier 1 authorities are required to enable denser housing, particularly in centres and areas with good access to public transport.

The polices of the NPS-UD that will require changes to the district plan controls and will have an impact on the potential for residential development are mostly contained in Policy 3.

Policy 3: In relation to tier 1 urban environments, regional policy statements and district plans enable:

- (a) in city centre zones, building heights and density of urban form to realise as much development capacity as possible, to maximise benefits of intensification; and
- (b) in metropolitan centre zones, building heights and density of urban form to reflect demand for housing and business use in those locations, and in all cases building heights of at least 6 storeys; and
- (c) building heights of least 6 storeys within at least a walkable catchment of the following: (i) existing and planned rapid transit stops (ii) the edge of city centre zones (iii) the edge of metropolitan centre zones.
- (d) in all other locations in the tier 1 urban environment, building heights and density of urban form commensurate with the greater of: (i) the level of accessibility by existing or planned active or public transport to a range of commercial activities and community services; or (ii) relative demand for housing and business use in that location.

Currently the Christchurch City Central Area has height limits ranging from 10 storeys to 3 storeys. As required by Policy 3(a) of the NPS-UD, the city centre zones will be required to have heights and density controls that enable as much development capacity as possible, which effectively removes the height limits in the centre zone and implements a 6 story minimum within the walking catchment of the centre.

In addition Policy 11, removes the ability of Tier 1, 2 and 3 authorities to require car parking when applying for resource consent to construct new housing. This could lower development costs in Christchurch and potentially encourage development through increasing land use flexibility. The impact of this change to carparking polices has not been included in the scope of this assessment.

Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill 2021

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill 2021 (the Bill) works with the NPS-UD to accelerate housing supply in areas of high demand. The Bill, which was passed into law in December 2021, enables greater levels of permitted residential intensification within low and

medium density residential zones in New Zealand's largest centres. This is achieved through two key instruments:

Medium density residential standards (MDRS) – requires Tier 1 authorities to adopt new medium density residential standards in residential zones, which enable people to build up to three units and three storeys on most residential zones, without the need for a land use resource consent, provided all other rules and standards in the district plan have been complied with. Exceptions to individual sites and areas will apply based on qualifying matters set out in the NPS-UD and councils must publicly notify their proposed changes to their district plans by the end of August 2022.

The Intensification Streamlined Planning Process (ISPP) – supports councils to implement the intensification policies of the NPS-UD and adopt the MDRS at least a year earlier, by amending the existing streamlined planning process under the RMA to be faster, easier, and less costly.

The MDRS apply to all residential zones in the Tier 1 urban environments, except:

- large lot residential zones and settlement zones
- areas predominantly urban in character that the 2018 census recorded as having a resident population of less than 5,000, unless a local authority intends the area to become part of an urban environment, or
- offshore islands.

Assessment of Zones where the MDRS applies

Based on a review of the provisions of the MDRS and the National Planning Standards , the following zones are considered within the scope of the MDRS provisions.

ODP Zone	Potential equivalent National Planning Standard zone	Within MDRS scope
 Residential suburban zone Residential new neighbourhood zone Residential Banks Peninsula zone (any within urban environment) 	General residential zone	Yes
Residential hill zone	Low density residential zone	Yes
 Residential suburban density transition zone Residential medium density zone 	Medium density residential zone	Yes
Residential city centre zone	High density residential zone	Yes

Table 1 Zones where MDRS applies
•	Residential large lot zone Residential small settlement zone (with potential exception of Kainga Overlay Area 1 & 2)	Large lot residential zone	No
•	Residential guest accommodation zone	Commercial zone	No
•	Residential Banks Peninsula zone (any outside urban environment)	General or low density residential zone – but outside of urban environment	No
•	Papakāinga/Kāinga Nohoanga Zone	Māori Purpose Zone	No

As shown below, the key changes are most significant for the Residential Suburban Zone and include removal of the 450m² minimum site area, increases in allowable height and building coverage, smaller outdoor living area requirements and a reduction in the recession plane requirements. Combined these changes will allow for a denser form of residential development to be achieved in the Residential Suburban Zone, dependant on the size of available development areas.

For the Residential Medium Density Zone there is less change. The provisions of this existing zone are similar to the MDRS, with density, landscaped area, height, and site coverage generally aligning. The MDRS is only slightly more permissive in regard to recession planes. The provisions under this existing medium density zone has resulted increasing examples of medium density development in the residential zones surrounding the centre over the last 10 years (refer to the following section 3 and Market Assessment provided at Appendix 2). It also means that the capacity for medium density through infill development has already begun to be exhausted in these areas. This is further analysed and tested as part of the capacity assessment outlined in this report.

Table 2 Comparison of density controls

	Residential Suburban Zone	Medium Density Zone	MDRS
Site Density	1 unit/ 450m2 minimum No minimum net site area for multi-unit residential complexes, social housing complexes, and older person's housing units	No site density applies Minimum subdivision area 200m2	Maximum 3 units per lot
Site Coverage (building coverage)	 35% net site area covered by buildings 40% net site area for single storey multiunit complexes where all the buildings are single storey 	50%	50%
Maximum building Height	8m	11m (unless subject to an overlay)	11m plus roof form up to 12m
Landscaped Area coverage	Minimum 20% for multi- unit developments	Minimum 20%	Minimum 20%
Height to boundary	2.3m plus recession plane angle	2.3m plus recession plane angle	4m + 60 degrees
Minimum building set backs	1m from internal boundaries 4.5 m from road boundary	2 m from road boundary	Front: 1.5m Side: 1m Rear: 1m
Minimum site area	450sqm	200sqm	-
Outdoor Living Space	90sqm with a minimum dimension of 6m	For one bedroom or studio: 16sqm minimum Minimum for balcony: 1.5m dimension and 6sqm area For two plus bedrooms: Minimum ground floor area: 30sqm	Ground floor 20sqm. With no dimension less than 3m Above ground floor level 8msqm with a minimum dimension 1.8m

4. Existing Residential Supply

Existing Residential Density

Currently, there are 153,531 existing homes in Christchurch City providing for an estimated resident population of 392,100 (Stats, NZ 2020). In line with the existing zoning patterns, the more densely populated areas are those suburbs surrounding the city centre and in areas surrounding the districts centres.





Figure 4 Residential Zones (Christchurch City District Plan)



Figure 5: Population density (TPG, 2022)

New housing supply

In the last 24 months there has been a significant increase in the number of residential building consents issued within Christchurch City. This is reflective of the increased demand for new residential development and the strength of the residential property market.

However, prior to this the number of new dwelling building consents issued in Christchurch City decreased over the five-year period from 2015 to 2020 from 4,236 to 2903 (-1,333) reflecting a 31.5% reduction over this time. This compares a national increase of 49.5% increase over the same five-year period. This reflects the reduction of consents to a more 'normal' level following significant consenting activity associated with the Christchurch rebuild.

TABLE 3 RESIDENTIAL BUILDING CONSENTS SINCE 2015, CHRISTCHURCH AND NATIONALLY (SOURCE STATISTICS NZ)								
Year ended June	2015	2016	2017	2018	2019	2020		
Christchurch City	4,236	3,838	2,620	2,522	2,519	2,903		
Annual change	-398	-1,218	-98	-3	-98	+384		
% Change over 5 years						-31.5%		
New Zealand	25,154	29,097	30,453	32,860	34,804	37,614		
Annual Change	3,943	1,356	2,407	1,944	2,407	12,460		
% Change over 5 years						49.5%		

Of the new resource consents issued since 2018, 38% have been for medium density housing, with 10% making up developments within the inner city. As shown in Figure 6, the location of new residential development is unsurprisingly located in the growth areas of Halswel and Burwood but notably over 30% consents have been issued for residential development in the urban areas close to the centre.



Figure 6: Location of new residential consents issued 2020 (BLACKBURN MANAGEMENT, 2020)

Increase in house prices and land values

Christchurch City has seen considerable increase in sale prices across the city post COVID-19 due to a range of factors. The latest statistics released by Quotable Value indicate that Christchurch had the biggest rise in average sale price up 40.2% over 2021.

The period of a reduction of supply together with strong buyer demand and historically low interest rates has resulted in steadily rising prices. Property listings in the region have been far less constrained than most other parts of the country for an extended period of time, with investors now attracted to Christchurch where prices are significantly more affordable than in Auckland and Wellington and much better yields are achievable (refer to the full Market Assessment provided in Appendix 2 for a more detailed analysis).

Amongst other factors, the feasibility of medium density development is influenced by the underlying land value of a property, if the underlying land value is too low, this impacts on the sale price of the finished units and therefore constrains the profit margin obtainable by the developer. As part of this assessment we have undertaken a review of recent vacant land sales and compared these against the August 2019 Rating Land Values, our analysis has indicated a 70-80% uplift in land value since the 2019 revaluation. As a high level approach we have then applied the uplift percentage across the city to provide an estimate of land values across all suburbs, to understand how current land values may be linked to the feasibility of development in the current environment.

Overview of the catchments used in this analysis

For the purposes of this analysis the cities residential suburbs have been broken into a series of catchments which reflect the differing residential areas of the city. The boundaries of the catchments are shown below. For the purposes of reporting the boundaries of the catchments are based on Stats NZ Statistical Area 2 (SA2) 2020 boundaries.



Figure 7: Boundary of the Residential Catchments

Each catchment has a different population and housing profile. This is reflected in the key statistics outlined in Table 3.

Catchment	2018 population	% Christchurch population	total number of occupied dwellings	% of housing supply	Residential Density (person per ha)
Addington	5724	1.49	2067	1.35	26.36
Avonhead/llam	15552	4.05	5514	3.59	32.09
Bishopdale	10653	2.78	4023	2.62	18.93
Burnside/Russley	14343	3.74	4989	3.25	26.17
Bush Inn/Ilam	18360	4.78	5127	3.34	37.67
Cashmere/Huntsbury	8664	2.26	3261	2.12	17.21
Christchurch Central	7233	1.88	2742	1.79	25.67
Fendalton/St Albans	27879	7.26	10770	7.01	35.66
Greater Halswell	17892	4.66	6276	4.09	14.45
Greater Hornby	15552	4.05	5766	3.76	11.25
Hoon Hay/Hillmorton	11505	3.00	4155	2.71	28.11
Linwood/Avonside	28314	7.38	11376	7.41	28.62
Lyttelton	2934	0.76	1278	0.83	9.03
Mashlands/Waimairi	17817	4.64	6414	4.18	10.28
New Brighton/Burwood	25500	6.64	9960	6.49	32.07
Northlands/Papanui	19743	5.14	7545	4.91	28
Northwood/Belfast	12477	3.25	4713	3.07	10.17
Riccarton Central	12615	3.29	4113	2.68	44.55
Shirley/Edgeware	24570	6.40	9660	6.29	31.32
Somerfield	12774	3.33	5172	3.37	38.56
St Martins/Waltham	10680	2.78	4287	2.79	29.83
Sumner/Mount Pleasant	10635	2.77	4251	2.77	15.89
Sydenham Central	9819	2.56	4056	2.64	28.45

Table 3 Catchment Population and Housing Profile (NZ Stats, 2018)

5. Population growth and housing demand

The greater Christchurch area has experienced significant population change following the 2010 and 2011 Canterbury earthquakes. The population of Christchurch City fell in 2011 and 2012 by 18,000 people, mainly due to people moving to adjacent greater Christchurch areas (such as Selwyn and Waimakariri districts). Christchurch City's population took several years to re-bound, to surpass the 2010 population of 376,000 people. (Canterbury District Health Board, 2022).

The estimated resident population as 30 June 2013 and 2018 for Christchurch City is noted below in comparison to the Canterbury Region and New Zealand together with projections for 2023. Between the Census years of 2013 and 2018, the population of Christchurch City increased 42,331 persons or 12.4%. Estimated resident population in 2021 is 392,100 people an increase of 8,300 persons (+2.1%) over three years. (Statistics NZ, 2021).

	2013	2018	2023
Christchurch City	341,469	383,800	402,400
Population Change		+ 42,331	+ 18,600
% increase		+ 12.4%	+ 4.8%
Canterbury Region	539,533	622,800	661,300
Deputation Change			
Population Change		+ 83,267	+ 38,500
% increase		+15.4%	+ 6.2%
New Zealand	4242,048	4,900,600	5,222,400
Population Change		+ 658,552	+ 321,800
% increase		+15.5%	+ 6.6%

Table 4 Population Change (2013-2023) (source: Statistics NZ)

Overall, estimated population forecasts indicate a projected resident population of 463,500 by 2048 an increase of 79,700 persons from 2018 to 2048 representing growth of 20.7%.

Table 5 shows the Statistics New Zealand population and household forecasts in Christchurch City from 2018 through to 2048. The period 2018 to 2033, as the short to medium term, is likely to be the most accurate and useful forecast information for immediate planning purposes.

In 2018, the dominant household type in Christchurch City was Families, which accounted for 68% of all households, this is projected to increase 72% in 2043. The total increase in Family households between 2018 and 2043 is estimated to be 26,600 or 26.3%, relatively this is the largest increase of all household types and suggests that demand for housing is likely to be for larger traditional family homes.

Table 5 Po	oulation and	household	forecasts in	Christchurch	City from	2018 through	to 2048
	pulation and	nouschola	iorecusts in	Children	city in onit	ZOTO UNOUGH	10 2040

Forecast year								
Summary	2018	2023	2028	2033	2038	2043	2048	
Population Forecast	383,800	402,400	417,000	430,600	453,800	453,800	463,500	
Population Change	-	+ 18,600	+14,600	+13,600	+12,200	+11,000	+9,700	
% Increase	-	4.8%	3.6%	3.3%	2.8%	2.5%	2.1%	
Household Forecast	148,000	155,000	161,100	167,200	172,400	176,400	*	
Average household size	2.5	2.5	2.5	2.5	2.5	2.5	*	

Canterbury Housing and Business Development Capacity Assessment

A Christchurch Housing and Business Development Capacity Assessment was produced by the Greater Christchurch Partnership in 2021 to satisfy the requirements of the National Policy Statement on Urban Development (NPS-UD).

The HCA includes an assessment of expected housing demand to 2051 for Christchurch, Selwyn and Waimakariri, and the sufficiency of development capacity. It builds upon the 2018 Housing Capacity Assessment undertaken under the previous National Policy Statement on Urban Development Capacity (NPS-UDC), and responds to key changes in the policy requirements between the NPS-UDC and NPS-UD.

Key demand trends for Greater Christchurch identified through the assessment include:

- resident population is projected to grow from 536,880 in 2021 to 705,600 in 2051, an increase of 168,720 people
- the number of households is projected to increase by 77,100 or 37%;
- demographic profile is projected to change with an aging population resulting in strong growth in the number of 'couple only' and one person households.

An assessment of the housing capacity found there is sufficient urban capacity in the short term (next three years) within each territorial authority to accommodate population projections. There are however shortfalls in the medium term (next ten years) approximately 2,000 households within Selwyn and approximately 3,100 households within Waimakariri.

6. Analysis Approach

Factors influencing housing supply and delivery

In addition to plan enabled residential development, the market has a significant role to play in delivering new homes. Even where the district plan provisions allow for medium density residential development to occur it may not be feasible, financially to undertake development. The financial feasibility of a development is dependent on a number of factors including design, consenting and construction costs, underlying land value, and the revenues that can be generated from the residential development or the increase in capital value achieved. Population demand over time and developer appetite also has a role to play dictating the delivery and take up of new residential development over time.

For the purposes of this analysis, the capacity of medium density residential development under the new policy framework has been determined to show 'plan-enabled development capacity' on sites where there is a development opportunity identified and then also 'feasible development capacity' based on a review of shifting land values and areas where there is developer interest.



Figure 8: Development Capacity Types (Adapted from Our Space, 2018)

Methodology

Utilising a GIS platform, capacity modelling across the cities residential areas has been undertaken on a parcel by parcel basis reflecting the sites where medium density development could be achieved under the differing set of planning controls that would apply.

In summary the following key steps form the basis of the capacity analysis with a detailed overview of the key assumptions provided at Appendix 5.

1. Identification of development sites

Across each residential zone where the MDRS applies (refer to section of this Report 3), analysis has been undertaken to determine sites that have potential to accommodate new residential development.

To ensure this analysis reflects market conditions this based on both a review of both vacant land suitable for development and also sites where land values and existing use could warrant redevelopment potential. In summary, the following sites have been included as development sites in the model:

- Existing vacant sites identification of appropriately zoned vacant sites excluding those designated for an alternative purpose
- Sites with re-development potential identification of sites where the value of the existing
 improvements is low comparative to the land value. Based on a review of recent developments
 across the city where sites have a land value that makes up to 80% of the capital value have been
 considered as providing a development opportunity¹.
- Sites with infill potential a review of existing residential lots has been undertaken to identify those where the existing building footprint leaves an adequate area for an additional dwelling/s and has sufficient road frontage to provide access to the additional development.
- Sites with potential for amalgamation and subdivision a review of identified adjoining development sites that could present an opportunity for subdivision and/or amalgamation based on minimum lot size and land ownership.

¹ It is noted that previous assessments have identified development potential on sites where land value has been 70% of capital value. For this assessment 80% has been used to reflect recent market activity. If 70% was applied the number of sites that show development potential across the city would increase considerably (approximately 6,000 more comprehensive development sites).



Figure 9: Example of the model baseline – development sites identified

2. Typology development and testing

Testing of the different yields that can be achieved under the different rules, on typical lot sizes across each zone has been undertaken and is included in Appendix 4.

Interestingly, the results of the typology assessment demonstrate that on a typical lot size the existing rules for the medium density zone achieve a greater yield than the MDRS. This is primarily due to the MDRS allowing for up to 3 dwellings rather than the number of dwellings being accommodated based on site coverage.





Multi-unit standalone and terraced housing



Mixed use development

Figure 10: Example of the typology development and testing (refer to Appendix 4 for detailed overview)

3. Establishing plan enabled capacity

Based on the results of the typology testing the resulting built form that achieves the greatest yield across the different lot sizes and zone parameters have been modelled across sites identified with development potential. From this the plan enabled development capacity is established.

4. Economic feasibility testing

To test development feasibility of the theoretical capacity an analysis of financial feasibility of a range of residential typologies has been undertaken across typical development lots (Refer to Appendix 4). The feasibility assessment is based on a Residual Land Value technique which assesses a site's development potential, in simple terms, by comparing the likely costs of development (including addressing issues of resilience) with the potential resale value. From this, the residual land value (the value a developer would pay to acquire the land) is derived to test feasibility. The model has been applied to a range of sites and different typologies.

Based on the results of the feasibility assessment the relative land values required to achieve a feasible medium density development have been established. A theoretical 'land value tipping point' of \$1,000 per sqm has been identified to achieve a feasible medium density development. This has been review against the findings of the market assessment and is indicative of where medium density is occurring.

5. Establishing feasible capacity

Based on the results of the feasibility assessment and resulting built form that achieves the greatest yield across the different lot sizes and zone parameters have been modelled across sites identified with development potential. From this a feasible capacity for residential development is established.

Limitations and Assumptions

Due to the time constraints for this analysis, a high level approach to the capacity assessment has been undertaken. This has included typology testing and feasibility assessment on a range of typical sites to establish key assumptions that could be applied across the city rather than an in depth analysis of each different suburb.

To provide a more detailed assessment of feasibility and capacity it is recommended that further sensitivity analysis is undertaken. This should include testing of additional sites across each suburb and more detail review of land values based on the upcoming updates to the rating base. This would give a more accurate range of parameters for the model.

The following key points to note:

- The assessment is focused on the capacity for medium density development within residential zones subject to the relevant provisions of the MDRS, it does not assess additional residential capacity that exists in areas where medium density is not viable or other commercial areas of the city.
- Assessment of the feasibility of development potential in the Central Area and the was not included in the scope of this assessment.
- The model has been developed without cross refence to the modelling undertaken for the 2021 HCA. To provide an analysis of how the new policy framework medium density development would impact the overall capacity for housing supply a comparison the assumptions of both models should be reviewed for alignment and a revised capacity assessment undertaken.
- The analysis has not incorporated consideration of those areas that would not be subject to the MDRS as a result of qualifying matters.

Summary of key assumptions

A detailed overview of the assumptions used to undertake the analysis are provided in Appendix 4 and 5. A summary of the key assumptions is provided below:

Sites identified with development potential

- Existing vacant sites that are appropriately zoned
- Sites with earthquake prone buildings
- Sites with re-development potential where the land value that makes up to 80% of the capital value based on a review of recent development activity
- Sites with infill potential where there is sufficient vacant space within a lot (minimum 50sqm) and adequate road frontage (minimum 10m)
- Sites with potential for amalgamation adjoining identified development sites in joint ownership

Areas excluded from the capacity analysis

- All zones where the MDRS does not apply
- Green field development sites, as the outcome for medium density development in these areas will differ than that which is covered by the MDRS
- High Flood Risk
- Tsunami Inundation
- Extreme Liquefaction Management Zone
- Slope Hazard/Land Instability
- Port Influence
- Noise Boundaries
- Community Facilities
- Sites of Cultural Significance
- Airport Protection
- Heritage and Character Sites
- Areas of Ecological Significance
- Natural Landscapes
- Protected Vegetation
- Red Zone
- Contaminated Sites
- Areas within the flight path restrictions or within the utility buffer requirements given in Operative District Plan.

Development Costs and Revenues applied to the development feasibility analysis are included in the market Assessment included at Appendix 2.

7. Results of the Medium Density Enablement Analysis

A summary of the key findings of the analysis is provided below in Table 8 with a more detailed overview of the results by catchment and zone provided in the following sections.

Potential for medium density residential development					
Total plan enabled capacity	222,478 dwellings				
	(158,772 dwellings through comprehensive re-development and 63,706 through infill development)				
Projected feasible capacity	58,188 feasible dwellings				
	(37,441 dwellings through comprehensive re-development and 20,747 through infill development)				

Table 8: Summary of medium density development potential

The results of the enablement assessment show that there is feasible capacity for an estimated 58,188 medium density dwellings that could occur across the city under the new policy framework based on current market conditions. This would make up a significant portion (57%) of the 101,994 feasible dwellings identified in the 2021 Greater Christchurch Housing Development Capacity Assessment.

It is noted that the 2021 Development Capacity Assessment was prepared prior to the release of the MDRS and the impact on capacity for housing across this city will be undertaken as part of the update to this assessment.

Catchment overview

To understand where the capacity for medium density is located a breakdown of the dwelling capacity by catchment is provided in Table 9.

Table 9 demonstrates that the existing residential areas hold a significant plan enabled dwelling capacity under the new policy framework. However, when these areas are assessed for development feasibility this capacity in the outer suburbs reduces. This can be explained by the lower land values further out from the city meaning the market values for medium density development in this area are currently not high enough to achieve a feasible outcome.

The catchments of Addington, Fendalton/St Albans, Greater Hornby, Northlands/Papanui, Riccarton, Shirley/Edgeware, Somerfield, St Martins and Sydenham show the largest capacity feasible medium density development. These catchments are generally one suburb back from the city located where land values are higher than some of the other surrounding suburbs. The heat maps provided at Figure 11 and 12 shows the concentration of both plan enabled and feasible development sites across the city. This further illustrates the focus of medium density potential in the more accessible suburbs.

Table 9 Development Capacity by Catchment

Catchment	Theoretical dwelling capacity		Feasible dwelling		
	comprehensive	Infill	comprehensive	infill	Total
Addington	593	1,104	593	1,104	1,697
Avonhead/Ilam	2,063	2,943	16	19	35
Bishopdale	1,368	786			0
Burnside/Russley	2,115	2,148	31	169	200
Bush Inn/Ilam	1,933	976	6	5	11
Cashmere/Huntsbury	2,322	2,878			0
Fendalton/St Albans	4,905	10,902	4,905	10,902	15,807
Greater Halswell	3,758	27,386		6	6
Greater Hornby	2,330	5,155	2,330	5,155	7,485
Hoon Hay/Hillmorton	2,976	424	14		14
Linwood/Avonside	3,415	4,358			0
Lyttelton	1,850	948			0
Mashlands/Waimairi Beach	4,055	27,744			0
New Brighton/Burwood	3,158	1,067			0
Northlands/Papanui	3,787	6,558	3,787	6,558	10,345
Northwood/Belfast	4,545	17,556	3	15	18
Riccarton Central	953	4,726	953	4,726	5,679
Shirley/Edgeware	4,141	4,082	4,141	4,082	8,223
Somerfield	1,507	1,090	1,507	1,090	2,597
St Martins/Waltham	2,009	1,607	2,009	1,607	3,616
Sumner/Mount Pleasant	3,218	8,354		14	14
Sydenham Central	450	1,989	450	1,989	2,439
Templeton	227	66			0
Westmoreland/Kennedys Bush	3,830	17,391			0
Wigram	1,139	5,832	2		2
Woolston/Heathcote	1,059	702			0
Total	63,706	158,772	20,747	37,441	58,188



Figure 11 Plan enabled Medium Density development



Figure 12 Locations Feasible medium density Development

Development potential by zone

In addition to the assessment of capacity by catchment, when the results of the assessment are shown by zone it demonstrates that the majority of the development capacity is located within the Residential Suburban Zone. While this is partly explained by the fact that this zone covers a larger area of Christchurch, it also demonstrates that the availability of development sites in the medium density zone and areas closest to the centres has already begun to be developed. This is evidence of the existing medium density zone provisions being aligned to that imposed by the MDRS.

Feasible capacity is reduced significantly where the balance between acquisition/construction costs and achievable price points does not achieve a development profit. This is evidenced in the Residential Banks Peninsula zone where the land values are not high enough to achieve a feasible outcome.

In locations such as Residential Hill's zone site constraints alongside land values also reduces the feasible capacity.

	Plan E	nabled Capacity	Feasible Capacity	
Zone	Infill	Redevelopment	Infill	Redevelopment
Residential Banks Peninsula	1,850	948	-	
Residential Hills	6,251	20,903	230	311
Residential Medium Density	2,722	10,651	1,779	8,333
Residential New Neighbourhood	12,941	88,047	1,667	9,066
Residential Suburban	36,186	33,017	14,408	15,626
Residential Suburban Density Transition	3,756	5,206	2,663	4,105
	63,706	158,772	20,747	37,441

Table 10 Dwelling Capacity by Zone

Impact on Residential Density

The enablement of medium density housing will also have an impact on the residential density across the city, especially in areas that already fairly densely populated and where medium density is feasible. An assessment of how the impact of feasible development may impact density across each catchment is provided below. Notably, Riccarton and Northlands/Papanui have the potential to have the most significance shift towards higher levels of residential density. This will have implications for infrastructure planning to these areas. This includes ensuring that anticipated development capacity can be accommodated within existing networks and also the incoming population are supported by sufficient community and social infrastructure.

Table 11 Potential impact on residential density

Catchment	Current Population	n (Census 2018)	Change with feasible medium density development applied		
	Population	Density (ha)	Population	Density	Increase
			Increase	(ha)	in density
Addington	5,598	26.36	9,162	43.14	16.78
Avonhead/llam	15,636	32.09	15,710	32.24	0.15
Bishopdale	10,707	18.93	10,707	18.93	0.00
Burnside/Russley	13,941	26.17	14,361	26.96	0.79
Bush Inn/Ilam	17,193	37.67	17,216	37.72	0.05
Cashmere/Huntsbury	8,718	17.21	8,718	17.21	0.00

Fendalton/St Albans	26,553	35.66	26,553	35.66	0.00
Greater Halswell	17,889	14.45	17,902	14.46	0.01
Greater Hornby	15,636	11.25	31,354	22.57	11.32
Hoon Hay/Hillmorton	11,430	28.11	11,464	28.19	0.08
Linwood/Avonside	28,608	28.62	28,608	28.62	0.00
Lyttelton	2,985	9.03	2,985	9.03	0.00
Mashlands/Waimairi Beach	17,763	10.28	17,763	10.28	0.00
New Brighton/Burwood	25,806	32.07	25,810	32.07	0.00
Northlands/Papanui	19,503	28	41,190	59.13	31.13
Northwood/Belfast	12,432	10.17	12,470	10.20	0.03
Riccarton Central	11,784	44.55	23,710	89.63	45.08
Shirley/Edgeware	24,534	31.32	41,802	53.37	22.05
Somerfield	12,939	38.56	18,393	54.81	16.25
St Martins/Waltham	10,797	29.83	18,391	50.81	20.98
Sumner/Mount Pleasant	10,563	15.89	10,592	15.94	0.05
Sydenham Central	9,753	28.45	14,875	43.39	14.94
Templeton	1,797	27.17	1,797	27.17	0.00
Westmoreland/Kennedys Bush	3,099	1.95	3,099	1.95	0.00
Wigram	8,595	15.9	8,599	15.91	0.01
Woolston/Heathcote	8,247	12.5	8,247	12.50	0.00



Figure 13 Locations with a potential shift in density

8. Take up

Across each catchment, understanding where development will take place first is challenging.

Whilst it can be assumed that development will generally follow the order in which infrastructure is provided evidence suggests the triggers for development differ depending on the type of project and the nature of the existing urban structure/land ownership.

Based on the market evidence, the suburbs that are located closer to the city with good amenity are currently experiencing medium density infill development.

Figure 14 below demonstrates the sites with feasible development potential that are also in areas with good accessibility ratings. This is based on Christchurch City Council's assessment of residential areas with a high degree of accessibility (October 2021).



Figure 14 Assessment of accessibility

9. Conclusions

This assessment demonstrates that the new policy framework and implementation of MDRS medium density development will become enabled in the majority of the cities residential areas, creating an estimated "plan enabled" capacity of 222,478 medium density dwellings.

However, when the realities of development costs and rising land values are factored in, the capacity for medium density development considerably reduces and it is anticipated that it is most likely to occur in those catchments that are generally one suburb back from the city in areas with good accessibility and amenity.

When the capacity identified in these suburbs is taken into consideration, there is potential that under the provisions of the new planning framework, they will absorb a significant proportion of residential growth anticipated in Christchurch. This has implications for the planning of infrastructure to support increases in resident populations in these areas. It also should be considered in line with plans to increase densities around centres.

Appendix 1: Policy Overview



National Policy Framework

The Urban Growth Agenda

The Urban Growth Agenda (UGA) is a national programme of work that aims to remove barriers to the supply of land and infrastructure and make room for cities to grow up and out.

The main objective of the UGA is to improve housing affordability, underpinned by affordable urban land. This objective is supported by wider objectives to:

- improve choices about the location and type of housing,
- improve access to employment, education and services,
- assist emission reductions and build climate resilience, and
- enable quality-built environments, while avoiding unnecessary sprawl.

To meet these objectives, the programme covers aspects of urban and infrastructure planning and provision through five interconnected focus areas:

- 1. infrastructure funding and financing enabling a more responsive supply of infrastructure and appropriate cost allocation
- 2. urban planning to allow for cities to make room for growth, support quality-built environments and enable strategic integrated planning
- 3. spatial planning (initially focused on Auckland and the Auckland-Hamilton corridor) to build a stronger partnership with local government as a means of developing integrated spatial planning
- 4. transport pricing to ensure the price of transport infrastructure promotes efficient use of the network
- 5. legislative reform to ensure that regulatory, institutional and funding settings are collectively supporting UGA objectives.

The programme is expected to deliver the medium to long-term changes needed to system settings to create the conditions for the market to respond to growth and bring down the high cost of urban land¹.





The National Policy Statement on Urban Development

The new National Policy Statement on Urban Development (NPS-UD) is a key initiative of the Urban Growth Agenda (UGA) and replaces the National Policy Statement on Urban Development Capacity 2016. The NPS-UD is designed to reinforce the responsiveness and competitiveness of land and development markets to better meet the different housing needs and preferences of New Zealanders. In particular, it removes overly restrictive planning rules that make it difficult to build homes and directs local authorities to provide more development capacity in accessible places, so more houses can be built in response to demand.

Some of the provisions in the NPS-UD apply across all urban environments. Others, setting more stringent requirements, are restricted to Tier 1 and Tier 2 urban environments where pressure on housing is greatest. Christchurch is a Tier 1 urban environment, so the majority of provisions apply.

The NPS-UD requires Tier 1 authorities to enable (but not require) denser housing, particularly in areas of high demand and access, including a minimum building height of 6 storeys in areas within a walkable catchment of existing and planned rapid transit stops, the edge of city centre zones and the edge of metropolitan centre zones.

The NPS-UD also removes the ability of Tier 1, 2 and 3 authorities to require car parking when applying for resource consent to construct new housing. This could lower development costs in Christchurch and potentially encourage development through increasing land use flexibility.

Another key policy encourages councils to take a responsive and proactive approach to increasing development capacity by requiring them to consider private plan changes where they would add significantly to development capacity, good urban outcomes and are well connected by transport corridors. This includes out-of-sequence developments or land unanticipated by RMA planning documents.

Tier 1 and some Tier 2 authorities are also required to work together to produce Future Development Strategies (FDS), which set out the long-term strategic vision for accommodating urban growth. FDSs are discussed in more detail below.

Future Development Strategies

A key policy of the NPS-UD requires Tier 1 and Tier 2 authorities to produce a Future Development Strategy (FDS) every 6 years and in time to inform, or at the same time as the authority's next long-term plan. The first FDS must be prepared in time to inform 2024 long-term plans and be regularly reviewed to determine whether anything needs updating.

The purpose of an FDS is to promote long-term, integrated, strategic planning by setting out how (and where, if relevant) a local authority intends provide sufficient development capacity to accommodate long-term growth, achieve well-functioning urban environments and assist the integration of planning decisions with infrastructure and funding decisions.

FDSs must respond to housing and business development capacity assessments (HBA), which Tier 1 and 2 authorities are required by the NPS-UD to prepare every 3 years. HBAs quantify the development capacity that is sufficient to meet expected demand for housing and for business land in the short, medium and long term. This is achieved through an assessment of the demand and supply of housing and of business land within the boundaries of the relevant tier 1 or tier 2



urban environment, and the impact of planning and infrastructure decisions of the relevant local authorities on that demand and supply.

In Christchurch, FDSs may lead to development in existing urban areas (Brownfields) that were previously not considered for residential uses or the release of more residential land (Greenfields) if the existing capacity will not be able to accommodate future demand.

Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill 2021

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill 2021 (the Bill) works with the NPS-UD to accelerate housing supply in areas of high demand. The Bill, which was passed into law in December 2021, enables greater levels of permitted residential intensification within low and medium density residential zones in New Zealand's largest centres. This is achieved through two key instruments:

- Medium density residential standards (MDRS) requires Tier 1 authorities to adopt new medium density residential standards in residential zones, which enable people to build up to three units and three storeys on most residential zones, without the need for a land use resource consent, provided all other rules and standards in the district plan have been complied with. Exceptions to individual sites and areas will apply based on qualifying matters set out in the NPS-UD and councils must publicly notify their proposed changes to their district plans by the end of August 2022.
- The Intensification Streamlined Planning Process (ISPP) supports councils to implement the intensification policies of the NPS-UD and adopt the MDRS at least a year earlier, by amending the existing streamlined planning process under the RMA to be faster, easier, and less costly.

The MDRS apply to all residential zones in the Tier 1 urban environments, except:

- large lot residential zones and settlement zones
- areas predominantly urban in character that the 2018 census recorded as having a resident population of less than 5,000, unless a local authority intends the area to become part of an urban environment, or
- offshore islands.

Enabling greater housing intensification in larger urban centres is critical to addressing Aotearoa's housing shortage as it allows more, and different types of housing to be built in areas with good access to public transport, jobs, services, amenities, and other community facilities.

Existing District Plan and Council's Strategic Plans

Christchurch City Council has a number of strategies, plan and policies that influence residential development.

Christchurch Central Recovery Plan

The 2010 and 2011 Christchurch earthquakes resulted in significant, widespread damage to property and much of the city's infrastructure. In the past 11 years, Christchurch has undergone significant redevelopment, particularly in its city centre. This redevelopment has been driven by the Recovery Strategy for Greater Christchurch - Mahere Haumanutanga and the



Christchurch Central Recovery Plan (CCRP), which were developed in line with the Christchurch Earthquake Recovery Act 2011 (the Act).

The CCRPs overarching design concept is the development of a greener, more accessible city with a compact core and a stronger built identity. It will also be a city for all people and cultures, recognising in particular Ngāi Tahu heritage and places of significance.

The CCRPs Blueprint provides a spatial framework for central Christchurch, or the "Frame". It describes the form in which the central city can be rebuilt as a whole, and defines the locations of 'anchor' projects, which will stimulate further redevelopment.

Under the Act, councils must act consistently with the CCRP and may be required to amend plans and policies where they are inconsistent with the CCRP, or where the CCRP directs it.

Whilst a large amount of redevelopment is complete, Christchurch's development will continue to be shaped by the strategic direction of the CCRP.

Canterbury Regional Policy Statement

The Canterbury Regional Policy Statement (CRPS) gives an overview of the significant resource management issues facing the Canterbury region, including issues of resource management significance to Ngāi Tahu. The purpose of the CRPS is to set out objectives, policies and methods to resolve those resource management issues and to achieve the integrated management of the natural and physical resources of Canterbury. This includes objectives to enable recovery and accommodate population growth, by providing for development (new land use, subdivision, infrastructure, housing) in a way that achieves the purpose of the RMA.

Chapter 5 of the CRPS sets out the issues and objectives for land use and infrastructure in the Canterbury region. It outlines the need for strategic integration of land use with regionally significant infrastructure, and provides a set of objectives and related policies concerning the location, design and function of development, the integration of land use and regionally significant infrastructure, and a transport network that supports a consolidated and sustainable urban form.

Chapter 6 of the CRPS provides a resource management framework for the recovery of Greater Christchurch, to enable and support earthquake recovery and rebuilding, including restoration and enhancement for the area through to 2028. It provides a set of objectives and related policies to enable recovery, rebuilding and development of Greater Christchurch, while achieving sustainable, and carefully managed urban development, quality urban environments and consolidation and intensification of urban areas.

Regional and District Plans must be consistent with the objectives set out in the CRPS. Regional Councils must also give effect to the urban form identified in Map A of the CRPS, which identifies the location and extent of urban development that will support recovery, rebuilding and planning for future growth and infrastructure delivery.





Map A - Greenfield Priority Areas and Future Development Areas (viewable in more detail at www.ecan.govt.nz)

Figure 1: Greater Christchurch greenfield priority areas and future development areas



Christchurch District Plan

The District Plan sets a framework for the development and management of resources in the district in a manner that is consistent with the RMA and Canterbury Regional Policy Statement. It includes objectives, policies and rules to manage the environmental effects of land use activities and defines the various zones and the rules for what activities are permitted to occur in each zone.

A set of strategic objectives provide the overarching direction for the District Plan, including for developing the other chapters within the Plan, and for its subsequent implementation and interpretation. These objectives are primarily driven by the need to accommodate long-term population growth, respond to the city's recovery needs following the 2020 and 2011 earthquakes, revitalise the city centre, and recognise and provide for Ngāi Tahu mana whenua's role as kaitiaki (guardian).

Objective 3.3.4 enables a minimum of 55,950 additional dwellings between 2018-2048, through a combination of residential intensification, brownfield and greenfield development, and a variety of housing types, densities and locations.

Objective 3.7.7. also increases housing opportunities, while seeking development that is well-integrated with infrastructure, a consolidated urban form and a high quality urban environment.

Greater Christchurch Urban Development Strategy 2007

The Greater Christchurch Urban Development Strategy 2007 (UDS) sets a vision for Greater Christchurch and provides a broad settlement pattern for Greater Christchurch for the next 35 years. This provides the primary strategic direction for the Greater Christchurch area by identifying the location of future housing, development of social and retail activity centres, areas for new employment and integration with transport networks. It promotes an integrated and intergenerational approach to planning for urban growth, and seeks to ensure that development is managed in a manner that protects environments, improves transport links, creates liveable areas and sustainably manages population growth

The UDS also establishes clear strategies, policies, and processes for organisations and the community to work collaboratively to manage growth. Guiding principles shape and guide decisions on planning, transport and infrastructure investment, while the strategic directions underpin and provide context for the specific actions listed in the Action Plan.

Our Space 2018-2048 – Christchurch Future Development Strategy

Our Space 2018-2048 complements the Greater Christchurch Urban Development Strategy (UDS) and has been prepared in order to satisfy the requirement to produce a future development strategy, outlined in the NPS-UD. This responded to the first HCA for Christchurch (discussed later in this document) and is implemented under Chapter 6 to the Canterbury Regional Policy Statement and relevant District Plans.

The document outlines land use and development proposals to ensure there is sufficient development capacity for housing and business growth across Greater Christchurch to 2048. The proposed settlement pattern is based upon maintaining the distinction between urban and rural areas by concentrating development at and around existing urban areas, both large and small.



The document was developed by the Greater Christchurch Partnership, which has worked collaboratively for more than a decade on planning and managing urban growth and development across Greater Christchurch (Christchurch City, Waimakariri District and Selwyn District). This Partnership brings together the leadership roles of local government, Te Rūnanga o Ngāi Tahu, the district health board, and Government agencies, and is guided by the vision, principles and strategic goals outlined in the UDS.

The UDS continues to provide the roadmap for growth planning in Greater Christchurch. Our Space therefore does not seek to replace this comprehensive strategy, but rather builds on it by considering and updating many of the key settlement pattern matters.

Canterbury Housing and Business Development Capacity Assessment

A Christchurch Housing and Business Development Capacity Assessment was produced by the Greater Christchurch Partnership in 2021 to satisfy the requirements of the National Policy Statement on Urban Development (NPS-UD).

The HCA includes an assessment of expected housing demand to 2051 for Christchurch, Selwyn and Waimakariri, and the sufficiency of development capacity. It builds upon the 2018 Housing Capacity Assessment undertaken under the previous National Policy Statement on Urban Development Capacity (NPS-UDC), and responds to key changes in the policy requirements between the NPS-UDC and NPS-UD.

Key demand trends for Greater Christchurch identified through the assessment include:

- resident population is projected to grow from 536,880 in 2021 to 705,600 in 2051, an increase of 168,720 people
- the number of households is projected to increase by 77,100 or 37%;
- demographic profile is projected to change with an aging population resulting in strong growth in the number of 'couple only' and one person households.

An assessment of the housing capacity found) there is sufficient urban capacity in the short term (next three years) within each territorial authority to accommodate population projections. There are however shortfalls in the medium term (next ten years) approximately 2,000 households within Selwyn and approximately 3,100 households within Waimakariri.

In response to the medium-term shortfall, "Our Space 2018-2048" identified Future Urban Development Areas (FUDA's) to accommodate growth projections. On the 28 July 2021, the Minister for the Environment approved Proposed Change 1 to Chapter 6 of the CRPS which identifies new FUDAs in Rolleston, Rangiora and Kaiapoi. Change 1 also adds associated policy provisions to enable Selwyn and Waimakariri District Councils to consider rezoning land within these areas through their district planning processes to meet shortfalls in housing capacity.

Canterbury Regional Transport Strategy 2012-2042

The Canterbury Regional Transport Strategy identifies a package of interventions to address Christchurch's current and future transport challenges.



The strategy seeks to transition towards a multi-modal transport system that gives people greater transport choice, supported by land use patterns that make transport accessible and affordable. The strategy also seeks to enable people to choose efficient travel options by employing a mix of infrastructure and service interventions, public education and price signals.

To achieve this vision, the Strategy identifies a range of objectives, outcomes and targets, that describe in detail how progress will be made and how it will be measured.

In the long-term, the Strategy seeks improved transport and land use integration to minimise the need to travel.

Canterbury Regional Land Transport Plan

The Canterbury Regional Land Transport Plan (RLTP) guides land transport planning and investment within the region. It sets out:

- the current state of the region's transport network
- priorities for investment
- a 10-year programme.

Canterbury Regional Public Transport Plan 2018-2028

The Canterbury Regional Public Transport Plan is a legislative document that sets out Environment Canterbury's vision, strategic objectives and policies for delivering public transport in Canterbury.

It describes the public transport system that Environment Canterbury, in partnership with local councils in Greater Christchurch and Timaru, proposes to fund and operate, the priorities for future investment and the policies which those services will operate by. It also explains how Environment Canterbury will work in partnership with operators and territorial authorities.

The Plan's vision is to provide all transport users with sustainable options that move people and freight around and through our region in a safe and efficient way that enables Environment Canterbury to be responsive to future challenges.

Greater Christchurch Public Transport Futures Programme and Mass Rapid Transit Business Case

Greater Christchurch partners are collaborating on a study to understand the implications of a Mass Rapid Transit solution for Greater Christchurch as part of its Public Transport Future's Programme. This is in response to high growth and changing travel demand in the sub-region.



The Public Transport Futures programme consists of three packages: Foundations, Rest of Network, and Mass Rapid Transit (MRT). The first two packages outline the priority opportunity for improving Greater Christchurch's current public transport network. The development of these two packages was finished in late 2020; they are now in the implementation phase with Greater Christchurch councils' Long-Term Plans deciding the appropriate phasing and timing of investment.

The third package – Mass Rapid Transit – is a transformational package that lays the foundation for significant urban development and land use changes and transformation in transport accessibility. This work is required under the Government Policy Statement for land transport and listed in the Canterbury Regional Land Transport Plan (RLTP). In 2021, work was undertaken to identify and protect the corridors and to enable policy changes that support intensification and regeneration in key areas. The implementation of MRT is currently mode agnostic and it is anticipated that the MRT business case will determine the timing and methodology for MRT implementation.

The National Policy Statement on Urban Development (NPS-UD) requires Tier 1 authorities to enable a minimum of 6 storeys in areas within a walkable catchment of existing and planned rapid transit stops². Whilst Christchurch does not currently have a mass rapid transit system, improvements to Christchurch's existing public transport network or the implementation of a mass rapid transit system could have a significant impact on the density of development that is enabled through the NPS-UD.

Potential corridors for mass rapid transit and high frequency public transport services are identified in the Canterbury RLTP's 30 year vision (see diagram below).

² The NPS-UD defines rapid transit service as an existing or planned frequent, quick, reliable and high-capacity public transport service that operates on a permanent route (road or rail) that is largely separated from other traffic



Appendix 2: Market Assessment




Residential Market Assessment January 2022



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Quality control

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Executive Summary

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake an updated residential capacity analysis for Christchurch City that takes into consideration the impact of the recent policy direction for urban growth under the National Policy Statement on Urban Development (NPSUD) and the implications of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill and the new Medium Density Residential Standards (MDRS).

This market assessment has been prepared to support preparation of the capacity analysis. The purpose of the market assessment is to identify the current residential market across the cities catchments and to review the likely demand into the future.

The key findings of the market assessment and analysis include:

• Strong district residential growth and demand

The population of Christchurch City is projected to grow under a medium growth scenario, from 392,100 people in 2021 to 417,000 people in 2028 reflecting an increase of 6.4%, with further projected growth to 453,800 people in 2038. The number of dwellings in the city is projected to increase from 148,000 in 2018 to over 161,100 by 2028, and 176,400 by 2043 to account for population growth. The average household size is also steadily declining, reflecting the changing demographics of older households and family structures.

• Strong value growth and demand

In recent years, the Christchurch property market has experienced significant activity with strong demand across all value ranges which has resulted in a reduction in supply. The latest statistics released by Quotable Value indicate that Christchurch had the largest rise in average sale price across New Zealand, up 40.2% over 2021. Property listings in the region have been far less constrained than most other parts of the country for an extended period of time, with investors now attracted to Christchurch where prices are significantly more affordable than in Auckland and Wellington and much better yields are achievable.

• Decreasing Housing Affordability

Christchurch city is currently considered more affordable than all other main centres in New Zealand. After many years of slow value growth following the Christchurch rebuild, value growth in Christchurch has picked up considerably, with the housing affordability index despite still being much lower than other main centres, now following a similar downward trend.

Housing supply

Over the long term (next 30 years) across the Greater Christchurch area as a whole, there is sufficient capacity and a significant surplus of housing supply capacity in terms of available land. Building consent data indicates an increasing number of infill development in comparison to greenfields in recent years.

• Limited small to medium sized housing stock available

There is currently limited availability of apartments, townhouses, or smaller dwelling types across Christchurch compared to similarly sized New Zealand cities. This suggests that there is currently an area of unmet demand for diversity of the housing stock including smaller dwelling typologies to accommodate, smaller household sizes and affordable price points.



1. Introduction

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake an updated residential capacity analysis for Christchurch City that takes into consideration the impact of the recent policy direction for urban growth under the National Policy Statement on Urban Development (NPSUD) and the implications of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill and the new Medium Density Residential Standards (MDRS).

The assessment will include consideration of the range of residential dwelling typologies that could be developed across the city under the new policy framework from standalone residential homes to more medium density typologies including infill development, apartments, and town houses.

As part of the capacity assessment, it is important to understand the current market drivers behind residential development. This includes both an understanding of the current residential market trends as well as anticipated levels of growth and demand for housing.

The market assessment has been prepared as a background document to support development of the capacity assessment.

Scope of the Market Assessment

The market assessment aims to provide an understanding of the current market for residential development within Christchurch. It also provides some indication how this may change into the future based on future directions for growth.

The objectives of the market assessment include the following:

- To review and quantify the current residential supply across the city's catchments
- Identify the potential pipeline of residential development and likely demand

Report Structure

Following this introduction, this report provides an overview of the results of the assessment in the following sections.

- Section 2, The Strategic Context: Puts the assessment into context by providing a review of relevant plans and policies and what they mean for residential development
- Section 3, Population growth
- Section 4, Residential Market: Analyses trends in the residential market to establish current and future demand for this sector
- Section 6, Development cost assumption: Outline of development costs including, construction costs and other direct costs and other assumptions.



2. Population growth and demand

The following section of this report provides a high-level overview of the population projections for Christchurch City to identify potential future residential demand.

Population Projections

The greater Christchurch area has experienced significant population change following the Canterbury earthquakes in September 2010 and February 2011. The population of Christchurch City fell in 2011 and 2012 by 18,000 people, mainly due to people moving to adjacent greater Christchurch areas (such as Selwyn and Waimakariri districts). Christchurch City's population took several years to re-bound, to surpass the 2010 population of 376,000 people. (Canterbury District Health Board, 2022).

The estimated resident population as 30 June 2013 and 2018 for Christchurch City is noted below in comparison to the Canterbury Region and New Zealand together with projections for 2023. Between the Census years of 2013 and 2018, the population of Christchurch City increased 42,331 persons or 12.4%.

	2013	2018	2023 projection
Christchurch City	341,469	383,800	402,400
Population Change		+ 42,331	+ 18,600
% Increase		+ 12.4%	+ 4.8%
Canterbury Region	539,533	622,800	661,300
Population Change		+ 83,267	+ 38,500
% Increase		+15.4%	+ 6.2%
New Zealand	4,242,048	4,900,600	5,222,400
Population Change		+ 658,552	+ 321,800
% increase		+15.5%	+ 6.6%

The estimated resident population of Christchurch City in 2021 is 392,100 people an increase of 8,300 persons (+2.1%) over three years. (Statistics NZ, 2021)

TABLE 1: POPULATION STATISTICS AND PROJECTIONS (SOURCE: STATISTICS NZ)

Estimated population forecasts indicate a projected resident population of 463,500 by 2048 an increase of 79,700 persons from 2018 to 2048 representing growth of 20.7%.

Table 2 shows the Statistics New Zealand population and household forecasts in Christchurch City from 2018 through to 2048 under a medium growth scenario. The period 2018 to 2033, as the short to medium term, is likely to be the most accurate and useful forecast information for immediate planning purposes.



			I	Forecast ye	ar		
Summary	2018	2023	2028	2033	2038	2043	2048
Population Forecast	383,800	402,400	417,000	430,600	453,800	453,800	463,500
Population Change	-	+ 18,600	+14,600	+13,600	+12,200	+11,000	+9,700
% Increase	-	4.8%	3.6%	3.3%	2.8%	2.5%	2.1%
Household Forecast (Medium growth scenario)	148,000	155,000	161,100	167,200	172,400	176,400	*

TABLE 2: POPULATION AND HOUSEHOLD FORECASTS FOR CHRISTCHURCH CITY 2018 - 2048 (SOURCE: STATISTICS NZ)

It is important to look at the relationship between population and average household size. If the average household size is falling, then there will need to be growth in the number of households (and dwellings for people to live in) to maintain or grow the population. In addition, a reduction in household size may increase the demand for smaller dwelling typologies.

The average household size was estimated to be 2.54 in 2021 and projected to decreased to 2.45 by 2051, the declining rate reflects the changing demographics of older households and changing family structures.

Household Type		Overall % change					
	2018	2023	2028	2033	2038	2043	
Family	101,100	108,100	113,500	119,000	123,700	127,700	26.3%
% Year total	68%	70%	70%	71%	72%	72%	
Other multi-person	10,400	9,800	9,800	9,800	9,700	9,600	7.7%
% Year total	28%	26%	26%	26%	25%	25%	
One person	36,500	37,100	37,800	38,400	38,900	39,100	7.1%
% Year total	25%	24%	23%	23%	23%	22%	
Total	148,000	155,000	161,100	167,200	172,400	176,400	19.2%

TABLE 3: HOUSEHOLD TYPE FORECASTS FOR CHRISTCHURCH CITY 2018-2048 (SOURCE: STATISTICS NZ)



3. Residential Market Assessment

General Market Commentary

To identify recent and potential pricing trends for residential property in Christchurch City we have commented on general market trends over recent years and completed analysis of recent residential sales and rentals across the various catchments.

Following the emergence of the COVID-19 pandemic in late 2019 the New Zealand economy has recovered better than anticipated, and generally on a more national level the residential property sector has remained strong. During the period of 2015 to 2018, Christchurch City experienced a decline in the residential property market, followed by a period of relatively subdued but steady growth through to the end of 2019. This trend was unique in comparison to most of New Zealand, which was experiencing strong growth. Factors influencing the property market decline in Christchurch over this period included:

- Fast tracking of planning and consenting requirements, therefore accelerating development and supply of housing.
- Low population growth in the immediate years following the earthquakes.
- Increased construction associated with the 2011 earthquake rebuild and an influx of migrant construction workers required for the rebuild.
- Rapid growth in surrounding Selwyn and Waimakariri Districts with flat land which is relatively more efficient in term so cost and time to develop.

Post COVID-19 the Christchurch property market has experienced significant activity with strong demand across all value ranges which has resulted in a reduction in supply. The latest statistics released by Quotable Value indicate that Christchurch had the biggest rise in average sale price up 40.2% over 2021.

The reduction of supply together with strong buyer demand and historically low interest rates has resulted in steadily rising prices. Property listings in the region have been far less constrained than most other parts of the country for an extended period of time, with investors now attracted to Christchurch where prices are significantly more affordable than in Auckland and Wellington and much better yields are achievable. (Tony Alexander)

Summarised below are sales statistics relating to Median Sale Price, Number of Sales, Median Days to Sell for Christchurch City in comparison to New Zealand as a whole. The figures reflect the slower value growth Christchurch City when compared to national indicators during the period 2015 to 2018, with increased market activity and value appreciation during 2021 and 2022.



Regional								
	Nov-21	Nov-20	Nov-19	Nov-18	Nov-17	Nov-16	Nov-15	
Christchurch City								
Median Sale Price	690,000	525,000	465,000	445,000	460,000	445,000	425,000	
Annual Increase	33.4%	12.9%	4.5%	-3.3%	3.4%	4.7%		
No. Sales	1,176	1399	708	776	1040	935	1003	
Overall increase - No	ov 2015 to N	lov 2021			62.4%			
			National					
	Nov-21	Nov-20	Nov-19	Nov-18	Nov-17	Nov-16	Nov-15	
New Zealand								
Median Sale Price	925,000	747,000	632,000	580,000	540,000	520,000	457,000	
Annual Increase	23.8%	18.2%	9.0%	7.4%	3.8%	13.8%		
No. Sales	9,381	10220	7627	7550	7102	7565	8025	
Overall Increase - Nov 2015 to 2021 (6 yrs) 102.4%								

TABLE 4: MEDIAN SALE PRICE, ANNUAL INCREASE AND NUMBER OF SALES FOR CHRISTCHURCH AND NZ (SOURCE REINZ)

Summary of Sales Statistics and Analysis

City wide residential sales

An overview of the average gross sale price for all dwellings, standalone dwellings, townhouses and apartments for the last three months per suburb and grouped by catchment is summarised in Table 5 below.

Area/Suburb	All Dwellings		Houses		Flats		Apartments	
Christchurch	1608	\$635,000	1200	\$679,000	354	\$492,750	54	\$520,500
City								
Westmorland	7	\$1,180,000	7	\$1,180,000				
Strowan	13	\$719,000	8	\$872,000	5	\$603,000		
Sumner	10	\$986,000	9	\$987 <i>,</i> 000				
Hoon Hay	36	\$598,500	32	\$616,250	4	\$440,500		
Southshore	5	\$710,000	5	\$710,000				
Upper	23	\$632,000	16	\$756,000	7	\$507,000		
Riccarton								



Lyttelton	6	\$733,643	5	\$718,285				
Broomfield	14	\$804,500	14	\$804,500				
South New	10	\$478,000	7	\$484,000	3	\$449,000		
Brighton								
Somerfield	30	\$721,750	24	\$764,500	6	\$586,000		
Waltham	20	\$475,000	8	\$535,500	12	\$438,000		
Wainoni	14	\$431,500	12	\$431,500	2	\$414,380		
Hei Hei	16	\$549,025	15	\$554,000				
Belfast	20	\$615,750	17	\$642,000	3	\$509,000		
Redcliffs	8	\$918,500	6	\$985,000	2	\$770,500		
Sockburn	23	\$634,000	18	\$645,000	5	\$519,000		
Mairehau	30	\$559,500	27	\$572,000	3	\$547,000		
Middleton	7	\$647,000	5	\$647,000	2	\$654,500		
Opawa	5	\$680,000	5	\$680,000				
Christchurch	71	\$547,000	6	\$1,484,750	25	\$554,000	40	\$530,500
Central								
Avondale	16	\$489,000	15	\$489,000				
Harewood	3	\$599,000	2	\$639,000				
Phillipstown	17	\$462,000	9	\$467,130	4	\$431,500	4	\$319,000
Halswell	91	\$797,917	85	\$814,000	6	\$599,000		
Clifton	5	\$1,210,000	5	\$1,210,000				
Dallington	8	\$586,250	7	\$588,500				
Marshland	8	\$1,012,000	8	\$1,012,000				
Saint Martins	9	\$602,000	5	\$695,000	4	\$555,500		
Hornby	37	\$569,000	30	\$605,500	7	\$399,000		
New	29	\$509,500	24	\$532,000	5	\$383,000		
Brighton	2.4	Á505 500	4.2	¢ c o 7 4 0 0	10	6505 500	2	6500.000
Sydenham	34	\$505,500	13	\$607,109	18	\$505,500	3	\$502,000
Edgeware	1/	\$524,000	/	\$540,000	10	\$450,500		
Ivierivale	12	\$678,000	4	\$1,494,500	8	\$662,000		
Waimairi	ð	\$967,000	ð	\$967,000				
North Now	10	\$400 E00	1./	\$522.764	1	\$168.000		
Brighton	10	\$499,500	14	Ş525,704	4	\$408,000		
Cashmoro	26	\$026 2E0	22	¢028 E00	1	\$622.250		
Avonhead	20	\$779,000	22	\$780,000	4	Ş023,230		
Diamond	5	\$664,000	5	\$664,000	Δ	\$637,000		
Harbour	5	900 - ,000	5	900 - ,000	-	<i>4037,000</i>		
Burnside	49	\$789.000	45	\$794 000	6	\$501 500		
Bishondale	34	\$688 500	28	\$700.000	8	\$349 750		
Woolston	49	\$492,000	41	\$524,000	0	<i>çs 13,730</i>		
Richmond	27	\$495.000	16	\$525.500	10	\$470.500		
Hillmorton	3	\$672,000	3	\$672,000	-	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Parklands	38	\$598,000	28	\$653,500				
Riccarton	30	\$501,500	11	\$845,000				
Northwood	23	\$794,000	22	\$797,000				



Burwood	27	\$595,000	27	\$595,000				
Beckenham	4	\$593,750	3	\$592,000				
Kainga	4	\$519,250	4	\$519,250				
Addington	21	\$475,000	8	\$535,500	13	\$447,000		
Casebrook	22	\$712,750	19	\$737,000	3	\$483,500		
Spreydon	36	\$589,500	27	\$617,000	9	\$465,000		
llam	28	\$789 <i>,</i> 500	21	\$867,000	7	\$621,000		
Shirley	37	\$592,000	32	\$620,500	5	\$471,000		
Wigram	19	\$817,000	16	\$843,500	3	\$599,000		
Russley	12	\$676,000	12	\$676,000				
Aranui	18	\$371,500	14	\$410,500	4	\$316,750		
Northcote	14	\$579,000	13	\$594,000				
Linwood	41	\$444,000	22	\$508,000	16	\$384,500	3	\$419,000
Bryndwr	26	\$680,500	25	\$692,000				
Huntsbury	10	\$1,068,500	10	\$1,068,500				
Islington	11	\$568,000	10	\$571,000				
Bromley	12	\$465,500	9	\$533,000	3	\$449,000		
Mount	9	\$1,105,000	8	\$1,111,000				
Pleasant								
Hillsborough	8	\$655,000	7	\$674,000				
Fendalton	13	\$1,920,000	12	\$2,020,000				
Papanui	33	\$652,000	27	\$707,000	6	\$514,000		
Avonside	4	\$535,500	4	\$535,500				
Heathcote	12	\$685,500	9	\$694,000	3	\$597,000		
Valley								
Redwood	33	\$647,000	28	\$667,000	5	\$494,000		
Yaldhurst	5	\$716,000	5	\$716,000				
Templeton	13	\$689,000	10	\$749,500	3	\$492,000		

TABLE 5: SUMMARY OF THE MEDIAN SALE PRICE OVER THE LAST 3 MONTHS PER SUBURB FOR ALL DWELLINGS, HOUSES, FLATS AND APARTMENTS

Table 6 below outlines the sale price per square metre of gross floor area for all standalone dwellings in all of Christchurch City and the city centre separately. The evidence is summarised in ranges and reflects the gross sale price per square metre of building area. The figures are given in a range which reflects sales which range in location, outlook, aspect, quality and size.

Standalone Homes	
Area	Analysis Gross Sale Price (\$/sqm)
All of Christchurch	\$1,000 - \$12,000 per square metre
City Centre	\$6,000 - \$10,000 per square metre

TABLE 6: SALE PRICE PER GROSS FLOOR AREA FOR STANDALONE DWELLINGS



Table 7 below outlines the sale price per gross floor area of townhouse sales which have occurred in the last 3 months. The suburbs represented in the table below have had more than 5 sales over this period of time, with the majority of townhouse sales occurring St Albans and Shirley. The upper end of the ranges reflects modern smaller townhouses of say one to two bedrooms, with the upper end of the range reflecting older townhouses or larger townhouses of three or more bedrooms.

Townhouses	
Suburb	Analysis Gross Sale Price (\$/sqm)
Christchurch City Centre	\$4,100 - \$9,400/sqm
Addington	\$4,500 - \$12,500/sqm
Richmond	\$6,000 - \$9,000/sqm
Shirley	\$6,000 - \$9,100/sqm
Somerfield	\$5,000 - \$12,600/sqm
St Albans	\$3,500 - \$10,000/sqm
Sydenham	\$3,600 - \$10,100/sqm

TABLE 7: SALE PRICE PER GROSS FLOOR AREA FOR TOWN HOUSES

Table 8 below outlines the sale price per gross floor area range for apartment sales within the last 3 months. The upper end of the range reflects modern recently constructed apartments in the City Centre, with the lower end of the range reflecting older apartments less centrally located.

Apartments			
Area		Analysis Gross Sale Pri	ice (\$/sqm)
	1bed	2bed	3bed
All Suburbs	\$6,700 - \$12,500	\$5,500 - \$12,500	\$5,500 - \$11,500

TABLE 8: SALE PRICE PER GROSS FLOOR AREA FOR APARTMENTS

The number of apartments in Christchurch City is relatively low, with the majority of apartment sales occurring in the City Centre, followed by a small number in Linwood and St Albans.

Residential Rentals

An overview of the median and upper price points for rentals are shown in Table 9 below. The data is categorised by dwelling type, including detached houses and flats and apartments.



Suburb		Apartment						Flat Houses														
	All Typ	ologies	1 B	ed	2 Be	ed	3 B	ed	1 Be	ed	2 Be	ed	1 Be	ed	2 Be	ed	3 B	ed	4 B	ed	5 + E	Зed
	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper
Addington	350	425			415	420	418	420			335	388	220	400	420	448	450	493	550	595	320	320
Aidanfield	590	629															505	569	603	631		
Aranui	410	445													380	410	400	443				
Avondale	425	470															455	483				
Avonhead	493	549									380	420			400	429	490	530	575	600	635	680
Avonside	410	475															460	480				
Beckenham	445	493															490	500				
Belfast	500	530													355	390	508	530	555	560		
Bishopdale	475	505									380	385		380	408	480	508	530	580			
Bromley	380	423															450	450				
Broomfield	490	550															440	460	498	500		
Bryndwr	450	520									390	405			398	420	490	523	550	594		
Burnside	490	580													410	435	485	515	580	600		
Casebrook	450	510													410	426	450	505	430	540		
Cashmere	510	570													420	443	535	550	635	685		
Christchurch Central	410	475	380	410	450	495	530	560	280	393	350	425	390	400	445	480	525	600	625	665		
Clifton	740	923															750	940				
Dallington	443	493															475	485	520	580		
Edgeware	400	465	379	379	410	450			275	295	360	398	320	350	425	450	495	550	550	560		
Fendalton	500	650			550	550									450	495	515	643	650	800		
Ferrymead	412	436																				
Halswell	545	580													428	453	520	550	588	620		
Harewood	540	595																				
Heathcote Valley	480	495													480	480	495	495				
Christchurch - Hei Hei	470	480															460	475	485	525		
Hillmorton	465	520													370	410	495	518	540	565		
Hillsborough	450	461													400	450	455	471				
Hoon Hay	455	490													425	450	460	485	523	578		
Hornby	450	470													360	395	450	480	500	560		

(TENANCY SERVICES , MAY - OCTOBER 2021)

 TABLE 9: MEDIAN RENTAL BY SUBURB FOR CHRISTCHURCH CITY SUBURBS (TENANCY SERVICES MAY - OCT 2021)

Suburb			Apartment					Flat				Houses										
	All Typ	ologies	1 B	ed	2 B	ed	3 B	ed	1 B	ed	2 B	ed	1 B	ed	2 B	ed	3 Be	ed	4 B	ed	5 + E	3ed
Huntsbury	540	593															580	588				
Ilam	450	560									390	408			410	439	500	550	600	650	700	840
Islington	445	483															445	480	500	510		
Linwood	350	425	325	340	360	393	430	434	298	320	335	360	305	326	385	429	450	495	478	508		
Mairehau	460	510													400	406	465	499	510	530		
Merivale	450	510			450	470			315	320	375	418			440	470	525	618	700	1000		
Moncks Bay	475	560																				
Mount Pleasant	533	645													420	450	550	695	650	675		
New Brighton	413	470									375	390			355	380	460	495	520	558		
North New Brighton	450	480													415	428	450	478				
Northcote	440	500															438	480				
Opawa	455	600															435	470				
Papanui	460	530									383	413	109	252	438	443	490	550	550	650		
Parklands	465	550									380	380			433	455	460	490	565	593		
Phillipstown	345	410	290	300	340	360			265	275	328	350	293	306	375	410	438	483				
Redcliffs	493	563													450	525	495	600				
Redwood	460	494													390	440	460	480				
Riccarton	380	450			410	468	500	600	300	338	385	408	400	400	410	440	460	515	533	580	625	703
Richmond	420	445	290	290	438	438			300	315	320	340			425	430	445	480	500	575		
Russley	465	500													420	430	480	529	475	550		
Saint Martins	450	500													410	420	490	538				
Scarborough	708	749															720	725				
Shirley	450	483													348	358	450	484	495	534		
Sockburn	423	470									345	384			380	410	450	473	590	631		
Somerfield	450	510									403	421			398	420	490	513				
South New Brighton	403	418																				
Southshore	450	500																				
Spreydon	438	495							280	280	375	389			420	450	480	528	500	558		
St Albans	420	500	345	350	380	416			275	300	380	400	330	366	420	450	520	580	580	693	750	850
Strowan	493	550													400	425	545	555	564	650		
Sumner	475	515													425	480	510	535				
Sydenham	420	460	350	360	375	410					340	370	355	380	420	440	470	495	540	578		
Templeton	440	484															445	450				
Upper Riccarton	380	450									385	400	230	253	385	416	463	490	545	593	480	625
Wainoni	398	443															420	445	450	460		
Waltham	360	410	265	295	360	366					350	360	345	360	390	410	460	495				
Westmorland	538	578															525	550				
Woolston	400	450									350	370			373	400	435	460	550	558		
Yaldhurst	545	620															530	545	583	643		

Building Consents

Table 11, below shows the history of new residential building consents since 2015. The number of residential building consents dropped each year from 2015-2019, which reflects the normalising of residential construction post the Christchurch rebuild.

	Number of new dwellings consented										
Year ended June	2015	2016	2017	2018	2019	2020					
Christchurch City	4,236	3,838	2,620	2,522	2,519	2,903					
Annual change	-398	-1,218	-98	-3	-98	+384					
% Change over 5 years						-31.5%					
New Zealand	25,154	29,097	30,453	32,860	34,804	37,614					
Annual Change	3,943	1,356	2,407	1,944	2,407	12,460					
% Change over 5 years						49.5%					

TABLE 10: RESIDENTIAL BUILDING CONSENTS SINCE 2015, CHRISTCHURCH AND NATIONALLY (SOURCE STATISTICS NZ)

The number of new dwelling building consents issued in Christchurch City has decreased over the fiveyear period from 2015 to 2020 from 4,236 to 2903 (-1,333) reflecting a 31.5% reduction over this time. This compares a national increase of 49.5% increase over the same five-year period. This reflects the reduction of consents to a more 'normal' level following significant consenting activity associated with the Christchurch rebuild. In the last 24 months however, there has been a marked increase in the number of residential building consents reflecting the increased demand for new residential development and the strength of the residential property market.

Housing Affordability

The housing affordability index is the ratio of the average current house value to average annual earnings. A higher ratio, therefore, suggests that average houses cost a greater multiple of typical incomes, which indicates lower housing affordability (i.e. a lower index is more affordable).

Property value appreciation has become a more prominent issue affecting housing affordability and has been influenced by a range of factors including more widely accessible credit, historically low interest rates, high net migration and population growth with insufficient housing supply, increasing construction costs and high demand to live close to major centres. At the same time as there has been consistent appreciation in property values, household incomes have generally risen at lower rates. (CorelogicNZ)

Figure 1 below outlines the Housing Affordability Index for Christchurch in comparison to other main centres around New Zealand, along with the share of income for repayments, years to save deposit and rent to income ratio.

	Valı Incom	ie to e ratio	Share o for rep	f income ayments	Yeai save d	rs to eposit	Rer incom	nt to ne ratio
Main centre	Latest (Q2 2021)	Average (2004-21)						
Auckland	9.1	6.9	43%	43%	12.1	9.2	20%	22%
Hamilton	7.9	5.1	38%	32%	10.5	6.8	22%	20%
Tauranga	10.3	7.8	49%	50%	13.7	10.4	29%	27%
Wellington	7.6	5.2	36%	33%	10.1	6.9	19%	18%
Christchurch	5.7	5.0	28%	32%	7.6	6.7	19%	20%
Dunedin	8.1	5.4	39%	34%	10.7	7.2	24%	23%
NZ	7.9	5.8	38%	37%	10.6	7.8	21%	21%

FIGURE 1: HOUSING AFFORDABILITY COMPARISON OF CHRISTCHURCH WITH OTHER MAIN CENTRES (SOURCE: CORELOGIC Q2 2021 HOUSING AFFORDABILITY REPORT)

The Christchurch housing affordability index was 5.7 in Q2 2021 up from 4.8 the previous year, this compares with the national average which reached a record high of 7.9 in Q2 2021 up from 6.6 the previous year. Whilst Christchurch appears to be following the national trend as a result of house price appreciation, the Christchurch affordability index is still much lower than all main centres across New Zealand.



Risk assessment

The long-term effects of COVID-19 pandemic over the past 24 months are still unknown. In the short term the pandemic appears to have been a factor in supporting residential sale price growth in Christchurch. The long-term consequences of the pandemic are not clear and whether the growth in house prices continues or declines as a result is likely to be linked to the impact on the wider economy.

There are a number of risk factors which are currently placing pressure on the residential property market, these include:

- Government Policy and Interest Rates House prices have continued to increase despite changes in Government tax policies focused on residential property investments, the tightening of bank loan to value ratios and falling population growth rates. The outlook is still tempered by the prospect of rising mortgage interest rates and the introduction of debt-to-income ratio restrictions on bank lending. Short term interest rates have increased since July 2021, as the Reserve Bank has started tightening its monetary policy settings. Market expectations are for higher interest rates to come, which in turn will limit homeowners buying power.
- Inflation Inflation is currently 4.9% however new data to be provided in late January is expected to show a rate close to 6%. Uncertainty regarding the track for inflation is very high and strong price rises may begin to alter people's spending patterns.
- Construction Costs On an annual basis, construction costs rose from 4.5% in Q2 2021 to 5.5% in Q3, the fastest rate of growth since the first quarter of 2018. The data shows that timber prices, particularly structural timber and cladding, have been a key contributor to overall cost increases. Metal costs and products have also been a factor in the increases. Looking ahead, it seems likely that the construction industry will remain strong for some time, with investors strongly incentivised to buy new-builds, due to their exemption from the loan to value ratio rules and ability to claim mortgage interest as a deductible expense for the first 20 years of the property's life (CoreLogic, Q3 2021).
- Construction supply shortages the COVID-19 pandemic and resultant global supply chain issues is exacerbating shortages of construction materials and delaying project completion. The construction sector is experiencing increased holding costs as a result, and an inability to deliver on time and to budget.
- Housing Affordability The housing affordability index has stepped up since 2016. The Index Value has increased from a figure of just under 5 to just under 6, meaning housing is now less affordable than 2016. This follows the general trend in New Zealand with house prices growing faster than incomes.



4. Development costs assessment

Introduction

The purpose of the development cost review and the rates noted below is to identify indicative construction costs within the Christchurch market to inform the preliminary financial feasibility and modelling of the development options. The cost information is based on the market sectors identified by TPG and as generally commented on in this report. The costs below are broad and based on generic assumptions of the site and proposed buildings. They assume a median build quality and average floor sizes. They will require refinement as the build options are further defined. Any site-specific conditions, including those that may onerously affect the due diligence, method of construction or materials will need to be assessed with the feasibility studies and included in addition to the below as the individual projects are defined and assessed.

It should be noted development costs, and particularly construction costs, are currently volatile while consequences of the COVID-19 pandemic a felt throughout the market. The below indicative costs are based on current development estimates as of early 2021, however, these estimates are themselves heavily caveated and subject to update, availability of materials and cost updates at the time of instruction. They will likely be influenced by pre COVID-19 prices and therefore a degree of cost escalation needs to be considered. Further comment is included in the Cost Escalation section below.

Construction Costs

Once the project is further defined including detail around occupier use, building type, floor areas, number of levels, location, access etc are available, a refined build cost will be provided for the feasibility studies which will incorporate site-specific issues. The following rates are indicative and for guidance only. They are build rates for construction above ground on a gross floor area basis. Rates are exclusive of the following:

- Goods and Services Tax
- Professional fees
- Legal costs
- Council development costs (contributions)
- Remediation, earthworks, and site infrastructure costs
- Removal of contaminated materials, including in demolition and earthworks
- Resource consent fees
- Service connections
- Car parking
- Resource consent fees
- Finance costs
- Land purchase
- Developers Profit
- Land purchase
- The following development cost assumptions were sourced from TPG's market intelligence.



TABLE 11: CONSTRUCTION COSTS (TPG INTERNAL DATABASE)

Construction Costs	Cost (\$ plus GST, if any)
Residential	
Low density/rise	\$2,800 - \$4,000 psm
Medium density/rise	\$3,000 - \$4,500 psm
High density/rise	\$5,000 - \$6,000 psm
Carparking - Central CBD only	
Open Area Parking	\$350 psm
Covered and Multi-level	\$1,760 psm
Seismic Resilience	Base Isolation 2.5-10% of construction costs
Open Space	
Soft	\$100 psm
Hard	\$400 psm
Demolition Costs	
Light duty – heavy duty	\$80 - \$200 psm
Site Establishment	\$300/sqm (civils and services)

TABLE 12: ADDITIONAL FEES AND COSTS (TPG INTERNAL DATABASE)

Fees and Additional Costs	Cost (\$ plus GST, if any)
Professional Fees	10-15%
Goods and Services Tax	15%
Council fees (subdivision and building)	\$5,000 - \$8,000 per dwelling
Legal Fees	\$2,000 per dwelling
Marketing Costs	2.5% of gross sales
Survey and Title	\$5,000 per unit
Project Contingency	10 – 20 %
Development Contributions	Refer Below
Interest Rate	7.0%
Cost Escalation	5.0%



Site establishment

Site establishment is not included within the above. The cost is site specific and will vary dependent on a number of factors including location, accessibility and surroundings.

Town Centre, brown field or reclamations will incur additional site establishment costs than a greenfield site. Locations within a Town Centre location with restricted access, storage, site accommodation and the like will incur additional costs; this is likely to be in the region of 5% to 10% over that of greenfield sites.

Development contributions

Development contribution charges are applied on a catchment basis. For resource consent (subdivision) applications, it is assumed that every lot created will contain one household unit equivalent (HUE). If, at a future time, more than one residential unit is developed on a lot, a development assessment is undertaken for each additional residential unit. Council's development contribution charges schedule is attached as Appendix 1 to this report.

A lot will be assessed as containing more than one household unit if it contains more than one kitchen. In these cases, the lot will be assessed at a rate of 1 HUE per kitchen where that kitchen creates a self-contained residential unit.

Small residential unit adjustment

- A small residential unit adjustment is applied to a residential unit with a gross floor area (GFA) of less than 100sqm, including garaging and potentially habitable accessory buildings. For activities other than stormwater and flood protection, the adjustment reduces the HUE calculation on a sliding scale in proportion of the GFA. For example, a residential unit with a GFA of 80sqm will be assessed at 0.8 HUE or 80% of the normally applicable development contribution requirement. The maximum adjustment is to a GFA of 35sqm or 35% of the charge for 1 HUE.
- For developments of more than on residential unit the adjustment is applied based on the average size of all units with a GFA of less than 100sqm (units with a GFA of 100sqm or more are assessed as 1 HUE). The assessment for stormwater and flood protection is on the basis of all units having an equal share of the total ISA.

Subsequent Redevelopment

• If a residential unit has previously received a small residential unit adjustment and is later the subject of consent application to enlarge the GFA, a development contribution assessment will be made, recognising the development contributions previously paid.

Multi-unit stormwater and flood protection adjustment

Residential developments of two or more attached residential units on a single lot receive an adjusted stormwater and flood protection development contribution if they have a lower-than-average Impervious Surface Area (ISA). The total impervious surface area of the development is divided by the average ISA for a single residential unit (427sqm) to calculate the number of HUES for stormwater and flood protection.



Resource Consent

Planning compliance, including resource consent costs will be dependent on the site the specifics. Costs for complex sites will require to be incorporated within site specific project business plans. As a general rule of thumb resource consents (exclusive of Development Contribution Fees) could be considered to generally be in the region of 0.05% to 0.1% of the gross development value, however this will be dependent on the project.

Legal fees

Legal Fees inclusive of Surveying and Subdivision Fees will be dependent on the site. Costs for complex sites will require to be incorporated within site specific project business plans.

Cost Escalation

Construction costs and material prices have been extremely volatile following implications of COVID-19. Effects including following the periods of shutdown, and also logistics and import difficulties have resulted in significant increases. These are ongoing, particularly for materials like timber and steel, and estimating a figure for how much these have increased over the past 12 months across the market will be inaccurate.

On an annual basis, construction cost growth rose from 4.5% in Q2 2021 to 5.5% in Q3, the fastest rate of growth since the first quarter of 2018. The data shows that timber prices, particularly structural timber and cladding, have been a key contributor to overall cost increases. Metal costs and products have also been a factor in the increases.

Looking ahead, it seems likely that the construction industry will remain strong for some time, with investors strongly incentivised to buy new-builds, due to their exemption from the loan to value ratio rules and ability to claim mortgage interest as a deductible expense for the first 20 years of the property's life (CoreLogic, Q3 2021). It appears a degree of cost uncertainty will continue over at least the short term and potentially over a longer time period.

Land Costs

Land values vary across Christchurch City as a result of varying parcel sizes, location and proximity to amenities and ground conditions. High level land values have been estimated through TPG's sales analysis and through discussions with local property professionals and range from \$1,000 - \$5,000 per square metre.

The lower end of the range reflects traditional sized development sites in the outer city suburbs, along with large centrally located sites, with the upper end of the range reflecting smaller and traditional sized Central City and West End development sites.

Liquefaction issues and ground conditions are factored into the purchase price of land, with developers discounting land prices by up to \$300 per square metre if significant ground stability work and excavation is required. It is common practice for Council to request full geotechnical site investigations before consent for development is granted.



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Appendix 1 – Development Contribution Policy

2.7 Schedule of development contribution charges (per HUE)

Table 4: Development contribution charge for each activity by catchment. The overall charge will depend on the location of the development.

Activity Group	Activity			c	atchment Developmen	t Contribution Charg	e		
	Regional Parks	District-wide							
	Ex. GST	\$101.07			1				
	Inc. GST	\$116.23							
	Garden and Heritage Parks	District-wide							
	Ex. GST	\$140.36							
	Inc. GST	\$161.42							
Decerves									
Reserves	Sports Parks	District-wide						I	
	Ex. GST	\$337.17							
	Inc. GST	\$387.75							
	Neighbourhood Parks	Central	Medium Density	Suburban	Growth	Banks Peninsula			
	Ex. GST	\$119,02	\$69,63	\$\$35.35	\$472.69	\$136,56			
	Inc. GST	\$136.87	\$80.07	\$615.65	\$543.60	\$157.04	6		
								-	
	Water Supply	Akaroa Harbour	Central North	Central South	Lyttelton Harbour	Marshlands	North	North West	Banks Peninsula
	Ex. GST	\$10,977.46	\$1,165.96	\$693.16	\$5,130.89	\$4,755.71	\$562.83	52,008.11	\$6,467.53
	Inc. GST	\$12,624.07	\$1,340.85	\$797.13	\$5,900.52	\$5,469.06	\$647.26	\$2,309.32	\$7,437.66
	Water Supply Cont.	West	Woolston/Summer	- 	1		V		1
	Fr. GST	\$1,608,04	\$980.85						
Network	Inc. GST	\$1,849.24	\$1,127,97						
Infrastructure		449-1-1-1							
	Wastewater Collection	North	North West	South	South West	East	City	West	Lyttelton Harbour
	Ex. GST	\$4,085.68	\$1,862.04	\$1,066.03	\$6,989.79	\$258.31	\$261.61	\$2,987.56	\$6,025.25
	Inc. GST	\$4,698.53	\$2,141.35	\$1,225.93	\$8,038.26	\$297.06	\$300.85	\$3,332.19	\$6,929.04

Activity Group	Activity			Cat	chment Developme	nt Contribution Charg	•		
		Akaroa Harbour	Banks Peninsula	1					
	Ex. GST	\$2,105.48	\$258.31						
	Inc. GST	\$2,421.30	\$297,06						
	Wastewater	Christchurch	Akaroa Harbour	Banks Peninsula					
	Treatment/Disposal	5							0
	Ex.GST	\$935.35	\$42,057.16	\$0.00					
	Inc. GST	\$1,075.65	\$48,365.73	\$0.00					
	Stormwater & Flood Protection	Styx	Õtukaikino	Avon	Waimakariri	Coastal	Heathcote	Halswell	Banks Peninsula
	Ex. GST	\$11,717.92	\$3,448.72	\$829.57	\$183.54	\$654.56	\$4,095.55	\$13,469.48	\$2,042.09
	Inc. GST	\$13,475.61	\$3,966.03	\$954.01	\$211.08	\$752.74	\$4,709.89	\$15,489.90	\$2,348.41
				. i.e.					
		Lyttelton Harbour / Whakaraupõ							
	Fr GST	\$654.10							
Network	Inc. GST	\$752.22							
Infrastructure	1110.001	\$1.04.00E						1	
	Road Network	Growth	Central City	Medium Density	Suburban	Banks Peninsula	Lyttelton Harbour		
	Ex. GST	\$3,359,86	\$984.01	\$988.65	\$948.58	\$538.56	\$1,035.88		
	Inc. GST	\$3,863.84	\$1,131.61	\$1,136.95	\$1,090.87	\$619.35	\$1,191.26		
				h.,				-t.,	
	Active Travel	Metro Zone							1
	Ex. GST	\$851.70							
	Inc. GST	\$979,46							
						,			
	Public Transport	Metro Zone							
	Ex. 651	\$481.42							
	Inc. GST	\$553.63							
Community	Community Infrastructure	District-Wide							
Infrastructure	Ex. GST	\$859.50							
	Inc. GST	\$988.43							1

Appendix 3: Typology Development



165 Kendal Avenue, Burnside, Christchurch

Residential Suburban Zone

Site Area: 700m2 (17 x 40 m)



scale: 1:1000 @ A

Residential Zone	MDRS: Enabling Housing Supply and other Matters Bill	Christchurch: Residential Suburban Zone				
Site Density	Max. 3 Units	1 unit/ 450m ² minimum				
		No minimum net site area for multi-unit residential complexes, social housing complexes, and older person's housing units				
Maximum Site Coverage	50%	35% net site area covered by buildings: 245m ²				
(building coverage)	350m ²	40% net site area for single storey multi- unit complexes where all the buildings are single storey:				
		280m ²				
Maximum Building Height	11m plus roof form up to 12m	8m				
Landscaped Area coverage	Minimum 20% 140m²	Minimum 20% for multi-unit developments:				
Height to		140m ²				
Boundary (Daylight recession planes)	4m + 60°	2.3m plus recession plane angle				
Outdoor Living Space	Ground floor: 20m² no dimension less than 3m	Minimum area: 90m² with minimum dimension: 6m				
	Above ground floor level: 8m² minimum dimension 1.8m	Multi-unit residential units: minimum 30m² with minimum dimension 4m				
Minimum	Front: 1.5m	1m from internal boundaries				
building setbacks	Side: 1m Rear: 1m					
Outlook space	Principal living room: 4x 4m; Bedroom: 1x 1m	N/a				
Minimum setback for balconies		4m				
Minimum road boundary building setback	Front: 1.5m	4.5m				
Subdivision Minimum Site Area		450m ²				

Notes:

The proposed Medium Density Residential Standards (MDRS) allows for increased height and site coverage compared to the existing Residential Suburban zoning (RSZ). However, the RSZ allows for multi unit developments that would allow for smaller units with increased landscape area.

The MDRS examples allow for three large houses that take advantage of the bulk and mass permissible under the MDRS and '3 units'. A more compact form such as townhouses may be more efficient, support a better built form outcome and be more profitable although the single laneway access is not ideal from an urban design perspective. A terrace layout also potentially allows for improved landscaping options although small ground floor footprint can limit ground floor area and accessibility of units due to the potential for all bedrooms to be located on the upper floors.

There is potential for shared wall and duplex arrangements between the sites that share boundaries.



TYPOLOGY

Standalone Housing

Terrace/ Duplex Housing

Multi Unit Housing Examples











MDRS

Number of Units: 3 x three storey standalone dwellings Building Coverage: 99.5 m² per unit (includes garage)

Residential Suburban Zone allows for: Number of Units: 2 x 2 storey Maximum 122.5 m² per unit maximum site coverage

MDRS

Total Number of Units: 3

1 x three storey standalone; building coverage (includes garage) 80 m² 2 x three storey duplex; building coverage (includes garage) 80 m² per Unit (includes garage)

Note: Similar outcome to standalone

Alternative Option

Total number of Units: 6 5 x three storey; building coverage 48 m² (includes garage) 1x two storey; building coverage 48 m² (includes garage)

Note: Compliant with most controls under MDRS including Site Coverage, Outlook and Outdoor Space

Residential Suburban Zone

Total number of Units: 8 1x two bedroom, 2x one bedroom and 5x studio units between 35-65 m²

Walk access only- can remove some ground floor units to allow for vehicle access and under croft parking.

165 Kendal Avenue, Burnside, Christchurch

Multi Unit Housing Examples

Alternative Option

Total number of Units: 5

3 x three storey terrace; building coverage 50 m² (includes one garage/ unit)

2 x two storey terrace; building coverage 50 m² per floor (includes one garage/ unit)

Note: Compliant with most controls under MDRS including Site Coverage, Outlook and Outdoor Space





Alternative Option

Total number of Units: 8

2 x three storey terrace; building coverage 50m² per unit (includes one garage/ unit)

6 x 42m² Studio or 3 x 84 m² 2-3 Bedroom Units in Walk up (includes 6 at grade car parks)







165 Kendal Avenue, Burnside, Christchurch

162 Clarence Street, Riccarton, Christchurch

Residential Medium Density Zone

Site Area: 550m² (15 x 36 m)



Residential Zone	MDRS: Enabling Housing Supply and other Matters Bill	Christchurch: Residential Medium Density Zone					
Site Density	Max. 3 Units	No site density applies- Minimum subdivision area 200m²					
Maximum Site	50%	50%					
(building	275m ²	275m ²					
coverage)							
Maximum Building Height	11m plus roof form up to 12m	11m (unless site subject to overlay)					
Landscaped	Minimum 20%	Minimum 20%					
Area coverage	110m ²	110m ²					
Height to Boundary	4m + 60°	2.3m plus recession plane angle					
(Daylight recession planes)							
Outdoor Living	Ground floor: 20m ² no dimension less than 3m	For one bedroom / studio:					
Брасе	Above ground floor level: 8m² minimum dimension 1.8m	Minimum for balcony: 1.5m dimension					
		For two plus bedrooms:					
		Minimum ground floor area: 30m ²					
		4m					
		Minimum dimension for balcony: 1.5m					
Outlook space	Principal living room: 4x 4m; Bedroom: 1x 1m	n/a					
Minimum		4m					
balconies							
Minimum road	Front: 1.5m	2m					
boundary building setback							
Minimum		Studio 35m ²					
residential unit size		1 Bedroom 45m ²					
		2 Bedrooms 60m ²					
		3 or more Bedrooms 90m ²					
Subdivision Minimum Site Area		200m ²					

Existing area has many surrounding sites already at a maximum or infilled.

Site width at 15m and geometry limits access options and location of built form which is largely constrained to centre of site. Vehicle access route to south to allow for northern orientation of outdoor areas.

MDRS zoning rules are comparable with Residential Medium Density Zone although there is an increased outdoor area requirement for ground floor units with two bedrooms and above and different recession plane requirements.



TYPOLOGY

Standalone Housing



Terrace Housing

Similar to Layout and built form to above scenario although more compact

Multi Unit Housing Options







Subdivision Option





MDRS:

Number of Units: 3 x three storey

Residential Medium Density Zone allows for: Number of Units: 2 Max. 137.5m² floor area per Unit

MDRS:

Number of Units: 3 x three storey terrace Building Coverage 80 m² per unit (includes garage)

MDRS: Total number of Units: 3

1 x three storey standalone-

2x three storey duplex unit-Building Coverage approx. 80 m² per unit (includes garage)

Alternative Option: Total number of Units: 7

1 x three storey standalone-Building Coverage approx. 65m² per unit (includes garage)

6 x one bedroom 45m² units plus deck/ outdoor living 4 x at grade parking

Subdivision Scenario:

Site areas- 1 x 268 m² + 1 x 207 m² plus laneway access

Can allow for 2 x three storey duplex housing per site Building coverage approx. 67m² per unit



Building Coverage Approx. 80 m² per unit (includes garage)

Building Coverage approx. 80 m² (includes garage)

162 Clarence Street, Riccarton, Christchurch

211 & 213 Linwood Avenue, Christchurch

Residential Medium Density Zone

Site Area: 2000m² (25 x 80 m)



Residential Zone	MDRS: Enabling Housing Supply and other Matters Bill	Christchurch: Residential Medium Density Zone
Site Density	Max. 3 Units/ site	No site density applies- Minimum subdivision area 200m²
Maximum Site Coverage	50%	50%
(building coverage)	1000m²	1000m²
Maximum Building Height	11m plus roof form up to 12m	11m (unless site subject to overlay)
Landscaped Area coverage	Minimum 20%	Minimum 20%
Height to Boundary (Daylight recession planes)	400 m² 4m + 60°	400m ² 2.3m plus recession plane angle
Outdoor Living Space	Ground floor: 20m² no dimension less than 3m Above ground floor level: 8m² minimum dimension 1.8m	For one bedroom / studio: Minimum ground floor area: 16m ² Minimum for balcony: 1.5m dimension and 6m ² area For two plus bedrooms: Minimum ground floor area: 30m ² Minimum dimension at ground level: 4m Minimum dimension for balcony: 1.5m
Outlook space	Principal living room: 4x 4m; Bedroom: 1x 1m	n/a
Minimum setback for balconies		4m
Minimum road boundary building setback	Front: 1.5m	2m
Minimum residential unit size		Studio 35m ² 1 Bedroom 45m ² 2 Bedrooms 60m ²
		3 or more Bedrooms 90m ²
Subdivision Minimum Site Area		200m ²

Amalgamation of two sites with 25m width.

Opportunities for mixed use fronting street and residential to rear.

Recession plane and HirB generous due to ROW access on neighbouring sites.



TYPOLOGY

Mixed Use Option



commercial/ retail at street level with residential above

Overall Building coverage: 747m²

Commercial Block (street fronting): Total building coverage: 162m² Commercial/ Retail Area at ground level: 1x 45m² + 1 x 85.5m² = 130.5m² 9 x one bedroom units 45m² per unit 14 at grade car parks

Residential Apartment Block (centre) with basement parking Building coverage: 360m² 3 x three bedroom units (90m²) 9x two bedroom units $(3 \times 65m^2 + 6 \times 70m^2)$ 12 car park spaces

Terrace Units (rear) 5 x three storey terrace- building coverage 45 m² plus at grade car park/ garage

Note: Can reduce parking areas to increase floor area as needed

Subdivision Scenario

2000m² Site areas- 8 x 200 m² plus laneway access (10m x 20m)



INFILL EXAMPLE

Rear site area $200m^2$ (12 x 16.7m) with 3m vehicle access

Building coverage: 100 m²

Allows for 55 m² landscaping and some area for circulation and at grade car parking although a garage could be incorporated on the ground floor if needed.

Can achieve two storey at 100 sq.m per floor plus around an extra 60 sq.m for a third storey-potentially enable a total dwelling GFA of around 260 sq.m









Appendix 4: Development Feasibility Analysis



165 Kendal Avenue, Burnside



Option 1









As As No Gr

mber of units/dwellings	3	
ology (per unit/dwelling including building height in storeys)	Standalone Unit – 3 Storey	
mber of bedrooms per unit/dwelling	5	
A per unit/dwelling	173 sq.m	
A of garaging (if any)	26 sq. m (single garage with storage/ laundry)	
al Area of landscaping	187.4 sq.m	
	Unit 1 (72.4m2); Unit 2 (47 m2); Unit 3 (68m2)	
a of any common space	Right of Way access and side berm 112 sq.m	
ess and circulation estimate	n/a	
artments only)		
ound conditions, if possible		

Assumptions:

Assume subdivision

No Resource consent required

Ground conditions are suitable for building - no additional costs

mber of units/dwellings	7 Single level units with outdoor space or balcony over two levels- walk up	
oology (per unit/dwelling including building height in storeys)		
mber of bedrooms per unit/dwelling	Total:	
	3 x studio units (35 m2) + 6 sq.m balcony	
	1 x one bedroom unit (45m2)	
	3 x two bedroom units (60m2)	
	Full Breakdown-	
	Ground Floor:	
	1x 45 sqm one bedroom unit + 40 sqm. Outdoor area	
	1 x 60 sq.m two bedroom unit + 77 sq. m outdoor space	
	1x 60 sqm two bedroom unit + 66 sq.m outdoor area	
	Upper Level:	
	3 x 35 sq.m studio units + 6 sq.m balcony	
	1 x 60 sq.m two bedroom unit + 6 sq.m balcony	
A per unit/dwelling	As above	
A of garaging (if any)	None- 6 x at grade parking	
al area of landscaping	317 sq.m	
a of any common space	Communal Garden area total: 126 sq.m	
	Vehicle access 84 sq.m	
cess and circulation estimate	36 sq.m	
partments only)		
ound conditions, if possible		

Assumptions

Assume unit title development

No resource consent required

Ground conditions are suitable for building - no additional costs

Permitted within planning framework

Christchurch City Council Preliminary development feasibility study



165 Kendal Avenue, Christchurch

Summary of Options Based on Market Evidence

Option	Option 1 - 3 Standalone Dwellings	Option 2 - 7 attached units
Residential dwellings	3	7
Net Dwelling GFA	720 m2	330 m2
Garaging GFA	108 m2	0 m2
Total GBA	828 m2	330 m2
Sensitivity analysis	Market	Market
Estimated project duration	1.5 years	2 years
Gross realisation (sales in \$m)	\$4.80	\$3.11
Net proceeds (\$m)	\$4.05	\$2.62
Total construction costs (\$m)	\$2.47	\$1.51
Total development costs (\$m)	\$3.51	\$2.40
Residual Property Value	\$544,000	\$220,000
Property Purchase Price	\$900,000	\$900,000
Developers Profit	-8.1%	-75.6%

Assumptions:

Assumes subdivision under Option 1, and unit title development under Option 2

Assumes development contributions at a rate of \$9,890 per additional HUE

Assumes no additional site excavation/remediation is required to account for liquefaction/flooding risk

Assumes that the development is permitted under the planning framework and therefore no Resource Consent fees

Construction costs of \$2,800 plus GST for standalone, \$3,500 for multi-unit
162 Clarence St, Riccarton



Option 1



Option 2



Number of units/dwellings	3
Typology (per unit/dwelling including building height in storeys)	Standalone Unit – 3 Storey
Number of bedrooms per unit/dwelling	5
GFA per unit/dwelling	173 sq.m
GFA of garaging (if any)	26 sq. m (single garage with storage/ laundry)
Total Area of landscaping	187.4 sq.m
	Unit 1 (72.4m2); Unit 2 (47 m2); Unit 3 (68m2)
Area of any common space	Right of Way access and side berm 112 sq.m
Access and circulation estimate	n/a
(Apartments only)	
Ground conditions, if possible	

Assumptions:

Assume unit title development

No Resource consent required

Ground conditions are suitable for building - no additional costs

Number of units/dwellings	4
Typology (per unit/dwelling including building height in storeys)	2 x three level duplex units
Number of bedrooms per unit/dwelling	4
GFA per unit/dwelling	156.6
GFA of garaging (if any)	Single garage with storage 24.5sqm
Total area of landscaping	124
Area of any common space	Right of way 126 sqm
Access and circulation estimate (Apartments only)	As above - right of way 126sqm
Ground conditions, if possible	

Assumptions

Assume subdivision

No resource consent required

Ground conditions are suitable for building - no additional costs

Permitted within planning framework



162 Clarence Street, Riccarton

Summary of Options Based on Market Evidence

Option	Option 1 - 3 standalone dwellings	Option 2 - Two duplexes
Residential dwellings	3	4
Net Dwelling GFA	519 m2	626 m2
Garaging GFA (per dwg)	78 m2	98 m2
Total GBA	597 m2	724 m2
Estimated project duration	1.5 years	2 years
Gross realisation (sales in \$m)	\$4.78	\$5.33
Net proceeds (\$m)	\$4.03	\$4.49
Total construction costs (\$m)	\$1.78	\$2.14
Total development costs (\$m)	\$2.58	\$3.07
Residual Property Value	\$1,451,038	\$1,423,424
Property Purchase Price	\$1,200,000	\$1,200,000
Developers Profit	6.6%	18.6%

Assumptions:

Assumes subdivision under both options, along with unit title of each site under Option 2

Assumes development contributions at a rate of \$9210 per additional HUE

Assumes no additional site excavation/remediation is required to account for liquefaction/flooding risk

Assumes that the development is permitted under the planning framework and therefore no Resource Consent fees

Construction costs of \$2,800 plus GST for standalone, \$2,600 plus GST for duplex.

Appendix 5: Model Assumptions



Appendix 5: Assumptions

Key Assumptions for built form included in the capacity model

Sites with new development potential	Comprehensive Development	Infill Development
 Vacant sites Earthquake prone buildings Sites where land value is more than 80% of the capital value Minimum Site size that can accommodate development – 200 sqm All heritage buildings or heritage sites excluded 	Terraced housing - duplex	Where medium density is n o One Standalone dwelling p
 All community facilities, designated sites and open space excluded. Assumptions for site amalgamation Adjoining development sites in single ownership Adjoining vacant sites. 		
 Assumptions for infill development Sites with 12m min road frontage and 200m2 contiguous vacant area. 	Height 2 stories on sites below 450sqm Height 3 stories on sites above 450sqm 50% site cover (Aprox 50sqm per dwelling making up a total 50% site coverage) Eg: on a 200sqm site we could accomdate 2 dwellings.	Height: 2 stories 50% site cover (This allows for 20% landsca

Areas excluded from the model

- All zones where the MDRS does not apply
- Areas with a high degree of resilience or poor ground conditions including
- High Flood Risk
- Tsunami Inundation
- Extreme Liquifaction Management Zone
- Slope Hazard/Land Instability
- Port Influence
- Noise Boundaries
- Community Facilities
- Airport Protection
- Heritage and Character Sites
- Areas of Ecological Significance
- Natural Landscapes
- Protected Vegetation
- Red Zone





caping requirement + 30% circulation)

Summary of the Permitted Built Form Standards from Chapter 14 Residential of the Christchurch District Plan (Operative 19 December 2017) and MDRS (Enabl

Residential Zone	Site Density	Tree and garden planting (landscaped area coverage)	Maximum building height	Maximum site coverage (building coverage)	Outdoor living space per unit	Daylight recession planes (height to boundary)	Minimum building setbacks	Minimum setback for balconies	Minimum road boundary building setback
MDRS: Enabling Housing Supply and other Matters Bill Schedule 1 New Schedule 3A	No minimum lot size, shape size, or other size-related requirements if subdivision does not increase the degree of non-compliance with the density standards No more than 3 units per site	Minimum 20% of a developed site	11m, except that 50% of a building's roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1m, where the entire roof slopes 15° or more (see diagram 1) New Schedule 3B Tier 1 – in metropolitan centre zones and within a walkable catchment of rapid transit and edge of city centre and metropolitan centre zones. At least 6 storeys (SG- 17m?)	must not exceed 50% of the net site area.	 Ground floor: at least 20m2 a. where located at ground level, has no dimension less than 3m; and b. where provided in the form of a balcony, patio, or roof terrace, is at least 8m2 and has a minimum dimension of 1.8m; and above ground floor level a. is at least 8m2 and has a minimum dimension of 1.8 metres 	60° recession plane measured from a point 4m vertically above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way (see diagram 2)	Front: 1.5m Side: 1m Rear: 1m (excluded on corner sites) Does not apply to site boundaries where there is an existing common wall between 2 buildings on adjacent sites or where a common wall is proposed. Outlook space – habitable from habitable room windows (see diagram 3) a. a principal living room: 4m in depth and 4m in width; Windows to street minimum of 20% of the street-facing façade in glazing (windows or doors)		Front: 1.5m
Residential Suburban Zone Note: Excludes area-specific Built Form Standards	One residential unit per site with a 450m2 minimum net site area No minimum net site area for multi-unit residential complexes, social housing complexes, and older person's housing units	Minimum of 20% of the site shall be landscaping for multi-unit residential complexes and social housing complexes only	8m	35% net site area covered by buildings 40% net site area for multi-unit residential complexes, social housing complexes, and groups of older person's housing units where all the buildings are single storey	Minimum area: 90m2 Minimum dimension: 6m Multi-unit residential complexes, social housing complexes, and groups of older person's housing units: Minimum area: 30m2 and minimum dimension: 4m	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram A and Diagram B <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	1m from internal boundaries 4m from rail corridor boundary	4m	4.5m
Residential Suburban Density Transition Zone Note: Excludes area-specific Built Form Standards	One residential unit per site with a 330m2 minimum net site area No minimum net site area applies for multi-unit residential complexes, social housing complexes, and older person's housing units	Minimum of 20% of the site shall be landscaping for multi-unit residential complexes and social housing complexes only	8m	40% net site area covered by buildings 40% net site area for multi-unit residential complexes, social housing complexes, and groups of older person's housing units where all the buildings are single storey	Minimum area: 50m2 Minimum dimension: 4m Multi-unit residential complexes, social housing complexes, and groups of older person's housing units: Minimum area: 30m2 and minimum dimension: 4m	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram A and Diagram B <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	1m from internal boundaries 4m from rail corridor boundary	4m	4.5m

ling	Housing	Supply	and	other	Matters	Bill)
0	0					,

Residential Zone	Site Density	Tree and garden planting (landscaped area coverage)	Maximum building height	Maximum site coverage (building coverage)	Outdoor living space per unit	Daylight recession planes (height to boundary)	Minimum building setbacks	Minimum setback for balconies	Minimum road boundary building setback
Residential Medium Density Zone Note: Excludes area-specific Built Form Standards	No site density applies Minimum residential unit size: Studio 35m2 1 Bedroom 45m2 2 Bedrooms 60m2 3 or more Bedrooms 90m2.	Minimum of 20% of the site shall be landscaping	11m provided there is a maximum of 3 storeys, unless site is subject to an overlay <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>Residential Medium</i> <i>Density overlays</i>	50% net site area covered by buildings	For one bedroom / studio: Minimum area: 16m2 Minimum for balcony: 1.5m dimension and 6m2 area For two plus bedrooms: Minimum area: 30m2 Minimum dimension at ground level: 4m Minimum dimension for balcony: 1.5m	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram C <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>Residential Medium</i> <i>Density overlays and sites</i> <i>in the Flood Management</i> <i>Area.</i>	1m from internal boundaries 4m from rail corridor boundary	4m	2m
Residential Central City Zone	One residential unit for every complete 200m2 of site area Minimum residential unit size: Studio 35m2 1 Bedroom 45m2 2 Bedroom 70m2 3 or more Bedrooms 90m2.	Minimum of 20% of the site shall be landscaping	As shown on the Central City Maximum Building Height planning map	N/A	Minimum area: 24m2 Minimum dimension at ground level: 4m Minimum dimension for balcony: 1.5m	2.3m above ground level plus recession plane angle according to Appendix 14.16.2C <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	 1.8m from internal boundary 1m where the site adjoins an access lot, access strip, or access to a rear site 4m from rail corridor boundaries 	4m for parts of a balcony or any window of a living area at first floor level or above	2m For sites Type equation here. fronting Bealey Avenue: 6m In the locations indicated as Central City Building Setbacks, on the Central City Active Frontages and Verandas and Building Setback planning map: 4.5m
Residential Hills Zone <i>Note: Excludes</i> <i>area-specific Built</i> <i>Form Standards</i>	One residential unit per site with a 650m2 minimum net site area <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>overlays</i> No minimum net site area for multi-unit residential complexes, social housing complexes, and older person's housing units	N/A	8m	35% net site area covered by buildings 40% net site area for multi-unit residential complexes, social housing complexes, and groups of older person's housing units where all the buildings are single storey <i>Note: Excludes sites and</i> <i>areas subject to overlays</i>	N/A	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram B <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	 1.8m from internal boundary 1m where the site adjoins an access 	4m for parts of a balcony or any window of a living area at first floor level or above	4m
Residential Banks Peninsula Zone Note: Excludes area-specific Built Form Standards	One residential unit per site with a 400m2 minimum net site area <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>overlays</i>	N/A	7m	35% net site area covered by buildings	N/A	2.0m above ground level plus 45-degree recession plane angle on an adjoining site boundary, that is not a road boundary. <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	2m from rear internal boundary One of 1.5m from side internal boundary and one of 2m 4m from rail corridor boundary	N/A	3m

Residential Zone	Site Density	Tree and garden planting (landscaped area coverage)	Maximum building height	Maximum site coverage (building coverage)	Outdoor living space per unit	Daylight recession planes (height to boundary)	Minimum building setbacks	Minimum setback for balconies	Minimum road boundary building setback
Residential Large Lot Zone	One residential unit per site with a 1500m2 minimum net site area Note: Excludes sites and areas subject to overlays	N/A Note: Excludes the Worsleys Road area	8m	40% net site area or 300m2 covered by buildings, whichever is the lesser Note: Excludes sites and areas subject to overlays	N/A	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram F <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	3m from internal boundary 1m where the site adjoins an access Note: Excludes sites and areas subject to overlays	N/A	Building with garage door facing the road: 5.5m Building without garage door facing the road: 5m <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>overlays</i>
Residential Small Settlement Zone	One residential unit per site with a 1000m2 minimum net site area <i>Note: Excludes sites</i> <i>and areas subject to</i> <i>overlays</i>	N/A	8m Note: Excludes sites and areas subject to overlays	25% net site area or 250m2 covered by buildings, whichever is the lesser Note: Excludes sites and areas subject to overlays	N/A	2.0m above ground level plus 45-degree recession plane angle on an adjoining site boundary, that is not a road boundary. <i>Note: Excludes sites in the</i> <i>Flood Management Area</i> .	3m from side and rear internal boundaries Note: Excludes sites and areas subject to overlays	N/A	Building with garage door facing the road: 5m Building without garage door facing the road: 4.5m Note: Excludes sites and areas subject to overlays
Residential Guest Accommodation Zone Note: Refer to Appendix 14.16.11	Development shall not result in any new building with a GFA greater than 500m2	N/A	Group A sites: 9 to 15m Group B sites: 11m Group C sites: As shown on the Central City Maximum Building Height planning map	Group A and B sites: 45% net site area covered by buildings Group C sites: 55% net site area covered by buildings	N/A	 2.3m above ground level plus recession plane angle according to: Group A sites: Appendix 14.16.2 Diagram A Group B sites: Appendix 14.16.2 Diagram C Group C sites: Appendix 14.16.2C 	Group A sites: 6m from a residential or open space zone boundary and 3m from all other zone boundaries. Group B and C sites: 3m from any zone boundaries.	N/A	Development shall not result in any new building with a building length greater than 15m which is located within 30m of a site boundary. Group A and B sites: 4.5m Group C sites: 2 to 4.5m
Residential New Neighbourhood (North Halswell) Zone	Minimum residential unit size: Studio 35m2 1 Bedroom 45m2 2 Bedrooms 60m2 3 or more Bedrooms 90m2.	N/A	8m Note: Excludes sites and areas subject to outline development plans	 40% net site area for sites over 300m2 45% net site area for sites under 300m2 45-50% net site area for comprehensive residential development Note: Excludes sites and areas subject to outline development plans 	Minimum area for one bedroom / studio: 16m2 Minimum area for two bedrooms or more: 30m2 Minimum dimension at ground level: 4m Minimum dimension for balcony: 1.5m	2.3m above ground level plus recession plane angle according to Appendix 14.16.2 Diagram C <i>Note: Excludes sites in the</i> <i>Flood Management Area.</i>	1m from internal boundaries 4m from rail corridor boundary	3m for any window of a living area 4m for a balcony or any window of a living area above ground level	4m Note: Excludes sites and areas subject to outline development plans





Enabling Housing Supply and other Matters Bill diagrams







Development feasibility Analysis assumptions

- The developments are permitted under the planning framework and therefore Resource Consent is not s significant development cost
- No additional site excavation/remediation is required to account for flooding risk or any other ground conditions. •
- Other key assumptions relating to development costs can be found in the Market Assessment.

162 Clarence Street, Riccarton

Option	Option 1 - 3 standalone dwelling	Option 2 - Two duplexes	
Residential dwellings	3	4	
Net Dwelling GFA	519 m2	626 m2	
Garaging GFA (per dwg)	78 m2	98 m2	
Total GBA	597 m2	724 m2	
Estimated project duration	1.5 years	2 years	
Gross realisation (sales in \$m)	\$4.78	\$5.33	
Net proceeds (\$m)	\$4.03	\$4.49	
Total construction costs (\$m)	\$1.78	\$2.14	
Total development costs (\$m)	\$2.58	\$3.07	
Residual Property Value	\$1,451,038	\$1,423,424	
Property Purchase Price	\$1,200,000	\$1,200,000	
Developers Profit	6.6%	18.6%	

Key Assumptions

- Property Purchase Price of \$1,200,000 including GST, and an underlying land value of \$2,000/sqm.
- Subdivision under both options, along with unit title development of each site under Option 2
- Development contributions at a rate of \$9,210 per additional HUE ٠
- Construction costs of \$2,800/sqm plus GST for standalone dwellings under Option 1 and \$2,600/sqm • plus GST for duplexes under Option 2.

165 Kendal Avenue, Burnside

Option	Option 1 - 3 Standalone Dwellings	Option 2 - 7 attached units		
Residential dwellings	3	7		
Net Dwelling GFA	720 m2	330 m2		
Garaging GFA	108 m2	0 m2		
Total GBA	828 m2	330 m2		
Sensitivity analysis	Market	Market		
Estimated project duration	1.5 years	2 years		
Gross realisation (sales in \$m)	\$4.80	\$3.11		
Net proceeds (\$m)	\$4.05	\$2.62		
Total construction costs (\$m)	\$2.47	\$1.51		
Total development costs (\$m)	\$3.51	\$2.40		
Residual Property Value	\$544,000	\$220,000		
Property Purchase Price	\$900,000	\$900,000		
Developers Profit	-8.1%	-75.6%		

Key Assumptions

- Property Purchase Price of \$900,000 including GST, and an underlying land value of \$1,000/sqm. •
- Subdivision under Option 1, and unit title development under Option 2.
- Development contributions at a rate of \$9,890 per additional HUE. •
- Construction costs of \$2,800/sqm plus GST for the standalone dwellings under Option 1 and \$3,500/ • sqm plus GST for the Mutli-unit development under Option 2.



High Density Residential Feasibility Assessment May 2022



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Exec	utive Summary4
1.	Introduction
2.	The Changing Policy Framework
3.	Residential Market Overview
4.	Analysis Approach
5.	Built Form Outcomes – Design Feasibility
6.	Development Feasibility Analysis
7.	Conclusions

Appendix 1: Market Assessment

	Appendix 2	<u>)</u> :	Planning	Controls	Summary
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- Appendix 3: Design Analysis
- Appendix 4: Feasibility Analysis
- Appendix 5: Feasibility Analysis Assumptions



Quality control

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Executive Summary

The National Policy Statement on Urban Development (NPS-UD) aims to create denser housing in cities and around centres and areas with good access to public transport. This reflects international best practice for creating sustainable urban form and increasing housing diversity and choice. Christchurch is identified as a Tier 1 urban environment, and this policy applies to the city centre itself and a range of smaller centres that have been identified through the implementation of this policy direction.

In response to the requirements of the NPS-UD Christchurch City Council has prepared the Draft Housing and Business Choice Plan Change (PC14) which implements a High Density Residential Zone framework to enable high density residential development of between 4 to 10 stories in the areas surrounding the cities centres.

This marks a change in the type of development enabled across the city. Christchurch city has historically been referred to as the garden city and is well known for low density and green leafy suburbs surrounding a more commercial city core. Following the 2011 earthquake, significant planning reform and investment occurred across the city that enabled far greater levels of medium density housing, while maintaining a relatively low scale city centre at a maximum of six stories.

This assessment has been undertaken to assess the feasibility of the introduction of high density residential development across the cities centres under the new provisions of PC 14.

Feasibility under current market conditions

The feasibility testing undertaken illustrates that despite the increases in density enabled through PC14 provisions, under current market conditions it remains challenging for development of buildings above six storeys to be feasible in the range of suburban centre locations explored. The analysis demonstrates that whilst the feasibility of high density development in the city centre does increase as heights are increased and greater yields are achievable, based on work completed by TPG in other areas within in New Zealand it is estimated that heights allowable would need to increase significantly (for example up to 32 stories) in the city centre to begin to achieve a viable development currently.

There are few (if any) current residential buildings of this nature, and to try and make a viable development, premium/high sales prices would need to be achieved. The impact of medium density, and lower density housing prices means that it would be unlikely that potential buyers would purchase a high density premium product for more than a standalone or terrace dwelling within the same suburb.

Maturity of the market

It is important to note that these results are based on the estimated current market values and current high risks around the increasing construction costs and market instability. Into the future, as the Christchurch residential market changes and the construction sector stabilises the viability of high density residential development at 10-12 stories in the city centre may improve. The price points achievable would need to increase similar to those achieved in the Wellington market alongside high levels of amenity provided for inner city residents.

Based on this analysis it is however considered unlikely that high density residential development (4 stories and above) within the cities local centres or metropolitan centres



will be feasible without a significant shift in the market or significant government intervention. For example, the potential increase in land values that may result from investment in infrastructure such as MRT in these areas.

Investment in amenity

Key factors in generating premium sales prices are generally related to the amenity a development provides, both within the dwelling and building, but also the amenity provided in the surrounding neighbourhood. In addition, the provision of access through high quality public transport and active modes also has a significant role. In the locations reviewed the amenity and access provision would not currently be high enough to drive any land value uplift or attract a premium sales price.

Enabling provisions

There are some levers that still remain to be explored. The size and shape and aspect of lots has a considerable impact on the ability to create feasible developments. Corner sites show the most promise for viable development at greater heights, however amalgamation of lots also create opportunities where the potential yield generates developments that are feasible. The planning levers to encourage development of higher density on corner sites, or amalgamated sites should be explored as one of the tools to improve development feasibility for high density in the range of locations tested.



1. Introduction

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake a feasibility analysis of the High Residential Density Zone (HRZ) as set out in the Draft Housing and Business Choice Plan Change (PC14). The analysis will support the development of an evidence base required for the Section 32 evaluation and reporting for PC14.

The HRZ framework has been drafted, both in spatial extent and with provisions to achieve development outcomes. Key conclusions that can be drawn from the feasibility assessment include a set of recommendations to ensure the proposed controls will enable housing delivery in the locations where increases in residential density is planned.

Scope of the Feasibility Assessment

This assessment has analysed the feasibility of development under the proposed HRZ being realised, given the parameters of the rules framework proposed. The assessment included:

- 1. A housing and market assessment.
- 2. Preparation of bulk and location plans for eight sites using three typical lot sizes in the HRZ within different development precincts.
- 3. Development feasibility testing and analysis of each of the eight sites.

The scope of each step is outlined in more detail below.

Housing and Market Assessment

A review of the current market drivers behind residential development was completed to support the feasibility analysis. This includes both an understanding of the current residential market trends as well as anticipated levels of growth and demand for housing.

This provides an understanding of the current market for high-density residential development within Christchurch and some indication of how this may change into the future based on future directions for growth.

Bulk and Location Plans

Bulk and location plans were developed for eight typical sites that are within the proposed HRZ Precinct located around different centres.

The plans were developed using the key bulk and location controls applicable to each site under the proposed plan change, including a review of earlier design analysis to ensure the intent of the controls is reflected in the analysis.

Development scenarios for 4 storeys, 6 storeys, and 10 storeys were tested. The plans maximise the sites' potential and reflects a likely development outcome, allowing quantification of the potential development yield (Gross Floor Areas) for each test site.



Development Feasibility Testing and Analysis

A bespoke feasibility model was developed that assesses each site's development potential by comparing the likely costs of development (including addressing issues of resilience) with the potential realisation of the sale of the completed development.

A comparison of the feasibility outcomes of each site, taking into consideration the projected demand and accessibility assessment across each precinct, has been undertaken. This identifies how the feasibility of the proposed height limits are varied across different centre precincts.

Report Structure

Following this introduction, this report provides an overview of the results of the feasibility assessment in the following sections:

- Section 2, The Changing Policy Framework: provides an overview of the new planning framework and its implications for residential development in Christchurch
- Section 3, Residential Market Overview: provides an understanding of the current market for highdensity residential development within Christchurch and some indication of how this may change into the future
- Section 4, Analysis Approach: outlines the approach taken to the feasibility analysis
- Sections 5-6, Results of the Development Feasibility Analysis: provides a summary of the results of the feasibility analysis and the implications for high density development in Christchurch.



2. The Changing Policy Framework

The National Policy Statement on Urban Development

Under the National Policy Statement on Urban Development (NPS-UD) Christchurch is identified as a Tier 1 urban environment. Tier 1 authorities are required to enable denser housing, particularly in centres and areas with good access to public transport.

The polices of the NPS-UD that will require changes to the district plan controls and will have an impact on the potential for residential development are mostly contained in Policy 3.

Policy 3: In relation to tier 1 urban environments, regional policy statements and district plans enable:

- (a) in city centre zones, building heights and density of urban form to realise as much development capacity as possible, to maximise benefits of intensification; and
- (b) in metropolitan centre zones, building heights and density of urban form to reflect demand for housing and business use in those locations, and in all cases building heights of at least 6 storeys; and
- (c) building heights of least 6 storeys within at least a walkable catchment of the following: (i) existing and planned rapid transit stops (ii) the edge of city centre zones (iii) the edge of metropolitan centre zones.
- (d) within and adjacent to neighbourhood centre zones, local centre zones, and town centre zones (or equivalent), building heights and densities of urban form commensurate with the level of commercial activity and community services.

Currently the Christchurch City Central Area is proposing height between 4 storeys and 10 storeys in HRZ areas. As required by Policy 3(a) of the NPS-UD, the city centre zones will be required to have heights and density controls that enable as much development capacity as possible, which effectively removes the height limits in the centre zone and implements a 6 story minimum within the walking catchment of the centre.

In addition Policy 11, removes the ability of Tier 1, 2 and 3 authorities to require car parking when applying for resource consent to construct new housing. This could lower development costs in Christchurch and potentially encourage development through increasing land use flexibility. The impact of this change to carparking polices has not been included in the scope of this assessment.

Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (the Act) works with the NPS-UD to accelerate housing supply in areas of high demand. The Act, which was passed into law in December 2021, enables greater levels of permitted residential intensification within low and medium density residential zones in New Zealand's largest centres. This is achieved through two key instruments:

Medium Density Residential Standards (MDRS) – requires Tier 1 authorities to adopt new medium density residential standards in residential zones, which enable people to



build up to three units and three storeys on most residential zones, without the need for a land use resource consent, provided all other rules and standards in the district plan have been complied with. Exceptions to individual sites and areas will apply based on qualifying matters set out in the NPS-UD and councils must publicly notify their proposed changes to their district plans by the end of August 2022.

The Intensification Streamlined Planning Process (ISPP) – supports councils to implement the intensification policies of the NPS-UD and adopt the MDRS at least a year earlier, by amending the existing streamlined planning process under the RMA to be faster, easier, and less costly.

The MDRS apply to all residential zones in the Tier 1 urban environments, except:

- large lot residential zones and settlement zones
- areas predominantly urban in character that the 2018 census recorded as having a resident population of less than 5,000, unless a local authority intends the area to become part of an urban environment, or
- offshore islands.

Plan Change 14

Council is developing the Draft Housing and Business Choice Plan Change (PC14) to give effect to the National Policy Statement – Urban Development (NPS-UD) and recent changes to the Resource Management Act (RMA) following enactment of the Enabling Housing Act, which promotes intensification around urban centres and application of the Medium Density Residential Standard (MDRS) across areas of the city.

Prior to notification in August 2022, the Council released draft material for public feedback on PC14 which includes prospective changes to residential and commercial zones, including subdivision changes. Two residential zones will replace all the existing residential zones across the city. The High Density Residential Zone (HRZ) allows development to achieve heights of 4 storeys without requiring consent, and 6-10 is enabled within the consenting process. The HRZ and related precinct is applied to the catchment surrounding the CBD as well as the majority of the centres and their surrounding catchments. The Medium Density Residential Zone (MRZ) meets the MDRS requirements set out in the Enabling Housing Act allows development to achieve 3 storey heights with requiring consent, and 4 storeys is enabled within the consenting process. The MRZ is applied to all residential areas within the city outside the centres and that are not impacted by qualifying matters.

Public feedback on the Draft PC14 closed on 13 May 2022. Council is now in the process of undertaking analysis that will support the development of an evidence base for the Section 32 evaluation.

Centres - walking catchments and intensification precincts

As outlined above, NPS-UD has a requirement to intensify to at least six storeys within a walkable catchment from the CBD and metropolitan centres, and intensify within and adjacent to centres. Intensification should be proportionate to the level of community activity and community services.



PC14 responds to the directive in the NPS-UD by taking a suburban centres approach to intensification, refer to Figure 1 below. Intensification will be focused within the centres and within a walkable catchment around centres, which will increase depending on the accessibility to amenities and housing demand. Council have established that a walkable catchment is generally considered to be a 400 metre distance or 5 minute walking time. Using this as a starting point, the smaller centres with less amenity and demand have smaller catchments while the bigger centres have larger catchments. The CBD catchment includes a minimum of 10 minutes walking distance which increases based on accessibility to amenities and housing demand, resulting in a catchment of 1.2 km or 15 minutes walking time.



FIGURE 1: SUBURBAN CENTRES APPROACH MAP SHOWING THE HIERARCHY OF CENTRES AND SURROUNDING CATCHMENTS (PRECINCTS) AS SET OUT ON PAGE 8 OF THE PC14 CONSULTATION DOCUMENT

The suburban centres approach identifies a hierarchy to classify centres based on size and relative services and amenities:

- City Centre
- Metropolitan Centre
- Town Centre
- Significant Local Centre
- Larger Local Centre
- Local Centre.

Precinct overlays are also applied over the catchment of each centre to allow a more nuanced approach to the application of the two proposed residential zones (refer to Figure 2 below). These precinct overlays determine the size of the centre catchment and the intensification enabled within the catchment area.





FIGURE 2: MAP SHOWING PRECINCTS OVERLAYS AROUND THE DIFFERENT CENTRE TYPES

The HRZ Precinct, applied to the majority of centres, allows for heights of 20 metres or 6 storeys. The centres with the HRZ Precinct overlays and the HRZ, which is located adjacent to the City Centre and enables heights of 32 metres or 10 storeys, are the focus of this exercise, as highlighted in Table 1 below.

Centre Type	Area of catchment (precinct)	Building Height (centre and precinct)	Precinct / Zone
City Centre (Christchurch CBD)	Two-tier catchment as per below:	Unlimited	City Centre Zone
	800 metres (10 mins walking distance)	32 metres (10 storeys)	HRZ
	0.8 – 1.2 km (10-15 mins walking distance)	20 metres (6 storeys)	City Centre HRZ Precinct
Emerging Metropolitan Centre	600 metres	20 metres (6 storeys)	Emerging Metropolitan Centre HRZ Precinct



Town Centre and Significant Local Centre	400 metres	20 metres (6 storeys)	Town Centre HRZ Precinct and Significant Local Centre HRZ Precinct
Larger Local Centre	200 metres	14 metres (4 storeys)	MRZ Precinct / Larger Local Centre MRZ Precinct
Local Centre	Centre only	12 metres (MRZ)	N/A

TABLE 1: SUMMARY OF CENTRE CATCHMENTS, PRECINCTS AND BUILDING HEIGHTS



3. Residential Market Overview

Current residential density

In 2021, the estimated resident population of Christchurch City was 392,100 people (Statistics NZ, 2021). In line with the existing zoning, the more densely populated areas are those suburbs surrounding the city centre and in areas surrounding the districts centres (see Figure 3).

The residential market is mostly made up of standalone homes and new medium density development. In the last three months (February-April 2022), 1200 standalone homes were sold in Central Christchurch, compared to 354 flats/townhouses and just 54 apartments.

Medium density development has been the main focus of the Christchurch construction market over recent years with steady demand for townhouses and fewer recent apartment building developments in the city.



FIGURE 3: CHRISTCHURCH POPULATION DENSITY (TPG, 2022)



Factors driving existing development patterns and densities

Post-earthquake urban expansion

Christchurch has historically been a low-density urban environment, that has steadily expanded outwards of the city centre as demand for housing has increased. This dispersal was accelerated following the 2010 and 2011 Christchurch earthquakes.

Immediately after the earthquakes, Councils, the Christchurch Earthquake Recovery Authority (CERA) and the Minister responded to the need for additional housing for people displaced from the red-zones by accelerating development areas already identified for growth in the Urban Development Strategy 2007 (UDS). This has resulted in significant growth North and South of the City in the Waimakariri and Selwyn Districts.

Increasing new housing supply in areas close to the city centre

In the last 24 months there has been a significant increase in the number of residential building consents issued within Christchurch City. This is reflective of the increased demand for new residential development and the strength of Christchurch's residential property market (refer to market assessment in Appendix 1 for further analysis).

As shown in Figure 4, the location of new residential development is mainly located in the growth area of Halswell (14% of new residential consents), but notably over 30% of consents have been issued for residential development in the urban areas close to the city centre.



FIGURE 4: LOCATION OF NEW RESIDENTIAL CONSENTS ISSUED 2020 (BLACKBURN MANAGEMENT, 2020)



Increased medium density offering

The initial policy response to the earthquakes was integrated within a Land Use Recovery Plan (LURP) – a statutory document prepared by CERA under the Canterbury Earthquake Recovery Act 2011. The LURP provides clear direction for residents, businesses and councils of greater Christchurch about where development should occur and what form it should take to support recovery, including targets for the % of new households to be provided in existing urban areas and provisions to encourage medium density development.

This has successfully encouraged more intensive housing types, such as terrace and town house developments within existing urban areas. Of the new resource consents issued since 2018, 38% have been for medium density housing.

Focus on commercial development in the City Centre

The Central City Recovery Plan, known as the 'Blueprint' also includes provisions to support medium to high density living in the Central City, and sets a target of 20,000 people living within the four avenues by 2024. The Blueprint, published in 2012, provides a spatial framework for central Christchurch, including defining a new central 'core' and 17 'anchor' projects.

Whilst some residential development has occurred in the central City, the uptake of inner-city living has been slow, with population levels only recently surpassing pre-earthquake levels. This may be a reflection in part of the rebuild process which has focused on the delivery of commercial precincts such as the Convention Centre and Justice and Emergency Services Precinct. This has attracted commercial investment to the Central City, but achieved little in terms of attracting new residents.

Consumer preference for standalone homes

The *Living in Christchurch* 2021 Survey revealed a strong preference for detached houses over more intensive typologies. The most popular housing type among respondents was a stand-alone single storey home (55%) with three bedrooms (51%). This preference continues to drive the City's residential market.

Respondents identified lack of privacy and intensity of the development as the main deterrents to living in an apartment or townhouse. One respondent shared the opinion that "*The apartments currently built are not fit for long-term family living. They are far too small, lack storage, adequate outdoor living space and privacy.*"

These findings are consistent with the results of the New Zealand Housing Preferences Survey 2017. Respondents overwhelmingly preferred stand-alone houses to other typologies and favoured attached and low-rise MDH typologies over high-rise MDH typologies (see Figure 5).





I would definitely consider living in this type of home in the future

FIGURE 5: NEW ZEALAND HOUSING PREFERENCES SURVEY 2017 - PARTICIPANTS AGREEMENT WITH THE STATEMENT "I WOULD DEFINITELY CONSIDER LIVING IN THIS TYPE OF HOME IN THE FUTURE" (BRANZ, 2017)

It is worth noting that multi-unit housing in Christchurch has not always been perceived to be of high quality. This has resulted in poor urban development outcomes, and some public opposition to multiunit housing in existing residential areas. There is an opportunity to improve the quality of multi-unit housing and shift the opinions of Christchurch residents in favour of more intensive housing.

Relative cost of apartments

Over the 3 month period ending April 2022, the average sale price of standalone home in Central Christchurch was \$679.000, compared to \$492,750 for a flat and \$520,500 for an apartment. The relative cost of an apartment is reflected in the higher number of standalone homes and townhouses in the market.

Buyers in the market for a smaller dwelling typology (e.g. first home buyers, retirees) are more likely to purchase a flat/townhouse than an apartment if a townhouse is more affordable. Townhouses also typically offer a higher level of amenity (e.g. outdoor space, privacy), which makes them more attractive housing choices.

Future market for high density development

There are a number of factors that may change the market for high density development in the future.

Strong residential growth and increasing demand

Under a medium growth scenario, Statistics NZ estimations project the population of Christchurch City to grow from 392,100 people in 2021 to 417,000 people in 2028. This reflects an increase of 6.4%, with further projected growth to 453,800 people in 2038. The number of dwellings in the city is also projected to increase from 148,000 in 2018 to over 161,100 by 2028, and 172,400 by 2038 to account for population growth (refer to Market Assessment in Appendix 1 for further analysis). This suggests there will be strong demand for housing over the coming decades, which may create more demand for higher-density dwellings.



Demand needs to be met through a larger degree of intensification and infill

The Council's adjusted growth model is currently showing flattened housing demand across the city, with a much smaller emphasis on intensification in and around the city centre than the Statistics New Zealand's population and household forecasts (refer to Market Assessment in Appendix 1). The adjusted model also suggests demand will need to be met through a larger degree of intensification and infill (greenfield/infill ratio of 23%/77% vs Council's previous aim of a 40%/60% greenfield/infill ratio). This additional demand for intensive housing in Christchurch's existing urban areas may improve the market for high density development.

Change in approach to high density development

As outlined is Section 2 of this report, the NPS-UD effectively requires Council to remove height limits in the city centre zone and enable at least six storeys within a walkable catchment of the Christchurch CBD and metropolitan centres. This represents a step change in height limits in the City Centre and will help create the conditions for developers to construct higher density housing in well-connected areas.

Growing demand for smaller housing typologies

Whilst a growing number of medium density dwellings are being consented, there is limited availability of apartments, townhouses, or smaller dwelling types across Christchurch in comparison to similarly sized New Zealand cities. The average household size is also projected to decrease from 2.54 in 2021 to 2.45 in 2051 (Greater Christchurch. 2021). This suggests that there is currently an area of unmet demand for diversity of the housing stock including smaller dwelling typologies to accommodate, smaller household sizes and affordable price points.



4. Analysis Approach

Due to the limited time available to undertake the assessment, the analysis approach developed is based on testing a range of potential outcomes, on different sized sites, across different locations. From this, high level conclusions can be drawn regarding the feasibility of high density development across the cities centres.

Whilst further sensitivity testing and detailed analysis would be required to assess how each individual centre performs, the high level analysis provides a useful indication of how viable high density development is currently under the proposed controls and the likely conditions required to improve feasibility.

The following section provides an overview of how the sites for testing were selected, the process for preparing the scenarios, the establishment of prices points for residential apartments and the methodology for the feasibility assessment.

Lot Size and Site Selection

The lot sizes used in the analysis were selected to represent the range of different development opportunities that are likely to available across the cities HRZ precincts. Unlike greenfield development, the new planning framework implemented under PC 14 enables high density development to occur within the existing urban area. Available development sites are therefore dependant the size of the existing lots available for redevelopment and potentially in some cases were sites have been amalgamated to create a larger development site.

Testing a range of different site sizes is important to understanding feasibility as the land available for development plays a significant role the feasibility of development. Based on a review of available development opportunities the following site sizes were used for testing:

- Large lot size (1200m²). Site widths of 21 metres and 26 metres were tested. Site widths of 26 metres are generally only available where two or more sites have been amalgamated.
- Medium lot size (731m²) located on a corner site.
- Small lot size (450m²).

Site Selection Process

Three typical lot size range were identified within the Christchurch morphology, lots below 500sqm, between 500 – 1,000sqm, and lots above 1,000sqm.



An exercise using GIS mapping identified the comprehensive development lots within the relevant centre precincts as set out in the table below:

Centre / precinct	Lots below 500sqm	Lots 500- 1,000 sqm	Lots above 1,000 sqm
High Density Zone	438	224	67
City Centre HRZ Precinct	235	196	87
Emerging Metropolitan Centres HRZ Precinct	147	360	109
Town Centre HRZ Precinct	104	95	61
Significant Local Centre HRZ Precinct	242	103	42
TOTAL	1166	978	366

TABLE 2: COMPREHENSIVE DEVELOPMENT LOTS BY CENTRE PRECINCT AND SIZE

Comprehensive development lots were identified on the basis of the following:

- Existing vacant sites identification of appropriately zoned vacant sites excluding those designated for an alternative purpose
- Sites with earthquake prone buildings
- Sites with re-development potential identification of sites where the value of the existing improvements is low comparative to the land value. Based on a review of recent developments



across the city where sites have a land value that makes up to 80% of the capital value have been considered as providing a development opportunity¹.

Sites were excluded if they fall within under the potential qualifying matters categories, such as natural hazard risks including liquification, areas of cultural or ecological significance, contaminated sites, or sites within the flight path restrictions.

A typical development lot from the High Density Zone, Emerging Metropolitan Centre HRZ Precinct, and Town Centre HRZ Precinct was selected to undertake the feasibility testing:

- Site 1: High Density Zone, lot between 500- 1,000 sqm (medium)
- Site 2: Emerging Metropolitan Centres HRZ Precinct, lot above 1,000 sqm (large)
- Site 3: Town Centre HRZ Precinct, lots below 500 sqm (small).

As typical development lot sizes were used for the design tests, these could be applied to lots in other geographic locations across the relevant centres to produce economic feasibility tests in those locations.

It was noted that analysis to select the lot sizes for testing found that typical lot dimensions in Christchurch tend to be deep with narrow street frontages.

Residential Building Typologies

To test the different outcomes achievable under PC14, on each different lot size a built form outcome was developed to represent how the site could be developed maximising its potential. The design test looked at three building height scenarios: 4 storeys, 6 storeys and 10 storeys to align with the heights enabled in the HRZ and HRZ precincts.

The models produced demonstrate if different residential typologies and building height scenarios are achievable on the three different typical site sizes when applying the HRZ standards.

The residential dwelling yield produced by the scenario tests, along with the geographic location of the sites selected, was the basis for undertaking the economic feasibility testing.

¹ It is noted that previous assessments have identified development potential on sites where land value has been 70% of capital value. For this assessment 80% has been used to reflect recent market activity. If 70% was applied the **number of** sites that show development potential across the city would increase considerably (approximately 6,000 more comprehensive development sites).



Development Feasibility Model

To test the development feasibility of the residential typologies developed a Residual Land Value model has been prepared. The model assesses a site's development potential, in simple terms, by comparing the likely costs of development (including addressing issues of resilience) with the potential resale value. From this, the residual land value (the value a developer would pay to acquire the land) is derived to test feasibility.

Establishing the cost assumptions

The construction costs used in the model are based upon current capital city rates for apartment buildings between 1 and 12 levels (AECOM, 2022). The other development cost assumptions are detailed in the market assessment (Appendix A) and where applied to the sites analysed based upon the bulk and location analysis, a risk assessment of ground conditions and flooding. The two key contingency allowances associated with the options analysis included seismic resilience assumption and a development cost contingency. Land costs were estimated based upon the notional sites selected in these locations and ranged between 730m² and 1,200m².

In addition to the market assessment assumptions and unless stated above, the following assumptions inform the feasibility analysis:

- No consenting risk
- Reference to Christchurch liquefaction information liquefaction damage
- Reference to Christchurch liquefaction information Vulnerability to Liquefaction
- Christchurch City Council District Plan Natural Hazards
- City Fringe and Outer Centre price points are discounted at 5% cumulatively from the analysed Central City price points
- Car parking at \$50,000 per space in addition to purchase of apartment in Central City and City Fringe.

Establishing the revenue assumptions

The price points for apartments used to inform the model, are associated with premium, market and affordable apartments. The market assessment has shown that apartments are generally not well represented in Christchurch and this is compounded by limited sales evidence to inform the feasibility analysis. Market and premium sales rates were established through blended rates between the limited Christchurch evidence and additional comparable sales and rents from other large towns and cities. The affordable sales rates are calculated at approximately 85% of market value for comparative purposes.

Limitations and Assumptions

Due to the time constraints for this analysis, a high level approach to the assessment has been undertaken. This has included typology testing and feasibility assessment on a range of typical sites to establish key assumptions that could be applied across the city rather than an in depth analysis of each different centre.



To provide a more detailed assessment of feasibility it is recommended that further sensitivity analysis is undertaken. This should include testing of additional sites across each centre and more detail review of land values based on the upcoming updates to the rating base. This would give a more accurate range of parameters for the model.



5. Built Form Outcomes – Design Feasibility

To provide the inputs in the development feasibility analysis the potential built form outcomes that could result from the draft provisions on three different sites sizes was analysed (site sizes were selected to represent potential development opportunities, refer to Section 4).

On each lot size, three different heights (4, 6 and 10 stories) were tested to reflect the different rules that apply as the increase in heights are allowed for. The outcomes of the design analysis are summarised below with more detail provided in Appendix 3.

Site type 1 – MEDIUM lot size (731m²)



Built Form Outcomes

Yield: 19 units

FIGURE 7: SCENARIO 2: 6 STOREYS



Built From Outcomes

Yield: 23 units



FIGURE 8: SCENARIO 2: 10 STOREYS

Built From Outcomes

Yield: 40 units



The design outcomes demonstrate that on a medium site size of 750 sqm, all heights can be achieved. The site selected demonstrates how, on a corner site, the development can achieve a greater yield with 3 m set backs at the road boundary allowing floor a larger floor pate. As the building increases on height it is considered that the corner site provides a more viable development outcome.

Site type 2A - LARGE lot size (1,200m2) - narrow lot (21.1m)





FIGURE 9: SCENARIO 1: 4 STOREYS

FIGURE 10: SCENARIO 2: 10 STOREYS



FIGURE 11: SCENARIO 1: 4 STOREYS



Built From Outcomes

Yield: 24 units





Built From Outcomes

Yield: 35 units

FIGURE 13: SCENARIO 2: 10 STOREYS



Built From Outcomes

Yield: 62 units



The design analysis demonstrates that all height scenarios (4 storeys, 6 storeys, and 10 storeys) can be achieved on larger sites of approximately 1,2000m². Whilst a narrow lot, with a street edge width of 21.1 metres (which is typical of the development lots within the city centre precinct) can accommodate a 10 storey building the resulting built from is a narrow tower typology which is difficult to achieve an efficient apartment layout within (refer to Figure 9 and 10.

Initial feasibility assessment indicated that the yields achieved on a narrow lot would not be sufficient to justify the cost of construction. A more likely scenario for a larger scale building would be the amalgamation of several parcels to create a larger development site. Therefore the scenario tested represents a possible site amalgamation to achieve the greater site width (26 metres).



Site type 3 - SMALL lot size (450²)

FIGURE 15: SCENARIO 2: 6 STOREYS



Built From Outcomes

Yield: 14 units

The typical small lot size is able to accommodate scenario of 6 to 10 storeys when the setback requirements are applied at the upper stories however only a small tower is achievable. The yield only increases five when the height is increased from 4 to 6 storeys but the costs of construction increase significantly due to the requirement of a lift.


Design Feasibility Analysis

The medium lot size on a corner site and the large lot size with a minimum frontage width of 26 metres were able to achieve a feasible design when tested at 4, 6 and 10 storeys. The small lot size was able to achieve developments of 4 storeys and 6 storeys, with a possibility of increasing to 10 storeys with a small tower however this is considered an unlikely outcome.

The analysis shows that size and shape and aspect of lots has a considerable impact on the ability to create feasible developments. Challenges to achieving heights of 6 storeys and above were identified for all three typical lot size scenarios tested. Commentary on the design testing conclusions is summarised below:

- Long, narrow sites are typical in the centre catchments. Height in relation to boundary standards and the setback requirements above 4 storeys restrict height on these sites. Amalgamation of sites to create sites with a wider street frontage may be required to achieve greater height on these lots.
- Corner sites allow for greater floor plates as built form can be more generous on street frontage, there should be consideration of how development can be encouraged in these locations.
- Geometry of smaller sites may be more suitable for townhouse or three storey walk-up typologies due to the height limitations create by height in relation to boundary setback requirements.
- Upper floor setbacks may have development cost implications as they reduce the yield and potentially create increases in cost.
- Accommodating car parking poses a number of risk and opportunities:
 - Car parking has been provided in scenario tested to reflect a likely outcome that is delivered to meet market demand.
 - Under croft car parking at ground level reduces the flood risk and need to apply freeboard levels as there is no residential uses at ground floor level.
 - At grade and under croft car parking adjacent to public areas can led to poor street front activation.
 - At grade car parking external to the building can be an inefficient use of the site.
 - The use of pervious driveway and parking surfaces can increase car parking options and ensure development meets 70% impervious controls.



6. Development Feasibility Analysis

The development feasibility of the scenarios prepared were then tested against a range of current land values and estimated price points² achievable across different locations to reflect the distance of the site from the city centre. This approach was undertaken to enable a high level assessment of how the viability of high density development may differ across the different centre types based on their proximity to the city centre.

As noted in Section 5, whilst further sensitivity testing and detailed analysis would be required to assess how each individual centre performs, the high level analysis provides a useful indication of how viable high density development is currently under the proposed controls and the likely conditions required to improve feasibility.

The tables below provide a summary of the feasibility results across the different heights at different locations. More detailed summary of the results is provided in Appendix 4.

	Premium	Market	Affordable
4-levels	-13.31%%	-12.77%	-25.16%
6-levels	-6.22%	-5.12%	-12.90%
10-levels	1.14%	2.40%	-5.50%

City Centre Location (City Centre HRZ)

TABLE 3: CITY CENTRE LOCATION ECONOMIC FEASIBILITY SUMMARY

As shown in Table 3 above, the City Centre location was able to achieve greatest profitability under the 10-storey scenario using a market price point, which achieves 2.4% profitability. This falls significantly short of the industry rule of thumb of 20% profitability required for a development to be considered feasible.

² As noted in Section 5, due to the current limited evidence of high density sales in Christchurch the price points used in the analysis for residential apartments were drawn from an analysis of other comparable markets.



Despite the limited feasibility identified, the results do demonstrate that the feasibility does increase as heights are increased and greater yields are achievable. Based on work completed by TPG in other areas within in New Zealand it is estimated that heights allowable would need to increase to between 18-32 stories to begin to achieve a viable development (note this would require further testing to confirm).

It is also important to note that these results are based on the estimated current market values and high risks around the increasing construction costs and market instability. Into the future, as the Christchurch residential market changes and the construction sector stabilises the viability of high density residential development at 10-12 stories may improve. The price points achievable would need to increase similar to those achieved in the Wellington market alongside high levels of amenity provided for inner city residents.

	Premium	Market	Affordable
4-levels	9.09%	9.46%	1.39%
6-levels	12.55%	9.58%	1.51%
10-levels	14.99%	11.63%	3.67%

City Fringe Location (City Centre HRZ Precinct)

TABLE 4: CITY FRINGE LOCATION ECONOMIC FEASIBILITY SUMMARY

The City Fringe location under a 10-storey scenario at a premium price point achieves 14.99% profitability. This is the best profitability achieved across all design scenarios in each of the three locations tested. The 6-storey scenario at a premium price followed at 12.55% profitability. This is not achieving the 20% profitability required, however further design, definition and risk mitigation may pass on development cost savings that could improve overall profitability and potential achieve feasibility.

The difference between this location and the city centre location reflects the impact the lower land values has on enhancing the feasibility of development at the 6-10 storey height limit.

Outer Centre location (Local Centre)

	Premium	Market	Affordable
4-levels	-15.46%	-14.79%	-22.98%
6-levels	-7.54%	-6.21%	-14.55%

TABLE 5: OUTER CENTRE LOCATION ECONOMIC FEASIBILITY SUMMARY



None of the Outer Centre location scenarios tested achieved profitability with the best outcome being -6.21% profit under the 6-storey scenario at a market price point. A 10-storey scenario was not tested in the Outer Centre location as market demand for this type of unit is considered to be due to the reduced proximity, amenity, and connectivity offer which can be better achieved in more central locations.

Study findings

The analysis shows that across all options, under current market conditions that development of high density residential development (apartment buildings above 3 storeys) is challenging. This is evident by the lack of profitability equal to or above 20% return on investment. The reasons for these results are generally due to the revenues generated by these options are not high enough for the locations to address the high development (including land) costs and the risks associated with the development to achieve a developers profit.

The analysis shows a very challenging environment for residential apartments between 4 and 10 storeys. Profitability does improve as the scale of the building and associated gross floor area increase, albeit falling well short of the 20% profitability target.

- All 4-level development scenarios across the three locations are not profitable. Poor profitability was consistently associated with affordable apartments ranging between -25% (loss) in the City Centre, -23% in the Outer Centres and +1.4% profit in the City Fringe. Premium and Market apartments followed this trend however the City Fringe location performed better under the market conditions at 9.6%
- All 6-level development scenarios across the three locations are not profitable. Poor profitability was consistently associated with affordable apartments ranging between -14.6% (loss) in the Outer Centre, -12.9% in the Central City and +1.9% profit in the City Fringe. Premium and Market apartments similarly followed this trend however the City Fringe location performed better under the premium conditions at +12.6% profitability
- All 10-level development scenarios across the three locations are not profitable. Poor profitability was consistently associated with affordable apartments ranging between -5.5% (loss) in the Central City compared to +3.7% profit in the City Fringe. Premium and Market apartments similarly followed this trend however the City Fringe location performed better under the premium conditions at +14.9% profitability
- The 731m² site in the City Fringe performed better than the Central City and Outer Centre locations that where based upon a 1,200m² notional site.

Further design, definition and risk mitigation may pass on development cost savings that improve the profitability for all height options, in particular, for new premium and market apartment buildings at 10 levels.

The above analysis needs to be balanced against other housing typologies that could be viable on this site and based upon the relationship of profit and risk and outside the scope of this project, for example medium density housing. This approach provides only a starting point to determine viability of a new housing typology entrant that Council is seeking to encourage through its District Plan.



6. Conclusions

The analysis shows that across all development scenarios, under current market conditions, development of high density residential development in Christchurch is challenging. It is made even more challenging by the fact that currently the feasibility of lower scale, medium density development is high and people are able to purchase a larger medium density unit for much less than an apartment would need to sell for in the same location.

The analysis does demonstrate that the city centre (area zoned High Density Residential), and its directly surrounding area (the City centre HRZ Precinct), has some potential for supporting high density residential development into the future. Whilst the results demonstrate that the feasibility in the city centre does increase as heights are increased and greater yields are achievable, based on work completed by TPG in other areas within in New Zealand it is estimated that heights allowable would need to increase significantly (for example up to 32 stories) in the city centre to begin to achieve a viable development currently.

It is important to note that these results are based on the estimated current market values and high risks around the increasing construction costs and market instability. Into the future, as the Christchurch residential market changes and the construction sector stabilises the viability of high density residential development at 10-12 stories may improve. The price points achievable would need to increase similar to those achieved in the Wellington market alongside high levels of amenity provided for inner city residents.

Based on this analysis it is considered unlikely that high density residential development (4 stories and above) within the cities local centres or metropolitan centres will be feasible without a significant shift in the market or significant government intervention. For example, the potential increase in land values that may result from investment in infrastructure such as MRT in these areas.

Recommended further analysis

It is recommended to further understand how high density residential development can be supported in the city centre locations further design analysis and identification of risk mitigation measures that may pass on development cost savings be explored. This could include:

Testing the impact of minimum apartment sizes

To achieve high density it needs to be desirable above other housing typologies that could be viable on the site and based upon the relationship of profit and risk and outside the scope of this project, for example medium density housing. Residential dwelling sizes are larger in general in the Christchurch market and a high density dwelling will need to achieve a unit size comparable to a medium density dwelling to be desirable within the market. Apartment sizes should be explored to understand whether these could be used as a lever for feasibility if they were more comparable to medium density options.

Re-focusing the HRZ in areas of high amenity

The centre and precincts classifications within which the HRZ standards have been applied are linked to the level of services and amenities within the centre. The larger and more diverse centres are in turn associated with those locations where high density development



will be supported, as high density demand is linked to good proximity, amenity, and connectivity conditions. To achieve development feasibility there needs to be a focus on those locations where proximity, amenity, and connectivity conditions are at a premium.

Further testing of the impact of size and shape of lots to inform planning provisions

The design feasibility analysis identified that the size and shape of lots has a considerable impact on the ability to achieve the height enabled within the HRZ and associated precincts.

- Heights: Ten storey residential typologies could be achieved within the HRZ standards on the medium and larger lot sizes tested. Exploring further height of greater than 10 storey may determine a height that will achieve development feasibility. The market conditions, however may not support greater height in suburban centre locations.
- The geometry of smaller sites may be more suitable for townhouse or three storey walk-up typologies due to the height limitations created by height in relation to boundary setback requirements.
- Corner sites: Corner sites allow for greater height, particularly on the medium sized sites, as built form can be more generous on street frontage. Further testing and analysis of how development can be encouraged in on corner sites should be undertaken.
- Site amalgamations: Long, narrow sites are typical in the centre catchments. The large site originally selected for testing had a width of 21.1 metres, however the height in relation to boundary and setbacks standards under the HRZ significantly restricted the ability to achieve height above a four storey, and particularly a six storey, scenario on the site. While a 10 storey building is technically feasible on a 21 metre site, the design reality makes it unlikely. A minimum width of 26 metres is more realistic to achieve a ten storey development scenario. Amalgamation of sites to create sites with a wider street frontage may be required to achieve greater height on these lots.



Appendix 1: Market Assessment

High Density Residential Feasibility Assessment - Market Assessment Christchurch City Council

May 2022

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Executive Summary

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake a feasibility assessment of residential development in areas identified as the high-density residential zone in Christchurch City as part of Plan Change 14.

This market assessment has been prepared to provide a basis from which the revenue assumptions for the feasibility analysis can be determined, and to identify trends in demand for high density residential development into the future.

To establish revenue assumptions for apartments, this assessment provides an overview of the current residential market across Christchurch City and provides a review of what this could mean for high density residential development. As there is currently limited evidence of high density development in Christchurch a review of other centres across New Zealand has also been undertaken alongside the review of the Christchurch residential market.

The key findings of the market assessment and analysis include:

• Strong district residential growth and increasing demand

The population of Christchurch City is projected to grow under a medium growth scenario, from 392,100 people in 2021 to 417,000 people in 2028 reflecting an increase of 6.4%, with further projected growth to 453,800 people in 2038. The number of dwellings in the city is also projected to increase from 148,000 in 2018 to over 161,100 by 2028, and 176,400 by 2043 to account for population growth.

• Currently there is limited supply of high-density residential typologies

There is currently limited availability of apartments, townhouses, or smaller dwelling types across Christchurch compared to similarly sized New Zealand cities. This suggests that there is currently an area of unmet demand for diversity of the housing stock including smaller dwelling typologies to accommodate, smaller household sizes and affordable price points.

• Strong value growth and demand

In recent years, the Christchurch property market has experienced significant activity with strong demand across all value ranges which has resulted in a reduction in supply. The latest statistics released by Quotable Value indicate that Christchurch had the largest rise in average sale price across New Zealand, up 40.2% over 2021. Property listings in the region have been far less constrained than most other parts of the country for an extended period, with investors now attracted to Christchurch where prices are significantly more affordable than in Auckland and Wellington and much better yields are achievable.

• Decreasing housing affordability

Christchurch city is currently considered more affordable than all other main centres in New Zealand. After many years of slow value growth following the Christchurch rebuild, value growth in Christchurch has picked up considerably, with the housing affordability index despite still being much lower than other main centres, now following a similar downward trend.



1. Introduction

The Property Group Limited (TPG) has been engaged by Christchurch City Council (Council) to undertake a feasibility assessment of high-density residential development (apartment buildings 4 storeys and above) in areas identified as the high-density residential zone in Christchurch City as part of Plan Change 14. Plan Change 14 has been prepared to give effect to the requirements of the National Policy Statement on Urban Development (NPSUD) and the implications of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill and the new Medium Density Residential Standards (MDRS).

To support the development of the feasibility assessment, this market assessment has been prepared to establish a basis from which the revenue assumptions for the feasibility analysis can be determined. This includes both an understanding of the current residential market trends as well as anticipated levels of growth and demand for housing.

Scope of the Market Assessment

The market assessment aims to provide an understanding of the current market for residential development in areas identified as the high-density residential zone in Christchurch City as part of Plan Change 14. It also provides some indication of how this may change into the future based on future directions for growth and demand for housing.

The objectives of the market assessment include the following:

- Review and quantify the current residential supply across the City's catchments
- Identify the potential pipeline of residential development and likely demand
- Establish indicative development costs for residential development in Christchurch.

Report Structure

Following this introduction, this report provides an overview of the results of the assessment in the following sections.

- Section 2, Population Growth and Demand: provides a high-level overview of the population projections for Christchurch City to identify potential future residential demand for high-density
- Section 3, Residential Market Assessment: analyses trends in the residential market to establish current and future demand for this sector
- Section 4, Development Costs Assessment: provides a review of development costs including construction costs and other direct costs and assumptions.



2. Population Growth and Demand

The following section of this report provides a high-level overview of the population projections for Christchurch City to identify potential future residential demand.

Population Trends

In order to establish potential residential demand, it is important to consider population trends. The greater Christchurch area has experienced significant population change following the Canterbury earthquakes in September 2010 and February 2011. The population of Christchurch City fell in 2011 and 2012 by 18,000 people, mainly due to people moving to adjacent greater Christchurch areas (such as Selwyn and Waimakariri districts). Christchurch City's population took several years to re-bound, to surpass the 2010 population of 376,000 people. (Canterbury District Health Board, 2022). The inner-city residential population took much longer to recover, with population levels only recently surpassing the pre-earthquake population of approximately 8000 people.

The estimated resident population as 30 June 2013 and 2018 for Christchurch City is noted in Table 1 below in comparison to the Canterbury Region and New Zealand together with projections for 2023. Between the Census years of 2013 and 2018, the population of Christchurch City increased 42,331 persons or 12.4%, to reach 383,800. The estimated resident population of Christchurch City in 2021 is 392,100 people. This reflects a further increase of 8,300 persons (+2.1%) over the three-year period between 2018 and 2021 (Statistics NZ, 2021). This represents steady population growth, with some signs of growth slowing.

	2013	2018	2023 projection
Christchurch City	341,469	383,800	402,400
Population Change		+ 42,331	+ 18,600
% Increase		+ 12.4%	+ 4.8%
Canterbury Region	539,533	622,800	661,300
Population Change		+ 83,267	+ 38,500
% Increase		+15.4%	+ 6.2%
New Zealand	4,242,048	4,900,600	5,222,400
Population Change		+ 658,552	+ 321,800
% increase		+15.5%	+ 6.6%

TABLE 1: POPULATION STATISTICS AND PROJECTIONS (SOURCE: STATISTICS NZ)

Population and Household Projections

Table 2 shows the Statistics New Zealand population and household forecasts in Christchurch City from2018 through to 2048 under a medium growth scenario. The period 2018



to 2033, as the short to medium term, is likely to be the most accurate and useful forecast information for immediate planning purposes.

Estimated population forecasts indicate a projected resident population of 430,600 by 2033 and an increase of 79,700 persons from 2018 to 2048, representing an estimated growth of 20.7%. The associated number of dwellings in the city is projected to increase from 148,000 in 2018 to over 167,200 by 2033, and 172,400 by 2038 to accommodate this population growth. This suggests there will be strong demand for housing over the coming decades.

	Forecast year						
Summary	2018	2023	2028	2033	2038	2043	2048
Population Forecast	383,800	402,400	417,000	430,600	453,800	453,800	463,500
Population Change	-	+ 18,600	+14,600	+13,600	+12,200	+11,000	+9,700
% Increase	-	4.8%	3.6%	3.3%	2.8%	2.5%	2.1%
Household Forecast (Medium growth scenario)	148,000	155,000	161,100	167,200	172,400	176,400	*

TABLE 2: POPULATION AND HOUSEHOLD FORECASTS FOR CHRISTCHURCH CITY 2018 - 2048 (SOURCE: STATISTICS NZ)

Household size

It is also important to explore the relationship between population and average household size, as if the average household size is falling, then there will need to be growth in the number of households (and dwellings for people to live in) to maintain or grow the population. In addition, a reduction in household size may increase the demand for smaller dwelling typologies.

The average household size was estimated to be 2.54 in 2021 and is projected to decreased to 2.45 by 2051, the declining rate reflects the changing demographics of older households and changing family structures (Greater Christchurch, 2021).

This changing demographic is reflected in table 3 below, with demand for all housing types projected to increase over the period 2018-2018.

Household Type	Forecast year						Overall % change
	2018	2023	2028	2033	2038	2043	
Family	101,100	108,100	113,500	119,000	123,700	127,700	26.3%
% Year total	68%	70%	70%	71%	72%	72%	



Other multi-person	10,400	9,800	9,800	9,800	9,700	9,600	7.7%
% Year total	28%	26%	26%	26%	25%	25%	
One person	36,500	37,100	37,800	38,400	38,900	39,100	7.1%
% Year total	25%	24%	23%	23%	23%	22%	
Total	148,000	155,000	161,100	167,200	172,400	176,400	19.2%

TABLE 3: HOUSEHOLD TYPE FORECASTS FOR CHRISTCHURCH CITY 2018-2048 (SOURCE: STATISTICS NZ)

Population Distribution

Whilst the Statistics New Zealand's population and household forecasts (SA2) are a useful baseline for understanding where population growth in Christchurch will occur, these do not take account of the medium density enabled through the new planning framework, development feasibility, or exhaustion of greenfield capacity in particular areas.

To provide a more accurate understanding of population densities into the future, Christchurch City Council is in the process of manually adjusting their growth model to reflect these additional considerations. The adjusted model is currently showing flattened demand across the city, with a much smaller emphasis on intensification in and around the city centre (see Figure 1).



FIGURE 1: CURRENT POPULATION DISTRIBUTION TO 30YR PICTURE UNDER THE ADJUSTED GROWTH MODEL

The adjusted model also depicts a greenfield/infill ratio of 23%/77%. This proportion of infill development is much greater than Councils previous aim of a 40%/60% greenfield/infill ratio. This suggests demand may need to be met through a larger degree of intensification and infill than initially thought (77% vs 60%).



3. Residential Market Assessment

General Market Commentary

To identify recent and potential pricing trends for residential property in Christchurch City we have commented on general market trends over recent years and completed analysis of recent residential sales and rentals across the various catchments.

Following the emergence of the COVID-19 pandemic in late 2019 the New Zealand economy has recovered better than anticipated, and generally on a more national level the residential property sector has remained strong. During the period of 2015 to 2018, Christchurch City experienced a decline in the residential property market, followed by a period of relatively subdued but steady growth through to the end of 2019. This trend was unique in comparison to most of New Zealand, which was experiencing strong growth. Factors influencing the property market decline in Christchurch over this period included:

- Fast tracking of planning and consenting requirements, therefore accelerating development and supply of housing.
- Low population growth in the immediate years following the earthquakes.
- Increased construction associated with the 2011 earthquake rebuild and an influx of migrant construction workers required for the rebuild.
- Rapid growth in surrounding Selwyn and Waimakariri Districts with flat land which is relatively more efficient in term so cost and time to develop.

Post COVID-19 the Christchurch property market has experienced significant activity with strong demand across all value ranges which has resulted in a reduction in supply. The latest statistics released by Quotable Value indicate that Christchurch had an average sale price increase over the last 12 months of 28.4%, although prices are slowing with an increase of 0.9% over the 3-month period ending April 2022.

Following a strong year of growth over 2021, market confidence has decreased over recent months resulting in a decrease in the value of sales in the Christchurch market. A shift in market sentiment has resulted in buyers becoming more selective. Lending restrictions, rising interest rates, and shortage of labour and materials are having a major impact on all parts of the transaction.

Over recent years the apartment market has not experienced the same level of demand as other housing sectors in Christchurch. The slower uptake on apartment style living has been due to the competition from the inner suburb infill homes, like in St Albans, Riccarton and Merivale and the fact that apartments have not historically been a common housing option in Christchurch. However, more recently due to greater supply and a vibrant and established central city, apartment living has become a more attractive lifestyle option.

Recent land sales have decreased from rates of \$1,000 per square metre in the latter half of 2021 to \$700-\$800 per square metre illustrating a drop of value of up to 30% over recent months. Due to the current market climate, developers are focusing on selling current housing stock and only looking to commence new projects if they can secure land at a low enough rate to make development feasible.



Summarised below are sales statistics relating to Median Sale Price for Christchurch City in comparison to New Zealand as a whole. The figures reflect the slower value growth Christchurch City when compared to national indicators during the period 2015 to 2018, with increased market activity and value appreciation during 2021 and 2022.

Regional								
	Apr-22	Apr-21	Apr-20	Apr-19	Apr-18	Apr-17	Apr-16	
Christchurch City								
Median Sale Price	761,356	594,577	516,677	498,105	491,908	495,855	488,943	
Annual Increase	28.1%	15.1%	3.7%	1.3%	-0.8%	1.4%	-	
Overall increase - A	pril 2016 to A	April 2022			55.7%			
			National					
	Apr-22	Apr-21	Apr-20	Apr-19	Apr-18	Apr-17	Apr-16	
New Zealand								
Median Sale Price	1,035,216	871,375	735,979	686,975	668,875	645,946	572,969	
Annual Increase	18.8%	18.4%	7.1%	2.7%	3.5%	12.7%	-	
Overall Increase – April 2016 to April 2022 80.7%								

TABLE 4: MEDIAN SALE PRICE, ANNUAL INCREASE CHRISTCHURCH AND NZ (SOURCE REINZ)

Summary of Sales Statistics and Analysis

City wide residential sales

The Christchurch residential market is mostly made up of standalone homes and new medium density development. In the last three months (February-April 2022), 1200 standalone homes were sold in Central Christchurch, compared to 354 flats/townhouses and just 54 apartments.

Apartment sales

Table 8 below provides a summary of average sale prices for 1-, 2- and 3-bedroom apartments across central city, fringe and outer suburbs in New Zealand's main centres. The number of apartment sales in Christchurch City is relatively low in comparison to the other centres. The majority of apartment sales occurring are in the City Centre, followed by a small number in Linwood and St Albans.

Sale Price Per Square Metre – Apartment Sales



	Auckland	Hamilton	Mount Manganui	Wellington	Christchurch
Central					
1 Bedroom	\$11,873	\$9,091	\$12,237	\$13,389	\$8,380
2 Bedroom	\$14,337	\$8 <i>,</i> 323	\$10,129	\$11,412	\$8 <i>,</i> 474
3 Bedroom	\$14,210	\$9 <i>,</i> 998	\$10,159	\$13,066	\$7,967
Fringe					
1 Bedroom	\$14,346	-	-	\$11,323	-
2 Bedroom	\$14,270	-	-	\$12,654	-
3 Bedroom	\$14,463	-	-	\$11,101	-
Outer					
1 Bedroom	\$12,608	-	-	-	-
2 Bedroom	\$11,846	-	-	-	-
3 Bedroom	\$11,722	-	-	-	-

TABLE 5: APARTMENT SALES RATES PER SQUARE METRE BY CITY (PROPERTY - GURU JUNE 2021 - MAY 2022)

Residential Rentals

An overview of the median and upper price points for rentals are shown in Table 6 below. The data is categorised by dwelling type, including apartments, flats and houses.



Suburb			Apartment				Flat				Houses													
	All Typologies		1 E	Bed	2 E	Bed	3 B	ed	1 E	Bed	2 E	Bed	3 E	3ed	1 B	led	2 E	Bed	3 B	ed	4 E	3ed	5+	Bed
	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper	Median	Upper
Barrington	No Data																							
Belfast	510	550															390	420	520	550	600	600		
Bishopdale	498	544															420	450	500	540	550	585	635	684
Church Corner	No Data																							
City Centre	425	495	390	420	465	500	530	565	300	400	360	437			400	420	475	500	535	600	588	643	788	920
Hornby	450	490															400	435	473	491	605	645		
Linwood	350	430	335	360	355	389			290	308	340	360			295	300	400	485	460	500	500	550		
Merivale	478	550	405	439	455	508											465	523	563	620	900	963		
North Halswell	570	620																	533	560	620	650	710	743
Papanui	480	553															425	450	525	555	635	650		
Prestons	No Data																							
Riccarton	465	600			430	463	480	550	350	390	400	430	430	463	420	443	440	480	490	550	570	630	760	930
Shirley	465	500															443	483	470	500				
Sydenham	435	470	395	395	370	420			300	318	350	401			360	388	440	460	480	510	550	575		

(TENANCY SERVICES, OCTOBER - MARCH 2022)

TABLE 5: MEDIAN RENTAL BY SUBURB FOR CHRISTCHURCH CITY SUBURBS (TENANCY SERVICES 1 OCT 2021 – 31 MAR 2022)

Building Consents

Table 11, below shows the history of new residential building consents since 2017. The number of residential building consents dropped each year from 2017-2019, which reflects the normalising of residential construction post the Christchurch rebuild. The number of new dwelling consents have increased year-on-year from 2019 to 2022.

Number of new dwellings consented									
Year ended January	2017	2018	2019	2020	2021	2022			
Christchurch City	3,237	2,498	2,327	2,805	2,974	4,038			
Annual change		-739	-171	478	169	1,064			
% Change over 5 years						22.0%			
New Zealand	30,123	31,251	33,576	37,695	39,881	48,707			
Annual Change		1,128	2,055	4,119	2,186	8,826			
% Change over 5 years						47.1%			

TABLE 6: RESIDENTIAL BUILDING CONSENTS SINCE 2015, CHRISTCHURCH AND NATIONALLY (SOURCE STATISTICS NZ)

The number of new dwelling building consents issued in Christchurch City has increased over the fiveyear period from January 2017 to January 2022 from 3,237 to 4,038 (807) reflecting a 22% increase over this time. This compares a national increase of 47.1% increase over the same five-year period.

Christchurch experienced a decrease in new dwelling consents between 2017 - 2019 however since January 2019, there has been a marked increase in the number of residential building consents reflecting the increased demand for new residential development and the strength of the residential property market over this period.

Medium density development has been the main focus of the Christchurch construction market over recent years with steady demand for townhouses and fewer recent apartment building developments in the city. Of the new resource consents issued since 2018, 38% have been for medium density housing.

Housing Affordability

The housing affordability index is the ratio of the average current house value to average annual earnings. A higher ratio, therefore, suggests that average houses cost a greater multiple of typical incomes, which indicates lower housing affordability (i.e. a lower index is more affordable).

Property value appreciation has become a more prominent issue affecting housing affordability and has been influenced by a range of factors including more widely accessible credit, historically low interest rates, high net migration and population growth with insufficient housing supply, increasing construction costs and high demand to live close to major centres. At the same time as there has been consistent appreciation in property values, household incomes have generally risen at lower rates. (CorelogicNZ)

Figure 2 below outlines the Housing Affordability Index for Christchurch in comparison to other main centres around New Zealand, along with the share of income for repayments, years to save deposit and rent to income ratio.

	Valu Incom	ue to le ratio	Share o for repo	f income ayments	Yea save c	rs to Ieposit	Rer incom	nt to ne ratio
Main centre	Latest (Q4 2021)	Average (2004-21)						
Auckland	10.1	7.0	55%	44%	13.5	9.4	21%	22%
Hamilton	8.6	5.2	47%	32%	11.5	7.0	22%	20%
Tauranga	11.9	7.9	65%	50%	15.8	10.5	30%	27%
Wellington	8.3	5.3	45%	33%	11.0	7.0	19%	18%
Christchurch	6.9	5.1	37%	32%	9.1	6.8	20%	20%
Dunedin	9.1	5.5	49%	35%	12.1	7.4	26%	23%
NZ	8.8	5.9	48%	37%	11.7	7.9	22%	21%

FIGURE 2: HOUSING AFFORDABILITY COMPARISON OF CHRISTCHURCH WITH OTHER MAIN CENTRES (SOURCE: CORELOGIC Q4 2021 HOUSING AFFORDABILITY REPORT)

The Christchurch housing affordability index was 6.9 in Q4 2021 up from 5.2 the previous year, this compares with the national average which reached a record high of 8.8 in Q4 2021 up from 6.8 the previous year. Whilst Christchurch appears to be following the national trend as a result of house price appreciation, the Christchurch affordability index is still much lower than all main centres across New Zealand.



Risk assessment

The long-term effects of COVID-19 pandemic over the past 24 months are still unknown. In the short term the pandemic appears to have been a factor in supporting residential sale price growth in Christchurch. We are now seeing the market starting to soften due to the volatility in the market from COVID-19. Interest rates are increasing, supply chains remain highly constrained, high price escalation and inflation are all having a negative impact. The long-term consequences of these factors are unknown and therefore it is hard to predict how long the downturn will last.

There are several risk factors which are currently placing pressure on the residential property market, these include:

- High Density Residential Development Apartments are a relatively new housing typology in Christchurch and therefore there is not a significant amount of data on this market to draw on. Further marketaibility analysis is required to understand the demand for and perception around this typology.
- Government Policy and Interest Rates House prices have continued to increase despite changes in Government tax policies focused on residential property investments, the tightening of bank loan to value ratios and falling population growth rates. The outlook is still tempered by the prospect of rising mortgage interest rates and the introduction of debt-to-income ratio restrictions on bank lending. Short term interest rates have increased since July 2021, as the Reserve Bank has started tightening its monetary policy settings. Market expectations are for higher interest rates to come, which in turn will limit homeowners buying power.
- Inflation Inflation is currently 4.9% however new data to be provided in late January is expected to show a rate close to 6%. Uncertainty regarding the track for inflation is very high and strong price rises may begin to alter people's spending patterns.
- Construction Costs On an annual basis, construction costs rose from 4.5% in Q2 2021 to 5.5% in Q3, the fastest rate of growth since the first quarter of 2018. The data shows that timber prices, particularly structural timber and cladding, have been a key contributor to overall cost increases. Metal costs and products have also been a factor in the increases. Looking ahead, it seems likely that the construction industry will remain strong for some time, with investors strongly incentivised to buy new-builds, due to their exemption from the loan to value ratio rules and ability to claim mortgage interest as a deductible expense for the first 20 years of the property's life (CoreLogic, Q3 2021).
- Construction supply shortages the COVID-19 pandemic and resultant global supply chain issues is
 exacerbating shortages of construction materials and delaying project completion. The construction
 sector is experiencing increased holding costs as a result, and an inability to deliver on time and to
 budget.
- Housing Affordability The housing affordability index has stepped up since 2016. The Index Value has increased from a figure of just under 5 to just under 6, meaning housing is now less affordable than 2016. This follows the general trend in New Zealand with house prices growing faster than incomes.



4. Development Costs Assessment

Introduction

The purpose of the development cost review and the rates noted below is to identify indicative construction costs within the Christchurch market to inform the preliminary financial feasibility and modelling of the development options. The cost information is based on the market sectors identified by TPG and as generally commented on in this report. The costs below are broad and based on generic assumptions of the site and proposed buildings. They assume a median build quality and average floor sizes. They will require refinement as the build options are further defined. Any site-specific conditions, including those that may onerously affect the due diligence, method of construction or materials will need to be assessed with the feasibility studies and included in addition to the below as the individual projects are defined and assessed.

It should be noted development costs, and particularly construction costs, are currently volatile while consequences of the COVID-19 pandemic a felt throughout the market. The below indicative costs are based on current development estimates as of early 2021, however, these estimates are themselves heavily caveated and subject to update, availability of materials and cost updates at the time of instruction. They will likely be influenced by pre COVID-19 prices and therefore a degree of cost escalation needs to be considered. Further comment is included in the Cost Escalation section below.

Construction Costs

Once the project is further defined including detail around occupier use, building type, floor areas, number of levels, location, access etc are available, a refined build cost will be provided for the feasibility studies which will incorporate site-specific issues. The following rates are indicative and for guidance only. They are build rates for construction above ground on a gross floor area basis. Rates are exclusive of the following:

- Goods and Services Tax
- Professional fees
- Legal costs
- Council development costs (contributions)
- Remediation, earthworks, and site infrastructure costs
- Removal of contaminated materials, including in demolition and earthworks
- Resource consent fees
- Service connections
- Car parking
- Resource consent fees
- Finance costs
- Land purchase
- Developers Profit
- Land purchase
- The following development cost assumptions were sourced from TPG's market intelligence.



TABLE 7: CONSTRUCTION COSTS (TPG INTERNAL DATABASE)

Construction Costs	Cost (\$ plus GST, if any)
Residential	
Low density/rise	\$4,800 - \$6,700 psm
Medium density/rise	\$4,900 - \$6,800 psm
High density/rise	\$5,000 - \$7,000 psm
Carparking - Central CBD only	
Open Area Parking	\$120 - \$200 psm
Covered and Multi-level	\$740 - \$900 psm
Seismic Resilience	Base Isolation 12-36 % of construction costs
Open Space	
Soft	\$100 psm
Hard	\$400 psm
Demolition Costs	
Light duty – heavy duty	\$100 - \$250 psm
Site Establishment	\$300/sqm (civils and services)

TABLE 8: ADDITIONAL FEES AND COSTS (TPG INTERNAL DATABASE)

Fees and Additional Costs	Cost (\$ plus GST, if any)
Professional Fees	10-15%
Goods and Services Tax	15%
Council fees (subdivision and building)	\$5,000 - \$8,000 per dwelling
Legal Fees	\$2,000 per dwelling
Marketing Costs	2.5% of gross sales
Survey and Title	\$5,000 per unit
Project Contingency	10 – 20 %
Development Contributions	Refer Below
Interest Rate	7.0%
Cost Escalation	8.0%



Site establishment

Site establishment is not included within the above. The cost is site specific and will vary dependent on a number of factors including location, accessibility and surroundings.

Town Centre, brownfield or reclamations will incur additional site establishment costs than a greenfield site. Locations within a Town Centre location with restricted access, storage, site accommodation and the like will incur additional costs; this is likely to be in the region of 5% to 10% over that of greenfield sites.

Development Contributions

Development contribution charges are applied on a catchment basis. For resource consent (subdivision) applications, it is assumed that every lot created will contain one household unit equivalent (HUE). If, at a future time, more than one residential unit is developed on a lot, a development assessment is undertaken for each additional residential unit. Council's development contribution charges schedule is attached as Appendix 1 to this report.

A lot will be assessed as containing more than one household unit if it contains more than one kitchen. In these cases, the lot will be assessed at a rate of 1 HUE per kitchen where that kitchen creates a self-contained residential unit.

Small residential unit adjustment

- A small residential unit adjustment is applied to a residential unit with a gross floor area (GFA) of less than 100sqm, including garaging and potentially habitable accessory buildings. For activities other than stormwater and flood protection, the adjustment reduces the HUE calculation on a sliding scale in proportion of the GFA. For example, a residential unit with a GFA of 80sqm will be assessed at 0.8 HUE or 80% of the normally applicable development contribution requirement. The maximum adjustment is to a GFA of 35sqm or 35% of the charge for 1 HUE.
- For developments of more than one residential unit the adjustment is applied based on the average size of all units with a GFA of less than 100sqm (units with a GFA of 100sqm or more are assessed as 1 HUE). The assessment for stormwater and flood protection is on the basis of all units having an equal share of the total ISA.

Subsequent redevelopment

• If a residential unit has previously received a small residential unit adjustment and is later the subject of consent application to enlarge the GFA, a development contribution assessment will be made, recognising the development contributions previously paid.

Multi-unit stormwater and flood protection adjustment

Residential developments of two or more attached residential units on a single lot receive an adjusted stormwater and flood protection development contribution if they have a lower-than-average Impervious Surface Area (ISA). The total impervious surface area of the development is divided by the average ISA for a single residential unit (427sqm) to calculate the number of HUES for stormwater and flood protection.



Resource Consent

Planning compliance, including resource consent costs will be dependent on the site the specifics. Costs for complex sites will require to be incorporated within site specific project business plans. As a general rule of thumb resource consents (exclusive of Development Contribution Fees) could be considered to generally be in the region of 0.05% to 0.1% of the gross development value, however this will be dependent on the project.

Legal fees

Legal Fees inclusive of Surveying and Subdivision Fees will be dependent on the site. Costs for complex sites will require to be incorporated within site specific project business plans.

Cost Escalation

Construction costs and material prices have been extremely volatile following implications of COVID-19. Effects including following the periods of shutdown, and also logistics and import difficulties have resulted in significant increases. These are ongoing, particularly for materials like timber and steel, and estimating a figure for how much these have increased over the past 12 months across the market will be inaccurate.

On an annual basis, construction cost growth rose from 4.5% in Q2 2021 to 5.5% in Q3, the fastest rate of growth since the first quarter of 2018. The data shows that timber prices, particularly structural timber and cladding, have been a key contributor to overall cost increases. Metal costs and products have also been a factor in the increases.

Looking ahead, it seems likely that the construction industry will remain strong for some time, with investors strongly incentivised to buy new-builds, due to their exemption from the loan to value ratio rules and ability to claim mortgage interest as a deductible expense for the first 20 years of the property's life (CoreLogic, Q3 2021). It appears a degree of cost uncertainty will continue over at least the short term and potentially over a longer time period.

Land Costs

Land values vary across Christchurch City as a result of varying parcel sizes, location and proximity to amenities and ground conditions. High level land values have been estimated through TPG sales analysis and through discussions with local property professionals and range from \$1,000 - \$5,000 per square metre.

The sales analysis compared recent vacant land sales in Christchurch with the August 2019 Rating Land Values. This indicates a 70-80% uplift in land value since the 2019 revaluation. As a high level approach, we have then applied the uplift percentage across the city to provide an estimate of land values across all suburbs, to understand how current land values may be linked to the feasibility of high density development in the current environment.



The lower end of the land value range reflects traditional sized development sites in the outer city suburbs, along with large centrally located sites, with the upper end of the land value range reflecting smaller and traditional sized Central City and West End development sites.

Liquefaction issues and ground conditions are factored into the purchase price of land, with developers discounting land prices by up to \$300 per square metre if significant ground stability work and excavation is required. It is common practice for Council to request full geotechnical site investigations before consent for development is granted.

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Appendix 1 – Development Contribution Policy

2.7 Schedule of development contribution charges (per HUE)

Table 4: Development contribution charge for each activity by catchment. The overall charge will depend on the location of the development.

Activity Group	Activity		e						
	Regional Parks	District-wide							
	Ex. GST	\$101.07							
	Inc. GST	\$116.23					5		
	Garden and	District-wide							
	Heritage Parks								
	Ex. GST	\$140.36							
	Inc. GST	\$161.42							
Decerver									
Reserves	Sports Parks	District-wide							
	Ex. GST	\$337.17							
	Inc. GST	\$387.75							
	Neighbourhood Parks	Central	Medium Density	Suburban	Growth	Banks Peninsula			
	Ex. GST	\$119,02	\$69,63	\$\$35.35	\$472.69	\$136,56			
	Inc. GST	\$136.87	\$80.07	\$615.65	\$\$43.60	\$157.04			
	Water Supply	Akaroa Harbour	Central North	Central South	Lyttelton Harbour	Marshlands	North	North West	Banks Peninsula
	Ex. GST	\$10,977.46	\$1,165.96	\$693.16	\$5,130.89	\$4,755.71	\$562.83	52,008.11	\$6,467.53
	Inc. GST	\$12,624.07	\$1,340.85	\$797.13	\$5,900.52	\$5,469.06	\$647.26	\$2,309.32	\$7,437.66
	Water Supply Cont.	West	Woolston/Sumner						
	Ex. GST	\$1,608.04	\$980.85						
Network	Inc. GST	\$1,849.24	\$1,127.97						
Infrastructure									
	Wastewater	North	North West	South	South West	East	City	West	Lyttelton
	Collection								Harbour
	Ex. GST	\$4,085.68	\$1,862.04	\$1,066.03	\$6,989.79	\$258.31	\$261.61	\$2,987.56	\$5,025.25
	and the second se	A c done with	ALC: 1 1 1 1 1 1 1	And representations	40.000.00	Anan 04	distance in the second	AR 220 10	A.A. (2000) (2014)

Activity Group	Activity	Catchment Development Contribution Charge										
		Akaroa Harbour	Banks Peninsula	1								
	Ex. GST	\$2,105.48	\$258.31									
	Inc. GST	\$2,421.30	\$297,06									
	Wastewater	Christchurch	Akaroa Harbour	Banks Peninsula								
	Treatment/Disposal	5							0			
	Ex.GST	\$935.35	\$42,057.16	\$0.00								
	Inc. GST	\$1,075.65	\$48,365.73	\$0.00								
	Stormwater & Flood Protection	Styx	Õtukaikino	Avon	Waimakariri	Coastal	Heathcote	Halswell	Banks Peninsula			
	Ex. GST	\$11,717.92	\$3,448.72	\$829.57	\$183.54	\$654.56	\$4,095.55	\$13,469.48	\$2,042.09			
	Inc. GST	\$13,475.61	\$3,966.03	\$954.01	\$211.08	\$752.74	\$4,709.89	\$15,489.90	\$2,348.41			
				. i.e.								
		Lyttelton Harbour / Whakaraupõ										
	Fr GST	\$654.10										
Network	Inc. GST	\$752.22										
Infrastructure	1110.001	\$1.04.00E						1				
	Road Network	Growth	Central City	Medium Density	Suburban	Banks Peninsula	Lyttelton Harbour					
	Ex. GST	\$3,359,86	\$984.01	\$988.65	\$948.58	\$538.56	\$1,035.88					
	Inc. GST	\$3,863.84	\$1,131.61	\$1,136.95	\$1,090.87	\$619.35	\$1,191.26					
				h.,				-t.,				
	Active Travel	Metro Zone							1			
	Ex. GST	\$851.70										
	Inc. GST	\$979,46										
						,						
	Public Transport	Metro Zone										
	Ex. 651	\$481.42										
	Inc. GST	\$553.63										
Community	Community Infrastructure	District-Wide										
Infrastructure	Ex. GST	\$859.50										
	Inc. GST	\$988.43							1			

Appendix 2: Planning Controls Summary

Site	Relevant Built Form Controls for three units per site - permitted activity	Relevant Built Form Controls – RD consent for four or r breaches of permitted standards	nore units per site and separate RD consent for any	Other Assumptions:
(1) City Centre Site	Height – up to 14m, 4 storeys	Height – 14m up to 20m, 6 storeys	Height – above 20m, 6 storeys and above	Typology: Residential Flat Building
177 Bealey Avenue, St Albans Site size: 731sqm High Density Residential Zone High Density Residential Precinct	 Setbacks: Front: 1.5 metres Side: 1 metre Rear: 1 metre (excluded on corner sites) Height to boundary: Buildings must not project beyond a 60° recession plane measured from a point 4 metres vertically above ground level along all boundaries.	 Setbacks: Front: 1.5 metres Side: 1 metre Rear: 1 metre (excluded on corner sites) Highest floor set back 1m from the floor beneath Height to boundary: Buildings must not project beyond a 60° recession plane measured from a point 4 metres vertically above ground level along all boundaries. 	 Setbacks for part of building above 20m in height in High Density Residential Precinct: 6m setback from all internal and rear boundaries 3m setback from any front boundary The highest floor shall be stepped back at least 1m from the floor beneath Not applicable. 	 (multi-unit) Apartment sizes: 35sqm for a studio 45 sqm for a 1 bed 55sqm for a 2 bed 70 for a 3 bed + Apartment mix: use mix to achieve most efficient layout but as a rough guide provide 65% 2 bed, 20% 3 bed + and 15% studio
	Building separation: Parts of a buildings above 12m shall have separation of 10m between buildings.	Building separation: Parts of a buildings above 12m shall have separation of 10m between buildings.	Building separation: Parts of a buildings above 12m shall have separation of 10m between buildings.	 Car parking: parking in underground or communal spaces where possible note: parking minimums were been removed from the District
	Building coverage: 50% net site area Impervious surface: 70% of site area	Building coverage: 50% net site area Impervious surface: 70% of site area	Building coverage: 50% net site area Impervious surface: 70% of site area	Plan earlier in the year, only mobility spaces need to be provided
	Outdoor living space per unit: Ground floor – 20sqm per unit with dimension no less than 3m (can be grouped communally) Above ground – 8sqm per unit with dimension no less than 1.8m Studios exceeding 32sqm internal area or single bedroom units exceeding 45sqm internal area: 15sqm on the ground floor and 6sqm above ground floor, with a 1.5m minimum dimension for the	Outdoor living space per unit: Ground floor – 20sqm per unit with dimension no less than 3m (can be grouped communally) Above ground – 8sqm per unit with dimension no less than 1.8m Studios exceeding 32sqm internal area or single bedroom units exceeding 45sqm internal area: 15sqm on the ground floor and 6sqm above ground floor, with a 1.5m minimum dimension for the latter.	Outdoor living space per unit: Ground floor – 20sqm per unit with dimension no less than 3m (can be grouped communally) Above ground – 8sqm per unit with dimension no less than 1.8m Studios exceeding 32sqm internal area or single bedroom units exceeding 45sqm internal area: 15sqm on the ground floor and 6sqm above ground floor, with a 1.5m minimum dimension for the	

Communal outdoor living space - n/a	Communal outdoor living space in High Density Residential Precinct: A ground floor communal outdoor living area shall be provided at a ratio of 100m ² per 10 residential units with a minimum dimension of 8m. This ratio shall be calculated on the number of residential units on the 5th floor of the building and any subsequent floors above.	Communal outdoor living space High Density Residential Precinct: A ground floor communal outdoor living area shall be provided at a ratio of 100m ² per 10 residential units with a minimum dimension of 8m. This ratio shall be calculated on the number of residential units on the 5th floor of the building and any subsequent floors above.
Windows to street: Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing.	Windows to street: Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing.	Windows to street: Any residential unit facing the street must have a minimum of 20% of the street-facing façade in glazing.
Landscaped area:	Landscaped area:	Landscaped area:
20% of the site is to be landscaped	20% of the site is to be landscaped	20% of the site is to be landscaped
Outlook space per unit:	Outlook space per unit:	Outlook space per unit:
Principal living room outlook: 4m by 4m	Principal living room outlook: 4m by 4m	Principal living room outlook: 4m by 4m
All other habitable rooms outlook: 1m by 1m	All other habitable rooms outlook: 1m by 1m	All other habitable rooms outlook: 1m by 1m
Ground floor habitable room:	Ground floor habitable room:	Ground floor habitable room:
Residential units below 12m in height must:	Residential units below 12m in height must:	Residential units below 12m in height must:
 Have a habitable space located at the ground level, where that unit is adjacent to a road boundary; and 	 Have a habitable space located at the ground level, where that unit is adjacent to a road boundary; and 	 Have a habitable space located at the ground level, where that unit is adjacent to a road boundary; and
 Have at least 50% of residential units within a development shall have a habitable space located at the ground level; and 	 Have at least 50% of residential units within a development shall have a habitable space located at the ground level; and 	 Have at least 50% of residential units within a development shall have a habitable space located at the ground level; and
• For each ground floor residential unit, at least one habitable room located on the ground level with a minimum floor area of 9m ² and a minimum internal dimension of 3 metres and be internally accessible to the rest of the unit.	• For each ground floor residential unit, at least one habitable room located on the ground level with a minimum floor area of 9m ² and a minimum internal dimension of 3 metres and be internally accessible to the rest of the unit.	 For each ground floor residential unit, at least one habitable room located on the ground level with a minimum floor area of 9m² and a minimum internal dimension of 3 metres and be internally accessible to the rest of the unit.

(2) Town Centre Site	Same controls for site (1) above.	Same controls for site (1) above.	Same controls for site (1) above.				
11 Russell Street, Linwood							
Site size: 627sqm							
High Density Residential Zone							
Town Centre Intensification Precinct							
(3)Emerging Metropolitan Centre	Same controls for site (1) above.	Same controls for site (1) above.	Same controls for site (1) above.				
23 Maxwell Street, Riccarton							
Site size: 938sqm							
High Density Residential Zone							
Emerging Metropolitan Centre Precinct							
(4)Large Local Centre	Same controls for site (1) above.	Same controls for site (1) above.	Same controls for site (1) above.				
Merivale							
High Density Residential Zone							
Large local Centre Intensification Precinct							
(5)New Mixed Use Area Site TBC – Addington	Height – up to 20m(?) Height is included in the Draft Housing and Business Choice Plan Change, but not in any of the draft PC14 documents.	Height –20m and above (?) Height is included in the Dra any of the draft PC14 documents.	aft Housing and Business Choice Plan Change, but no				
Commercial Mixed-use Zone	Same controls for site (1) above (?). It appears that the controls for this zone are not yet confirmed.	Same controls for site (1) above, excluding the controls that apply to the residential precinct and the precinct.					
(6)Brownfield Overlay Site TBC – Papanui or Hornby	Comprehensive residential development is not a permitted activity on sites identified by the brownfield overlay	Comprehensive residential development is a RD activity The matters of discretion revert to the outcomes sought	on sites identified by the brownfield overlay for the residential medium density zone.				
Industrial General Zone							

Typology: Residential Flat Building

Typology: Residential Flat Building

Typology: Residential Flat Building

iot in	Typology: Mixed use Building, ground floor retail, upper floors residential
25	
	Typology: Mixed use Building, ground floor retail, upper floors residential

High Density Residential Zone - intentions

- Encourage location of buildings toward the street front
- Bulk of buildings frame the street, reduces privacy and overshadowing issues
- More open space to rear allows for shared amenity and sunlight access
- · Allows taller buildings on small sites.



High Density Residential Zone

- 20m or 32m (6 or 10) storey limit
- MDRS for the first 12m in height
- Above this there are no recession planes (6m setback from side boundary applies instead)
- Assessment matters seek to avoid overly long, tall buildings built sideways to the street.



Changes to MDRS – High Density Zone

- Heights to 14m permitted
- No recession planes on side boundaries within 20m of the street boundary
- 6m setback applies above 12m (no recession plane)
- Accessory buildings can intrude into the side setback
- Eaves not included in site coverage
- · Gables not included in calculation of size of front façade for glazing requirement
- Outdoor living space for one bed units can be 15m² (or 6m² where the unit is above ground).



Additional Standards - High Density Residential Zone

As for the MDRZ except that:

• 50% of units must have a habitable space at the ground floor (where height <12m)

OR

• 50% of ground floor must be habitable (where height is above 12m).

Appendix 3: Design Analysis

High Density Residential Feasibility- Bulk and Location

Site Address: 177 Bealey Ave, St Albans Site Area: 731 sqm



- · Corner site allows for more generous built form along street frontage with vehicle access from side
- · Opportunities for ground floor commercial/ retail purposes
- All units have 8m² decks



Scenario 1: 4 Storeys

Total Units: 19 Parking:12 parks Landscaped Area: 220m2

- At grade residential units can be utilised for commercial/ retail purposes as required
- · Landscaping includes private outdoor space for ground floor units
- Mix of undercroft and at grade parking





Scenario 2: 6 Storeys

Total Units: 23 Parking: 10 parks Rear Communal Area: 155 m²

- · At grade residential units can be utilised for commercial/ retail purposes as required but will require a reduction to car parking
- Basement parking





Scenario 3: 10 Storeys

Total Units: 40 Parking: 10 parks Rear Communal Area: 260 m²

- · At grade residential units can be utilised for commercial/ retail purposes as required but will require a reduction to car parking
- · Ratio of unit types can be varied across floors to improve unit mix across development.
- Basement parking

LEVEL	STUDIO	1 BED	2 BED	1
Ground	0	0	G	
Level 1	2	0	2	
Level 2	2	0	2	
Level 3	2	0	2	
Level 4	2	0	2	
Level 5	2	0	2	
Level 6	1	1	1	
Level 7	1	1	-1	
Level B	1	1	1	
Level 9	1	0	1	-
TOTAL	14	3	14	







Revision A

3 BED	TOTAL		
0	0		
1	5		
1	5		
1	5		
1	5		
1	5		
1	4		
1	4		
1	4		
1	1		
9	40		

High Density Residential Feasibility- Bulk and Location

Site Geometry: 26m street frontage x 46.15 m deep Site Area: 1200 sqm



One Bedroom (45m²) Two Bedroom (55 m²)

Three Bedroom (70m²)

TOTAL

9

ED	2 BED	3 BED	TOTAL
	0	0	0
i.	5	2	8
5	5	2	8
i.	5	2	8
	5	2	8
	5	2	8
Ē.	3	1	6
	3	1	6
ŝ.	3	1	6
	0	2	4
L.	34	15	62

High Density Residential Feasibility- Bulk and Location

Site Address: 18 Ajax St, Burwood Site Area: 450 sqm



Site area and geometry may be more suitable to townhouse development



Scenario 1: 4 Storeys

Total Units: 10 Parking: 9 parks Landscaped Area: 148m²

- Mix of undercroft and at grade parking
- Landscape area available for a mix of private and communal use



Scenario 2: 6 Storeys

Total Units: 14 Parking: 9 parks Landscaped Area: 148m¹

- · Mix of undercroft and at grade parking
- · Some rear landscape area available for communal use

LEVEL	STUDIO	1 BED	2 BED	3 8ED	TOTAL
Ground	0	0	1	0	1
Level 1	0	1	1	1	з
Level 2	0	1	1	1	3
Level 3	2	0	1	0	1
TOTAL	2	2	4	2	10

LEVEL	STUDIO	1 BED	2 BED	3 BED	TOTAL
Ground	0	G	1	0	1
Level 1	D	1	1	1	3
Level 2	0	1	1	1	3
Level 3	2	0	1	0	з
Level 4	0	0	2	0	2
Level 5	1	1	0	0	2
TOTAL	3	3	6	2	14


High Density Residential Feasibility- Bulk and Location

Site Address: 36 Hanrahan Street, Site Area: 1274 sqm (21.1m street frontage x 60.4m depth)





Scenario 1: 4 Storeys



Scenario 2: 6 Storeys



Scenario 3: 6 Storeys



Appendix 4: Feasibility Analysis

Options	Option 1 4-levels	Option 1 4-levels	Option 1 4-levels	Option 2 6-levels	Option 2 6-levels	Option 2 6-levels	Option 3 10-levels	Option 3 10-levels	Option 3 10-levels
Price points	Premium	Market	Affordable	Premium	Market	Affordable	Premium	Market	Affordable
Project summary									
Residential GFA (m2)	1350	1350	1350	1985	1985	1985	3415	3415	3415
Residential Dwellings	24	24	24	35	35	35	62	62	62
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	594	594	594	594	594	594	594	594	594
Car parking spaces	20	20	20	20	20	20	20	20	20
Total GFA (m2) (ex access, circulation and car parking)	1350	1350	1350	1985	1985	1985	3415	3415	3415
Financial analysis									
Gross realisation (Sales \$m)	\$19.58	\$17.60	\$15.10	\$28.24	\$25.21	\$21.58	\$48.16	\$42.42	\$36.20
Net proceeds (\$m)	\$16.48	\$14.81	\$12.71	\$23.78	\$21.22	\$18.15	\$40.55	\$35.70	\$30.45
Total construction costs (\$m)	\$9.05	\$7.69	\$7.69	\$13.24	\$11.24	\$10.22	\$22.97	\$19.47	\$17.70
Estimated land value (\$m)	\$3.82	\$3.82	\$3.82	\$3.82	\$3.82	\$3.82	\$3.82	\$3.82	\$3.82
Total development costs (\$m)	\$19.01	\$16.98	\$16.98	\$25.36	\$22.37	\$20.84	\$40.09	\$34.86	\$32.22
Profit or (loss) \$m	-\$2.53	-\$2.17	-\$4.27	-\$1.58	-\$1.15	-\$2.69	\$0.46	\$0.84	-\$1.77
Profit or (loss) as a % of total development costs	-13.31%	-12.77%	-25.16%	-6.22%	-5.12%	-12.90%	1.14%	2.40%	-5.50%

Options	Option 1 4-levels	Option 1 4-levels	Option 1 4-levels	Option 2 6-levels	Option 2 6-levels	Option 2 6-levels	Option 3 10-levels	Option 3 10-levels	Option 3 10-levels
Price points	Premium	Market	Affordable	Premium	Market	Affordable	Premium	Market	Affordable
Project summary									
Residential GFA (m2)	990	990	990	1145	1145	1145	2026	2026	2026
Residential Dwellings	19	19	19	23	23	23	40	40	40
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	250	250	250	306	306	306	306	306	306
Car parking spaces	8	8	8	10	10	10	10	10	10
Total GFA (m2) (ex access, circulation and car parking)	990	990	990	1145	1145	1145	2026	2026	2026
Financial analysis									
Gross realisation (Sales \$m)	\$13.57	\$11.87	\$10.14	\$15.80	\$13.37	\$11.44	\$27.45	\$22.94	\$19.58
Net proceeds (\$m)	\$11.42	\$9.99	\$8.53	\$13.30	\$11.25	\$9.62	\$23.10	\$19.30	\$16.46
Total construction costs (\$m)	\$6.55	\$5.56	\$5.05	\$7.56	\$6.42	\$5.83	\$13.57	\$11.50	\$10.46
Estimated land value (\$m)	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80
Total development costs (\$m)	\$10.47	\$9.12	\$8.41	\$11.82	\$10.27	\$9.47	\$20.09	\$17.29	\$15.87
Profit or (loss) \$m	\$0.95	\$0.86	\$0.12	\$1.48	\$0.98	\$0.14	\$3.01	\$2.01	\$0.58
Profit or (loss) as a % of total development costs	9.09%	9.46%	1.39%	12.55%	9.58%	1.51%	14.99%	11.63%	3.67%

Summary of 4, 6 & 10 level apartment development options, in the City Fringe, shown at Premium, Market and Affordable Price Points

Summary of 4 & 6 level apartment development options, in Outer, shown at Premium, Market and Affordable Price Points							
Options	Option 1 4-levels	Option 1 4-levels	Option 1 4-levels	Option 2 6-levels	Option 2 6-levels	Option 2 6-levels	
Price points	Premium	Market	Affordable	Premium	Market	Affordable	
Project summary							
Residential GFA (m2)	1350	1350	1350	1985	1985	1985	
Residential Dwellings	24	24	24	35	35	35	
Commercial GFA (m2)	0	0	0	0	0	0	
Retail GFA (m2)	0	0	0	0	0	0	
Car parking GFA (m2)	594	594	594	594	594	594	
Car parking spaces	20	20	20	20	20	20	
Total GFA (m2) (ex access, circulation and car parking)	1350	1350	1350	1985	1985	1985	
Financial analysis							
Gross realisation (Sales \$m)	\$16.78	\$15.05	\$12.75	\$24.61	\$21.95	\$18.60	
Net proceeds (\$m)	\$14.12	\$12.66	\$10.72	\$20.72	\$18.47	\$15.64	
Total construction costs (\$m)	\$9.05	\$7.69	\$7.00	\$13.24	\$11.24	\$10.22	
Estimated land value (\$m)	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	
Total development costs (\$m)	\$16.71	\$14.86	\$13.92	\$22.41	\$19.69	\$18.30	
Profit or (loss) \$m	-\$2.58	-\$2.20	-\$3.20	-\$1.69	-\$1.22	-\$2.66	
Profit or (loss) as a % of total development costs	-15.46%	-14.79%	-22.98%	-7.54%	-6.21%	-14.55%	

Appendix 5: Feasibility Analysis Assumptions

In addition to the market assessment assumptions and unless stated above, the following assumptions inform the feasibility analysis:

- 1. No consenting risk
- 2. Reference to Christchurch liquefaction information liquefaction damage
- 3. Reference to Christchurch liquefaction information Vulnerability to Liquefaction
- 4. Christchurch City Council District Plan Natural Hazards
- 5. City Fringe and Outer Centre price points are discounted at 5% cumulatively from the analysed Central City price points
- 6. Car parking at \$50,000 per space in addition to purchase of apartment in Central City and City Fringe.

CBD North						
ASSUMPTIONS						
						COMMENTS
FINANCIAL FEASIBILITY ASSUM	IPTIONS					COMMENTS
Existing conditions		Land Area	Improvements	Estimated land values	Contaminated land	
Site A		731.00	0.00	\$1,094.39	0.00	RESIDENTIAL VACANT SITE, SOLD FOR \$800K ON 24/10/20. FOR SALE ASKING \$729K
Site B		0.00	0.00	\$0.00	0.00	Not applied
Site C		0.00	0.00	\$0.00	0.00	Not applied
Site C		0.00	0.00	\$0.00	0.00	Not applied
Spare		0.00	0.00	\$0.00	0.00	Not applied
Estimated totals		731.00	0.00	\$1,094.39	\$0.00	
Utilisation						
		05.00%				Mat and I al
GBA LO GFA		95.00%				Not applied
Access and circulation		15.00%				Not applied
GFA to GBA		80.75%				Not applied
Dwolling typologies		Studio	1brm	2 hrm	2 hrm	
		Studio		20111	30111	
GFA		40	50	65	105	
Mix		0.00%	0.00%	38.00%	62.00%	100.00%
						COMMENTS
REVENUE ASSOMPTIONS						COMMENTS
Gross realisation						
GST		15.00%				
Marketing & sales		2.50%				
Lagal fees per dwelling		\$2,000,00				
Legar rees per uweiling		φ 2,000.00				
Net realisation		Low	Med	High		
Consenting risk		0.00%	0.00%	0.00%		Not applied
		5.0070	0.0070	0.0070		
Developers profit		20.00%				
DEVELOPMENT COST RATES			\$/M2	\$/M2	\$/M2	COMMENTS
Construction costs	Building type (Loyals)	Typology	Affordable	Market	Promium	
construction costs	Building type (Levels)	rypology	Anoruable	Warket	Freihluth	
Low-rise (Level 1-3)						
Residential						
Decidential terrace	Low rise (Lowel 1.2)	2 have	¢4,000,00	<u>ć4 400 00</u>	¢F 200.00	Entry of streat
Residential -terrace	Low-rise (Level 1-3)	2-DITI	\$4,000.00	\$4,400.00	\$5,200.00	Entry of street
Residential -terrace	Low-rise (Level 1-3)	3-brm	\$4,000.00	\$4,400.00	\$5,200.00	Entry of street
Residential -walk up	Low-rise (Level 1-3)	Studio	\$4,200.00	\$4,620,00	\$5,460,00	Entry of street, units off internal access
Posidontial walk up		1 hrm	\$4,200,00	\$4,720,00	\$5,590,00	Entry of street, units off internal access
Residential -walk up	LOW-HSE (LEVEL 1-5)	1-0111	\$4,300.00	\$4,730.00	\$3,390.00	
Residential -walk up	Low-rise (Level 1-3)	2-brm	\$4,300.00	\$4,730.00	\$5,590.00	Entry of street, units off internal access
Residential -walk up	Low-rise (Level 1-3)	3-brm	\$4,400.00	\$4,840.00	\$5,720.00	Entry of street, units off internal access
Balcony	Low-rise (Level 1-3)	-	\$130.00	\$150.00	\$170.00	Extra, over and above
			+	+	+	
Commercial						
Commercial office	Low-rise (Level 1-3)	A-Grade	\$6,700.00	\$7,370.00	\$8,710.00	Base build, fit out to MCHF, SHF. Excludes SF/FF&E
Commercial office	Low-rise (Level 1-3)	Prime	_		_	
		- Thine				
Retail						
Retail	Low-rise (Level 1-3)	Shell only	\$3,100.00	\$3,410.00	\$4,030.00	Suburban
Low-rise (Level 1-6)						
Residential						
nesiuelludi				A		
Residential -apartments	Low-rise (Level 1-6)	Studio	\$4,830.00	\$5,320.00	\$6,280.00	
Residential -apartments	Low-rise (Level 1-6)	1-brm	\$4,940.00	\$5,440.00	\$6,430.00	
Residential -apartments	Low-rise (Level 1-6)	2-brm	\$5,040,00	\$5,550,00	\$6,560,00	
Residential exertments		2 b m	¢5,0,000	¢5,550.00	¢0,000.00	
Residential -apartments	LOW-FISE (LEVEL 1-6)	3-DITT	\$5,130.00	\$5,650.00	\$6,670.00	
Balcony	Low-rise (Level 1-6)	-	\$130.00	\$150.00	\$170.00	Extra, over and above
Commercial						
Commercial office	Low rise (Lovel 1, 6)	A Crada	\$E 800.00			Suburban
	LOW-IISE (LEVEL 1-6)	A-Glaue	\$0,800.00	-	-	Subulball
Commercial office	Low-rise (Level 1-6)	Prime	-	-	-	
Retail						
Rotail	Low rise (Lovel 1, 6)	Shall only				
Netall	LOW-IISE (LEVEL 1-0)	Shell Only	-	-	-	
Medium-rise (Level 1-12)						
Residential						
Residential -anartments	Medium-rise (Level 1-12)	Studio	\$4,940.00	\$5,440,00	\$6,430,00	
Posidontial apartments	Modium rise (Level 1 12)	1 hm	¢=,0=10.00	¢E E20.00	¢¢, 100.00	
nesidential -apartments	weulum-rise (Level 1-12)	T-DIII	\$5,020.00	\$5,53U.UU	00.08C,0Ç	
Residential -apartments	Medium-rise (Level 1-12)	2-brm	\$5,090.00	\$5,600.00	\$6,620.00	
Residential -apartments	Medium-rise (Level 1-12)	3-brm	\$5,250.00	\$5,780.00	\$6,830.00	
Balcony	Medium-rise (Level 1-12)	_	\$130.00	\$150.00	\$170.00	Extra over and above
Dateony	medium rise (Level 1-12)	=	\$130.00	\$T30.00	9170.00	Exercition over and above
Commercial						
Commercial office	Medium-rise (Level 1-12)	A-Grade	-	\$8,500.00	-	Central Wellington
				, -,		- U···



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Note of the second	Commercial office	Medium-rise (Level 1-12)	Prime	-	\$9,000.00	-	E.g. Deloitte Office Building
Bath Mark (app) Bath June (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) Name (app) Name (app) Name (app) Harden (app) Name (app) </td <td>Retail</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Retail						
Weight w	Retail	Medium-rise (Level 1-12)	Shell only	-	-		
Home of the set of the s	High-rise (Level 12 +)						
Nature of a specified of a specifi	Residential						
hierberger seminer in	Residential -apartments	High-rise (Level 12 +)	Studio	\$4,980.00	\$5,480.00	\$6,480.00	
Hatcher is getrature in the Local 2 2 mm 3.4400 <	Residential -apartments	High-rise (Level 12 +)	1-brm	\$5,230.00	\$4,760.00	\$6,800.00	
Rates and manual and services and servi	Residential -apartments	High-rise (Level 12 +)	2-brm	\$5,340.00	\$5,880.00	\$6,950.00	
hale mon and set of the set of th	Residential -apartments	High-rise (Level 12 +)	3-brm	\$5,450.00	\$6,000.00	\$7,090.00	
And a series of the series of	Balcony	High-rise (Level 12 +)	-	\$130.00	\$150.00	\$170.00	Extra, over and above
Conversion definitionA finite	Commercial						
Control (III) None Part Status Example Real Non- Non- Status Status Status Real Non- Status Status Status Status Real Non- Status Status Status Status Real Non- Status Status Status Status Non- Status Status Status Status Status Status Status	Commercial office	High-rise (Level 12 +)	A-Grade	-	-	-	
Name Note: Note: Note: Note: Note: Note: Note: Note: Note: Componing Note: Note: Note: Note: Note: Note: Note: Note: Note: Note:	Commercial office	High-rise (Level 12 +)	Prime	-	\$9,500.00	-	E.g. Deloitte Office Building
Band Band Low 21-4 Second Joint 10 Start 10 Start 10 None 15,000.0 5,000.0 5,000.0 6,000.0 <td>Retail</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Retail						
Note Note of parts Note of parts <td>Retail</td> <td>High-rise (Level 12 +)</td> <td>Shell only</td> <td>-</td> <td>-</td> <td>-</td> <td></td>	Retail	High-rise (Level 12 +)	Shell only	-	-	-	
Content Content <t< td=""><td>Hotel</td><td></td><td></td><td>Suburban</td><td>3-star</td><td>5-star</td><td></td></t<>	Hotel			Suburban	3-star	5-star	
Cirk Park Correl Mail or for any park of a large fragment large fragment of a large fragment of a large fragm	Hotels			\$3,000.00	\$4,200.00	\$5,700.00	Circa 2016 Şs
Algade Algo Algo Algo Algo Algo Algo Algo Algo	Car parking			Low-rise	Medium-rise	Hign-rise	
Under conts S20,000	At grade			\$120.00	\$150.00	\$200.00	Asphalt with basecourse with some kerbing and lighting. Level site
diama di ante	Under croft			\$200.00	\$250.00	\$300.00	Parking garage at ground floor, as above with trafficable concrete slab. Substructure
Automation Control Contro Control Control	Basement			\$740.00	\$800.00	\$900.00	As undercroft but including extra excavation, extra over substructure, water proofing,
Under Wate 12.0% 42.0% 56.0% Estimate to fer yours analog and isquefactor for own of the provide and isquefactor for own of the provide and squefactor for own of the pr	Other Direct Costs						retaining to edge, services
senine relations of before a field of a source of a so	Solismic resilience			12.00%	24.00%	26.00%	Estimatos for low, modium and high risk for ground shaking and liquefaction for low
Calculated S25.00 S35.00 S45.00 Assume a level site with the construction of a work and the con	Seisific resilience			12.00%	24.00%	50.00%	medium and high rise buildings. Pased on significant ground improvement works, jot
Coll service 5000 5000 5000 5000 5000 5000 5000 60000 6000 6000							arouting
Link dots intergroups 57.00 5500.00 5500.00 5500.00 5700.00 5700.00 Outy a high wind its charace, produces any demails on evences removal any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on design and extent. Excludes any determination of setures. See depaident on setures any groundworks. Septime any setures. See depaid of setures. See depaid of setures. See depaid of setures. See depaid of setures. Seture and any features. Second any any depaident on specification of person and any features. Seture and any seture and any available typing. Seture and any seture and any available typing. Seture and any seture any seture and any seture any setur	Civil works						grouting
Induity genes 25.00 35.00 35.00 00000 00010 00110 001110 001110 0011111 0011111 0011				¢25.00	¢35.00	Ć 45.00	A second second site instantianal site allowers and share and share little and second second second second second
a vates 53000 50000 50000 50000 1000 a reprint seven in seven seve	Enabling works			\$25.00	\$35.00	\$45.00	Assumes a level site, minimal site clearance, excludes any demolition or services removal
Integration Stand	3 waters			\$500.00	\$600.00	\$700.00	Only a high level indication for 3 waters, very dependent on design and extent. Excludes
Integring and table of the part of the first set of the f	Transmission			¢200.00	¢350.00	ć200.00	any other civil and external works
Indigene with a sympole of sympol	Fransport	¢ (\$200.00	\$250.00	\$300.00	Access tranicable road high level
signing registering registerin	Engineered fill	\$/m3		\$85.00	\$110.00	\$140.00	Uteb lavel termene forter even for a flat site
Public gramma for space for s	Sloping versus flat site			5.00%	10.00%	15.00%	High level increase/extra over for a flat site
The set of the s	Public open space						
Herd landscaping Conventional strate Statubility (Provided and strate and strate strate (Provided and strate strate (Provided and strate (Provided and strate (Pro	Soft landscaning			\$30.00	\$45.00	\$60.00	Only soft landscaping i.e. lawns, planting, topsoiling, Excludes any groundworks
Into an accepting 20000 20000 Procession	Hard landscaping			\$130.00	\$200.00	\$400.00	Only bard landscaping Evoluties any groundworks. Very dependent on specification of
Rod tog grades S300.0 S400.0 S500.0 Bits over not for creating a rod graden. Additional structure, waterproofing, drainage, landscaping. Demiltions Sint over not for creating a rod graden. Additional structure, waterproofing, drainage, landscaping. Sint over not for creating a rod graden. Additional structure, waterproofing, drainage, landscaping. Light duty \$/m2 \$100.00 - - Constructure \$/m2 \$250.00 - - Contaminated land remedition \$/m2 \$350.00 350.00 \$450.00 \$/m2.00 Contaminated land remedition \$/m2 \$350.00 - - - Contaminated land remedition \$/m2 \$350.00 \$/m2 - - Contaminate land remedition \$/m2 \$350.00 \$/m2 - - Contaminate land remedition \$00% \$/m2 \$/m2 - - Contaminate land remedition \$/m2 \$/m2 \$/m2 - - Contaminate land remedition	hard landscaping			\$150.00	\$200.00	Ş 4 00.00	navers and any features
Index or graded conserver on a centre of the centre of th	Roof top gardens			\$300.00	\$400.00	\$500.00	Extra over roof for creating a roof garden. Additional structure, waterproofing, drainage
Denoisions \$\sum_2 & \sum_2 &	Noor top gardens			\$300.00	Ş + 00.00	Ç300.00	landscaning
Light duy \$/n2 \$100,000 - - Heav duy \$/n2 \$250,000 - - CBD ligh-rise \$/n2 \$250,000 - - CDTigencies \$200,000 \$200,000 \$200,000 \$200,000 \$200,000 Contingencies \$000,000 \$000,000 10,000,000 \$200,000 \$200,000 Contingencies \$000,000 \$500,000 \$200,000 \$200,000 \$200,000 New build (preenfield) \$000,000 \$500,000 \$200,000 \$200,000 \$200,000 Design engineers \$000,000 \$200,000 \$200,000 \$200,000 \$200,000 Contingencies \$000,000 \$200,000 \$200,000 \$200,000 \$200,000 Contingency allowances \$000,000 \$200,000 \$200,000 \$200,000 \$200,000 Professional fees Complexity \$000,000 \$200,000 \$200,000 \$200,000 Souting-rote thanagement \$000,000 \$200,000 \$200,000 \$200,000 \$200,000 <td>Demolitions</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>and copping.</td>	Demolitions						and copping.
Light duty S/m2 S100.00 - - Beavy duty S/m2 S250.00 - - Contaminated land remedition S200.00 S350.00 S450.00 S/m2, can vary a lot on type of material and available typing Contingencies 500% - - - Contingencies 600% S00% - - New build (preenfield) 500% - - - New build (preenfield) 500% - - - Stance of the remedition grand of	bennondons						
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Medium Density Housing Research

Additional Case Studies

Christchurch City Council Technical Report

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1 Introduction

This report has been produced to support the original research carried out in 2020 and summarised in the report *Medium and High Density Housing in Christchurch: Urban Design Review 2020.*

A number of gaps were identified in that research, relating in particular to the Central City due to the variety of development types; as well as to higher density RMD developments which were an emerging typology at the time. Whilst some trends were able to be observed in the sample, it was considered that more examples were needed to confirm how prevalent the issues are.

This research is aimed at providing more evidence to confirm the observations in the original paper.

The sample includes sites in the following zones of the Christchurch District Plan:

- 5 Residential Medium Density (RMD) sites
- 4 Residential Central City (RCC) sites
- 3 Commercial Central City Mixed Use (CCMU) sites

1.1 Methodology

The research uses the same "Urban Scales" methodology as the original study. A site visit was carried out for each site in the sample, and a score allocated to various criteria. For each site, comments were also noted in relation to the points and these form a valuable dataset that highlights issues and allows comparison of how the scores were reached in each case.

The methodology scored each attribute from 1 to 5. A score of 3 indicated a basic standard of urban design, and a score of 4 that a development was "well-considered". The district plan seeks "high quality" which is more than a basic response and considered to be more akin to a score of 4 than 3. Attributes that do not reach the threshold of a score of 3 indicate that there is a low quality of design.

The assessment matrix is provided in Section 3.2 of the original report.

2 Summary of Findings

2.1 Residential Medium Density Areas

Additional sites were surveyed because it was observed that a 2 storey 2 bedroom townhouse typology was becoming prevalent in the RMD areas, which was not well represented in the sample.

The outcome of the new survey revealed that, for this new typology:

- The newly surveyed RMD sites were consistently at a basic standard, with one site reaching a high standard.
- There was at least a small improvement in all 4 scales compared to the original sample. This appears to be in part due to features of the change in typology (such as centralised car parking, which splits the built form into two blocks, and ground floor living space).
- Both Building and Site scores were significantly higher than previously, across a range of categories. This largely appears to be due to the typology.
- CPTED issues, previously noted as a concern, were much improved, in part due to overlooking public and communal space from kitchens.
- As previously, some street interfaces were affected by confusion over "fronts and backs" where outdoor living space is in the front setbacks and there is not clear point of entry. Resident's desire for privacy sometimes resulted in screening of the space.

2.2 Central City Areas

Additional central city types were surveyed to broaden the range of typologies in the original sample. Mixed with the original surveys from 2020, the following trends were evident:

- Overall scores were in line with the 2020 survey, with a basic standard reached on average, but relying on good performance in the Neighbourhood scale (with shortfalls in the Street, Building and in particular the Site scales). This indicates that much of the good outcomes is related to location rather than the development itself.
- There was significant variability in scores between sites, particularly noticeable in the CCMU sample. Outcomes ranged from poor to best-practice.
- In both zones, Street was around the basic level. Developments tended to provide a good sense of enclosure, but did not always create a sense of ownership of the street due to issues of fencing and poor transition space.
- In the RCC zone, site scores were significantly below the basic threshold with problem areas being the quality of accessways and communal space and CPTED issues. This is a continuation of the theme that private amenity is well provided for, but that communal spaces and servicing are neglected.
- There are some particular traits evident in the CCMU zone. These include problems related to internal layouts of houses, and poor resolution of communal areas and in one case, an almost total absence of usable outdoor living space. In this zone, there is more scope for very poor outcomes to eventuate.
- Some particular CPTED issues also arose in the CCMU zone, relating to privacy conflicts, lack of surveillance and very narrow accesses.

Medium Density Housing Research: Additional Case Studies

2.3 Taller Buildings

Bulkier buildings are unique to the central city and particular issues of integration were identified for these tall buildings. To investigate this, some analysis was carried out in relation to the taller buildings in the sample as a whole. Particular issues identified in this study include:

- Overlooking of neighbours
- Examples of monolithic buildings with poor design mitigation
- A shortfall of outdoor living space

These buildings also provided particular benefits:

- The sense of enclosure of the street and the potential for positive visual interest
- Variety in housing choice.

As for other samples, site layout issues and street issues were areas of under-performance.

3 Residential Medium Density Zone Examples

3.1 Overview

The RMD examples were predominantly 2 bed sites (of the 5 examples, 2 also included 1 or 2 1 bed units). This was to consider the impact of an observed trend: that there has been an increase in the number of 2 bedroom developments over the past 2 years.

	2021 (New Examples)	2020 (Previous Sample)
RMD Average	3.3	3.1
Neighbourhood	3.8	3.7
Street	3.0	2.9
Site	3.2	2.7
Building	3.3	3.1

Urban Scale scoring for the RMD zone, for this study and the 2020 sample

The overall averages for the new 2022 sample are for the most part slightly higher than for the previous one, with the exception of "site" which has shown a marked improvement, reflecting better outcomes in a number of the criteria. Particular improvements are related to CPTED outcomes and to general site layout. This is thought to be related to the typologies used, as well as a potentially greater awareness of street scene issues.

Two-bedroom-two-storey units usually have some of these attributes:

- Ground floor living areas and upper floor bedrooms (there is a good balance between ground and first floor accommodation because two bedrooms on the first floor fit easily over ground floor living).
- Due to the above, kitchen windows can easily overlook public space (this reduces adverse privacy impacts whilst achieving engagement and surveillance).
- There is often a central carpark rather than garaging which splits the block in two, avoiding long "sausage blocks".
- Where there is attached garaging, there are not usually bedrooms above it meaning that there are breaks in the first floor façade.
- Where there is a central car park, there is often a wide walking access to the rear units, which allows space for planting.

For this analysis, the scores in this zone have not been combined with the previous sample. This is because the new study uses selected examples to fill an identified niche in the research rather than a random selection. The purpose is to identify if the general trends also apply to this new product.

3.2 Analysis by Urban Scales

Neighbourhood

For three of the sites, the developments were observed to be incongruous in areas with with predominantly single housing. This issue was noted in the original study: new developments do not fit into "traditional" areas because of visual dominance and a change in the rhythm of development along the street. Where they were in more established RMD suburbs, the developments fitted with the pattern of development. This is an issue of transition.

More generally, the density was found to be appropriately located and contribute to housing choice.

Street

This attribute was found to be marginally higher for the new (higher density) sample than for the main sample.

Issues with the previous sample were related to the prevalence of fencing, location of entrances and issues around transition space. These were observed in all zones and summarised as "an ill-considered transition between public and private areas", evident in lower scores for B2 and B4. The new sample recorded improved scores for these categories.

Ref	Outcome	2021 Sample	2020 RMD Av
B1	Creating an appropriate sense of enclosure along the street	3.6	3.0
B2	Fostering a sense of ownership of the street.	2.8	2.5
B3	Activation and articulation of the street façade through openings	2.8	2.8
B4	Property boundaries are well defined and enable views of the street.	3.0	2.7
B5	Building layout and form appropriately responds to the urban context	3.0	3.2
	Overall Score	3.0	2.8

Urban Scale scoring for the RMD zone, for this study and the 2020 sample (Street scale)

Creating a sense of enclosure

The most striking difference between the samples is in B1 (sense of enclosure), where 3 of the sample were regarded as being in the "well-considered" category with a score of 4 in the 2021 sample. This may be in part due to the two-storey scale of the housing, which is enough to create enclosure – the built form was more consistent in the new sample.

Fronts and Backs

One trend that was evident was that there was confusion over fronts and backs of houses, with internally facing front doors and private space at the street. Sometimes screening had been used to block views through transparent fencing, indicating a poor balance between privacy and street engagement.

However, other sites showed some awareness of managing the issue with thoughtfully placed transparent fencing in front of the house (which is less privacy sensitive than the outdoor living area).



Figure 1: Front Outdoor living space has been screened in this example

Site

The RMD sites scored well for site layout averaging over 3.2, indicating more than basic outcomes. This good scoring indicates that site layout is generally well thought through, even if there are some aspects that are not, in some cases.

Scores in the new RMD sample were considerably higher than in 2020 in some categories. C1, C3, C4, C5 and C9 were at least half a point higher), while other categories were quite similar.

Site	Outcome	2021 Average	2020 RMD Average
C1	An integrated and comprehensive approach to the layout of buildings and spaces	3.6	2.7
C2	Provides for housing choice	3.2	3.0
С3	Respectful and responsive design of interfaces and activities relating to neighbouring properties	4	3.1
C4	Comprehensive approach taken to the design and quality of paving, landscaped areas and open space.	3.0	2.2
C5	Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety)	3.6	2.7
C6	Appropriate provision and location of private outdoor living spaces	3.4	3.2
C7	Appropriate provision, location and design of communal open space	2.8	2.7
C8	Provide for the safe and efficient movement of pedestrians, cyclists and vehicles	3.2	3.0
C9	A sound car parking strategy is utilised, and the visual impact car parking where provided is minimised.	3.4	2.9
C10	Efficient and effective provision of services and storage areas	3	3.1
C11	Incorporation and promotion of sustainability across the site	2	1.8
	Overall	3.2	2.8

Urban Scale scoring for the RMD zone, for this study and the 2020 sample (Site Scale)

Most sites in the previous study had poor site layout. Particular observations were that:

- Sites had poor CPTED outcomes and privacy issues, due to the location of outdoor living spaces and bedrooms next to public areas.
- Accessways were poorly landscaped and communal space was of poor quality

Private amenity (eg outdoor living spaces and solar access) was well provided for.

Observations made in relation to these improved categories were:

Improved Site Layouts

Category C1 relates to overall site layout, which was almost a whole point higher, a very significant increase, albeit for a small sample size. There was usually a good basic layout with some pedestrian priority and a satisfactory relationship with the accessway. Some sites had outdoor living in front of the house, which reduced the scores somewhat.

Improvements with the way buildings fit with Neighbours

Category C3 is concerned with privacy and the impact on neighbours. For many sites, there was more than one building, usually due to centralised car parking. This avoided the common issues of a long building sideways to the street, dominating views and outlook. Prominent overlooking was also avoided and the scale of building was also not considered overbearing.



Figure 2: A common typology is two buildings with central car parking

Better CPTED related Outcomes

For category C5, (CPTED) there was a big improvement in an area that was noted as being of concern. The examples had a high frequency of doors and often overlooked spaces through kitchen windows. In all cases bedrooms were upstairs and kitchens faced the accessways. Several examples had relatively generous planting in front of the houses to provide separation and protect internal privacy. Direct sightlines were also noted as a positive. This is a very positive finding, which may reflect improved implementation of the District Plan, or may simply be due to the typology. In all, 4 of the 5 sites had a well-considered outcome.

Better Car-Parking but Landscaping still variable

Catergory C9 concerns car parking, which was generally well managed, either in garages or centralised car parking areas which were not visually prominent. Parking was usually provided in a sensitive manner in these examples. Communal landscaping (catergory C4) was another of the main issues previously identified and results were better than previous, but still below the basic threshold. Performance was highly variable and there was a shortage of provision in some cases.

Sustainability still not well provided

The main category where there is site-layout underperformance is sustainability (about which the district plan has little to say).

Building

This category is made up of three distinct sets of outcomes: Appearance related matters (catergory D1-D5), Functional outcomes (catergory D6-D10) and Sustainability and Innovation (catergory D11

and D12). In the RMD zone, matters were generally met quite well except for sustainability and innovation.

Scores for the new 2022 examples were somewhat higher than for the previous study. This was due to appearance related matters averaging 3.6 as opposed to 3.3 in the 2020 study; whilst Functional outcomes were identical at 3.5.

For appearance related matters, performance was variable with 2 examples scoring almost 4, and others achieving around 3 or less.

Good Site Layout resulted in good built outcomes.

In part, the good scores were driven by the form of developments as previously discussed under "Site" (generally not in a single run and so the roofline and building line were broken into two or more buildings). One good example with a long terrace broke it into two blocks at first floor by stepping a unit down (ie inserting a single storey studio unit into the centre of the row). Sometimes the buildings were quite blocky, but the larger (longer) building was usually at the rear.



Figure 3: This development consisted of several smaller buildings (duplexes)

There was generally a good amount of glazing and detailing. Rather than the detailing being used to try and cover site layout issues as for the previous examples, the site layout in these cases was generally satisfactory.

For functional outcomes, storage emerged as a shortcoming in some cases, likely due to the lack of a garage (and nothing being provided to make up for it).

Sub - Category	Building	Outcome	2021 RMD Average	2020 RMD Average
Appearance Related	D1	A visually interesting and cohesive approach to the building form	3.6	3.05
	D2	Variation and steps in the building line	4	3.4
	D3	Sufficient breaks in the roofline	3.8	3.4
	D4	Designing to a domestic scale	3.6	3.2
	D5	Use high quality materials	3.2	3.3
Functional	D6	Coordinated internal/ external relationship	3.8	3.4
	D7	Provision of adequate storage	3	3.75
	D8	Logical and efficient layout	3.6	3.5

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	D9	Protecting privacy and minimising overlooking	3.4	3.1
	D10	Enabling of natural ventilation, solar gain and daylight penetration	3.6	3.65
Innovation and Sustainability	D11	Promotes energy efficiency and incorporates sustainability features	2	1.55
	D12	Demonstrates innovation and creativity in build design, form and function	2	1.35
		Overall	3.3	3.1

Urban Scale scoring for the RMD zone, for this study and the 2020 sample (Building Scale)

3 Central City Examples

3.1 Overview

The purpose of this part of the study is to augment the sample size of the 2020 study. It was noted that there was a shortage of examples in the central city given the variety of typologies. As a result, the new examples have been combined with data from the previous study.

The study has included four higher density RCC examples to augment the previous sample, as well as three randomly selected CCMU developments.

Unlike the 2020 study, this study also breaks down the two central city zones. The more "hands-off" approach in the CCMU does have the potential for poor outcomes to eventuate and the question is whether this is happening.

	RCC Combined (Both Samples)	CCMU Combined (Both Samples)	Central City Combined	Central City 2021	Central City 2020	RCC 2020
Average	3.0	3.1	3.0	3.0	3.1	2.9
Neighbourhood	3.5	3.6	3.5	3.6	3.5	3.4
Street	2.9	3.3	3.0	3.0	3.0	2.8
Site	2.7	2.7	2.7	2.5	2.8	2.7
Building	2.8	3.0	2.8	2.8	2.8	2.7

Urban Scale scoring in the Central City, for this study and the 2020 sample

As a whole, the results are not greatly different to the previous sample except that site layout has not scored so highly. This appears to be due to lower scores in the CCMU sample which are discussed later in this section.

There is also not much difference between the headline scores of the two zones. However, scores in the CCMU zone are much more variable, indicating a potential for poor quality outcomes. This is shown in the chart below, although it is notable that RCC also records a range of outcomes.



Figure 1: Overall scores for RCC and CCMU zone examples

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3.2 Residential Central City

This analysis relates to the combined scores for all RCC sites. More detailed analysis is provided in Section 4 (Tall Apartment Buildings), because these were a focus of the sample.

The sample demonstrates that the sites were generally complimentary at the neighbourhood scale, but did not have a good street interface or function well at the building scale. The site scale recorded the lowest scores due to poorly conceived communal spaces and servicing, combined with intensive overlooking of neighbours in some cases. Some of these issues are more prevalent in taller buildings, which are considered separately.

	RCC
	Combined
Average	3.0
Neighbourhood	3.5
Street	2.9
Site	2.7
Building	2.8

Urban Scale scoring for the RCC zone, Combined Samples

Neighbourhood

Scores are consistently high in this scale due to the facilities available in the central city. One issue noted, however, was that there was often an integration issue because buildings were bulky and often very visible in the existing surroundings. This is a result of the scale of building and discussed further in the next section.

Street

Combined scores are marginally short of the basic threshold. The reasons previously described, to do with the location of outdoor living spaces, privacy issues and the lack of a public interface for development continue to be observed. These are reflected in low scores in the B2 and B3 categories.

Ref	Outcome	Combined Average
B1	Creating an appropriate sense of enclosure along the street	3.4
B2	Fostering a sense of ownership of the street.	2.5
B3	Activation and articulation of the street façade through openings	2.6
B4	Property boundaries are well defined and enable views of the street.	2.9
B5	Building layout and form appropriately responds to the urban context	3.0
	Overall Score	2.9

Urban Scale scoring for the RCC zone (Street Scale)

Medium Density Housing Research: Additional Case Studies

Site

Combined scores are in line with what was seen in 2020 and significantly below the basic threshold. Problem areas are categories C3 (neighbouring amenity), C5 (CPTED) and C4 and C7, which relate to the quality of accessways and communal space.

Site	Outcome	Combined
		Average
C1	An integrated and comprehensive approach to the layout of buildings and spaces	2.9
C2	Provides for housing choice	3
C3	Respectful and responsive design of interfaces and activities relating to neighbouring properties	2.5
C4	Comprehensive approach taken to the design and quality of paving, landscaped areas and open space.	2.3
C5	Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety)	2.6
C6	Appropriate provision and location of private outdoor living spaces	3.1
C7	Appropriate provision, location and design of communal open space	2.3
C8	Provide for the safe and efficient movement of pedestrians, cyclists and vehicles	3.3
C9	A sound car parking strategy is utilised, and the visual impact car parking where provided is minimised.	2.9
C10	Efficient and effective provision of services and storage areas	2.8
C11	Incorporation and promotion of sustainability across the site	2
	Overall	2.7

Urban Scale scoring for the RCC zone (Street Scale)

The first of these is due to overlooking and loss of outlook, from large buildings built along the boundaries, usually perpendicular to the street. This is an issue with the shape of sites and the predominant "sausage block" development, the impacts of which increase with height – for example several rows of balconies overlooking neighbours. These contrast with the lower scale RMD zone that recorded good outcomes in relation to this matter.



Four storey development built lengthways on a narrow section creates issues of overlooking and enclosure for neighbours

The second issue (CPTED) was highlighted in the previous study and was due to the lack of a functional relationship between the houses and public or communal areas, in many cases. Whilst there was often surveillance and engagement via windows, a shortage of separation between the public and private realm lead to screening. There was also a lack of a sense of ownership of public or communal space.

The remaining two issues are a continuation of the theme that private amenity is well provided for, but that communal spaces and servicing are neglected, likely because these are of less direct interest to buyers of individual units.

Building

The overall scores were marginally below the basic threshold and the sample as a whole. The driver of this was the five appearance related outcomes, which were mostly below the threshold. Larger developments were seen as being monolithic. The low score for category D3 is symptomatic of the issue of bulky buildings.

Sub -Category	Building	Outcome	Combined
			Score
Appearance Related	D1	A visually interesting and cohesive approach to the building form	2.7
	D2	Variation and steps in the building line	2.7
	D3	Sufficient breaks in the roofline	2.3
	D4	Designing to a domestic scale	2.8
	D5	Use high quality materials	3.1
Functional	D6	Coordinated internal/external relationship	3.1
	D7	Provision of adequate storage	3.3
	D8	Logical and efficient layout	3.4
	D9	Protecting privacy and minimising overlooking	2.8
	D10	Enabling of natural ventilation, solar gain and daylight penetration	3.6
Innovation and	D11	Promotes energy efficiency and incorporates sustainability features	1.8
Sustainability	D12	Demonstrates innovation and creativity in build design, form and function	1.6
		Overall	2.8

Functional outcomes were similar to the wider sample, as were sustainability outcomes.

Urban Scale scoring for the RCC zone (Building Scale)

3.3 Commercial Central City Mixed Use

The sample size for this zone is six developments. This is not a large size, but is sufficient to see emerging trends in the zone and identify any particular problem areas.

Whilst the average urban scale scores are similar (or indeed higher) than the RCC, there is a lot of variability in the sample, indicating potential for poor quality development. Overall scores range from 2.1 (amongst the lowest in the entire sample) to 4.5 (the highest). There were 2 inadequate developments, 2 basic and 2 well-conceived or better. This indicates some validity in the concern that CCMU allows for poor quality to be constructed. To a significant extent, the results have been skewed by one high performing site.

There are some particular traits evident in the zone that are not necessarily evident in RCC. These include problems related to internal layouts of houses, and poor resolution of communal areas and

in one case, an almost total absence of usable outdoor living space. In this zone, there is more scope for very poor outcomes to eventuate. By contrast, there was one very good example with innovative layout.

Neighbourhood

Scores are consistently high in this scale due in part to the facilities available in the central city. Observations were that there is consistent appropriate scale but sometimes poor quality street interface due to inward looking sites. Sites in this sample are generally better positioned for residential development than the CCMU as a whole (often at the edge of the zone, opposite existing residential).

Street

CCMU sites had a combined score of 3.3 for category B3, which is comfortably meeting the "basic" threshold. However, there was considerable variability, including 2 developments that rated inadequate. These low-performing sites did enclose the street, but were rated at most inadequate for all other measures. Issues with poor street interface were evident, along with some poor detailed resolution. The units had quite a commercial appearance in one case, although the area was clearly predominantly residential and becoming more so. The zoning does not reflect the transition to residential which is apparent in this particular area.

Ref	Outcome	Combined Average
B1	Creating an appropriate sense of enclosure along the street	3.8
B2	Fostering a sense of ownership of the street.	3.2
B3	Activation and articulation of the street façade through openings	3.3
B4	Property boundaries are well defined and enable views of the street.	3.5
B5	Building layout and form appropriately responds to the urban context	2.8
	Overall Score	3.6

Urban Scale scoring for the CCMU zone (Site Scale)



Figure 2: There is a variable range of street outcomes in the CCMU zone



Above: Two storey housing encloses the street, but with outdoor living space at the street front which has created a lack of privacy and led to screening

Site

Site layout results were generally not good for CCMU. Results ranged from "poor" site layout to "well-considered", but generally fell well below the basic threshold, including two scores below 2. Scores were low for category C1, indicating that site layout was not well conceived or integrated, and for category C5 (CPTED), for which no site received more than a basic score.

Developments did generally have a good relationship with neighbours, reflecting the generally low scale of development in the zone.

Site	Outcome	Combined Average
C1	An integrated and comprehensive approach to the layout of buildings and spaces	2.2
C2	Provides for housing choice	2.8
C3	Respectful and responsive design of interfaces and activities relating to neighbouring properties	3.5
C4	Comprehensive approach taken to the design and quality of paving, landscaped areas and open space.	2.7
C5	Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety)	2.2
C6	Appropriate provision and location of private outdoor living spaces	2.8
C7	Appropriate provision, location and design of communal open space	2.5
C8	Provide for the safe and efficient movement of pedestrians, cyclists and vehicles	3.2
C9	A sound car parking strategy is utilised, and the visual impact car parking where provided is minimised.	2.8
C10	Efficient and effective provision of services and storage areas	2.5
C11	Incorporation and promotion of sustainability across the site	2.2
	Overall	2.7

Medium Density Housing Research: Additional Case Studies



Figure 3: Range of site outcomes in the CCMU zone

The CPTED issues were:

- a lack of surveillance within the sites, communal spaces that lacked ownership and purpose
- a lack of privacy that is likely to discourage surveillance (curtains were often closed). In two cases, ranchsliders overlooked car parks, in one with no separation from passers-by at all.
- The car-free sites usually had narrow accessways with little space for passing or avoidance.

Other low scores were for categories C4 and C7, which relate to the quality of communal areas. Where there was centralised car parking, the car parks were poorly landscaped, vehicle dominated and communal spaces were not useful, due to narrow dimensions and poor location at the margins of the site.



Vehicle dominated accessway

Storage was often not provided, and sometimes not in a practical fashion, for instance bins were located at the front of car parks and bike storage was in between buildings with little surveillance. Again, these functions were relegated to the margins of the site.

Building

Scores were an average of 3 over the scale, although this disguises some of the variability in the CCMU zone. The overall results indicate a basic standard on the appearance and function subcriteria on average. However, more detailed look at the data reveals that only 2 sites recorded this basic standard, indicating that this apparently satisfactory performance is not usually achieved.

Sub ·	Building	Outcome	Combined
Category			Score

Appearance Related	D1	A visually interesting and cohesive approach to the building form	3.5
	D2	Variation and steps in the building line	3.0
	D3	Sufficient breaks in the roofline	3.3
	D4	Designing to a domestic scale	3.5
	D5	Use high quality materials	3.3
Functional	D6	Coordinated internal/ external relationship	3.5
	D7	Provision of adequate storage	2.7
	D8	Logical and efficient layout	3.3
	D9	Protecting privacy and minimising overlooking	2.8
	D10	Enabling of natural ventilation, solar gain and daylight penetration	3.7
Innovation and	D11	Promotes energy efficiency and incorporates sustainability features	2.2
Sustainability		Demonstrates innovation and	
	D12	creativity in build design, form and function	1.5
		Overall	3.0

A Basic Standard of Appearance

The appearance criteria were usually met to a basic extent, with category D2 (variation and steps in the building line) recording the lowest score. Note that in contrast to RCC, there was only 1 apartment building in the survey.

Shortage of Storage and Privacy

Of the functional criteria, categories D7 and D9 were not usually well met (storage and privacy). Internal storage is not generally well provided. Some units had external storage (sheds) in visually intrusive locations in front of the units. One development provided leasable storage cupboards, which is a higher quality and practical solution.

Poor management of privacy was in part due to the views into apartments from communal and public space without adequate separation or planting. These privacy issues were sometimes reflected in poor scores for category D8, where unusual layouts had been employed (including one example where houses were accessed through the bedrooms), as well as the more common front and back issue where entrances are internalised.



Figure 4: Range of building outcomes in the CCMU zone

4 Taller Apartment Buildings

4.1 Overview

The additional case studies provide a more meaningful sample of taller buildings and the issues that have occurred with recent examples. Combined together, the surveys have six sites and the scores and comment have been analysed as a separate dataset below.

These sites were all of horizontally divided apartment buildings of at least 3 stories.

Overall, these examples have an average score of 3.1 which indicates that a basic standard has been achieved on average. However, a deeper look at the data indicates that there are some pervasive problems and also some buildings that did not perform well, indicating that the Plan is not providing consistent performance.

Tall Building Average		3.1
Neighbourhood	3.8	
Street	3.2	
Site	2.6	
Building	2.8	

Urban Scale scoring for taller buildings (Combined)

The taller buildings exhibited many of the same issues that were evident in the wider sample. These include:

- Issues with street interface, due to the location of outdoor living space at the front, and insufficient consideration of privacy in general.
- Poor CPTED outcomes
- Site planning issues that prioritise vehicle access, with much better results where separate access is provided

Some issues were evident that were not identified in the wider sample. These include:

- Overlooking of neighbours
- Examples of monolithic buildings with poor mitigation
- A shortfall of outdoor living space

Particular benefits were:

- The sense of enclosure of the street and the potential for positive visual interest
- Variety in housing choice.

As for other samples, site layout issues were a notable under-performance. Interestingly, scores for street related matters were higher than for the site average.

4.2 Urban Scale Analysis

Some comments on the individual scales are as follows:

Neighbourhood

It is not surprising that the neighbourhood score was quite high as all the examples were in the Central City and have access to a wide range of amenities.

Street

The street score was heavily influenced by the "creating a sense of enclosure" score (4.3) which was influenced by the scale of building. This was seen as positive for the context because of the greater scale of building, which encloses the street at a scale more appropriate to an urban area (generally with a ratio of around 1:2).

Points of weakness were creating a sense of ownership (category B2) and "property boundaries are well defined and enable views of the street" (category B4). The taller buildings have the same issues as the wider sample, with some buildings being inward looking, or with outdoor living space and fencing at the street front.

Site

Site layout scores were very variable with high scores in some categories and low in others. There was also a difference in scores between buildings.

Notable trends were that:

- parking in higher density developments is associated with low amenity communal space and poor quality pedestrian access. This seems to be due to the competition for space on the ground plane, with planting and amenity being sacrificed. Where there was a separate pedestrian access, results tended to be better.
- Some developments, those built lengthways down a deep block, were observed to be efficient in terms of layout, but at the expense of public and communal areas.
- Most developments overlooked neighbours and created privacy issues. There was usually too much outlook concentrated to one side.
- There were poor outcomes in relation to CPTED due to poor design of internal spaces (for instance entrapment spaces were common and there was often little overlooking of internal areas). Street interfaces were often problematic for the same reasons as observed more generally (privacy conflicts).
- Outdoor living space was often under-provided and was not usually compensated by adequate communal space.
- Housing choice is noted as being a benefit of apartments because they generally provide a range of options (eg 1 and 2 beds).



This building demonstrates visual interest and good materiality (but does overlook neighbours)

Building

The building scale is marked by variability, indicating that good design is perhaps not required (but sometimes provided because it is valued by some market segments).

Particular observations were:

- Some bulky buildings used tack-on features to try and create some visual interest but this was not successful. Partly as a result of this, some buildings were regarded as monolithic and clumsy.
- Sometimes breezeways created an awkward interface because of the difficulty of glazing next to them (fire rating). One building has bedrooms without external glazing.

Appendix 1: Individual Property Scores

RMD zone Examples

48 Ward Street

A development of 10 two bedroom units and 2 one bedroom units in Addington. The development consists of two units beside the street, a central car park and a rear terrace. It also includes a separate walking access from the street.



Scoring Summary		
Neighbourhood	4.0	
Street	2.8	
Site	3.5	
Building	3.9	
Total	3.5	

68 Barbour Street

A development of 8 two bedroom units in Charleston. The development consists of two units beside the street, a central car park and a rear terrace. It also includes a separate walking access from the street.



Scoring Summary		
Neighbourhood	3.3	
Street	3.0	
Site	3.0	
Building	2.9	
Total	3.1	

9 Bolton Avenue

A development of 5 two bedroom units and 1 one bedroom units in Spreydon. The development consists of a single terrace of units, some with garages and an additional parking space at the front.



Scoring Summary	
Neighbourhood	3.3
Street	3.2
Site	3.3
Building	3.0
Total	3.2

70 Bishop Street

A single building containing seven two bedroom units with garages in Edgeware.



Scoring Summary	
Neighbourhood	3.7
Street	2.6
Site	2.5
Building	2.9
Total	2.9

554 Madras Street

Seven units in St Albans, built over two original sites and centred around a landscaped car-park, and adjacent to a stream. The development consists of three duplexes and a single unit. Two of the units are adjacent to the street. One has a front door facing it and another has outdoor living space in the setback.



Scoring Summary	
Neighbourhood	4.7
Street	3.6
Site	3.9
Building	3.8
Total	4.0

RCC Zone Examples

466 Hagley Avenue

30 units in two blocks, one of which overlooks Hagley Park. There is a central shared communal space. Units in the Selwyn Block (not facing the park) do not have an outdoor living space – instead there is a Juliet Balcony and they are larger than the minimum size (for one bed units). Access to upper floor apartments is via a breezeway. The Selwyn Block units do have a large area of glazing facing the site next door.



Scoring Summary	
Neighbourhood	3.7
Street	4.0
Site	3.0
Building	2.8
Total	3.4





272 Barbadoes Street

A five storey apartment complex in two buildings with 32 units in all. The smaller building sits in front of a car parking area and there is a separate pedestrian entrance into the main building. There is no communal space and upper floor units have balconies of around 12m².



Scoring Summary		
Neighbourhood	4.3	
Street	3.8	
Site	2.9	
Building	3.0	
Total	3.4	



269 Kilmore Street

A complex of one bedroom apartments with a central internal corridor. The complex is car-free and each of the units has around 16m2 of private outdoor living space. Units are two storey with a townhouse-style layout, but accessed internally.



Scoring Summary	
Neighbourhood	4.0
Street	2.8
Site	3.4
Building	3.0
Total	3.3

36 Cranmer Square

A four storey apartment complex in the central city facing Cranmer Square. The complex has a smaller front building facing the square, and a larger building facing the internal boundaries. Access to the rear building is from a breezeway and via the driveway. Parking is located behind the front building but underneath the rear one.



Scoring Summary	
Neighbourhood	3.7
Street	2.6
Site	2.1
Building	2.7
Total	2.8


CCMU Zone Examples

361 Madras Street

A two storey townhouse complex in the CCMU zone at the north of the city. The area is transitioning to residential use but the property to the north was industrial at the time of construction. This has led to an unusual site layout where the access is on the north side of the development and the houses are accessed through the outdoor living space. There is a central carpark and a small communal outdoor space at the rear of the site.



Scoring Summary				
Neighbourhood	3.0			
Street	2.2			
Site	1.6			
Building	2.0			
Total	2.2			

201-205 Salisbury Street

A two and three storey townhouse complex in the CCMU zone at the north of the city, adjacent to an established large format retail site. A large consolidated site was developed with two adjacent rows of houses on separate accessways. Two sets of duplexes front the street, with rows of housing behind, divided into a number of blocks with some varied articulation.



Scoring Summary			
Neighbourhood	4.0		
Street	4.0		
Site	3.4		
Building	3.5		
Total	3.7		

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290 Hereford Street

19 3 bedroom units in the central city, in 4 blocks with a central car park. Each has a small outdoor living area at the front facing the street or car park. Some communal space present in the car park corners.



Scoring Summary			
Neighbourhood	2.3		
Street	2.6		
Site	1.5		
Building	2.8		
Total	2.3		

1

UNIT 9

UNIT 19

A Summary of a National Survey on Living Locally in Aotearoa, New Zealand

Survey results on the 20 Minute City

HEADER CORNE



JACI



Based on the findings of this research.



Environmental Planning Programme

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Minute City

As cities plan beyond Covid-19, the concept of the 20-Minute City is generating growing international interest. The idea is based on living locally, with residents able to access the services and amenities they need within 20 minutes of their home whether by walking, cycling, micromobility or using public transport.

This document summarizes the findings of the first Aotearoa-New Zealand nationwide survey on how long, and how far, people are willing to travel to access different services and amenities without using cars.



Age groups of the Respondents



Age groups also included 76 and over (1%) and 15 and under (0.1%)

What respondents want to live close to

How much time respondents are willing to travel to get to nature, parks and gardens

re

Most of the respondents would prefer to live near nature, parks and gardens

The overall preferred amenities include:



'Other' Amenities included: "Recreational facilities" (4.8%), "Entertainment or cultural amenities" (3.6%), "Healthcare services" (2.3%), "Government services" (0.7%), "Places of worship" (0.3%) and, "Marae" (0.3%)



Regardless of the destination or mode of transport, on average, people would prefer to spend up to **20 minutes** getting there. People told us they preferred certain amenities over others. The top two most preferred amenities took up around half of all preferences:

Most preferred = Nature, parks & gardens

Second preferred = Local shops & services

This tells us that a 20 minute city strategy could prioritize the provision of local nature and local shops rather than treating everything equally.

★ Public Transport included time spent walking to and from the transit stop, waiting and in transit. Most (25%) respondents selected "I would not / could not", however those who would/could would be willing to spend 20-30 minutes travelling.

★ Micro Mobility included electric scooters, skateboards etc... Most (39%) respondents selected "I would not / could not however those who would/could would be willing to spend 10-20 minutes travelling.

A closer look at how walking preference time differs between different amenities



Respondents want to spend the least amount of time walking to public transport stops.

> Respondents are willing to walk the furthest for religious or spiritual purposes.

On average, respondents are willing to walk 18.54 minutes to reach their preferred destination.

> By changing the urban environment to favour walking we can increase the number of amenities available within 20 minutes

Time and

Distance. People are willing to spend on

average and across all amenities...

Time

speed of 4.8km/h.



Based on an average speed between various micro mobility modes of transport of 26.6km/h.

A rule of thumb on **Time and Distance.**

Averaging responses of this research provides a useful rule of thumb of how close amenities should be by different modes of travel.

> Walking 20 minutes = 1.5km Cycling 20 minutes = 5km Micro Mobility 20 minutes = 8km

Age and travel



Age and amenity

The preferred amenities for each age group is:

15 and under	Recreational facilities & nature, parks and gardens			
16-20	Local shops and services			
21-25	Local shops and services			
26-30	Nature, parks and gardens			
31-35	Nature, parks and gardens			
36-40 Nature, parks and gard				
41-45	Local shops and services			
46-50	Local shops and services & nature, parks and gardens			
51-55	Nature, parks and gardens			
56-60	Nature, parks and gardens			
61-65	Local shops and services			
66-70	Nature, parks and gardens			
71-75	Local shops and services			
76 and over	Local shops and services			
Note for ages 15 and under and 46-50, the votes were equal.				

Gender and amenity

MALES

FEMALES

overall rank nature, parks and gardens as their preferred amenity. overall rank local shops and services as their preferred amenity.

GENDER DIVERSE

overall rank nature, parks and gardens as their preferred amenity.

Gender and travel



18.8 minutes on average

Gender Diverse

people are willing to spend the least amount of time travelling across all transport modes

17.4 minutes on average

Ethnicity and time

Ethnicity and amenity

MĀORI	PASIFIKA				
are willing to spend more time walking and cycling than any other ethnicity	are willing to spend more time using micro mobility than any other ethnicity				
19.95 minutes on average	e 20 minutes				
ASIANS are willing to spend the least time walking than any other ethnicity	PASIFIKA are willing to spend the least time cycling than any other ethnicity				
18.2 minutes on average	19.1 minutes				
are willing to spend the least amount of time using micro mobility than any other					
ethnicity 16.9 minutes					

Ethnicity	Preferred Amenity	Second preferred amenity
Asian	Larger shopping complexes	Local shops and services
European	Local shops and services	Nature, parks and gardens
Māori	Local shops and services	Nature, parks and gardens
Pasifika	Nature, parks and gardens	Educational facilities
Pākeha / NZ European	Nature, parks and gardens	Local shops and services
Other	Nature, parks and gardens	Local shops and services

In Summary

Time, preferred amenity and travel choices differ between ages, gender and ethnicities. There is no one-size-fits-all approach or solution.

Regardless of this, the top two preferred amenities are 'nature, parks and gardens' and 'local shops and services'

Other interesting finds

Without good design, the way people travel changes after dark.



Preferred amenities based on location.



In Summary

People only want to travel for 20 minutes...

> ...Regardless of how they choose to do it



Technical Advice for Wind Assessments for Christchurch City

Meteorology Solutions

Using meteorology expertise to optimise engineering solutions

Mike Green, Engineering Meteorologist 8 June 2022



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1. Introduction

Meteorology Solutions Ltd was commissioned by Christchurch City Council (CCC) for provision of technical advice to inform a package of rules and assessment matters for managing the impact of wind conditions caused by tall buildings in both residential and commercial areas. The scope includes advising CCC on new District Plan rules and may include suggesting rules and assessment matters to include in the Plan, as well as appropriate technical standards for wind conditions.

The scope also includes modelling of existing prevalent conditions in the City based on existing development, and further, demonstrating the likely impact of some future development scenarios. The purpose of the modelling is to identify impacts to inform potential mitigation options for challenging wind locations resulting from taller buildings. The wind modelling includes part of the city centre and an edge area to represent the High-Density Residential Zone.

A workshop was held on 6 May 2022 to discuss initial results. This report accounts for discussions in that workshop.

2. Context

Christchurch is a relatively windy city with a background mean wind speed of about 4 m/s (at 10 m above the ground). At the airport for example, the mean wind speed exceeds 4 m/s about 45% of the time, exceeds 6 m/s about 21% of time, and exceeds 8 m/s about 11% of the time.

In general, the 'roughness' of a city, which is caused by buildings and trees/vegetation, results in a reduction of wind speeds. However, higher buildings can intercept and deflect stronger winds from higher levels towards the ground. Also, channeling of wind along street and across open areas (such as parks), can result in localised higher wind speed areas.

The modelling completed in this study for an existing CDB scenario showed that wind conditions in most places are reasonable (such as mean speeds exceeding 6 m/s less than 5% of the time) in most places, except at isolated locations where there is channeling/reinforcement of wind, or enhancement of wind speeds from deflection off taller buildings.

The CFD simulations with added 30 m high buildings added to the Christchurch CBD showed that there was only a small increase in adverse wind effects. However, for building heights above 30 m, there is evidence that there would be increasing potential for wind impacts at more locations, and over larger areas.

For residential areas, the CFD modelling showed that there is more potential for adverse wind conditions when higher buildings are added due to less sheltering in general by the absence of surrounding tall buildings, and due to more exposed areas around the added buildings. For this reason, it has been recommended that buildings above 20 m should require a wind impact assessment.

3. Review of other New Zealand city distrcit plan requirements for wind

Auckland City Council requires a wind assessment to be done for new buildings exceeding 25 m height. The plan requirements are the same for the city area and for surrounding local business centres. The council is flexible with the procedure to complete a wind assessment including a desk top study (from experience for areas outside of the CBD), CFD (computational fluid dynamics), or using a wind tunnel. The criteria refer to areas not exceeding environmental control limits (which is based around mean wind speed and probably of occurrence) which are aligned to pedestrian usage categories. There is also a requirement for safety around an annual 3-second wind gust not exceeding 25 m/s.

The Wellington plan is flexible in that a wind assessment can be in the form of a wind report (a desktop analysis by a wind expert referred to as a Wind Assessment Report) and modelling is not required. However, using CFD is not allowed, and modelling must use a wind tunnel, which is referred to as a Wind Tunnel Test Report. It is not clear from the district plan when a certain assessment type is suitable.

The Dunedin city plan requirements for wind assessments is brief. *Buildings and additions and alterations are required to maintain or enhance streetscape amenity by ensuring buildings and structures above 20m minimise as far as practicable adverse effects of shading and wind on pedestrian amenity.*

Wind assessments in all cities require a suitably qualified wind expert.

It is worth noting here that London city has very specific guidelines for wind such as at: <u>https://www.cityoflondon.gov.uk/assets/Services-Environment/wind-microclimate-guidelines.pdf</u>

Table 1 provides a high-level summary of the Auckland, Wellington, and Dunedin rules and criteria in the relevant district plans.

Table 1: Summary of Auckland, Wellington, and Dunedin rules and criteria in city plans for wind

City	Building height limit for wind assessments	Flexibility around methodology of wind assessments	Criteria comments
Auckland	Above 25 m	Flexible methods allowed, but CFD or wind tunnel assessment is most likely required for CBD area.	 Wind criteria are based around recognised international standards (looks similar to the Davenport standard), but the criteria have difference that appear to be unique. The annual 3-second second gust speed of 25 m/s is difficult to assess. Strong wind gusts are specific to a local environment, wind data is often some distance and in a different wind climate to the urban area, and extreme wind events often occur in localised weather events such as in thunderstorms. To evaluate the gust criteria a wind tunnel or CFD would need to be required. The gust speed of 25 m/s represents gust equivalent mean speed (GEM) of 13.5 m/s.
Wellington	Above 18.6 m	Some flexibility, but CFD is not allowed	 Standard is based around safety and cumulative wind effects. Safety criteria is based around maximum gusts speeds of 20 m/s. Comfort/pedestrian/public space wind criteria are based around mean wind speeds of 2.5 and 3.5 m/s thresholds where occurrence of wind speeds cannot increase by more than 170 hours per year (or about 2% of the time). There are also criteria based around the existing windy environment with criteria in public spaces with mean wind speeds above 2.5 m/s 1700 hours per year (about 20% of the time) and with different rules if the existing scenario already exceeds this limit. To assess these standards would require a wind tunnel assessment.
Dunedin	Above 20 m	Required method of assessment is not specified	 Criteria is limited to minimising as far as practicable adverse effects of wind.

4. Computation Fluid Dynamics (CFD) overview

This modelling for Christchurch utilised a new branch of the Computation Fluid Dynamics (CFD) model known as the Lattice Boltzmann Method (LBM) to evaluate wind speeds at 1.5 m above ground level. The LBM solver is provided by SimScale and used for complex fluid systems including wind flow around buildings and structures, and through porous objects such as trees and hedges. This form of CFD has been adapted and evaluated by SimScale for wind tunnel type applications such as wind loading on buildings, pedestrian wind safety analysis, automotive aerodynamics, and other external flow applications. SimScale allows for pedestrian comfort and safety results to be given in a number of internationally recognised standards, some of which are described below.

5. Modelling scenarios

The modelling consisted of two parts; part of the CDB centered around the Colombo St and High St intersection, and a residential area just northeast of the city around the Chester St. E and Barbados St area.

The CBD modelling comprised of three build scenarios including, existing, a scenario with added 30 m high buildings in the wider CDB area, and a scenario with added 90 m high buildings in the wider CDB area. Larger trees were included in the modelling. These building scenarios are shown in Appendix 1.

The two residential modelling scenarios were somewhat artificial including a model based around Chester St. E wit 6-story level buildings (18 m high) added, and then a model with a mix of 6 and 10-storey level buildings (30 m) added. Addition of these 6 and 10-story building meant that there were increased open areas such as car parking and public space areas between buildings compared to the existing conditions. Note that only trees in the vicinity of the Avon River were included in the modelling. These build scenarios are shown in Appendix 2.

6. Background wind conditions

Background wind conditions are a key input into the modelling. The wind rose uses was from Christchurch Airport for a 10-year period and is shown in Figure 1. While the airport is some distance from the Christchurch CDB, it is assessed to be representative of the background wind conditions.



Figure 1: Wind rose for Christchurch Airport (showing the direction that the wind comes from)

Another required input for the CFD model is the surrounding surface roughness criteria which was assessed to be the 'urban' or 'suburban' categories. The surrounding surface roughness helps the model determine how wind speed changes with height which in turn affects how wind interacts with structures, especially taller buildings.

7. Wind Comfort Standards

Wind standards have been designed to give guidance around how wind conditions are suitable for intended pedestrian activities in urban settings. These standards use predicted spatial wind fields from the CFD modelling, and the frequencies of wind speeds, to give spatial pedestrian wind comfort and safety levels. Where the wind category exceed activity proposed in locations, this indicates the existence of an adverse effect of wind on pedestrians.

While there is no universal wind comfort/impact standard, there are a number that can be used to assess how a new building will impact on the surrounding wind environment. The criteria within standards range for example from 'sitting for long periods' (as would be suitable for outdoor cafes and restaurants) through to 'uncomfortable' and/or 'dangerous' levels. Standards that are often used are Lawson (and related variations such as London LDDC, Lawson 2001, and Lawson LDDC), Davenport, and NEN 8100. The NEN 8100 safety standard is an example of an index that is used to assess wind impacts on safety for pedestrians.

For pedestrian wind comfort, the typical approach can be to use mean wind velocity for the comfort calculations. However, it has been recognised that wind gusts often represent additional discomfort to the pedestrians, and the Gust Equivalent Mean (GEM) formulation is a way to account for such sudden wind accelerations. Some authorities around the world now require GEM to be considered. Note that while the GEM is given as mean wind speed, gust speeds can be estimated by multiplying the GEM by a (gust) factor of 1.85. For example, GEM of 13.5 m/s represents potential wind gusts speeds of about 25 m/s.

Wind standards are made up of a number of components including:

- Comfort and/or safety considerations
- Wind speed thresholds
- Percentage of wind speed occurrence
- Use of mean wind speed or GEM, or the maximum of both

Some standards combine both comfort and safety criteria, such as for the London LDDC criteria. This can result in the small exceedance percentages for safety criteria can supersede the comfort criteria, especially when GEM is being used. The Lawson LDDC standard is very similar to the London LDDC standard but does not include the safety criteria.

Based on the results of the Christchurch modelling, we recommend the following wind standard are used to assess wind comfort and safety for urban Christchurch:

For comfort:

- 1. Use either the London LDDC or Lawson LDDC standards as given in Tables 2 and 3.
- 2. Use 5% wind speed exceedance thresholds
- 3. Use maximum of mean wind speed and GEM (gust equivalent mean) wind speed.
- 4. Use all 24-hours of background hourly wind data.

For safety:

Use the NEN 8100 standard or London LDDC Pedestrian Safety Limit (which is more conservative than NEN 8100).

London Docklands Development Corporation (London LDDC) standard

Table 1 describes the six wind categories in the London LDDC standard. The London LDDC index is based around a version of a Lawson wind comfort classification and utilises the maximum of the mean and GEM wind speeds with exceedance levels of 5%, and using background wind data for all 24 hours. Note that for this standard, a safely wind speed criteria (F) is sometimes used as part of the comfort assessment criteria.

Table	1:	London	LDDC	criteria	to	show	spatial	wind	impacts
Tubic		Longon		criteria		511011	spatia		inpacts

	Category	Maximum of mean and GEM wind speed (5% exceedance)	Possible adapted description for Christchurch
A	Frequent Sitting	2.5 m/s	Acceptable for frequent outdoor sitting use such as outdoor restaurants and cafés.
В	Occasional Sitting	4 m/s	Acceptable for occasional outdoor seating, such as general public outdoor spaces, balconies and terraces intended for occasional use.
с	Standing	6 m/s	Acceptable for entrances, bus stops, covered walkways or passageways beneath buildings.
D	Walking	8 m/s	Acceptable for external pavements and open walkways.
E	Uncomfortable	Greater than 8 m/s	Not comfortable for regular pedestrian access.
F	Pedestrian Safety Limit	15 m/s (0.022% exceedance)	Presents a safety risk for pedestrians, especially to the more vulnerable members of the public.

Lawson LDDC criteria

Table 2 identifies the six wind categories in the Lawson LDDC standard which is also based around a version of a Lawson wind comfort classification scheme. This standard utilises the maximum of the mean and GEM wind speed levels with exceedance levels of 5% (using wind data from 24 hours in a day). The Lawson LDDC standard does not include the lower percentage exceedance safety criteria - which can be beneficial for not masking other higher wind level criteria areas which can occur with the London LDDC standard.

It is recommended that it is up to the discretion of a wind specialist to include the F criteria level in the London LDDC standard for a wind comfort assessments. In our opinion both the London LDDC and Lawson LDDC standards provide a rigorous level of assessment and have similar wind speed thresholds except at the lowest level, and with an added comfort level for the Lawson LDDC standard for higher wind speeds.

Table 2: Lawson LDDC criteria to show spatial wind impacts

	Category	Maximum of mean and GEM wind speed (5% exceedance)	Possible adapted description for Christchurch
A	Outdoor dining	2 m/s	Acceptable for frequent outdoor sitting use such as outdoor restaurants and cafés.
В	Pedestrian Sitting	4 m/s	Acceptable for occasional outdoor seating, such as general public outdoor spaces, balconies and terraces intended for occasional use.
с	Pedestrian Standing	6 m/s	Acceptable for entrances, bus stops, covered walkways or passageways beneath buildings.
D	Pedestrian Walking	8 m/s	Acceptable for external pavements and open walkways.
E	Business walking	10 m/s (less than 5%)	Not comfortable for regular pedestrian access.
U	Uncomfortable	10 m/s (more than 5%)	Not comfortable for regular pedestrian access (and potentially dangerous for some people)

Lawson 2% exceedance criteria

The Lawson 2% exceedance standard is another version of a Lawson standard. The 2% exceedance criteria means that wind comfort levels are exceeded at more locations and for lower frequency than for the 5% exceedance criteria.

Table 3: Lawson 2% exceedance criteria to show spatial wind impacts

	Category	Maximum of mean and GEM wind speed (2% exceedance)	Possible adapted description for Christchurch
Α	Sitting long	1.8 m/s	Acceptable for frequent outdoor sitting use such as outdoor restaurants and cafés.
В	Sitting short	3.6 m/s	Acceptable for occasional outdoor seating, such as general public outdoor spaces, balconies and terraces intended for occasional use.
с	Walking leisurely	5.3 m/s	Acceptable for entrances, bus stops, covered walkways or passageways beneath buildings.
D	Walking fast	7.6 m/s	Acceptable for external pavements and open walkways.
E	Uncomfortable	Above 7.6	Not comfortable for regular pedestrian access.

NEN 8100 Wind Danger Criteria

The NEN8100 index is based on a Dutch wind nuisance standard adapted to advise on danger caused by wind as set out in Table 2 below. Using the danger criteria, mean wind speeds of 15+ m/s occurring less than 0.05% of the time are regarded as being 'No Risk', while mean speeds 15+ m/s occurring more than 0.3% of the time are regarded as 'Dangerous'. For a hospital environment where there is more likely to be vulnerable people in outdoor areas, the more conservative 'Limited Risk' criteria (or green category) was used to assess wind speed risk.

Table	3: NEN	8100	standard	adapted	to identify	'dangerous'	locations

	Wind speed	Frequency	Description
A	15 m/s	Less than 0.05%	No Risk
В	15 m/s	Less than 0.3%	Limited Risk
с	15 m/s	Greater than or equal to 0.3%	Dangerous

8. CBD wind modelling results

Below are results for the three proposed wind impact standards for the CBD area including for the existing building scenario and for the two scenarios including added 30 m and 90 m high buildings (as shown in Appendix 1). For comparison the Lawson 2% exceedance standard has been included in the results to compare with the 5% exceedance standards. Note that the results have a truncated version of the wind criteria key. Also note that the colour scale for the Lawson 2% exceedance criteria has a different colour scale to the other comfort criteria.

The London LDDC standard for existing building scenario, added 30 m buildings, and added 90 m buildings (using maximum of mean and GEM wind speeds)



A	2.5 m/s	< 5%	Frequent Sitting
В	4 m/s	< 5%	Occasional Sitting
С	6 m/s	< 5%	Standing
D	8 m/s	< 5%	Walking
Ε	8 m/s	> 5%	Uncomfortable
S	15 m/s	> 0.022%	Unsafe

The Lawson LDDC standard for existing building scenario, added 30 m buildings, and added 90 m buildings (using maximum of mean and GEM wind speeds)



А	2 m/s	< 5%	Outdoor Dining
В	4 m/s	< 5%	Pedestrian Sitting
С	6 m/s	< 5%	Pedestrian Standing
D	8 m/s	< 5%	Pedestrian Walking
Е	10 m/s	< 5%	Business Walking
U	10 m/s	> 5%	Uncomfortable

Lawson 2% exceedance standard for existing building scenario, added 30 m buildings, and added 90 m buildings (using maximum of mean and GEM wind speeds)



А	1.8 m/s	< 2%	Sitting Long
В	3.6 m/s	< 2%	Sitting Short
С	5.3 m/s	< 2%	Walking Leisurely
D	7.6 m/s	< 2%	Walking Fast
Ε	7.6 m/s	>= 2%	Uncomfortable

The NEN 8100 danger standard for existing building scenario, added 30 m buildings, and added 90 m buildings (using maximum of mean and GEM wind speeds)



А	15 m/s	< 0.05%	No Risk
В	15 m/s	< 0.30%	Limited Risk
С	15 m/s	>= 0.30%	Dangerous

9. Urban residential wind modelling results

Below are results for the three proposed wind impact standards for an urban residential area including for included 6-story buildings scenario and for included mixed 6 and 10-story buildings (as shown in Appendix 2). For comparison the Lawson 2% exceedance standard has been included in the results to compare with the 5% exceedance standards.

The London LDDC standard for 6-story buildings, and mixed 6 and 10-story building scenario (using maximum of mean and GEM wind speeds)



А	2.5 m/s	< 5%	Frequent Sitting
В	4 m/s	< 5%	Occasional Sitting
С	6 m/s	< 5%	Standing
D	8 m/s	< 5%	Walking
Е	8 m/s	> 5%	Uncomfortable
S	15 m/s	> 0.022%	Unsafe

The Lawson LDDC standard for 6-story buildings, and mixed 6 and 10-story building scenario (using maximum of mean and GEM wind speeds)



A	2 m/s	< 5%	Outdoor Dining
В	4 m/s	< 5%	Pedestrian Sitting
С	6 m/s	< 5%	Pedestrian Standing
D	8 m/s	< 5%	Pedestrian Walking
Ε	10 m/s	< 5%	Business Walking
U	10 m/s	> 5%	Uncomfortable

A Lawson 2% exceedance criteria standard for 6-story buildings, and mixed 6 and 10-story building scenario (using maximum of mean and GEM wind speeds)



The NEN 8100 Danger standard for 6-story buildings, and mixed 6 and 10-story building scenario (using maximum of mean and GEM wind speeds)



10. Results discussion

The modelling results for the CBD show that wind impacts at ground level increase with building height from around 30 m. Wind impacts are shown to increase for building heights above 30 m in the vicinity of the taller buildings and in open spaces. There was no significant increase in wind impacts for the 30 m building added compared to the existing scenario, except for a few locations of low frequency strong wind gusts. These results are what is expected with taller buildings expected to intercept stronger winds above the sheltered zone created by the city environment.

For the residential modelling, there is a reasonable increase in wind impacts when increasing building heights from 6-storeys (modelled as 18 m height) to 10-storey buildings (modelled as 30 m height). Increased wind impacts are expected for lower building heights outside of the CBD due to the more exposed environment.

Following discussion in the workshop on 6 May 2022 and subsequent emails, and considering the modelling results, the proposed building heights of 28 m for the CBD, and 20 m for residential and mixed-use areas are appropriate levels to initiate a wind impact assessment.

Note that the larger buildings had smooth facades, which could enhance downwash effects in the results.

11. Wind Mitigation

The following mitigation measures can be considered to reduce wind impacts:

- Use of vegetation and other porous/mesh barriers strategically aligned to reduce wind speeds at street level.
- Use of vegetation next to or under building overhangs.
- Avoiding larger towers/slab structures facing into stronger wind regimes, such as for northeast, southwest and northwest winds in Christchurch.
- Use of wind canopies at street level for larger towers/slab structures, especially those facing into stronger wind regimes.
- Balconies and other 'rough' features on the building facades will reduce downwash, especially buildings facing into stronger wind regimes (such as northeast, southwest and northwest). Note that such features were not included in the models for this exercise. Small features such as balconies can be challenging to model due to the scale of such features; however, there are methods that they can be represented.
- Use of wind lobbies and revolving doors for laneways exposed to the stronger wind regimes.

12. District plan rule and assessment criteria recommentations

Potential rule option for Christchurch city wind impact

To be able to quantify changes of the pedestrian level wind environment resulting from a proposed new building (above 30 m height in the CDB, and above 20 m height for urban residential and mixed zones) by comparing with existing wind conditions. Where wind conditions deteriorate as a result of a proposed building, the assessment must address the following:

- 1. Show that wind conditions (comfort and safety) do not exceed that for pedestrian use as indicated by the London LDDC and/or Lawson LDDC standards.
- 2. If wind conditions exceed the criteria for intended pedestrian use, show that mitigation options reduce wind conditions to an acceptable level (such as given in Table 1 or Table 2).
- 3. If a reduction to 'required wind levels' is not possible at all locations, the wind assessment must show the steps taken to minimise wind impacts (through mitigation options and/or design changes).
- 4. If reduction to 'required wind levels' is not possible at all locations, the wind assessment can show if/where wind conditions have improved in some areas as a result of the new building.

The wind assessment must address both comfort and safety considerations. It is recommended that the London LDDC and/or Lawson LDDC standards are used to assess wind comfort, and the NEN 8100 Danger standard is used to assess safety. These standards should use 5% exceedance wind speed criteria, the maximum of the mean and GEM (gust equivalent mean) wind speeds, and with background wind data covering a 24-hour period.

In our opinion the 2% exceedance level criteria (as for the Lawson 2% exceedance standard results (as provided above), would be less forgiving for the higher building scenarios, and could make achieving suitable wind levels difficult for more locations, especially for a relatively windy city such as Christchurch.

Other considerations for Christchurch city wind assessments:

- The wind assessment covers pedestrian areas/parks, laneways etc. such as within 100 m (for example) from the edge of the new building/development.
- Surrounding buildings, other significant structures, and later vegetation features within at least one additional block from the edge of the assessment area should also be included in the model domain.
- The wind assessment should aim to include all features greater than 1 m in dimension.
- The wind assessment can use CFD software and/or a wind tunnel.
- A wind study using the wind comfort and safety standard approach should include at least eight wind direction sectors.
- The wind assessment must use the wind climate file provided.
- The wind assessment should use a standard geometry file (that can be provided).
- Show that the existing wind modelling results reflects reality

13. Cyclist considerations

There has been discussion on how practical it could be to require mitigation for cycle lanes. One challenge of this is that wind speeds tend to be higher on streets due to channelling effects down streets and between buildings, and wind acceleration around exposed corners of buildings. For example, a new building on a corner could potentially increase wind speeds much more than a new buildings in the centre of a block.

For a new development, a wind assessment could be required to cover an adjacent cycle way to show that wind conditions do not exceed a certain level, such as one of the criteria from the NEN 8100 wind standard.

Appendix A – CFD models for CBD area



Figure 2: Existing Christchurch CDB model



Figure 3: Christchurch CDB model with added 30 m high buildings



Figure 4: Christchurch CDB model with added 90 m high buildings

Appendix B – CFD models for high density residential area



Figure 5: Christchurch residential model with added 6-story high buildings



Figure 6: Christchurch residential model with added mixed 6 and 10-story high buildings

PROPERTY CONOMICS



CHRISTCHURCH CITY RESIDENTIAL ZONES & INTENSIFICATION PRECINCTS (PC14) ECONOMIC CBA

Client:	Christchurch City Council	
Project No:	52156	
Date:	August 2022	



SCHEDULE

Code	Date	Information / Comments	Project Leader
52156.13	August 2022	Report	Tim Heath / Phil Osborne

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1. INTRODUCTION

Property Economics has been engaged by Christchurch City Council (**Council**) to identify the high-level economic costs and benefits of a suite of proposed changes to residential rules in the Christchurch District Plan (**CDP**) as part of Plan Change 14 (**PC14**). These proposed changes are specific to the Medium Density Residential Zone (**MRZ**), High Density Residential Zone (**HRZ**) Residential Large Lot Zone (**LLZ**) and Residential Guest / Visitor Accommodation Zone (**G / VAZ**) provisions¹.

PC14 has been driven by the implementation process of the National Policy Statement on Urban Development (NPS-UD) which is an enabling document. As a result, many of the proposed changes as part of PC14 are enabling in nature. To mitigate some of the economic and non-economic costs associated with greater levels of enablement Council also proposes to implement and loosen several controls on existing residential zones.

This high-level economic cost-benefit assessment is a review of the economic implications of the proposed residential controls as part of PC14. This assessment does not consider changes that have otherwise been mandated as part of the Medium Density Residential Standards (MDRS) implementation which are also included as part of PC14.





1.1. OBJECTIVES

Key objectives in this assessment are:

- Identify the extent of the impacted Residential Zones in Christchurch City MRZ, HRZ, RLL, and RG/VAZ.
- Identify residential zone rules and policies impacted by PC14, that did not arise as part of MDRS changes, that have economic implications.
- Identify the economic breadth and extent of each of the residential rules and policy changes.
- Assess the economic implications of each of the residential rules and policy changes through an economic cost-benefit lens.
- Determine the economic breadth and extent of the interaction of the residential rules and policy changes through an economic cost-benefit lens.
- Assess the net economic effects of each policy or rules change in the residential and form an economic view on the change in policy or rule.

1.2. DATA SOURCES

Information has been obtained from a variety of reputable data sources and publications available to Property Economics, including :

- Primary Land Parcels LINZ
- Maps Bing
- Christchurch District Plan CCC
- National Road Centre Lines Waka Kotahi
- Proposed Centre Heights Options CCC
- Draft Housing and Business Choice Plan Change CCC
- National Policy Statement on Urban Development MfE
- National Planning Standards MfE

1.3. GLOSSARY OF ACRONYMS AND TERMS

The following list is a glossary of acronyms and terms utilised within this report.

• CCBZ - City Centre Business Zone.





- CCC Christchurch City Council (or 'Council')
- CDP Christchurch District Plan
- CCMUZ Central City Mixed Use Zone
- CCMUZ (SF) Central City Mixed Use Zone (South Frame)
- Enabling Housing Supply Act Resource Management Act (Enabling Housing Supply and Other Matters) Amendment Act 2021
- G/VAZ Residential Guest / Visitor Accommodation Zone
- HRZ High-Density Residential Zone
- MRZ Medium Density Residential Zone
- RLL Residential Large Lot Zone
- MDRS Medium Density Residential Standards
- NPS-UD National Policy Statement on Urban Development 2020
- PC14 Plan Change 14
- **QFM –** Qualifying Matters
- RMA Resource Management Act
- MfE Ministry for the Environment
- LRV Light Reflectance Value
- CPTED Crime Prevention Through Environmental Design
 - RMA Land Use Activity Status:
 - o **D** Discretionary
 - o **P** Permitted
 - o **RD -** Restricted Discretionary
 - RD(1): Restricted Discretionary
 - RD(2): More restrictive Restricted Discretionary i.e., more restrictions than RD(1). Relative within zone and policy prescription not between zone and policy prescriptions.
- Transaction Costs Costs that arise as part of engaging in an economic trade. This can include compliance costs, planning costs, variation costs, etc.



1.4. SUMMARY

The following table summarises, at a high level, the proposed residential rules changes facilitated by PC14.

There are a number of proposed rules changes that are considered to have no material economic impact, or the economic impact is limited to changes in development capacity which has not been assessed as part of this report. This suite of provisions are likely to have limited impacts on transactional, compliance or feasible costs and as such have limited potential beyond the extent on capacity modelling.

These rules changes are identified (‡) in the table below, and some additional comment is incorporated later in this report. As such, no in-depth economic CBA is considered required to promulgate these rules changes.

Rule Category	Proposed Change		
More lenient MDRS	Building height:		
standards (MRZ and HRZ	 MRZ: exemption for within Local Centre Intensification Precinct to permit up to 14m in height. 		
only)	o HRZ: increasing permitted height to 14m.		
	Height in relation to boundary (‡):		
	o MDRS standards are adopted.		
	 Only in HRZ and Local Centre Intensification Precinct (MRZ), are there more lenient controls proposed. Exceptions here focus on encouraging development along the front of a site and readily providing for height under specific conditions. 		
	 When constructing two or more residential units, recession planes will not apply along the first 20 metres of site depth, or 60% of a site – whichever is lesser. The rule is designed as an incentive (at two or more units) to encourage a strong presence along the street frontage, retaining the rear of the site for private amenity space. 		
	 Buildings that are setback at least 6 metres from side and rear boundary are exempt from height in relation to boundary controls. This provides a balance between openness and privacy expectations in the HRZ environment and the ready ability to develop to anticipated heights. Aligning with site boundaries also incentivises amalgamation of sites, largely seen as necessarily to see a ready transition to a HRZ living environment. 		
	• Setbacks <mark>(‡)</mark> :		
	 MRZ and HRZ: exemption of setbacks for accessory buildings at no greater than 10.1m and for eaves and roof overhangs of a specific dimension that protrudes into the front boundary setback. 		
	Building coverage (‡):		
	o MRZ and HRZ: exemption for eaves and roof overhangs of a specific dimension.		
	Outdoor Living Space per unit (‡):		



Rule Category Proposed Change		
	 HRZ: Smaller studio and single bedroom units are permitted to have a reduced outdoor living space, being 5m² lesser at the ground floor and 2m² lesser above ground. Outlook space (‡): MRZ and HRZ: clarity provided that doors opening into an outlook space from the principal living room are not considered to obstruct outlook space, as per j.i. of the standard. 	
	Windows to street (+):	
	 MRZ and HRZ: exemption made for calculating glazing requirements, removing the area of the gable above upper floor ceiling height from the area calculation. Clarity is also provided that unglazed doors can contribute to area calculation, including specific exemption for a reduced glazing requirement of 17.5% when specific glazing is provided to habitable rooms and 20% of the ground floor is glazed. 	
Additional	Building separation (±):	
permitted standards	 HRZ only: standard controlling the separation of parts of buildings above 12m, aligning with the MDRS height threshold. 	
(MRZ and HRZ	Fencing standard (‡):	
only)	 MRZ and HRZ: standard for when fencing is provided for developments, addressing heights across specific frontages. Builds upon existing CDP fencing standard. 	
	 Fencing standard is specifically targeted to the front boundary, requiring that at least 50% of the fenced frontage is no greater than 1m in height. Greater fencing heights are permitted alongside and rear boundaries and on frontages along arterial roads. 	
	 Garaging and carport building location (+): 	
	 MRZ and HRZ: standard for the placement of any detached garage or carport (accessory building) to be located behind the façade of residential units. Only in MRZ is this at a specified distance of 1.2m. 	
	Ground floor habitable room:	
	 MRZ and HRZ: standard for the location of ground floor habitable rooms when fronting a road or public open space. Builds upon existing RMD habitable room standard. 	
	 Requirement only applies to ground floor units, ensuring habitable rooms front public areas and cover at least 50% of the ground floor space. This threshold decreases to 30% of the ground floorspace in the HRZ for buildings of 4 or more storeys. 	
	 Service, storage, and waste management (‡): 	
	 MRZ and HRZ: standard to require each residential unit to be provided with adequate waste management areas, servicing and storage space. 	
	 Waste management standards direct minimum areas and dimension requirements, including screening. The standard ensures that areas are able to be serviced, appropriate for each unit, and recognise that such an area can be provided communally. 	



Rule Category	Proposed Change
	 Controls for washing line areas are maintained, requiring a 3m2 area with a minimum dimension of 1.5 metres.
	 Storage standards prescribe a minimum volume of storage required based on the number of bedrooms each unit provides. Flexibility is also afforded in how this is provided, with up to 50% of storage space able to be provided external to the unit.
	Water supply for fire fighting (‡) :
	 This is an established CDP standard that has been carried over into the MRZ and HRZ framework.
	Wind standard (‡) :
	 MRZ and HRZ: A threshold of 20 metres is adopted in the residential environment, with any residential unit above this level requiring to demonstrate that wind effects do not adversely impact on surrounding areas of public and private enjoyment, retaining their overall safety and pleasantness. The height threshold is bespoke to the residential environment due to its level of residential occupation and degree of private amenity space.
	 A catchment of 100 metres surrounding a development site is adopted to evaluate wind effects. More sensitive environments, such as open spaces, outdoor living areas, and footpaths are more stringently considered at 4m/s. This compares to areas where safety is more of a concern, being roadways and carparks, which set a 6m/s threshold. Any of these spaces much not exceed wind speeds for 5% annually (about 18 days a year).
	 Those areas immediately surrounding a building set a wind gust threshold of 15m/s that must not be exceeded more than 0.3% annually (about two days a year).
	Building reflectivity (+):
	 Within MRZ only in the Residential Hills Precinct, rule restricting roof reflectivity to 30% light reflectance value (LRV). This carries over current CDP controls for the Residential Hills Zone, which the new precinct intends to capture.
Restricted Breaches of the following permitted standards are treated as restricted discre	
controls	Number of units (‡):
(MRZ and HRZ only)	 MRZ and HRZ: requires an assessment against the residential design principles. This builds upon the existing CDP framework as part of the RMD matters of discretion. The design elements that the residential design principles consider ensure that environmental design is applied to ensure an adequate degree of residential amenity, attractiveness, and safety is possible for scale developments of four or more units.
	Building height breach:
	 Matters of discretion for height breaches across MRZ and HRZ are very similar. The main differences are the thresholds at which they apply and there specific design standards are included.
	 In MRZ, height is in breach when beyond 12m in height (or when in breach of MDRS roof standards), except where in the Local Centre Intensification precinct, which anticipates a taller urban form. As previous, HRZ heights are permitted up



Rule Category	Category Proposed Change	
	to 14m, therefore RDA standards apply for height controls between 14-20m and then additional standards when between 20-32m in height.	
	 Matters of discretion for breaches beyond permitted heights across MRZ and HRZ focus on bulk, dominance, privacy, need for extra height for more efficient site occupation, design and building modulation features, ground floor habitable rooms, and heritage features. 	
	 In HRZ, standards for building up to 20m require modulation of the upper 1m of the building and the inclusion of ground level communal area to a scale that corresponds to the scale of residential units. Beyond 20m and up to 32m, HRZ standards require the building to be setback 6m from side boundaries and the proportion of the building above 20m setback 3m from the street-facing building face. 	
	 Required communal outdoor living areas are calculated based on the nearest 10 units requiring 50m² of communal outdoor living area, to a maximum of 20% of the site area. For example, a development of 35 units on a 1,200m² site would require a communal outdoor living area of 4 x 50 = 200m². In a scenario where a greater number of units would be proposed, the communal area would be limited to maximum of 240m² – being 20% of the site area. The minimum dimension of any communal area should be 8m. 	
	 A breach of these standards, or heights above 14m in MRZ is also treated as RDA. It requires assessment against much of the same matters previously, but also focuses on consideration of alignment with planned urban character, residential design principles, provision for greater housing choice, association with papakāinga / kāinga housing, accessibility to local amenities and services, and how the site contributes to (or provides for) a sense of place or place making. 	
	 In HRZ, the final RDA tier of controls focus on the effects associated with the breach of prescribed standards, amongst the aforementioned matters of discretion. 	
	Breach of wind effects (‡) :	
	 MRZ and HRZ: breaches are addressed though a new wind assessment matter of discretion. This assesses how safety and amenity is impacted due to wind changes, how landscaping is used to mitigate wind effects, and wind effects anticipated over those already present. The latter reflects that in some instances, the urban environments may already be at the thresholds described in the standard, therefore the degree of change is a matter of discretion. 	
	 Height relation to boundary breach (‡): 	
	 MRZ and HRZ: breaches are addressed through a new height in relation to boundary matter of discretion. This primary focuses on effects on adjacent properties, in terms of how bulk and dominance can adversely impact on privacy and shading, particularly on habitable rooms and outdoor living spaces. Effects on heritage values are also recognised. 	
	 Building separation (HRZ only) (‡): 	
	 Breaches in building separation are considered under the height in relation to boundary matter of discretion. 	
	 An additional matter is added, focusing on access ways, addressing some of the CPTED and privacy issues that may arise at a closer proximity. 	



Rule Category	Proposed Change		
	Setback breach (‡):		
	 MRZ and HRZ: breaches of setbacks are considered under the Impacts on neighbouring property matter of discretion. 		
	 While the assessment matters evaluate bulk and dominance effects on adjoining properties, the standard also considers whether the increased in height in necessary to enable more efficient or cost effective use of the site, including any building design features used to manage visual impacts. The rule anticipates that breaches may be unavoidable in some circumstances. 		
	 Impacts on heritage values and the protection of significant trees or natural features are also considered. 		
	 Lastly, the rule also recognises how the configuration of a building can negate some of the adverse impact of setback breaches through the location of habitable rooms at the ground level. 		
	Building coverage breach (‡):		
	 MRZ and HRZ: breaches of setbacks are considered under the Site density and site coverage rule. 		
	 This is an existing rule that is proposed to be modified to better address MDRS standards. Alongside building dominance and privacy effects, it also considered effects on character and amenity values for the local environment. 		
	 Specific design elements are now also considered, being how landscaping is used or site layout or building designed to mitigate effects. The practical use of the site is also considered, in terms of access ways or onsite outdoor living spaces, and how their configuration provides opportunities for planting. 		
	Outdoor living space breach (‡):		
	 MRZ and HRZ: breaches of setbacks are considered under a modified outdoor living space rule already contained in the District Plan. 		
	 Changes have been proposed to instead evaluate how residual spaces consider sunlight access and their connection between internal and outdoor living areas. 		
	 The last addition considers the usability of the space, ensuring that no other facilities are occupied within the remaining space. 		
	Outlook space breach (‡) :		
	 MRZ and HRZ: breaches in outlooks space are considered under a new outlook space occupation rule. 		
	 Matters of discretion focus the degree to which openness is still achieved across the site, creating the sense of spaciousness that would otherwise be provided. Consideration is given to whether the area remains unobstructed, provides for daylight to window of the primary living room, including any loss of privacy of amenity within these spaces. 		
	Breach of street-facing glazing (‡):		
	 MRZ and HRZ: breaches in glazing are considered under a new Street-facing glazing non-compliances rule. 		
	 Matters of discretion largely focus on design and CPTED measures, such as: whether glazing is for habitable rooms; passive surveillance opportunities that remain; and other building design features that add to the visual interest at the street-facing façade. 		



Rule Category	Proposed Change
	Landscaping breach (‡):
	 MRZ and HRZ: breaches in glazing are considered under a new Residential landscaping rule.
	 The rule considers similar matters contained in 14.15. It evaluates the type of landscaping provided, its contribution to amenity, and whether it would be suitable for the local climatic conditions.
	 Positive effects are also considered, including whether planning could act to soften building effects and how it could enhance onsite and neighbouring amenity, or improve the overall safety and accessibility of a site with lesser landscaping.
	 Consideration is also given to the practicalities of planning, whether a lesser amount of landscaping is needed for a more cost-effective development form, where site of cultural significant are not compromised, and whether a maintenance programme as has been proposed to manage landscaping.
	Fencing breach (‡):
	 MRZ and HRZ: this is now considered through a separate Residential fencing rule. The rule evaluates whether taller fencing is needed in the specific roading context, materials used, and whether passive surveillance is still possible.
	 Amenity and privacy effects of increased fencing is also considered and whether height would detract from the openness and coherence of the street scene.
	Garaging location breach (‡):
	 MRZ and HRZ: any garaging is simply considered under the residential design principles, as detailed above.
	Breach of ground floor habitable rooms (‡) :
	 MRZ and HRZ: any ground floor habitable room breach is simply considered under the residential design principles, as detailed above.
	• Waste, servicing, or storage breach (‡) :
	 MRZ and HRZ: any breach of this standard is considered under a modified Service, storage and waste management spaces rule.
	 Changes to the rule mean that consideration is also given to communal outdoor living spaces and how landscaping may instead be used as a form of screening.
	Building reflectivity breach (‡):
	 Control is the same as per the current CDP breach within the Residential Hills Zone.
	 Matter of discretion is limited to the specific matters for small settlements and hilled areas within residential design principles.
New Residential Large Lot Zone built form standards	 Site density (‡): Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct. These carryover CDP controls for these specific zones from the associated density overlays



Rule Category	Proposed Change		
	Site coverage (‡):		
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct. 		
	 These carryover CDP controls for these specific zones from the associated density overlays. 		
	 Minimum building setbacks from internal boundaries (‡): 		
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct. 		
	 These carryover CDP controls for these specific zones from the associated density overlays. 		
	Road boundary building setback (‡):		
	 Insert bespoke controls for new Residential Mixed Density Precinct – 86 Bridle Path Road, Residential Mixed Density Precinct – Redmund Spur, and Rural Hamlet Precinct. 		
	 These carryover CDP controls for these specific zones from the associated density overlays. 		
	Building reflectivity and colour (‡):		
	o Add exemption that the rule does not apply within the Rule Hamlet Precinct.		
	 Minimum setback for living area windows and balconies facing internal boundaries (‡): 		
	 New standard inserted to only apply to new precincts, reflective of existing CDP controls. 		
	 Service, storage and waste management spaces (‡): 		
	 New standard inserted to only apply to new precincts, reflective of existing CDP controls. 		
	 Street Scene amenity and safety – fences (‡): 		
	 New standard inserted to only apply to new precincts, reflective of existing CDP controls. 		
	Tree and garden planting (‡) :		
	 New standard inserted to only apply to new precincts, reflective of existing CDP controls. 		
	Outdoor living space (‡):		
	 New standard inserted to only apply to new precincts, reflective of existing CDP controls. 		
New Residential Large Lot Zone (RLL) restricted	 RD15 – updating naming of agency to 'Fire and Emergency New Zealand' (‡). Breach of setbacks for living area windows and balconies facing internal boundaries (‡): 		
activities	o inserted in response to new RLL site-specific precinct standards.		



Rule Category Proposed Change		
	 This carries over the matter of discretion from the equivalent zone for the site- specific standard in the CDP. 	
	 Breach of service, storage, and waste management spaces (‡): 	
	o Inserted in response to new RLL site-specific precincts.	
	 This carries over the matter of discretion from the equivalent zone for the site- specific standard in the CDP. 	
	Breach of fencing standard (‡):	
	o Inserted in response to new RLL site-specific precinct standards.	
	 Breach matters of discretion are the same as landscape area breaches under MRZ and HRZ. 	
	 Breach of tree and garden planting standard (‡): 	
	o Inserted in response to new RLL site-specific precinct standards.	
	 Breach matters of discretion are the same as landscape area breaches under MRZ and HRZ. 	
	Breach of outdoor living space (‡):	
	o Inserted in response to new RLL site-specific precinct standards.	
	 This carries over the matter of discretion from the equivalent zone for the site- specific standard in the CDP. 	
Residential Guest/Visitor Accommodation Zone – Built form standards	 Maximum site coverage (‡): Alignment with MDRS building coverage standard of 50% across all groups. Maximum building height (‡): Alignment MRZ and HRZ permitted building heights Minimum building setback from road boundaries (‡): Alignment with front yard standards under MDRS. Daylight recession planes (‡): Alignment with MDRS standards and re-directing standards to align with MDZ 	
Desidential	and HRZ.	
Guest/Visitor	 RD6 – Buildings that no not meet the maximum building height (‡): 	
Accommodation	 Clarification added within standard and matter of discretion that the applicable MRZ or HRZ rule, as listed in Appendix 14.16.11 for each group, shall apply as if it were within that zone. 	
discretionary	 RD10 – Updated reference to the new residential fencing matters of discretion. Applies same considerations as residential activities (‡). 	
	• Various rule references updated with changes made to sub-chapter 14.15 (‡).	



The following table identifies the proposed changes that are assessed in this CBA by zone as well as by current and proposed activity status. Other provisions identified in the preceding table that have not been assessed within this report due to having no economic implications outside of their impacts on capacity which has not been assessed.

Note that the current and proposed activity statuses apply only to the activity being pursued and do not account for any other elements that may be being breached as part of a particular proposed development that would result in a different activity status for the development overall.

Policy	Zone	Option
Building height	MRZ within Local	Status Quo – MDRS
limit options	Centre Intensification	P on building height up to 12m and RD(1) on height between 12m-14m,
	precinct.	and RD(2) beyond 14m
		P on building height up to 14m and RD on height beyond 14m.
	HRZ outside the Central	Status Quo – MDRS
	City	P on building height up to 12m and RD(1) on height between 12m-14m,
		and RD(2) beyond 14m.
		P on building height up to 14m and RD(1) on height between 14m-20m,
		and RD(2) beyond 20m for areas surrounding large centres except the
		City Centre.
		P on building height up to 14m and RD on building height beyond 14m
	HRZ within the Central	P on height up to 14m (current baseline) and D on height beyond 14m.
	City	P on height up to 20m and D on height beyond 20m with select areas
		closest to Christchurch's City Centre enabling heights up to 32m as P on
		height.
		P on height up to 32m and D on height beyond 32m.
		No height limit.
Ground floor	MRZ	Status Quo
habitable room		Where the permitted height is 11 metres or less (refer to Rule 14.5.2.3):
		any residential unit fronting a road or public open space shall
		have a habitable space located at the ground level; and
		• at least 50% of all residential units within a development shall
		have a habitable space located at the ground level; and
		• for each residential unit, at least one habitable space located at
		the ground level shall have a minimum floor area of 9m2 and a
		minimum internal dimension of 3 metres and be internally
		accessible to the rest of the unit.
		Where the permitted height limit is over 11 metres (refer to Rule 14.5.2.3), a
		minimum of 50% of the ground floor area shall be occupied by habitable



		spaces and/or indoor communal living space. This area may include
		pedestrian access to lifts, stairs and foyers.
		This rule does not apply to residential units in a retirement village.
		Any building that includes a residential unit shall:
		• where the residential unit fronts a road or public open space,
		unless built over a separate ground floor residential unit, have a
		habitable room located at the ground floor level with minimum
		internal dimension of 3 metres; and
		• any residential unit shall have at least 50% of any ground floor
		area as habitable rooms.
		Where the permitted height limit is over 11 metres (refer to Rule 14.5.2.3), a
		minimum of 50% of the ground floor area shall be occupied by habitable
		spaces and/or indoor communal living space. This area may include
		pedestrian access to lifts, stairs and foyers.
		This rule does not apply to residential units in a retirement village.
		[This is effectively the same as the Status Quo]
	HRZ	Status Quo
		 Any residential unit fronting a road or public open space, unless
		built over an access way or another residential unit, shall have a
		habitable space located at ground level.
		• At least 30% of all residential units within a development shall
		have a habitable space located at ground level.
		At least one habitable space located at the ground level of a residential
		unit shall have a minimum floor area of 12m2 and a minimum internal
		dimension of 3 metres.
		Any building containing residential units shall:
		• where this includes a residential unit that fronts a road or public
		open space, unless built over another ground floor residential
		unit, have a habitable room located at ground level with
		minimum internal dimension of 3 metres; and
		 have at least 50% of any ground floor area as habitable rooms,
		except on sites where at least 25% of the building footprint is
		more than 4 storeys, which shall have at least 30% of any ground
		floor area as habitable rooms.



2. EXTENT OF RESIDENTIAL ZONES

The following figures identify the extent of the MRZ, HRZ, and LLZ areas in Christchurch City. The map also identifies the extent of the various building height precinct and / or rule change areas (note: all HRZ has a precinct or other height enablement adjustment).

FIGURE 1: PRIMARY RESIDENTIAL ZONES AND HRZ HEIGHT PRECINCTS



Source: Bing, Christchurch City Council.

A map showing the extent of just the HRZ and its height precincts is provided in the following figure for additional clarity.

It is worth noting that the height limit in the HRZ of 14m only applies to a small tranche (orange) in the areas surrounding the Central City. The other HRZ areas, surrounding centres (City Centre, Emerging Metropolitan Centres, Town Centres and Local Centres), have rules adapting the height limit to reflect the status of the centre in the centre hierarchy.







Source: Bing, Christchurch City Council.

The following figure demonstrates the indicative planning heights that PC14 proposes to enable with the inclusion of MDRS (base residential zone being 11m + 1m, subject to QFM).

This graphic is designed to show how the proposed suite of heights and the activity statuses will work together in a staggered manner based solely on building height i.e., other criteria determining the status of an activity, such as urban design, are not considered. The activity status beyond the indicated is implied to be a higher threshold to meet – Restricted Discretionary (RD(2)), or Discretionary status.

The graphic shows the proposed height gradient of the city with the highest density area (the Central City – City Centre, CCMUZ and HRZ 32m height enablement area – to the left and the lowest density areas making up the bulk of the residential zoned area, including city fringe areas – MRZ.





Source: Christchurch City Council, Property Economics.



3. ECONOMIC COSTS AND BENEFITS OF INCREASED BUILDING HEIGHT IN RESIDENTIAL AREAS

The following high level economic cost benefit analysis summary applies to building heights in the MRZ and HRZ.

As a reminder this cost benefit analysis uses the MDRS 11m + 1m as a baseline for residential height enablement.

In general, each cost and benefit identified applies more, or less, based on the height limit imposed, i.e., a greater height limit has greater benefits and greater costs while a lower height limit has lower benefits and lower costs.

BENEFITS

 Catalyses development: Liberalising of land use rights has historically been proven to increase development of associated land. The increase in height limits brings the (re)development timeframe of affected properties forward in time as the return on development is higher (more rent is now achievable).

There is a second order effect also because development encourages further development. As one parcel is (re)developed, neighbouring properties benefit off the improvement in amenity (assuming development and urban design standards are appropriately set to deliver such outcomes) and are encouraged to (re)develop themselves to maximise returns.

- Increases the impetus for intensified (re)development: The ability to build up to a higher level generates an impetus for developers to maximise their build envelope.
- Enhanced housing affordability: Restrictions on building vertical can contribute to housing shortages. More permissive building height restrictions, therefore, can have positive consequences for delivering more affordable / serviceable housing where the construction of apartments and other higher density dwellings become more feasible within the height change area.
- Potential for less land / green space take-up: A higher density and agglomeration of residential activity means that a greater quantity of activity can take place within the identified area. This would suggest that more efficient use of land for residential activity leaves more land / space available for other uses, such as parks, green space, environmental amenity which the local community can enjoy. This improved amenity increases the desirability / attractiveness of an area and increases property values which encourages demand for an area and catalyses further development / improvement and intensification.

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- More efficient land use: Taller buildings mean land is being used more efficiently as the vertical space is being used more effectively i.e., more people are using the same footprint of land as a living space so the people per sqm of land increases.
- More flexibility for land users: Flexibility is often an attractive part of greater heights. This includes a greater variety of building typologies such as multi-storey apartments / units that were not previously enabled.
- One efficient infrastructure use: The existing and future infrastructure that is put in place to service local residents is used by a larger number of people. This includes road / footpath network, community facilities libraries, halls, parks power and telecommunications, three waters, etc. and results in a lower marginal cost of infrastructure. A greater number of people able to access these infrastructure assets which means a lower marginal cost and a greater benefit for the community overall.
- One Efficient Transport Networks: Higher capacity roads in and around centres will be utilised by a greater number of people. A larger number of people will also be located closer to public transport routes which encourages greater public transport usage. This also encourages greater use of footpaths and non-vehicular transport options (scooters, bicycles, walking, etc.) as the average distance to travel is lower. All these benefits have flow on benefits to reducing the carbon emissions on a per person basis.
- Provide greater market certainty and simpler planning process that lower transaction costs: Greater heights are allowable within the area but require a resource consent, PC14 will remove some cost and wait time for the resource consent process up to a greater height limit in the respective residential areas and / or make the consent process timeframe shorter / less costly as there is a lower threshold for heights to pass. This also increases market certainty a critical element to investment in a market.
- Potential to safeguard productive land: A large proportion of urban centres are currently surrounded by the most productive, or versatile, soils, across the country. As urban centres expand into these productive areas there has been a concern that productive land is not being adequately protected. As such, more floorspace being built higher within the same footprint will ensure the district has somewhere for its growing population to live and work- mitigating effects on the future rate of consumption of its productive land resource.
- Increased centre spend and vitality: The larger population base facilitated by increased density enablement improves the vitality and marketability of centres. The larger number of people living around and using centres increases sales and the desirability of centre tenancies for food and beverage, retail and commercial enterprises attracting higher quality goods and services. This has a flow on benefit of encouraging a greater level of market competition, variety and specialisation of businesses which encourages new business opportunities and innovation stimulating more competitive pricing and broader range of products for consumers.





Increased Local Employment: Intensification around centres generates increased local employment opportunities as centres enhance and become greater focusses of retail, commercial and community activity. The flow on benefit from this means centres will intensify and / or expand to accommodate a greater level of demand and activity. This facilitates increased local employment opportunities.

COSTS

- Increased congestion of road / footpath networks: Increased density can generate increased congestion. The greater level of foot traffic generated through increased development, increased employment and increased high density residential activity may impact the road network and parking space availability. The increase in disbenefits, including congestion, is unlikely to be immediately appreciable, so traffic flow mitigation will likely be somewhat mitigated with sufficient planning.
- Increased levels of crime: There is a direct correlation between greater numbers of people and levels of crime. This tends to be at all levels of crime from petty theft / public nuisance to serious assaults. Crime can be somewhat mitigated with design outcomes such as more open / visible spaces, more lights, etc., and greater levels of investment in the form of security cameras, guards and police presence.

Additionally, crime has other, more significant, covariates, such as socioeconomic deprivation and low education rates that will be more influential determinants and should receive a greater level of focus from Council.

- Increased noise: Increasing the amount of people / traffic in an area will increase the level of ambient noise in that area. This can be mitigated with urban design and architecture such as increased greenspaces and trees or greater levels of noise acoustic absorption materials in buildings, thicker walls / glass, etc at a financial cost which increases the cost of development.
- Increased levels of vagrancy and transient population: Higher density areas attract homelessness and transient populations. This can negatively impact the general amenity of an area and discourage community participation including demand for residential, retail, and employment.
- Reduced Impetus for Centre Intensification: The increase in heights in non-Centre locations may reduce the impetus to develop higher densities in the City Centre, and other centre locations. This would represent an inferior outcome economically as it would result in less efficient uses of infrastructure. This cost can be manged through restricting the most intensified development to the City Centre and other centre locations.





3.1. ZONE SPECIFIC ECONOMIC COSTS AND BENEFITS

Non-Central City HRZ - Costs and Benefits

- Enabling greater heights limits will allow a greater level of intensification in an efficient location (relative to MRZ or other lower density residential area) – close to centres of high amenity and public services.
- Enabling greater heights may disturb the zones role and function as being almost exclusively to enable higher density residential forms as additional convenience retail / services may be required with significant densities.
- Facilitating greater height enablement may detract additional residential intensification from the City Centre, CCMUZ and other centre locations where a critical mass of activity is anticipated. This will be particularly pertinent to the respective centre zoning that the HRZ is supporting (surrounding).

Enabling a higher density residential environment within the HRZ, to a limited extent, in the areas closest to the City Centre and / or main arterials in the central city would produce a greater level of directed growth to efficient locations but also enable the HRZ to better compete for residential activity with the respective centre that it is supporting, and, to some extent, with other centres in the centre network (including the City Centre).

Central City HRZ - Costs and Benefits

- Enabling greater heights limits will allow a greater level of intensification in a relatively efficient location – close to the City Centre.
- Enabling greater heights may disturb the zones role and function as being almost exclusively to enable higher density residential forms as additional convenience retail / services may be required with significant densities.
- Facilitating greater height enablement may detract additional residential intensification from the City Centre and CCMUZ where a critical mass of activity is anticipated.
- Enabling greater heights may increase the level of residential capacity further, beyond the already sufficient levels, which could lead to an inefficient allocation of infrastructure and land resources as well as give rise to uncertainty as to the infrastructure need of areas.

It is worth noting that the costs and benefits are limited by, and subject to, the extent of the zone. Enabling some greater height beyond the status quo within a sub-precinct, or other such geospatial discrimination, of the HRZ may limit the costs but also provide an opportunity



for dedicated higher residential development to occur in a more consolidated and efficient manner that otherwise may occur in a more dispersed manner.

Enabling a higher density residential environment within the HRZ, to a limited extent, in the areas closest to the City Centre and / or main arterials in the central city would produce a greater level of directed growth to efficient locations but also enable the HRZ to better compete for residential activity with the CCMUZ.

3.2. ECONOMIC DIRECTION

Enable building heights up to 14m in MRZ within local centre intensification precinct

The areas of overlap between the proposed MRZ and proposed Local Centre Intensification precinct are extremely limited. This means the MRZ with the Local Centre Intensification precinct only represent a small increase in capacity, though no comprehensive capacity assessment has been undertaken at this point in time. This additionally means that the costs and benefits associated with the proposed height increase are equally limited in potential realisable outcome and extent.

By increasing heights from 12m to 14m Council would be affirming the superiority and hierarchy of centres as hubs of activities by contrasting the proposed 14m height limit with the MDRS of 11m + 1m as the baseline of the MRZ.

The MRZ properties in local centre intensification precincts are efficiently located sites that should be encouraged to develop to a greater degree over other MRZ sites. By encouraging these properties to develop to a greater extent, Council would be pushing more activity into consolidated areas of activity in efficient locations.

By enabling a greater level of development in efficient locations Council are also discouraging intensification in areas that are relatively less enabling (such as other MRZ areas). This allows Council a greater level of directional development control that can reduce the cost of infrastructure installation, upgrade and maintenance in the long run by encouraging greater levels of consolidation.

However, by enabling greater heights in the local centre intensification precinct Council are also enabling a greater level of competition with other competing residential environments. This is particularly important for residential environments that are comparatively more efficient locations for greater levels of intensification such as Centre Zones and HRZ.

Most centre zonings, and HRZ with precincts, are still relatively competitive based on height as centre zonings allow for a greater range of typologies, as well as a mix of activity that make them significantly more competitive development locations. HRZ areas are also, generally,



more efficiently located around more prominent centres or main arterials that provide a competitive locational advantage, which will likely translate to a market advantage.

The historical pattern of development in areas where the 14m enablement is proposed does not demonstrate a current high level of demand for structures above 12m. This suggests that the market has either not had sufficient levels of demand for this taller product, or the current barrier (less permissive activity status) has discouraged this type of development.

Given that there is little product even approaching 12m in height in these areas, Property Economics suggest that lack of demand for this typology in the MRZ local centre intensification precinct is the more likely reason, which suggests the proposed increase is unlikely to markedly stimulate additional development in the short-to-medium term.

Enablement of height up to 14m in the HRZ

The majority of the HRZ has additional height precincts increasing the height enablement beyond 14m. This is because these areas are in the most efficient locations, surrounding centres and on main arterials.

The height enabled under PC14 is the same as that enabled under the ODP for the RCCZ, 14m, and the same height limit for the MRZ with Local Centre Intensification Precinct (pre-MDRS) identified above (though the extent of the HRZ is substantially larger than the RCCZ, extending beyond the Central City to include areas around other prominent centres). This limits the ability for the HRZ to compete with other areas of HRZ that have proposed further height enablement precincts and with centre locations and CCMUZ – all of which are intended to cater to higher density residential options and are more efficient locations.

The existing baseline height limit for this area is, however, the MDRS enablement of 11m + 1m or 3 storeys. Permitting HRZ by an additional 2-3m offers some distinction and recognition of the fact that the HRZ is not the same as the MRZ and is, generally, a more efficient location for intensification than the MRZ.

This also facilitates a greater range of dwelling typologies, forms, sizes and price points within the HRZ, over the MRZ, which will make the zone more attractive to perspective buyers and encourage intensification in an efficient location.

By enabling a greater level of development in efficient locations Council are also less encouraging intensification in areas that are relatively less enabling (such as the MRZ areas). This allows Council a greater level of directional development control that can reduce the cost of infrastructure installation, upgrade and maintenance in the long run by encouraging greater levels of consolidation.



4. ECONOMIC COSTS AND BENEFITS OF GROUND FLOOR HABITABLE ROOM REQUIREMENTS

The following high-level cost-benefit analysis summary applies to the ground floor habitable room requirements in the MRZ and HRZ. It is worth noting that the MRZ provisions are broadly the same as the existing provisions, while the HRZ provisions further restrict building design to include a greater proportion of habitable space on the ground floor.

Of note also is that Council are considering easing restrictions on habitable space for buildings greater than 14m in height to allow for a greater level of flexibility in design of these taller structures. The proposed provisions for this relaxation of restrictions were not assessed as part of this cost-benefit analysis.

BENEFITS

No material economic benefits.

COSTS

- Reduce flexibility of design: Increasing the restrictions of the built form of a structure reduce the variety of offering to the market. By enforcing more built-form and design standards, Council are reducing the type of structures that may otherwise be absorbed by the market.
- Reduced consumer choice: The restriction on design has a direct impact on the range of product available to end consumers. The lower level of flexibility directly impacts the availability to the consumer.
- Reduced feasibility of development: The lower level of flexibility reduces the feasibility of development and has an impact on residential capacity. The extent of this capacity loss is not known at this point.

4.1. ECONOMIC DIRECTION

This proposed provision is unlikely to have a material economic benefit as a result of regulating a position that the market may or may not demand. but instead aims to provide other noneconomic urban design outcomes pursued by Council.

Inherently, regulation has an economic cost, so to regulate for something that only part of the market may want impacts upon market efficiency whereby those who want this product can demand it from the market as opposed to it being regulated to the market.





The proposed provision limits the level of development in the HRZ, including the typologies and design that could be constructed and offered to market, or at the very least increases the transactional cost of the development of residential product in breach of the proposed provisions. This represents an economic risk and cost to the community.

The proposed provisions are also likely to result in some reduction in feasible capacity for the city, though the extent to which this reduction is realised is not known. Council has completed feasibility analysis and is comfortable with the residential capacity position of the city with this provision in place.

The proposed provisions may also detract residential activity away from the HRZ to other zonings such as the CCMUZ or centre zonings because the provision represents a competitive market impediment. This goes some way in promoting centre locations ahead of non-centre locations as locations of development.

However, the introduction of these provisions to the HRZ also represent a loss in competitive advantage over the MRZ which the zone has enjoyed. This loss is mitigated to some degree with the concept of relaxing the restrictions for development four or more storey development which may encourage a greater level of intensified development to the HRZ compared to the MRZ.



5. COMMENTS ON OTHER PROPOSED PROVISIONS

Most of the other provisions outlined in the summary table, provided in Section 1 of this report, result in economic costs and benefits that can only be quantified in terms of their impact on feasible residential capacity or are entirely non-economic in nature.

Generally, loosening of land use restrictions results in a greater potential for economic benefits to be realised including an increase in: development flexibility, consumer choice, and economic output. While restrictions run contrarywise to these economic benefits.

While the economic costs and benefits of the identified land use restrictions / liberalisations may be small or large, the motivation for sanctioning the controls has no economic element outside its impact on realisable capacity.

Property Economics understands that the current and anticipated future realisable capacity estimates commissioned by Council indicate sufficient levels of capacity for the city and for Council to meet its obligations under the NPS-UD. Property Economics also understands that the level of sufficiency is substantial and that minor losses, even of a cumulative nature, will likely not endanger the city's ability to meet future demand.

If it is subsequently found that a land use restriction, or a combination of land use restrictions, remove a substantial level of realisable capacity then Council should reassess their position and the city's ability to provide for future residential demand as well as their own ability to meet their obligations under the NPS-UD.



6. ECONOMIC OPTIONS SUMMARY

This section summarises the findings of this report by proposed change resulting from PC14, including the assessed costs and benefits in the form of a summary of the economic direction of the proposed option. This is intended to provide Council with some direction as to the economic implications of the policies assessed.

Policy	Zone	Option	Economic Extent
Building	MRZ within	Status Quo – MDRS	Enables a substantial amount of
height limit	Local Centre	P on building height up to 12m and RD(1) on	residential activity to occur but does
options	Intensification	height between 12m-14m, and RD(2) beyond	not recognise the relatively more
	precinct.	14m	efficient geospatial location of being
			proximate to a local centre.
		P on building height up to 14m and RD on	Enables a substantial amount of
		height beyond 14m.	residential activity to occur and
			recognises the relatively more
			efficient geospatial location of being
			proximate to a local centre by
			enabling a relatively easier
			development path compared to other
			MRZ.
	HRZ outside	Status Quo – MDRS	Enables a substantial amount of
	the Central	P on building height up to 12m and RD(1) on	residential activity to occur but does
	City	height between 12m-14m, and RD(2) beyond	not recognise the relatively more
		14m.	efficient geospatial location of being
			near centres or growth corridors and
			also does not distinguish between
			MRZ around local centres.
		P on building height up to 14m and RD(1) on	Enables a substantial amount of
		height between 14m-20m, and RD(2) beyond	residential activity to occur and
		20m.	recognises the relatively more
			efficient geospatial location of HRZ
			being near centres or major corridors.
			Recognises and promotes the
			hierarchy of centre locations and
			bolsters them as locations for
			increased activity and development.
			(Note: this assumes that RD(1) is less
			restrictive than proposed RD for MRZ
			around local centres)



	P on building height up to 14m and RD(2) on	Enables a substantial amount of
	building height beyond 14m.	residential activity to occur and
		recognises the relatively more
		efficient geospatial location of being
		near centres. Recognises and
		promotes the hierarchy of centre
		locations and bolsters them as
		locations for increased activity and
		development. May not generate a
		significant competitive advantage
		against MRZ land based on the
		relative enabled height being just 2m
		different and no difference between
		MRZ within the Local Centre
		Intensification precinct.
HRZ within	P on height up to 11-14m (current baseline) and	Enables some additional level of
City		not direct growth towards the most
City		efficient locations within the HRZ.
		Establishes a competitive high density
		Contro and CCMUZ
	P on height up to 14 and RD on height beyond	Enables a substantial level of
	this, with select areas closest to Christchurch's	residential activity to occur and directs
	City Centre enabling heights up to 32m on	growth towards the most efficient
	height. Any height beyond this is also RD but	locations within the HRZ. May detract
	applies greater levels of discretion (more	a small amount of high-density
	restrictive).	residential development away from
		the City Centre.
	P on height up to 32m and RD on height	Enables a substantial level of
	beyond 32m.	residential activity to occur but does
		not direct growth towards the most
		efficient locations within the HRZ,
		closest to high order centres. May
		result in sporadic high-density
		development which may result in an
		inefficient distribution of increased
		density – away from centres.
	No height limit.	Enables sporadic high-density
		development which will result in an
		inefficient distribution of increased
		density – away from centres.



Ground	MRZ	Status Quo	This policy increases transactional
floor		Where the permitted height is 11 metres or less	costs and / or design costs and may
habitable		(refer to Rule 14.5.2.3):	prevent some residential typologies
room		• any residential unit fronting a road or	from occurring. Has a negative impact
		public open space shall have a	on overall capacity, though this is
		habitable space located at the ground	likely a small impact
		level; and	
		• at least 50% of all residential units	
		within a development shall have a	
		habitable space located at the ground	
		level: and	
		 for each residential unit, at least one 	
		habitable space located at the ground	
		level shall have a minimum floor area of	
		9m2 and a minimum internal	
		dimension of 3 metres and be internally	
		accessible to the rest of the unit	
		Where the permitted height limit is over 11	
		metres (refer to Rule 14523) a minimum of	
		50% of the ground floor area shall be occupied	
		by habitable spaces and/or indoor communal	
		living space. This area may include pedestrian	
		access to lifts stairs and fovors	
		This rule does not apply to residential units in a	
		retirement village	
		Any building that includes a residential unit	
		Any building that includes a residential unit	I his policy increases transactional
		where the residential unit fronts a road	prevent some residential typologies
		or public open space, unless built over a	from occurring. Has a negative impact
		separate ground floor residential unit,	on overall capacity, though this is
		have a habitable room located at the	likely a small impact.
		ground floor level with minimum	
		internal dimension of 3 metres; and	
		any residential unit shall have at least	
		50% of any ground floor area as	
		habitable rooms.	
		Where the permitted height limit is over 11	
		metres (refer to Rule 14.5.2.3), a minimum of	
		50% of the ground floor area shall be occupied	
		by habitable spaces and/or indoor communal	



	living space. This area may include pedestrian	
	access to lifts, stairs and foyers.	
	This rule does not apply to residential units in a	
	retirement village.	
	[This is effectively the same as the Status Quo]	
HRZ	Status Quo	This policy increases transactional
	Any residential unit fronting a road or	costs and / or design costs and may
	public open space, unless built over an	detract from some residential
	access way or another residential unit,	typologies occurring in HRZ areas. Has
	shall have a habitable space located at	a negative impact on overall capacity,
	ground level.	though this is likely a less than minor
	• At least 30% of all residential units	impact.
	within a development shall have a	
	habitable space located at ground level.	
	At least one habitable space located at the	
	ground level of a residential unit shall have a	
	minimum floor area of 12m2 and a minimum	
	internal dimension of 3 metres.	
	Any building containing residential units shall:	This policy increases transactional
	• where this includes a residential unit	costs and / or design costs more
	that fronts a road or public open space,	substantially and may prevent some
	unless built over another ground floor	residential typologies from occurring.
	residential unit, have a habitable room	Has a negative impact on overall
	located at ground level with minimum	capacity, though this is likely a small
	internal dimension of 3 metres; and	impact. This policy is likely to have an
	have at least 50% of any ground floor area as	negative impact on development
	habitable rooms, except on sites where at least	opportunities from the status quo.
	25% of the building footprint is more than 4	
	storeys, which shall have at least 30% of any	
	ground floor area as habitable rooms.	







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PREAMBLE

HE WHENUA HE WHENUA HE TANGATA HE TANGATA AOTEAROA STREETS

Piki atu ki te taumata o tōku maunga, Ka kite au i te mana, I te ihi o te whenua <u>nei nō ōku tūpuna.</u>

E tū ana ki te maunga, e whakaaro ana; He aha te taonga katoa? He whenua, he wh<u>enua!</u>

Ka hōkio atu ki ngā raorao o te whenua, Ka kite au i te harakeke e tipu ana, He tohu o te oranga.

E whakaaro ana ano, Unuhia te rito o te harakeke, Kei hea te kōmako, e kō? Rere ki uta, rere i tai.

Kī mai koe ki au; He aha te mea nui o tēnei ao? Māku e kī atu; He tangata, he tangata!

Tihei Mauri Ora!

I climb to the peak of my mountain, Where I see the power, And the ethos of my ancestors.

I stand above the mountain, And I think; What is most precious of all? It is the land, it is the land!

I descend down to the lands below, I see the harakeke growing, A symbol of life.

I think again, If we are to remove the centre of the harakeke Where will the bellbird sing? It will fly inland and fly seawards.

You would then ask me; What is the greatest thing in this world? I would say; It is people, it is people!

Behold, the sneeze of life!

The above, reflects the interconnectedness of all things and the importance of both land and people. This is reflective of the vision for the Aotearoa Urban Street Planning and Design Guide - He Whenua, He Tangata where the whakataukī (proverbs) embedded within, metaphorically represents the shared relationships between land, people and place. This relationship is built on the concept of whakapapa (genealogy), which is understanding the layers of the past for the betterment of the present and future.

He Whenua, He Tangata is how we respond to the way we live. This has provided an approach designing for people at the heart of street planning and design, and supports the system level changes needed to achieve Vision Zero/ Road to Zero New Zealand road safety strategy. Street design and street thinking at the spatial, network and local scale with a 'safe system' lens (see section 1.1) is also at the centre of a sustainable, multi-modal, land transport system where public transport, active and shared modes of transport are also part of our daily transport choice and experience.

The street guide has been developed as a point of reference for Waka Kotahi, its partners and sector. The guide has been established to create common ground in relation to the form and function of streets as part of the land transport system. Kī mai koe ki au; he aha te mea nui i tēnei ao? Maku e kī atu; HE WHENUA, HE WHENUA, HE TANGATA, HE TANGATA

If I were to ask you; what is the greatest thing in this world? You would respond; IT IS THE LAND, IT IS THE LAND, IT IS THE PEOPLE, IT IS THE PEOPLE

BACKGROUND

AOTEAROA URBAN STREET PLANNING AND DESIGN GUIDE

Waka Kotahi recognises, respects and honours Te Tiriti o Waitangi and is committed to upholding the principles of partnership, participation and protection. These underpin the relationship between tangata whenua and government. Waka Kotahi will work with tangata whenua to build strong, meaningful and enduring partnerships.

At its foundation the Aotearoa Urban Street Planning and Design Guide (the street guide) establishes an ethos of 'He Whenua, He Tangata', which encapsulates the shared relationship between land, people and place. This is given effect through a suite of protocols that bring together the wider objectives of a safe system, inclusive access, environment, movement and place.

- MAHI TAHI Partnership and Engagement
- HE WHENUA ORA A Living Environment
- TAONGA TUKU IHO Places of Value & Meaning
- TĀTOU TĀTOU Inclusivity for everyone •
- TOIORA Healthy & Safe Environments
- MAURI ORA Prosperity and Vitality

These protocols highlight the opportunities for improvements to the land transport system alongside well-functioning urban environments, transport movement, place function, and outcomes for communities.

Streets are part of the land transport system and shape the urban form of Aotearoa's towns and cities. However, the dynamic and multi-functional use of streets has changed over time.

For Māori, streets were understood as ara (traditional pathways) connecting tangata and whenua, both land and sea. Ara were formed by understanding the landscape. Early colonial settlements formed streets, some of which followed ara (McLaren, 2019 2). Streets offer space for a mix of pedestrians, horses and carts and later trams, where users negotiated the spaces with limited regulation. The introduction of private motor vehicles in the 20th century gradually changed the use of streets as shared spaces to ones dominated by vehicles. Due to the risks and conflicts associated with the increased speed and numbers of cars, pedestrians and place based activities for people have been increasingly separated from the street.

As urban environments continue to change, a balanced approach to street planning and design is required that focuses on:

- Safety for all road users and reducing harm overall
- Urban mobility and developing a multi-modal transport system
- Improved urban development, urban form and good urban access
- The provision of integrated transport and land use, and places for people that fits the context
- Environmental and sustainability outcomes such as human health, reduced emissions and connectivity
- Methods for movement network and place-based development that are tactical, staged and provide pathways to permanence
- Integrated planning and an intervention hierarchy that highlights ways to develop existing networks to drive optimisation and performance
- Partnerships in developing the above (including with iwi)
- · Collaboration, and also engaging with stakeholders and the local community



FINAL DRAFI

<u>A Brief History of Auckland's Urban Form, McLaren</u> 2019

Waka Kotahi Intervention Hierarchy


URBAN STREET PLANNING & DESIGN GUIDE

PURPOSE

Guidelines developed by Waka Kotahi operationalise the national policy direction and Waka Kotahi policy, strategies and plans. The street guide sets out this policy context and the criteria for the planning and design, and evaluation of streets. It is a practical tool to link high-level spatial and network planning to good outcomes. In this urban space, the street guide connects the concepts of movement function, place function and multimodal networks with urban design processes.

The street guide is a companion document to the Waka Kotahi overarching multi-modal guidelines (see links) including the pedestrian guide, cycling guide, public transport guide, using e-scooters, mobility devices, innovating streets handbook and urban design guidelines. These provide the general and specific design criteria for all highway and transport projects.

The street guide also supports safety guidance related to safe system principles, speed management, and the application of the standard safety interventions toolkit to create a suite of technical guidance (see Links to all).

The intent of the street guide is to support existing good practice already underway in Aotearoa, rather than duplicate guides prepared by local authorities. It provides an overarching direction for Aotearoa and supports best practice on Waka Kotahi and council projects.

The street guide will support the development of further resources, detailed case studies and toolkits over time.

WHAT IS A STREET?

A street is the basic unit of urban space through which people experience atn urban area. It is often thought of as the two-dimensional surface that vehicles drive on when moving from one place to another, however a street is a multi-dimensional space consisting of many surfaces and elements.

Streets stretch from one property line to another, including the building edges, land uses and setbacks that define each side. They offer space for movement, access and facilitate a variety of uses and activities. Streets are dynamic spaces that can adapt over time to support social, cultural and environmental change.

LINKS

- Global Street Desian Guide (NACTO)
- Waka Kotahi Intervention Hierarchy
- Waka Kotahi Multi-modal Transport Planning
- Waka Kotahi Urban Mobility and Liveable Cities
- Safe System with Movement and Place for Vulnerable Road Users, Austroads

PEOPLE CAPACITY OF DIFFERENT MODES

The illustration shows the hourly capacity of a 3m-wide lane (or equivalent width) by different modes at peak conditions with normal operations. Ranges relate to the type of vehicles, traffic signal timing, operation, and average occupancy.



Figure 2: Capacity of Modes. IMAGE SOURCE: Global Street Design Guide (NACTO)

4



GLOBAL STREET DESIGN GUIDE (NACTO) USER HIERARCHY

The Global Street Design Guide (NACTO) establishes a street user hierarchy based on the vulnerability of users and spatial efficiency of mode and mobility choices to make a significant contribution to a safe, healthy and sustainable future.

The illustration from the guide shows a street hierarchy that puts people first.

1. PEDESTRIANS



2. CYCLISTS AND TRANSIT RIDERS



3. PEOPLE DOING BUSINESS AND PROVIDING CITY SERVICES



4. PEOPLE IN PERSONAL MOTORISED VEHICLES

Figure 3: User hierarchy places the most vulnerable users as the top priority in street design. IMAGE SOURCE: Global Street Design Guide (NACTO)





VULNERABLE USERS AND SPATIAL EFFICIENCY **FIRST**

The user hierarchy in the Global Street Design Guide is based on the vulnerability of users, as well as the spatial efficiency of mode and mobility choices.

The overview below from Global Street Design Guide (NACTO) provides an understanding of key considerations and outcomes for each street user group within the overall hierarchy that puts people first. Links to Waka Kotahi and Austroads guidance where relevant provide further resources for each street user within an Aotearoa context.



Pedestrians include people of all abilities and ages, sitting, walking, pausing, and resting within urban streets. Designing for pedestrians means making streets accessible to the most vulnerable users. Design safe spaces with continuous unobstructed sidewalks. Include visual variety, engage building frontages, design for human scale and incorporate protection from extreme weather to ensure an enjoyable street experience.

LINKS

Waka Kotahi Pedestrian Planning and Design Guide



Cyclists include people on bicycles, cyclerickshaws, and cargo bikes. Facilities should be safe, direct, intuitive, clearly delineated, and part of a cohesive, connected network to encourage use by people of all ages and confidence levels. Cycle tracks that create an effective division from traffic, are well coordinated with signal timing, and are incorporated in intersection design form the basis of an accessible and connected cycle network.

LINKS

Waka Kotahi Cycling Network Guidance

PUBLIC TRANSPORT PASSENGERS

Public transport passengers are people using collective transport such as rail, bus, or small collective vehicles. This sustainable mode of transportation dramatically increases the overall capacity and efficiency of the street. Dedicated space for transit supports convenient, reliable, and predictable service for riders. Accessible boarding areas promote safe and equitable use. The space dedicated to a public transport network should be aligned with demand, meeting service needs without sacrificing streetscape quality.

LINKS

- Waka Kotahi Public Transport Design Guidelines
- <u>Te Āhei ki te Whakamahi</u> Ara - Accessible Streets





Motorists are people driving personal motor vehicles for on-demand, point-to-point transportation. This includes drivers of private cars, for-hire vehicles, and motorized two-and three-wheelers. Streets and intersections must be designed to facilitate safe movement and manage interactions between motor vehicles, pedestrians, and cyclists.

- Waka Kotahi Road Engineering
- Austroads Guides



Freight operators and service providers are people driving vehicles that move goods or conduct critical city services. These users benefit from dedicated kerb access and allocation of space for easy loading and unloading as well as dedicated routes and hours of operation. Emergency responders and cleaning vehicles need adequate space to operate, which must be accommodated while ensuring the safety of all other street users.

Waka Kotahi National Parking Management

LINKS

- Global Street Desian Guide (NACTO)
- Waka Kotahi Intervention Hierarchy
- Waka Kotahi Multi-modal Transport Planning
- Waka Kotahi Urban Mobility and Liveable Cities
- Safe System with Movement and Place for Vulnerable Road Users, Austroads

FINAL DRAFT

LOADING AND



PEOPLE DOING BUSINESS

People doing business include vendors, street stall operators, and owners or renters of commercial storefronts. These users provide important services that support vibrant, active, and engaging street environments. Adequate space should be allocated to these uses. Provide regular cleaning, maintenance schedules, power, and water to support commercial activity and improve local quality of life.

WHY DO WE NEED AN URBAN STREET PLANNING AND DESIGN GUIDE?

The land transport system is facing a number of challenges that require an efficient and timely response. Similar challenges also face the current housing system and reflect the ongoing rapid change in social and environmental patterns and behaviours. These include road safety, congestion, a shift to more multi-modal trips, urban growth, increased housing density, parking management and use, human health and environmental matters such as emissions reduction.

Government policy has identified the interrelated nature of these challenges and prioritised its response through a shift in policy and guidance towards a focus on wellbeing and sustainability, amongst other things. Streets are integral to the land transport system, and to the provision for urban development and housing. Street planning and design provides an opportunity to positively address the challenges within the urban environment.

Waka Kotahi works with its partners to operationalise the direction set by the government policy.

Multiple transport outcomes could be delivered by accelerating widespread street changes that support public transport, active travel, and integrated placemaking.

The partnership between central and local government is important for the street network. Local government is responsible for the local network through improvements, operations, regulation (such as parking), and maintenance. The outcomes of the street network however are shared as part of the land use and land transport system.

Central government has an interest in local street networks as the cost to build, operate and maintain these networks is shared between central government (through Waka Kotahi) and local councils. Central government also co-funds roading, public transport services, and walking and cycling infrastructure and improvements on national highway networks.

Local government operates within the regulatory and funding context set by central government. This means that while local government has more control over the local street network than central government, central government can support and influence the planning, design and management of local streets in partnership. This is achieved through rule changes, regulation, standards, guidelines and incentives.

The street guide seeks to:

- align with the work by local government in street planning and design
- present the Waka Kotahi street planning and design objectives, methods and requirements
- create a common language for street planning and design
- recognising movement and place function
- use streets to support equitable outcomes for all including vulnerable users
- improve understanding of what quality street design means for the land transport system
- demonstrate how an urban street language can contribute to higher quality and more integrated urban form to create more sustainable and resilient urban places
- operationalise both government policy direction, and Waka Kotahi policy, in particular around safety, multi-modal transport and the urban system shifts needed to address rapid environmental and social change.

(Note: This section will be updated following the RMA reforms)

Waka Kotahi is committed to working with our local partners at all scales from spatial planning to local network planning (under the One Network Framework), on projects (funded from the National Land Transport Fund and other sources), and through business cases using the street guide to connect these systems.

7

WHO IS THE AOTEAROA URBAN STREET PLANNING AND DESIGN GUIDE FOR?

The street guide is intended for clients, consultants, contractors, project managers, stakeholders and the community who participate in the planning, design, construction, operations and maintenance of street networks.

The street guide is also intended for Waka Kotahi staff whose work and actions affect multi-modal and urban design outcomes.

The street guide is for use by Waka Kotahi, central and local government partners in relation to public street network infrastructure in urban environments. Use of the street guide on other privately funded street projects may be considered appropriate with the agreement of the relevant road controlling authority, client or landowner.





THE STREET GUIDE INCLUDES:

- the current policy context
- the national high-level principles for excellence in street design
- a summary of the key challenges for street planning and design
- direction on good process
- examples of the form and function for streets for the One Network Framework urban street categories
- resources and case studies (as part of a developing community of practice).

THE STREET GUIDE IS DIVIDED INTO FOUR SECTIONS:

SECTION 1.0 INTRODUCTION:

Describes the Street Design Guide, its background and policy context

- 1.1: How Does the Urban Street Guide Work?
- 1.2: Policy and Direction

SECTION 2.0 DESIGN PRINCIPLES:

Establishes the design objectives and methods, principles and objectives that guide our approach to street design

SECTION 3.0 PLANNING AND PROCESS:

Sets out guidelines for how to plan and design streets

- 3.1: Planning & Design Process
- 3.2: Establishing the Case for Change
- 3.3: Shared Challenges & a Community of Practice

SECTION 4.0 CREATING GOOD URBAN STREETS:

Outlines how to understand and design a street network in urban areas & illustrates the different types of urban streets and how to design them.

- 4.1: Urban Context & Spatial Planning
- 4.2: Spectrum of Urban Catchments
- 4.3: Dealing with Difference
- 4.4: Urban Street Family Guidance

APPENDICES:

- i) Resources & Links
- ii) Case Studies
- iii) Glossary

Through the objectives and methods set out in Section 2, the street guide sets out what the investment in our streets should be achieving.

The street guide does not address the detailed design of streets nor specific streetscape treatments, design standards or specifications.



RELATIONSHIP WITH POLICY AND PLANNING FRAMEWORKS

We deliver Government's long-term outcomes & short-term priorities for land transport ...

... informed and implemented according to ...

... following the partnership model and engagement approaches ...

... signalled through our 10 year plan to deliver key shifts for land transport system ...

POLICY CONTEXT

• GPS Land Transport • GPS Land Transport

PLANNING FRAMEWORK

- Standards & Statements
 NLTP, NES, NPS
- Regulatory Frameworks LTMA, RMA, LGA

PARTNERSHIPS & ENGAGEMENT

ARATAKI - OUR TEN YEAR VIEW

• Transform urban mobility • Tackle climate change • Create a safe and healthy system • Improve urban form • Support regional development

AOTEAROA URBAN STREET PLANNING & DESIGN GUIDE

... according to objectives, principles and integrated planning and design guidance that achieve desired outcomes ...

- » Section 2 He Whenua He Tangata Framework, Objectives and design principles to capture and integrate collective aspirations and expectations for street planning and design in Aotearoa.
- » Section 3 Planning and Process for delivering better urban street outcomes in Aotearoa including investing in streets and building a community of practice to address shared challenges.
- » Section 4 planning and design guidance for creating good urban streets that are fit for context. Integrate with spatial plans, urban street form and function.

LEVERS AND INTERVENTIONS

• Business Case Process • Policy and regulatory setting • Spatial and place-based planning and design • Network design, management and optimisation • Infrastructure and services investment • Urban Design Frameworks and Master Plans • Guidance • Education, engagement and awareness

SCALES OF PLANNING

• Regional Planning • Urban Planning • Area Plans and Precinct Plans • Urban Context • Corridor and Network Scale • Street Scale • Placemaking and Tactical Urbanism

... using a range of levers, applied directly or in partnership ...

... via implementation plans, including ...

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development and land use integration and reflect One Network Framework



GOVERNMENT DIRECTION DRIVING STREET CHANGE

GOVERNMENT POLICY TO CHANGING URBAN STREETS

The recent change in government policy direction has focused on the impacts of the transport system on the following key challenges:

- the safety and health of the population
- environmental sustainability
- climate change, particularly emissions
- aligning transport and land-use outcomes.

The following sets out the statutory and non-statutory policies, guides and frameworks that provide key direction and context for the street guide. For further detail on additional policy and frameworks see links for resources.

GOVERNMENT POLICY STATEMENT ON LAND TRANSPORT

The Government Policy Statement on Land Transport (GPS) sets out how money from the National Land Transport Fund (NLTF) is allocated towards achieving the Government's transport priorities. It defines ranges for funding activities such as public transport, state highway improvements, local and regional roads and road safety. These are called activity classes. The GPS on Land Transport covers a 10-year period, and is reviewed and updated every three years.

The GPS on Land Transport draws its priorities from the outcomes identified in the Ministry of Transport's Transport Outcomes framework. The 2021 GPS identifies that the "purpose of the transport system is to improve people's wellbeing and the liveability of places". Improving the way in which transport proposals better accommodate "place" is a tangible way of addressing this intent.

The most recent GPS on Land Transport 2021 identified four strategic priorities for investment:

- **safety:** developing a transport network where no-one is killed or seriously injured
- **better travel options:** providing people with better transport options to access social and economic opportunities
- **climate change:** developing a low carbon transport system that supports emissions reductions while improving safety and inclusive access
- improving freight connections for economic development.

ARATAKI

Arataki is the Waka Kotahi 10-year view of what is needed to deliver on the government's current priorities and long-term objectives for the land transport system. It identifies key drivers for change and step changes that are needed to deliver on the government's direction.

MINISTRY OF TRANSPORT - TRANSPORT OUTCOMES **FRAMEWORK 2018**

The Transport Outcomes Framework 2018 sets a strategic approach for the government and the transport sector and defines a purpose for the transport system centred around wellbeing of people and liveability of spaces. Five outcome areas help to contribute to the purpose, which are inclusive access, healthy and safe people, environmental sustainability, economic prosperity, and resilience and security.

The street guide includes a number of objectives that build upon the five outcomes for the transport system. These are described in greater detail in Section 2 of this document.

Inclusive access

Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.

Economic prosperity

Supporting economic activity via local, regional, and international connections, with efficient movements of people and products.

LINKS

- Better Travel Choices
- Te Āhei ki te Whakamahi Ara Accessible Streets
- <u>Arat</u>aki
- Waka Kotahi Keeping Cities Moving
- Vision Zero Road to Zero
- Toitū Te Taiao Our Sustainability Action Plan Sustainability
- Te Ara Kotahi Our Māori Strategy



Healthy and

sale people

Environmental

ustainability

A transport system that improves wellbeing and liveability

Inclusive

Economic

Resilience and security

Resilience and security

Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.

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Figure 4: Arataki, Our Plan for the Land Transport System 2021-31, Waka Kotahi.

Protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option.

Environmental sustainability

Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

> Figure 5: Transport Outcomes Framework 2018, Ministry of Transport.

VISION ZERO APPROACH

Vision Zero is an ethics-based approach to a safe transport system first developed in Sweden in the 1990s with success globally. Vision Zero is underpinned by the Safe System approach to road safety. Safe System is a holistic approach that addresses all facets of the mobility system. It applies multiple layers of evidence-based measures to mitigate the effects of human error to avoid death and serious injury. Vision Zero acknowledges human error and fragility but doesn't accept that death or serious injury should be an inevitable or acceptable outcome of using the transport system. This includes travelling and spending time in public environments such as streets, cycleways and footpaths, and in accessing public transport.

WHY? **VISION ZERO**

HOW? **SAFE SYSTEM**

Proven principles to make sure transport solution keep people safe.

WHAT? **STRATEGIES AND ACTION PLANS**

Outlines and prioritises road safety solutions for Aotearoa/ New Zealand

Figure 6: Relationship of Waka Kotahi Safe System approach to Vision Zero.

ROAD TO ZERO: NEW ZEALAND'S ROAD SAFETY **STRATEGY FOR 2020 - 2030**



The Road to Zero strategy sets out principles, focus areas and targets to stop people being killed or injured within the transport system. It adopts a Vision Zero approach where no death or serious injury from travelling on the roads is acceptable.

The accompanying three-year Action Plan beginning in 2020, outlines 15 initial actions set within the focus areas to help reach the target of reducing deaths and serious injuries in New Zealand by 40% by 2030.

The Road to Zero Strategy seeks to make the safety of people a priority through the following four principles:

Figure 7: Road to Zero. New Zealand's Road Safety Strategy 2020-2030, Waka Kotahi.

- We promote good choices but plan for mistakes.
- We design for human vulnerability.
- We strengthen all parts of the transport system.
- We have a shared responsibility.

The strategy identified the importance of updating guidances to reflect the Road to Zero Strategy. The action plan identifies the review of infrastructure standards and guidelines to embed the Safe System approach within them. The action plan points to a street guide as the mechanism to support this integration.

Figure 8 envisages the positive feedback system created through this approach. Streets become safer, healthier and more people-centred following design changes, resulting in more people feeling comfortable walking, cycling and taking public transport. This contributes to ongoing reductions in vehicle kilometres travelled, compounding the associated benefits of reduced emissions and air pollution, and fewer crashes and fatalities. This feeds back into a safer, healthier and more people-centred environment and the cycle continues.



Û

Vision

An Addampa where

no one is killed or

seriously injured in

road crashes.



We have a shared responsibility for Improving road safety

Figure 8: Info-graphic shows the New Zealand Road to Zero framework.



- Vision Zero for system Designers Road to Zero Vision Zero Challenge Healthy Urban development, Ministry of Health Air Quality, Ministry of Health <u>Austroads - Integrating Safe System with</u> <u>Movement and Place for Vulnerable Road Users</u>
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ENVIRONMENTAL & HEALTH BENEFITS OF A SAFE SYSTEM APPROACH

The following diagram illustrates the positive cycle that can be generated by a Safe System approach.



Figure 9: Environmental and Health Benefits of a Safe Systems Approach. Sustainable and Safe: A Vision and Guidance for Zero Road Deaths, World Resources Institute. Edited graphic.

INCLUSIVE ACCESS AND URBAN DESIGN

A 'Safe System' view recognises the importance of designing for all users.

Designing accessible streets for people, including for those with disabilities means:

- Determining the movement and place function and street category
- Identifying place factors
- Determining land use priorities
- Identifying movement factors
- Determining the transport mode priority
- Identifying and accessing Safe System requirements
- Prioritising treatments
- Integrated selected treatments with the surrounding network

While movement and place functions inform street categories, modal

provision, prioritisation and space allocation, the base level of assessing accessibility and inclusive access (e.g. for those with less physical mobility for example children, elderly and people with disabilities) should be consistent across all streets. For example, while some low movement areas like 'shared spaces' can allow non-disabled pedestrians to move freely across the carriageway, an accessible path must still be provided for those less able or confident in crossing the carriageway.

INCLUSIVE ACCESS (UNIVERSAL DESIGN) AND USER EQUALITY

Road users such as cyclists, pedestrians and people on electric scooters are more likely to suffer serious injury or death on our streets due to historic street designs that would expose them to conflict with vehicles. These users can be referred to as vulnerable road users. Designing safe streets for all users is crucial for meeting goals in the Road to Zero strategy and supporting mode shift goals to walking and cycling. This in turn supports emissions reduction goals.

The street guide supports the safe and appropriate speed, safety interventions, space re-allocation and re-prioritisation of space for people by designing streets with consideration of the movement and place functions, and the users.

Streets with higher place value can require less exposure to traffic and speeds to function which supports safer movement for active modes and the reallocation of space. Higher movement and speed streets require separated facilities or routes to protect active modes from conflicts.

A shift in emphasis to moving people not simply by vehicles is part of mode shift. Section 4.1 of this guide introduces concepts of walkable cities and catchments and how an understanding of these should be a foundation for planning of urban street networks. Making streets work for active travel has the following benefits:

- Long term sustainability
- Health
- Low noise
- Low emissions
- Supports public transport
- Supports social equity
- Space efficient
- Low risk to others

Further understanding of this can be gained through the online resource - Integrating Safe System with Movement and Place for Vulnerable Road Users, A process for integration by Dr Bruce Corben 🗹

Crime Prevention Through Environmental Design (CPTED) is a multidisciplinary approach to crime prevention though design in the management of built and natural environments. The principles outlined in CPTED assist in the design of streets for all users. Specialists audits may be required where issues are identified in existing environments or reviews of street change proposals.

ACCESSIBLE STREETS

The Accessible Streets package is a proposed set of rule changes that intends to introduce clearer rules about how people use footpaths, shared paths, cycle paths, cycle lanes and roads. The package is made up of nine proposals with numerous sub-proposals. Some of these proposals include allowing cyclists on the footpath, provided they follow behavioural requirements (like giving way to pedestrians and following a speed limit), allowing councils to make changes to spaces via resolution, and mandating a minimum overtaking gap for motor vehicles when they are passing cyclists, pedestrians, horse riders and others. Accessible Streets is also one of 15 actions proposed as part of the initial action plan under the Road to Zero strategy and a key step in following a Safe Systems approach to improving safety for vulnerable road users.

Waka Kotahi consulted the public on these proposals in 2020. The next steps for Accessible Streets involve carrying out additional analysis on high-risk proposals and investigating potential changes to limit the risks outlined during consultation. Some of this work is expected to include:

- further work and potential changes to the proposed definitions of devices/vehicles (proposal 1)
- analysis of land allocation and potentially changing the proposed rules relating to footpath and shared path use
- investigating how berms are defined.

a full package.



- Deaths
- National Guidelin Environmental De
- Healthy Urban de
- Air Quality, Minist
- New Zealand Hui
- Austroads Integ ٠ Place for Vulnero
- Te Manatū Waka

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

completing a disability impact assessment about the proposals

Once these tasks have been completed, Accessible Streets will progress as

Sustainable and Safe: A Vision and Guidance for Zero Road

nes for Crime Prevention through
esign in New Zealand, Ministry of Justice
evelopment, Ministry of Health
try of Health
<u>man Rights. Your Rights</u>
rating Safe System with Movement and able Road Users
Accessible Streets - Accessible Streets
Customs with Maxana and an al Disco for

Integrating Safe System with Movement and Place for Vulnerable Road Úsers, Dr Bruce Corben

ONE NETWORK FRAMEWORK

The One Network Framework (ONF) is an evolution of the One Network Road Classification (ONRC) to take a more human-centric approach to classifying roads and streets, recognise the place and movement functions, as well the surrounding context of the street. The framework builds upon the transport and urban development policy shift from central government.

The ONF provides a 5-point matrix to link street family and place and movement functions which informs the new street families. Under the Urban Street Family there are seven street classes. Each class has a different role based on its movement and place function and this will inform the requirements for the design of the street and what is prioritised. A street is only part of a bigger context and the framework recognises streets can have multiple street families along its length reflecting its location, activities that happen on it, form and function.

The classification of a street or section of a street under the ONF will inform the design process both the current and future form and function of it. These classes under the street guide will seek to clearly align with and support the ONF.



Figure 10: One Network Framework Place and Movement Matrix, Waka Kotahi.

MOVEMENT AND PLACE FRAMEWORK



Figure 11: ONF Street Categories within the Movement and Place continuum. Source Graphic NSW Future Transport Strategy 2056

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LINKS

One Network Framework

<u>Austroads - Integrating Safe System with</u> <u>Movement and Place for Vulnerable Road Users</u>



AOTEAROA URBAN STREET PLANNING & DESIGN GUIDE PRINCIPLES



HE WHENUA HE TANGATA DESIGN PRINCIPLES

The street guide uses the overarching ethos of He Whenua He Tangata (introduced in Section 1) to set the framework for six objectives for streets, and ten street design principles under these objectives. These items together seek to capture and integrate the collective aspirations and expectations for street planning and design in Aotearoa, and create a line of sight to the global street design best practice. The diagram to the left reflects an integrated approach and the synergies to designing healthy and liveable streets within Aotearoa environments.



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PLANNING & DESIGN OBJECTIVES

The street guide defines six objectives for streets in Aotearoa. These create a clear direction to ensure good practice outcomes are delivered to support the land transport system and strategies and action plans such as road to zero (and a safe system approach 🖒), mode shift, and those related to environment and sustainability. The objectives also seek to give effect to the overarching policy, planning and investment drivers, transport planning (recognising movement and place function) and urban integration as noted in section 1. In addition, Waka Kotahi National Land Transport Fund investment decisions need to give effect to the strategic direction

provided by the Government Policy Statement. The street objectives are unique to Aotearoa and aim to ensure streets are fit for context in the places where we work, live and play. Street design is informed by mātauranga Māori and is context specific. The formation of an iwi working group is key to advise on the implementation of mātauranga Māori based design. Iwi unique relationship with the natural environment is celebrated and used to inform the design of streets in Aotearoa. Streets that look and feel like places of Aotearoa and reflect Aotearoa unique identity.



MAHI TAHI PARTNERSHIPS & ENGAGEMENT

Transport affects the daily lives of all New Zealanders. Mahi tahi refers to working together in collaboration to achieve shared outcomes and visions. This means both informing communities and stakeholders about proposed projects and decisions that have been made, and engaging with them as part of our decision-making process. In addition to engaging, 'Mahi tahi' is about partnering in a collaborative relationship with a number of organisations. This can unlock more comprehensive investment that considers all aspects of street form and function and how it affects people.



HE WHENUA ORA A LIVING ENVIRONMENT

As towns and cities change we adapt our living environments, and work with living systems and the natural environment. Spatial and system thinking is needed to connect the street to its neighbourhood and buildings, the neighbourhood to its city, and the city to its region.

Street planning and design optimises relationships between natural and built environments activating streets for activities and transport networks. It also recognises that towns and cities are part of a constantly evolving relationship between people, land, culture and the wider environment

HE WHENUA HE TANGATA DESIGN PRINCIPLES

TAONGA TUKU IHO PLACES OF VALUE

All environments have specific and unique contexts and value. Recognising these unique layers offer opportunities to connect our past with new relationships within our environments. Places of value reflect and enhance the distinctive character and culture of our urban environments.

Street planning and design recognises that character is dynamic and evolving, but also protects and manages our heritage, including buildings, landmarks, places and landscapes.



TĀTOU TĀTOU INCLUSIVITY FOR EVERYONE

Inclusive street environments cater for all ages, abilities and cultures. It is about recognising through 'Taonga Tuku Iho' that place provides context and value, nd 'Tātou Tātou' provides inclusiv access.

Connectivity and access is a positive way to foster this inclusivity and diversity, and offers people choice in the way they move in our towns and cities. This is reflected in the urban form, the transport choices provided, and in the form of streets. Providing flexible and adaptable design which meets the needs of all and anticipates future uses connecting to the past. Support distinctive place identity that is rooted in history to create resilient and robust urban places for everyone.

TOIORA HEALTHY & SAFE ENVIRONMENTS

The built environment needs to support safe and healthy communities. This expands on 'Tātou Tātou' which ensures that environments are inclusive. 'Toiora' is a safe system approach which supports the street design of peoples' physical, mentality, spiritual, community and family wellbeing (Te Whare Tapa Wha).

Safe streets reduce harm, risks and help create enjoyable and public spaces and quality environments that are cared for, and a sense of ownership and responsibility in all residents and visitors.

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MAURI ORA PROSPERITY & VITALITY

Understanding that streets are multidimensional and that 'Toiora' - a safe, efficient street network is essential to 'Mauri Ora' the vibrancy, social, cultural and economic health of a town, city or region. Street planning and design plays a role in facilitating access to formal and informal commerce and employment, and the movement of goods and services. During business case development, both during optioneering and detailed design, the benefits and whole of life costs of a street design should be considered.

PLANNING & DESIGN PRINCIPLES

WHAT ARE THE DESIGN PRINCIPLES?

The street guide reinforces the tactics and techniques being pioneered by the world's foremost urban engineers and designers \square , and adopts and endorses the Global Street Design Guide Principles (NACTO) \square . The principles reflect the shared challenges and opportunities Aotearoa shares with countries around the world in planning and designing for better urban streets. Street design must meet the needs of people walking, cycling, taking public transport, lingering/playing, doing business, providing city services, and driving, all in a constrained space^{\Box}. The design principles aim to help shape and inform this challenge. As we develop the transport solutions we develop the places and

spaces in which New Zealanders live, work and play. As we develop our transport networks, we shape the urban form and function of streets. Streets therefore provide a common point of reference for the necessary integration of the transport system and land use systems in urban areas. We are working to ensure that quality street design principles inform this planning, design, implementation and management and the way we engage with communities on street programmes and projects.



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PLANNING AND PROCESS FOR URBAN STREETS IN AOTEAROA

Planning and process are critical to the success of delivering better urban street outcomes in Aotearoa. This starts with an understanding of the current state and a vision of the future state.

This section sets out guidance in three parts to improve planning and process for better urban street outcomes in Aotearoa.

PART 3.1 PLANNING & DESIGN PROCESS

The street guide outlines a planning and process cycle in broad terms that uses the three levels of investment as a basis to implement change.

PART 3.2 ESTABLISHING THE CASE FOR CHANGE

Establishing the appropriate level of change required to deliver the future state is critical. The street guide identifies three broad levels of change that can be applied to existing and new streets:

- tactical urbanism and small-scale intervention
- staged network and streetscape development
- permanent changes including new streets or upgrade.

PART 3.3 SHARED CHALLENGES & BUILDING A COMMUNITY OF PRACTICE

There are a number of commonly shared challenges to delivering better urban streets in Aotearoa, whatever the level of investment or planning and process steps being followed. Establishing a 'community' of practice' approach will support peer-to-peer collaboration in raising awareness and addressing these challenges earlier in the process. Simply put a community of practice for streets is a group of people who share a common goal around the transport system and streets. It is a way to share best practices and support continual improvement, research and develop new knowledge to advance street design in Aotearoa. Such an approach will build sector capability for more integrated and higher quality urban street outcomes at all stages of the process cycle of planning, design, implementation and improvement. The intention is to develop a cross sector way to share good practice for street design, in acknowledgment that there is no one agency that can secure all outcomes sought for streets and adjoining urban environment.



Tactical | Staged | Permanent





PLANNING & DESIGNING STREETS

PLANNING & PROCESS CYCLE:

Creating good urban streets is an iterative process. The street guide organises this process into 4 main phases of development:

- Discover
- Create
- Implement
- Maintain and Improve

The planning and process cycle is not intended to take the place of best practice project delivery but highlight the phases that are important to achieving successful outcomes in the planning and design of urban streets.

The intended application of this cycle is broad and can be used for the development and implementation of a wide range of policies, plans and programmes, but also on projects that result in physical changes to the urban street.

The street guide focuses primarily on the discover and create phases as the parts of the process which are most closely tied to the planning and design of urban streets.

Some phases will require more time than others, and some phases will happen more than once as each phase has its unique feedback loops. Projects can be scaled and amplified to 'right size' the process and scale of investment, remembering the tactical/ staged/ permanent pathways to the future state and enabling more rapid change in response to, for example, urgent safety, health and climate issues. The process (and feedback loops) around how the phases are carried out is important to achieving successful outcomes.



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PARTNERSHIP & ENGAGEMENT

Partnering and engagement approaches are central to good planning and design processes for delivering better urban streets in Aotearoa. Waka Kotahi utilises the International Association of Public Participation (IAP2) framework to identify partners, stakeholders and community members and establish the level of engagement with each party at each stage in the process of planning, designing, implementing and improving streets, as set out on the following pages.

increasing impact on the decision						
	Inform	Consult	Involve	Collaborate	Empower	
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/ or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place the final decision making in the hands of the public.	
Promise to the public	We will keep you informed. Uisten to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.		We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decisions.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decision to maximum extent possible.	We will implement what you decide.	

Figure 12: IAP2 Spectrum of Public Participation



HONOUR OUR TIRITI/TREATY PARTNERSHIP.

Respect and inclusion of Te Ao Māori and Māutauranga Māori is at the heart of the street guides He Whenua, He Tangata approach. In line with Te Tiriti o Waitangi principles of partnership, participation and protection this directs continuous partnership with hapū, iwi, tribal authorities and mātāwaka to shape aspirations, direction, options, design and implementation throughout the lifecycle of urban streets.

RECOGNISE MANA.

Engaging and partnering with iwi is an important factor to all urban street projects. Recognising mana (authority) of iwi, hapū, whānau and marae ensures that we understand equal partnership between tangata whenua and tangata tiriti. Projects that have taken this approach demonstrate how embedding iwi values into urban street programmes and projects provide for holistic outcomes and opportunities that benefit everyone.

INCLUSIVE APPROACH.

No one organisation in Aotearoa can plan, design, build, maintain and improve all aspects of urban streets and their connections to the wider urban contexts and communities of which they are a part. It takes co-ordinated and collective effort. An inclusive approach to both partnering and engagement is critical to success and should be understood as a constant thread to all steps in the process of delivering better urban streets for Aotearoa.

SHARE LEARNINGS AND BUILD CAPABILITY.

Fostering a community of practice approach across different sectors and communities allows knowledge and learnings to be shared more widely than those involved in, or with, knowledge of individual project processes and outcomes.

Advice on best practice engagement with Māori is enshrined in the Local Government Act; in the engagement Waka Kotahi Te Ara Kotahi -Our Māori strategy. The first to have. This will help shape the engagement approach and

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PARTNERING & ENGAGEMENT

MĀORI PARTNERSHIPS

ESTABLISH LEVEL OF ENGAGEMENT

UNDERSTAND WHO SHOULD BE INVOLVED.

The International Association of Public Participation (IAP2) framework helps identify partners, stakeholders and community members, and understand how they are affected or why they are interested. It is important to do this at the start to ensure a diverse range of people, opinions, perspectives and knowledge are bought to the project, particularly to understand local knowledge about local priorities and themes, and how the street functions in its place and movement context.

ENGAGE STAKEHOLDERS AND IWI. Engage with a wide range of disciplines to understand the full extent of the project and to align it with any existing and upcoming projects in the area, including urban development projects and other land use change on sites adjoining and nearby the street or streets that are the focus. Partnering and collaborating with other local and central government partners and Waka Kotahi is particularly important, and It will help ensure the planning and investment process is founded on trust, clarity and accountability and gives effect to the policy drivers for change as reflected in the GPS and other key guiding documents of central and local government agencies.

UNDERSTAND STAKEHOLDERS. Use local knowledge and keep lwi and stakeholders involved throughout the process to make decisions together on the local priorities and themes for the street project while considering its wider place and movement context. Identifying and engaging early with key stakeholders and community groups will ensure local challenges, opportunities and aspirations are uncovered and well understood as the project develops.

PARTNER. Waka Kotahi adopts a partnership approach to planning and investment decision-making, founded on trust, clarity and accountability. This approach and the investment principles and policies that guide Waka Kotahi provide a foundation for Waka Kotahi, its partners and stakeholders to work towards developing and implementing urban street solutions that give effect to the policy drivers for change as reflected in the GPS and other key guiding documents.

COLLABORATE. For the planning, development and maintenance of urban streets, a close collaborative approach to planning and investment between local government partners and Waka Kotahi is particularly important, given the myriad ways in which local communities rely on and use the streets in urban areas. Such an approach should embed early on in a process, ways that can maintain relationships and ways of collaborating that endure through implementation and improve/maintain phases through a philosophy of ongoing stewardship.

BE CLEAR HOW PEOPLE CAN PARTICIPATE.

The IAP2 Spectrum of Participation shows how to identify what level of participation projects can work towards with different groups. It comes with corresponding promises to the public about what this means. A co-design approach to street projects can sit across any of the levels above 'inform/consult', with different methods and tools and the appropriate level of participation likely to change at each stage. It is important to be clear what level of participation the co-design model can offer, to reassess this at each stage and always communicate that promise clearly, to avoid confusion or frustration later. Engagement activities to help design the project can include surveys, enquiry by design workshops, place-making models, games and activities (refer Tactical Urbanism handbook).

SECTOR STAKEHOLDERS AND ONGOING INVOLVEMENT

IDENTIFYING SECTOR STAKEHOLDERS.

In addition to partnering with iwi and engaging with local communities, there are a range of sector stakeholders that should be identified for more targeted involvement in the process. These can include relevant central and local government agencies, professional institutes and industry bodies and special interest advocacy and community groups. These groups typically have more narrowly defined interests in street projects that support a more targeted approach to their participation and engagement.

ESTABLISH A COMMUNITY OF PRACTICE.

Foster a community of practice with a diverse cross-section of sector stakeholders involved with and invested in bettering urban streets for Aotearoa (refer Section 3.3 of this guide).

FRONT-FOOTING POSITIVE COMMUNICATIONS.

Proposing changes for public spaces will always provoke a response and often involve emotional reactions or resistance to change to the status quo. Front-foot your project with positive communications about your vision and the big picture, to explain how change can be positive progress.

CHAMPIONING AND TELLING THE STORY.

Ensure local media are well briefed in advance to make sure you have opportunities to tell your story. Find champions in iwi partners, council, transport agencies and other respected community leaders who can show support and help you to activate support and voices from groups in the community who aren't usually heard, but will be interested in making positive changes and will help the more vocal and engaged appreciate the demographic diversity of the community.

A CONSENSUS VIEW IS NOT NEEDED TO MOVE FORWARD.

At points in the engagement process there will be points when groups do not agree. The intent of engagement is not to necessarily result in consensus. At this point in the process it is important to not get paralysed into inaction as this will result in the continuation of the 'status quo' of the current state which continues to result in significant health and safety issues. Frameworks to clearly and transparently guide decision making are important to taking steps forward consistent with objectives and outcomes sought that deliver measurable progress towards better urban streets for Aotearoa.

ENABLE CONTINUOUS FEEDBACK LOOPS.

Enabling effective feedback structures helps to continuously adapt and evolve the development of urban streets and networks in response to ongoing feedback and data collection from stakeholders and the community. At each stage of the project or after public engagement sessions report back to everyone who has taken the time to contribute how their feedback has helped shape the next stage. Continue to report back as part of post-monitoring and evaluation phases.

- outset

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CHECKLIST & RESOURCES

BETTER URBAN STREETS FOR AOTEAROA

PARTNER & ENGAGE

Communication & Engagement Plan

Partner with tangata whenua

Identify and engage everyone affected at the

Be clear about the level of influence at each stage of the project

Close the loop to show how people have influenced the outcomes at each stage

LINKS

IAP2 resources

Taituara (SOLGM) Working shoulder to shoulder

Te Arawhiti Māori engagement framework

LGNZ resources for Māori partnerships

Waka Kotahi Public Engagement Guidelines (2016)

Waka Kotahi Te Ara Kotahi – Our Māori Strategy

Waka Kotahi Investment Principles

Waka Kotahi Tactical Urbanism handbook

How to talk about urban mobility and transport shift – a short guide, The Workshop

DISCOVER & CREATE PHASES

Street retrofits and rebuilds are usually part of the Local Government Act process and required meaningful and extensive consultation and engagement and communication with the community while streets being designed for greenfield developments are typically usually part of a statutory process (consenting).

Data collection can for example inform how street designs can be more inclusive, universal, catering for all ages, groups, genders and mobility levels. That can be achieved by, for example:

- Measuring diversity of participation
- Counting mobility aid users as a proportion of all pedestrians, or of people accessing a place
- Safety vs. perception of safety.
- Latent demand or suppressed demand is this a desirable place to walk? Is there severance?
- Corresponding feedback themes on people's values and aspirations

Additionally, data collection is important to create a more diverse and complete baseline and evidence base across the broader considerations for urban streets as identified by the policy drivers of change and section 2 principles in this guide



ANALYSE

ANALYSE CONTEXT.

Analyse and understand context including the cultural and heritage, environmental context and the spatial constraints of the urban place and/or street at multiple scales. Identify how it functions as part of an urban context for example the role the street has within a metropolitan, suburban, or town centre context and scale as well as on movement networks.

GATHER DATA & IDENTIFY GAPS.

Gather data about all relevant modes and aspects of the transport network including walking, cycling, public transport and parking for which there is typically less baseline data than traffic volumes and speeds. Understand water systems, ecological functions and values, and any environmental goals or guiding documents relevant to the project area. Use detailed surveys or GIS data that includes topography, catchment & stormwater as well as above and below ground services. Draw upon or gather social planning data to inform how people use and value streets subject to change and how changes may affect people's lives.

UNDERSTAND BASELINE AND PAST TRENDS BUT FOCUS ON FUTURE.

Analyse data to understand the baseline and past trends to inform a focus on planning and designing for the future we want as defined by strategic plans and visions and investment goals and objectives. Plan and design for the street we want in ways that is not subject to status quo bias that risks unduly or unconsciously assuming aspects of the street environment and function must be fixed or not re-visited because that is the way they are and have always been.

UNDERSTAND CHANGES IN FUTURE STREET USERS.

Understand the expected change from existing to future users (both numbers and types of use/activities). Consider carrying public life surveys to understand the street uses and functions, investigating desire lines solar access and wind and carrying safety assessments such as Crash Analysis System (CAS) data and CPTED to understand how people perceive the space.

ASSESS STATUTORY AND BROADER POLICY IMPLICATIONS.

Understand the legal, regulatory, statutory, and non-statutory guiding documents from your local or regional council and Waka Kotahi thinking about the big picture of goals or agendas that relate to the project location including reference to the One Network Framework (ONF), local place-movement frameworks, and local-based plans where available.

SEEK DIRECTION FROM EXISTING STRATEGIC PLANS.

Review and distil strategic direction from relevant spatial plans (at all applicable scales) that relate to the urban place or street. Synthesise an integrated transport and movement context of strategic network planning considerations and modal goals and priorities relevant to the urban place and/or street and how this should guide the design and development of outcomes through the process.

ACCOUNT FOR FUTURE PLANS.

Consider land use integration requirements including taking account of future planned context as guided by statutory and non-statutory planning documents and national policy statements, in particular the NPS on Urban Development and its implications for integrated transit-oriented development and role of transport networks and modal shift in facilitating greater urban densities and well-functioning urban environments.

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UTILISE ONF TO INFORM A FUTURE STATE AND VISION.

Utilise the ONF to assist with defining a future state of street movement and place function (that takes account of expected changes in transport networks, urban form and land use activity and street users).

DEVELOP A VISION.

Building upon the initial discovery phase of analysis of current state and future state street form and function, work with partners and stakeholders to develop a vision for the future of the street/s. Take into account the bigger picture and align the project vision with strategic planning and frameworks to support integrated urban mobility, land use, and urban development outcomes, with reference to the policy context, drivers of change and urban street design principles as set out in Sections 1 and 2 of this guidance.

DEMONSTRATE AND COMMUNICATE A POSITIVE VISION FOR THE FUTURE.

You can bring your engagement to life over the course of your project by demonstrating the positive changes you are seeking with 'experiential' events, highly visual graphics and great storytelling. Be creative and showcase the people, place and environmental aspirations of your corridor's ONF Street Family through video, pictures, media, models, pop-up activatio ns and implementation trials, so people can see for themselves how things can be different.

RESEARCH GOOD PRACTICE.

As part of visioning, look to global best practice and precedent street designs where looking to innovate, then adapt to the local context. Such exemplars can be invaluable in developing a shared understanding of the vision and what success looks like for achieving better urban street outcomes. As case studies, they also often offer invaluable insights that can inform new projects at this early discovery phase.

DEVELOP AND CONTEXTUALISE OBJECTIVES.

Project objectives should be based on contextual information gathered and should be able to help develop the street design as well as assess a proposed design against. Establishing and socialising project objectives help demonstrate a mandate from the local community for what success will look like. Distinguish between higher level or wider objectives and specific outcomes sought where this provides greater clarity of what will be delivered on the ground that results in tangible changes to the form and function of the street.

PRIORITISE SAFETY.

Address the drivers of an urban safe system approach and how this should guide the design and development of urban street outcomes through the process of project creation and implementation.

DECARBONISE AND EMBED ENVIRONMENTAL SUSTAINABILITY **OUTCOMES.**

Ensure plans, programmes and projects for urban streets develop objectives to reduce carbon in the transport system and, give adequate consideration to when best to address this in a process. In doing so, recognise that while you can reduce carbon at any point in a delivery process, there is a law of diminishing returns with the greatest opportunities to reduce transport emissions (including embodied carbon, operational emissions and enabled emissions) are far greater the earlier you start in discover and create phases of project planning. For example, through integrated transport and land use planning for more compact urban design enabling fewer and shorter trips.

PLAN & DESIGN

INPUT FROM A RANGE OF SPECIALISTS & STAKEHOLDERS.

Ensure the process of design development from concept to detailed design is collaborative, involves a multi-disciplinary team, and identifies multiple review points for planners, designers, technical specialists and decision-makers as well as iwi, stakeholders, and the community.

FUTURE-PROOFING STREET CHANGES.

Design sustainable future-proof solutions in terms of the fundamentals of spatial allocation, mode shift and climate change adaptation and response and how these relate to additional considerations for the future of street user priorities and functions, local conditions, climate, maintenance, quality, and construction.

ACCOMMODATE ALL USERS.

There are different design requirements for various modes. Design from the outset to accommodate all users' needs addressing the principles of inclusive access and road to zero and urban safe system outcomes as articulated in Section 2 and 4 of this guide.

BE MODE SPECIFIC IN WORKING TOWARDS MODE SHIFT GOALS.

In consciously working towards mode shift to active modes and public transport, be clear how each mode will be catered for as the various facility types have different space requirements. Use network plans and the ONF to understand modal priorities and needs to be catered for streets with respect their relative place/movement values and how this translates to street space allocation.

DELIVER INTEGRATED OUTCOMES.

Engineering design to deliver on integrated urban street outcomes as identified and developed through the analysis and project objective definition phases ensuring technical or organisational barriers are overcome.

DEVELOP SCENARIOS.

Identify quick and easy wins and consider tactical interventions to test the performance of the proposed design and help realise benefits sooner following the tactical and staged pathways of implementation that are informed by the international movement of tactical urbanism for streets. Develop different scenarios and solutions and communicate them with involved stakeholders using drawings, diagrams, and visualisations, with participatory co-design processes where these have been established at the discover phase.

REFERENCE

ANALYSE

- Engineering studies (e.g. Services, ground conditions)
- Parking assessment

ENVISION

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CHECKLIST & RESOURCES

BETTER URBAN STREETS FOR AOTEAROA

 SPATIAL PLANS (ALL RELEVANT SCALES/PLACES) MODE-SPECIFIC NETWORK PLANS NETWORK OPERATING FRAMEWORK

- Street dimensions
- Space context
- Density and landuse context
- Topographical survey
- User intercept survey
- Public life survey / public life data
- Arboricultural assessment
- Stormwater management

- One Network Framework (ONF) Assessment
- Vision Statement
- Objectives and Outcomes Sought
- Investment Logic Mapping

PLAN & DESIGN

- Urban Design Framework
- Integrated Streetscape Drawing Packages (Concept Design > Developed Design > Detailed Design)
- General Arrangement Plans

TEST & ASSESS

BUILD THE CASE.

Recognising the full spectrum of outcomes for urban streets and their impacts on people and place may require innovations in measuring changes to streets and their future performance and user profile to build the case for investment in areas not traditionally captured through narrow transport planning and economic evaluation methodologies.

ASSESS OPTIONS.

Most projects will be developed through the development of a business case, a key part of the business case development process is optioneering and the use of Multi Criteria Analysis. Smaller projects should also coordinate and agree on a suitable framework to assess the options developed during the design phase commensurate with the scale of the project investment and timeframes. This should be based on the project vision, objectives and outcomes sought and be informed by assessment tools that inform these, for example safe system assessment, health streets assessment and value of pedestrian improvement tools.

TEST FOR SPATIAL FIT.

Ground options in spatial reality by developing and testing them in the 3Dimensional complexity of the built environment. Draw and analyse street proposals in plan, section and 3D models to test for spatial fit and sensitivities, inform greater depth of understanding of integration issues and opportunities earlier in process and how street solutions fit with adjacent urban form and function, land use activity and building edge considerations.

REDUCING CARBON.

Use carbon calculators and other tools to assess performance of options to reduce transport carbon emissions including ways to reduce embodied carbon on urban streets - such as through reduced structural solutions and use of hard construction materials and adaptive reuse of existing structures and materials - to inform multi-criteria optioneering and assessment, testing and development of preferred options.

REVIEW STATUTORY IMPLICATIONS.

Confirm all statutory planning considerations have been taken into account and are integrated with business case and design development processes and engagement strategies to ensure integrated and aligned approaches to creating urban street proposals.

CONSIDER A REVIEW.

Ensure consideration is given to the need for and /or benefits of external as well as internal review processes, including for example peer review by independent planning, design and technical specialists, and use of urban design panels and technical advisory groups providing place-based strategic guidance and design review of proposals in different urban jurisdictions across Aotearoa.

REVIEW & APPROVE

KEEP THE BIG PICTURE.

Plan in time to respond to feedback received and ensure decisionmakers are equipped with frameworks, processes and reporting that keep sense of the bigger picture policy context and drivers of change for urban streets in determining appropriate courses of action that avoid reactionary short-sighted decisions or compromised outcomes that do not adequately deliver on the intended outcomes for better urban streets. Where compromises must be made, ensure they are consistent with the project objectives and do not sacrifice the essential outcomes sought.

AFFORDABILITY.

It is important to understand relevant stakeholder affordability, timelines and project scopes. This is often informed by council Long Term Plan documents.

SET PROJECT MILESTONES.

Build into planning and design processes the necessary and appropriate review and approval hold points and milestones to guide project development taking account of necessary requirements and good professional practices.

REDUCE RISKS.

Integrate requirements for statutory planning and approvals into project planning and design processes and consider the role of early and innovative partnering and engagement approaches with stakeholders and communities to help reduce the risk of opposition and delays or failures of project delivery that can eventuate where projects are disrupting the status quo.

AOTEAROA

TEST & ASSESS

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- Urban Design and Landscape Framework Guidelines Environmental and Social Responsibility Screen Crash Analysis System Modal Guidance (Pedestrian Planning, Cycling, Public Transport) Business Case Approach Guidance Bridging the Gap Urban Design Guidelines Engineering Standards

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CHECKLIST & RESOURCES

BETTER URBAN STREETS FOR

Spatial Fit Sensitivity Analysis (Plan and Sectional Studies, 3D Modelling) Multi-criteria Analysis (MCA) Safe System Assessment Healthy Streets Assessment Pedestrian Benefits and LOS tools Carbon calculators **REVIEW & APPROVE** Business Case Reporting

Investment Advice

LINKS

- <u>UK HM Treasury Infrastructure Carbon Review</u>
- UK Guidance Document for PAS 2080 Tool for Managing
 - Whole of Life Carbon in Infrastructure



IMPLEMENT, MAINTAIN & IMPROVE PHASES

Decisions made at the implement and improve phases in this process ultimately have a big impact on the ability to continually deliver good urban streets for Aotearoa.

Implementing change on urban streets is inherently disruptive and often challenging and complex to plan and deliver. Consistent with the global movement as captured by NACTO's Global Street Design Guide, and the Innovating Streets Programme and Tactical Urbanism Handbook, better implementation outcomes can be achieved through applying a more strategic lens to implementing street changes with a pathway to permanence that considers, and where appropriate, adopts, staged and tactical solutions to realise benefits sooner than would otherwise be possible.

Similar to the urban environments and systems of which they are an integral part, urban streets are constantly evolving. A philosophy of continual improvement should guide the approach to maintaining and evaluating the performance of urban streets and contributing to new and improved policies, plans, programmes and projects.



TACTICAL

A TACTICAL APPROACH TO TESTING OUTCOMES. Consider an innovating streets approach to partner with iwi and communities to canvas and implement tactical opportunities to deliver on some project outcomes and deliver some benefits sooner than budgets for permanent solutions would enable. Tactical approaches should bear in mind the goal of becoming a pathway to permanence and be informed by a clear idea of longerterm desired outcomes. Not all street trials and testing is physical - opportunities exist for example to trial city logistics such as alternate first/last mile freight solutions, operations of share schemes for cars, bicycle and micro-mobility modes time-based trials such as access management measures and part-time street closures.

USE WAKA KOTAHI GUIDANCE AND TOOLS. The Tactical Urbanism Handbook has been prepared as a tool to help councils and communities deliver tactical urbanism projects to a high standard, using a collaborative best-practice approach. The guidance and a growing number of local Aotearoa case studies are creating a rich resource and community of practice locally about how to effectively plan, deliver and implement tactical approaches to better urban streets in Aotearoa. (Refer to the draft Tactical Urbanism Handbook for detailed guidance on process and tools for tactical approaches).

CONSIDER A STAGING APPROACH.

Consider the ability to stage permanent outcomes to improve urban streets and networks, in the context of available funding (including through operational budget lines of maintenance and renewals where appropriate and available) and budget prioritisation. While there are often some overlaps, staging is different to tactical interventions in that they deliver permanent pieces of a bigger project in a considered and co-ordinated way that dovetails with and is future-proofed for future stages of investment. Common approaches to stages might be to prioritise geographically (for example developing the first of three street blocks in a corridor), or a combination of spatial and streetscape element prioritisation (for example reallocating kerbside space and developing a new cycleway prior to returning to re-construct new footpaths and add new street lighting and trees in a second stage investment.

TAKE AN INTEGRATED APPROACH.

Take an integrated and strategic approach to determining an optimal sequence of staging taking into account considerations such as inter-dependencies and integrated delivery with other projects, impacts to users and the community and the ability to maximise the early delivery of benefits.

DELIVER THE PROJECT VISION.

Implement street projects in full and for the long term carrying the project vision and intent through to the building phase.

FUTURE PROOF.

Invest in future-proof quality materials for long term sustainable environmental, social, and economical outcomes.

DEVELOPMENT RESPONSE.

Put in place well-considered and fully integrated development response programmes in place from the beginning of construction that inform staging, construction management and temporary traffic management plans.

MAINTAIN ENGAGEMENT.

Maintain engagement with local communities and stakeholders and proactively address and offset the disruption impacts of construction on local urban life.

ONGOING PARTNERING, ENGAGEMENT AND FEEDBACK THROUGHOUT

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STAGED

PERMANENT

MAINTAIN

A STEWARDSHIP APPROACH.

Adopting a stewardship approach to maintenance and renewals programmes helps to ensuring continuing return on investment and the benefits envisaged for proposed street changes continue to be realised long after the implement phase. Such an approach also gives the ability to involve partners and stakeholders in a "living and breathing" approach to managing the street or streets within a given centre, urban precinct or neighbourhood. A stewardship approach also aids streets to more nimbly adapt and evolve to changing needs without the need for major new capital investment as the only intervention tool to realise change.

MAINTENANCE = PERFORMANCE.

Ensure that ongoing maintenance and management is carried out in ways that support the intended quality and use. Streets are part of the public realm and maintenance is the most cost-effective way of ensuring performance and lifespan of the built project.

ACCOUNT FOR MAINTENANCE.

Consider project life cycle and whole of life costs as part of capital expenditure (Capex) investment and operational expenditure (Opex) including determinations of appropriate Levels of Service and asset management.

DIFFERENT STREETS, DIFFERENT NEEDS.

Recognise that urban streets with high user numbers in city and town centres will need higher levels of service to reflect greater intensity of use. This is particularly so for city centre and metropolitan centre streets adjacent to and interfacing with rapid transit stations supporting the highest volumes of daily pedestrian flows.

EVALUATE

MEASURE AND EVALUATE OUTCOMES.

Continue to engage with the local community to measure the performance of the overall project. Using metrics before and after the implementation of the project can help to convey information to decision-makers, stakeholders and wider community when assessing the benefits, cost and quality of the project while informing future approaches and assisting building support for other projects. Invest in monitoring both prior to and post-implementation of changes to urban streets to obtain a robust baseline and measure change over time against key performance indicators.

IWI PARTNERSHIP SUCCESS.

Consider the development of project specific iwi management plans and measures to ensure successful lwi partnerships. Using project specific metrics developed in collaboration with lwi can give aspirational baseline measures to achieve over the project lifetime.

INVEST IN THE USE OF TECHNOLOGY.

Consider the role of smart cities technology and data capture and analytics in the monitoring and evaluation of the performance of urban streets and networks and changes to their user and activity profiles over time.

GUIDANCE.

Recognise the need for continual improvement and use feedback from projects to revisit local and national policies, guidelines and to inform on the redevelopment of national guides and statutory planning documents and spatial plans.

IMPROVE THE NEXT PROJECT.

Apply lessons learned to future projects and review and development of new policies and strategic planning documents. Share lessons within community of practice networks to improve projects and practitioner knowledge and expertise more broadly.

UPDATE FUTURE DECISION-MAKING.

Ensure that new policies are based on the most recent guides, relevant precedents, and research available while considering the successes and failures of the past.

MAINTAIN RELATIONSHIPS.

Ensure ongoing relationships with iwi and mana whenua are maintained and continue to be invested in as set out under Partner and Engage, allowing for rich spaces that tangata whenua and communities can enjoy and prosper within.

IDENTIFY FURTHER PARTNERSHIP OPPORTUNITIES.

Identify partnerships with other agencies and community to deliver the best sustainable outcomes and eliminate barriers to implementing new approaches.

CHECKLIST & RESOURCES

Public Life Audit

BETTER URBAN STREETS FOR AOTEAROA

IMPLEMENT

- IMPROVE
- Communication and Engagement Plan
 Post-Occupancy Survey
- **Development Response Plan**
- Staging Strategy / Staging Plans
- **Construction Management Plans**
- Temporary Traffic Management Plans MAINTAIN
- Levels of Service
- Asset Management Plan



IMPROVE

INFORM FUTURE POLICY MAKING, STREET STANDARDS AND

LINKS

 Innovating Streets Guidelines Handbook for Tactical Urbanism Aotearoa <u>Multi-modal Transport Planning and design guidance</u>

ESTABLISHING THE CASE FOR CHANGE



ESTABLISHING THE CASE FOR CHANGE

The business case is the primary mechanism to explore the case for change and appropriate investment from a mode neutral perspective. As described in the street planning guidance, options for new streets and/or streetscape upgrades can be explored by developing tactical, staged and permanent options. All are pathways to addressing the challenges of urban transport system in the short, medium and long term.

WAKA KOTAHI - NZ TRANSPORT AGENCY INVESTMENT

It is useful to consider the following when developing a business case.

The overarching context and the ONF level of change. This includes:

- Tactical urbanism and small-scale intervention
- Staged network and streetscape development
- Permanent changes including new streets or upgrades
- **Connections /movement function or link (movement items)** The primary mode(s)/ modal priority(ies) should be clearly highlighted.
- Compliance/ mitigation and statutory requirements (essential items)
 Identification of required components in the project environment, such as environmental compliance, stormwater requirements, utility relocation etc. These are largely unavoidable costs on components, they may vary for each solution choice, but are attributable to the environmental impacts of the link / solution itself, as established through meeting statutory and legal requirements.
- Collaboration / Partnership Agreements and multi-party agreements
 Where Waka Kotahi has specific obligations to partnerships (e.g. under Treaty of Waitangi,
 MOU's etc) or where projects have multi-party agreements, will be considered on a case-by-case
 basis.
- Context / integration of safe systems and customer level of service (place items)
 Identification of safe systems elements or facilities and how they are integrated into the
 streetscape.

Given the difference between street categories as set out within the One Network Framework street investment is based on a case by case basis. Generally, the investment will be calibrated to the street category and the context/ urban area the street sits within (see section 4 of the street guide).

Within urban streetscape projects items which support integrated outcomes can be considered for funding. An example of this is street trees where they provide strong visual cues to help enforce road safety, safe and appropriate speeds, or separation benefits for active mode users.

The Waka Kotahi investment advisors can assist in determining if items are necessary, fit for purpose or if they sit within or outside transport (NLTF) funding rules. For full details of Waka Kotahi investment policies refer to the Planning and Investment Knowledge Base.

- Waka Kotahi Investment Hub
- One Network Framework
- Planning and Investment Knowledge Base
- Waka Kotahi Investment Principles
- Investing in Place Policy
- Land Transport Benefits Framework and Management Approach Guidelines

The diagram below shows a holistic approach to street investments moving from current state to future state and the shift in how we think about streets from movement only to integrated understandings of movement and place. Streets have a significant role to play in the climate emergency; by urgently changing our approach to street investment and prioritising people over vehicle movement we can improve air quality, chronic diseases, road deaths and injuries and climate disaster. Investing in streets now, is an investment in the future health of people.





BUILDING A COMMUNITY OF PRACTICE



BUILDING A COMMUNITY OF PRACTICE

Through the engagement phase in the development of the street planning and design guide a number of commonly shared challenges for achieving better urban streets in Aotearoa emerged (see overleaf). These challenges highlighted that a more joined-up approach is needed across the country. The concept of a community of practice - as has been established and fostered for example through the Waka Kotahi Innovating Streets Programme - emerged as one way to share these challenges and build upon the practice of street design to address them.

WHAT IS A COMMUNITY OF PRACTICE?

Put simply a community of practice for streets is a group of people who share a common goal around the transport system and streets.

It is a way to share best practices and support continual improvement, research and develop new knowledge to advance street design in Aotearoa. Importantly this is undertaken on an ongoing basis, in a virtuous cycle of continual learning and improvement both for practitioners and for the way in which we plan, design and implement changes to urban streets.

In addition to the Innovating Streets Programme, there are a number of other current examples of a community of practice approach in Aotearoa that have been successfully developed and fostered within the multi-modal transportation and urban design fields. The intention would be to bring these strands together to achieve the following outcomes:

- Connect people for peer to peer discussion on street design.
- Provide a common language and shared context for streets and a communication channel to share information, stories, insights and experiences as part of continual improvement.
- Enable innovation and ways to explore new possibilities, solve problems and challenges, and identify and realise opportunities that achieve broader outcomes.
- Support sector learning, and share existing knowledge to help people improve their practice.
- Provide a forum for resources to address common problems and a process to collect and evaluate best practices.
- Support collaborative processes and the creative free flow of ideas and information sharing.

Organisational support from Waka Kotahi

The intention is to develop this community of practice alongside the implementation of the street guide, and the supporting suite of mode specific, urban design and safe system guidance.

- Subject matter expertise for waka Kotahi projects and partner projects
- Dedicated email address for Street planning and design questions monitored by the core Waka Kotahi team: streets@nzta.govt.nz
- Technical guidance and workshops
- Online guidance (including good practice, technical design recommendations, case studies and evidence) with regular updates based on sector needs
- A community of practice to connect people and knowledge within and outside of the sector.
- Webinars or sector workshops focused on capability-building, peer-to-peer support

If you are interested in participating, please email streets@nzta.govt.nz

IS IT THE RIGHT TIME TO **EVALUATE SUCCESS?**





WHAT'S NEXT?

SHARE RESULTS WITH THE COMMUNITY





Figure 13: Examples of community of practice activities and approach from Waka Kotahi Draft Tactical Urbanism Handbook. The guide was developed to help councils and communities deliver tactical urbanism projects using a collaborative best-practice approach that support a community of practice. IMAGE SOURCE: Handbook for Tactical Urbanism in Aotearoa, Waka Kotahi,





DEBRIEF THE TEAM

SHARE LESSONS **LEARNED WITH PEERS**



LINKS

Handbook for Tactical Urbanism Aotearoa

SHARED CHALLENGES TO CREATING GOOD URBAN STREETS

Developing a shared awareness and common understanding of the key challenges in planning and designing urban streets in Aotearoa can lead to more continual improvement and consistently successful outcomes. While each project will to some degree face its own set of unique challenges, the issues captured here are commonly experienced and have been identified by sector. A collective community of practice approach to understanding and overcoming challenges can assist project teams in identifying and developing the project-specific opportunities and solutions to address them.

Raising the awareness of the important roles that streets Allocating space for different functions and modes in play in shaping the built environment and improving urban Gaining community support for street changes constrained urban contexts and corridors life Streets are often overlooked Streets need to reflect their Most streets in Aotearoa Travel by car is currently seen Urban street space as the basic urban fabric of unique sense of place by have been made to prioritise as the 'normal' way to move Certain activities towns and cities, shaping embedding historical and the movement and parking of in urban areas. A mindset must be prioritise urban form and the character cultural features in the design. private motorised vehicles. shift requires ensuring access choice possible. Changing streets to improve and amenity of the built and choice to break people's • Universal design and inclusive Transport and str safety, enable mode shift and environment. current travel habits. access factors are often activities are in co support denser urban living Streets are public space and overlooked. means many streets need to for space and this play a crucial role as places most pronounced change. This challenges what Street planning and design for social interaction, civic centres. many people are used to. is fundamental to transport engagement, play, and events. Reallocation of street space and land use integration and Communities are seldom universally united when it supports transport mode shift is needed to prioritise use of Streets are important for comes to changing existing access and connectivity. objectives. the street by pedestrians and Streets have a major impact support mode shift. streets. Some people can

Designing for a safe system (including safe and

- **Retrofitting within the existing built environment**
- Widening street corridors is rarely feasible due to cost (e.g. property acquisition) and complexity. Reallocation of space presents opportunities to support mode shift and placemaking within the existing right-of-way.

on human health and well-

being. They influence how

transport, which then affects

the accessibility and vitality of

often people walk, wheel, cycle, and take public

urban environments.

Maintaining access, services and activities while retrofitting streets means considering project disruption, phasing, and staging. This requires collaborative engagement with businesses and community members.

Utility and services infrastructure can be a constraint in street planning, design, and delivery. Underground utilities can limit what is possible above ground, for example plantings and street trees. Coordinating street upgrades with utility upgrades and renewals provides opportunities to enhance outcomes.

• For speeds to be 'safe and appropriate', the operational speeds need to be designed into street elements, rather than just relying on speed limits and signage.

strongly resist changes,

is important to showcase

especially when this involves reallocating street space. It

examples, evidence and work

momentum or pathways for

change.

appropriate speeds)

with communities to build the

- Safety interventions and streetscape design elements that support safe speeds and active modes can sometimes be considered hazards when viewed from the perspective of highway and road engineering.
- Conventional practice and design standards are influenced by a strong car focus (e.g. highway and road designs standards). This often leads to inappropriate operating speeds for streets when considering the safety of all users, including pedestrians and cyclists.
- Designs must be inclusive, equitable and welcoming. This means considering people of different ages, gender identity, abilities, socioeconomic status, ethnicity and national origin, culture, religion and lived experience.

- The demand and use of kerbside space is evolving. Transport innovations including Taxi ride hail, customer delivery services. and EV charging are some of the new uses contending for limited kerbside space.
- Access to streets and kerbs for some vehicles and services can be managed and restricted according to different days/times, or through planning service lanes and entries.

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ce is limited. and modes ed to make	•	Pedestrian numbers are increasing due to investment in public transport and higher density urban developments.
reetside ompetition s conflict is d in urban		in urban centres to accommodate this increased footfall.

Prioritising and managing limited kerbside space for more efficient pick-up/drop-off of passengers and products while ensuring inclusive access

Changes to vehicle access and street space allocation may adversely affect disabled people and people who use mobility devices. Measures are needed to ensure access for these groups is retained.

Network optimisation, managing the tension between movement and place

Car-oriented streets, urban sprawl and dispersal makes it more difficult to create multi-modal, healthy streets and address environmental issues

There is little distinction in the design of different types of street, despite their different functions. Design changes are needed to support the different needs and functions of streets within urban street families and rural street families.

- Many urban streets are failing to provide for both movement and place functions. Traffic saturation or network design have produced streets which serve movement functions that are inappropriate for the context and hinder development of a street's place function.
- Taking a network optimisation approach considers maximising access on existing networks, while considering mode specific networks and what would be 'fit for the context'.
- Strategic multi-modal network planning involves establishing what mode to prioritise on what street, while accounting for active mode connectivity across the network.
- Transport appraisal tools and conventional practice prioritises movements, for example travel times savings for cars and freight. Evidence related to multi-modal transport and use of streets is still developing. and is often not captured adequately.
- Sprawl and dispersed caroriented urban development increases distances between homes, workplaces, schools, services, and amenities. This makes it difficult to access places by walking, cycling or public transport.
- A history of car-oriented urban areas has created the expectation of carprioritisation and the provision of on-street parking.
- Mixed-use urban intensification, in contrast, requires streets that support slower traffic speeds, travel by walking, cycling, or public transport, and public spaces to make urban environments comfortable and attractive.
- Disconnected street networks limit walkability and are difficult to serve with public transport. In these situations, the car can be the only transport choice.
- Enabling mode shift and mitigating the effects of climate change such as storms greater intensity, requires rethinking street layouts and functions.

Managing communications and engagement effectively

- Early and ongoing engagement with communities is often overlooked or seen as an add-on to the development process. This engagement is a vital stage of the planning, design, and development process.
- A shared vision with clear rationale and objectives can provide direction as projects progress. This strategic direction can often get lost when facing process complexity.

Achieving increased greening of streets for human health, liveability and climate change response

- While typical suburban streets in Aotearoa have always had grass berms and often street trees, increased urbanisation and underground services has diminished street greening over time.
- Green infrastructure can sometimes be de-prioritised or not delivered in the face of other urban street priorities for limited street space or project funding. Green infrastructure needs to be valued as an integral part of urban streets with many synergies with hard infrastructure.
- Urban streets must play a critical role in adapting our urban environments to changing climate, reducing urban heat island effect as our climate gets hotter, and managing increased stormwater as our climate gets wetter.
- Valuing the role of street trees & green infrastructure elements requires allocating street space and budgets to investing in these outcomes as part of integrated urban streetcape projects. Establish better data/ information on the role of urban trees and street trees in the transport system, safe system and as green infrastructure.

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Listening and understanding the different perspectives and the impacts the changes may have on different street users is key.

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INTRODUCTION

There are many factors that shape streets in Aotearoa. Section 4.0 is divided into three parts providing a framework for understanding the spatial, context and network scale, and form and function of streets. The following outlines each part of section 4.0:

Part 4.1 Urban Context & Spatial Planning Includes the spatial scale of street planning and design thinking

- The overall built environment & context
- Walkable catchments
- Movement function & place function
- Urban street categories (reference One Network Framework)
- Urban development and land use integration
- Parking management and road space allocation
- Multi-modal transport
- Street form, function and modal priorities
- Activity, places for people and the public realm.

Part 4.2 Spectrum of Urban Catchments Provides guidance on network planning and illustrates the different urban contexts and priorities for street networks that can influence the future state. The aim of this chapter is to assists with establishing planning and design guidance linked to the implementation of the One Network Framework (ONF), a Waka Kotahi strategic network planning tool which recognises movement function and place function for streets across Aotearoa.

Part 4.3 Dealing with Difference

Part 4.4 Urban Street Family Guidance Provides guidance on developing corridor/ street design options under the ONF. The ONF established a set of urban street categories. This section of the guide provides advice for shaping integrated outcomes for the future state of each of these street categories. Including guidance on developing options, and what each of the categories should consider, in terms of their form and function. Each of the following street categories is visualised in ways that demonstrate integrated place and movement functions for the future state appropriate for the range of urban context considerations of each category:

- City hubs: public transport streets
- Civic spaces: laneway streets and shared spaces
- Main streets: urban centres
- Main streets: towns and townships
- Urban connector: narrower
- Urban connector: wider
- Suburban residential streets.



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The overall built environment and context

Walkable catchments

Movement function and place function

ONF Urban street categories

Urban Development and land use integration

Parking management and road space allocation

Multi-modal transport

Street form, function and modal priorities

Activity, places for people and the public realm.
THE URBAN SPECTRUM - SPATIAL CONTEXT TO URBAN STREET GUIDANCE

Achieving more integrated urban street outcomes requires a networked understanding of urban context and place This section of the guide provides integrated guidance for urban streets at three different scales. and movement functions across a spectrum of spatial scales. These spatial scales range from the urban area as a whole, to more immediate catchments around centres and neighbourhoods, down to the individual street corridor or street block.



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STREET CATEGORY GUIDANCE PART 4.3

STREET SPECIFIC DESIGN

CITY HUBS: PUBLIC TRANSPORT STREETS

CIVIC SPACES: LANEWAY STREETS & SHARED SPACES

MAIN STREETS: URBAN CENTRES

MAIN STREETS: TOWNS & TOWNSHIPS

URBAN CONNECTOR: NARROWER

URBAN CONNECTOR: WIDER

SUBURBAN RESIDENTIAL STREETS



AOTEAROA URBAN ENVIRONMENT

URBAN SCALE

This guide makes reference to the three tiers of urban environment categorised by the National Policy Statement on Urban Development. These are based on a combination of population size and growth rates, with some smaller but fast-growing urban areas such as Queenstown being categorised as Tier 2.



TIER 1 URBAN ENVIRONMENTS

- Auckland (Auckland Council)
- Christchurch (Canterbury Regional Council, Christchurch City Council, Selwyn District Council and Waimakariri District Council)
- Wellington (Wellington Regional Council, Wellington City Council, Porirua City Council, Hutt City Council, Upper Hutt City Council, Kāpiti Coast District Council)
- Tauranga (Bay of Plenty Regional Council, Tauranga City Council and Western Bay of Plenty District Council)
- Hamilton (Waikato Regional Council, Hamilton City Council, Waikato District Council and Waipa District Council).

TIER 2 URBAN ENVIRONMENTS

- Whangārei (Northland Regional Council, Whangārei District Council)
- Rotorua (Bay of Plenty Regional Council and Rotorua District Council)
- New Plymouth (Taranaki Regional Council, New Plymouth District Council
- Napier-Hastings (Hawke's Bay Regional Council, Napier City Council and Hastings District Council)
- Palmerston North (Manawatū-Whanganui Regional Council and Palmerston North City Council)
- Nelson Tasman (Nelson City Council, Tasman District Council)
- Queenstown (Otago Regional Council, Queenstown Lakes District Council)
- Dunedin (Otago Regional Council and Dunedin City Council).

TIER 3 URBAN ENVIRONMENTS

All other local and urban environments.

An "urban environment" is defined in the NPS-UD as "any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that: (a) is, or is intended to be, predominantly urban in character; and (b) is, or is intended to be, part of a housing and labour market of at least 10,000 people". For example:

- Taupo
- Motueka
- Oamaru
- Invercargill

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URBAN CONTEXT IN AOTEAROA

Urban street networks in Aotearoa are influenced and shaped by the following macro-factors:

CULTURAL FOOTRPINTS, HISTORICAL SURVEYS AND PLANS

Prior to European colonisation the landscape was a complex fabric of interwoven peoples, histories and perspectives. Towns and cities in Aotearoa were then overlaid on top of this landscape. Urban form and streets can be traced back to this earlier time, cadastral boundaries and historic plans. Many icon streets have derived their form and proportions and character from the earlier colonial grid and street tree planting. Traced back in time to early cultural landscape, local histories, surveys and masterplans can reveal insight into the resulting urban form, street patterns and features.

GEOGRAPHY, CLIMATE & NATURAL ENVIRONMENT

Many of our urban areas and urban street networks are geographically constrained by water bodies and topography. Urban expansion is often challenging and expensive and is often limited in capacity by physical corridor constraints. Topography can lead to less permeable street networks which make walking and cycling difficult and are hard to serve with public transport. Landscape and ecological factors shape our urban contexts, there are opportunities to reintroduce meaningful local species and biodiversity into street corridors to bring social and envionmental health benefits.

GROWTH PATTERNS AND URBAN MORPHOLOGY.

Over the last 50 years, residential growth has generally occurred through low density greenfield development at the edge of the urban area or in new satellite towns rather than infill or by comprehensively planned higher density development. This greenfield expansion has been enabled by large investment in roading networks. Towns and cities with little to no growth face a different challenge but reimagining streets as places for people can support economic growth by creating attractive places where people want to visit, work, study and play. Changes in urban density are placing additional need for street space to consider public transport, walking or cycling networks, and space for public life. Alongside this many of the issues associated with poor urban form such as poor access are looking to be addressed. This can bring economic benefits (e.g. better access to jobs), as well as human health and social benefits to communities where their urban form and street networks limit transport choice.

LAND & ECONOMIC FACTORS

Our urban areas have historically been characterised by an abundance of cheap greenfield land within ready proximity to established urban cores. This has enabled cheap and readily integrated urban growth possible over many decades. This has become harder as population growth, density and traffic congestion has grown over time, particularly in our largest and most constrained urban areas. This is reflected in increased land values both in existing brownfield areas and at the urban/rural boundary, which heavily influence land use and transport planning and the economics of urban development. Higher land values in part help drive the need for more space-efficient and harder working street networks to service denser forms of urban development.

REDUCING TRANSPORT EMISSIONS AND ADAPTING TO CLIMATE CHANGE

As Aotearoa works towards significantly reducing its emissions and transitioning to zero carbon communities, our urban streets have a vital role to play in supporting reduced transport emissions. This includes re-prioritisation to support mode shift and re-localisation to reduce overall travel demand across urban networks. Similarly, in mitigating the effects of climate change by creating resilient environments and supporting urban climate amelioration.

LINKING HUMAN HEALTH WITH LIVEABILITY BENEFITS

There is growing recognition in our planning frameworks at a national, regional and local level of the role urban streets play in supporting human health and well-being as well as inc reased liveability for the majority of our population. This has been driven by research in the health sector in Aotearoa and internationally that makes the connections between the urban mobility - how and how much we move - and our physical and mental wellbeing. The wider health, social and environmental benefits that flow from improvements to our urban streets and community connectivity are now being recognised in our investment frameworks and evaluative and decision-making tools and processes.

LINKING HUMAN HEALTH WITH URBAN SAFE SYSTEMS

There is increasing awareness that the 'status quo' of vehicle movement street design is resulting in road injury and death for vulnerable users such as pedestrians and cyclists. In addition, poor air quality, low amenity values (noise management), and physical and mental health issues are a result of exposure to current transport systems. By putting vulnerable users at the centre of the street design process we can create street environments that support our health, safety and wellbeing.

URBAN INFRASTRUCTURE & TECHNOLOGY

Urban infrastructure supports land-use changes, and can be a constraint to development. As cities grow infrastructure development and renewal occurs. This provides greater impetus for investment into improving the surface and street system as many infrastructure systems utilise the road ways space (e.g. underground utilities and services). There are a number of examples in Aotearoa and overseas of street renewals in association/ following urban infrastructure development.





LINKS

 Healthy Urban development, Ministry of Health Healthy Street Indicators, UK Department for Transport • Air Quality, Ministry of Health

URBAN STREETS AND WALKABLE CATCHMENTS

UNDERSTANDING AND DEFINING WALKABLE CATCHMENTS

A walkable catchment is the area that an average person could walk from a specific point to get to multiple destinations. A walkable catchment of 400 metres is typically associated with a five-minute average walk and 800 metres with a 10-minute average walk. These distances are also affected by factors such as land form (eg, hills take longer to walk up and can be an obstacle to walking), connectivity or severance (eq, the lack of ease and safety of crossing roads, highways and intersections), and the quality of footpaths. Walkable catchments can be determined either using a simple, radial pedshed analysis or a more detailed GIS (geographic information systems) network analysis.

NPS-UD, Policy 3(c) and Policy 5(a), Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development [□]

The 800-metre distance was determined by assuming most people would be happy to walk 10 minutes to access services and amenities, and that they walk at a walking speed averaging 1.3 metres per second across the journey (Munro, 2009). The vast majority of people walk at speeds between 0.8 metres per second and 1.8 metres per second (2.9 kilometres per hour and 6.5 kilometres per hour) (New Zealand Transport Agency, 2009). Australian state government policies and the Ministry for the Environment's toolkit for urban design consider pedsheds (another term for walkable catchment) to be within a five- to 10-minute walk of an activity, node or urban amenity (Allen, 2018).

While the 800-metre catchment may be a good starting point, the draw of certain amenities will influence how far people are willing to walk to access them, and is likely to influence the size of a walkable catchment. While walkable catchments of 400 to 800 metres will be suitable for most tier 1 urban environments, it may be appropriate for larger tier 1 urban environments to consider greater distances in some situations. For example, where rapid transit is of high frequency, there is potential for higher densities and other factors such as high amenity along adjacent main routes and corridors. This is often already reflected in for example, the city centres of Auckland and Wellington that in general terms form highly walkable larger catchments some 2-3km across of continuously connected, dense city blocks with high concentrations of walkable destinations supported by high capacity and frequent public transport stops and stations.

DIFFERENT LOCATIONS WILL HAVE DIFFERENT SIZED WALKABLE CATCHMENTS

Not all places are equal and different locations with different characteristics may often have different-sized walkable catchments. We should expect walkable catchments of rapid transit stops and a city centre to be larger than those of metropolitan centre zones, particularly in larger tier 1 urban environments. This is because city centres are likely to be larger, have more services and amenities, and be better connected than a metropolitan centre. Also, the convenience of using rapid transit and the connections that rapid transit services often offer, mean people are prepared to travel further to use them than other modes of public or active transport.

The centre's size can also affect the size of the catchment. For example, a smaller metropolitan centre with fewer services and amenities than a larger centre, will also be likely to have a smaller walkable catchment. Additionally, a city or a metropolitan centre with a rapid transit stop located within or close by, is also likely to have a larger walkable catchment than a centre without a rapid transit stop.

Although it is up to each local authority to determine the size of walkable catchments appropriate for local circumstances, we offer the following recommendations consistent with long-standing academic and international best practice $\$:

- 1. A distance of 800 metres from each main entrance to a transit stop is considered a minimum walkable catchment in all urban areas.
- 2. For larger tier 2 and all tier 1 local authorities, we suggest this threshold is extended further to account for local factors that include:

NPS-UD Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development C.



- are the streets laid out in a grid, or well connected through footpaths and open space that permit easier connectivity?

CONNECTIVITY

are there footpaths on both sides of the roads? Is there access via pathways that run through reserves and open space? Are there pedestrian crossings?

PASSIVE SECURITY

 are footnaths and nedestrian routes overlooked by buildings with active frontages or otherwise designed to meet the security needs of vulnerable groups (noting that increased density can improve passive security)?

Figure 14: Walkable catchments can extend beyond the suggest 800m minimum catchments. Thresholds can be extended in tier 1 and 2 urban environments based on the above factors. Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development



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SEVERANCE

- are major pieces of infrastructure or natural landscape interrupting or channelling convenient pedestrian movement?

TOPOGRAPHY

- how hilly or steep an area is will affect how easy or difficult it is for people to walk within a period of time.

URBAN AMENITY

what other activities, such as local retail, pharmacy or green space, exist in streets within the extended catchment that would encourage local walking activity and multi-purpose trips?

STREET LIGHTING

are streets well lit, including through local footpath connections, to ensure that vulnerable groups feel secure?

MOBILITY NEEDS

is the street layout and accessible design suitable for those with mobility needs, specifically those using wheelchairs or with pushchairs, those using walking aids and other groups who may no be physically able to walk as far or as fast?

CONSIDERATIONS

matters such as traffic light-controlled intersections. especially those that require pedestrians to wait for multiple lights to travel across a road, means a pedestrian's travel distance in a fixed period of time will be shorter.

LINKS

Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development





ACTIVE MODE CATCHMENTS

Walking and cycling catchments represent the optimal pattern of access to centres and public transport stations. Prioritising space-efficient modes means streets can both cost less to deliver and achieve better urban integration. In planning and designing streets

- Walking and cycling catchments from a public transport station or central city hub (for example central public space heart or main street location) can be simplified to circles based on travel time or distance that people find acceptable.
- Actual catchments are determined by street/path network connectivity and layout including intersections, the space allocation and priority given to walking and cycling along and across the street, and the quality of the pedestrian and cycling environment (influenced strongly by built form and land use activity factors adjacent the street as well as transport factors) the quality of infrastructure, and the priority given to modes as well as influencing factors including topography.
- International practice applies 800m (10 minutes) walking catchment at either end of a rail journey. Research in Auckland suggests passengers in New Zealand may walk further - up to 1200m on a quality route.
- Street network layouts and their mode priority should maximise the area and convenience of walking and cycling catchments.

The levels of use by people of walking and cycling routes in the catchment is strongly connected to the auality of the urban environment. Routes should feature streets and land uses which are interesting for people on foot or on cycles with attractive spaces, high levels of passive surveillance, quality lighting, and an environment which clearly supports personal safety.

WALKABLE CATCHMENTS FOR URBAN ENVIRONMENTS AT A HUMAN SCALE

The following are key items for planning streets:

SHAPING STREET & URBAN DEVELOPMENT

Well functioning urban environments, within walkable catchments connected to rapid transit/ fast and frequent public transport has been embedded within the National Policy Statement on Urban Development.

These concepts of walkability and co-locating density and public transport are key to the design of more sustainable cities. Our urban street networks have a fundamental role to play in achieving these urban planning outcomes for sustainable transport and land use integration.

Streets in urban environments have multiple important functions and roles to play in shaping sustainable urban development, including providing greater access to urban centres, transport hubs and development areas, as well as providing the public realm and space for the growing numbers of people living in dense urban environments.



CENTRES AND TRANSIT-ORIENTED DEVELOPMENT (TOD)

Urban Centres of all scales (from top tier city centres and metropolitan centres through to town and local neighbourhood centres) as well as Transit-Oriented Development Nodes (TODs) require all elements of urban planning and development - block structure and street network layout, movement patterns for all transport modes, urban form and densities, distribution of land use activities, building forms and public realm design - to actively 'orient' towards a transport hub / station as the highest priority movement mode for accessing the centre. Key civic spaces and other pedestrian-focused destinations within centres are also important nodal points for pedestrian-prioritised network planning.

STREET NETWORK PLANNING: BLOCK SHAPES & SIZES

Street network layout and design is key to effective walkable catchment planning. A highly connected grid of closely spaced streets is an example of an urban form which is easy to access. Factors to consider at early stages of spatial and land use planning include:

- Closely spaced streets increase choice of routes for walking and cycling, enhance land value by increasing saleable active frontage, and increase the quality of street experience.
- Larger blocks resulting from wider street spacing should be located further from centres.
- Street spacing and urban block sizes should be tested robustly to ensure adaptability of land use.



LINKS

Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development



THE SPECTRUM OF URBAN CATCHMENTS

AOTEAROA URBAN CATCHMENTS & CONTEXT

CITY CENTRES &

This guide uses four urban contexts to summarise the variety of urban conditions in different towns, cities and neighbourhoods across Aotearoa.

City Centres and Metropolitan Centres - representative of City and Metropolitan Centres in Tier 1 and 2 Urban Environments, as defined in the National Policy Statement on Urban Development 2020.

Urban Centres and Suburban Neighbourhood - representative across all urban environments, to highlight the unique characteristics and requirements of each context.

Towns and townships context - representative of the smaller urban settlements across Aotearoa which often face the unique challenge of being located along higher speed rural roads including state highways and typically not well served by public transport. They typically have less distinct land use patterns and street hierarchies but also often benefit from being inherently compact with people living in close proximity to a range of daily needs compared to the more dispersed patterns of larger urban areas.

None of these contexts are a perfect representation of a specific town or city but the elements in each context should reflect the situations and identify key challenges.

SUBURBAN NEIGHBOURHOODS

Specific street form and function guidance and the types of street in section 4.2 then provides the guidance detail on how streets can be adapted to address these challenges and meet the demands of their role in the wider street network and these urban contexts.



URBAN CENTRES

URBAN CENTRE TRANSITION ZONE

Urban Gateways, Thresholds, Gateways Safe Systems, Speed Management

TOWNSHIP TRANSITION ZONE Urban Gateways, Thresholds, Gateways Safe Systems, Speed Management



TOWN & TOWNSHIPS



The diagram below shows the transition into each urban context with indication of built form, activities and street qualities present in each of the four representative urban contexts.



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TOWN & TOWNSHIPS



Low Traffic Neighbourhood Speed Management 30km Slow Speeds Active Modes Community Amenity Wide Rural Catchment

CITY CENTRES & METROPOLITAN CENTRES

City Centres and Metropolitan Centres are specific to Tier One and Two urban environments. These rapidly evolving places are our densest and busiest urban centres. They contain a diverse mix of land uses including commercial and government offices, wide range of retail and entertainment, residential, community facilities, public open spaces and educational facilities including large tertiary campuses. The higher population and employment density places further pressure on streets to provide access for people, goods and deliveries, as well being part of the public open space network. Key to the success of these centres is many converging primary public transport routes, for which streets must be designed to allow for easy transfer between.

City and Metropolitan Centres are structured around very high movement and very high place value streets. They are generally amongst our oldest urban places with high concentations of heritage buildings and elements within the street network that contribute to distinctive built character and sense of place. City Hubs - Public Transport Streets provide for the very high movement function, allowing efficient movement of public transport and active modes. Activity Streets and Main Streets can allow for general traffic and business delivery access to the centre. They should also accommodate easy and safe walking and cycling connections to and through the city centre. Civic Spaces make up the rest of the grid and have a low movement function, prioritising place value, local business activity and walking.



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- Car-light core prioritises walking, cycling and public transport as sustainable and space-efficient modes in our densest and busiest urban centres with greatest constraints and demands.
- All streets provide for active modes.
- Private vehicle traffic is redirected around rather than through the centre.
- Direct and convenient connections between public transit stops and stations accompanied by legible wayfinding.
- Mobility parking located convenient to key destinations.
- Logistics hubs at the outskirts of the centre provide opportunities for lighter delivery vehicles.
- Deliveries are restricted through circulation planning and/or timed based access reducing negative impact on streets of high place value.

URBAN CENTRES

A broad spectrum of urban, town and local centres exist across all urban areas of Aotearoa. They are the heart of our towns and local communities and serve as are the smaller suburban centres supporting local communities across the suburbs of our larger Tier 1 and 2 cities. As such, town and local centres vary widely in their scale, density, and activity mix, usually serving a mix of local and regional visitors. Allowing for a range of uses including residential, office and commercial activities on upper floors of buildings can create a more vibrant centre that people visit for different purposes and different times in the day. The street network is the backbone of the public open space network for urban centres, which can also include civic squares and spaces, parks, playgrounds, and waterfronts.

Local and Town Centres can typically consist of one or more Main Streets and or/Activity Streets under the ONF classification as well as a network of smaller Civic Spaces. The Main Streets may be a continuation of an Urban Connector but within the town centre the function of the street changes to reflect the greater place function with lower speeds, more space dedicated to pedestrians, people on bikes and the public realm. Re-prioritising street networks to better reflect the One Network Framework place/movement value and network functions of centres through traffic circulation planning, is often needed to support desired outcomes at the street scale. Due to spatial constraints, to accommodate different modes and functions, different corridors and streets play different roles within the centre.







- Urban centres should have a high level of access by public transport, walking and cycling should be provided to support lower emissions and better air quality in the centre.
- Allow for a high level of walkability and cycling acess to local destinations within the urban centre and nearby, including public transport stops and stations.
- All streets within urban centres are to be designed for safe speeds.
- Safe speeds aligned with land uses such as schools, community centres or libraries.
- Kerbside prioritisation of walking, cycling, public transit and services and deliveries to prioritise local access and space-efficient modes.
- Limited parking is managed to enable the success of the centre. Levers to manage parking include time restrictions (short stay), paid parking, and locations off the main street or off-street network (excluding mobility parking)
- Support and manage taxi and ride share services.

SUBURBAN RESIDENTIAL NEIGHBOURHOODS

Suburban neighbourhoods are predominantly residential areas with supporting land uses such as neighbourhood shops, schools and community facilities including parks and green spaces. They can feature a range of typologies from standalone houses, terraced housing, and low-rise apartments. The mix of housing types caters for different demographics which supports higher levels of amenity, local businesses, and better public transport services. The value of streets as public open space and creating the fabric of a community should not be overlooked, streets in suburban neighbourhoods should be spaces where residents can connect and socialise while children can play safely due to low traffic volume and speeds.

Suburban Neighbourhoods primarily consist of networks of Local Streets, providing slow vehicle access to residential properties, bounded by Urban Connectors or other higher order streets like Activity Streets or Main Streets where the neighbourhood orders a centre. The area within the neighbourhood should have low traffic speeds and volumes, provided by restricting through traffic to create Low Traffic Neighbourhoods. This allows the streets be used for walking, cycling, social interactions and as informal play spaces by residents, having a focus on place value and amenity. Urban Connectors at the edge of the neighbourhood provide for higher volumes of traffic, access to the wider urban area and provide public transport routes. Suburban neighbourhoods should be walkable and cyclable to a Town or Local Centre.







COMPREHENSIVE URBAN REDEVELOPMENT

PARKING CONSOLIDATION TO ENABLE PEDESTRIAN FOCUSED AMENITY WITHIN RESIDENTIAL DEVELOPMENTS

- Streets within Suburban Residential Neighbourhoods should have safe speeds with a maximum of 30kmph with some shared residential streets being designed for 10kmph.
- Reduced traffic volumes and safe speed design allows for safe walking and cycling without separated infrastructure.
- Allow for a high level of walkability to local destinations within the neighbourhood and nearby, including public transport stops and stations.
- Street and neighbourhood design to encourage walking, cycling and micromobility for local journeys reducing emissions.
- Narrower carriageways mean streets can become multipurpose spaces where people can socialise, and kids can play.
- On-street parking should be minimised, parking should be located off street and to the side or rear of houses.

TOWNS & TOWNSHIPS

Towns and townships are smaller urban environments within predominantly rural communities across Aotearoa. They support rural communities and regional and inter-regional movement throughout the country. Towns and townships often function relatively independently depending on their relative size and proximity. They are generally supported by larger Tier 1, 2 and 3 urban environments for some services and functions. They vary widely in their scale, density and activity mix but typically feature a healthy mix of commercial, local council offices, retail and entertainment, residential, heritage buildings, community facilities, public open spaces and civic spaces. In this sense, they are often good examples of 'complete communities' with a wide range of destinations and land use activities within compact, walkable catchments.

Towns and townships are connected to cities and other centres through highways, rail and regional bus services. Speed strategies need to be implemented to provide communities with safe access within towns and townships and address the safety and severance issues of national and regional transport corridors.

Active transport modes and safe speeds can make it safe for communities to access schools and amenities and encourage walking and cycling within the town. State highway or other critical transport routes often carry freight and movement of goods through towns and townships and this requires additional speed considerations and environmental design cues where there is no alternative to bypass the centre of town.



LEGEND



- Freight directed around towns and townships to improve safety.
- Multiple speed thresholds implemented on approach to urban area.
- Allow for a high level of walking and cycling within the towns and townships reflecting the often short distances between residential streets and all destinations.
- Streets within towns and townships are to be designed for safe speeds providing safe access to schools and community facilities.
- Main street environment allows for visitor stopping.





SAME STREET, DIFFERENT CONTEXTS TAKING ACCOUNT OF URBAN CONTEXT CHANGE ALONG THE STREET

Context is a crucial, yet often overlooked, factor in designing streets. Densities, land uses, and travel characteristics can shift as the street traverses the city from one neighborhood to another. Street design should respond to and affect the desired character of the public realm. As the needs and uses along a street change, street designs should respond and adjust accordingly. The One Network Framework provides guidance on how to classify street corridors based on their 'place' and 'movement' contexts to define the street category.

Below, a single street is illustrated at three points along its length, depicting three different potential street category designs that respond to the adjacent contexts.



CONTEXT 1 -City Centres & Metropolitan Centres

- The street transitions into a public transport mall in a high-density context, serving large volumes of pedestrians.
- Commercial activity extends from storefronts, and new street furniture supports a high-quality public realm.
- Collective transport moves through the space at slow speeds, allowing all users to safely navigate the mall.
- A mix of uses keeps the space active and engaging through the day and evening.

CONTEXT 2 -Urban Centres

- A mix of residential and commercial ground floor uses line each side of the street in a low-to-mid density context.
- public transport is provided in mixed traffic.
- Dedicated cycle tracks are created in both directions.
- 30km speeds through urban centre.
- Green infrastructure and trees are added.
- Public transport stops are provided on boarding islands.

CONTEXT 3 -Suburban Neighbourhoods

- A mix of residential and commercial ground floor uses line each side of the street in a lowto-mid density context.
- Public transport runs dedicated lanes.
- Dedicated cycle lanes are created in both directions.
- Green infrastructure and trees are added.
- Public transport stops are provided on boarding islands.

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STREET FAMILY -Urban Connector: Wider



SAME STREET, DIFFERENT MODES **DESIGNING FOR DIFFERENT USERS**

The content below is adapted from the Global Street Design Guide (NACTO) and provides an understanding of key considerations and outcomes for each street user group within the overall hierarchy that puts people first. Links to Waka Kotahi and Austroads guidance where relevant provide further resources for each street user within an Aotearoa context.



Pedestrians include people of all abilities and ages, sitting, walking, pausing, and resting within urban streets. Designing for pedestrians means making streets accessible to the most vulnerable users. Design safe spaces with continuous unobstructed sidewalks. Include visual variety, engage building frontages, design for human scale and incorporate protection from extreme weather to ensure an enjoyable street experience.



Waka Kotahi Pedestrian Planning and Design Guide



Cyclists include people on bicycles, cyclerickshaws, and cargo bikes. Facilities should be safe, direct, intuitive, clearly delineated, and part of a cohesive, connected network to encourage use by people of all ages and confidence levels. Cycle tracks that create an effective division from traffic, are well coordinated with signal timing, and are incorporated in intersection design form the basis of an accessible and connected cycle network.



Waka Kotahi Cycling Network Guidance

PUBLIC TRANSPORT PASSENGERS

Public transport passengers are people using collective transport such as rail, bus, or small collective vehicles. This sustainable mode of transportation dramatically increases the overall capacity and efficiency of the street. Dedicated space for public transport supports convenient, reliable, and predictable service for riders. Accessible boarding areas promote safe and equitable use. The space dedicated to a public transport network should be aligned with demand, meeting service needs without sacrificing streetscape quality.

LINKS

- Waka Kotahi Public Transport Design Guidelines
- Te Āhei ki te Whakamahi • Ara - Accessible Streets



Motorists are people driving personal motor vehicles for on-demand, pointto-point transportation. This includes drivers of private cars, for-hire vehicles, and motorized two-and three-wheelers. Streets and intersections must be designed to facilitate safe movement and manage interactions between motor vehicles, pedestrians, and cyclists.



- Waka Kotahi Road Engineering
 - Austroads Guides



Freight operators and service providers are people driving vehicles that move goods or conduct critical city services. These users benefit from dedicated kerb access and allocation of space for easy loading and unloading as well as dedicated routes and hours of operation. Emergency responders and cleaning vehicles need adequate space to operate, which must be accommodated while ensuring the safety of all other street users.



Waka Kotahi National Parking Management

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PEOPLE DOING BUSINESS

People doing business include vendors, street stall operators, and owners or renters of commercial storefronts. These users provide important services that support vibrant, active, and engaging street environments. Adequate space should be allocated to these uses. Provide regular cleaning, maintenance schedules, power, and water to support commercial activity and improve local quality of life.

SAME STREET FAMILY, DIFFERENT URBAN CONTEXTS

TOWNS AND TOWNSHIPS ARE DIFFERENT TO BIGGER URBAN CENTRES

Context is crucial. Below is a diagram illustrating how an understanding of differing urban contexts impact the space allocation priorities of the street design for two streets within the ONF Main Streets category with the same overall place and movement values. Street designs should respond and adjust accordingly. In the examples shown, the Urban Centre Main Street is prioritising mode shift goals enabled by frequent public transport bus service and being part of a connected cycle network. Whereas for the Towns & Township example ongoing provision of kerbside space allocation for parking, loading, servicing and deliveries is critical.

WHAT IS THE ONF CATEGORY?



OPTIONS & CONTEXT

How do different place contexts and modal priorities drive different integrated solutions?

WHAT IS THE PLACE CONTEXT?



URBAN CENTRES

WHAT ARE THE SPACE **ALLOCATION PRIORITIES?**

WHAT IS THE INTEGRATED

STREET SOLUTION?



- PUBLIC TRANSPORT
- CYCLING



PARKING



SAME STREET FAMILY, DIFFERENT STREET WIDTHS NARROWER STREETS DEMAND DIFFERENT SPATIAL SOLUTIONS

Street width matters. Below is a diagram illustrating how an understanding of different street widths will necessarily inform spatially integrated solutions for streets that in all other respects are the same having a common urban context and the same ONF street category with the same overall place and movement priorities. This a very commonly occurring challenge for urban

streets in Aotearoa, particularly for the Urban Connector and Main Street ONF street categories where street width commonly varies between c.30m wider streets and c.20m narrower street corridors.

WHAT ARE THE **SPACE ALLOCATION PRIORITIES?**

TO THE SAME PLACE AND MOVEMENT PRIORITIES OUTDOOR SEATING DINING





HOW DOES THE INTEGRATED SOLUTION DIFFER?



- **URBAN CONNECTOR WIDER (30M) 4 LANES SOLUTION**
- WIDER FOOTPATHS .
- UNI-DIRECTIONAL CYCLEWAY
- **BUS LANES**







URBAN CONNECTOR NARROWER (20M) - 2 LANES SOLUTION NARROWER FOOTPATH . **BI-DIRECTIONAL CYCLEWAY** SHARED BUS AND TRAFFIC LANE **BUS PRIORITY AT STOPS AND SIGNALS**



SAME STREET, DIFFERENT OPTIONS

URBAN STREET OUTCOMES THROUGH OPTION DEVELOPMENT, EVALUATION AND BUSINESS CASE PROCESSES

How do we deal with difference in options? How through planning and design processes such as optioneering and business cases do we do better at identifying and developing preferred solutions that will lead to more holistic and integratedurban street outcomes for Aotearoa?

For better urban street outcomes we need to be able to navigate through the plethora of potential options to land on a future state that supports a much more holistic and integrated set of place and movement outcomes for any given urban street, that takes account of the differences in urban context and what is happening on the edge of the street in terms of adjacent land use and built form, and the needs and aspirations of street users and community who use it.

Urban streets are by their nature complex and constrained. This requires hard-working options that accommodate and enable multiple functions and needs in spatially constrained corridors with diverse demands and resulting in varied impacts on people, place and the environment.

At the street scale, how do we develop options that address this complexity, and are focused on all the outcomes we want for our urban streets in future? Options that pull together and synthesise the different outcomes sought for both place and movement and pull in considerations for people identified through partnering and engagement as well as understanding of how different street outcomes can impact upon and deliver benefits in areas of human and environmental health.

Irrespective of how comprehensive and complete a set of investment objectives and outcomes sought, it is inevitable that challenges arise in delving into the specifics of street-scale solutions. Through the option development and evaluation process, it is expected that a number of different tensions and trade-offs may emerge between different types of outcomes sought. How we address these is the key to selecting options that offer the best integrated outcomes for urban streets.

To this end, the Discover and Create phases, as captured in the Section 3.1 planning and process subsection of this guide, provides some guidance on how to navigate the option development and evaluation phases of street planning and design. This guidance is applicable for taking options through the business case process, but equally applicable to smaller projects that may be developed within a simpler process of option development and evaluation to land on a preferred solution.

Some key considerations for achieving more holistic and integrated urban street outcomes through option development and evaluation processes include:

Partner with Māori -

To inform Discover and Create phases and establish how people can participate in the process of option development and selection to ensure consideration is given to the human dimension of how people use streets and are impacted and benefited by changes to streets in their urban communities.

All option development should be informed by a contextual analysis to understand the physical, social and environmental contexts and the spatial constraints and demands on the urban street or place at multiple scales but it is critical that this is translated into the key takeaways ("the contextual so what") that should inform development and evaluation of all options as well as supporting KPIs for investment objectives and outcomes sought.

Ensure these address urban context and place values and factors as well as movement ones, as guided by the ONF, strategic plans and insights from early partnering and engagement activity.

Establish street design teams with expertise in urban design, landscape architecture, placemaking, environmental and cultural aspects of street design as well as transport planning and engineering.

STARTING OUT RIGHT

Informants to option development before you start:

Utilising the He Whenua, He Tangata approach of this guide to shape aspirations, directions, option development and preferred designs in ways that will lead to inherently holistic and integrated outcomes.

Early engagement with communities and sector stakeholders -

Understanding the "so what" from contextual analysis phases -

Develop a Vision, Objectives and Outcomes Sought -

Ensuring multi-disciplinary teams are in place from the outset -



OPTION DEVELOPMENT

Ensuring all options are developed in ways that can inform evaluation around all outcomes sought and understanding of their ability to achieve holistic and integrated outcomes.

Understand baseline and past trends but focus on future -

Plan and design for the street we want as defined by strategic plans, visions and investment goals and objectives. Develop options in ways that are not subject to status quo bias and do not assume aspects of the street layout or function must be fixed because that is the way they have always been.

Capture contextual change along the length of street as well as at the edges - Options should always draw in and take account of what is happening on the edges of the street section but don't forget to also consider changes in context and spatial constraints along the length of the street corridor to developing options that have a strong contextual and spatial fit.

Address all modes but work towards mode shift goals - Options for urban streets should generally be focused on mode shift towards prioritising active modes and public transport - this typically means a shift from current state to a future state allocating more street space to footpaths, cycleways and bus priority lanes for example - whilst being clear how general traffic is to be provided for, and how local access both to property and kerbside management, is to be provided for with each option.

The ideal cross-section probably won't fit - In established urban areas (brownfields) it is rare that there is sufficient space to fit what might be considered the ideal cross-section providing the optimal space allocation for each mode, plus space allocation for public realm, placemaking and supporting adjacent land use activity. Options are going to need to work smarter or be bolder in their integration and prioritisation of outcomes.

Robustly test what will fit, guided by place and modal movement **priorities -** before jumping to corridor widening solutions, option development must comprehensively capture the range of potential space allocations and arrangements that could occur within the street width available.

Think about multi-functionality and co-benefits - Not all aspects must be translated into a dedicated space allocation or mono-functional requirement. To achieve strongly integrated outcomes in constrained urban streets demands considering and capturing how space allocation and street elements can be multi-functional and/or deliver multiple co-benefits.

DEVELOPING A SET OF PERFORMANCE INDICATORS FOR URBAN STREETS IN AOTEAROA

A set of "complete urban streets" indicators is one additional tool that is becoming increasingly established and in-use internationally to help evaluate transport and streetscape options around a broader set of measures for the outcomes sought and to be delivered by a preferred option.

One example of this is the Healthy Streets Indicators, developed by Transport for London and sometimes being referenced, applied and used in an Aotearoa context.

In the future, Waka Kotahi may consider the development of a set of urban street indicators appropriate for consistent application and use throughout Aotearoa. These could be developed and released through for example, future versions of this guide or related urban policy following a period of indicator development and engagement with a range of partners and sector stakeholders.

For now, reference and use of international indicators or development of bespoke sets of key performance indicators that draw upon international resources, tools and measures is appropriate to broaden the performance indicators being used to measure our future success of investing in and bettering urban street outcomes for Aotearoa.

OPTION EVALUATION

Ensuring non-movement objectives and outcomes sought are thoroughly evaluated and assessed to identify preferred solutions that lend to more holistic and integrated urban outcomes.

Test for spatial fit sooner rather than later - Ground options in spatial reality by developing and testing them in the 3Dimensional complexity of the built environment and fundamental space constraints such as street corridor width. Draw and analyse street proposals in plan, section and 3D models to test for spatial fit and sensitivities, inform greater depth of understanding of integration issues and opportunities earlier in the process and how street solutions fit with adjacent urban form and function, land use activity and building edge considerations. This spatial fit sensitivity analysis should be a key informant to evaluation of options against place criteria.

Make use of the broader business case tools available - Transport planning methodologies and tools are evolving and broadening to better capture the wider range of investment objectives and outcomes sought for urban streets. Be sure to make use of existing approved and wellestablished tools where relevant, This includes as informed by the Waka Kotahi Investment Assessment Framework (IAF) criteria and tools as guided by the recently revised Waka Kotahi manuals and tools that provide greater scope and new and revised tools for example, for investing in and calculating the benefits of future outcomes for pedestrians, public realm / placemaking and environmental benefits and impacts on townscape - both public realm and adjacent land use / urban development interface.

Innovate where this adds insight around hard to quantify areas -Recognising the full spectrum of outcomes for urban streets and their impacts/benefits on people and place may require innovations in measuring changes to streets and their future performance and user profile to build the case for investment in areas not well captured or catered for through established and approved evaluation tools and methodologies.

A preference for options that lend themselves to more holistic and **integrated urban outcomes -** Weigh tensions and trade-offs against investment objectives and outcomes sought and seek a preference through evaluation processes for options that best achieve the overall integrated vision and strategic direction for the street and place as informed by insights from project partners, stakeholders and communities of interest and practice as well as the expertise of planning and design teams and specialist and technical advisors.

Work back to keeping the big picture in mind when evaluating options

- Don't lose sight of the forest for the trees and ensure evaluators and decision makers return to the overall vision and strategic objectives in recommending and approving preferred options for implementation phases. Where compromises must be made, ensure they are consistent with the project objectives and do not sacrifice essential outcomes sought.





A set of indicators for safe and healthy in Aotearoa are yet to be developed with the sector.

- Waka Kotahi Investment Assessment Framework
 - Waka Kotahi Manuals, Guidelines and Tools
 - Evaluating Complete Streets Projects, Smart Growth America
 - How to measure streets, Global Designing Cities Initiative
- Safer City Streets: Global Benchmarking for Urban Road
 - Safety, International Transport Forum
- Guide to the Healthy Streets Indicators, Transport for London



onnell Si Bistro URBAN STREET FAMILY GUIDANCE



DESIGN GUIDANCE FOR 7 URBAN STREET CATEGORIES

Section 4.4 provides more detailed street design guidance for seven the most important and commonly occurring urban street families as defined by the One Network Framework (ONF). This section of the guidance is where everything comes together, demonstrating how a co-ordinated and integrated approach to the planning and design of streets is grounded in specific streets responding to particular place and movement functions in ways that respond appropriately to their urban context. The Street Categories have been developed as exemplar integrated solutions for the different place and movement priorities of each as identified by the One Network Framework (ONF). Each of the street categories responds to differing urban contexts on the spectrum of City Centres & Metropolitan Centres to smaller Urban Centres, Towns & Townships and Suburban neighbourhoods. To ensure that new street designs are suitable for the given context, by applying a Safe System and people focused approach streets can form a comprehensive public space network and ensure the designs serve social, environmental and economic needs.

The street-level guidance demonstrates how street design is multi-faceted and demanding discipline to translate multidisciplinary safe system thinking and place and movement considerations into well integrated solutions for street form and function that are a good spatial fit. In this way, the guidance in this section documents how to apply the ONF framework, as well as the objectives and design principles of Section 2 of this guide, that demonstrate how we now think differently about urban streets consistent with the policy and government direction of Section 1 of the guide. Each of these street families has been developed to provide consistent guidance in an integrated way with the four urban places in the preceding Section 4.3. For each street, the guidance highlights links to more specialist and detailed modal guidance and other resources where relevant.

There can never be a 'one size fits all' solution and the urban street family guidance in this section demonstrates how to translate the place and movement priorities of the ONF into streets of varying widths and urban contexts.

Use the guidance in this section to identify opportunities for street transformations. The exemplar streets are placed in contexts to help illustrate how street families work together to form a comprehensive network.



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STREET DESIGN GUIDANCE FROM CURRENT TO FUTURE STATE

The street design guidance that follows presents simplified typical cross sectional spatial arrangement for each of the seven street category types. The treatments illustrated have been consciously developed to demonstrate comprehensive future state outcomes that show how more holistic and integrated urban streets can deliver upon a wider rage of urban planning and place based objectives and outcomes.

The integrated spatial street design guidance for each street family is not intended to suggest that every urban street within each ONF street family will need to be the subject of a comprehensive redesign and rebuilt from street edge to street edge.

This street guide recognises that there is often a significant gulf between the current state and optimal future state for an urban street within any given ONF street family across Aotearoa. There are multiple pathways to permanence (tactical, staged, permanent) and targeted investment and interventions to deliver outcomes for prioritised modes, public realm and place based outcomes or specific street user groups are of course possible and often desirable to deliver identified future state benefits sooner.

CURRENT

STATE

ENVIRONMENT MOVEMENT & CONNECTIVITY LAND USE **CONTEXT &** PLACE **URBAN STREET** CATEGORY **STREET FORM & FUNCTION FUTURE** STATE

street design

Staged Tactical Permanent

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URBAN

CITY HUBS - PUBLIC TRANSPORT STREETS

TYPICAL STREET WIDTH: 27M - 30M

Public transport streets are designed to accommodate high-frequency, high-quality public transport services through areas with very high pedestrian numbers and the densest concentration of activities. Public transport streets maximise the space for people, creating places where people want to visit, spend time and money supporting the local businesses and meet and gather. This supports civic spaces and the public and social life of our city centres and metropolitan centres day and night.



>> PUBLIC TRANSPORT GUIDANCE **Places for stopping** through seating within trees providing shade an shelter, climate resilience, improved air quality

and amenity.

Signalised bus priority through

intersections on the lead-in to

reliability and travel times.

the bus only section to support

CITY HUBS

NETWORK AND OPERATIONS GUIDANCE

- General traffic is limited by bus-only lane designations and banning or mandating certain turning movements before the bus only section, supported by an access and traffic circulation plan for the wider area to support the public transport street.
- Public transport streets can be achieved by traffic restrictions and do not require full streetscape and stop upgrades.
- Public transport streets have a design and speed limit of 30kph.
- While the street may experience high bus volumes, narrow kerb to kerb distances and formal crossing at key intersections allow for easy crossing of the corridor.
- Public transport streets provide the opportunity to close minor side streets to traffic allowing for easier pedestrian movements and the creation of new pedestrian plazas.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths. Service and delivery activities should be managed with access limited to certain times of day.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders. General parking should not be located on a Public Transport Street.

Cycleways are continuous,

clearly defined from pedestrian paths and separated from PT vehicles. This creates safe and accessible routes for people cycling and scootering and minimise conflicts with other users.

>> CYCLING NETWORK GUIDANCE

Formal crossings are required near stops, on pedestrian desire lines and at key areas of demand where users may need assistance.

Managed access (time

laneways and adjacent

restricted) from side streets,

and circulation for servicing,

properties requiring local access"

deliveries and rubbish collection.

>> PEDESTRIAN PLANNING AND DESIGN GUIDE

Distinguish cycleways from pedestrian paths to minimise user conflict between pedestrians and cyclists, utilising changes in materials, level changes and road markings.

>> CYCLING NETWORK GUIDANCE

street and waiting public transport passengers.

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Bus Stops are off-set or provided in-line to allow appropriate space allocation for bus stop requirements. This means uninterrupted cycleways, wider footpaths and public space, recognising that high place values demand space allocation for more than just public transport services.

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Upright street trees can be accommodated in public transport streets, meeting the clearance requirements for double decker bus operations and support the comfort of people using the

Pedestrian through-site links



Prohibited or limited general traffic access to maximise capacity of the street for public transport and active modes. >> PUBLIC TRANSPORT GUIDANCE

> **30 km/h speeds** for public transport and vehicles to move slowly through these busy streets with very high pedestrian volumes.

.....

Building frontage zone provides allocated space within the overall footpath width for building access, shop frontage and sheltering functions on the edge of through route for pedestrian movement. >> PEDESTRIAN PLANNING AND **DESIGN GUIDE**

Carriageway width is as narrow as possible to achieve safe operating speeds and make it easier to cross the road, while accounting for clearance for

Mountable kerb loading zones provide

space for managed access (time restricted) for servicing, loading and deliveries outside of peak times while allowing for continued public transport operations. At other times form additional space within the pedestrian environment.



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Space for street trees, planting, seating and other public realm streetscape elements and activities is prioritised and allocated, reflecting that these streets are at the highest end of the ONF place spectrum as well as highest movement function.

Low amenity planting

protecting active mode users from the carriageway while encouraging pedestrians to cross at safe crossing points.

CIVIC SPACES - LANEWAY STREETS & SHARED SPACES

TYPICAL STREET WIDTH: 6M - 14M

Laneway Streets and Shared Spaces prioritise pedestrians and city activities using traffic circulation and vehicle management strategies. They relate to streets with high place and low movement values, and often play important civic space function as human-scaled streets that priortiise pedestrians and the street-trading retail and hospitality businesses that typically line them at street level. This reflects their place in the ONF in locations with high place and low movement values.



NETWORK AND OPERATIONS GUIDANCE

- Pedestrians are prioritised. Where vehicles and pedestrians mix, the speed should be no more than 10kph.
- Key movement function is to provide local access.
- Remove unnecessary through traffic by wider traffic circulation changes to ensure volumes are low enough for pedestrians to safely use the street carriageway.
- Provide appropriately for emergency access but do not otherwise compromise pedestrian and place-focused street design for access by large vehicles which should only require access on rare occasions.
- Removal of general parking reduces cruising traffic. General parking is provided in nearby off-street facilities or in strategic areas where kerbside activity is less important.
- Service and delivery parking (loading zones) are located close to destinations but in places that do not compromise public space and walking paths. As pedestrian demands increase service and delivery can be limited to certain times of day.
- Disabled parking should be located convenient to key destinations determined through consultation with stakeholders.

Flexible programming and space

allocation to support day and night time economy on the street e.g. overnight/early morning loading zones can be converted to outdoor dining space during middle of day and evening.

activities.

>> PEDESTRIAN PLANNING AND DESIGN GUIDE

Street trees of varying species are placed along street to provide a legible structure of spatial zones, slow traffic and provide greening in city streets.

Planting, furniture, artworks

and other place-making elements can contribute to a sense of place and character and space should be found even on the narrowest streets.

Remove general carparking to

eliminate cruising for parking opportunities. Parking should be allocated to loading zones serve business and for disabled people. >> PARKING MANAGEMENT GUIDANCE

Cycling and scootering in both directions should be enabled through planning and design to make all laneways and shared spaces safe even when vehicular traffic is one way. Entry signage should clearly articulate active mode priorities (including cyclists and micromobility users) at both ends of the street.

>> CYCLING NETWORK GUIDANCE

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Pedestrian-priority street designs such as shared spaces enable people freedom to stroll, wander and explore along and across entire street, promoting more connected and vibrant destinational streets with two-sided retail, hospitality and place-making

Co-locate seating with planting to

create programmed pockets of public space or people 'pause points' to provide comfort and promote lingering and spending time in space

Entry thresholds including a ramp, rumble strip and 10 kph sign to a laneway or shared zone slows vehicles and adds a clear threshold to indicate a changing street context.



Low vehicle volumes (50-100 vehicles/

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MAIN STREETS - URBAN CENTRES

TYPICAL STREET WIDTH: 20M

Main streets serve as the centre of community life and should prioritise local walking trips and access to public transport. Main streets support a high concentration of commercial, retail, cultural and residential activity. They also serve as busy transport corridors.



NETWORK AND OPERATIONS GUIDANCE

- · Main street balances the competing demands of local activities and important movement requirements. Prioritising pedestrians creates places where people want to visit, spend time and money supporting the local businesses.
- Main streets are tasked with two sometimes conflicting functions - providing a long-distance arterial function and being a central place for public life and local economic activity. Prioritising people and place activity require slowing traffic speeds, enabling safe places to cross the street and design elements like street trees. Where possible long-distance traffic should be reduced by rerouting vehicle traffic away from main streets and onto highways to allow place value functions to take priority.
- General parking should be minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths. Consider a range of transport activities that require parking like food delivery e-bikes.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders.

Bus priority measures where required give buses a head start on the approach and exit to the Main Street, supporting public transport reliability and travel times.

>> PUBLIC TRANSPORT GUIDANCE

Manage parking to maximise street success including restriction by vehicle activity, time and price. >> PARKING MANAGEMENT GUIDANCE

> Distinguish cycleways from pedestrian paths by materials, level changes and road markings to minimise user conflict in busy urban centres.

>> CYCLING NETWORK GUIDANCE

Formal crossings are required near bus stops and in areas with high demand. Allow for easy walking with pedestrian priority on raised tables at minor side street crossings and safe signalised crossings at major intersections and on key cross corridor desire lines along the Main Street.

Cycle and micromobility parking

should be located close to destinations without impeding pedestrian movements. >> CYCLING NETWORK GUIDANCE

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Laneways and Through Site Links

to improve walkability between the main street and wider centre. >> PEDESTRIAN PLANNING **AND DESIGN GUIDE**



>> PEDESTRIAN PLANNING AND DESIGN GUIDE





MAIN STREETS - TOWNS & TOWNSHIPS

TYPICAL STREET WIDTH: 20M

Main streets in towns and townships are the hub of community life. Often they also serve as part of the regional highway network and so they must balance the competing demands of local activities and important movement requirements. Even in the smallest places, a safe walking environment and crossing opportunities are priorities for main streets. Providing for this creates the foundation for more vibrant places where people want to visit, spend time and money supporting the local businesses.

delineation.



NETWORK AND OPERATIONS GUIDANCE

- Main streets in Towns are often tasked with two sometimes conflicting functions - providing a longdistance arterial function and being a central place for public life and local economic activity.
- Prioritising people and place activities requires slowing traffic speeds, enabling safe places to cross the street and design elements like street trees. Where possible longdistance traffic should be reduced by re-routing vehicle traffic away from main streets and onto highways and bypasses to allow place value functions to take priority.
- Main streets are places with numbers of pedestrians where traffic speeds should be reduced to 30kph. At major intersection free-flowing traffic should not exceed 50kph.
- General parking is an important provision for towns and townships (especially for larger towns that lack public transport) but may require management by timing or pricing to provide turnover to support local businesses. Kerbside activity can be managed in different ways across the day.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders.

Off-street carparks and streets 'one block back' from main street can provide plentiful parking close to the centre to support allocating more space for walkability and public realm enhancements on the main street itself.

>> PARKING MANAGEMENT GUIDANCE



Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements. >> CYCLING NETWORK GUIDANCE

>> PARKING MANAGEMENT GUIDANCE

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Respect and celebrate built heritage settings and partner with iwi and specialists to identify opportunities to interpret, reveal, amplify or celebrate the stories of a place within the main

> **Gateways** and supporting interventions are required to lower vehicles speeds and modify driver behaviour through environmental design cues before arriving at the main street.

>>BRIDGING THE GAP URBAN DESIGN GUIDE

Formal crossings are required at key points along the main street to support pedestrian safety and two-sided functioning of the centre for retail, businesses and carparking.

>> PEDESTRIAN PLANNING AND DESIGN GUIDE



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Street trees give structure and clear legibility to main streets and help to manage speeds and driver behaviour, with canopy cover and street greening providing many co-benefits for people, place and planet in ways that enhance air quality and microclimate and the mauri ora of main streets.

> **Seating** to support business activity and public life is carefully located where it does not impede pedestrians. Co-locate with trees for comfort and socially-focused pause points supporting place function of the main street. >> PEDESTRIAN PLANNING

URBAN CONNECTOR - NARROWER

TYPICAL STREET WIDTH: 18-20M

Connectors are long, contiguous streets that have higher levels of vehicle traffic. Their access function is typically less intense than the mains streets they lead into.



NETWORK AND OPERATIONS GUIDANCE

- · Where adjacent land uses support transitioning connector streets to more place-focused activity streets and peoplefriendly places they provide the opportunity for additional local serving business and public places, even for short stretches or local spots such as outside neighbourhood shops or parks.
- Reducing traffic, lowering traffic speeds, and improving public transport may stimulate urban regeneration and higher quality, more engaging urban development on sites adjacent urban connectors.
- Connector streets are movement focused though they should not sever communities or be a barrier to public transport access. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from the connector and onto highways.
- General parking should be removed minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day to provide for peak period bus lanes for example.
- Service and delivery parking are located close to destinations but in places that do not compromise walking paths or cycleways.
- Versions of this street type can be delivered in tactical or incremental ways saving time and money from a complete streetscape upgrade.

Parking can be re-located to side

streets with time or price restrictions in place. One-way side streets can provide additional parking in an angle layout.

>> PARKING MANAGEMENT GUIDANCE

Raised zebra crossings of minor side streets allow for easy and safe walking journeys along the street including to access public transport and nearby centres.

>> PEDESTRIAN PLANNING AND DESIGN GUIDE

Bus stops can be located at the beginning of a bus lane segment or at the approach to a signal where priority can be provided with a bus advance signal. In lane bus stops can improve PT efficiency by avoiding delays merging back into traffic lane. >> PUBLIC TRANSPORT GUIDANCE

Street trees mediate temperature, provide shade, and reduce heat island effect and planted regularly along the length of corridors assist with speed management and sense of definition and enclosure.

Bi-directional cycleways can save

space on narrower corridors, still delivering safe separation from buses, trucks and general traffic, although compared to uni-directional cycleways they may limit network connectivity and seamless access to destinations.

>> CYCLING NETWORK GUIDANCE

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Support intensification along urban connectors with improved footpaths, street tree and public seating. As land-use changes occur, streets that may have previously been an Urban Connector may become an Activity Street that suggests different space allocation and priority.

>> ONE NETWORK FRAMEWORK

Regular formal crossings are required across the main carriageway at bus stops, major intersections and mid-block where activities such as schools, shops, parks and recreational destinations demand. >> PEDESTRIAN PLANNING AND DESIGN GUIDE

No parking on narrow urban connectors to minimise carriageway width and prioritise traffic flow functions for urban connector routes while creating space for cyleways, bus stops, trees and planting in ways that don't impinge on pedestrian environment.

>> PARKING MANAGEMENT GUIDANCE





URBAN CONNECTOR - WIDER

TYPICAL STREET WIDTH: 27M - 30M

Connectors are long, contiguous streets that have higher levels of vehicle traffic. Their access function is typically less intense than the mains streets they lead into.



NETWORK AND OPERATIONS GUIDANCE

- Versions of this street type can be delivered in tactical or incremental ways saving time and money from a complete streetscape upgrade.
- Where adjacent land uses support transitioning connector streets to more place-focused activity streets and peoplefriendly places they provide the opportunity for additional local serving business and public places, even for short stretches or local spots such as outside neighbourhood shops or parks.
- Reducing traffic, lowering traffic speeds, and improving public transport may stimulate urban regeneration and higher quality, more engaging urban development on sites adjacent urban connectors.
- Connector streets are movement focused though they should not sever communities or be a barrier to public transport access. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from the connector and onto highways.
- General parking should be removed minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day to provide for peak period bus lanes for example.
- Parking can be re-located to side streets with time or price restrictions in place. One-way side streets can provide additional parking in an angle layout.

Continuous bus lanes, or transit (T3) lanes are enabled by wider road reserve, with possibility of parking outside of busy periods of time.

>> PUBLIC TRANSPORT GUIDANCE >> PARKING MANAGEMENT GUIDANCE

> Bus stops should be located inline to save space, allow for more efficient operations and be close to a pedestrian crossing. >> PUBLIC TRANSPORT GUIDANCE

Cycle and micromobility parking should be located close to

destinations without impeding pedestrian movements.

>> CYCLING NETWORK GUIDANCE

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Service and delivery parking and P5/short stay parking can be provided by mountable kerb solutions outside shops and other destinations on busy urban connectors with no kerbside parking, designed in ways that do not compromise walking paths or cycleways.

>> PARKING MANAGEMENT GUIDANCE

Support intensification along urban connectors with improved footpaths. street tree and public seating. As land-use changes occur, streets that may have previously been an Urban Connector may become an Activity Street that suggests different space allocation and priority.

>> ONE NETWORK FRAMEWORK

Regular formal crossings are required across the main carriageway at bus stops, major intersections and mid-block where activities such as schools, shops, parks and recreational destinations demand.

>> PEDESTRIAN PLANNING AND DESIGN GUIDE




LOCAL STREETS - SUBURBAN RESIDENTIAL STREET

TYPICAL STREET WIDTH: 14M - 20M

Local streets have low traffic volumes, low speeds and limited network requirements. They are largely residential streets with occasional commercial uses.



NETWORK AND OPERATIONS GUIDANCE

- · Residential streets support access to housing and support public and community activity and walking to destinations and transit stops.
- Residential streets are not a part of the traffic movement network and through traffic should be removed through network design.
- · Residential streets act as open spaces providing space for play, gathering places, and recreation such as walking and cycling.
- Design and enforce traffic speeds of 30kph to provide safe and liveable neighbourhoods.
- Modal filters can provide permeable connectivity for active modes while removing unnecessary through traffic, both contributing to more liveable residential neighbourhoods.
- Car share and electric vehicle charging should be focused around dense housing pockets.
- Comprehensive parking management strategies of time restrictions and pricing should be implemented to increase the liveability of the street.







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APPENDIX (i) Resources & Links



WAKA KOTAHI RESOURCES AND GUIDELINES

PARTNERSHIP & ENGAGEMENT:

Our Māori Strategy - https://www.nzta.govt.nz/assets/About-us/docs/ te-ara-kotahi-our-maori-strategy-august-2020.pdf

Waka Kotahi Public Engagement Guidelines (2016) - https://nzta.govt. nz/assets/resources/public-engagement-manual/docs/nzta-publicengagement-guidelines.pdf

Waka Kotahi Te Ara Kotahi - Our Māori Strategy - https://www.nzta. govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategy-august-2020.pdf

TRANSPORT OUTCOMES:

Arataki (10-year view): https://www.nzta.govt.nz/arataki/

Waka Kotahi - Keeping Cities Moving - https://www.nzta.govt.nz/ assets/resources/keeping-cities-moving/Keeping-cities-moving.pdf

Vision Zero - Road to Zero: https://www.transport.govt.nz/area-of-interest/safety/road-to-zero/

ONE NETWORK FRAMEWORK

One Network Framework - https://www.nzta.govt.nz/onf

VISION ZERO:

Vision Zero for system designers - https://www.nzta.govt.nz/safety/ what-waka-kotahi-is-doing/nz-road-safety-strategy/road-to-zeroresources/vision-zero-for-system-designers/

Vision Zero for engineers: https://www.nzta.govt.nz/safety/safety-resources/vision-zero-for-engineers/

Vision Zero for planners: https://www.nzta.govt.nz/safety/safety-resources/vision-zero-for-planners/

SAFETY SYSTEM:

Standard Safety Intervention Toolkit - https://www.nzta.govt.nz/ resources/standard-safety-intervention-toolkit/

Waka Kotahi Crash Analysis System (CAS) - https://www.nzta.govt.nz/ safety/partners/crash-analysis-system/

Road Safety Audit Procedures for projects - https://www.nzta.govt.nz/ resources/road-safety-audit-procedures/

Speed Management Guide - https://www.nzta.govt.nz/safety/speed-management-resources/

Austroads - Integrating Safe System with Movement and Place for Vulnerable Road Users - https://austroads.com.au/publications/roadsafety/ap-r611-20

ENVIRONMENT & SUSTAINABILITY:

Environment & Social Responsibility Policy, Standard, tools and processes - https://www.nzta.govt.nz/roads-and-rail/highwaysinformation-portal/technical-disciplines/environment-and-socialresponsibility/

Toitū Te Taiao - Our Sustainability Action Plan Sustainability -https:// www.nzta.govt.nz/assets/About-us/docs/sustainability-action-planapril-2020.pdf

Tools (for air quality and road traffic noise): https://www.nzta.govt.nz/ roads-and-rail/highways-information-portal/tools/

URBAN DESIGN:

Bridging the Gap, Waka Kotahi Urban design Guidelines - https://www. nzta.govt.nz/assets/resources/bridging-the-gap/docs/bridging-thegap.pdf

Creating vibrant towns and cities webinar series: https://www.nzta.govt. nz/walking-cycling-and-public-transport/creating-vibrant-towns-andcities-webinar-series/

Urban and Landscape Design Frameworks - https://www.nzta.govt.nz/ assets/resources/urban-design/highways-network-ops-guideline/docs/ uldf-highways-network-ops-guideline.pdf

PLANNING & INVESTMENT:

Waka Kotahi Investment Hub - https://invest.nzta.govt.nz/

Planning Policy Manual (PPM) - https://www.nzta.govt.nz/resources/ planning-policy-manual/

Business Case Approach - https://invest.nzta.govt.nz/

Intervention Hierarchy – https://www.nzta.govt.nz/assets/resources/ The-Business-Case-Approach/PBC-intervention-hierarchy.pdf

Planning & Investment - https://nzta.govt.nz/planning-and-investment/ planning/

Planning & Investment Knowledge Base - https://www.nzta.govt.nz/ planning-and-investment/planning-and-investment-knowledge-base/

TACTICAL URBANISM

Innovating Streets for People - https://www.nzta.govt.nz/innovating-streets/

Tactical Urbanism Handbook (2020): https://www.nzta.govt.nz/roadsand-rail/innovating-streets/resources/tactical-urbanism-handbook/

MODE SHIFT PLANS:

Waka Kotahi Multi-modal Transport Planning and Design Guidance https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/ technical-disciplines/multi-modal-transport/

NZTA - Programme Business Case Intervention hierarchy - https:// www.nzta.govt.nz/assets/resources/The-Business-Case-Approach/ PBC-intervention-hierarchy.pdf

Waka Kotahi - Walking and cycling planning and design guidance https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/ technical-disciplines/multi-modal-transport/

Auckland - https://at.govt.nz/about-us/transport-plans-strategies/ regional-land-transport-plan/

The Bay of Plenty - https://www.nzta.govt.nz/assets/resources/ keeping-cities-moving/BoP-regional-mode-shift-plans.pdf

Hamilton-Waikato - https://www.nzta.govt.nz/assets/resources/ keeping-cities-moving/Hamilton-Waikato-regional-mode-shift-plans. pdf

Wellington - https://www.nzta.govt.nz/assets/resources/keepingcities-moving/Wellington-regional-mode-shift-plans.pdf

Greater Christchurch - https://www.nzta.govt.nz/assets/resources/ keeping-cities-moving/Christchurch-regional-mode-shift-plan.pdf

WALKING:

Pedestrian Planning and Design Guide - https://www.nzta.govt.nz/ resources/pedestrian-planning-guide/

CYCLING:

Cycling Network Guide (CNG) - https://www.nzta.govt.nz/walkingcycling-and-public-transport/cycling/cycling-standards-and-guidance/ cycling-network-guidance/

PUBLIC TRANSPORT:

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PARKING & KERBSIDE MANAGEMENT:

National Parking Management Guidance - https://www.nzta.govt.nz/ assets/Roads-and-Rail/docs/National-Parking-Management-Guidancefor-consultation.pdf

UNIVERSAL ACCESS:

RTS14 Guidelines for facilities for blind and vision impaired pedestrians (2015) - https://www.nzta.govt.nz/assets/resources/road-traffic-standards/docs/rts-14.pdf

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN: CPTED - https://www.nzta.govt.nz/assets/resources/pedestrianplanning-guide/docs/pedestrian-planning-guide.pdf

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Public Transport Design Guidelines (PTDG) - https://nzta.govt.nz/ptdg

CENTRAL GOVERNMENT RESOURCES

TRANSPORT & URBAN POLICY:

Government Transport Outcomes Framework - https://www.transport. govt.nz/area-of-interest/strategy-and-direction/transport-outcomesframework/

Vision Zero - Road to Zero - https://www.transport.govt.nz/area-ofinterest/safety/road-to-zero/

Land Transport Management Act - https://www.legislation.govt.nz/act/ public/2003/0118/latest/DLM226230.html

Better Travel Choices - https://www.transport.govt.nz//assets/ Uploads/Report/ATAPBetterTravelChoices.pdf

Te Āhei ki te Whakamahi Ara - Accessible Streets - https://www. transport.govt.nz/area-of-interest/walking-and-cycling/accessiblestreets/

Transport Emissions Action Plan - https://www.transport.govt.nz/areaof-interest/environment-and-climate-change/climate-change/

Ministry of Housing and Urban Development - Urban Growth Agenda https://www.hud.govt.nz/urban-development/urban-growth-agenda/

Ministry of Housing and Urban Development - National Policy Statement - Urban Development - https://www.hud.govt.nz/urbandevelopment/national-policy-statement-on-urban-development-npsud/

Urban Development Act 2020- https://www.legislation.govt.nz/act/ public/2020/0042/latest/whole.html

RMA reforms - https://environment.govt.nz/what-government-isdoing/key-initiatives/resource-management-system-reform/overview/

CLIMATE CHANGE & TRANSPORT EMISSIONS:

New Zealand's Framework for Adapting to Climate Change - https:// environment.govt.nz/publications/new-zealands-framework-foradapting-to-climate-change/

Hīkina te Kohupara - Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050 - https://www.transport.govt.nz/ consultations/hikina-te-kohupara-discussion/

New Zealand's targets for reducing emissions - https://www. climatecommission.govt.nz/our-work/reducing-emissions/

Hīkina te Kohupara - Kia mauri ora ai te iwi - https://www.transport. govt.nz/consultations/hikina-te-kohupara-discussion/

Transport Emissions: Pathways to Net Zero by 2050 Climate Action Framework

HEALTH & WELLBEING:

Living Standards Framework - https://www.treasury.govt.nz/ information-and-services/nz-economy/higher-living-standards/ourliving-standards-framework

Ministry of Health - Healthy Urban Development - https://www.health. govt.nz/our-work/environmental-health/built-environment/urbandevelopment

Ministry of Health - Urban Development - https://www.health.govt.nz/ our-work/environmental-health/built-environment/urban-development

Ministry of Health - Air Quality - https://www.health.govt.nz/our-work/ environmental-health/built-environment/air-quality

https://www.health.govt.nz/publication/achieving-healthy-urbanplanning-comparison-three-methods

https://www.health.govt.nz/our-work/environmentalhealth?mega=Our%20work&title=Environmental%20health

SOCIAL AND STREET DATA:

New Zealand Human Rights - Your Rights - https://www.govt.nz/ browse/law-crime-and-justice/human-rights-in-nz/human-rightsand-freedoms/#:~:text=The%20Act%20includes%2C%20among%20 other, rights%20covenants%2C%20conventions%20and%20protocols.

DEMOGRAPHICS:

Statistics NZ - http://nzdotstat.stats.govt.nz/wbos/Index.aspx

NEW ZEALAND POLICE:

Protecting Our Crowded Places from Attack: New Zealand's Strategy - Te Whakamaru i Ō Tātau Wāhi Kōpiripiri mai i te Whakaekenga: Te Rautaki a Aotearoa - https://www.police.govt.nz/sites/default/files/ publications/crowdedplaces-strategy-30092020.pdf

HERITAGE & CULTURE:

resources/saving-the-town

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Saving the Town Heritage Toolkit - https://www.heritage.org.nz/

PARTNERSHIP & ENGAGEMENT

IAP2 Resources - https://iap2.org.au/resources/iap2-publishedresources/

Taituara (SOLGM) Shoulder to shoulder - guide to collaborative engagement - https://taituara.org.nz/ Attachment?Action=Download&Attachment_id=621

Te Arawhiti Māori Engagement Framework - https://www.tearawhiti. govt.nz/te-kahui-hikina-maori-crown-relations/engagement/

LGNZ resources for Māori partnerships - https://www.lgnz.co.nz/ assets/Uploads/2dac054577/44335-LGNZ-Council-Maori-Participation-June-2017.pdf

Waka Kotahi Business case approach - https://www.nzta.govt.nz/ planning-and-investment/planning-and-investment-knowledge-base/ archive/201821-nltp/planning-and-investment-principles-and-policies/ business-case-approach/

Waka Kotahi Public Engagement Guidelines (2016) - https://nzta.govt. nz/assets/resources/public-engagement-manual/docs/nzta-publicengagement-guidelines.pdf

Waka Kotahi Te Ara Kotahi - Our Māori Strategy - https://www.nzta. govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategyaugust-2020.pdf

Waka Kotahi Tactical Urbanism handbook - https://nzta.govt.nz/assets/ Roads-and-Rail/innovating-streets/docs/tactical-urbanism-handbook. pdf

The Workshop - How to talk about urban mobility and transport shift - a short guide - https://static1.squarespace.com/ static/5e582da2de97e67b190b180c/t/5e964a181c923d689f09 9d58/1586907824986/The-Workshop-Urban-Mobility-2020.pdf

Investing in Place - https://investinginplace.org/about/

GLOBAL DESIGNING CITIES INITIATIVE (NACTO)

STREET DESIGN GUIDANCE:

Global Street Design Guide (GDCI-NACTO) - https:// globaldesigningcities.org/publication/global-street-design-guide/

Designing Streets for Kids (NACTO) - https://globaldesigningcities.org/ publication/designing-streets-for-kids/

Urban Street Design Guide (NACTO) - https://nacto.org/publication/ urban-street-design-guide/

Transit Street Design Guide (NACTO) - https://nacto.org/publication/ transit-street-design-guide/

Urban Bikeway Design Guide (NACTO) - https://nacto.org/publication/ urban-bikeway-design-guide/

Designing for All Ages & Abilities (NACTO) - https://nacto.org/ publication/urban-bikeway-design-guide/designing-ages-abilities-new/

Urban Street Stormwater Guide (NACTO) - https://nacto.org/ publication/urban-street-stormwater-guide/

OTHER GLOBAL RESOURCES

Safer City Streets: Global Benchmarking for Urban Road Safety - https:// www.itf-oecd.org/safer-city-streets-global-benchmarking-urban-roadsafety

Evaluating Complete Streets Projects: A Guide for Practitioners, Smart Growth America - https://smartgrowthamerica.org/resources/ evaluating-complete-streets-projects-a-guide-for-practitioners-2/

How to measure streets, Global Designing Cities Initiative - https:// globaldesigningcities.org/publication/global-street-design-guide/ measuring-evaluating-streets/how-to-measure-streets/

UK HM Treasury Infrastructure Carbon Review - https://assets. publishing.service.gov.uk/government/uploads/system/uploads/ attachment_data/file/260710/infrastructure_carbon_review_251113.pdf

UK Guidance Document for PAS 2080 - Tool for Managing Whole of Life Carbon Infrastructure - http://greenbuildingencyclopaedia.uk/wpcontent/uploads/2016/05/Guidance-Document-for-PAS2080_vFinal. pdf

Sustainable and Safe: A Vision and Guidance for Zero Road Deaths - https://www.wri.org/research/sustainable-and-safe-vision-andguidance-zero-road-deaths

KEY STAKEHOLDER LINKS

GOVERNMENT MINISTRIES AND AGENCIES:

Accident Compensation Corporation (ACC) - https://www.acc.co.nz/

Ministry for Culture & Heritage - Ministry for Culture and Heritage Te Manatu Taonga - https://mch.govt.nz/

Ministry of Health - https://www.health.govt.nz/

Ministry of Māori Development - https://www.tpk.govt.nz/en

New Zealand Police - https://www.police.govt.nz/

SPECIALIST USER GROUPS:

Grey Power New Zealand Federation - https://greypower.co.nz/

PROFESSIONAL INSTITUTES & INDUSTRIES:

Engineering New Zealand Transportation Group - https://www. transportationgroup.nz/

co.nz/

New Zealand Planning Institute - https://planning.org.nz/

New Zealand Institute of Architects - https://www.nzia.co.nz/

php?m=185

Property Council New Zealand - https://www.propertynz.co.nz/

TRANSPORT & URBAN ADVOCACY GROUPS:

Living Streets Aotearoa - https://www.livingstreets.org.nz/

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Blind Low Vision New Zealand - https://blindlowvision.org.nz/

CCS Disability Action - https://ccsdisabilityaction.org.nz/

Sport New Zealand - Ihi Aotearoa - https://sportnz.org.nz/

New Zealand Institute of Landscape Architects - https://www.nzila.

Ngā Aho Maori Design Institute - https://ngaaho.maori.nz/page.

Urban Design Forum - https://urbandesignforum.org.nz/

Cycling Action Network NZ - https://can.org.nz/

Generation Zero - https://www.generationzero.org/

Women in Urbanism - https://www.womeninurban.org.nz/

APPENDIX (ii) Case Studies

PLACE DEVELORMENT



