

Plan Change 12 – Enabling Housing: Part 3 Other Appendices

## Appendix 3.4 Capacity Modelling



# Residential Capacity Modelling

Medium Density Residential Standards  
and Plan Change 12: Hamilton City

3 August 22 – final

m.e  
consulting



# Residential Capacity Modelling

Medium Density Residential Standards  
and Plan Change 12: Hamilton City

Prepared for  
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# 1 Introduction

Hamilton City Council (HCC) are proposing a plan change (Plan Change 12) to implement a range of intensification provisions across the urban environment. The provisions include the application of the Medium Density Residential Standards<sup>1</sup> (MDRS), which tier 1<sup>2</sup> high growth urban areas are required to incorporate into their district plans under the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill. They also include provisions for higher density residential development in key areas of accessibility required under Policy 3 of the National Policy Statement on Urban Development<sup>3</sup> (NPS-UD). M.E have undertaken modelling to inform the plan change Section 32 on the effects of the proposed provisions on residential capacity.

The proposed intensification provisions increase the level of development that is provided for within urban areas. The MDRS enables a higher level of residential development capacity in most areas. It increases the potential yield on each property parcel by enabling up to three dwellings on each site. It also increases the level of development opportunity on each site through expanding the three-dimensional development envelope<sup>4</sup> within which dwellings can be constructed. The NPS-UD Policy 3 requires high density development to be provided for within key areas of accessibility within the urban environment.

In combination, these provisions enable a substantial increase in development capacity across much of the urban area. In many locations, if taken up, they would represent shift in development patterns from those previously occurring within those locations under the existing and past planning provisions.

HCC needs to understand the effect of different potential intensification provisions on residential capacity to inform the development of options for Plan Change 12. M.E have been commissioned by HCC<sup>5</sup> to undertake further residential capacity modelling across the urban residential zones in Hamilton City to understand the level of capacity enabled by the proposed plan change options. The additional modelling builds off the existing residential capacity modelling<sup>6</sup> undertaken in 2021 for HCC (and the Future Proof Partners) to meet the requirements of the National Policy Statement on Urban Development (NPS-UD).

This report calculates the amount of residential dwelling capacity that is enabled within Hamilton City's urban areas with the application of the MDRS and NPS-UD Policy 3 requirements through proposed options

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<sup>1</sup> Ministry for the Environment, 2022. *Medium Density Residential Standards: A guide for territorial authorities*, 21 April 2022, <https://environment.govt.nz/assets/publications/Medium-density-residential-standards-A-guide-for-territorial-authorities-v2.pdf>, accessed at June 2022.

<sup>2</sup> As part of the Future Proof Partnership<sup>2</sup> (FPP), Hamilton City's urban area is identified as a tier 1 high growth urban area. The FPP is formed by Waikato District, Hamilton City, Waipa District, and more recently, the main urban centres of Matamata-Piako District.

<sup>3</sup> Ministry for the Environment, 2020. *National Policy Statement on Urban Development 2020*, July 2020.

<sup>4</sup> This occurs through a combination of the maximum height allowances (up to three storeys), building setbacks and height to boundary building recession planes.

<sup>5</sup> As part of the project, M.E were commissioned jointly by the Future Proof Partners to model the impacts of the MDRS on residential capacity across the Future Proof urban areas.

<sup>6</sup> M.E, 2021. *NPS-UD Housing Development Capacity Assessment (HDCA): Future Proof Partners*, prepared for Future Proof Partners (Hamilton City Council, Waikato District Council and Waipa District Council), 30 July 2021.



for Plan Change 12. As part of this, it tests different extents of the provisions through the application of qualifying matters. A wide range of qualifying matters were assessed to identify their potential effects on planning provisions affecting capacity, with the modelling qualifying matters including those which may affect residential capacity. The evaluation of qualifying matters is set out in Section 2.3.

Understanding the capacity enabled by the MDRS and Policy 3 is an important first stage in understanding the implications of these policies. It is likely that development will get taken up through time at a range of densities, including up to that of the MDRS/Policy 3 in some locations. However, much of the development capacity delivered by the market is still likely to occur at densities below those enabled, particularly within the short-term, as demand increases through time for higher density dwelling options.

The report sets out the approach undertaken to model the MDRS and Policy provisions and presents the city's urban capacity calculations. This includes the modelled capacity parameters in relation to the proposed provisions. It is not intended to be a detailed technical report on the model structure specifications, beyond outlining the key changes and extensions to the Hamilton Residential Capacity Model used to model the MDRS/Policy 3. Further technical information on the structure of the Hamilton Residential Capacity Model is instead contained within the FPPs Housing Development Capacity Assessment<sup>7</sup> (HDCA) and associated technical documentation.

The report is structured as follows. Section 2 outlines the proposed intensification provisions under Plan Change 12 in relation to the MDRS and NPS-UD Policy 3. The modelled capacity scenarios are then set out in Section 3. The modelling approach is then described in Section 4. The focus of Section 4 is on the key stages and development of the modelling approach to reflect the intensification provisions from the residential capacity modelling undertaken for the HDCA in 2021. The plan enabled capacity results from the modelling are contained in Section 5, with commentary on the economic costs and benefits of the intensification provisions in Section 6. Concluding comments are contained in Section 6.

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<sup>7</sup> Ibid.



## 2 Intensification Provisions: MDRS and NPS-UD Policy 3

A range of different intensification provisions are being proposed through Plan Change 12 for Hamilton City to meet the requirements of the MDRS and Policy 3. These form the basis for the residential modelling approach. This section sets out the relevant aspects, for the capacity modelling, of the intensification provisions being considered within Plan Change 12 in relation to the MDRS and Policy 3. It also outlines the qualifying matters that affect the application of the provisions.

### 2.1 Residential Intensification Areas (Policy 3)


Urban intensification is proposed within the core central nodes of high amenity across Hamilton's urban area. Policy 3 of the NPS-UD requires adequate provision for higher density development in key nodes of accessibility relative to the level of accessibility and demand:

*“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 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*
- (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. “*

The areas of accessibility and proposed density provisions have been defined through Hamilton City's planning assessment. Plan Change 12 proposes to meet the NPS-UD Policy 3 requirements through the inclusion of provisions for higher density vertical residential development in key areas. These are provided for through the application of medium to higher density zones, that allow for the higher density development, across key areas of the urban environment. Higher density residential development is characterised by provision for development of vertically attached apartment buildings.





The changes in the proposed zoning structure also increase the density of other (non-vertically attached) residential development patterns through reducing the required minimum site sizes and land areas per dwelling. A full set of the proposed planning provisions are contained in HCC documentation and the modelled parameters to reflect the provisions are set out in Section 4.

The proposed zoning structure where these are applied under plan change 12 is set out as follows:

- Increased height allowance within the **City Centre Zones**. This includes an unlimited height allowance across all three precincts within the City Centre and is applied to the existing spatial extent of the zones.
- A **High Density Residential Zone** applied broadly to the 800m walkable catchment area surrounding the City Centre and some further northern extension along Te Rapa Road. This zone permits residential development up to 7 storeys.
- A **Medium Density Residential Zone** permitting residential development up to 5 storeys. This is applied in the existing residential areas:
  - adjacent to some areas of the the High Density Residential Zone surrounding the City Centre;
  - surrounding Hamilton's larger sub-regional and suburban centres;
  - surrounding key factors of urban amenity (e.g. public facilities such as the university and hospital); and
  - at the Ruakura urban edge.

## 2.2 Medium Density Residential Standards (MDRS)


Intensification has also been proposed across the remainder of Hamilton's general residential suburban area. This would occur through the application of the MDRS across both the medium to higher density residential areas outlined above (excluding the City Centre) and the remainder of the general suburban area.

The MDRS enable greater yields and levels of development to be achieved on most sites across Hamilton's urban residential area. They increase the yield through enabling up to three dwellings to be constructed on each site that are up to three storeys high. They also increase the level of development as the dwellings are also able to be constructed within an expanded three-dimensional building envelope through the combination of greater allowances in height limits, required setbacks from boundaries and height to boundary recession planes. These are set out in the MDRS fact sheet<sup>8</sup> and Schedule 3A Part 2 of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill.

The Plan Change 12 assessment considers options that include the application of MDRS across all urban residential zones within the urban environment. This covers the medium-higher density residential areas surrounding centres and other urban nodes, as well as the general residential suburban area. The modelling

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<sup>8</sup> Ministry for the Environment, 2022. *Medium Density Residential Standards: A guide for territorial authorities*, 21 April 2022, <https://environment.govt.nz/assets/publications/Medium-density-residential-standards-A-guide-for-territorial-authorities-v2.pdf>, accessed at June 2022.



has also considered the application of the MDRS within the zoned greenfield areas that are not covered by a structure plan or development plan.

Alterations to the spatial extent of the MDRS provisions have been tested through the application of qualifying matters set out in Section 2.3 below.

Modelling has been undertaken to test the application of the MDRS to the existing ODP zoning structure as well as together with a different underlying zoning structure proposed for Plan Change 12.

## 2.3 Qualifying Matters

Policy 4 of the NPS-UD requires the modification of building heights and densities within Hamilton's District Plan under Policy 3 to the extent necessary to accommodate a qualifying matter. The Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill requires the incorporation of MDRS into residential zones with the Plan to extent necessary to accommodate a qualifying matter.

Qualifying matters relate to certain aspects and characteristics of a property in a location that mean it is less appropriate to enable the additional level of residential development enabled by the intensification provisions. These are set out in Subpart 6 of the NPS-UD and section 77 of the Bill.

A range of qualifying matters have been considered by HCC as part of the evaluation process. Only a subset of these are likely to affect plan enabled capacity as some matters occur outside of residential zoned areas or areas where dwellings are likely to be constructed, with others affecting the cost of construction (e.g. costs from an engineering report requirement) without affecting the permitted capacity.

The first stage of the evaluation process identifies whether or not each qualifying matter is likely to have an effect on plan enabled capacity. Those likely to affect capacity are then incorporated within the capacity modelling process. The following sub-sections outline firstly the full range of qualifying matters considered, and then, secondly, those identified as affecting plan enabled capacity.

### 2.3.1 Full Range of Qualifying Matters Considered

The full range of qualifying matters considered within the capacity assessment is set out in Table 2-1. It identifies whether each matter is likely to affect plan enabled capacity and the consequent inclusion within the capacity modelling.

HCC have investigated a range of qualifying matters, with the most notable being flood hazard areas. Initial investigation of these matters determined that they did not impact on the residential plan enabled capacity. In some cases, there may be an impact on the commercial feasibility of capacity, but there are currently no proposals to alter the planning provisions. Where appropriate, impacts on feasibility will be incorporated into later feasibility modelling through the adjustment of cost structures.

SNAs were also considered in the modelling, but were determined not to impact capacity in either the base scenario or the intensification scenarios as development had already been excluded from these areas. SNAs are located within the natural gully system of Hamilton and identified in the ODP as Gully Hazard Areas. Residential development within Gully Hazard Areas is a Discretionary Activity, however, these areas are entirely excluded from the capacity modelling due to the reduced viability of constructing dwellings within

these steep areas. PC12 proposes that any residential developments within SNAs will be considered a Non-Complying Activity. The extension of SNAs proposed by PC9 does not impact modelled capacity in either the base scenario or the intensification scenarios as development had already been excluded due to the approach to the existing Gully Hazard Areas.

A range of other matters occurred in areas that did not contain provision for residential capacity as they were already excluded from the base scenario through planning provisions. These included nationally significant infrastructure, open spaces, designations and business lands (excluding the City Centre).

Table 2-1: Summary of Potential Qualifying Matters and Inclusion within Modelling

Qualifying Matter	Potential Effect on Plan Enabled Capacity
<b>Matters of National Importance</b>	
Peat Lake and Wetlands and Peat Lake Catchment	These areas have already been removed from the residential modelled areas.
Significant Natural Areas and Gullies	Only gully areas occur within the residential zones. These have already been removed from all modelled scenarios (including the base scenario) as dwellings are unlikely to be able to be constructed within these steep areas.
Archeological Sites	No change to plan enabled capacity provisions - capacity still enabled with inclusion of technical assessment report.
Built Heritage	No change to plan enabled capacity provisions - capacity still enabled with inclusion of technical assessment report.
Historical Heritage Areas	Likely to affect capacity - included in capacity modelling.
Flood Hazard Areas	No planning constraint, but likely to affect feasibility through additional mitigation measures required. This is a modelling limitation as testing has not occurred due to insufficient information. Testing can occur when more information becomes available in the future.
Te Turi Whai Mana	Likely to affect capacity - included in capacity modelling with the application of the Infrastructure Capacity Overlay.
<b>Nationally Significant Infrastructure</b>	These areas have already been excluded from areas of residential capacity in all modelled scenarios.
<b>Open Spaces</b>	There is no zoned residential capacity in these areas.
<b>Designations</b>	These areas have already been excluded from areas of residential capacity in all modelled scenarios.
<b>Business Lands</b>	Residential capacity is not provided for in business areas beyond the City Centre.

## 2.3.2 Qualifying Matters Potentially Affecting Plan Enabled Capacity

Within the above assessment, HCC have identified a number of qualifying matters that may apply within Hamilton affecting the application of the above intensification provisions being considered. Qualifying matters relevant to the model through their effect on plan enabled residential capacity include:

- **Infrastructure Capacity Overlay (ICO):** This overlay area covers much of Hamilton's urban area. At a broad level, the central city area and surrounding walkable catchment falls outside the ICO overlay area.
- **Historic Heritage Areas (HHAs):** These include the existing HHAs as well as the additional areas proposed under Plan Change 9.

Qualifying matters have been applied under various scenarios (Section 3) to limit the application of the proposed MDRS and Policy 3 intensification provisions. The residential development capacity on a parcel generally reverts to the existing zoning provisions in either the Operative District Plan or the Plan Change 12 proposed zoning (with the exclusion of the additional residential height allowances) with the application of a qualifying matter.



The additional density enabled by the MDRS beyond the zoning provisions does not apply to parcels affected by a qualifying matter; nor does the Policy 3 additional height allowance provided within the Plan Change 12 proposed zoning structure.

The additional density enabled by the proposed zoning structure, outside of the additional height allowance, does still apply in areas affected by a qualifying matter. This predominantly includes the increased density in minimum lot sizes across residential suburban areas through the upzoning of General Residential Zone areas to Medium Density Residential Zone, and other residential areas to the smaller minimum lot size requirements of the High Density Residential Zone<sup>9</sup>.

The above qualifying matters have been applied in different combinations together with the application of MDRS and base zoning structures (ODP and Plan Change 12 zones). These test the effects of qualifying matters on capacity. The combinations are set out under each modelling scenario in Section 3.

### **Covenants**

There are a proportion of residential properties within Hamilton City's urban area that contain covenants that may limit additional future development on parcels. A larger proportion of these are concentrated around Rototuna in the northern part of the city, with smaller proportions also around Nawton and in recent urban expansion areas of Ruakura and Peacocke.

HCC have identified all residential parcels across the city that contain covenants. They have estimated the share of these (75% to 80%)<sup>10</sup> that may restrict development capacity. The effects of covenants have been applied as a sensitivity test subsequent to the modelling of scenarios. This is because covenants are present in both the existing base situation and the modelled proposed situation. As such, the modelling needs to identify the effect of the intensification provisions without being skewed by the inclusion of covenants in the modelled proposed intensification provisions scenario<sup>11</sup>.

### **Jack's Landing Special Housing Area**

MDRS and Policy 3 provisions were excluded from this area and the agreed SHA yield was applied. This item has been included in both the baseline and other modelled scenarios.

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<sup>9</sup> It is noted that no change, in this respect, is observed within the High Density Residential Zone modelling outputs with the application of qualifying matters. This is because qualifying matters are not currently applied to areas covering the zone. However, the approach has been established here in principle to guide future potential qualifying matter applications, if required.

<sup>10</sup> HCC have undertaken analysis in 2021 to estimate the share of the residential properties that contain a covenant where the covenant may restrict further development options. A random sample of 400 residential properties was selected from all residential properties that contain covenants. Title information from the selected properties were examined to determine whether the covenants may limit additional future development on the property. From this analysis, HCC estimate that around 75% to 80% of the residential properties containing covenants may have restrictions on their future development potential from the covenants.

<sup>11</sup> HCC have requested the inclusion of a baseline scenario (Scenario 1) to show alignment with the 2021 HDCA. The HDCA did not include the effect of covenants as the information was unavailable at the time.



## 3 Modelled Scenarios

HCC have developed a range of Scenarios to test the effect of the intensification provisions and application of qualifying matters on residential capacity. These underpin the modelling approach and structure of the assessment of effects on capacity.

The modelled scenarios are described below<sup>12</sup>. The first modelled scenario is the existing ODP capacity and provides the baseline from which to measure changes in residential capacity as a result of the proposed provisions. The second scenario is the full, unrestricted application of the MDRS and Policy 3 intensification provisions. It provides the baseline from which to measure the effects of qualifying matters on capacity.

### ***Scenario 1: Baseline Current Planning Provisions***

Scenario 1 is the capacity modelled on the existing ODP provisions. It contains the same planning inputs as those used in the 2021 HBA.

### ***Scenario 2: Unmodified Intensification Provisions***

Scenario 2 is the capacity modelled with the full extent, without modification, of the MDRS and Policy 3 intensification provisions. This scenario is modelled with the MDRS applied to the Plan Change 12 base zone structure with the vertical apartment development enabled within the zones as set out above.

### ***Scenario 3: Modified Intensification Provisions***

Scenario 3 tests the effect of the Infrastructure Capacity Overlay (ICO) qualifying matter together with the application of all other qualifying matters (relevant to the modelling) listed above. It is structured spatially in the following way:

- a. Within the ICO area, the MDRS provisions are applied, but with a capacity density control of:
  - i. 200m<sup>2</sup> net land area per dwelling within the General Residential Zone; and
  - ii. 150m<sup>2</sup> net land area per dwelling within the Medium Density Residential Zone.

The additional height allowance for vertically-attached apartment buildings within the Medium Density Residential Zone is not enabled within the ICO area.

- b. Outside of the ICO area, the MDRS provisions and additional height allowances (Policy 3) are applied on an unrestricted basis across most areas. The exception occurs in specific locations where another qualifying matter occurs, in which case the base zone provisions of the proposed Plan Change 12 zones apply, without MDRS, (with the exclusion of the additional vertical height allowance).

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<sup>12</sup> The numbering of scenarios may not occur consecutively as they reflect their development by HCC and later scenarios added through M.E modelling.



In addition to the application of qualifying matters in Scenario 3, M.E have undertaken further modelling runs to illustrate the impact of each qualifying matter individually.



## 4 Approach: Technical Modelling Structure and Parameters

This section outlines the modelling approach that has been undertaken to model the capacity enabled by the MDRS and Policy 3 within Hamilton City. It identifies the key changes and extensions that have been constructed within the Hamilton Residential Capacity Model to reflect the intensification provisions.

The estimation of capacity has been undertaken at the parcel level, extending upon the M.E Residential Capacity Model developed for the 2021 HDCA. It is an estimation of the net additional dwellings that can be accommodated on each parcel.

The modelling firstly calculated the capacity enabled under the Plan (plan enabled capacity), and then estimated the share of capacity that is likely to potentially represent commercially feasible development options for profit-driven commercial developers. This section sets out the key changes and extensions developed for the 2021 HDCA capacity model to reflect the intensification provisions. It is not intended to be a technical document describing the Model in its entirety, which can instead be found within the 2021 HDCA and associated documentation.

An outline of the approach, noting the key changes/extensions is set out in the sub-sections below.

### 4.1 Capacity Structure

This section sets out the structure of the capacity outputs that have been modelled. These are set out by zoning structure, urban spatial structure and development options.

#### *Urban Zoning Structure*

Modelling has been undertaken across all urban residential zones and the City Centre zones within the city's urban area. These include zones that are developed at an urban density and exclude residential development in other zones that are developed at lower densities (e.g. rural and lifestyle dwellings).

As set out in Section 3, modelling has been undertaken across both the existing ODP zoning structure and the proposed zoning structure under Plan Change 12. Use of the ODP zoning structure is consistent with the 2021 HDCA modelling, which has been re-based under Scenario 1.

The ODP urban residential zones across which the modelling (Scenario 1) has been undertaken within the urban area include:

- City Centre Zones (Precincts 1, 2 and 3)
- Residential Intensification Zone
- Medium Density Residential Zone
- General Residential Zone
- Special Residential Zone

- Special Heritage Zone
- Special Natural Zone
- Temple View Zone
- Rototuna North East Special Character Zone
- Peacocke Character Zone
- Future Urban Zone<sup>13</sup>

Further areas, outside these base zones, identified for future urban-scale residential development within the greenfield were also included under both zoning base structures. These are areas that are covered by development or structure plans that apply in the place of zoning.

Capacity modelling on other scenarios has been undertaken across the proposed Plan Change 12 zone structure. This generally contains more widespread application of medium to higher density residential zones that enabled greater intensification around the City Centre and other main urban centres, and other areas of higher amenity. This is achieved through the application of a High Density Residential Zone around the City Centre (with a degree of overlap with the previous Residential Intensification Zone), and the Medium Density Residential Zone in other areas.

The proposed Plan Change 12 urban residential zones across which the modelling (Scenario 2 and Scenario 3) has been undertaken within the urban area include:

- City Centre Zones (Precincts 1, 2 and 3)
- High Density Residential Zone
- Medium Density Residential Zone
- General Residential Zone

HCC has also supplied further information on structure plan and development agreement yields within selected greenfield areas, which have been applied in this assessment. This incorporates information that has been updated since that used within the HDCA. M.E have used HCC's greenfield area spatial structure and have applied minor updates where appropriate to capture further outward movement of the urban edge.

Within the greenfield areas, the modelling has applied any structure plan or development agreement yields supplied by HCC in place of the capacity that would otherwise be enabled as a function of the base zone or the application of MDRS/Policy 3 provisions. This is a conservative approach to capacity estimation to avoid over-stating capacity in areas which have higher certainty of future development patterns from existing plans or signalled developer intentions. This is consistent with the approach undertaken within the 2021 HDCA.

The base zone, together with the MDRS provisions (where applied within each scenario) have been applied within other parts of the greenfield areas that do not contain yield information.

### *Urban Spatial Structure*

Analysis was undertaken across the above zones within Hamilton's existing and future urban area. As a first stage, parcels were identified as either greenfield or existing urban areas. A similar approach to the HDCA

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<sup>13</sup> At the request of HCC, the General Residential Zone provisions have been applied to the Future Urban Zone area.



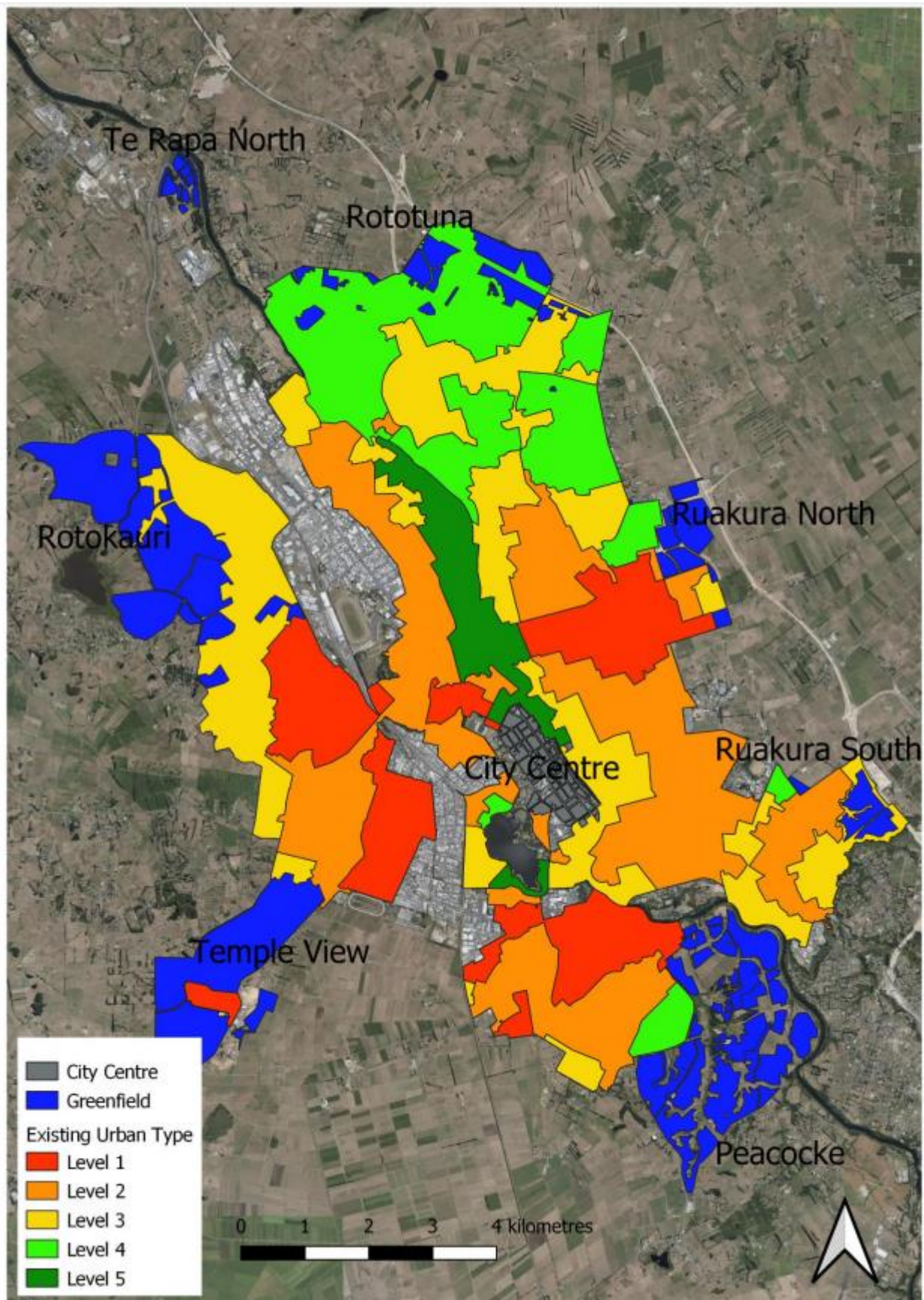


was followed where the existing urban edge was identified through a combination of aerial photographs and analysis of the most recent LINZ parcel boundary file. There has been some outward expansion of the urban edge since the analysis undertaken for the HDCA.

Further development has been undertaken within the Hamilton Residential Capacity Model to better reflect the spatial structure of more intensive development patterns. Greater variation within the spatial structure is an important driver of the sales price component of the feasibility model.

At a base level, the model applies the same spatial structure as the HDCA (shown in Figure 4-1), consisting of five levels (Level 1 to Level 5) across the urban area. This enables the model to capture the broader geographic variations that occur in area values across the city. Level 1 are the lowest value areas, with correspondingly lower sales prices; and Level 5, the highest value areas. These levels are applied to both the parcel land and potential dwelling sales prices.

Figure 4-1: Hamilton City Spatial Framework (Base Levels) for Residential Capacity Assessment





Further layers, shown in Figure 4-2 and Figure 4-3 have been added into the model that reflects a greater level of differentiation to development patterns and sales prices within each of the areas. These generally differentiate parcels based on their location relative to main centres, accessibility along main roads and other areas of urban amenity.

Figure 4-2: Intensification Modelling Spatial Structure of Hamilton City Main Road Parcels

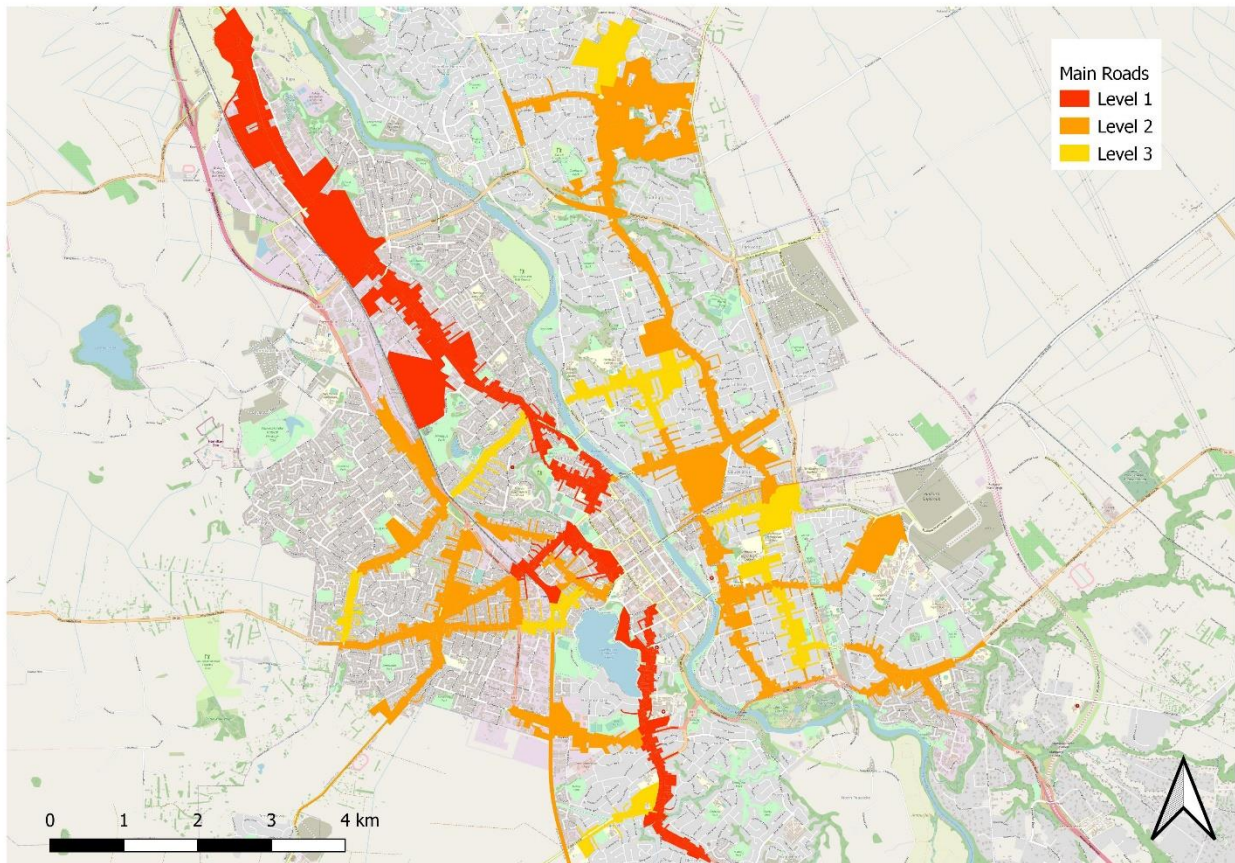
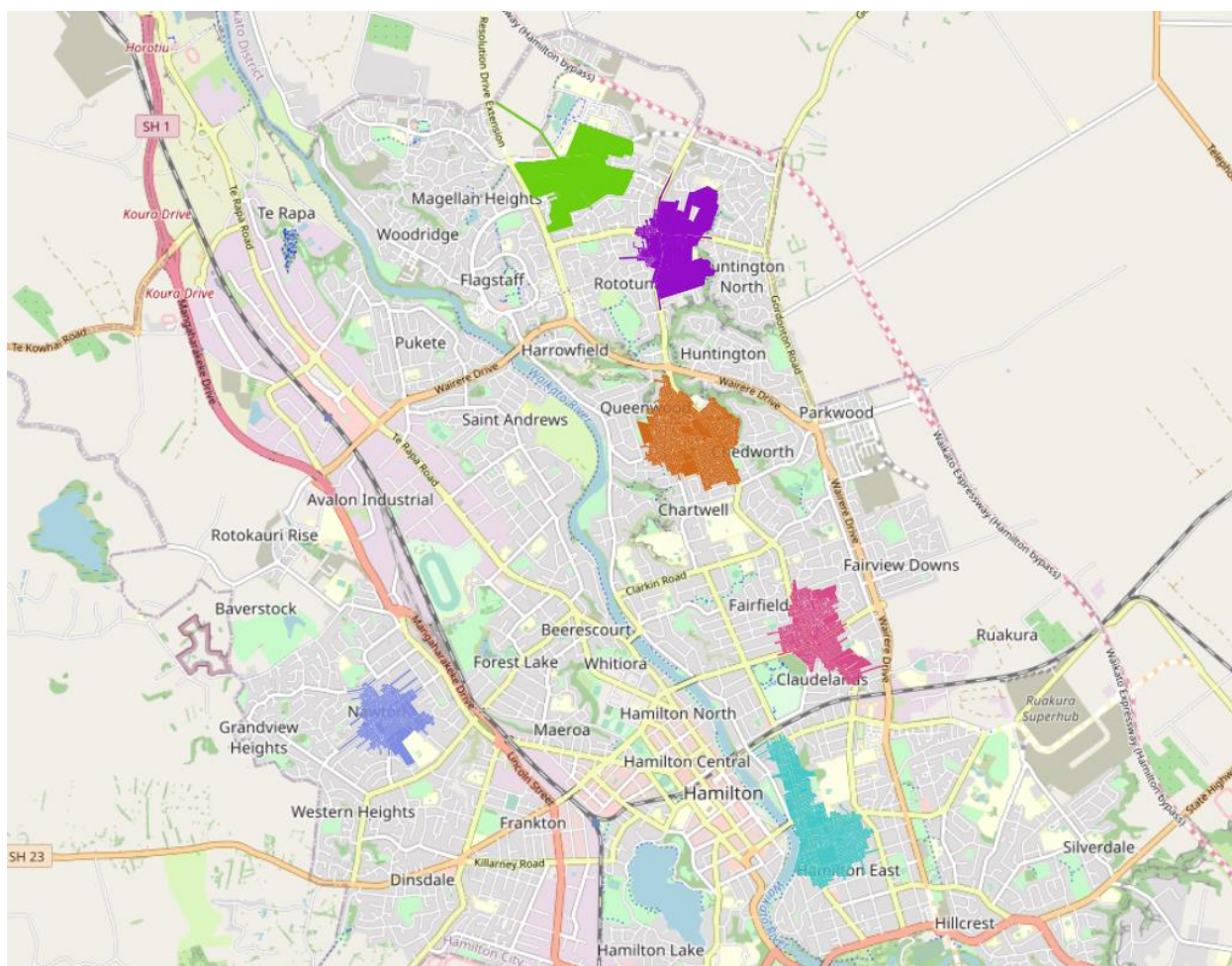


Figure 4-3: Intensification Modelling Spatial Structure of Hamilton City Main Centre Surrounds (excl. City Centre)




### *Modelled Development Options*

The modelling estimates the number of net additional dwellings that can be accommodated on each site. In line with the HDCA modelling, the Model tests for both infill and redevelopment capacity, and capacity within the existing urban vs. greenfield areas.

Within the existing urban area:

- **Infill capacity** refers to the number of additional dwellings that can be constructed within the existing urban area without the removal or demolition of any existing dwellings. It typically involves the construction of additional dwellings on the vacant areas of parcels (e.g. constructing an additional dwelling in a large back yard area of an already developed property parcel).
- **Redevelopment capacity** refers to the number of additional dwellings that can be constructed within the existing urban area through the redevelopment of sites. It involves the demolition or removal of existing dwellings on a site and the subsequent construction of a greater number of dwellings on the same site.



Within each category, a range of different dwelling typologies are modelled, which each have different site size requirements. They also have different relationships between dwelling size and land area, where smaller sites can generally be developed more efficiently with attached dwellings (than detached dwellings). The modelled dwelling typologies are outlined further in the following sub-section (Section 4.2).

## 4.2 Modelled Dwelling Typologies


A range of dwelling typologies have been modelled within each of the development pathways. The typology categories are also included within the modelling undertaken for the 2021 HDCA, but have been applied in different locations and zones. They have also been substantially recalibrated to reflect the changes in the nature of dwellings with the intensification provisions.

The following lists the dwelling typologies modelled and describes any difference in their application, within each zone, to the HDCA. It also describes the nature of the dwellings constructed within each category, as this may differ substantially to the characteristics of each typology under lower density provisions:

- **Detached dwellings:** These range from smaller two-storey detached dwellings on smaller sites (at a minimum, around 175m<sup>2</sup>-200m<sup>2</sup>) up to larger single level detached dwellings on general suburban scale sites (up to 400m<sup>2</sup>).
- **Attached dwellings:** These include a range of different dwelling typologies. They range from single level attached units up to higher density, horizontally-attached terraced houses. Dwellings within the higher density range can include two to three-level walk up terraced houses/apartments. In alignment with the ODP provisions, attached dwellings are modelled as duplex pairs in the scenarios where the MDRS are not applied. With the application of MDRS, the requirement to form duplex pairs is removed, with the modelling of multiple (up to three) attached dwellings on each site formed. These reflect terraced housing configurations.
- **Horizontally attached apartments:** These are higher density horizontally attached dwellings and are included as a separate dwelling typology to reflect the distinctions made within the ODP between different types of attached dwellings. They are generally higher density horizontally attached dwellings that are two to three-level walk up terraced houses/apartments. In some zones, the modelling applies higher density assumptions to these dwellings than the attached dwellings category.
- **Vertical apartments:** These include vertically attached apartment dwellings in buildings that are up to the maximum height enabled within the zone (up to five to eight storeys). These dwellings are modelled on larger sites within the City Centre zone, Commercial zone and, within the Medium and High Density Residential zones.

The capacity results also include maximums (across the four modelled typologies) of each of infill and redevelopment capacity within the existing urban area. A maximum combination total is also included within the greenfield areas. Here, the model returns the greatest yield for each parcel out of the infill and redevelopment capacity options. Under the plan enabled capacity, the maximum redevelopment option will almost always represent the greatest yield. However, under the commercially feasible capacity often only a subset of the development options will be feasible (e.g. infill detached dwellings). This means that





the model selects the highest yield from this subset (i.e. feasible dwellings), often resulting in smaller feasible maximums on a parcel than plan enabled maximums.

## 4.3 Plan Enabled Capacity

The plan enabled capacity estimates the total number of additional dwellings enabled through the application of planning provisions. It does not take into account the commercial feasibility of construction of dwellings or infrastructure constraints.

### *Modelling Stages*

The key stages of the plan enabled capacity modelling are outlined within the HDCA. The main changes and extensions to the MDRS modelling include:

- **Exclude selected parcels from development.** This stage involves excluding parcels from the modelling that are unlikely to be developed. A conservative approach was taken during this modelling to exclude capacity on parcels currently occupied by retirement villages. This differs to the 2021 HDCA where these sites were not excluded.
- **Defining the number of sites that can be formed through subdivision of each parcel/vacant area.** This step identifies the number of sites that can be formed through applying the minimum site areas required for subdivision. These are based on the existing ODP and proposed Plan Change 12 zones minimum site areas for each base zone.
- **Estimate the potential number of dwellings on each formed site.** This additional stage applies assumptions on the land area required to construct a dwelling of each typology (excluding vertical apartments, where the number is instead mainly limited by height allowances) and then calculates how many dwellings can be accommodated within each of the formed sites. In line with the MDRS, the model allows for up to three dwellings to be accommodated on each formed site. When MDRS is not applied, the model allocates up to the number of dwellings permitted within each site under the Plan<sup>14</sup>.

The model tests for three dwelling typologies – standalone (detached) dwellings, attached dwellings and apartment dwellings. Larger minimum land areas are required to accommodate detached dwellings than attached dwellings.

The input table in Section 4.4 identifies the input assumptions for minimum land area required for each dwelling typology within each zone and scenario. These minimum land areas take into account the maximum densities observed in recent developments in other locations in relation to the average land area required to accommodate each dwelling. They have also been tested for their ability to accommodate a minimum floorspace area within a 3-dimensional building footprint (up to 3 storeys) and outdoor living space requirements.

- **Infill modelling.** A geometrical approach has been undertaken within FME GIS modelling software to identify the vacant areas of existing parcels that are suitable for infill development. The approach is outlined in more detail within the 2021 HDCA and associated documentation, and has been modified in the following ways to reflect the MDRS and Policy 3 requirements:
  - The setbacks from site boundaries as set out within the MDRS have been applied.

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<sup>14</sup> The model has included duplex pairs within the General Residential, Residential Intensification and Medium Density Residential zones.

- Vacant areas are tested for their potential road access.
- Road accessible vacant areas are then tested for their ability to accommodate dwellings through the application of shape factor input assumptions. Under the MDRS modelling, up to three shape factors on each site were tested (compared to 1 to 2 shape factors under the HDCA modelling). The number of shape factors accommodated determined the number of dwellings tested on each site. The shape factor input assumptions are included within the input table.
- Infill areas were then adjusted to allow for planning requirements to be met for any existing dwellings on the remainder of the site (using the MDRS parameters). The final areas were then input into the Residential Capacity MDRS Model to test for plan enabled and feasible capacity.
- A larger shape factor was used to estimate whether a vertically-attached apartment building would be likely to fit on each infill site under the Policy 3 modelled scenarios.

## 4.4 Modelling Density Inputs

Minimum subdivision area requirements and land areas per dwelling formed inputs to the model. These are the initial land areas required to form a site within each zone, which could then be tested to accommodate up to three dwellings; and the land areas required, per dwelling, within these formed sites.

The minimum subdivision area requirements were supplied by HCC and reflect the subdivision requirements of the ODP and Plan Change 12 proposed zone structure<sup>15</sup>. The minimum land area requirements were then established as input assumptions within the model. These are contained below in Table 4-1<sup>16</sup>.

The development patterns enabled under the MDRS and Policy 3 are substantially different to those that are currently provided for across some parts of the city's urban area within the District Plan. If taken up, they would represent a significant step-change in density to past development patterns that have occurred across parts of the city's urban areas. If the MDRS provisions are applied to the existing underlying zoning structure (and vertically-attached apartment buildings enabled under Policy 3), then they would produce a range of medium to higher density dwelling typologies.

Initial three-dimensional modelling work undertaken by the HCC GIS team estimated the land areas required to accommodate different dwelling sizes and typologies. These were analysed as a starting point to determine parameters to apply to the development patterns within the city's urban area. The land areas per attached and apartment dwelling within each site reflect one-third of the initial site formation area to accommodate three dwellings upon each site. The viability of these densities was triangulated with the initial HCC modelling. Larger minimum areas (based on analysis of development patterns in other urban

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<sup>15</sup> Assumptions were applied, relative to the rest of the zoning structure, where minimum subdivision areas were not available, or where densities used a maximum site area control (such as the Residential Intensification Zone).

<sup>16</sup> This table contains a combination of the ODP and proposed Plan Change 12 zones as both sets of zoning are used within the modelling. Parcels are assigned the ODP zones in Scenario 1, and then are assigned the proposed Plan Change 12 zones in Scenario 2 and Scenario 3.



economies) were assumed to be required for detached dwellings to reflect the site area required to physically construct a standalone dwelling.

Zones with larger minimum subdivision site areas contained larger minimum land area per dwelling requirements. These were set at a minimum of one third of the subdivision area to ensure the model allocated only up to three dwellings per site.

Importantly, Table 4-1 contains the *minimum* land areas which are formed within the model to accommodate dwellings. These have been applied to the existing spatial structure of the latest LINZ parcel file, with sites formed using the existing ratings parcel boundaries. In most cases, the existing parcel boundaries exceed the minimum areas, meaning that sites (and corresponding land areas per dwelling) are formed at lower densities than the minimums within the table<sup>17</sup>.

### *Greenfield Areas*

Within the greenfield areas, yields were applied in the first instance from structure plans or developer plans, and then in line with the observed density at the adjacent urban edge. The model was required to adopt these densities for the initial site formation to reflect the structure/development plan yields.

Other greenfield areas (not covered by structure/developer plans) were multiplied by 70% to include an allowance of 30% of the developable area for roads and reserves. The MDRS were then applied to the formed lots (within the net parcelled area) to accommodate up to three dwellings on each site.

### *Infrastructure Capacity Overlay (ICO) Area*

Alternative density controls were applied to properties within the ICO area when it was applied within the modelling scenarios. A density control of 200m<sup>2</sup> per dwelling (net area) was applied within the General Residential Zone, and 150m<sup>2</sup> per dwelling (net area) within the Medium Density Residential Zone<sup>18</sup>. The requirement for these dwellings to form duplex pairs was removed under the MDRS modelled scenarios. This meant that some increase in plan enabled density was still able to occur within the ICO area<sup>19</sup>.

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<sup>17</sup> For example, if a General Residential Zone parcel of 750m<sup>2</sup> were entered into the model, it would form only one initial site due to insufficient land area to form two sites at the zone's minimum subdivision requirement of 400m<sup>2</sup>. Consequently, the model would construct dwellings at an average land area of 250m<sup>2</sup> per dwelling.

<sup>18</sup> Gross densities of 210m<sup>2</sup> per dwelling and 160m<sup>2</sup> per dwelling were applied within the General Residential Zone and the Medium Density Residential Zone respectively to achieve the net densities. This creates an allowance for access way areas that do not contribute to the minimum site area requirements. This is likely to be a conservative approach as not all sites will require an allowance for accessways to achieve the net densities.

<sup>19</sup> For example, under the ODP, a 600m<sup>2</sup> parcel within the General Residential Zone could accommodate one duplex pair (as the plan requires 400m<sup>2</sup> to accommodate a duplex pair), meaning that the resulting density would be 300m<sup>2</sup> land area per dwelling unit. With the removal of the requirement to form attached dwellings in pairs, the same parcel could potentially accommodate three dwellings at the 200m<sup>2</sup> land area per dwelling alternative density control.



Table 4-1: Minimum Site Area Subdivision, Land Area per Dwelling and Dwelling Floorspace Minimum Modelling Inputs by Zone and Typology (Base Zones and MDRS)

HCC ODP/Plan Change 12 Base Zone	Dwelling Typology	Initial Subdivision Requirement - Land Area (m2)	Minimum Land Area per Dwelling (m2)		Corresponding Dwelling Size - Floorspace (m2)	
			Base Zones	MDRS	Base Zones <sup>1</sup>	MDRS
High Density Residential Zone	Detached	175	175	175	TBC	125
High Density Residential Zone	Attached (duplex/other)	150	150	100	TBC	150
High Density Residential Zone	Apartments (horizontally attached)	150	150	50	TBC	55
Residential Intensification Zone	Detached	300	300	175	TBC	125
Residential Intensification Zone	Attached (duplex/other)	300	150	133	TBC	152
Residential Intensification Zone	Apartments (horizontally attached)	300	150	100	TBC	150
Medium Density Residential Zone	Detached	300	300	200	TBC	135
Medium Density Residential Zone	Attached (duplex/other)	300	150	100	TBC	150
Medium Density Residential Zone	Apartments (horizontally attached)	300	150	100	TBC	150
General Residential Zone	Detached	400	400	200	TBC	135
General Residential Zone	Attached (duplex/other)	400	200	133	TBC	152
General Residential Zone	Apartments (horizontally attached)	400	n/a	133	TBC	152
Special Heritage Zone	Detached	600	600	200	TBC	135
Special Heritage Zone	Attached (duplex/other)	600	n/a	200	TBC	155
Special Heritage Zone	Apartments (horizontally attached)	600	n/a	200	TBC	155
Special Natural Zone	Detached	600	600	200	TBC	135
Special Natural Zone	Attached (duplex/other)	600	n/a	200	TBC	155
Special Natural Zone	Apartments (horizontally attached)	600	n/a	200	TBC	155
Special Residential Zone	Detached	600	600	200	TBC	135
Special Residential Zone	Attached (duplex/other)	600	n/a	200	TBC	155
Special Residential Zone	Apartments (horizontally attached)	600	n/a	200	TBC	155
Temple View Zone	Detached	600	600	200	TBC	135
Temple View Zone	Attached (duplex/other)	600	n/a	200	TBC	155
Temple View Zone	Apartments (horizontally attached)	600	n/a	200	TBC	155
Rototuna North East Special Character Zone	Detached	500	500	200	TBC	135
Rototuna North East Special Character Zone	Attached (duplex/other)	500	n/a	167	TBC	153
Rototuna North East Special Character Zone	Apartments (horizontally attached)	500	n/a	167	TBC	153
Peacocke Character Zone	Detached	400	400	200	TBC	135
Peacocke Character Zone	Attached (duplex/other)	400	n/a	133	TBC	152
Peacocke Character Zone	Apartments (horizontally attached)	400	n/a	133	TBC	152
Large Lot Residential	Detached	2,500	2500	833	TBC	200

Source: M.E Hamilton Residential Capacity Model, 2022.

<sup>1</sup> Base Zone dwelling size inputs will be detailed following subsequent modelling stages.



## 5 Modelled Plan Enabled Capacity

This section contains the modelled results of the plan enabled capacity. It shows the effect of the intensification provisions on capacity as well as the effect of the qualifying matters on the capacity enabled under the planning provisions.

Outputs are included for each modelled scenario as well as for each of the qualifying matters. The summary tables show the capacity by typology within each zone across the existing urban and greenfield areas. More detailed information of capacity at a parcel level has been supplied as GIS files to HCC.

The capacity results are net additional dwellings where the existing dwellings have been removed from the calculated gross yields on each parcel. The tables within the following sub-sections show the net additional dwellings in accordance with the capacity structure outlined in Section 4.1.

The first portion of the table shows the modelled capacity within each typology for infill development, including a maximum yield across the three typologies<sup>20</sup>. The middle section contains the redevelopment capacity across the three options, including maximums for redevelopment as well as redevelopment and infill options combined. The remainder of the table shows the greenfield capacity in this structure.

Importantly, the columns within the table are not additive. The maximum columns show the maximum yield combinations within each development pathway (infill, redevelopment or greenfield), as well as the final column containing the total across the greenfield and existing urban areas.


### 5.1 Scenario 1: Baseline Current Planning Provisions Capacity

This section contains the existing baseline capacity modelled on the ODP provisions. It does not contain any application of intensification provisions or qualifying matters. The modelled approach here is the closest to the 2021 HDCA. The key difference is the exclusion, from the infill capacity, of developing an additional dwelling on already developed sites to form a duplex pair with an existing dwelling.

The modelled plan enabled capacity is contained in Table 5-1. It shows the net additional dwellings that are enabled by the ODP. In total, there is an estimated plan enabled capacity for an additional 140,600 dwellings across the existing urban and greenfield areas combined. Over three-quarters (77%; 108,500 dwellings) of the capacity is within the existing urban area. The large majority of this capacity is redevelopment capacity, which is over 12 times the size of infill capacity.

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<sup>20</sup> The maximum yield has been calculated at the parcel level and then aggregated to each location within the table. This means that the maximums within the commercially feasible tables will in most cases not align with the largest column value by typology. This is because some parcels may have feasible development options across higher density dwelling options, while others may only have feasible capacity for lower yield options. Therefore, the aggregation of feasible yields at the parcel level is a combination of some development within higher density typologies, and others at lower density typologies.



Over one-third (38%; 41,000 dwellings) of the plan enabled capacity within the existing urban area is in the form of apartment dwellings within the City Centre. Most of these are located within the Downtown and City Living Precincts, and would be in the form of vertically-attached apartment buildings. The market for these types of apartments is currently small in Hamilton, but is likely to increase through time. A smaller share (1,100) of the City Centre apartments are located within the Ferrybank Precinct, and are modelled in the form of three-level walk-up apartments that are more established.

Across the remainder of the existing urban area, there is a modelled plan enabled redevelopment capacity for 67,500 additional dwellings. This suggests that Hamilton City could accommodate over double its existing household base if most of the suburban residential areas outside of the City Centre were redeveloped to the highest intensities enabled under the Plan.

Under the current provisions, most of the suburban redevelopment capacity is in the form of attached dwellings, equating to over five times the detached dwelling redevelopment capacity. This directly reflects the differences in minimum site sizes enabled under the Plan. Under the current provisions, these would occur in the form of horizontally-attached dwellings, predominantly duplex pairs. Hamilton City has an increasing share of new building activity as attached dwellings, with around two-thirds of the consents for new dwellings over the past five years issued for attached dwellings.

The largest volume of the attached dwelling capacity occurs within the General Residential Zone, where there is a modelled redevelopment capacity for an additional 62,00 attached dwellings in the form of duplex pairs. This reflects the large geographic extent of the zone. The next largest redevelopment capacity occurs within the Residential Intensification Zone, where there is a modelled capacity for an additional 4,300 attached dwellings.

The detached dwelling capacity within the existing urban area is substantially lower, with a redevelopment capacity for an additional 12,300 dwellings, and an infill capacity of around 3,000 dwellings. The large majority of this capacity occurs within the General Residential Zone.

Hamilton City has a further capacity for an additional 32,000 dwellings within the greenfield areas, which equates to around half of the existing household base. It is noted that nearly one-third (31%; 9,800 dwellings) of this estimated capacity occurs within the Templeview area, equating to Hamilton's largest greenfield areas. Templeview does not include any structure/developer plan information, all occurs within the Future Urban Zone (where General Residential Zone provisions have been applied from the HCC assumption) and is not planned to be served by infrastructure till towards the end of the long-term. Under the modelling approach, the ODP provisions therefore calculate the plan enabled capacity, meaning that the maximum yield consists all of attached dwellings.

If Templeview were instead developed at densities closer to the existing planning provisions for detached dwellings, then the estimated yield would be around 5,100 dwellings. This lower bound estimate would reduce Hamilton's total greenfield capacity to around 27,400 dwellings.

The greenfield is more evenly distributed across the detached and attached dwelling typologies, and may result in growth patterns (under the current provisions) more focused on detached dwellings if it were assumed that Templeview capacity were developed at a lower density than that enabled by the Plan. Around half of this capacity (15,300 dwellings) is contained within areas covered by structure

plan/developer plan yields (reflect the yields from these plans). The densities calculated from these plans suggest that it is likely that between half and two thirds may be developed as detached dwellings.

The next largest areas of greenfield capacity occur in Rotokauri (8,800 dwellings) and Peacocke (7,300 dwellings). All of the capacity within Peacocke, and over half (61%) of the capacity within Rotokauri is contained within structure/developer plans.

Table 5-1: Hamilton City Plan Enabled Capacity by Dwelling Typology Zone and Urban Structure: ODP Base Zones and No MDRS

	INFILL					REDEVELOPMENT					Max Infill or Redevelopment	GREENFIELD					Max Existing Urban + Greenfield
	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Infill	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Redevelopment		Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Greenfield	
<b>Hamilton Operative District Plan Zone</b>																	
Precinct 1 - Downtown Precinct	-	-	-	1,500	1,500	-	-	-	16,700	16,700	16,800	-	-	-	-	-	16,800
Precinct 2 - City Living Precinct	-	-	-	1,400	1,400	-	-	-	23,000	23,000	23,100	-	-	-	-	-	23,100
Precinct 3 - Ferrybank Precinct	-	-	-	30	30	-	-	-	1,100	1,100	1,100	-	-	-	-	-	1,100
High Density Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Intensification Zone	200	400	400	-	400	1,100	4,100	4,300	-	4,300	4,300	-	-	-	-	-	4,300
Medium Density Residential Zone	100	300	300	-	300	200	800	1,000	-	1,000	1,000	-	-	-	-	-	1,000
General Residential Zone	2,500	5,100	-	-	5,100	10,800	62,000	-	-	62,000	62,000	-	-	-	-	-	62,000
Special Heritage Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special Natural Zone	10	-	-	-	10	10	-	-	-	10	10	-	-	-	-	-	10
Special Residential Zone	40	-	-	-	40	100	-	-	-	100	100	-	-	-	-	-	100
Temple View Zone	10	-	-	-	10	10	-	-	-	10	10	-	-	-	-	-	10
Rototuna North East Special Character Zone	50	-	-	-	50	50	-	-	-	50	50	-	-	-	-	-	50
Peacocke Character Zone	10	-	-	-	10	10	-	-	-	10	10	-	-	-	-	-	10
Large Lot Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jacks Landing SHA	-	-	-	-	-	100	-	100	-	100	100	-	-	-	-	-	100
Future Urban Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Te Rapa North	-	-	-	-	-	-	-	-	-	-	-	900	-	900	-	900	900
Rotokauri	-	-	-	-	-	-	-	-	-	-	-	7,500	2,500	6,400	-	8,800	8,800
Rototuna	-	-	-	-	-	-	-	-	-	-	-	2,300	400	1,700	-	2,500	2,500
Ruakura	-	-	-	-	-	-	-	-	-	-	-	1,400	2,800	1,900	-	2,800	2,800
Templeview	-	-	-	-	-	-	-	-	-	-	-	5,100	9,800	-	-	9,800	9,800
Peacocke Stage 1B	-	-	-	-	-	-	-	-	-	-	-	300	-	300	-	300	300
Peacocke Stage 2	-	-	-	-	-	-	-	-	-	-	-	7,000	-	7,000	-	7,000	7,000
<b>TOTAL</b>	<b>3,000</b>	<b>5,700</b>	<b>700</b>	<b>2,900</b>	<b>8,800</b>	<b>12,300</b>	<b>66,800</b>	<b>5,400</b>	<b>40,800</b>	<b>108,300</b>	<b>108,500</b>	<b>24,500</b>	<b>15,500</b>	<b>18,200</b>	<b>-</b>	<b>32,100</b>	<b>140,600</b>

Source: M.E Hamilton Residential Capacity Model, 2022.

The planning infrastructure timing of the Hamilton's baseline modelled greenfield capacity is shown in Table 5-2. This shows that around 7% of the capacity is currently (as at 2021) served by infrastructure, with nearly all of this located within Rototuna. A further 10% (3,200 dwellings; 5,400 cumulative dwellings) is planned to have infrastructure supplied within the short-term (to 2024). This predominantly occurs within Peacocke, with a sizeable portion also in Ruakura.

The largest shares of Hamilton's greenfield capacity served by infrastructure are planned to occur within the medium-term, by which time nearly two-thirds (62%; 19,900 dwellings) will occur within infrastructure-served areas. Additional infrastructure-served capacity is planned across several main locations around the edge of the city. The largest among these is Rotokauri, generating a large northern urban expansion for Hamilton.

The main infrastructure additions within the long-term are planned to occur within Templeview, with a smaller share in Peacocke.

Table 5-2: Infrastructure Timing of Modelled Greenfield Capacity: ODP Base Zones and No MDRS

	Net Additional Dwellings (within time period)					Net Additional Dwellings (cumulative from 2021)						
	Current (2021)	Short- Term (2022- 2024)	Medium- Term (2025- 2031)	Long-Term (2032- 2051)	Longer- Term (2052+)	TOTAL	Current (2021)	Short- Term (2021- 2024)	Medium- Term (2021- 2031)	Long-Term (2021- 2051)	Longer- Term (2021- 2051+)	TOTAL
Greenfield Location												
Te Rapa North	-	-	900	-	-	900	-	-	900	900	900	900
Rotokauri	-	200	7,900	-	700	8,800	-	200	8,100	8,100	8,800	8,800
Rototuna	2,200	-	300	-	-	2,500	2,200	2,200	2,500	2,500	2,500	2,500
Ruakura	40	800	2,000	-	-	2,800	40	900	2,800	2,800	2,800	2,800
Templeview	-	-	-	9,800	-	9,800	-	-	-	9,800	9,800	9,800
Peacocke Stage 1B	-	-	300	-	-	300	-	-	300	300	300	300
Peacocke Stage 2	-	2,200	3,100	1,700	-	7,000	-	2,200	5,300	7,000	7,000	7,000
TOTAL	2,200	3,200	14,500	11,500	700	32,100	2,200	5,400	19,900	31,400	32,100	32,100
Share	7%	10%	45%	36%	2%	100%	7%	17%	62%	98%	100%	100%

Source: HCC Greenfield Capacity Database and M.E Hamilton Residential Capacity Model, 2022.

## 5.2 Scenario 2: Unmodified Intensification Provisions

This section contains the modelling plan enabled capacity when the intensification provisions are applied without any modification from qualifying matters. It contains the proposed Plan Change 12 base zoning structure with the Policy 3 vertical height limits for vertically-attached dwellings in core areas of accessibility. The MDRS are applied to these base zones providing intensification on a citywide basis. This scenario contains the largest plan enabled capacity as the intensification provisions are applied to the fullest extent without any reduction.

Scenario 2 shows that the intensification provisions would enable large scale increases in capacity across most of the existing urban environment. This would occur around areas of higher accessibility as well as the general suburban area. While there is some differentiation in relation to the medium-density provisions between the higher accessibility areas (High and Medium Density Residential zones) and the rest of the suburban area (General Residential Zone), the inclusion of provision for vertically-attached apartments (Policy 3) within the former creates the largest difference in development form (if taken up).

The modelled plan enabled capacity under Scenario 2 is contained in Table 5-3. The modelling shows that the application of the intensification provisions increases Hamilton's plan enabled capacity to an additional 330,600 dwellings, which is between 2 and 2.5 times the plan enabled capacity under the current ODP provisions. This is an increase of plan enabled capacity of 190,000 additional dwellings from the baseline provisions.

The scale of capacity enabled under this scenario is also very large relative to the existing household base and long-term demand. It equates to over five times the existing household base and nearly nine times the projected long-term dwelling demand increase.

Most (86%; 284,000 additional dwellings) of the capacity under Scenario 2 occurs within the existing urban environment. This is due to the effect of the intensification provisions where both large scale capacity increases have occurred through the vertical apartment building capacity (Policy 3) as well as across the general suburban area through medium density upon existing sites (MDRS).

The largest increases in capacity have occurred within the redevelopment capacity for apartments. This is spread across both the vertically attached apartments as well as the horizontally-attached apartments that would be likely to occur as more intensive terraced housing. The modelled scenario provides for 175,000



additional vertically attached apartment dwellings, up from the previous 40,800 apartments within the City Centre. These occur across the City Centre (up slightly to 43,400 dwellings) and the Medium and High Density Residential Zones.

While there is some overlap between the vertical and horizontally-attached apartment capacity, a large amount of horizontally-attached capacity remains in the outside of the vertical development areas. This can be seen in the large amount of apartment redevelopment capacity (+107,800 additional dwellings) within the General Residential Zone where higher density vertical development is not provided for. Apartment capacity within this zone reflects medium-density attached development in the form of terraced housing. Part of this increase occurs through the removal of the requirement to form duplex pairs<sup>21</sup> and the yield increase (of up to three dwellings) enabled on each site under the MDRS.

The modelling outputs show that the intensification provisions would produce substantially large capacity for attached dwellings across a range of densities and locations.

The intensification provisions also substantially increase the capacity for detached standalone dwellings across the existing urban area. Under this scenario, the capacity increases to an additional 88,100 detached dwellings through redevelopment or 8,500 additional dwellings through infill development. These are large increases from Scenario 1. However, if constructed at the Scenario 2 densities, the nature of these dwellings would differ substantially to most of Hamilton's detached dwelling stock, of which a high proportion are single-level dwellings on full sites (of 400m<sup>2</sup>+). The detached dwellings modelled here are generally smaller-two level dwellings on much smaller sites (tending toward 200m<sup>2</sup> per dwelling), with very little outdoor land areas.

The application of intensification provisions also enables some increase in the greenfield capacity. Under this scenario, there is capacity for an additional 46,700 dwellings – up from 32,100 dwellings under the existing ODP base scenario. The increase in greenfield capacity (+45% from Scenario 1) is smaller due to the limited extent to which the intensification provisions were applied within the modelling (as set out in Section 4).

The largest increases in greenfield capacity are modelled to occur across several points of Hamilton's urban edge. These include Ruakura, Templeview and Rotokauri, and a smaller share in Rototuna.

The modelling infrastructure timing of greenfield capacity under Scenario 2 is shown in Table 5-4. The timing of additional infrastructure capacity is similar to that under Scenario 1, but with larger net additions within each time period as a result of the intensification provisions. The largest differences to the existing ODP provisions occur within Ruakura, where the MDRS and Policy 3 provisions substantially increase plan enabled capacity within the Medium Density Residential zoned area. This occurs within the short to medium-term, with further additional capacity in Templeview within the long-term.

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<sup>21</sup> Even if apartment dwellings occurred at the existing 200m<sup>2</sup> land area provision for General Residential Zone duplex dwellings, it introduces the possibility to construct up to three dwellings on sites that are too small to accommodate two duplex pairs (i.e. 4 dwellings).

Table 5-3: Hamilton City Plan Enabled Capacity by Dwelling Typology Zone and Urban Structure: Proposed Plan Change 12 Base Zones and MDRS

	INFILL					REDEVELOPMENT					Max Infill or Redevelopment	GREENFIELD					Max Existing Urban + Greenfield
	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Infill	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Redevelopment		Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Greenfield	
<b>Hamilton Zone</b>																	
Precinct 1 - Downtown Precinct	-	-	-	1,500	1,500	-	-	-	16,700	16,700	16,800	-	-	-	-	-	16,800
Precinct 2 - City Living Precinct	-	-	-	1,400	1,400	-	-	-	23,000	23,000	23,100	-	-	-	-	-	23,100
Precinct 3 - Ferrybank Precinct	-	-	-	70	70	-	-	-	3,700	3,700	3,700	-	-	-	-	-	3,700
High Density Residential	800	1,100	2,700	5,000	5,300	4,900	6,500	27,000	52,800	52,900	52,900	-	-	-	-	-	52,900
Residential Intensification Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medium Density Residential Zone	1,100	2,200	2,600	7,300	7,300	6,300	25,400	25,400	78,900	79,000	79,000	-	-	-	-	-	79,000
General Residential Zone	6,600	9,100	9,800	-	9,800	76,900	107,800	107,800	-	107,800	108,300	-	-	-	-	-	108,300
Special Heritage Zone	10	10	10	-	10	20	20	20	-	20	20	-	-	-	-	-	20
Special Natural Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special Residential Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temple View Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rototuna North East Special Character Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peacocke Character Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jacks Landing SHA	-	-	-	-	-	100	100	100	-	100	100	-	-	-	-	-	100
Future Urban Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Te Rapa North	-	-	-	-	-	-	-	-	-	-	-	900	-	900	-	900	900
Rotokauri	-	-	-	-	-	-	-	-	-	-	-	10,700	6,700	12,000	-	12,000	12,000
Rototuna	-	-	-	-	-	-	-	-	-	-	-	2,900	1,400	3,200	-	3,200	3,200
Ruakura	-	-	-	-	-	-	-	-	-	-	-	2,000	4,300	4,300	7,000	8,500	8,500
Templeview	-	-	-	-	-	-	-	-	-	-	-	10,100	14,800	14,800	-	14,800	14,800
Peacocke Stage 1B	-	-	-	-	-	-	-	-	-	-	-	300	-	300	-	300	300
Peacocke Stage 2	-	-	-	-	-	-	-	-	-	-	-	7,000	-	7,000	-	7,000	7,000
<b>TOTAL</b>	<b>8,500</b>	<b>12,500</b>	<b>15,000</b>	<b>15,300</b>	<b>25,300</b>	<b>88,200</b>	<b>139,800</b>	<b>160,300</b>	<b>175,100</b>	<b>283,300</b>	<b>284,000</b>	<b>33,900</b>	<b>27,300</b>	<b>42,500</b>	<b>7,000</b>	<b>46,700</b>	<b>330,600</b>

Source: M.E Hamilton Residential Capacity Model, 2022.

Table 5-4: Infrastructure Timing of Modelled Greenfield Capacity: Proposed Plan Change 12 Base Zones and MDRS

Greenfield Location	Net Additional Dwellings (within time period)						Net Additional Dwellings (cumulative from 2021)					
	Current (2021)	Short-Term (2022-2024)	Medium-Term (2025-2031)	Long-Term (2032-2051)	Longer-Term (2052+)	TOTAL	Current (2021)	Short-Term (2021-2024)	Medium-Term (2021-2031)	Long-Term (2021-2051)	Longer-Term (2021-2051+)	TOTAL
Te Rapa North	-	-	900	-	-	900	-	-	900	900	900	900
Rotokauri	-	200	9,600	-	2,200	12,000	-	200	9,800	9,800	12,000	12,000
Rototuna	2,600	-	600	-	-	3,200	2,600	2,600	3,200	3,200	3,200	3,200
Ruakura	100	3,000	5,400	-	-	8,500	100	3,100	8,500	8,500	8,500	8,500
Templeview	-	-	-	14,800	-	14,800	-	-	-	14,800	14,800	14,800
Peacocke Stage 1B	-	-	300	-	-	300	-	-	300	300	300	300
Peacocke Stage 2	-	2,200	3,100	1,700	-	7,000	-	2,200	5,300	7,000	7,000	7,000
<b>TOTAL</b>	<b>2,700</b>	<b>5,400</b>	<b>19,800</b>	<b>16,500</b>	<b>2,200</b>	<b>46,700</b>	<b>2,700</b>	<b>8,100</b>	<b>27,900</b>	<b>44,400</b>	<b>46,700</b>	<b>46,700</b>
<b>Share</b>	<b>6%</b>	<b>11%</b>	<b>42%</b>	<b>35%</b>	<b>5%</b>	<b>100%</b>	<b>6%</b>	<b>17%</b>	<b>60%</b>	<b>95%</b>	<b>100%</b>	<b>100%</b>

Source: HCC Greenfield Capacity Database and M.E Hamilton Residential Capacity Model, 2022.

## 5.3 Scenario 3: Modified Intensification Provisions

This section contains the plan enabled capacity when the proposed intensification provisions are modelled together with qualifying matters. The MDRS have been applied to the proposed Plan Change 12 base zones. The additional density enabled by these intensification provisions is restricted across parts of the city's urban environment through the application of qualifying matters (as described in Section 3).

The modelled plan enabled capacity within each zone in Scenario 3 is contained in the tables below. Table 5-5 contains the capacity outputs where the ICO has been applied.

Table 5-5: Hamilton City Plan Enabled Capacity by Dwelling Typology Zone and Urban Structure: Proposed Plan Change 12 Base Zones and MDRS with Qualifying Matters (ICO and HHAs)

	INFILL					REDEVELOPMENT					Max Infill or Redevelopment	GREENFIELD					Max Existing Urban + Greenfield
	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Infill	Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Redevelopment		Detached Standalone	Duplex Attached	Horizontally Attached Apartments	Vertically Attached Apartments	Max Greenfield	
<b>Hamilton Zone</b>																	
Precinct 1 - Downtown Precinct	-	-	-	1,500	1,500	-	-	-	14,800	14,800	14,900	-	-	-	-	-	14,900
Precinct 2 - City Living Precinct	-	-	-	1,400	1,400	-	-	-	23,000	23,000	23,100	-	-	-	-	-	23,100
Precinct 3 - Ferrybank Precinct	-	-	-	70	70	-	-	-	3,500	3,500	3,500	-	-	-	-	-	3,500
High Density Residential	800	1,100	2,700	4,900	5,200	4,900	6,400	26,900	52,300	52,500	52,500	-	-	-	-	-	52,500
Residential Intensification Zone	-	-	10	-	10	10	50	60	-	60	60	-	-	-	-	-	60
Medium Density Residential Zone	1,100	1,800	2,000	2,100	3,400	6,300	15,000	15,000	19,700	29,000	29,100	-	-	-	-	-	29,100
General Residential Zone	5,600	5,900	6,100	-	6,100	62,600	63,700	63,700	-	64,100	64,400	-	-	-	-	-	64,400
Special Heritage Zone	10	10	10	-	10	20	20	20	-	20	20	-	-	-	-	-	20
Special Natural Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special Residential Zone	20	-	20	-	20	60	-	60	-	60	60	-	-	-	-	-	60
Temple View Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rototuna North East Special Character Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peacocke Character Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jacks Landing SHA	-	-	-	-	-	100	100	100	-	100	100	-	-	-	-	-	100
Future Urban Zone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Te Rapa North	-	-	-	-	-	-	-	-	-	-	-	900	-	900	-	900	900
Rotokauri	-	-	-	-	-	-	-	-	-	-	-	10,700	6,700	12,000	-	12,000	12,000
Rototuna	-	-	-	-	-	-	-	-	-	-	-	2,500	900	2,600	-	2,600	2,600
Ruakura	-	-	-	-	-	-	-	-	-	-	-	2,000	4,200	4,200	7,000	8,400	8,400
Templeview	-	-	-	-	-	-	-	-	-	-	-	10,100	14,800	14,800	-	14,800	14,800
Peacocke Stage 1B	-	-	-	-	-	-	-	-	-	-	-	300	-	300	-	300	300
Peacocke Stage 2	-	-	-	-	-	-	-	-	-	-	-	7,000	-	7,000	-	7,000	7,000
<b>TOTAL</b>	<b>7,500</b>	<b>8,800</b>	<b>10,800</b>	<b>10,000</b>	<b>17,700</b>	<b>74,000</b>	<b>85,400</b>	<b>105,900</b>	<b>113,200</b>	<b>187,200</b>	<b>187,800</b>	<b>33,500</b>	<b>26,600</b>	<b>41,900</b>	<b>7,000</b>	<b>46,000</b>	<b>233,800</b>

Source: M.E Hamilton Residential Capacity Model, 2022.

### Capacity Enabled Under Scenario 3

Table 5-5 shows that there is a total modelled plan enabled capacity for an additional 233,800 dwellings under Scenario 3. Four-fifths (80%; 187,800 additional dwellings) of this would occur within the existing urban area, and the remaining fifth (20%; 46,000 dwellings) within the greenfield area. The total capacity amounts to nearly four times the existing household base and over six times the projected long-term dwelling demand.

Scenario 3 contains sizeable amounts of capacity across a range of different dwelling densities and types. It provides for a large amount higher density dwelling capacity (113,200 additional dwellings) in the form of vertically attached apartment dwellings. These are concentrated into the central part of Hamilton City – in the City Centre and surrounding High and Medium Density Residential Zone areas. The application of the ICO restricts this capacity around other centres across the urban area.

The modelled scenario also provides for sizeable amounts of medium density residential capacity across a range of dwelling typologies. This capacity is spread more widely across the urban area as it is still able to occur under the ICO alternative densities. In total, there is a redevelopment capacity for an additional 105,900 attached dwellings, with over half occurring within the General Residential Zone.

Scenario three also provides for a sizeable capacity for detached standalone dwellings (+74,000 additional detached dwellings). However, if constructed at these densities, these would differ substantially to the a larger proportion of the detached dwelling development that has historically occurred within Hamilton City.

The infrastructure timing of greenfield capacity under Scenario 3 is shown in Table 5-6. The largest differences to the existing ODP provisions occur within Ruakura, where the MDRS and Policy 3 provisions substantially increase plan enabled capacity within the Medium Density Residential zoned area. This occurs within the short to medium-term, with further additional capacity in Templeview within the long-term.



Table 5-6: Infrastructure Timing of Modelled Greenfield Capacity: Proposed Plan Change 12 Base Zones and MDRS with Qualifying Matters (ICO and HHAs)

Greenfield Location	Net Additional Dwellings (within time period)						Net Additional Dwellings (cumulative from 2021)					
	Current (2021)	Short-Term (2022-2024)	Medium-Term (2025-2031)	Long-Term (2032-2051)	Longer-Term (2052+)	TOTAL	Current (2021)	Short-Term (2021-2024)	Medium-Term (2021-2031)	Long-Term (2021-2051)	Longer-Term (2021-2051+)	TOTAL
Te Rapa North	-	-	900	-	-	900	-	-	900	900	900	900
Rotokauri	-	200	9,600	-	2,200	12,000	-	200	9,800	9,800	12,000	12,000
Rototuna	2,300	-	400	-	-	2,600	2,300	2,300	2,600	2,600	2,600	2,600
Ruakura	100	3,000	5,300	-	-	8,400	100	3,100	8,400	8,400	8,400	8,400
Templeview	-	-	-	14,800	-	14,800	-	-	-	14,800	14,800	14,800
Peacocke Stage 1B	-	-	300	-	-	300	-	-	300	300	300	300
Peacocke Stage 2	-	2,200	3,100	1,700	-	7,000	-	2,200	5,300	7,000	7,000	7,000
<b>TOTAL</b>	<b>2,400</b>	<b>5,400</b>	<b>19,500</b>	<b>16,500</b>	<b>2,200</b>	<b>46,000</b>	<b>2,400</b>	<b>7,800</b>	<b>27,300</b>	<b>43,800</b>	<b>46,000</b>	<b>46,000</b>
<b>Share</b>	<b>5%</b>	<b>12%</b>	<b>42%</b>	<b>36%</b>	<b>5%</b>	<b>100%</b>	<b>5%</b>	<b>17%</b>	<b>59%</b>	<b>95%</b>	<b>100%</b>	<b>100%</b>

Source: HCC Greenfield Capacity Database and M.E Hamilton Residential Capacity Model, 2022.

### Capacity Reductions from Scenario 2

Table 5-5 shows that the application of the ICO and HHA qualifying matters reduces the plan enabled capacity across Hamilton City by 29%. This is a reduction of around 96,800 dwelling units from the additional capacity provided by the proposed intensification provisions under Scenario 2. Almost all of the reduction occurs within the existing urban area as only minor parts of the greenfield areas are either affected by the intensification provisions or qualifying matters. Overall, capacity within the greenfields areas is reduced by only 1% (-630 dwellings) from Scenario 1 with the application of qualifying matters.


Meanwhile, qualifying matters reduce the plan enabled capacity across the existing urban area by an estimated 34% (-96,100 dwellings) from the full application of the intensification provisions. The largest reduction in plan enabled capacity occur within the Medium Density Residential and General Residential zones. Reductions in Medium Density Residential Zone capacity occur mainly within the vertically-attached apartment dwellings, where nearly three-quarters of the capacity is removed.

Capacity reductions within the General Residential Zone instead occur mainly within the attached dwellings. Attached redevelopment capacity is reduced by 41%, to amount to an additional 63,700 dwellings under Scenario 3. Despite the application of the ICO across a large portion of the existing urban area, there is still some modelled increase in attached redevelopment capacity within the zone. Part of this increase is due to the MDRS increasing the yield on many parcels through negating the requirement to form duplex pairs. This is still enabled on many sites under the alternative density control of 200m<sup>2</sup> per dwelling unit. If compared to General Residential zoned areas without the application of MDRS (i.e. Scenario 1), then this increase (under the MDRS alternative ICO controls – i.e. Scenario 3a) would be larger as part of the increase is offset by an overall reduction in the size of the zone.

### Capacity Increases from Existing ODP Base Provisions

The plan enabled capacity, under Scenarion 3, would increase by around two-thirds (66%) from that enabled under the existing ODP base zone provisions. This equates to an additional 93,200 dwellings, with the largest increases within the existing urban area. Most of the increase would occur within the central parts of Hamilton's urban area that fall outside of the ICO.

The largest net increases would occur within the High Density Residential Zone through a combination of medium to high density development (i.e. horizontally and vertically-attached apartments). Sizeable



increases would occur within the Medium Density Residential Zone surrounding the City Centre area, also in the form of medium to higher density development.

Under this scenario, there would be a smaller increase in capacity across the rest of the residential suburban area. This would come about through an increase in the yield on each parcel (with the removal of the need to form duplex pairs) and the smaller site areas required for detached dwellings (compared to the ODP).

## 5.4 Plan Enabled Capacity – Comparison of Scenarios and Qualifying Matters

This section provides a comparison of the plan enabled capacity across each of the modelled scenarios. It also demonstrates the effect of the qualifying matters individually on plan enabled capacity, as well as the effect of covenants.

### 5.4.1 Summary of Modelled Scenarios

The modelled capacity by type and location is compared across the modelled scenarios within the following figures and table. They show the increase in capacity that occurs with the application of the proposed intensification provisions (Scenario 2) from the existing ODP baseline (Scenario 1). They also show the reduction in capacity from Scenario 2 that occurs with the application of qualifying matters in Scenario 3.

Figure 5-1 compares the capacity from each modelled scenario where capacity is split into vertically attached apartments and other capacity. Importantly, there is some overlap between the types of capacity, meaning that the sum of these categories exceeds the total<sup>22</sup>.

The capacity within each type is further disaggregated by type of location in Figure 5-2, which shows the modelled capacity by type within the City Centre, rest of the suburban area (i.e. existing urban area less the City Centre) and the greenfield areas. The City Centre is defined by the three City Centre Zones<sup>23</sup>. The changes in capacity between the modelled scenarios is then summarised in Table 5-7.

The proposed intensification provisions (if applied without modification in Scenario 2) increase the plan enabled capacity across Hamilton by 135%. This amounts to a further 190,000 additional dwellings from the capacity enabled by the existing baseline provisions (Scenario 1). The largest increase occurs within the existing suburban areas, with sizeable increases in both vertically-attached apartments and other types of capacity.

When the qualifying matters are applied (Scenario 3), the capacity enabled by the intensification provisions decreases by 29%. The largest decreases occur within the existing urban area, outside of the central area,

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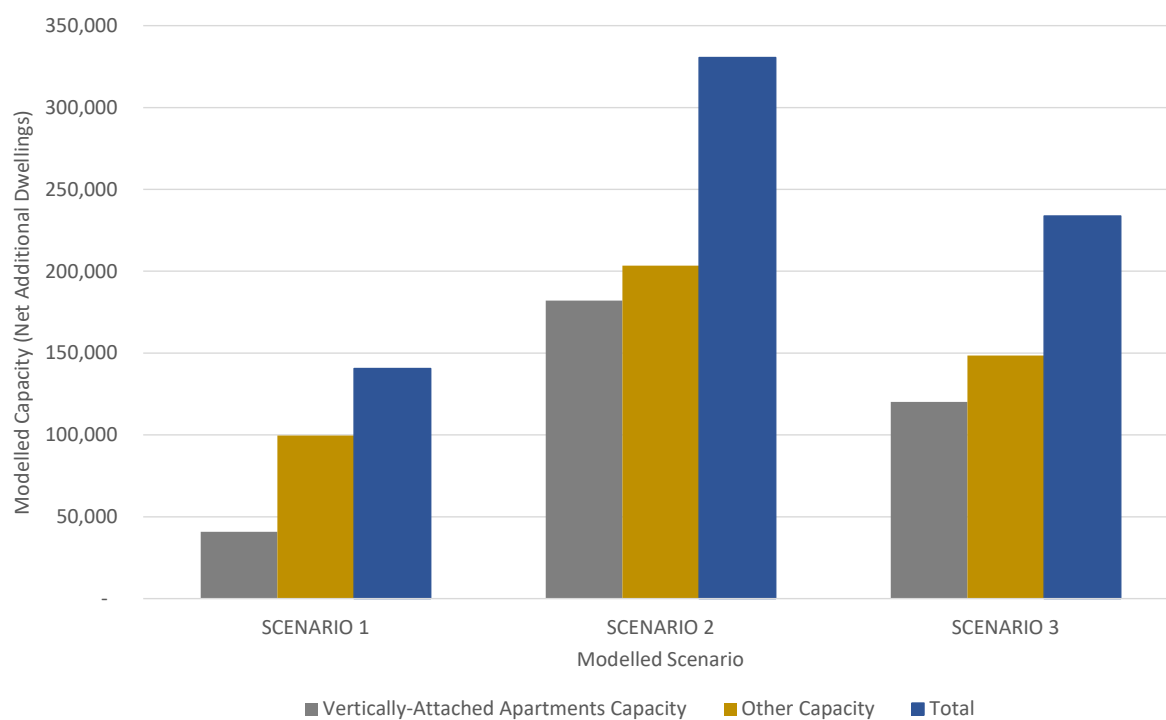
<sup>22</sup> This occurs as parcels within the Medium and High Density Residential can have either vertically-attached apartments or other capacity.

<sup>23</sup> These include Precinct 1 – Downtown Precinct, Precinct 2 – City Living Precinct and Precinct 3 – Ferrybank Precinct.



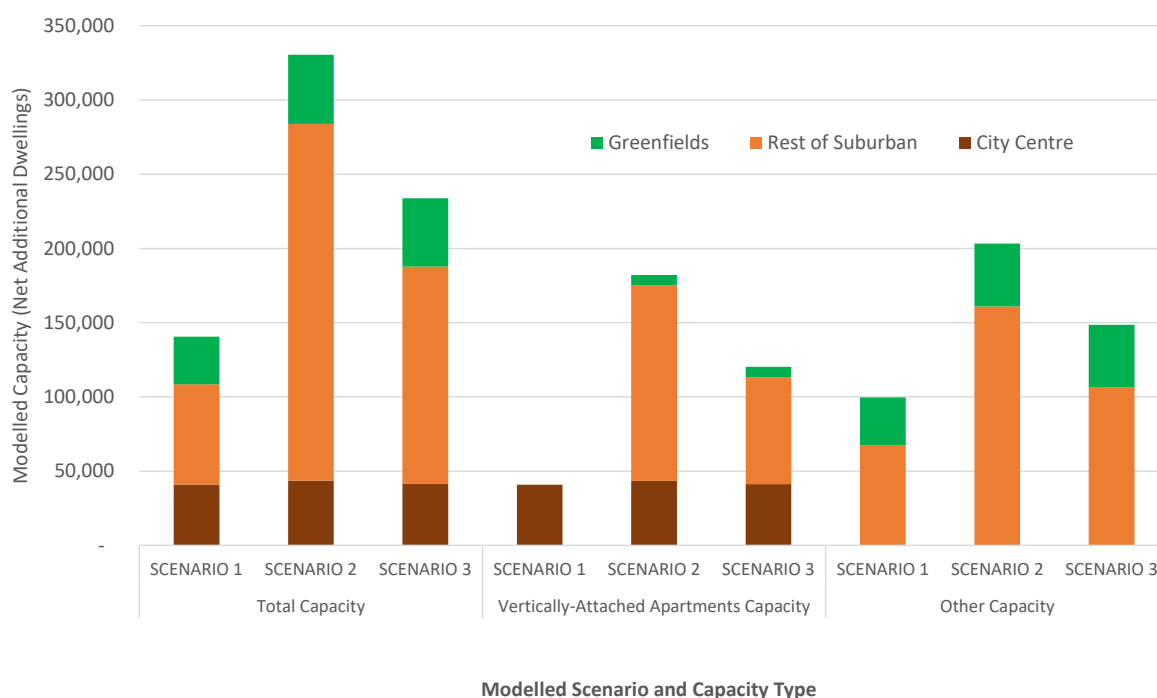
as this is where the qualifying matters have mainly been applied. Sizeable decreases have occurred within both the vertically-attached apartment dwellings as well as other types of capacity.

Figure 5-1: Comparison of Modelled Scenarios by Capacity Type



Source: M.E Hamilton Residential Capacity Model, 2022.

Figure 5-2: Comparison of Modelled Scenarios by Urban Location and Capacity Type



Source: M.E Hamilton Residential Capacity Model, 2022.

Table 5-7: Summary of Modelled Capacity and Changes in Capacity Between Scenarios

Modelled Scenario	Vertically-Attached Apartments Capacity				Other Capacity				Total Capacity			
	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total
SCENARIO 1	40,800	-	-	40,800	-	67,500	32,100	99,600	41,000	67,500	32,100	140,600
SCENARIO 2	43,400	131,700	7,000	182,100	-	160,900	42,500	203,400	43,600	240,400	46,700	330,600
SCENARIO 3	41,300	72,000	7,000	120,200	-	106,700	41,900	148,600	41,500	146,300	46,000	233,800
Net Change in Capacity												
Scenario 2 vs. Scenario 1	2,600	131,700	7,000	141,300	0	93,300	10,400	103,700	2,600	172,800	14,500	190,000
Scenario 3 vs. Scenario 2	-2,200	-59,700	0	-61,900	0	-54,200	-600	-54,800	-2,200	-94,000	-600	-96,800
Percentage Change in Capacity												
Scenario 2 vs. Scenario 1	6%	0%	0%	346%	0%	138%	32%	104%	6%	256%	45%	135%
Scenario 3 vs. Scenario 2	-5%	-45%	0%	-34%	0%	-34%	-1%	-27%	-5%	-39%	-1%	-29%

Source: M.E Hamilton Residential Capacity Model, 2022.

## 5.4.2 Effects of Qualifying Matters Individually

To this point, the modelling has shown the effect of qualifying matters on capacity in combination through Scenario 3. This section demonstrates the effects of each qualifying matter individually. It models the capacity under the MDRS and Policy 3 intensification provisions (in accordance with Scenario 2), and then applies each qualifying matter individually. The changes in capacity are measured using Scenario 2 as a baseline. Importantly, the modelled effects of the individual qualifying matters are not additive where many parcels experience the same effect on capacity from multiple qualifying matters. The combined total effect is demonstrated in Scenario 3.



Figure 5-3 compares the capacity from each modelled application of the individual qualifying matters where capacity is split into vertically attached apartments and other capacity. Importantly, there is some overlap between the types of capacity, meaning that the sum of these categories exceeds the total.

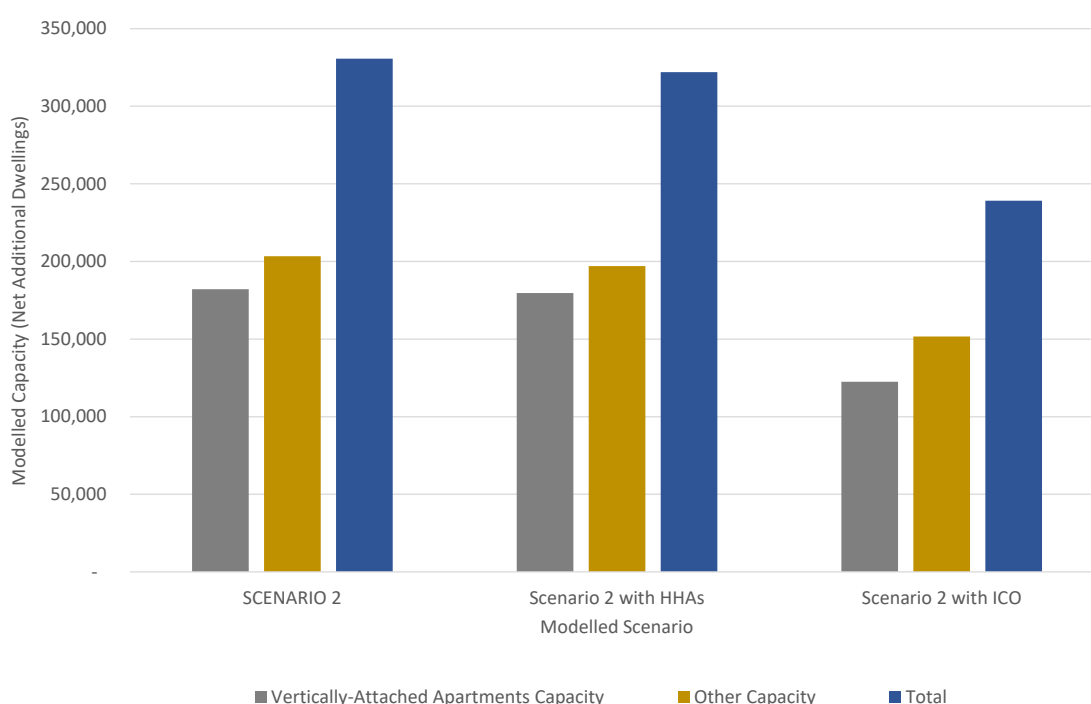
The capacity within each type is further disaggregated by type of location in Figure 5-4, which shows the modelled capacity by type within the City Centre, rest of the suburban area (i.e. existing urban area less the City Centre) and the greenfield areas. The changes in capacity from Scenario 2 (unmodified intensification provisions) with each of the individual qualifying matters is summarised in Table 5-8.

The application of the ICO has the largest effect on the modelled capacity. It reduces the capacity enabled under the intensification provisions (Scenario 2) by 28%. This effect occurs almost entirely within the existing urban area (outside of the City Centre), where the modelled capacity is reduced by over one-third (38%).

The ICO has a sizeable effect on both the higher density capacity (vertical apartments) and the medium density development across the suburban area. It reduces the higher density development across most of the suburban area, therefore concentrating the provision of this capacity into the City Centre and surrounding areas that fall outside of the overlay area. It also reduces the level of medium-density capacity across the general suburban area, but still allows for a sizeable increase in capacity from the existing baseline provisions.

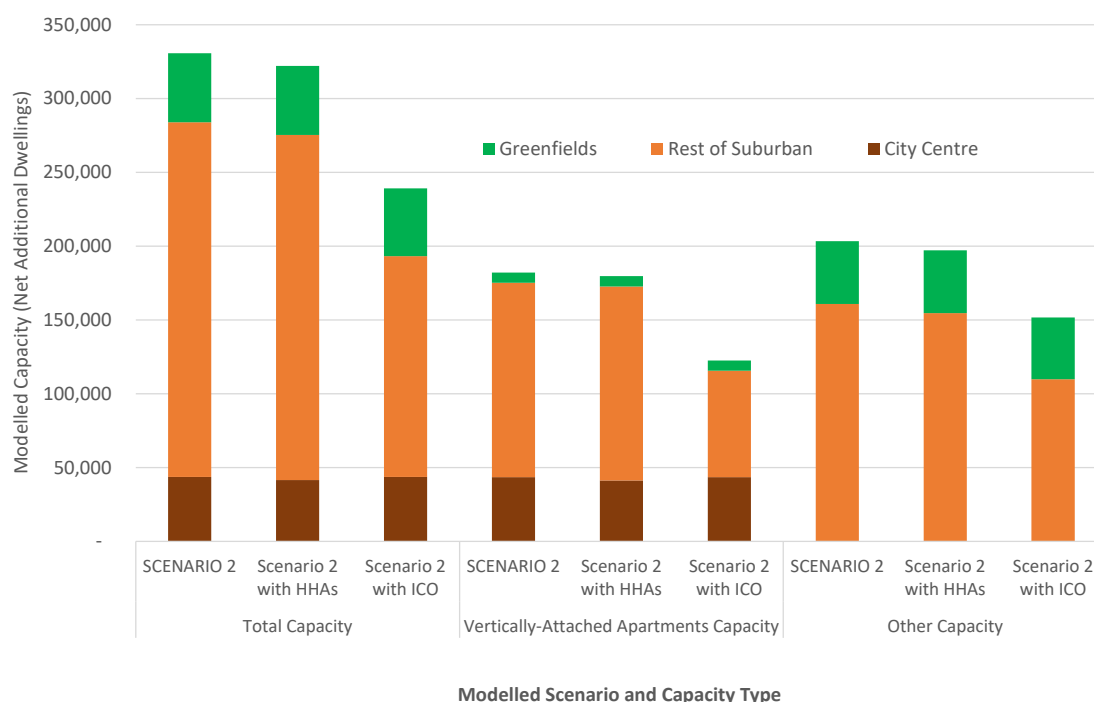
The effect of the HHAs is considerably smaller. This qualifying matter reduces total modelled capacity by 3%. It reduces vertically-attached apartment dwellings within the City Centre by 5%, and other capacity within the rest of the existing urban suburban area by 4%.

Figure 5-3: Comparison of Individual Qualifying Matters Applied to Scenario 2



Source: M.E Hamilton Residential Capacity Model, 2022.

Figure 5-4: Comparison of Individual Qualifying Matters Applied to Scenario 2 by Urban Location and Capacity Type



Source: M.E Residential Capacity Model, 2022.

Table 5-8: Summary of Modelled Capacity and Changes in Capacity from Qualifying Matters

Modelled Scenario	Vertically-Attached Apartments Capacity				Other Capacity				Total Capacity			
	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total
SCENARIO 2	43,400	131,700	7,000	182,100	-	160,900	42,500	203,400	43,600	240,400	46,700	330,600
Scenario 2 with HHAs	41,300	131,400	7,000	179,700	-	154,500	42,500	197,100	41,500	233,900	46,700	322,000
Scenario 2 with ICO	43,400	72,100	7,000	122,500	-	109,800	41,900	151,700	43,600	149,500	46,000	239,100
Net Change in Capacity												
HHAs change from Scenario 2	-2,200	-300	0	-2,400	0	-6,300	0	-6,300	-2,200	-6,400	0	-8,600
ICO change from Scenario 2	0	-59,600	0	-59,600	0	-51,100	-600	-51,700	0	-90,800	-600	-91,500
Percentage Change in Capacity												
HHAs change from Scenario 2	-5%	0%	0%	-1%	0%	-4%	0%	-3%	-5%	-3%	0%	-3%
ICO change from Scenario 2	0%	-45%	0%	-33%	0%	-32%	-1%	-25%	0%	-38%	-1%	-28%

Source: M.E Hamilton Residential Capacity Model, 2022.

## 5.4.3 Effects of Covenants

This section applies the effects of covenants on the capacity within the modelled scenarios. It shows the total effect of covenants on the modelled capacity within each scenario and then compares the changes between the modelled scenarios when the effect of covenants have been applied. The comparisons between scenarios are consistent with those undertaken in Section 5.4.1 where the increases in capacity with the application of intensification provisions are measured from the existing provisions, and then the

reduction in capacity (from the unmodified intensification provisions) from the application of qualifying matters is shown.

The effect of the application of covenants on each of the modelled capacity scenarios is shown in Table 5-9. The table shows the modelled capacity within each of the scenarios with and without the application of covenants. It then shows the difference (net and percentage) between the inclusion and exclusion of covenants.

The removal of development capacity from properties containing covenants<sup>24</sup> decreases the capacity within each of the scenarios by between 12% and 14%. Most of the capacity reduction occurs within the existing urban area outside of the City Centre, where capacity is reduced by between 19% and 27%.

Capacity reductions within the existing suburban area are proportionately smaller within the Scenarios 2 and 3 due to the increases in capacity through vertically-attached apartment dwellings. A smaller share of the higher density capacity is in locations that are affected by covenants as the capacity is concentrated around the central urban areas (which have fewer covenants).

The application of covenants reduces the baseline (Scenario 1) capacity by 18,800 dwellings, almost all in the form of non-vertically-attached apartment dwellings within the existing suburban area. With the application of covenants, the total modelled baseline capacity is around 121,800 additional dwellings. This is around two times the existing dwelling base, and over three times the size of projected long-term dwelling demand.

Covenants reduce the modelled unmodified intensification provisions (Scenario 2) capacity by around 46,000 dwellings. The removal of this capacity results in a total capacity of 284,600 additional dwellings. This reduces to 205,300 additional dwellings once qualifying matters have been taken into account (Scenario 3). This modified capacity amounts to over three times the size of the existing dwelling base and around 5.5 times the projected long-term dwelling demand.

Table 5-9: Effects of Covenants on Capacity (Net Additional Dwellings) by Modelled Scenario

Modelled Scenario	Vertically-Attached Apartments Capacity				Other Capacity				Total Capacity			
	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total
Scenario 1	40,800	-	-	40,800	-	67,500	32,100	99,600	41,000	67,500	32,100	140,600
Scenario 1 with covenants	40,400	-	-	40,400	-	49,000	32,100	81,100	40,600	49,000	32,100	121,800
Net Difference	-300	0	0	-300	0	-18,500	0	-18,500	-300	-18,500	0	-18,800
% Difference	-1%	0%	0%	-1%	0%	-27%	0%	-19%	-1%	-27%	0%	-13%
Scenario 2	43,400	131,700	7,000	182,100	-	160,900	42,500	203,400	43,600	240,400	46,700	330,600
Scenario 2 with covenants	42,800	117,800	7,000	167,600	-	124,400	42,500	166,900	43,000	195,000	46,700	284,600
Net Difference	-600	-13,900	0	-14,500	0	-36,500	0	-36,500	-600	-45,400	0	-46,000
% Difference	-1%	-11%	0%	-8%	0%	-23%	0%	-18%	-1%	-19%	0%	-14%
Scenario 3	41,300	72,000	7,000	120,200	-	106,700	41,900	148,600	41,500	146,300	46,000	233,800
Scenario 3 with covenants	40,600	67,200	7,000	114,800	-	81,600	41,900	123,500	40,800	118,500	46,000	205,300
Net Difference	-600	-4,700	0	-5,400	0	-25,100	0	-25,100	-600	-27,900	0	-28,500
% Difference	-2%	-7%	0%	-4%	0%	-24%	0%	-17%	-2%	-19%	0%	-12%

Source: M.E Hamilton Residential Capacity Model, 2022.

<sup>24</sup> Development capacity has been removed from 77.5% of the properties containing covenants in alignment with the share indicated within the HCC research (refer to Section 2.3).

Table 5-10 shows the difference between the modelled scenarios if the effect of covenants are included in all scenarios. The proportional changes between the scenarios are similar to those modelled when the effect of covenants were excluded (see Table 5-7). The total plan enabled capacity increases by 134%, from the existing baseline capacity, when the intensification provisions are applied without modifications (Scenario 2). When qualifying matters are included (Scenario 3), the total plan enabled capacity reduces by 24% from the unmodified intensification provisions.

Table 5-10: Summary of Modelled Capacity and Changes in Capacity Between Scenarios (Including the Application of Covenants)

Modelled Scenario	Vertically-Attached Apartments Capacity				Other Capacity				Total Capacity			
	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total	City Centre	Rest of Suburban	Greenfields	Total
<b>Modelled Capacity (Net Additional Dwellings)</b>												
SCENARIO 1	40,400	-	-	<b>40,400</b>	-	49,000	32,100	<b>81,100</b>	40,600	49,000	32,100	<b>121,800</b>
SCENARIO 2	42,800	117,800	7,000	<b>167,600</b>	-	124,400	42,500	<b>166,900</b>	43,000	195,000	46,700	<b>284,600</b>
SCENARIO 3	40,600	67,200	7,000	<b>114,800</b>	-	81,600	41,900	<b>123,500</b>	40,800	118,500	46,000	<b>205,300</b>
<b>Net Change in Capacity</b>												
Scenario 2 vs. Scenario 1	2,300	117,800	7,000	<b>127,100</b>	0	75,300	10,400	<b>85,800</b>	2,300	146,000	14,500	<b>162,800</b>
Scenario 3 vs. Scenario 2	-2,200	-50,600	0	<b>-52,700</b>	0	-42,800	-600	<b>-43,400</b>	-2,200	-76,500	-600	<b>-79,300</b>
<b>Percentage Change in Capacity</b>												
Scenario 2 vs. Scenario 1	6%	0%	0%	<b>314%</b>	0%	154%	32%	<b>106%</b>	6%	298%	45%	<b>134%</b>
Scenario 3 vs. Scenario 2	-5%	-43%	0%	<b>-31%</b>	0%	-34%	-1%	<b>-26%</b>	-5%	-39%	-1%	<b>-28%</b>

Source: M.E Hamilton Residential Capacity Model, 2022.





## 6 Economic Costs and Benefits of Proposed Intensification Provisions

This section provides a brief overview of the anticipated economic costs and benefits of the modelled intensification scenarios within Hamilton City (including application of MDRS), relative to the status quo.

### 6.1 Economic Costs and Benefits of the Intensification Plan Change

The proposed provisions (including the application of the MDRS) are likely to generate changes through time to the nature and distribution of residential growth in Hamilton's urban area. Changes to growth patterns are likely to incrementally and cumulatively impact the city's urban form, becoming more significant through time. The nature of urban form has important impacts on the efficiency of spatial interactions across and within the city.

These factors give rise to a range of costs and benefits that are likely to flow from changes to the underlying planning structure. Part of the effect relates generally to the implementation of provisions for intensification, and is observable in aggregate at the city level; while part relates to the spatial distribution of the provisions and how they are applied within the urban environment. It is also important to evaluate the scale of the proposed provisions in relation to the likely market size as the combination of these factors will affect the take-up of development and the urban form patterns that emerge.

#### 6.1.1 City Level Aggregate Effects of Intensification Provisions

The implementation of intensification provisions is likely to generate an economic benefit to households through increasing the range of different housing options available. While many of the dwelling typologies are already enabled across different parts of the city, the provisions are likely to increase the density at which they can occur and extend the locations across which higher density dwellings can occur, as well as increase the ability for the medium density attached options to be developed.

At the lower end of the increased density, the proposed provisions would enable smaller standalone dwellings to be constructed on smaller sites. Within the mid-range, the provisions would increase the density at which horizontally attached dwellings could be constructed. Currently, across the bulk of Hamilton's suburban area (General Residential Zone), these can occur as duplexes, and be constructed in pairs. The provisions would expand this mid-range density to better enable the construction of terraced housing, and at a higher density. Part of this effect occurs through the effective removal of the requirement to construct the dwellings in pairs<sup>25</sup>. The range of densities is increased at the higher end through the

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<sup>25</sup> Within the General Residential Zone, the ODP currently provides for a duplex pair to be constructed on a 400m<sup>2</sup> minimum net site area (i.e. a minimum of 200m<sup>2</sup> per dwelling unit). If the site were instead 600m<sup>2</sup>, then still only two duplex units could be constructed as a permitted activity due to the requirement to be constructed in pairs. This would result in an average density of



geographic expansion across a number of nodes within the urban area for the provision for vertically-attached apartment buildings. These are currently only enabled within the City Centre.

The greater range of densities would enable a level of substitution of demand across different typologies. It would also allow demand to be met within the same typology at significantly different densities.

The provisions enabling smaller sites are likely to result in changes to the cost structures of dwelling construction and delivery due to changes in the nature of dwellings constructed. Generally, the provision of smaller sites is likely to result in increased flexibility for the market to scale dwellings to different site sizes. Under the current provisions for detached dwellings, there is a market tendency to construct larger dwellings that are scaled to the site size, with smaller dwellings shifting to the attached typology. The provisions would increase the range of detached dwellings that could be constructed, with the construction of two, possibly three, storey detached dwellings on smaller sites at the higher end. Increases in the range of densities for attached dwellings also changes the cost structures of dwellings through increasing the efficiency of site use. For example, the terraced housing typology typically increases the ratio of floorspace to site area.

The increased ability for the market to deliver a wider range of dwellings at different costs structures is likely to have a positive effect on housing affordability relative to the development patterns of new dwellings that would otherwise occur under the existing provisions. This is important for Hamilton as there is a growing demand for more affordable dwellings as well an increasing market acceptance for medium density attached dwellings. In aggregate, the provision of a greater range and value distribution of dwellings is likely to enable the market to increase its alignment with future citywide household demand structures.

The ability to form smaller site sizes increases the potential dwelling yield of sites. This is likely to increase the feasibility of redevelopment, particularly in higher value areas. This occurs where a significant share of the value of a dwelling is associated with the existence of a dwelling, with increases in value with size and characteristics. The same concept applies to land where a share of the value is associated with the ability to accommodate a dwelling. As such, the aggregate value of multiple dwellings on a parcel is likely to significantly exceed the value of a single larger dwelling with the equivalent floor area of the smaller dwellings combined. Furthermore, the provision of smaller dwellings is likely to better align with the market demand for cheaper dwellings than a more expensive, larger dwelling.

### 6.1.2 Effects from the Location of Provisions

The *location* and *extent* of intensification provisions are important and affect the costs and benefits that may arise from changes to development patterns across the urban area. Part of the effects occur to private households involved in the transaction of individual dwellings, while the resulting development patterns have wider effects observed at the community and the city levels. The location of intensification provisions and the spatial extent across which they are applied determine the level of optimisation of effects of intensification and need to be considered together.

The application of intensification provisions within key areas of accessibility is likely to have positive effects on urban form through supporting a centres-based structure. This generates a range of benefits that accrue

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300m<sup>2</sup> per attached dwelling on the site, where the typology is more likely to reflect a townhouse. If MDRS were applied, then three dwellings could be constructed on the site, which would likely result in a terraced housing typology.



to both individual households and the wider community. Concentration of development into these areas increases the amenity received by households through greater accessibility. It also supports the viability of centres through the concentration of demand in local surrounding areas, thereby increasing the level of amenity provided by the centre to the community within its catchment area. This is important as centres play an important social role and function in addition to the amenity offered by their commercial activities.

Increased centres' function and the concentration of growth around these key nodes has benefits through increasing the sustainability of urban form. This occurs through several mechanisms. These include a greater share of alternative mode trips (e.g. walking/cycling to the centre), increased travel efficiency at the city scale through the concentration of commercial and social activities within centres relative to a more dispersed distribution, and the increased viability of public transport options where transport hubs are supported by centres.

Further economic benefits that accrue to the public sector are also achieved through the implementation of growth patterns that support intensification within centres. Increased nodes of activity allow for the more efficient delivery of transport and social infrastructure through their concentration into centres. A concentration of residential demand within close proximity to these centres enables investment in this infrastructure to more efficiently serve a greater demand.

It is also important to consider the location of provisions at a higher spatial scale in relation to the distribution across the urban centre's hierarchy. This relates to the overall form of the city and the ability to achieve appropriate differentiation of nodes within the centres' hierarchy. A distribution of growth, as enabled through the intensification provisions, can support Hamilton's objectives to re-establish the primacy of the City Centre if it occurs in appropriate locations. Alternatively, high levels of intensification around key nodes away from the City Centre may redirect growth away from central locations that would otherwise support the primacy of the City Centre.

### **6.1.3 Effects from the Spatial Extent of Provisions**


It is important to consider the spatial extent of any intensification provisions as this is likely to affect the type of urban form outcomes that are achieved, and the costs and benefits that flow from these development patterns.

The spatial extent of the provisions determines whether there is likely to be sufficient differentiation of development intensities across the urban area. The benefits of intensification rely on a level of concentration of growth around key nodes of accessibility and sufficient differentiation of these patterns within the urban area.

The application of walkable catchments has different relative effects within different sized urban economies. Application of intensification areas across a constant distance across all urban economies will generally cover considerably larger shares of the total residential area in smaller urban economies. Depending upon the nature (dwelling scale, etc) of provisions, high relative coverage of urban areas may reduce the level of differentiation across the urban area<sup>26</sup>. This may reduce the degree to which growth is

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<sup>26</sup> The share of urban area covered by a constant catchment distance tends to be inversely related to city size.



concentrated around key nodes of accessibility, potentially reducing the benefits associated with intensification into these areas set out in the previous sub-section.

The spatial extent of provisions that apply to the highest density development (e.g. vertically attached apartments) is also important to appropriately encourage growth that functions together with the centre and encourage development patterns that are appropriate for the surrounding urban environment. If the spatial extent of higher density development provisions are too large, then this may result in higher density developments occurring opportunistically within parts of the area that are less likely to function together with the centre. Moreover, these developments could potentially absorb a high share of the total higher density market demand. This may therefore reduce the likelihood of this development occurring elsewhere in locations that are more likely to function together with the centre and achieve the intensified urban form concentrated around centres.

#### **6.1.4 Effects on Infrastructure**

The concentration of growth into the core parts of accessible areas, and appropriate parts of the suburban environment, enables more efficient infrastructure provision. This occurs through the higher density of demand<sup>27</sup> as well as the timing and sequencing of growth. If intensification provisions are too widespread, then this reduces the ability to achieve infrastructure efficiencies and may increase infrastructure costs through the requirement to supply increased infrastructure across larger areas due to the possibility of intensification.

#### **6.1.5 Effects from the Scale of Market Demand**

The overall scale of market demand is likely to affect the appropriateness of the scale of intensification provisions by location. The level of market demand for different types of dwelling densities will affect the degree to which concentration of development within key areas of accessibility are achieved and the nature of that intensification.


Smaller urban economies typically have lower demand for the higher density dwelling typologies, such as vertically attached apartments. This market is not yet well established in Hamilton City. Lower demand means that core nodes of accessibility are less able to sustain intensification of higher density dwellings than areas where there is greater market demand. A smaller market size increases the propensity for any higher density vertical development outside of the centre zone or not directly adjacent to the centre to form a standalone development that is less consistent with the surrounding urban environment.

In contrast, larger urban economies with higher demand are able to sustain higher density development across greater distances that function together with the centre and are consistent with the density gradient within the catchment area. Higher density vertical development is typically more consistently sustained across larger walkable catchment areas within higher value areas in larger urban economies.

In smaller urban economies, intensification patterns around centres are instead more likely to be characterised by medium density attached dwellings, such as those provided for within the Residential

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<sup>27</sup> Infrastructure costs are generally lower if demand is more spatially concentrated than the higher costs from more expansive networks required to serve more dispersed patterns of growth.



Intensification and High Density Residential zones or the MDRS provisions applied to the underlying general suburban residential zones.

## 6.2 Assessment of Modelled Scenarios

There are two modelled scenarios for intensification in Hamilton City. These are Scenario 2 (unmodified intensification) and Scenario 3 (modified intensification). The modelling has shown that both scenarios would enable a large volume of plan enabled capacity to occur in relation to projected long-term demand; and within this, each would provide for a large amount of intensification at the city level. The intensification enabled under the scenarios would expand the range of density, and consequently, typologies, able to be constructed across much of the urban environment.

The benefits in relation to an increased range of densities (greater market flexibility and increased feasibility of smaller cheaper dwellings that use land more efficiently) are set out in Section 6.1 and are therefore likely to be achieved across both options. Despite the large spatial extent of the ICO, the provisions in Scenario 3 still provide for some of this benefit to occur across the general suburban area covered by the overlay. This is because the 150m<sup>2</sup>/200m<sup>2</sup> alternative density control still enables an increase in density across these areas. The exclusion of a requirement to form duplex pairs under this option is an important factor in enabling this greater density and results in a change in the typology potentially able to be provided – it opens up the ability for the market to deliver terraced housing, albeit at a lower density than in Scenario 2.

There are substantial differences in the overall urban form enabled by scenarios 2 and 3. These differences are likely to have an important effect on the type of costs and benefits experienced by each option and flow from the location of the provisions.

Scenario 2 enables widespread intensification across all of the residential urban environment. It provides for sizeable nodes of vertically-attached apartment buildings in multiple Medium Density Residential nodes arounds centres across the extent of the urban environment. Some of these areas are away from the City Centre. The extent and location of these higher density nodes (at the macro city structure level) mean that intensification development patterns in some areas may dilute the level of intensification that may otherwise occur around the City Centre.

The vertically-attached apartment market is not yet well established in Hamilton City, but is likely to increase through time. The overall scale of provision for this type of development is very large relative to demand under both scenarios. As such. It is likely that only a small share of the capacity would need to be taken up to meet demand. This means that only some locations are likely to be able to develop with consistent levels of intensification within the nodes, while higher density developments in other areas may take the form of opportunistic standalone developments within their surrounding areas. The spatial extent of the provisions for higher density development and the number of areas across which it applies mean that the development may occur in some locations where it may be less likely to function together with the centre.



The provision for intensification under Scenario 3 is considerably more concentrated into the central areas of Hamilton City. The provision for higher density vertically-attached apartment buildings is concentrated around the City Centre, High Density Residential Zone and proximate areas of the Medium Density Residential Zone. There is no provision for this form of development in areas away from the central part of the urban areas.

Scenario 3 is better aligned with Hamilton City's centres strategy than Scenario 2. Scenario 3 still allows for high levels of vertically-attached apartment capacity relative to growth. However, if development were to occur anywhere within these areas, then it would be more likely to support the primacy of the City Centre.

Within the rest of the suburban area, the proposed zoning structure (and ICO alternative densities) still allow for differentiation across the urban environment to reflect the higher accessibility and amenity provided by centres. The level of density contained within the Medium Density Residential alternative controls is likely to enable a significant level of intensification to occur around these centres and align with a larger proportion of the market for attached dwellings.

There is also significant scope for further development across the rest of the suburban area under Scenario 3. Even with the ICO controls, development can be realised at greater densities on many sites than that currently enabled by the ODP. As such, it increases the feasibility of redeveloping these sites.

The differences in the patterns of development across the city between the two scenarios is likely to result in differences in infrastructure costs. Scenario 3 provides greater centralisation of intensification into a more concentrated area. As set out in Section 6.1.4, this is likely to enabled greater efficiencies in infrastructure provision (than Scenario 2) and be more likely to avoid the increased cost of widespread, un-sequenced intensification.

It is important to note that both scenarios represent large increases in intensification across the urban environment relative to demand. This may generate challenges in relation to infrastructure sequencing and provision, and may reduce the propensity of growth to concentrate into the areas of higher accessibility and amenity. However, taking the above factors into account, Scenario 3 is likely to represent a more favourable option (than Scenario 2) in relation to the consideration of economic costs and benefits. It contains a sizeable increase in plan enabled dwelling capacity relative to demand and the existing ODP base scenario. The increase in capacity also provides for a wider range of densities and, within this, dwelling options. These are likely to increase the feasibility for the market and the feasibility to redevelop sites.

#### *NPS-UD Objectives*

The greater levels of intensification enabled under both scenarios 2 and 3 mean that they each enable much higher levels of urban development opportunity than the existing baseline provisions, recognising the national significance of urban development. The increased ranges of density of these provisions, under both scenarios, align with the NPS-UD objectives to increase housing affordability.

At the city level, both modelled scenarios have a similar effect in terms of the overall range of density and dwelling typologies. The larger differences in the alignment of the scenarios with the NPS-UD objectives instead relate to the spatial distribution of enabled development patterns. Importantly, as set out above, this effect occurs through a combination of both enabling increased development opportunity in





appropriate places as well as providing sufficient differentiation across the urban area to encourage development to occur within these locations.

A core part of achieving the NPS-UD well functioning urban environment (Objective 1) relates to achieving sufficiently concentrated development patterns within areas of higher accessibility and amenity. The viability of these centres and the amenity they provide is supported by the concentration of residential development within their surrounding catchment areas. It is therefore important to encourage patterns of intensification to concentrate into these areas and reduce the dilution of higher density development away from areas of higher amenity.

While both scenarios enable a substantial level of intensification across the urban area, Scenario 3 provides greater direction for patterns of growth to concentrate into central areas of amenity. This takes into account the overall market size and level of market establishment of higher density dwelling typologies. While the higher density provisions are limited to the more central areas, Scenario 3 does still allow for substantial levels of intensification to occur around other areas of higher amenity where the qualifying matters have been applied. The levels of intensification enabled within the Medium Density Residential Zone and the additional provision within the General Residential Zone reflect levels of intensification occurring in centres in other areas within less central parts of the urban areas.

In contrast, Scenario 2 allows for high levels of intensification across the extent of the urban environment. This may reduce the level to which development is concentrated into areas of higher accessibility and amenity, therefore slowing the achievement of a well-functioning urban environment within these central areas.



## 7 Conclusions

The MDRS provision enable a greater level of capacity and development across much of the urban residential area of Hamilton. They enable greater intensification through a combination of higher potential yields on most parcels together with a greater level of development able to occur within each site.

The provisions also introduce substantial further opportunity for higher density residential development across a range of locations within core areas of accessibility within the urban area. With the application of qualifying matters, the higher density development opportunity is concentrated into the central parts of the urban environment within the City Centre and surrounding areas.

In addition to areas of higher density development, the provisions also increase the density of development across the general suburban area. They provide for medium density development across this area. Part of this effect occurs through changes to the underlying zoning base, to increase the spatial extent of the High and Medium Density Residential zones, with part also occurring through the application of the MDRS.

The combined application of intensification provisions substantially increases the total additional development capacity. This mainly occurs within the existing urban area outside of the City Centre as a large share of the greenfield areas are already covered, within the modelling, by developer or structure plans. Capacity increases result in a sizeable enabled capacity relative to the existing urban dwelling base and projected long-term dwelling demand.

In some locations, the types of capacity enabled by the Policy 3 vertical height provisions and MDRS is at a significantly higher density than that provided within many of the main urban residential zones of the Plan. If capacity is taken up at these higher vertical-development densities, then it would represent a significant shift to the development patterns that have previously characterised growth within central parts of the city. Development at medium densities is already occurring across many parts of Hamilton City, which are closer to the attached dwelling development provided for through the MDRS.

Understanding the capacity enabled by the intensification provisions is an important first stage in understanding the implications of the provisions. It is likely that development will get taken up through time at a range of densities, including up to that of the provisions in some locations. However, a portion of the development capacity delivered by the market is still likely to occur at lower to medium densities, particularly within the short-term, as demand increases through time for higher density dwelling options.

There are a range of economic costs and benefits that may occur as a result of the urban form development patterns enabled by the modelled intensification scenarios. Part of the effect relates generally to the implementation of provisions for intensification, and is observable in aggregate at the city level; while part relates to the spatial distribution of the provisions and how they are applied within the urban environment.

Both intensification options (scenarios 2 and 3) result in a large increase in plan enabled capacity (relative to demand and to the existing ODP provisions) and levels of potential intensification widespread across the urban environment. Increased density options create greater flexibility for the market to provide smaller, cheaper dwellings, but may result in costs associated within infrastructure sequencing and may dilute the ability to concentrate growth into the core areas of accessibility provided for within the provisions.



Within the options, Scenario 3 is likely to represent a more favourable option (than Scenario 2) in relation to the consideration of economic costs and benefits and the alignment with the objectives of the NPS-UD. It contains a sizeable increase in plan enabled dwelling capacity relative to demand and the existing ODP base scenario. The increase in capacity also provides for a wider range of densities and, within this, dwelling options. These are likely to increase the feasibility for the market and the feasibility to redevelop sites. Scenario 3 is likely to support a more efficient spatial economic structure for the city (than Scenario 2) as higher density development is limited to central areas where it is more likely to support the primacy of the City Centre.