Housing Development Capacity Assessment 2017

Future Proof Area – Waikato District, Hamilton City and Waipa District

17 July 2018 – final

m.e consulting

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Hamilton City and Waipa District

Prepared for

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Context

The National Policy Statement on Urban Capacity[1] (NPS-UDC or NPS) came into effect on the 1 December 2016 and establishes the requirement for local authorities to ensure there is sufficient housing and business land to meet expected demands. Under the Resource Management Act 1991 (RMA) and regional policy statements, regional plans and district plans must give effect to the objectives and policies of the NPS-UDC. The Future Proof Partners (FPP) are identified as a "high growth urban area"[2] under the NPS-UDC and are subject to the full suite of provisions.

The FPP comprises three local authorities – Waikato District, Hamilton City and Waipa District. Hamilton City forms the main urban economy as a significant second-tier city within New Zealand. It is surrounded by Waikato and Waipa districts that contain a number of smaller urban settlements, with large shares of their land area in rural uses.

Part of the FPP area is located within New Zealand's 'golden triangle' – bound by Auckland, Tauranga and Hamilton – and is currently experiencing significant growth, particularly within the Waikato District and Hamilton City. Overflow in demand from large growth in the Auckland region has contributed to significant growth in Hamilton City property prices and large expansion of a number of the northern Waikato urban settlements. Substantial growth pressures are set to continue as strong growth is projected to persist in the Auckland region.

The FPPs face the challenge of responding to this growth. This includes the provision of capacity (through both land and zoning provisions within existing urban areas) and infrastructure to provide sufficient capacity to accommodate growth, while simultaneously managing growth to achieve the best outcomes across economic, social, cultural and environmental well-beings.

In accordance with the NPS-UDC, the FPPs must complete a comprehensive assessment of demand and capacity for residential dwellings at least every three years, starting from 31 December 2017.

Approach

M.E have undertaken an assessment for the FPPs that provides detailed analysis of the FPP housing market, including drivers and influences on demand and supply, and the sufficiency of capacity provided within the district plan.

Dwelling Demand Assessment

M.E. have conducted an analysis of demand for the FPPs to understand the need for additional dwellings. The FPPs provided their own set of projections of households across different locations within the study

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[1] http://www.mfe.govt.nz/sites/default/files/media/Towns%20and%20cities/National_Policy_Statement_on_Urban_Development_Capacity_2016-final.pdf

[2] "High-growth urban area" is defined in the NPS-UDC.

area with the requirement to convert these to demand for dwellings. The FPPs have requested the use of medium projection series for the Waikato and Waipa districts, and the use of a low projection series for Hamilton City.

Household growth is a key driver of development markets and is important to understand in terms of absolute scale, composition and timing. The assessment focuses on resident household growth and how it translates into dwelling requirements within the Future Proof Partners urban environment. In accordance with the NPS, M.E have constructed a model to convert the growth in households into demand for dwellings by location, type and sale price value band.

Housing Capacity Assessment

Housing capacity is defined as the total stock of existing dwellings and the potential capacity for future dwellings to accommodate demand. Future capacity is defined as dwellings that are enabled by the Plan, serviced by infrastructure and are likely to be commercially feasible to construct.

The capacity assessment needs to consider the location of capacity, as well as the type and price points of different types of dwelling capacity. These are important characteristics of the dwelling capacity to meet demand for different dwelling types in different locations and at different price points.

Understanding the level of capacity that is enabled under the Plan – "plan enabled capacity" – is an important first stage of any capacity assessment. Information on the development options on each site is brought together with the site characteristics (including any existing dwellings) to determine the options for the number and types of dwellings that can occur on each site under the Plan.

M.E have undertaken detailed GIS analysis to identify the capacity for infill development, redevelopment and greenfield expansion across areas within the urban growth boundaries of FPPs. The analysis identifies the number of additional residential dwellings that can theoretically be constructed under each development scenario under the FPP District Plans.

The second stage of the assessment – "commercially feasible capacity" - estimates the commercial feasibility of constructing each of the different development options on each site enabled under the Plan.

The residential Commercial Feasibility Capacity Model calculates the number of plan-enabled dwellings that are commercially feasible to construct at each point in time. It spatially integrates detailed data from a wide range of sources to calculate the total cost of each development option, then compare it to an estimated sales price. If the sales price exceeds the costs by a sufficient margin, then the development option is identified as commercially feasible. During this stage, information on development costs is combined with careful analysis of the local market and geographic conditions.

The model operates at a parcel level and tests the commercial feasibility of the range of different development configurations that are enabled on each site under the District Plans. This includes infill development through subdivision or additional dwellings through the land use provisions of a component of the site, and the redevelopment of a site. Importantly, the model tests a range of different dwelling sizes within each possible dwelling configuration (rather than averages) to reflect differences in the development types that are suitable within each location.

The residential commercial feasibility model shows the number of development options that are commercially feasible on each property parcel at each point in time, and within each sale price value band. These are combined with spatial data on infrastructure servicing and timing to identify the level of infrastructure-served, plan enabled and commercially feasible capacity.

Results

Dwelling Demand Assessment

It was estimated there were over 100,000 households in the FPP area in 2017, with over half of those within Hamilton City. The Study Area is expected to experience significant growth in household numbers over the short, medium and long-terms, driving growth in demand for dwellings.

Hamilton City

In 2017, Hamilton City had an estimated 57,000 dwellings. This is projected to increase by an additional 5,000 dwellings in the short-term (to 2021), 11,000 additional dwellings in the medium-term (to 2026) and 32,000 additional dwellings in the long-term (to 2046) to reach a total demand of nearly 90,000 dwellings.

Rototuna is projected to have the largest net growth in demand within the short-term, followed to a significantly lesser extent by Nawton, East/University and Melville. Rototuna remains the largest area of net growth into the medium-term, followed by Peacocke. In the long-term, Peacocke and Chartwell become the largest areas of net growth (since the medium-term), followed by Rototuna and Nawton (Figure 6 contains a map of these areas).

Waikato District

The Waikato District had an estimated demand for 25,400 dwellings in 2017. This is projected to increase by an additional 2,600 dwellings in the short-term (to 2021), 5,900 additional dwellings in the medium-term (to 2026) and 16,900 additional dwellings in the long-term (to 2046) to reach a total demand of 42,300 dwellings in 2046.

Over time, significant relative growth in demand is forecast to occur across many of the Waikato District's urban settlements, with the largest net growth in Pokeno, Tuakau, Te Kauwhata, Ngaruawahia and Huntly. The area to the north east of Hamilton is projected to be the largest area of demand growth in both the short and medium-term. Growth in demand in this area is predominantly within the peri-urban area spread across a number of smaller localities and lifestyle block areas (Figure 5 contains a map of these areas).

Waipa District

The Waipa District had an estimated demand for 20,000 dwellings in 2017. This is projected to increase by an additional 2,000 dwellings in the short-term (to 2021), 4,700 additional dwellings in the medium-term (to 2026) and by 12,100 additional dwellings in the long-term (to 2046). In the long-term, the total dwelling demand is projected to be 32,000 dwellings.

Nearly half of the short-term additional demand is projected to occur within the Cambridge area, with a further fifth in Te Awamutu. Kihikihi is the next largest area of demand growth. This pattern is projected to

persist into the medium and long-term, but with an increasing share of demand growth into Te Awamutu and a decreasing share into Cambridge (Figure 7 contains a map of these areas).

Housing Capacity Assessment

Significant capacity exists to accommodate growth across the Future Proof Partner City and District areas. The level of capacity is a function of the land zoned to accommodate future growth, the existing development patterns on the land, the presence of future infrastructure servicing, and the commercial feasibility of capacity, which is influenced by demand growth. Capacity exists within both the existing urban areas and areas of greenfield expansion.

To meet the NPS-UDC requirements, the assessment of capacity within the Future Proof Partnership area is based on the capacity currently provided within the Operative District Plans. Waikato and Waipa District are currently undergoing district plan reviews and plan changes, which are each anticipated to enable substantial additional capacity across the districts. This is likely to occur within the growth areas identified within the Waikato District Plan review and the Growth Cells identified in Plan Change 5 notified for the Waipa District. Both of these include significant additional greenfield residential capacity in the areas surrounding the main urban settlements.

Waikato District

Plan Enabled Capacity

The Waikato District Plan enables the further development of 4,300 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site are removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 5,200 additional dwellings within existing urban areas. A further 11,000 dwellings are enabled in greenfield areas over the short to long-terms (the figure increasing to 11,000 as infrastructure is supplied through time).

The Country Living Zone accounts for around half of the plan enabled infill capacity, predominantly consisting of larger lots around the edge of existing urban settlements and the larger lifestyle properties stretching along State Highway 1 (with the greatest share within the area around the edge of Hamilton City). Significant shares of capacity also occur within the New Residential Living Zone (and Tuakau and Pokeno Living Zones) in the urban settlements, the largest of which include Ngaruawahia, Pokeno, Tuakau and Te Kauwhata.

In total, 11,900 to 14,250 dwellings are enabled under the Plan within the greenfield areas for future urban expansion within Waikato District without taking into account infrastructure constraints. When taking into account infrastructure, this figure drops to 8,000 in the short-term, increasing to 11,000 in the long-term as more infrastructure is supplied.

Taking into account infrastructure, the largest areas of greenfield plan enabled capacity occur in Ngaruawahia, Te Kauwhata, Taupiri, Pokeno and Tuakau. A significant share of the plan enabled capacity in Huntly and Pokeno is limited by the provision of infrastructure over the study period. Infrastructure significantly limits plan enabled capacity within Tuakau, Ngaruawahia and Te Kauwhata over the short to

medium terms, but is closer to plan enabled capacity (excluding infrastructure constraints) in the longer-term.

Commercially Feasible Capacity

In the short-term (to 2021) there is commercially feasible capacity for around 7,000 dwellings within the Waikato District. This rises to around 9,500 dwellings in the medium-term (to 2026); and to around 13,000 dwellings in the longer-term (to 2046). Around 70 per cent of this capacity occurs within the greenfield areas.

The Country Living Zone accounts for around half of the commercially feasible infill capacity, particularly around the edge of Hamilton City. This share decreases over the longer-term as a greater share of capacity becomes commercially feasible in other zones through time. The urban settlements of Ngaruawahia, Tuakau and Pokeno also contain significant portions of the feasible infill subdivision capacity.

Without taking into account the infrastructure constraints, Waikato District has approximately a further 7,600 to 8,600 dwellings that are commercially feasible within the greenfield areas in the short-term (to 2021). This increases to around 8,900 to 10,400 in the medium-term (to 2026) as demand increases; and to around 10,400 to 12,400 dwellings by 2046. When applying infrastructure constraints, the feasible, infrastructure-serviced capacity is reduced to around 3,400-4,700 dwellings in the short-term (to 2021). This increases to around 5,800 to 6,600 dwellings in the medium-term, and around 8,000 to 9,200 dwellings within the long-term.

Pokeno, Te Kauwhata and Ngaruawahia are the largest areas of commercially feasible, infrastructure-served greenfields capacity in the short-term. In the medium-term significant capacity is also added to Tuakau, and in the long-term, to Taupiri. The provision of infrastructure constrains the feasible greenfield capacity within several of the urban settlements (Huntly, Ngaruawahia, Pokeno, Te Kauwhata and Tuakau).

Overall, when combining feasible infill and infrastructure-serviced greenfield capacity, the largest areas of capacity occur around the edge of Hamilton and in Pokeno, Ngaruawahia and Te Kauwhata. These areas remain the main areas of capacity across the medium and longer-terms. Over the long-term a significant amount of capacity becomes commercially feasible in Taupiri. Growth in greenfield capacity in Huntly, Pokeno and Ngaruawahia is limited by infrastructure constraints as seen in the difference between commercially feasible capacity, and infrastructure-served capacity within these areas.

A snapshot analysis of the current market as at 2017 showed that Waikato District has 8,700 dwellings that currently have a profit margin of 20 per cent or greater; 10,200 dwellings currently with a profit margin of 15 per cent or greater; and 11,800 dwellings currently with a profit margin of 10 per cent or greater.

Hamilton City

Plan Enabled Capacity

The Hamilton City District Plan enables the further development of over 27,000 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site a removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 120,000 additional dwellings within existing urban areas. A further 5,000 to 25,000

dwellings are enabled in greenfield areas over the short to long-term (the figure increasing to 25,000 as infrastructure is supplied through time).

A large share of the plan enabled infill capacity occurs within the General Residential Zone, with provision to add a further unit as a duplex (without subdivision) accounting for a significant portion of this capacity. The CBD contains the next largest share of plan enabled infill capacity, followed by a small share within the Residential Intensification Zone. Infill capacity is spread across a large number of Hamilton's suburbs in relation to both subdivision and redevelopment capacity, with the CBD containing a large amount of redevelopment capacity.

Hamilton has further plan enabled capacity for over 30,000 dwellings within its greenfield areas (without taking into account infrastructure constraints). When infrastructure constraints are applied, the level of plan enabled greenfield capacity within Hamilton is reduced to around 5,000 dwellings within the short-term (to 2021), rising to around 25,000 dwellings within the long-term (to 2046).

Nearly all of the capacity within the short-term occurs within Rototuna and Ruakura, which both further increase in infrastructure-serviced capacity into the medium-term. In the medium-term, capacity becomes available within Rotokauri, and to a lesser extent Peacocke, which also contain the largest net increases of capacity between the medium and long-term. A small share of capacity also occurs within Te Rapa North in the long-term. Once infrastructure is taken into account no plan enabled greenfield capacity is available within the Temple View area.

Commercially Feasible Capacity

In the short-term (to 2021) there is commercially feasible capacity for around 11,000 dwellings within Hamilton City, or 17,500 dwellings if redevelopment is taken into account. This rises to 21,000 dwellings in the medium-term (to 2026), or 31,000 dwellings including redevelopment; and to 49,000 in the long-term (to 2046), or 108,000 dwellings including redevelopment. Redevelopment plays a larger potential role in commercially feasible capacity in Hamilton City than Waipa and Waikato Districts, with the commercial feasibility of redevelopment increasing through time.

Greenfield development accounts for around one-third of feasible capacity within the short-term, increasing over time to around half of the feasible capacity. If redevelopment is taken into account, the relative role of greenfield development becomes smaller due to the large amount of redevelopment capacity that becomes commercially feasible into the medium and long-term.

Rototuna, the Central City and East/Claudelands contain the largest amount of commercially feasible infill dwelling capacity within the short-term (excluding redevelopment). When including redevelopment capacity, the central city becomes one of the larger areas of capacity within the short-term. Over the medium-term, infill development capacity becomes commercially feasible across a greater range of areas in Hamilton City, particularly across the north-eastern suburban areas. A high share of the capacity becomes commercially feasible over the long-term.

Without taking into account infrastructure constraints, a further 6,500 dwellings are expected to be commercially feasible within Hamilton's greenfield areas within the short-term. This rises to 12,000 dwellings in the medium-term and to 28,000 in the long-term.

Infrastructure constraints reduce the feasible greenfield capacity to an additional 4,000 dwellings in the short-term, around 8,100 in the medium-term and around 25,000 in the long-term. Ruakura and Rototuna form the main areas of capacity within the short-term and with Peacocke and Rotokauri in the long-term. Infrastructure constrains commercially feasible capacity within Peacocke within the short and medium-term, followed by Rotokauri, and also within Temple View in the long-term (where no infrastructure is supplied).

Overall, when combining feasible infill and infrastructure-serviced greenfield capacity, the largest areas of capacity occur in Rototuna and Ruakura in the short-term (and within the CBD when including redevelopment). In the medium and long-term, larger amounts of both infill subdivision and redevelopment capacity become feasible across a wide range of Hamilton's areas.

A snapshot analysis of the current market as at 2017 showed that Hamilton City has 18,000 dwellings that currently have a profit margin of 20 per cent or greater; 30,000 dwellings currently with a profit margin of 15 per cent or greater; and 45,500 dwellings currently with a profit margin of 10 per cent or greater.

Waipa District

Plan Enabled Capacity

The Waipa District Plan enables the further development of nearly 1,760 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site are removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 4,500 additional dwellings within existing urban areas. A further 3,700 to 4,300 dwellings are enabled in greenfield areas over the short to long-terms (the figure increasing to 4,300 as infrastructure is supplied through time).

The Residential Zone, which is predominately located within the main urban settlements, accounts for two-thirds of the infill capacity, or three-quarters if redevelopment is taken into account. The remaining capacity occurs within the Large Lot Residential Zone, approximately 40 per cent of which is located around the edge of the main urban settlements. Together, Cambridge, Te Awamutu and Kihikihi account for around 80-90 per cent of infill capacity.

A further 4,200 to 5,600 dwellings are enabled under the Plan within the greenfield areas for future urban expansion without taking into account infrastructure constraints. When taking account of infrastructure constraints, the capacity decreases to between 3,700 and 4,300 dwellings. Approximately two-thirds of this capacity is located within the main urban settlements of Cambridge, Te Awamutu and Kihikihi. In all three settlements, the plan enabled capacity is constrained by infrastructure provision.

Commercially Feasible Capacity

In the short-term (to 2021) there is commercially feasible capacity for approximately 3,300 dwellings within the Waipa District. This rises to over 4,000 dwellings in the medium-term (to 2026); and to around 5,200 dwellings in the longer-term (to 2046). Around three-quarters of this capacity occurs within the greenfield areas.

Approximately half of the feasible infill capacity occurs within the Residential Zone in the short-term, which is concentrated into the main townships of Cambridge, Te Awamutu and Kihikihi. Overall, these townships

contain over 80 per cent of the feasible infill capacity over the short, medium and long-term. Over the long-term (to 2046) 42 per cent of the plan enabled infill (redevelopment) capacity is expected to become commercially feasible.

A further 3,700 to 4,400 dwellings are projected to be commercially feasible within Waipa District's greenfield areas (without taking into account infrastructure constraints) in the short-term (to 2021). This increases to 3,900 to 5,300 dwellings in the long-term as demand increases. When infrastructure constraints are applied, the greenfields feasible capacity reduces to 2,400 to 2,700 in the short-term, 2,400 to 3,100 dwellings in the medium-term and 2,900 to 3,900 dwellings in the long-term.

In the long-term nearly three-quarters of the infrastructure-served feasible greenfield capacity is located within the main townships of Cambridge, Te Awamutu and Kihikihi. This share has decreased from over 80 per cent in the short-term as greenfield capacity becomes commercially feasible in other locations within the district as demand has increased through time.

Overall, in both infill and greenfield areas, approximately a third of the total feasible capacity is located in Cambridge, and around one-quarter in Te Awamutu. Other areas where significant proportions of feasible capacity is located, include Kihikihi and the Hamilton Edge area.

A snapshot analysis of the current market as at 2017 showed that Waipa District has 3,500 dwellings that currently have a profit margin of 20 per cent or greater; 4,800 dwellings currently with a profit margin of 15 per cent or greater; and 5,300 dwellings currently with a profit margin of 10 per cent or greater.

Sufficiency Assessment

The core estimate of the sufficiency of housing capacity is direct comparison of projected demand with assessed supply in total, by location and in each value band. At the highest level, the comparison is total demand at each point in time (2021, 2026 and 2046) compared with total estimated supply, with total supply including the existing dwelling estate.

It is also important to consider the components of demand, in order to understand sufficiency by dwelling value band, in particular because this directly influences households' capability to secure housing – as owners or tenants – and by location, and dwelling type which relate to housing choices.

The measure of sufficiency which is applied is total feasible supply compared with total demand, where sufficiency is measured as the shortfall/surplus in terms of dwelling numbers, and the percentage share of demand for which there is likely to be feasible supply. The simple percentage reflects the shortfall or surplus relative to demand, while the dwelling count indicates the scale of the shortfall/surplus.

The standard approach used here is the shortfall surplus in each property value band, since that is the soundest indicator of potential supply shortfall relative to the purchasing power of the community.

Hamilton City

Overall, in the short-term, the modelling projects a net surplus of capacity within Hamilton City of up to 5,600 dwellings (or 11,700 dwellings taking into account redevelopment). This is projected to increase to around 7,600 dwellings in the medium-term (or 17,800 dwellings taking into account redevelopment), and to around 12,200 dwellings in the long-term (or 72,000 dwellings taking into account redevelopment).

However, when considering the value distribution of dwellings, some shortfalls are projected to occur within the lower value bands within Hamilton City, combined with surpluses within the upper value bands. Once redevelopment is taken into account, these shortfalls within the lower value bands either significantly reduce or disappear in the medium and long-term.

In some cases there is scope within the market for surpluses and shortfalls to balance out where shortfalls are in value bands that are adjacent to value bands that contain surpluses.

In the short-term, nearly three-quarters of Hamilton City's demand is for standalone dwellings. This share decreases through time as trade-offs are made based on price and location. A small shortfall in demand for standalone houses exists in the medium-term of between 1,000 to 2,000 dwellings. There is no shortfall in standalone dwelling capacity within the long-term.

Patterns of shortfall and surplus occur across different locations within Hamilton City across the short, medium and long-term. Hamilton's main areas of urban expansion, Ruakura and Rototuna, form the main areas of surplus within the short-term. Significant surplus also occurs within the CBD reflecting the potential for infill development.

Areas of capacity surplus increase across Hamilton through the medium and long-term. Surpluses become larger and nearly all of the deficits are removed once redevelopment is taken into account, illustrating the increased feasibility of this development option through time.

The presence of capacity deficits across a few suburbs of Hamilton do not necessarily imply the need to provide further capacity through increased zoning provisions within these locations as demand is able to be met within other locations across the city. Importantly, the household projections supplied to M.E contain the underlying demand arising from natural increase and migration within each local area of Hamilton and are not intended to reflect resulting patterns of growth (which will differ depending on the location of supply).

A snapshot analysis of the current market as at 2017 shows that Hamilton City currently has 10,500 dwellings that have a profit margin of 20 per cent or greater, and have planned infrastructure for the short-term. This compares to a short-term demand for 5,800 dwellings. It shows 24,400 dwellings that currently have a profit margin of 15 per cent or greater (or 13,200 dwellings within a profit margin of 20% or greater) and infrastructure planned for the medium-term. This compares to a medium-term demand for 13,200 dwellings. It shows 45,500 dwellings that currently have a profit margin of 10 per cent or greater (or 18,000 dwellings with a profit margin of 20% or greater) and infrastructure planned for the long-term. This compares to a long-term demand for 36,800 dwellings.

Waipa District

Overall, in the short-term, the modelling projects a net surplus of capacity of around 900 dwellings within the Waipa District. Over the medium-term a 5 per cent shortfall of some 1,300 dwellings is projected to occur, widening to a 24 per cent shortfall of 8,000 dwellings in the long-term.

When considering the value distribution of dwellings, there are projected to be shortfalls in the lower to mid value bands. However, there is some scope for the market to adjust where shortfalls occur in value bands adjacent to those which contain surpluses. In the medium to long-term, large shortfalls are projected

to occur across the low to mid value bands. However, it should be noted that part of these shortfalls are likely to be mitigated dwelling stock is constructed within these bands in the short-term in response to demand (meaning that the effect of real price growth within the dwelling stock is partly offset by construction through time).

The main urban settlements of Cambridge, Te Awamutu and Kihikihi, along with the area around the edge of Hamilton, are projected to contain capacity surpluses in the short-term. Shortfalls are projected to occur across most other smaller settlements and more remote locations.

In the medium-term, deficits are projected to occur across most locations, including the main urban settlements of Cambridge and Kihikihi. Infrastructure constraints in greenfield areas contribute to the projected deficits in these areas. However, in Cambridge, the level of feasible capacity on greenfield land is also a function of the underlying commercial feasibility of the land. Te Awamutu is projected to have a small surplus of feasible capacity.

In the long-term, the largest deficits are projected to occur in the main urban towns of Cambridge, Te Awamutu and Kihikihi where the largest amounts of demand growth are expected to occur. This is partly driven by infrastructure constraints in greenfield areas in the longer-term in both Te Awamutu, and to a lesser extent Cambridge.

Both Cambridge and Te Awamutu face capacity deficits in the long-term even when compared with plan enabled capacity (including infrastructure constraints). In Cambridge, if infrastructure was supplied to the rest of the greenfield land, then this would increase plan enabled capacity in greenfield areas by 500 dwellings, which would still result in a shortage. Te Awamutu is in a similar situation, but to a lesser scale than Cambridge.

A snapshot analysis of the current market as at 2017 shows that Waipa District currently has 2,900 dwellings that have a profit margin of 20 per cent or greater, and have planned infrastructure for the short-term. This compares to a short-term demand for 2,400 dwellings. It shows 4,200 dwellings that currently have a profit margin of 15 per cent or greater (or 2,900 dwellings within a profit margin of 20% or greater) and infrastructure planned for the medium-term. This compares to a medium-term demand for 5,700 dwellings. It shows 5,300 dwellings that currently have a profit margin of 10 per cent or greater (or 3,500 dwellings with a profit margin of 20% or greater) and infrastructure planned for the long-term. This compares to a long-term demand for 13,900 dwellings.

Waikato District

Overall, in the short-term, the modelling projects a net surplus of capacity of around 3,700 dwellings within the Waikato District. Over the medium-term, the surplus remains, but decreases to around 2,100 dwellings. However, in the long-term, a shortfall of 13 per cent emerges – around 6,400 dwellings.

When considering the value distribution of dwellings, shortfalls are projected to occur in the lower to mid price brackets, increasing into the long-term. In the short and medium-term, some of this demand could be met through market adjustment within the mid value brackets. Surpluses are also projected to occur within the higher value bands, although it is unlikely these will be able to meet demand within the lower price brackets. However, it should be noted that part of these shortfalls are likely to be mitigated where

dwelling stock is constructed within these bands in the short-term in response to demand (meaning that the effect of real price growth within the dwelling stock is partly offset by construction through time)[3].

By location, a surplus of capacity exists in the short-term across most of the main urban settlements (Ngaruawahia, Te Kauwhata, Pokeno and Taupiri, and to a lesser extent Tuakau and Huntly). A significant surplus also exists in the area around the edge of Hamilton, which mainly includes lifestyle block properties. The largest areas of deficit occur outside of the main urban settlements, across smaller settlements in the largely rural areas. The largest area of deficit occurs across the areas to the northeast of Hamilton although this deficit is adjacent to Hamilton Edge, a large area of surplus.

Most of the larger urban towns and settlements (Te Kauwhata, Ngaruawahia, Tuakau, Pokeno and Taupiri) continue to have a capacity surplus in the medium-term. The small surplus in Tuakau increases into the medium-term as more infrastructure is supplied for greenfield development. A deficit emerges in Huntly and continues to widen in Raglan due mainly to greenfield infrastructure constraints.

In the long-term, capacity deficits emerge in the larger urban settlements of Pokeno and Tuakau. In the case of Pokeno, infrastructure provision within the greenfield areas becomes a constraint on feasible capacity in the long-term where there is a difference of around 1,300 dwellings when comparing feasibility with and without infrastructure constraints. A large surplus is projected to occur in Taupiri in the long-term as more greenfield capacity is supplied with infrastructure. Te Kauwhata and Ngaruawahia are projected to continue to experience capacity surpluses into the long-term, however, these may become smaller if a higher share of demand is concentrated into these urban settlements into the future.

A snapshot analysis of the current market as at 2017 shows that Waikato District currently has 5,600 dwellings that have a profit margin of 20 per cent or greater, and have planned infrastructure for the short-term. This compares to a short-term demand for 3,100 dwellings. It shows 9,200 dwellings that currently have a profit margin of 15 per cent or greater (or 7,600 dwellings within a profit margin of 20% or greater) and infrastructure planned for the medium-term. This compares to a medium-term demand for 7,100 dwellings. It shows 11,800 dwellings that currently have a profit margin of 10 per cent or greater (or 8,700 dwellings with a profit margin of 20% or greater) and infrastructure planned for the long-term. This compares to a long-term demand for 19,400 dwellings.

[3] The Model identifies the capacity that is available at each point in time relative to the currently existing supply. The price point of capacity reflects the price at which it would be feasible to construct at the point in time of the model run year. It is important not to confuse the Model with a growth model, which would allocate a level uptake within each location. However, when assessing sufficiency, it is important to understand that a level of capacity is likely to be up-taken at each point in time, and therefore capacity identified in later model years (where prices are higher) is likely to contain a share which has already been constructed (at lower prices) in earlier years.

1 Introduction

The National Policy Statement on Urban Capacity[4] (NPS-UDC or NPS) came into effect on the 1 December 2016 and establishes the requirement for local authorities to ensure there is sufficient housing and business land to meet expected demands. Under the Resource Management Act 1991 (RMA) and regional policy statements, regional plans and district plans must give effect to the objectives and policies of the NPS-UDC.

The Future Proof Partners (FPP) are identified as a "high growth urban area"[5] under the NPS-UDC and are subject to the full suite of provisions. In accordance with the NPS-UDC, Hamilton City, Waikato District, and Waipa District must complete a comprehensive assessment of demand and capacity for residential dwellings at least every three years, starting from 31 December 2017.

This assessment provides detailed analysis of the FPP housing market, including drivers and influences on demand and supply, and the sufficiency of capacity provided within the district plan. These results will be a key part of Council's evidence base to inform future planning and infrastructure decisions, in particular the development of a 'Future Development Strategy' which is also required under the NPS-UDC by December 2018.

This report, prepared by Market Economics Limited (M.E) in collaboration with the FPP delivers the first Housing Development Capacity Assessment (HDCA). A Business Development Capacity Assessment (BDCA) has been undertaken and is detailed in a separate report.[6]

This HDCA focuses on the development capacity of the Hamilton City, Waikato District and Waipa District urban environments as required by the objectives of the NPS-UDC. It is acknowledged that the responsive planning policies of the NPS-UDC can be applied outside the boundaries of the urban environment.

1.1 Purpose of the NPS – UDC

In summary, the NPS-UDC requires local authorities to ensure there is sufficient housing and business land to meet expected demands. To do so, it establishes a comprehensive staged assessment process to ensure local authorities gain a fine-grained understanding of the economic influences on capacity and demand in order to better plan for growth.

The NPS identifies that urban environments are areas where population and economic activities are in close proximity and that they are often growing at significantly higher rates than in rural or provincial settings. This dynamism leads to unique and challenging conditions that require particular policy responses to manage effects and to ensure that growth is managed in a manner that is both efficient and ensures that

[4] http://www.mfe.govt.nz/sites/default/files/media/Towns%20and%20cities/National_Policy_Statement_on_Urban_Development_Capacity_2016-final.pdf

[5] "High-growth urban area" is defined in the NPS-UDC.

[6] Business Development Capacity Assessment 2017

communities continue to be able to provide for their social, cultural, environmental and economic wellbeing.

In order to effectively plan for, and manage growth, it is important to understand particular influences on growth within the urban environment, both population and economic. Local authorities are able to make well informed decisions if they have access to consistent and robust estimates of economic growth. Understanding the key drivers or constraints on growth and the land use implications of change will assist authorities when assessing the effects of alternative policy options. In the context of business land, it will also support thriving town centres, efficient transport and infrastructure planning, and enable change that fosters the sustainable growth of our District. This information will also provide greater understanding of industries that may change over time, and enable the management of possible negative effects of business activities, such as reverse sensitivity or high vacancy rates.

A key outcome of the NPS-UDC is the integration of land use and infrastructure planning. This recognises that development is dependent on the availability of infrastructure, and decisions about infrastructure can shape the location and form of urban development. There are obvious benefits, particularly in terms of efficiencies, more predictable outcomes and the cost savings to the wider community from ensuring consistency between all of these processes. Accordingly, the NPS-UDC requires (under PA1) that development capacity considered in these assessments is either serviced, or identified in a Long Term Plan or Infrastructure Strategy.

1.2 NPS Objectives

As a high growth urban area, the FPP are subject to the full suite of objectives and policies under the NPS-UDC. The objectives and policies are structured into four key themes, summarised below:

- *Outcomes for planning decisions* – these provisions establish the requirement to ensure sufficient housing and business capacity to meet demand, provide for choices, and urban environments that develop and change over time.
- *Evidence and monitoring to support planning decisions* - these provisions specify the reporting requirements, the need to monitor market indicators, and consider influences on capacity such as rate of take-up and feasibility.
- *Responsive planning* – requires a response to be initiated if the evidence base suggests there is insufficient development capacity, establishes the requirement for Councils to prepare a 'Future Development Strategy' and the setting of 'minimum targets' in regional and district plans.
- *Coordinated planning evidence and decision-making* – encourages collaboration between authorities that share jurisdiction over an urban area, and between regional and local councils.

1.3 The Housing Development Capacity Assessment

The NPS specifies the overall requirement for the HDCA, together with a range of requirements in the policies[7]. Each policy assessment requires a sound analytical/technical base and good supporting information, and most require quantification to achieve compliance. There are many inter-linkages and inter-dependencies among the policies, which make it important to understand the NPS both holistically, and as to the specific requirements for each policy. The individual policies cannot be satisfied if treated in isolation.

NPS guidance paraphrases the policies most relevant to the HDCA (PB1 to PB5) as follows.

Figure 1 – NPS Guidance Policies PB1 to PB5

PB1: Local authorities shall, on at least a three-yearly basis, carry out a housing and business development capacity assessment that:

a) Estimates the demand for dwellings, including the demand for different types of dwellings, locations and price points, and the supply of development capacity to meet that demand, in the short, medium and long-terms

PB2: The assessment ... shall use information about demand including:

a) Demographic change using, as a starting point, the most recent Statistics New Zealand population projections

PB3: The assessment... shall estimate the sufficiency of development capacity provided by the relevant [regulatory and infrastructure plans] including...

c) current feasibility of development

d) rate of take-up observed over the last 10 years and estimated for future

PB4: The assessment shall estimate additional development capacity [if] needed

PB5: local authorities shall seek and use the input of... iwi authorities, the property development sector, significant land owners, social housing providers [etc.]

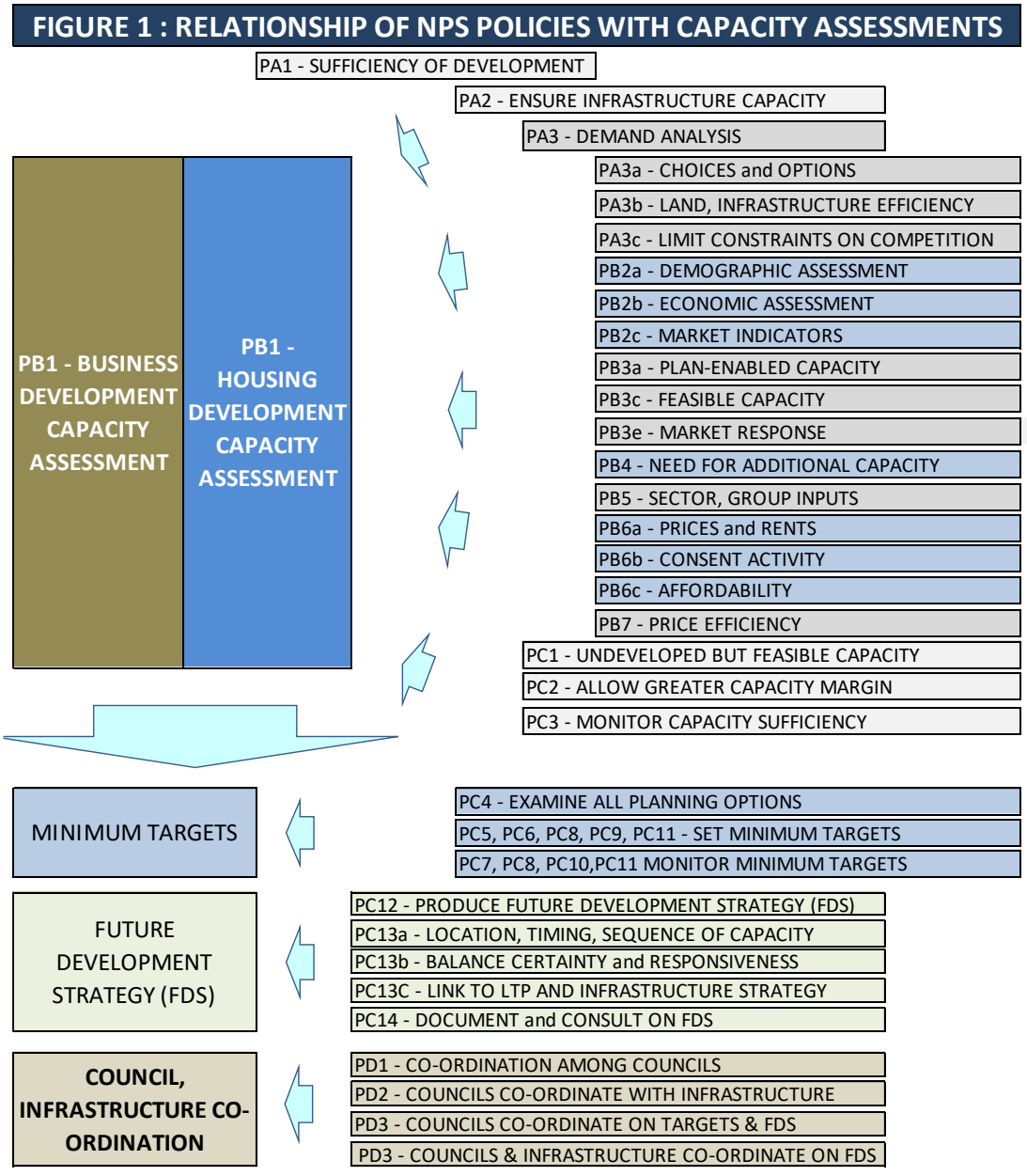
Figure 2 sets out the overall policy structure of the NPC-UDS, and shows the relationship of each policy to the overall requirement to produce Business (and Housing) Development Capacity Assessments (PB1). A key feature of the flow chart is that while there are significant cross-flows between Policies (these are not shown in the figure to maintain some clarity), the main focus of all Policies from PA1 to PC3 is on the capacity assessments.

Subsequent to the completion of the HDCA (and BDCA), Policies PC4 to PC11 are oriented to setting and achieving Minimum Targets for growth and capacity. Policies PC12, PC13a-c, and PC14 are geared toward the third of the major reporting documents, the FDS. The remaining policies PD1 through PD4 are to ensure co-ordination among councils and between councils and infrastructure providers.

[7] Insert link to latest guidance and monitoring doc.

Within this wide suite of policies, the major part of the technical analysis and monitoring is set out in policies PA1 through PC3, which contribute most directly to the BDCA (and HDCA). These are addressed throughout this report.

Figure 2 – Relationship of NPS Policies with Capacity Assessments



The two (housing and business) assessments should help local authorities to quantify in broad terms how much development capacity is, or should be, provided in resource management plans and supported with development infrastructure, to enable the supply of business (and housing) space that meets demand. Policy PB3 requires that this assessment include how much capacity is "feasible" to develop in the current market and expected to be taken up over time. In addition, to account for a portion of feasible development

capacity that may not be developed, the calculation of total feasible capacity needs to include margins over and above projected demand, to inform policies PC1 and PC2.4.

The assessments should also include information about the interactions between housing and business activities, such as how these drive demand for each other in particular locations or industries; and whether the location of activities provides for accessibility and the efficient use of land and infrastructure.

1.4 Approach Overview

This HDCA presents information at a level of detail that is relevant for Council's planning decisions and the setting of minimum development capacity targets for housing, as required under policies PC5 – PC11. It explores the composition of demand and feasibility of capacity at a level of detail that informs zoning and regulations (and infrastructure planning) affecting development typologies and location. It includes information about different groups in the community to demonstrate who might be affected by planning regulations that constrain development capacity, and to what extent. This includes analysis on key consumer groups such as renters, first home buyers, movers, investors and holiday home owners. This information will help inform analysis required under Section 32 of the Resource Management Act associated with any future changes to the district plan.

The following sub-sections provide a high level overview of the approach taken within the assessment. Further technical detail on the methodology and approach is contained within the supporting technical reports.

1.4.1 Assessing Housing Demand (PA3a, PB2)

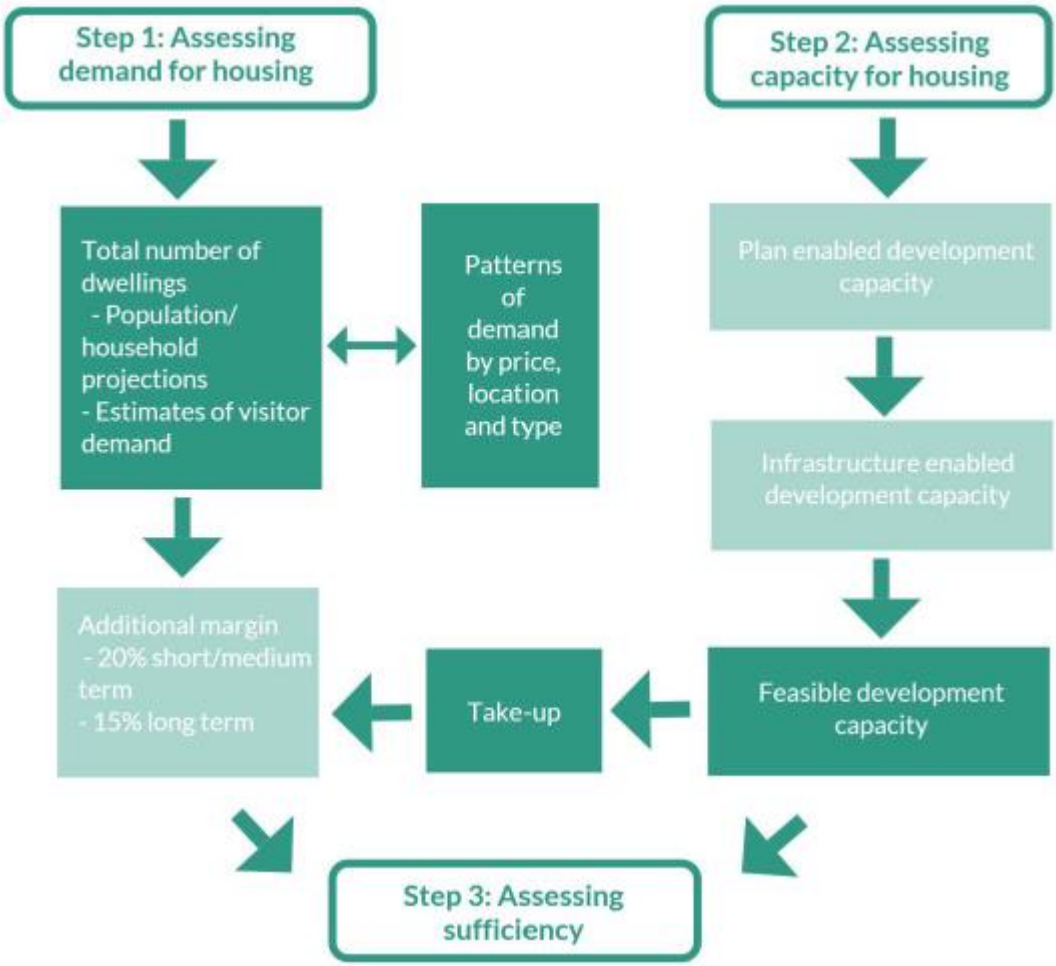
This report does not attempt to predict demand in fine detail. The results should not be used as the basis for providing precise amounts of capacity at specific locations. Rather, the assessment provides broad brush information for planning that enables development of a range of dwelling types, price points and locations (organised according to a set of scenarios).

Household growth is a key driver of development markets and is important to understand in terms of absolute scale, composition and timing. The HDCA focuses on resident household growth and how it translates into dwelling requirements within the Future Proof Partners urban environment. With this information, the Future Proof Partners can make more informed decisions that:

- provide sufficient capacity and choices for district households;
- support thriving town centres, efficient transport, and management of the negative effects and reverse sensitivity;
- enable constant spatial change to support growth and change.

The HDCA has three main stages or components of analysis for both demand and supply, and includes several intermediate steps. The broad approach is presented in Figure 3. The following sections contain a narrative that addresses each stage in detail.

Figure 3 – Housing Development Capacity Approach Overview



1.4.2 Assessing Housing Capacity

Housing capacity is defined as the total stock of existing dwellings and the potential capacity for future dwellings to accommodate demand. Future capacity is defined as dwellings that are enabled by the Plan, serviced by infrastructure and are likely to be commercially feasible to construct.

The capacity assessment needs to consider the location of capacity, as well as the type and price points of different types of dwelling capacity. These are important characteristics of the dwelling capacity to meet demand for different dwelling types in different locations and at different price points. The need for a housing capacity assessment is set out in the NPS as above. This does not, however, require highly detailed specification of demand from each type of household by dwelling type and location and price point, because of the multitude of possible combinations. Rather, the requirement is that housing capacity offers a suitable range of options by dwelling type and/or location and/or price/value point from which consumer households may choose according to their preferences and capabilities, and not require a wide range of dwelling and price options in every location.

The level of commercially feasible capacity serviced by infrastructure is then compared to the level of demand to determine the sufficiency of capacity to accommodate demand from the current and future population.

1.4.2.1 Plan Enabled Capacity

Understanding the level of capacity that is enabled under the Plan – "plan enabled capacity" – is an important first stage of any capacity assessment. Information on the development options on each site is brought together with the site characteristics (including any existing dwellings) to determine the options for the number and types of dwellings that can occur on each site under the Plan.

M.E have undertaken detailed GIS analysis to identify the capacity for infill development, redevelopment and greenfield expansion across areas within the urban growth boundaries of Future Proof Partners'. The analysis identifies the number of additional residential dwellings that can theoretically be constructed under each development scenario under the FPP District Plans ("DP"). A range of spatial parcel level data were brought together within the GIS system to calculate capacity.

Infill Development

GIS processes were used to identify whether sufficient land area exists within each property parcel to subdivide a site to accommodate a new dwelling or to accommodate an additional dwelling through the land use provisions of the District Plans. The process takes account of the number and position of any existing dwellings within each property parcel. It then applies any planning rules (such as setbacks) to exclude specific areas within each parcel from development. A series of geometric techniques were then applied to identify the largest and most appropriately shaped portion of each parcel that could potentially be subdivided or accommodate further dwellings through land use provisions, and whether driveway access is possible to the subdivided portion of the site. A final stage of the calculation adjusts the distribution of land area within each parcel between the subdivided and residual sections of the site to maintain adherence of existing dwellings to planning rules.

Redevelopment

M.E's model calculates the redevelopment capacity on each site through taking into consideration the total site area, the developable area and the planning rules for different zones and dwelling typologies. The model outputs the number of dwellings that can fit on each site, of each type, if any existing dwellings were removed and the site redeveloped.

Greenfield expansion

Structure plan, zoning, and developer plan information was brought together within the GIS system to calculate the number of dwellings of each type that were enabled to locate within each greenfield area under the Plans. A combination of yields established within the Plan/structure plans, yields from developer plans, and minimum site size requirements were applied to each greenfield area to identify their total capacity.

A further scenario was developed for the Future Proof Partners model given the higher densities enabled by the District Plans in some locations relative to the existing dwelling landscape. This more conservative scenario developed site sizes based on the local market conditions at each location to reflect more likely

development outcomes in locations where new site sizes were considerably larger than those enabled under the District Plans. These alternative site sizes were applied to both the infill and greenfield areas.

1.4.2.2 Commercially Feasible Capacity

The second stage of the assessment – "commercially feasible capacity" - estimates the commercial feasibility of constructing each of the different development options on each site enabled under the Plan.

The residential Commercial Feasibility Capacity Model calculates the number of plan-enabled dwellings that are commercially feasible to construct at each point in time. It calculates the total cost of each development option, then compares it to an estimated sales price. If the sales price exceeds the costs by a sufficient margin, then the development option is identified as commercially feasible. During this stage, information on development costs is combined with careful analysis of the local market and geographic conditions.

The model operates at a parcel level and tests the commercial feasibility of the range of different development configurations that are enabled on each site under the District Plans. This includes infill development through subdivision or additional dwellings through the land use provisions of a component of the site, and the redevelopment of a site. Importantly, the model tests a range of different dwelling sizes within each possible dwelling configuration (rather than averages) to reflect differences in the development types that are suitable within each location.

The residential commercial feasibility model shows the number of development options that are commercially feasible on each property parcel at each point in time[8]. The model also identifies the sale price value band of each potential dwelling, which is important in assessing the sufficiency of capacity in relation to the value bands of demand. These are combined with spatial data on infrastructure servicing and timing to identify the level of infrastructure-served, plan enabled and commercially feasible capacity.

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[8] The NPS-UDC requires assessment of "*current feasibility*" (Policy PB3) but elsewhere defines feasibility in terms of the "*current likely*" returns and costs.
One interpretation is that capacity be assessed in terms of its feasibility at this moment in time, and so excludes from consideration any capacity that is likely to become feasible to develop in the future (the term "likely" being just acknowledgement that estimates of costs and returns inevitably carry a degree of uncertainty).
The other interpretation is that the NPS definition explicitly acknowledges that feasibility will change over time - as urban economies grow, the value of land increases because the scale and range of potential uses increase, while the value of improvements is tied to the time at which they were added when the economy was smaller. The progressive increase in land value as a share of total value of a property, together with the ageing of existing improvements, means that the feasibility of development or re-development also progressively increases – such that the term "*likely*" refers to an expected future circumstance.
If "*currently feasible*" is taken to mean that only capacity which is feasible at this moment in time may be considered, then it is necessary to sustain the consequent assumptions – in brief, that today's economic conditions including prices, land and improvement values, the age and condition of improvements will remain unchanged throughout the next 30 years and longer, and be unchanged during a period when the district economy is expected to grow by between 80% and 105%.
The conceptual and practical difficulties of justifying such extreme assumptions suggest that it is prudent to allow for the term "*likely*" to denote forward-looking. Otherwise, an assessment limited to current feasibility can be expected to significantly underestimate the capacity that will be feasible within the 30+ year time frame of the NPS-UDC.

1.5 Data Sources

The HDCA modelling draws on existing datasets as supplied to M.E by the FPP councils. Key database sets include:

- Rating databases – containing information on land parcels relating to their existing land uses, dwelling types, development patterns (e.g. floorspace), and value (CV, IV, LV)
- Published District Plans – contain information relating to activity status of development types and development rules (site sizes, driveway widths, setbacks, site shape factors).

Several spatial datasets were also incorporated into the modelling, including:

- LINZ Primary Parcels[9] – capacities were modelled at the LINZ Primary Parcel level
- District Plan Zoning – provided by each council, including overlays, subzones, and hazards
- Building Footprints – derived from aerial photography, used to undertake a GIS-based plan-enabled capacity assessment
- Greenfield Structure Plans – spatial layers detailing the land earmarked for future development, including any information on development types and capacity.

The HDCA modelling also incorporates several other datasets, including:

- Statistics New Zealand (SNZ) 2017 Population Projections
- Core Logic Datasets – relating to dwelling typologies and sales prices

Ground truthing of capacity estimates was also supplied to M.E throughout the modelling process, as well as informal inputs to the demand and feasibility portions of the assessment.

1.6 Stakeholder Engagement

The NPS-UDC requires local authorities to seek and use the input of particular local groups with relevant expertise. This helps ensure that local development perspectives inform assessment of feasibility and that local market conditions are fully represented in the analysis. In particular, local engagement has been used to assist in identifying characteristics of land and location that make development feasible across the range of development sectors.

1.7 Terminology and Definitions

Key terms used in this report are defined here:

[9] https://data.linz.govt.nz/layer/50772-nz-primary-parcels/

- Base year: the base year of this assessment is 2016.
- Urban Residential Land: land that is zoned for residential uses in urban and surrounding developed environments, including but not limited to land in the following examples of zones:
    - Residential
    - City Centre
    - Special Character
    - Village
    - Country Living
- Resident Demand: The demand current and future residents place on the housing market, in total and including by dwelling type, tenure (owned and rented private dwellings), price point and location.
- Attached Housing, where two or more dwellings are attached physically, typically as units, duplexes (two dwellings attached) town houses, terrace houses and apartments
- Detached Housing or Standalone Dwellings, where a dwelling is constructed as a standalone dwelling without being attached to another dwelling.
- Short-term: 2016 to 2021[10].
- Medium-term: 3-10 years measured from the base year, in this case 2016 to 2026
- Long-term: 10-30 years (measured from the base year, in this case 2016 to 2046.
- Feasible: Development that is commercially viable to a developer, taking into account the current likely costs, revenues and yield of developing. Feasibility has a corresponding meaning. Note that feasibility assumes that the land is enabled for development by the plan and supported by public infrastructure.

1.8 Report Outline

This report is structured as follows:

Section 2 describes the study area and urban environment of the Future Proof Partners. This section details the approach and spatial framework used.

Section 3 describes localised dwelling demand by type across the FPP.

[10] In this case, 2021 has been used given the report availability at the start of 2018.

Section 4 describes the plan enabled residential dwelling capacity for each of the councils. The capacity for a number of dwelling typologies is presented.

Section 5 contains the assessment of sufficiency of housing capacity, and compares the residential dwelling capacity outputs and the residential dwelling demand projections, and includes discussion of the importance of key assumptions and approaches.

Section 6 provides concluding remarks.

2 Study Area - Urban Environment

The NPS-UDC describes the urban environment as being characterised by the closeness of people and places, and the connections between them. They are places of high economic and population activity, and while sharing common elements, each has unique characteristics which influence their economic and societal roles and significance, and their identity and relative advantages and disadvantages. Urban environments are often places of quite rapid change and growth, through a combination of outward expansion and intensification of already urbanised land through infill and redevelopment. Managing change and growth is important for councils seeking to ensure the urban environments continue to provide appropriately for the wellbeing of people and communities.

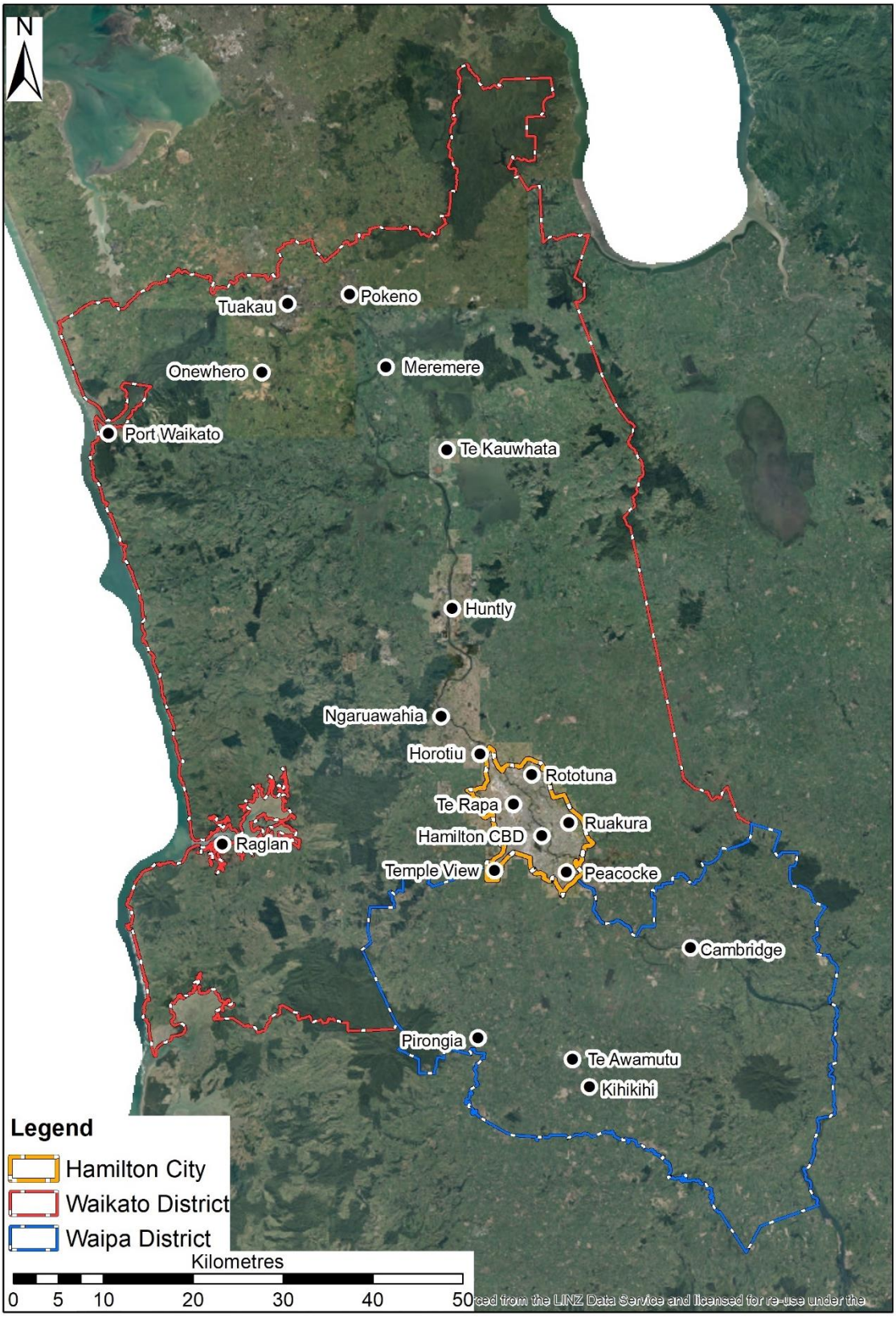
2.1 Geographic Context

The FPP network is shown in Figure 4 and encompasses Hamilton City, and adjacent Waikato and Waipa Districts. It contains a land area totalling 6,034 km^2, of which Waikato District makes up 4,453 km^2 (73.8%), Waipa District makes up 1,470 km^2 (24.4%), and Hamilton City makes up 111 km^2 (1.8%). The combined area is located within a geographically significant sector of the North Island, sitting astride a large portion of the 'Golden Triangle' (Hamilton-Tauranga-Auckland).

Within the Future Proof Partnership area Hamilton is the major city, with 5 significant towns - Te Awamutu and Cambridge in Waipa, and Huntly and Ngaruawahia together with Tuakau in the north in Waikato District - and a number of smaller towns/townships - Raglan, Pokeno, and Te Kauwhata serving the rural economy (Figure 4). Towns and townships are primarily located along State Highways, interspersed by tracts of rural land. These rural areas include highly productive and intensively farmed areas mostly dairying and horticulture) as well as less intensively utilised and hillier country (mostly sheep and beef farming and forestry).

The economy of the FPP area has two major influences – the substantial farming and forestry and associated processing and service activities of the Waikato region, and proximity to Auckland, the country's largest commercial and industrial centre, port, and largest population centre, characterised by rapid expansion historically, and expectations of further strong growth into the long term (2060 and beyond). Population growth pressure from Auckland (including on housing supply and affordability) is influencing growth demands in adjacent areas, and locations in northern Waikato in particular are experiencing significant pressure to develop and expand urban amenities. This exacerbates demands arising from internal population growth, and puts pressure on requirements for land and service infrastructure.

Figure 4 – Future Proof Partners Study Area



2.2 Urban Environments and the NPS-UDC

2.2.1 Context

Defining the urban extent is both relatively simple and complex in Hamilton. For the most part the extent of the Hamilton City boundary has been used to define the extent of the Urban Area. While the NPS defines the Urban Environment as;

> *an area of land containing, or intended to contain, a concentrated settlement of 10,000 people or more and any associated business land, irrespective of local authority or statistical boundaries.*

The NPS states on page 10 that the "following objectives apply to all decision-makers when making planning decisions that affect an urban environment". What forms part of an urban environment is therefore important, as the objectives of the NPS, and Policies PA1 to PA4 in relation to an urban environment that is expected to experience growth, only apply to those areas that meet the NPS definition of urban environment. 'Urban environment' is defined in the NPS as:

A local authority must have part, or all, of either a medium or high-growth urban area (as defined under the NPS) within their district/region, before Policies PB1 to PB7 (*evidence and monitoring*), PC1 to PC4 (*responsive planning*), and PD1 to PD4 (*Coordinated planning evidence and decision-making*) apply; and a high-growth area in their district/region before Policies PC5 to PC14 (*minimum targets and future development strategy*) apply.

Once defined as being a high or medium-growth area within a District, the application of these policies is not restricted to the boundaries of the urban area itself, and therefore can apply District-wide. This reflects for example, the scenario in which new greenfield land may be identified as a future growth area in order to provide additional development capacity outside the boundaries of the existing “urban environment”.

Together, the Future Proof Partners area is considered a ‘high growth urban area’ under the NPS-UDC.

2.3 Spatial Framework – Land Use Zones

The District Plan zones were key in determining the urban areas to be assessed for the HDCA, primarily because they quite effectively define the extent of the urban environment and related boundary in most cases. The Rural Zones and “peri-urban” zones (e.g. Country Living) in the Plans correspondingly define the areas intended to remain urban and maintain the rural environment and economy. The key issues in the medium and long term relate to the outward expansion of urbanised areas into the existing peri-urban and rural environments. The urban capacity (especially residential) which may be provided in areas for such outward expansion are central to growth areas meeting the requirements of the NPS-UDC, and at the same time the location and scale of such capacity for expansion, and the timing of its development, are central to the wider objectives of sustainability (relating to efficiency) and community wellbeing in plan objectives, with corresponding requirements also in the NPS-UDC.

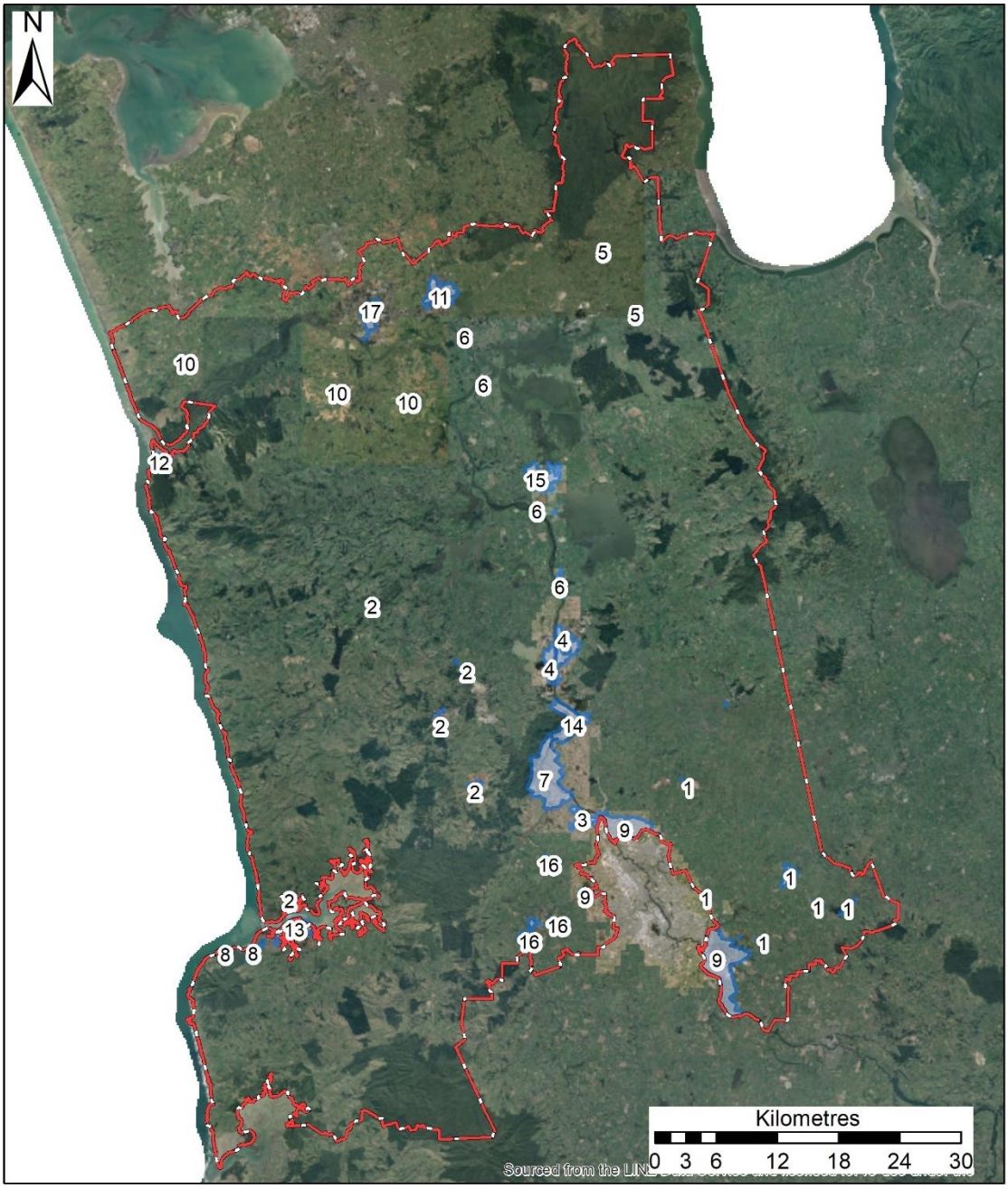
The FPP area has long recognised requirement to accommodate urban growth, and this has translated through to city and district plan provision as to scale and location of such expansion.

These provisions underpin the Spatial Framework for this assessment. The zones included in the HDCA were selected based on the activities allowed, and the objectives for the zones. Anywhere that urban development was recognised as a priority has been included in the analysis.

A spatial framework was developed for each of the Future Proof Partners. The frameworks are shown in Figure 5 to Figure 7 and were developed within the GIS based on recognisable development patterns, district plan zoning, and distinguishable suburb-type boundaries. These zones were developed as a way to recognise that spatially distinct patterns that emerge from both the demand and supply side of the HDCA modelling. In the case of Waikato and Waipa Districts, the spatial frameworks were developed broadly based on distinct town/urban boundaries, as well as any further urban-type zoning and structure plans surrounding these. Generally, anywhere that has been earmarked for urban expansion has been included in the analysis.

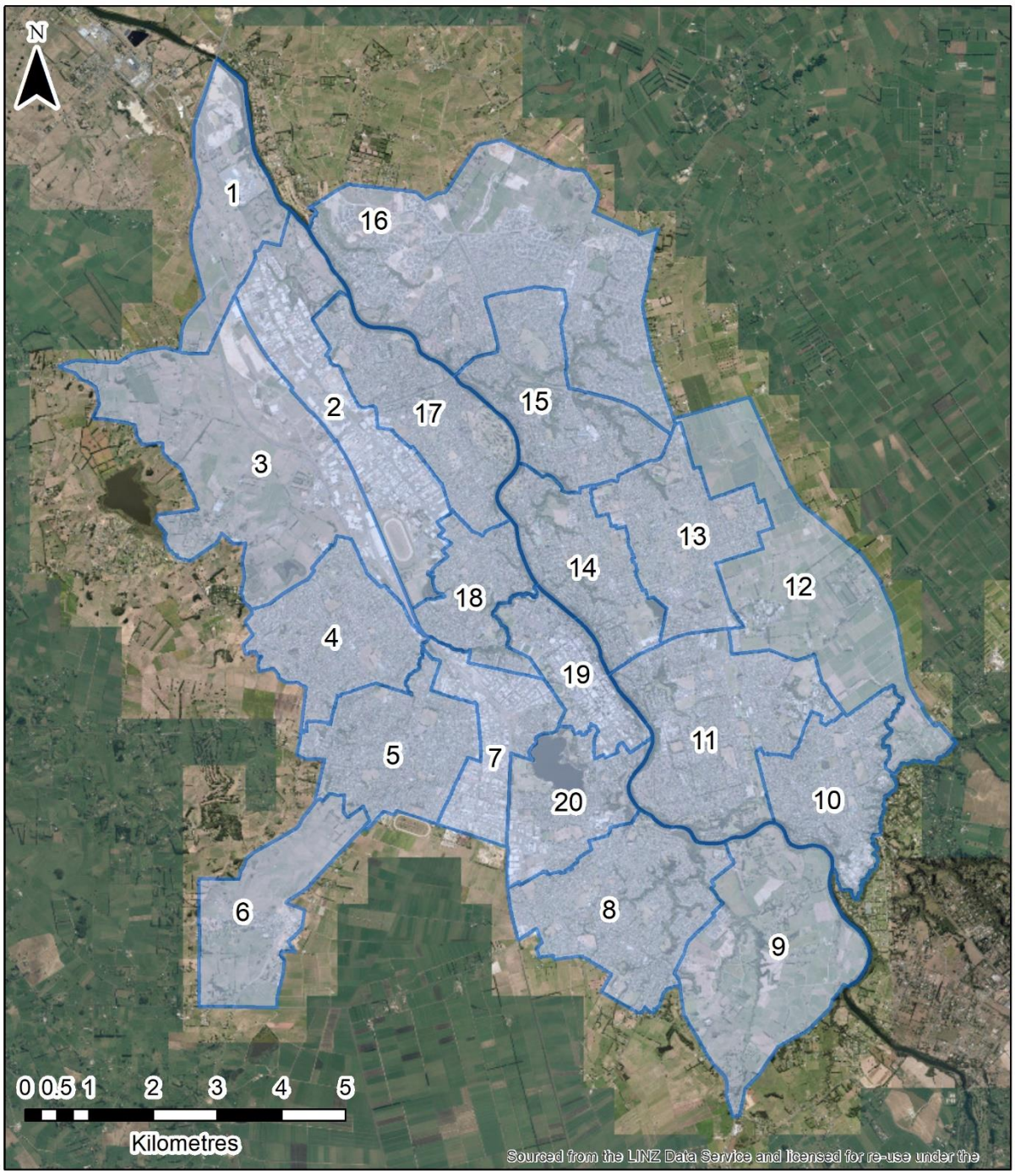
The HDCA conducts assessments of capacity at a highly granular spatial resolution as a means to recognise any differences between areas. The results have then been aggregated together for reporting purposes. The spatial distribution of the aggregated frameworks can be seen in the following figures.

Figure 5 – Waikato District Council Spatial Framework



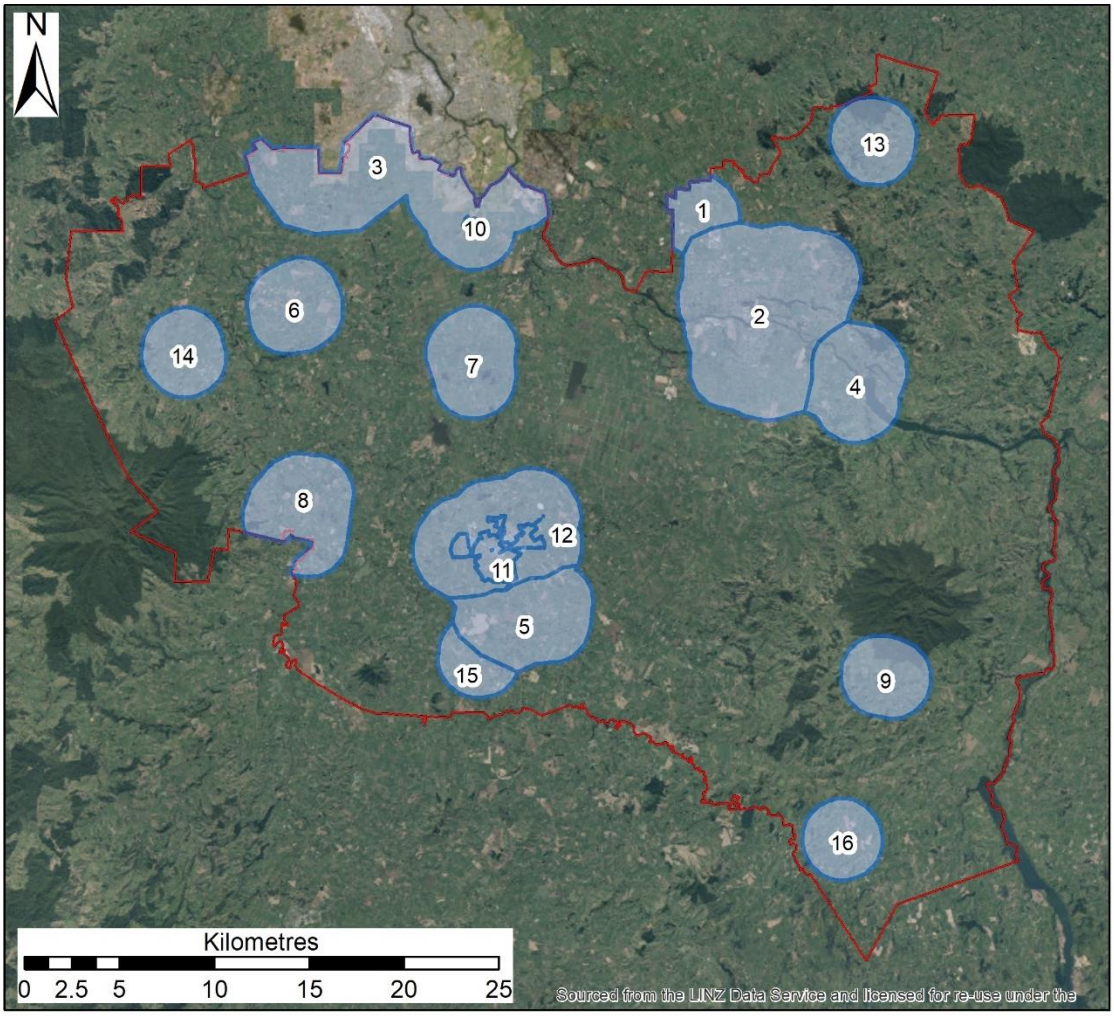
1 - North East of Hamilton
2 - Mid-West Waikato
3 - Horotiu
4 - Huntly
5 - North Eastern Waikato
6 - SH1 North
7 - Ngaruawahia
8 - Ngaruni Beach
9 - Hamilton Edge
10 - Northern Edge
11 - Pokeno
12 - Port Waikato
13 - Raglan
14 - Taupiri
15 - Te Kauwhata
16 - North West of Hamilton
17 - Tuakau

Figure 6 – Hamilton City Spatial Framework



1 - Te Rapa North
2 - Te Rapa
3 - Rotokauri
4 - Norton
5 - Dinsdale
6 - Temple View
7 - Frankton
8 - Glenview
9 - Peacocke
10 - Hillcrest
11 - Hamilton East
12 - Ruakura
13 - Chedworth-Fairview Downs
14 - Claudelands
15 - Chartwell
16 - Rototuna
17 - Saint Andrews
18 - Forest Lake
19 - CBD
20 - Hamilton Lake

Figure 7 – Waipa District Spatial Framework



1 - Cambridge Outer	7 - Ohaupo	13 - Te Miro
2 - Cambridge	8 - Pirongia	14 - Te Pahu
3 - Hamilton Edge	9 - Pukeatua	15 - Tokanui
4 - Karapiro	10 - Rukuhia	16 - Wharepapa South Surrounds
5 - Kihikihi	11 - Te Awamutu	
6 - Ngahinapouri	12 Te Awamutu Outer	

2.3.1 Waikato District

The Waikato District contains a wide range of zones, due to the complex range of residential, business, environmental and rural land types that exist across the district. Adding to this complexity, the district plan contains two separate planning sections (Figure 8) that can change the rules for the same zone. The HDCA takes account of these rules to assess capacity across each of the locations.[11]

[11] Further information regarding this will be supplied in the following HDCA Technical Report.

Figure 8 – Waikato District Plan Sections

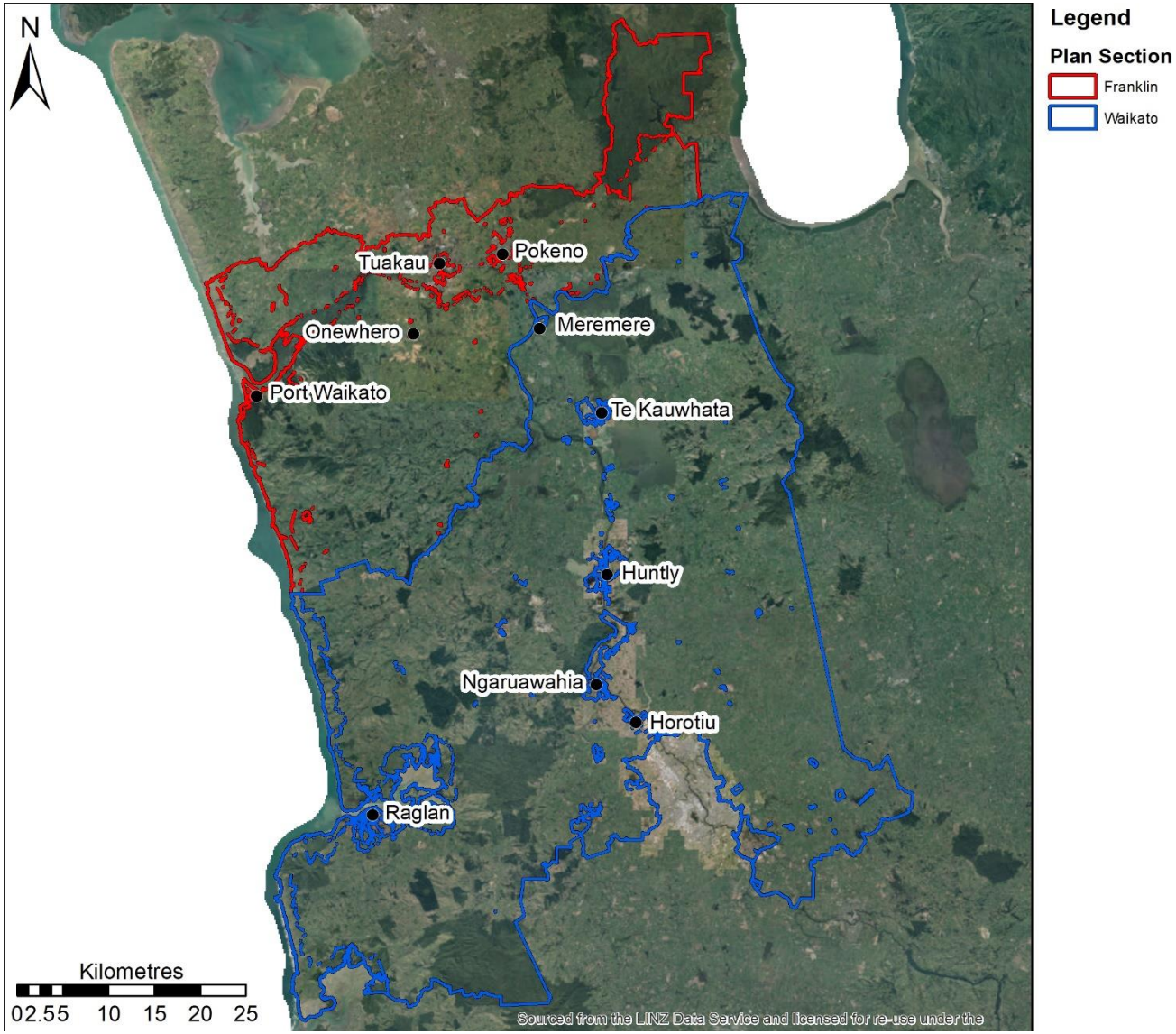
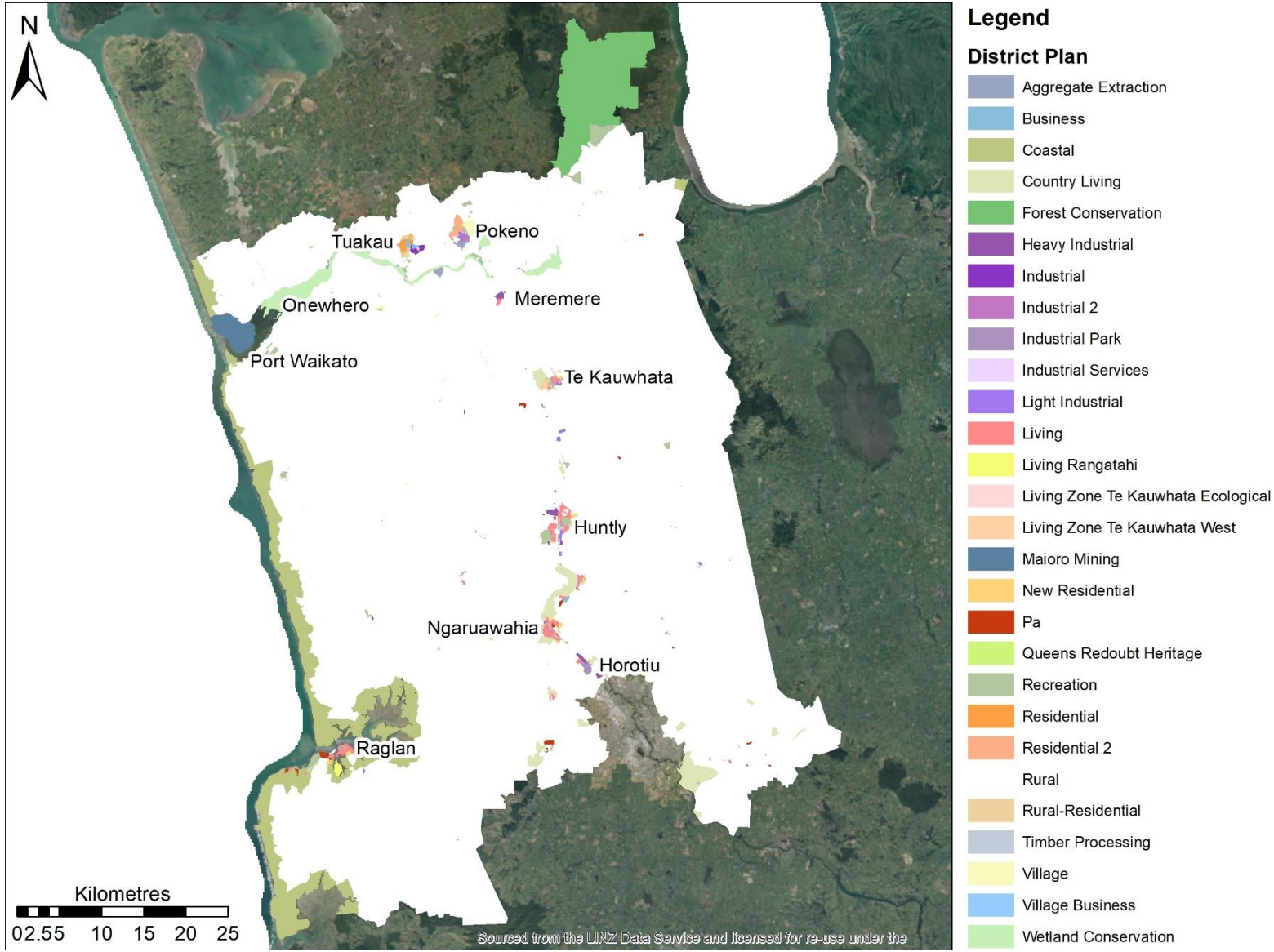


Figure 9 – Land Use Zones in Waikato District



Across the Waikato District, the key zoning that pertains to the HDCA are the residential zones, primarily:

- Country Living
- Living
- Living Rangatahi
- Living Zone Te Kauwhata
- New Residential
- Residential
- Residential 2, and
- Village.

Figure 9 shows these planning zones, as well as others, across the district.

The Country Living zone is a primarily residential zone that has been designated as part of the Waikato Section of the district plan. The primary development typology in this zone is akin to large lot residential or lifestyle blocks, with larger site sizes and lower dwelling densities than other zones. The Country Living zone primarily occurs around the outskirts of urban townships as a transitional zone between the urban and the rural environments.

The Living Zone is the primary residential zone that exists in the Waikato Section of the Waikato District. The district plan allows for a range of dwelling types in this zone, and it is categorised as an urban type zone. Dwelling site sizes are generally smaller than that of the Country Living zone, with more intensive developments allowed. The Living Zone makes up the bulk of the urban towns within the Waikato Section of the district plan.

The Living Rangatahi zone is a special zone existing to the south of Raglan, within the Waikato Section of the district plan. Currently the zone is greenfield, but the objective of this zone is to provide additional residential capacity to service the Raglan area into the future. Development of the Living Rangatahi zone is subject to a acceptance of a Comprehensive Development Plan, however the zone is likely to supply a locally significant level of residential capacity to the Raglan area.

Living Zone Te Kauwhata West and Living Zone Te Kauwhata Ecological are variations of the already described Living Zones that exist to service Te Kauwhata. These zones exist in the Waikato Section of the district plan. These zones make up part of the Te Kauwhata Structure Plan, with an aim toward providing residential capacity to Te Kauwhata. The development typologies in these zones are likely to be similar to that in the Living Zones, though less intensive due to larger minimum lot sizes. Some development has already started on the Living Zone Te Kauwhata West.

The New Residential Zone is a variation of the Living Zone already described, occurring within the Waikato Section of the district plan. This zone primarily occurs around the outskirts of urban towns with comparable densities to that of the Living Zone. The objective of this zone is to allow for controlled urban expansion by up-zoning land from other zone types (primarily Rural), without heavily impacting existing Country Living zones (which occupy a similar space on the urban boundary).

The Residential zone is part of the Franklin section of the Waikato District plan, and exists solely within the urban boundary of Tuakau. The Residential Zone is the primary residential zone providing residential capacity in Tuakau, supplemented partially by a Rural-Residential zone. The Residential Zone is densely developed as compared with the Rural-Residential zone.

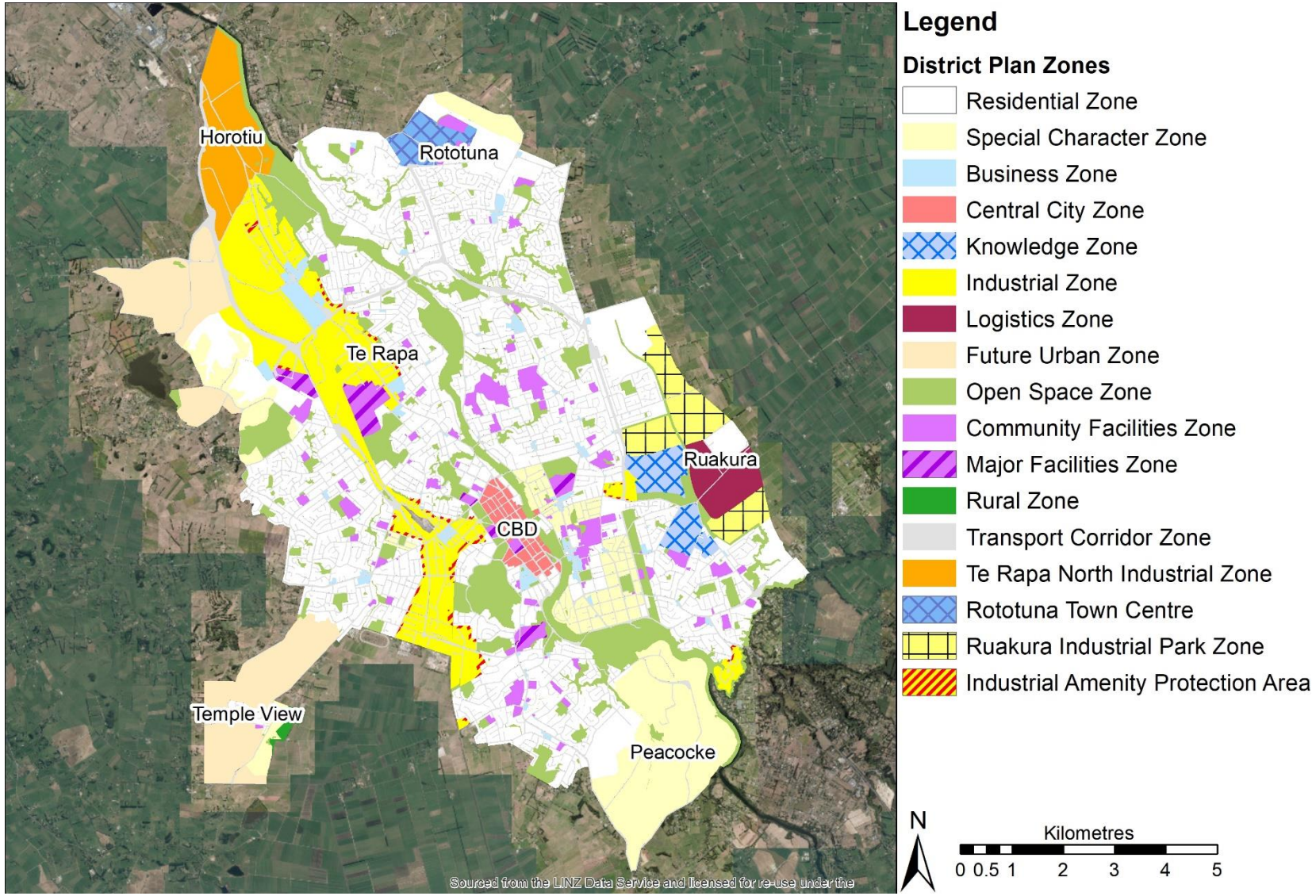
Similar to the Residential zone, the Residential 2 zone exists solely within the Pokeno urban township. This zone forms about half of the residential zoning within Pokeno, complemented by the Village zone. Much of the zone has been rapidly developed recently, with further development occurring throughout the rest of the zone. Dwelling types in the Residential zone are relatively intensive, with small lot sizes for each of the dwellings. Housing developments in the zone are nearing completion, meaning any existing capacity is likely to be occupied within the short-term.

The Village Zone is provides the remaining urban residential capacity within the Franklin Section of the Waikato District Plan. This zone is the primary residential zoning in small settlements such as Port Waikato, Otaua, Onewhero, Pukekawa, Mercer and Mangatangi, with the except of a large portion to the east of the main Pokeno township. The Village Zone is largely occupied within each of the aforementioned settlements with relatively low density developments and open space amenities. The exception to this is the large portion of land to the east of Pokeno which is in the early stages of dense residential development. There are relatively few existing dwellings in this specific case, as the effects of up-zoning the land from rural-residential has yet to be realised.

2.3.2 Hamilton City

Hamilton City contains a wide range of zones, due to the complex range of residential, business, environmental and rural land types that exist within the city boundary. Figure 10 displays the main District Plan zones as they occur across the city. The zones within the city are further defined by the inclusion of sub-zoning information, which reflect differing rules and requirements reflecting the desired objectives and development patterns put forth by Hamilton City Council.

Figure 10 – Land Use Zones in Hamilton City



The key zones assessed within the Hamilton City portion of the FPP HDCA are the

- Residential Zone
- Special Character Zone, and the
- Central City Zone.

Alongside this, the HDCA also takes into account Greenfield Structure Plan areas that were supplied to M.E by Council.

As the name suggests, the Residential Zone is the primary zone on which most residential activities occur. The Residential Zone covers large portions of the city, made up of a number of subzones including the General Residential, Residential Intensification, Medium Density Residential, and Large Lot Residential subzones.

The General Residential subzone is the main subzone underlying the Residential Zone, and is spread across the City. Existing dwellings within the zone are primarily single standalone dwellings, though there are provisions within the zoning rules for duplexes and the like.

The Residential Intensification subzone has been created by Hamilton City Council with a view to increasing the dwelling density at key points within Hamilton City. This subzone is located close to the City Centre, in several clusters. Currently, much of the Residential Intensification subzone is already occupied by relatively low density dwellings, however the subzone planning rules allow for much higher dwelling densities including apartments. The increased dwelling densities provide a vital role in the feasibility of redevelopment in this subzone.

The Medium Density Residential subzone is confined to a series of clusters through parts of the city. This subzone has the objective of providing residential capacity at a slightly increased density when compared with the main General Residential subzone. Although the dwelling densities are not as high as those in the above Residential Intensification subzone, the relatively increased densities are important for aspects of the redevelopment scenarios presented below.

The Large Lot Residential subzone is the final of the subzones associated with the broader Residential Zone. As the name suggests, this subzone is composed of larger lot sizes and dwellings. This subzone exists primarily on the outskirts of the current urban extent, toward the Rural Zone. The Large Lot Residential subzone is akin to the Country Living zone within Waikato District in that it allows for lifestyle type dwellings to be developed. The Large Lot Residential subzone does not allow for intensive development styles.

The Special Character Zone is complementary to the Residential Zone in Hamilton City, allowing for some residential development. This zone is clustered in special/historic areas within the city, and has underlying subzones to reflect this. The HDCA includes modelling for the Special Residential Zone, the Special Heritage Zone, the Peacocke Character Zone, and the Chartwell North East Special Character Zone. Unlike the subzones contained within the Residential Zone, these subzones are relatively restrictive, allowing for single dwellings on large site sizes. Redevelopment within these subzones is restricted, as is subdivision. Due to the age and nature of these subzones, these are largely developed with little extra capacity.

The final zone assessed within the framework of the Hamilton City portion of the HDCA is the Central City Zone. This zone has the potential to allow for significant residential capacity if redevelopment is enabled,

due to allowances within the District Plan for apartment dwellings. The key issue within the Central City Zone however, is the competition that exists for both residential and business land uses. Currently the Central City Zone does not have a large amount of vacant capacity due to this competition, though future redevelopment capacity is significant.

2.3.3 Waipa District

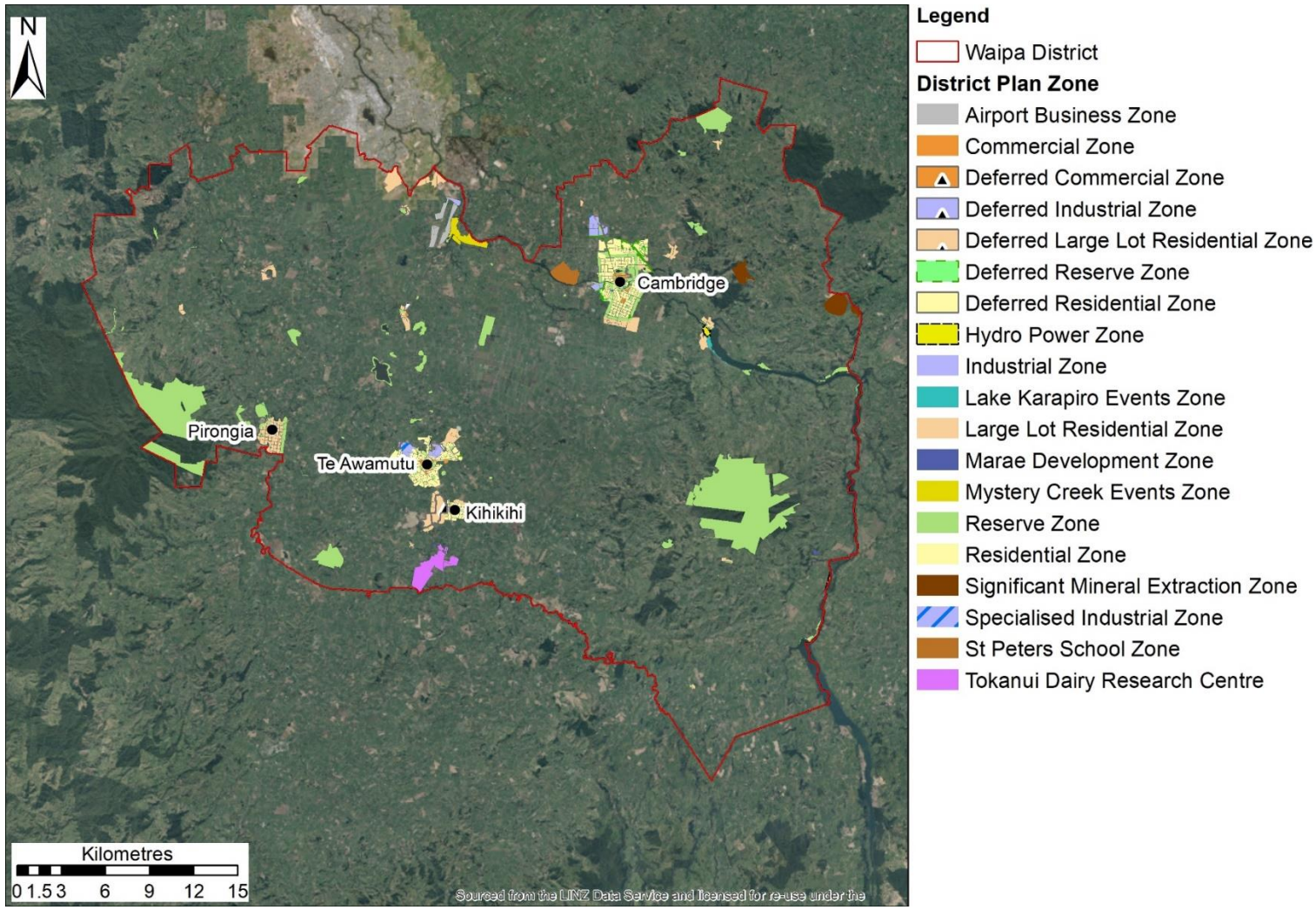
As with the other Future Proof Partners, the Waipa District has a distinctive set of zones that enable residential, business, environmental, and recreational land uses. Compared to the other FP councils however, the zones assessed within the HDCA are less complex, with few zones and no subzones or differing plan sections. Figure 11 details the extent of the different zones across the Waipa District.

The key zones assessed within the Waipa District section of the HDCA are the Residential Zone and the Large Lot Residential Zone, and their counterparts the Deferred Residential Zone and the Deferred Large Lot Residential Zone. Together, these zones contain the entirety of the urban residential dwellings within the district.

The Residential Zone is the primary zone assessed under the HDCA for the Waipa District. This zone is represented in the majority by standalone dwellings within the urban extents of Cambridge, Te Awamutu and Kihikihi. This zone allows for small site sizes compared to Large Lot Residential zone, as fits it's position within the main urban extents of key Waipa District towns. The Deferred Residential Zone is similar, except for the fact that it generally sits closer to the urban-rural divide due to the fact that it has been up-zoned or earmarked from rural zoned land. These two zones supply the main residential capacity within the Waipa District, due to their allowance for relatively dense dwellings.

The Large Lot Residential Zone is similar to that discussed for Hamilton City, above. This zone and its deferred counterpart are primarily composed of lifestyle blocks, relatively low intensity when compared to the above Residential Zone. The Large Lot Residential Zone primarily occurs on the outskirts of Cambridge, Te Awamutu, and Kihikihi, but also exists in small townships such as Pirongia and Karapiro. Due to their function as a lifestyle development-type zone, the Deferred and Large Lot Residential zones do not allow for intensive development, limiting their potential for a large amount of residential new or redevelopment capacity.

Figure 11 – Land Use Zones in Waipa District



2.4 Infill and Greenfield Areas

The areas contained within the study areas of Waikato District, Hamilton City and Waipa District were categorised as either infill or greenfield development areas within the assessment. This process was undertaken within the GIS through the analysis of aerial photography, zoning and structure plan information, existing parcel boundaries and building consent spatial data.

Infill areas were defined as those within the existing urban footprint area. As the analysis includes the zones made up of larger lifestyle properties, the infill area also included some parcels outside the existing urban footprint, but that were within the spatial extent of the development of lifestyle properties.

Greenfield areas were defined as areas of urban expansion beyond the existing urban footprint. In some cases, these included areas of non-urbanised land within the existing urban edge. In these cases, the key determinant for inclusion was a sufficiently large area to require subtraction of a portion of the area for non-saleable parcel areas (i.e. roads, reserves, road edges, etc).

Appendix A contains maps that show how areas have been classified as either infill or greenfield areas.

3 Dwelling Demand

In 2017 there were an estimated over 100,000 households in the Study Area, with over half of those within Hamilton City. The Study Area is expected to experience significant growth in household numbers over the short, medium and long-terms, driving growth in demand for dwellings. Growth is occurring as a combination of population increase within each area, as well as growth pressure from the adjacent Auckland region.

This section outlines the growth in dwelling demand across each of the Future Proof Area component areas (Waikato District, Hamilton City and Waipa District). Household projections were supplied to M.E by the Future Proof Partners, which M.E have converted to increases in dwelling demand. The Future Proof Partners have requested that M.E use a low household projection series for Hamilton City and a medium projection series for Waikato and Waipa Districts.

3.1 Hamilton City

Hamilton City had an estimated 57,000 dwellings in 2017. It has a projected demand for an additional 32,000 dwellings over the long-term to reach a total dwelling demand of nearly 90,000 dwellings by 2046. This section estimates the demand for additional dwellings by location across Hamilton City over the short, medium and long-terms.

M.E have converted the low series household projections in each location (supplied by Hamilton City Council[12]) to demand for additional dwellings. The household projections supplied are a function of the natural increase (and associated household formation rates) within each local area combined with an extrapolation of rates of migration for each area. They represent underlying demand and do not take account of resulting patterns of growth where demand may be met in a different location within Hamilton to where it arises.

[12] Hamilton City Council have requested the analysis of demand use the low projection series.

Figure 12 - Short-Term (2017-2021) Demand for Dwellings by Location in Hamilton City

Location	Dwellings		Demand	Demand + 20%
	2017	2021	2017-2021	2017-2021
1 (Te Rapa north)	40	32	- 8	- 9.1
2 (Te Rapa)	199	178	- 21	- 24.9
3 (Rotokauri)	201	349	148	178.1
4 (Nawton)	4,991	5,349	358	429.7
5 (Dinsdale)	5,058	5,354	296	355.5
6 (Temple View)	373	388	16	18.9
7 (Frankton)	798	885	88	105.0
8 (Melville)	5,440	5,770	330	395.8
9 (Peacocke)	380	687	307	368.3
10 (Silverdale)	3,286	3,386	100	120.2
11 (East/University)	6,305	6,651	345	414.5
12 (Ruakura)	88	88	1	0.9
13 (Fairview/Enderley)	4,408	4,681	273	327.6
14 (East/Claudelands)	3,238	3,400	161	193.7
15 (Chartwell)	3,971	4,151	180	215.9
16 (Rototuna)	8,217	10,028	1,811	2,173.0
17 (St Andrews)	3,977	4,161	184	221.1
18 (Beerescourt)	2,798	2,891	94	112.7
19 (Central City)	1,314	1,430	116	139.4
20 (Hamilton Lake)	1,653	1,743	90	107.5
TOTAL	**56,733**	**61,603**	**4,870**	**5,844**

Hamilton City has a projected increase in demand for nearly 5,000 additional dwellings over the short term (Figure 12). If an additional margin of 20 per cent is applied, the demand for additional dwellings increases to nearly 6,000 dwellings.

The greatest number of dwellings is required in Rototuna (1,800; +20% margin, 2,170), Hamilton's largest area of urban expansion in the short-term, followed by Nawton (360; +20% margin, 430), East/University (350; +20% margin, 410) and Melville (330; +20% margin, 400). For the City as a whole, demand for additional dwellings, is expected to increase by on average, 2.1% per annum. The fastest growth in demand for additional housing is expected in Peacocke, i.e. 16% per annum, followed by Rotokauri, where demand is expected to increase by an annual average of 15% between 2016 and 2021. These areas are also areas of urban expansion for Hamilton.

Figure 13 - Medium-Term (2017-2026) Demand for Dwellings by Location in Hamilton City

Location	Dwellings		Demand	Demand + 20%
	2017	2026	2017-2026	2017-2026
1 (Te Rapa north)	40	35	- 5	- 6.2
2 (Te Rapa)	199	164	- 35	- 41.6
3 (Rotokauri)	201	858	657	788.3
4 (Nawton)	4,991	5,904	913	1,095.6
5 (Dinsdale)	5,058	5,679	621	745.1
6 (Temple View)	373	410	38	45.1
7 (Frankton)	798	992	194	233.4
8 (Melville)	5,440	6,126	685	822.4
9 (Peacocke)	380	1,531	1,151	1,381.0
10 (Silverdale)	3,286	3,547	261	313.2
11 (East/University)	6,305	7,092	786	943.7
12 (Ruakura)	88	89	1	1.1
13 (Fairview/Enderley)	4,408	4,993	584	701.3
14 (East/Claudelands)	3,238	3,636	398	477.4
15 (Chartwell)	3,971	4,359	388	466.1
16 (Rototuna)	8,217	11,488	3,271	3,925.3
17 (St Andrews)	3,977	4,419	442	530.4
18 (Beerescourt)	2,798	3,030	233	279.3
19 (Central City)	1,314	1,572	258	309.9
20 (Hamilton Lake)	1,653	1,835	182	218.8
TOTAL	**56,733**	**67,758**	**11,025**	**13,230**

Over the medium term, Hamilton City is projected to have demand for an additional 11,000 dwellings (Figure 13), which implies an average annual growth rate of 2.0% over the medium term, for Hamilton City as a whole. This is similar to the annual growth rate over the short term. If an additional margin of 20 per cent is applied, the demand for additional dwellings increases to 13,200 additional dwellings.

Like the short-term projection, demand for additional dwellings over the medium-term is greatest in Rototuna (3,200; +20 % margin, 3,900). However, the rate at which the demand for additional houses increases, is greatest in Rotokauri (+650 dwellings; 17% per annum), followed closely by Peacocke (16% per annum). The number of additional dwellings needed in Peacocke is estimated at 1,150 (+20% margin, 1,400), over the medium term.

Figure 14 - Long-Term (2017-2046) Demand for Dwellings by Location in Hamilton City

Location	Dwellings		Demand	Demand + 15%
	2017	2046	2017-2046	2017-2046
1 (Te Rapa north)	40	43	4	4
2 (Te Rapa)	199	203	4	5
3 (Rotokauri)	201	4,809	4,608	5,299
4 (Nawton)	4,991	7,898	2,907	3,343
5 (Dinsdale)	5,058	6,436	1,378	1,585
6 (Temple View)	373	458	85	98
7 (Frankton)	798	1,293	495	569
8 (Melville)	5,440	7,176	1,735	1,996
9 (Peacocke)	380	7,135	6,755	7,768
10 (Silverdale)	3,286	3,863	578	664
11 (East/University)	6,305	8,184	1,878	2,160
12 (Ruakura)	88	76	- 12	- 13
13 (Fairview/Enderley)	4,408	5,801	1,393	1,601
14 (East/Claudelands)	3,238	4,145	906	1,042
15 (Chartwell)	3,971	4,859	888	1,021
16 (Rototuna)	8,217	14,037	5,820	6,693
17 (St Andrews)	3,977	4,998	1,021	1,174
18 (Beerescourt)	2,798	3,313	515	592
19 (Central City)	1,314	2,021	708	814
20 (Hamilton Lake)	1,653	2,011	358	412
TOTAL	**56,733**	**88,757**	**32,024**	**36,828**

Over the long term, the demand for additional dwellings in Hamilton City is expected to total around 32,000 (Figure 14). This translates into an average annual growth rate of 1.6%, lower than the growth rate over the medium term (2.0%) as the rate of growth is projected to slow through time. If an additional margin of 15 per cent is applied, then the projected demand for dwellings increases to an additional 37,000 dwellings in the long-term.

Unlike the short and medium-term projections, where the greatest increase in demand for housing is expected in Rototuna, over the longer term, the greatest increase is in Peacocke (6,800; +15% margin, 7,800). Rototuna shifts down to second place (5,800; +15% margin, 6,700). When comparing annual growth, the fastest growing areas are Rotokauri, with an average annual growth rate of 11.6%, and Peacocke with 10.6% per annum.

3.2 Waikato District

The Waikato District had an estimated demand for 25,400 dwellings in 2017. Over the long-term, under a medium-growth scenario[13], this is projected to increase by 16,900 dwellings to reach a total dwelling demand of over 42,300 dwellings by 2046. The main small urban settlements include Huntly, Tuakau, Ngaruawahia, Raglan, Te Kauwhata and Pokeno. This section estimates the demand for additional dwellings by location across the Waikato District over the short, medium and long-terms.

Figure 15 - Short-Term (2017-2021) Demand for Dwellings by Location in Waikato District

Location	Demand 2017	Demand 2021	Demand 2017-2021	Demand + 20% 2017-2021
Other Areas	143	142	- 1	- 1
Hamilton Edge	980	1,068	88	106
Horotiu	281	317	36	43
Huntly	2,820	3,000	180	216
Mid-West Waikato	1,843	1,996	153	183
Ngaruawahia	1,766	1,917	152	182
Ngaruni Beach	718	788	70	84
North East of Hamilton	5,807	6,385	577	693
North Eastern Waikato	1,150	1,251	101	121
North West of Hamilton	1,455	1,576	121	146
Northern Edge	2,272	2,414	141	170
Pokeno	959	1,412	453	543
Port Waikato	-	-	-	-
Raglan	1,316	1,423	107	128
SH1 North	1,099	1,179	80	96
Taupiri	145	148	3	4
Te Kauwhata	758	909	151	181
Tuakau	1,864	2,073	209	251
TOTAL	**25,378**	**27,998**	**2,620**	**3,144**

In the Waikato District it is estimated a total of 2,600 additional dwellings are needed over the short term (Figure 15). This translates into annual growth of 2.5% for the District as a whole, over the short term. Applying an additional margin of 20 per cent, the total short-term increase in dwelling demand equates to 3,100 additional dwellings.

Of the total demand, the greatest number of additional dwellings required over the short term, is anticipated to be across the area to the northeast of Hamilton (580; +20% margin, 700), followed by Pokeno (450; +20% margin, 540). The area to the northeast of Hamilton currently contains the largest share of existing dwellings, i.e. 23%, with Huntly accounting for the second largest share, i.e. 11%. Pokeno is

[13] The Future Proof Partnership has requested the use of medium household projection series. An alternative projection series is an Auckland-driven growth scenario where the district attracts a share of the spill-over high growth from the Auckland Region.

projected to have the fastest growth rate over the short term, with the number of dwellings projected to increase by nearly 50% between 2017 and 2021. Te Kauwhata is projected to grow at the second fastest rate over the short term (20% growth 2017-2021).

Figure 16 - Medium-Term (2017-2026) Demand for Dwellings by Location in Waikato District

Location	Demand 2017	2026	Demand 2017-2026	Demand + 20% 2017-2026
Other Areas	143	151	8	9
Hamilton Edge	980	1,195	215	258
Horotiu	281	362	81	97
Huntly	2,820	3,210	389	467
Mid-West Waikato	1,843	2,209	366	439
Ngaruawahia	1,766	2,084	319	383
Ngaruni Beach	718	900	182	218
North East of Hamilton	5,807	7,114	1,306	1,568
North Eastern Waikato	1,150	1,359	209	251
North West of Hamilton	1,455	1,765	310	372
Northern Edge	2,272	2,622	350	420
Pokeno	959	1,840	881	1,057
Port Waikato	-	-	-	-
Raglan	1,316	1,553	237	284
SH1 North	1,099	1,316	217	260
Taupiri	145	157	12	15
Te Kauwhata	758	1,098	340	408
Tuakau	1,864	2,380	515	619
TOTAL	**25,378**	**31,314**	**5,936**	**7,124**

Over the medium-term, 6,000 additional dwellings are expected to be needed in the Waikato District (Figure 16). This implies a very similar growth in demand to the short term, i.e. 2.4%. If an additional margin of 20 per cent is applied, the projected increase in demand increases to an additional 7,100 dwellings over the medium-term.

Similar to the short-term projection, the largest demand for dwellings over the medium-term, is expected in North East Hamilton (1,300; +20% margin, 1,600), followed by Pokeno, where demand for an additional 900 dwellings (+20% margin, 1,060) is projected. However, Pokeno has the highest growth rate over the medium term (on average 7.5% per annum), but which is lower than over the short term (10.1% per annum). Over the medium term, similar to the short term, the second highest growth in demand for housing is expected in Te Kauwhata (average 4.2% per annum).

Figure 17 - Long-Term (2017-2046) Demand for Dwellings by Location in Waikato District

Location	Demand 2017	Demand 2046	Demand 2017-2046	Demand + 15% 2017-2046
Other Areas	143	139	- 5	- 5
Hamilton Edge	980	1,652	672	773
Horotiu	281	538	257	295
Huntly	2,820	3,731	911	1,047
Mid-West Waikato	1,843	2,940	1,096	1,261
Ngaruawahia	1,766	2,576	810	932
Ngaruni Beach	718	1,347	629	723
North East of Hamilton	5,807	9,209	3,402	3,912
North Eastern Waikato	1,150	1,682	533	613
North West of Hamilton	1,455	2,504	1,049	1,207
Northern Edge	2,272	3,226	954	1,098
Pokeno	959	2,960	2,001	2,301
Port Waikato	-	-	-	-
Raglan	1,316	1,971	655	753
SH1 North	1,099	1,955	856	985
Taupiri	145	172	27	31
Te Kauwhata	758	1,917	1,159	1,333
Tuakau	1,864	3,762	1,898	2,183
TOTAL	**25,378**	**42,283**	**16,905**	**19,440**

Over the long term, a total demand for an increase of 16,900 dwellings is projected in the Waikato District (Figure 17). This implies a lower annual growth rate than for the short and medium term, i.e. 1.8% compared to 2.4-2.5% over the short and medium term. If an additional margin of 15 per cent is applied, then the projected increase in demand for dwellings rises to 19,400 additional dwellings.

The geographic distribution of growth in dwelling demand is similar for the long term to the short and medium terms, i.e. the area to the northeast of Hamilton (3,400; +15% margin, 3,900) followed by Pokeno (2,000; +15% margin, 2,300). Pokeno remains on top when comparing annual growth in demand (4.0% per annum, which is lower than over the short and medium terms). Te Kauwhata is projected to have the second fastest growth in additional dwelling demand over the long-term. Its' long-term annual average of growth rate of 3.3% is slower than over the short and medium terms.

3.3 Waipa District

The Waipa District had an estimated demand for 20,000 dwellings in 2017. Over the long-term, this is projected to increase by 12,100 dwellings, to reach a total demand for 32,000 dwellings by 2046. The main urban settlements are Cambridge and Te Awamutu (and nearby Kihikihi), to the south of Hamilton. This section sets out the estimates of household growth and associated demand for additional dwellings by location across the Waipa District over the short, medium and long-terms.

Figure 18 - Short-Term (2017-2021) Demand for Dwellings by Location in Waipa District

Location	Demand 2017	2021	Demand 2017-2021	Demand + 20% 2017-2021
Other Areas	1,575	1,692	117	140
Cambridge Combined	8,287	9,203	916	1,099
Hamilton Edge	515	586	71	85
Karapiro	1,016	1,118	102	122
Kihikihi	1,236	1,483	247	296
Ngahinapouri	792	855	63	76
Ohaupo	220	239	19	23
Pirongia	538	590	53	63
Pukeatua	260	270	11	13
Rukuhia	-	-	-	-
Te Awamutu Combined	4,912	5,313	401	481
Te Miro	-	-	-	-
Te Pahu	469	503	34	41
Tokanui	131	135	4	5
Wharepapa South Surrounds Unzoned	-	-	-	-
TOTAL	**19,950**	**21,988**	**2,038**	**2,445**

Over the short term, there is a projected demand for an additional 2,000 dwellings needed in the Waipa District (Figure 18). If an additional margin of 20 per cent is applied, then the demand for additional dwellings increases to 2,400 additional dwellings.

Almost half (44.9%) of the demand is projected to occur in the Cambridge Combined area (900 dwelings; +20% margin, 1,100). The demand for additional housing in the Te Awamutu Combined area (400, +20% margin, 480), accounts for around a fifth (19.7%) of the total demand in the District.

The annual growth in demand for additional housing is expected to be around 2.5% for the District as a whole, over the short term. The fastest growth is expected to occur in Kihikihi, i.e. 4.7% per annum between 2017 and 2021, and around the edge of Hamilton (+3.3% per annum). Demand in most other areas in the District is expected to grow at rates of between1-3% over this period.

Figure 19 - Medium-Term (2017-2026) Demand for Dwellings by Location in Waipa District

Location	Demand 2017	2026	Demand 2017-2026	Demand + 20% 2017-2026
Other Areas	1,575	1,852	277	333
Cambridge Combined	8,287	10,303	2,016	2,419
Hamilton Edge	515	681	166	199
Karapiro	1,016	1,246	230	276
Kihikihi	1,236	1,787	551	661
Ngahinapouri	792	933	141	169
Ohaupo	220	269	49	59
Pirongia	538	667	129	155
Pukeatua	260	289	29	35
Rukuhia	-	-	-	-
Te Awamutu Combined	4,912	5,951	1,039	1,246
Te Miro	-	-	-	-
Te Pahu	469	551	82	99
Tokanui	131	148	17	21
Wharepapa South Surrounds Unzoned	-	-	-	-
TOTAL	**19,950**	**24,677**	**4,727**	**5,672**

Over the medium term, demand for an additional 4,700 dwellings is projected in the Waipa District (Figure 19). If an additional margin of 20 per cent is applied, the demand increases to an additional 5,700 dwellings across the medium-term.

Similar to the short-term projections, the greatest demand over the medium term, is expected in the Cambridge Combined area (2,000; +20% margin, 2,400), followed by the Te Awamutu Combined area (1,000; +20% margin, 1,250). The share of total demand made up by the Cambridge Combined area, is slightly lower over the medium term, than over the short term (42.7% compared with 44.9%).

Kihikihi is projected to have the fastest growth (4.2% per annum), followed by the area around the edge of Hamilton (3.2% per annum). Demand for additional dwellings in the District as a whole, is expected to grow on average, around 2.4% per year, between 2017 and 2026, much like the growth rate over the short term.

Figure 20 – Long-Term (2017-2046) Demand for Dwellings by Location in Waipa District

Location	Demand 2017	2046	Demand 2017-2046	Demand + 15% 2017-2046
Other Areas	1,575	2,217	642	738
Cambridge Combined	8,287	13,190	4,903	5,638
Hamilton Edge	515	955	440	506
Karapiro	1,016	1,581	565	650
Kihikihi	1,236	2,651	1,415	1,627
Ngahinapouri	792	1,105	313	360
Ohaupo	220	361	142	163
Pirongia	538	871	333	383
Pukeatua	260	333	74	85
Rukuhia	-	-	-	-
Te Awamutu Combined	4,912	7,971	3,059	3,518
Te Miro	-	-	-	-
Te Pahu	469	625	156	180
Tokanui	131	163	32	36
Wharepapa South Surrounds Unzoned	-	-	-	-
TOTAL	**19,950**	**32,023**	**12,073**	**13,884**

Over the long term, the total number of additional dwellings needed in the Waipa District, is expected to be around 12,100 (Figure 20). If an additional margin of 15 per cent is applied, then the projected demand additional dwellings increases to 13,900 additional dwellings in the long-term.

The Cambridge Combined area still makes up the greatest share of this demand, i.e. 41% over the long term. Over the short (44.9%) and medium (42.7%) terms, this figure was slightly higher. For the Waipa District as a whole, the rate at which demand for additional dwellings increases, is lover over the long term than the medium and short term, i.e. 1.6% compared to around 2.4-2.5% over the short and medium term. Kihikihi is projected to remain the fastest growing area of demand (2.7%) over the long term, although growth is projected to slow down over the longer-term.

4 Residential Dwelling Capacity

Significant capacity exists to accommodate growth across the Future Proof Partner City and District areas. The level of capacity is a function of the land zoned to accommodate future growth, the existing development patterns on the land, the presence of future infrastructure servicing, and the commercial feasibility of capacity, which is influenced by demand growth. Capacity exists within both the existing urban areas and areas of greenfield expansion.

The first part of this section presents the capacity within each area enabled by the District Plans (plan enabled capacity). This measure of capacity is identified through detailed GIS modelling of the planning provisions together with the existing development patterns. It does not take account of the commercial feasibility of capacity, but does include infrastructure constraints within greenfield areas of urban expansion. The second part of this section then calculates the commercial feasibility of the capacity enabled under the plan into account growth in demand through time. It identifies the level of commercially feasible capacity across the short, medium and long-terms.

4.1 Plan Enabled Capacity

4.1.1 Waikato District

The Waikato District Plan enables the further development of 4,300 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site are removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 5,200 additional dwellings within existing urban areas. A further 8,000-11,000 dwellings are enabled in greenfield areas over the short to long-terms (the figure increasing to 11,000 as infrastructure is supplied through time)[14]. The following tables present the detailed results of the plan enabled capacity modelling within Waikato District[15].

[14] Plan enabled capacity within Waikato District is based on the Operative District Plan. It does not include any capacity which may be notified within the Proposed District Plan.

[15] Further information has subsequently been provided that contains a prohibition on subdivision within the Urban Expansion Policy Area (the section of Waikato District to be transferred to Hamilton City beyond the long-term modelling period). This affects the capacity contained within the section of the 'Hamilton Edge' area adjacent to the northern boundary of Hamilton City. In total, it reduces plan enabled capacity slightly within the infill areas by approximately 100 dwellings, and the greenfield capacity by around 35 to 40 dwellings. This has an insignificant effect on the conclusions drawn from the modelling given the small capacity numbers, the type of capacity (higher value lifestyle properties) and the large surplus within this location.

Figure 21 – Infill (Subdivision and Redevelopment) Plan Enabled Capacity in Waikato District

Location	Plan Enabled Capacity Subdivision	Redevelopment
Other Areas	18	26
Hamilton Edge	1,157	1,342
Horotiu	74	106
Huntly	286	327
Mid-West Waikato	4	8
Ngaruawahia	568	703
Ngaruni Beach	20	21
North East of Hamilton	68	90
North Eastern Waikato	-	-
North West of Hamilton	434	484
Northern Edge	7	7
Pokeno	494	604
Port Waikato	-	-
Raglan	97	105
SH1 North	5	6
Taupiri	229	273
Te Kauwhata	343	371
Tuakau	515	765
TOTAL	**4,316**	**5,235**

Figure 21 shows that the Plan enables capacity for an additional 4,300 to 5,200 dwellings within Waikato Districts existing urban areas. Greater capacity is enabled through redevelopment where smaller site sizes than existing property boundaries are enabled under the plan.

Around half of the capacity for both subdivision (50%) and redevelopment (47%) occurs within the Country Living Zone. This consists of properties with larger sections around the edges of the main urban settlements as well as larger lifestyle blocks stretching along State Highway 1 in the areas connecting the settlements[16]. Around half of the capacity within this zone occurs around the edge of Hamilton ("Hamilton Edge"), with smaller but significant shares also in the area to the northwest of Hamilton, Ngaruawahia and Te Kauwhata.

Nearly a fifth (17%) of both the subdivision and redevelopment capacity occurs within the New Residential Living Zone. This predominantly occurs in Ngaruawahia, Huntly, Te Kauwhata, Taupiri, Raglan and Horotiu. Substantial capacity of around 500 and 400 dwellings in Tuakau and Pokeno respectively is also present in residential zones specific to these townships.

[16] The Future Proof Partners project team decided to include this zone within the analysis of capacity given its role in accommodating the type of growth expected to occur within the Waikato District. The zone accounts for a significant proportion of the development around the edges of the small settlements within the District.

Overall, across all zones, the largest area of capacity within existing developed areas[17] occurs in the area around the edge of Hamilton. The next largest areas of capacity include Ngaruawahia, Pokeno, Tuakau, Te Kauwhata and across the area to the northwest of Hamilton.

Figure 22 – Greenfields Plan Enabled Capacity (Excluding Infrastructure Constraints) in Waikato District

Location	Plan Enabled Capacity - Excl. infrastructure constraints			
	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Other Areas	1,248	1,226	1,207	1,198
Hamilton Edge	1,386	1,246	1,101	974
Horotiu	208	206	206	204
Huntly	888	803	726	668
Mid-West Waikato	150	131	118	106
Ngaruawahia	2,251	2,098	1,957	1,842
Ngaruni Beach	24	20	16	14
North East of Hamilton	94	78	62	49
North Eastern Waikato	-	-	-	-
North West of Hamilton	227	207	194	175
Northern Edge	104	91	78	69
Pokeno	2,256	2,129	2,024	1,935
Port Waikato	5	5	4	4
Raglan	497	493	489	488
SH1 North	233	210	191	173
Taupiri	1,508	1,372	1,260	1,156
Te Kauwhata	1,895	1,836	1,787	1,744
Tuakau	1,295	1,246	1,209	1,172
TOTAL	**14,250**	**13,376**	**12,607**	**11,949**

A further 12,000 to 14,000 dwellings are enabled under the Plan within the greenfield areas for future urban expansion within Waikato District without taking into account infrastructure constraints (Figure 22). Plan enabled capacity is greatest under scenario 1 and least under scenario 4 for the Waikato District for each of the individual areas, when infrastructure constraints are ignored. This is due to the different minimum section sizes applied within each scenario, with scenario 1 containing the minimum site sizes enabled under the Plan, and the other scenarios with progressively larger average section sizes (meaning the land can be divided into a smaller number of total sections). The difference between the upper and lower bound (i.e. scenario 1 and 4), is around 2,300 properties/dwellings. The largest shares of the greenfield development, enabled under the District plan, are located in Pokeno (16%) and Ngaruawahia (16%). Significant greenfield capacity (without taking into account infrastructure) is also enabled under the Plan within the other main townships of Te Kauwhata, Taupiri and Tuakau, followed by Huntly and Raglan.

[17] The Country Living Zone areas were classified as existing areas of development where bounded by existing lifestyle properties.

Figure 23 – Greenfields Plan Enabled Capacity (Including Infrastructure Constraints) in Waikato District

Location	Plan Enabled Capacity Scenario 1 Years 1-3	Years 4-10	Years 11-30
Other Areas	831	1,106	1,248
Hamilton Edge	1,386	1,386	1,386
Horotiu	155	208	208
Huntly	174	174	174
Mid-West Waikato	150	150	150
Ngaruawahia	1,181	1,206	1,714
Ngaruni Beach	24	24	24
North East of Hamilton	52	52	52
North Eastern Waikato	-	-	-
North West of Hamilton	227	227	227
Northern Edge	76	76	76
Pokeno	915	915	915
Port Waikato	5	5	5
Raglan	64	64	485
SH1 North	233	233	233
Taupiri	1,508	1,508	1,508
Te Kauwhata	1,121	1,378	1,770
Tuakau	-	811	811
TOTAL	**8,048**	**9,504**	**10,967**

Figure 23 shows that when taking into account the infrastructure constraints, the plan enabled capacity in greenfield areas, drops over the long term, in scenario 1, from 14,250 (excl. infrastructure constraints), to 11,000 additional dwellings by 2046 (30 years). Most of this capacity (74%) is enabled within the first three years.

In two-thirds of the individual areas (e.g. Hamilton Edge, Huntly, Pokeno, and so forth), no additional capacity is enabled beyond the short term (years 1-3). In Tuakau the largest increase in plan enabled capacity occurs over the medium term (years 4-10), while in Raglan and Ngaruawahia the increase occurs over the long term (years 11-30). In Te Kauwhata there is an increase (+260) in plan enabled greenfield capacity over the medium term (years 4-10), with the largest increase (+ 400) occurring over the long term (years 11-30).

In summary, the consideration of infrastructure constraints changes the distribution of capacity. Taking into account infrastructure, the largest areas of plan enabled capacity occur in Ngaruawahia, Te Kauwhata, Taupiri, Pokeno and Tuakau. A significant share of the plan enabled capacity in Huntly and Pokeno is limited by the provision of infrastructure over the study period. Infrastructure significantly limits plan enabled capacity within Tuakau, Ngaruawahia and Te Kauwhata over the short to medium terms, but is closer to plan enabled capacity in the longer-term.

4.1.2 Hamilton City

The Hamilton City District Plan enables the further development of over 27,000 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site a removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 120,000 additional dwellings within existing urban areas. A further 5,000 to 25,000 dwellings are enabled in greenfield areas over the short to long-term (the figure increasing to 25,000 as infrastructure is supplied through time). The following tables present the detailed results of the plan enabled capacity modelling within Waikato District.

The largest share of infill capacity occurs within the General Residential zone, which accounts for 86 per cent of subdivision infill capacity, and 55 per cent of infill capacity if redevelopment is included. Within this zone, nearly 80 per cent of the plan enabled non-redevelopment capacity occurs through the ability to add an additional unit as a duplex to an existing dwelling (without the need for subdivision). When redevelopment is taken into account, this form of plan enabled capacity accounts for less than one-third of the maximum plan enabled capacity within this zone.

The CBD contains the next largest share of capacity, accounting for 11 per cent of non-redevelopment infill capacity and 39 per cent of infill capacity if redevelopment is taken into account. The Residential Intensification Zone also contains a significant share of capacity (3% of subdivision infill and 5% of capacity when redevelopment is taken into account). Very little capacity exists within the Special Residential and Special Heritage zones.

Figure 24 - Infill (Subdivision and Redevelopment) Plan Enabled Capacity in Hamilton City

Location	Plan Enabled Capacity Infill (excl. redevelopment)	Plan Enabled Capacity Infill (incl. redevelopment)
1 (Te Rapa north)	-	-
2 (Te Rapa)	2	107
3 (Rotokauri)	-	28
4 (Nawton)	2,285	6,097
5 (Dinsdale)	2,241	6,617
6 (Temple View)	203	534
7 (Frankton)	230	777
8 (Melville)	2,847	7,332
9 (Peacocke)	-	904
10 (Silverdale)	1,683	4,794
11 (East/University)	736	4,152
12 (Ruakura)	-	-
13 (Fairview/Enderley	2,409	6,023
14 (East/Claudelands)	2,227	4,809
15 (Chartwell)	1,934	5,850
16 (Rototuna)	3,868	12,463
17 (St Andrews)	2,073	5,712
18 (Beerescourt)	1,347	3,944
19 (Central City)	2,210	46,490
20 (Hamilton Lake)	854	3,244
TOTAL	**27,075**	**119,841**

Figure 24 shows that infill subdivision (including the addition of a duplex to an existing unit) capacity is spread across a large share of Hamilton's residential areas. These include the central city, inner and outer suburban areas. Redevelopment capacity is also high across a large share of Hamilton's residential areas.

The largest area of redevelopment capacity occurs within the CBD, which contains capacity for 46,500 additional dwellings[18]. However, a share of this capacity would be likely to go to commercial uses. Significant redevelopment capacity also exists across much of Hamilton's suburban residential areas. Outer areas including Rototuna, Melville, Dinsdale, Nawton and Fairview/Enderley, have substantial plan enabled capacity for redevelopment. This reflects the lower density patterns of development around the outer suburban areas of Hamilton relative to the density provisions within the Plan.

[18] Capacity includes development above the ground floor and it is assumed that no residential development will occur on the ground floor.

Figure 25 - Greenfields Plan Enabled Capacity (Excluding Infrastructure Constraints) in Hamilton City

Location	Plan Enabled Capacity - Excl. infrastructure constraints Scenario 1
1 (Te Rapa north)	457
2 (Te Rapa)	-
3 (Rotokauri)	8,950
4 (Nawton)	-
5 (Dinsdale)	-
6 (Temple View)	4,418
7 (Frankton)	-
8 (Melville)	-
9 (Peacocke)	9,289
10 (Silverdale)	-
11 (East/University)	-
12 (Ruakura)	3,368
13 (Fairview/Enderley)	-
14 (East/Claudelands)	-
15 (Chartwell)	-
16 (Rototuna)	3,753
17 (St Andrews)	-
18 (Beerescourt)	-
19 (Central City)	-
20 (Hamilton Lake)	-
TOTAL	**30,233**

Hamilton has further plan enabled capacity for over 30,000 dwellings within its greenfield areas (without taking into account infrastructure constraints) (Figure 25)[19]. The largest areas of capacity include Peacocke (9,300 dwellings) and Rotokauri (9,000), followed by Temple View[20], Rototuna, Ruakura and Te Rapa North.

[19] Scenario 1 uses the minimum section sizes as set out under the District Plan. This was selected as the scenario of focus for Hamilton City to reflect the decreases in section sizes starting to occur within the greenfield areas.

[20] Most of the capacity within Temple View occurs within the Future Urban Zone (FUZ). Modelling assumptions about the distribution of FUZ land across residential and non-residential uses were supplied to M.E by Hamilton City Council during the project.

Figure 26 - Greenfields Plan Enabled Capacity (Including Infrastructure Constraints) in Hamilton City

Location	Plan Enabled Capacity - Incl. Infrastructure Constraints Scenario 1 2016 (Year 0)	2021 (Year 1-3)	2026 (Year 4-10)	2036 (Year 11-20)	2046 (Year 21-30)
1 (Te Rapa north)	-	-	-	-	203
2 (Te Rapa)	-	-	-	-	-
3 (Rotokauri)	140	140	2,801	4,022	8,839
4 (Nawton)	-	-	-	-	-
5 (Dinsdale)	-	-	-	-	-
6 (Temple View)	-	-	-	-	-
7 (Frankton)	-	-	-	-	-
8 (Melville)	-	-	-	-	-
9 (Peacocke)	147	147	559	5,900	9,289
10 (Silverdale)	-	-	-	-	-
11 (East/University)	-	-	-	-	-
12 (Ruakura)	2,078	2,205	3,130	3,203	3,295
13 (Fairview/Enderley)	-	-	-	-	-
14 (East/Claudelands)	-	-	-	-	-
15 (Chartwell)	-	-	-	-	-
16 (Rototuna)	2,314	2,656	3,753	3,753	3,753
17 (St Andrews)	-	-	-	-	-
18 (Beerescourt)	-	-	-	-	-
19 (Central City)	-	-	-	-	-
20 (Hamilton Lake)	-	-	-	-	-
TOTAL	**4,678**	**5,147**	**10,241**	**16,876**	**25,377**

Figure 26 shows that when infrastructure constraints are applied, the level of plan enabled greenfield capacity within Hamilton is reduced to around 5,000 dwellings within the short-term (to 2021), rising to around 25,000 dwellings within the long-term (to 2046).

Nearly all of the capacity within the short-term occurs within Rototuna and Ruakura, which both further increase in infrastructure-serviced capacity into the medium-term. In the medium-term, capacity becomes available within Rotokauri, and to a lesser extent Peacocke, which also contain the largest net increases of capacity between the medium and long-term. A small share of capacity also occurs within Te Rapa North in the long-term.

Once infrastructure is taken into account no plan enabled greenfield capacity is available within the Temple View area.

4.1.3 Waipa District

The Waipa District Plan enables the further development of 1,760 dwellings within existing urban areas through further infill subdivision of existing properties. If properties are redeveloped (i.e. existing dwellings on a site are removed and the site is redeveloped to a greater intensity), then the Plan enables a total of 4,400 additional dwellings within existing urban areas. A further 3,700-4,300 dwellings are enabled in greenfield areas over the short to long-terms (the figure increasing to 4,300 as infrastructure is supplied

through time)[21]. The following tables present the detailed results of the plan enabled capacity modelling within Waipa District.

Approximately two-thirds of the infill subdivision capacity is enabled by the Plan within the Residential Zone, which is mainly located within the main townships. This increases to three-quarters of capacity once redevelopment is taken into account. The remaining enabled capacity occurs within the Large Lot Residential Zone. Approximately 40 per cent of capacity in this zone is located around the edge of the main townships (Cambridge, Te Awamutu and Kihikihi) with the remainder forming a combination of smaller settlements (Pirongia and Karapiro) and larger lifestyle blocks away from the main urban settlements.

Figure 27 - Infill (Subdivision and Redevelopment) Plan Enabled Capacity in Waipa District

Location	Plan Enabled Capacity	
	Subdivision	Redevelopment
Other Areas	2	7
Cambridge	584	1,791
Cambridge Outer	6	6
Hamilton Edge	84	131
Karapiro	46	110
Kihikihi	248	378
Ngahinapouri	11	26
Ohaupo	12	15
Pirongia	179	287
Pukeatua	7	13
Rukuhia	-	-
Te Awamutu	473	1,459
Te Awamutu Outer	99	145
Te Miro	6	12
Te Pahu	1	5
Tokanui	-	-
Wharepapa South Surrounds	-	1
TOTAL	**1,759**	**4,387**

Cambridge and Te Awamutu, Waipa District's main urban towns, contain the largest shares of subdivision infill development capacity enabled under the Plan (Figure 27). Significant subdivision capacity is also enabled in Kihikihi and Pirongia, with small shares of capacity across other smaller settlements and localities.

Plan enabled capacity under the redevelopment scenario is more than double (249%) what is possible under the subdivision scenario. The largest share of plan enabled infill capacity, is concentrated in

[21] Plan enabled capacity within Waipa District is based on the Operative District Plan. It does not include any capacity which was notified under Plan Change 5.

Cambridge and Te Awamutu. Under the subdivision setting, around 60% of the total capacity is located in Cambridge (33%) and Te Awamutu (27%). Under the redevelopment setting, this increases to 74% in total and 41% and 33% for Cambridge and Te Awamutu, respectively.

Figure 28 - Greenfields Plan Enabled Capacity (Excluding Infrastructure Constraints) in Waipa District

Location	Plan Enabled Capacity - Excl. infrastructure constraints Scenario 1	Scenario 2	Scenario 3	Scenario 4
Other Areas	-	-	-	-
Cambridge	1,764	1,592	1,437	1,317
Cambridge Outer	1	1	1	1
Hamilton Edge	653	591	541	496
Karapiro	118	106	95	85
Kihikihi	842	759	688	632
Ngahinapouri	122	108	97	88
Ohaupo	202	181	164	153
Pirongia	184	163	151	135
Pukeatua	7	6	5	4
Rukuhia	70	62	58	54
Te Awamutu	1,319	1,190	1,082	993
Te Awamutu Outer	235	214	195	179
Te Miro	23	20	19	17
Te Pahu	55	49	44	40
Tokanui	12	11	9	8
Wharepapa South Surrounds Unzoned	15	13	12	11
TOTAL	**5,622**	**5,066**	**4,598**	**4,213**

Figure 28 shows that a further 4,200 to 5,600 dwellings are enabled under the Plan within Waipa District's greenfield areas (without taking into account infrastructure constraints). Plan enabled capacity is greatest under scenario 1 and least under scenario 4 for the Waipa District for each of the individual areas, when infrastructure constraints are ignored. This is due to the different minimum section sizes applied within each scenario, with scenario 1 containing the minimum site sizes enabled under the Plan, and the other scenarios with progressively larger average section sizes (meaning the land can be divided into a smaller number of total sections). Approximately 40 per cent of this capacity is within the Residential Zone (almost all in Cambridge and Te Awamutu), with a further 15 per cent within the Deferred Residential Zone.

The remainder of capacity (45 per cent) is located within the Large Lot (29%) and Deferred Large Lot (16%) zones. Approximately one-third of this is located around the edges of Kihikihi.

Similar to infill capacity, the greenfields plan enabled capacity is largely concentrated in Cambridge (31%) and Te Awamutu (23%). Other areas where significant portions of plan enabled capacity is located, include Kihikihi (15%) and Hamilton Edge (12%).

Figure 29 - Greenfields Plan Enabled Capacity (Including Infrastructure Constraints) in Waipa District

Location	Plan Enabled Capacity Scenario 1 1-3 Years	4-10 Years	11-20 Years	21-30 Years
Other Areas	-	-	-	-
Cambridge	1,040	1,040	1,266	1,266
Cambridge Outer	-	-	-	-
Hamilton Edge	657	657	657	657
Karapiro	118	118	118	118
Kihikihi	398	398	672	672
Ngahinapouri	122	122	122	122
Ohaupo	196	196	202	202
Pirongia	182	182	182	182
Pukeatua	7	7	7	7
Rukuhia	70	70	70	70
Te Awamutu	599	599	607	690
Te Awamutu Outer	170	170	170	170
Te Miro	23	23	23	23
Te Pahu	55	55	55	55
Tokanui	12	12	12	12
Wharepapa South Surrounds Unzoned	16	16	16	16
TOTAL	**3,665**	**3,665**	**4,179**	**4,262**

When taking account of infrastructure constraints, the capacity decreases to between 3,700 and 4,300 dwellings enabled under the Plan within the greenfield areas (Figure 29). In most areas (13 out of 17), the greenfield capacity is enabled within the first three years, with no additional capacity enabled over the medium to long term. The largest differences in enabled capacity (once taking account of infrastructure) occur in Cambridge, Te Awamutu and Kihikihi. These areas remain the largest areas of greenfield plan enabled capacity.

Significant greenfield capacity is also enabled within the area around the edge of Hamilton. All of this capacity is within the Large Lot Residential Zone and does not require specific infrastructure provision.

4.2 Commercially Feasible Capacity

4.2.1 Waikato District – Future Capacity Projections

In the short-term (to 2021) there is commercially feasible capacity for around 7,000 dwellings within the Waikato District. This rises to around 9,500 dwellings in the medium-term (to 2026); and to around 13,000 dwellings in the longer-term (to 2046). Around 70 per cent of this capacity occurs within the greenfield areas. The following tables present the detailed results of the commercially feasible capacity within Waikato District.

Figure 30 – Infill (Subdivision) Commercially Feasible Capacity in Waikato District

Location	Plan Enabled Capacity Subdivision	Commercially Feasible Capacity Subdivision 2017	2021	2026	2046
Other Areas	18	16	16	16	18
Hamilton Edge	1,157	706	825	927	1,075
Horotiu	74	7	7	7	74
Huntly	286	160	232	281	286
Mid-West Waikato	4	-	-	1	4
Ngaruawahia	568	191	313	334	449
Ngaruni Beach	20	-	6	15	19
North East of Hamilton	68	-	-	68	68
North Eastern Waikato	-	-	-	-	-
North West of Hamilton	434	4	6	9	228
Northern Edge	7	5	5	6	7
Pokeno	494	299	334	369	488
Port Waikato	-	-	-	-	-
Raglan	97	5	6	8	92
SH1 North	5	5	5	5	5
Taupiri	229	4	4	105	191
Te Kauwhata	343	155	214	269	343
Tuakau	515	202	309	424	506
TOTAL	**4,316**	**1,695**	**2,248**	**2,841**	**3,850**

The Waikato District Plan enables around 4,300 additional dwellings through further subdivision of existing properties within the developed areas. Figure 30 demonstrates that over the long term 89 per cent of this capacity is expected to become commercially feasible (2017-2046).

In line with the plan enabled capacity, the Country Living Zone accounts for nearly half of the commercially feasible capacity. The share is higher in the short-term, but drops over the longer-term as a greater share of capacity becomes commercially feasible in other zones through time. Around 21 per cent of the commercially feasible capacity occurs within the New Residential Living areas in the short-term, decreasing to around 18 per cent of feasible capacity in the medium to long-term. Huntly, Ngaruawahia and Te Kauwhata contain the largest quantities of commercially feasible capacity within this zone. The New Residential Zone in Pokeno also contains around 10 to 11 per cent of the commercially feasible infill capacity within the District.

Around one-third (27 to 39%) of the commercially feasible infill capacity under the subdivision setting, is in the Hamilton Edge area. All of the subdivision capacity within this area occurs within the Country Living zone. Other areas that make up significant portions of the total feasible infill capacity, include Pokeno (13 to 17%), Tuakau (12 to 13%), Ngaruawahia (11%), Huntly (7 to 9%) and Te Kauwhata (9%).

Figure 31 - Infill (Redevelopment) Commercially Feasible Capacity in Waikato District

Location	Redevelopment	Commercially Feasible Capacity Redevelopment 2017	2021	2026	2046
Other Areas	26	21	22	22	26
Hamilton Edge	1,342	436	534	717	1,163
Horotiu	106	11	11	11	77
Huntly	327	94	165	210	323
Mid-West Waikato	8	1	1	2	8
Ngaruawahia	703	13	182	366	611
Ngaruni Beach	21	-	2	8	20
North East of Hamilton	90	-	-	-	84
North Eastern Waikato	-	-	-	-	-
North West of Hamilton	484	-	-	2	218
Northern Edge	7	2	7	7	7
Pokeno	604	270	333	404	572
Port Waikato	-	-	-	-	-
Raglan	105	7	7	11	93
SH1 North	6	6	6	6	6
Taupiri	273	4	4	36	228
Te Kauwhata	371	206	285	342	369
Tuakau	765	68	163	320	697
TOTAL	**5,235**	**1,061**	**1,654**	**2,421**	**4,499**

The plan enabled infill capacity in Waikato District, totals 5,200 additional dwellings under the redevelopment setting. Over the long term (2017-2046), Figure 31 shows that 86% of this capacity is expected to become commercially feasible. Similar portions of both the subdivision and redevelopment capacity are projected to become commercially feasible over the long-term, although greater shares of the subdivision capacity will become feasible over the short to medium term than the redevelopment capacity.

Figure 32 – Greenfields Commercially Feasible Capacity (Excluding Infrastructure Constraints) in Waikato District

Location	Commercially Feasible Capacity Scenario 1 2017	2021	2026	2046	Scenario 4 2017	2021	2026	2046
Other Areas	187	687	1,143	1,207	172	655	1,111	1,166
Hamilton Edge	699	825	983	1,315	483	561	675	910
Horotiu	142	149	202	202	141	146	199	199
Huntly	314	829	836	883	546	622	628	658
Mid-West Waikato	-	-	-	150	-	-	-	106
Ngaruawahia	776	1,016	1,308	1,706	825	933	1,041	1,341
Ngaruni Beach	12	22	22	24	3	9	12	14
North East of Hamilton	-	-	-	-	-	-	-	-
North Eastern Waikato	-	-	-	-	-	-	-	-
North West of Hamilton	70	80	86	189	65	65	77	149
Northern Edge	-	59	79	89	-	35	47	58
Pokeno	2,255	2,255	2,256	2,256	1,935	1,935	1,935	1,935
Port Waikato	-	-	-	-	-	-	-	-
Raglan	275	321	381	493	270	316	385	485
SH1 North	-	-	-	144	-	-	-	103
Taupiri	253	273	292	667	213	228	240	518
Te Kauwhata	1,759	1,784	1,827	1,866	1,644	1,673	1,689	1,703
Tuakau	307	436	1,111	1,265	429	510	1,037	1,150
TOTAL	**6,865**	**8,625**	**10,415**	**12,400**	**6,541**	**7,566**	**8,954**	**10,426**

Without taking into account the infrastructure constraints, Waikato District has approximately a further 7,600-8,600 dwellings that are commercially feasible within the greenfield areas in the short-term (to 2021) (Figure 32). This increases to around 8,900-10,400 in the medium-term (to 2026) as demand increases; and to around 10,400 to 12,400 dwellings by 2046.

The plan enabled greenfield capacity totals 14,250 additional dwellings, when infrastructure constraints are ignored, under scenario 1 and 11,900 dwellings under scenario 4. This means ignoring infrastructure constraints, 87% of the greenfield capacity is expected to be commercially feasible in the long term (by 2046).

The largest areas of commercially feasible greenfield capacity in the short-term (to 2021) are expected to occur in Pokeno (1,900-2,300 dwellings) and Te Kauwhata (1,700-1,800 dwellings), followed by Ngaruawahia, Huntly and Tuakau. These townships remain the largest areas of commercially feasible capacity in the medium-term. Over the longer-term, greenfield capacity becomes more commercially feasible in other areas, including Taupiri, outside of these main locations.

High shares of the plan enabled greenfield capacity is projected to become feasible across most areas in the long-term (around 80%-100%). The shares are lower in Taupiri (44%), SH1 North (62%) and Ngaruawahia (76%).

Figure 33 – Greenfields Commercially Feasible Capacity (Including Infrastructure Constraints) in Waikato District

	Scenario 1				**Scenario 4**			
	Infrastructure Timing				**Infrastructure Timing**			
	Years 1-3	Years 1-3	Years 4-10	Years 11-30	Years 1-3	Years 1-3	Years 4-10	Years 11-30
Location	**2017**	**2021**	**2026**	**2046**	**2017**	**2021**	**2026**	**2046**
Other Areas	152	652	1,001	1,207	137	620	969	1,166
Hamilton Edge	699	825	983	1,315	483	561	675	910
Horotiu	142	149	202	202	141	146	199	199
Huntly	36	157	157	174	39	111	111	124
Mid-West Waikato	-	-	-	150	-	-	-	106
Ngaruawahia	631	673	799	1,194	494	521	649	949
Ngaruni Beach	12	22	22	24	3	9	12	14
North East of Hamilton	-	-	-	-	-	-	-	-
North Eastern Waikato	-	-	-	-	-	-	-	-
North West of Hamilton	70	80	86	189	65	65	77	149
Northern Edge	-	48	51	61	-	27	29	38
Pokeno	915	915	915	915	915	915	915	915
Port Waikato	-	-	-	-	-	-	-	-
Raglan	14	60	60	481	9	55	55	476
SH1 North	-	-	-	144	-	-	-	103
Taupiri	253	273	292	667	213	228	240	518
Te Kauwhata	1,042	1,067	1,367	1,770	943	972	1,245	1,649
Tuakau	-	-	811	811	-	-	811	811
TOTAL	**3,747**	**4,733**	**6,593**	**9,206**	**3,222**	**4,041**	**5,833**	**8,026**

Figure 33 shows that when applying infrastructure constraints, the feasible, infrastructure-serviced capacity is reduced to around 4,000-4,700 dwellings in the short-term (to 2021). This increases to around 5,800-6,600 dwellings in the medium-term, and around 8,000-9,200 dwellings within the long-term. Consequently, in the short-term around 50-55 per cent of the commercially feasible capacity is expected to served by infrastructure, around 60-65 per cent in the medium-term, and around 75-80 per cent in the long-term.

High shares of the greenfield capacity (that takes into account infrastructure constraints) becomes commercially feasible across many areas into the long-term. In many of the main urban settlements – Horotiu, Huntly, Pokeno, Raglan, Te Kauwhata and Tuakau – between 95 and 100 per cent of the plan enabled capacity becomes feasible in the long-term. With the exception of Tuakau (as infrastructure constraints are present in the short-term), the share of capacity as commercially feasible in these settlements is also high in the short-term. This is reflected in the development activity that is currently occurring in many of these settlements. The shares of plan enabled capacity as feasible are lower in Taupiri and Ngaruawahia. In the short-term, 53% of the capacity in Ngaruawahia and 17% in Taupiri is projected to be commercially feasible, rising to 66% and 43% respectively in the long-term.

Figure 34 - Combined Infill (Subdivision) and Greenfields Commercially Feasible Capacity in Waikato District

	Scenario 1				**Scenario 4**			
	Infrastructure Timing				**Infrastructure Timing**			
	Years 1-3	Years 1-3	Years 4-10	Years 11-30	Years 1-3	Years 1-3	Years 4-10	Years 11-30
Location	**2017**	**2021**	**2026**	**2046**	**2017**	**2021**	**2026**	**2046**
Other Areas	168	668	1,017	1,225	153	636	985	1,184
Hamilton Edge	1,404	1,649	1,909	2,389	1,188	1,385	1,601	1,984
Horotiu	150	157	210	277	149	154	207	274
Huntly	199	392	441	463	202	346	395	413
Mid-West Waikato	-	-	1	154	-	-	1	110
Ngaruawahia	822	986	1,133	1,643	685	834	983	1,398
Ngaruni Beach	13	29	38	44	4	16	28	34
North East of Hamilton	-	-	68	68	-	-	68	68
North Eastern Waikato	-	-	-	-	-	-	-	-
North West of Hamilton	74	86	95	417	69	71	86	377
Northern Edge	5	53	57	68	5	32	35	45
Pokeno	1,213	1,248	1,283	1,402	1,213	1,248	1,283	1,402
Port Waikato	-	-	-	-	-	-	-	-
Raglan	20	67	69	574	15	62	64	569
SH1 North	5	5	5	148	5	5	5	107
Taupiri	257	277	397	858	217	232	345	709
Te Kauwhata	1,197	1,281	1,636	2,113	1,098	1,186	1,514	1,992
Tuakau	202	309	1,235	1,317	202	309	1,235	1,317
TOTAL	**5,448**	**6,987**	**9,440**	**13,062**	**4,923**	**6,295**	**8,680**	**11,882**

When combining infill capacity with commercially feasible greenfield capacity served by future infrastructure, the total number of additional dwellings in the Waikato District adds to around 6,300-7,000 dwellings in the short-term (to 2021) (Figure 34). This increases to around 8,700-9,500 in the medium term (to 2026), and to around 11,900-13,100 over the long term (to 2046) as demand grows and more infrastructure is provided.

In the short-term, the largest areas of capacity include the area around the edge of Hamilton, Te Kauwhata, Pokeno and Ngaruawahia. These areas remain the main areas of capacity across the medium and longer-terms. Over the medium to long-term a significant amount of capacity becomes commercially feasible in Tuakau and Taupiri.

Infrastructure constraints limit potential locations of growth across a number of the urban settlements. This is observed in the difference between commercially feasible capacity, and infrastructure-served capacity within each area. The largest constraints occur in Pokeno (short to long-term), Huntly (short to long-term), and Te Kauwhata (short-term and easing into the long-term as more infrastructure is supplied).

While these areas have significant differences in the short-term, it is important not to directly equate this with demand for additional infrastructure within the same time period. These results show the total options that are commercially feasible for the market, which is an important difference to actual growth and uptake. The effect of any constraint in infrastructure supply instead becomes binding when considering the level of growth and uptake – i.e. while a large share of the greenfield areas in these settlements may be commercially feasible in the short-term beyond the area of planned infrastructure provision, their growth may not be constrained where the rate of uptake is adequately met by the area served by infrastructure.

4.2.2 Waikato District – Current Market Situation

Subsequent central government interpretation of the NPS-UDC requires a comparison between the current market capacity situation and the level of demand over the short, medium and long-term. This section provides a snapshot of the level of commercial feasibility of capacity within the current 2017 market. It reflects the dwelling sale prices and construction costs (incl. land) and as at 2017 and is not a reflection of the capacity that is likely to become commercially feasible to construct in the future as costs and prices change. It also does not reflect the changes in costs and prices that are likely to occur as the population base geographically expands into new greenfield locations and new areas of intensification within the existing urban area into the future. Within this snapshot, changes in the level of feasibility are entirely a function of infrastructure supply where new areas of greenfield capacity are added with the timing of infrastructure provision.

Figure 35 - Current Profit Margin of Potential Dwelling Capacity in Waikato District in 2017

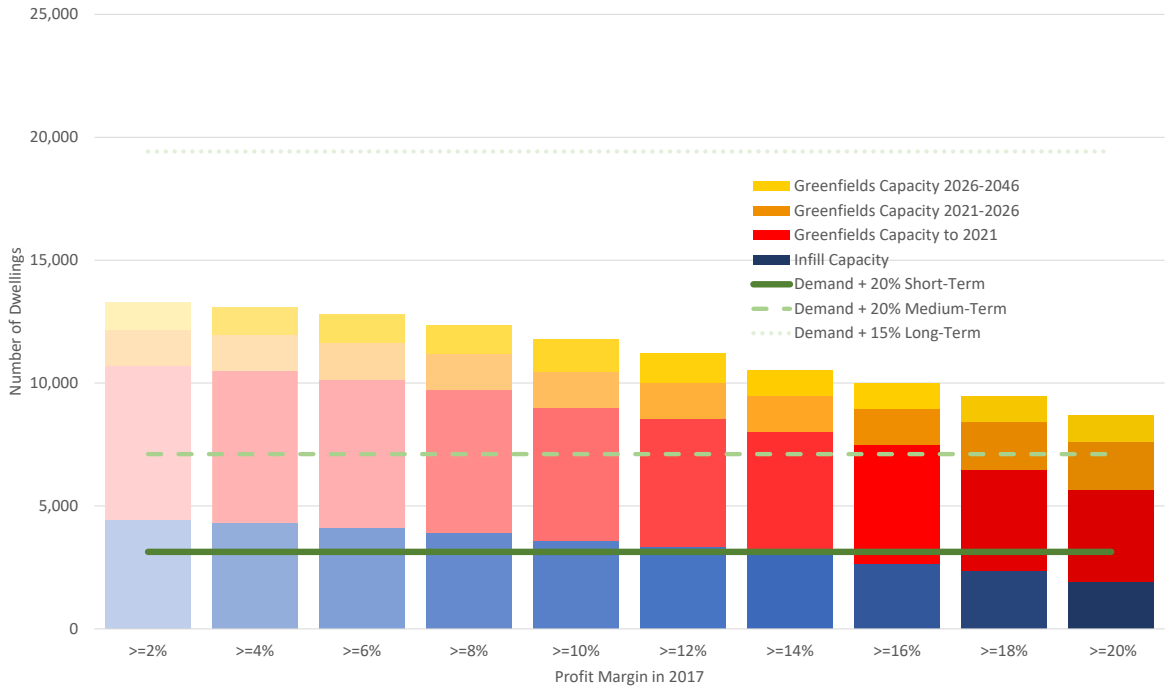


Figure 35 shows the profit margin of development capacity within Waikato District in the year 2017. In total, it shows that there is a capacity of 8,700 dwellings (across both existing urban and greenfield areas) that have a profit margin of 20 per cent or greater in 2017. It shows a capacity of around 10,200 dwellings with a profit margin of 15 per cent or greater in 2017; and 11,800 dwellings with a margin of 10 per cent or greater.

The blue component of each bar represents the capacity contained within the existing urban area. The red component shows the capacity within the greenfields area where infrastructure will be provided by 2021. The orange and yellow bars represent the additional capacity in greenfields areas where infrastructure will be provided by 2026 and 2046.

4.2.3 Hamilton City – Future Capacity Projections

In the short-term (to 2021) there is commercially feasible capacity for around 11,000 dwellings within Hamilton City, or 17,500 dwellings if redevelopment is taken into account. This rises to 21,000 dwellings in the medium-term (to 2026), or 31,000 dwellings including redevelopment; and to 49,000 in the long-term (to 2046), or 108,000 dwellings including redevelopment. Redevelopment plays a larger potential role in commercially feasible capacity in Hamilton City than Waipa and Waikato Districts, with the commercial feasibility of redevelopment increasing through time.

Greenfield development accounts for around one-third of the feasible capacity within the short-term, increasing over time to account for around half of the feasible capacity in the long-term. If redevelopment is taken into account, the relative role of greenfield development becomes smaller due to the large amount of redevelopment capacity that becomes commercially feasible into the medium and long-term.

Figure 36 – Infill (Subdivision) Commercially Feasible Capacity in Hamilton City

Location	Plan Enabled Capacity Infill (excl. redevelopment)	Commercially Feasible Capacity Infill (excl. redevelopment) 2017	2021	2026	2046
1 (Te Rapa north)	-	-	-	-	-
2 (Te Rapa)	2	-	-	-	-
3 (Rotokauri)	-	-	-	-	-
4 (Nawton)	2,285	189	493	1,032	1,868
5 (Dinsdale)	2,241	153	378	900	1,945
6 (Temple View)	203	-	17	36	97
7 (Frankton)	230	43	62	92	194
8 (Melville)	2,847	39	384	965	2,428
9 (Peacocke)	-	-	-	-	-
10 (Silverdale)	1,683	157	339	906	1,605
11 (East/University)	736	132	179	330	673
12 (Ruakura)	-	-	-	-	-
13 (Fairview/Enderley)	2,409	113	376	750	2,097
14 (East/Claudelands)	2,227	325	385	543	1,861
15 (Chartwell)	1,934	299	949	1,509	1,891
16 (Rototuna)	3,868	1,025	2,429	3,316	3,766
17 (St Andrews)	2,073	76	374	1,025	1,711
18 (Beerescourt)	1,347	110	225	345	1,077
19 (Central City)	2,210	642	647	660	2,164
20 (Hamilton Lake)	854	191	272	392	701
TOTAL	**27,075**	**3,356**	**7,398**	**12,719**	**23,999**

The plan enabled infill capacity in Hamilton City, totals 27,000 additional dwellings, excluding the potential for redevelopment. Approximately 27 per cent (7,400 dwellings) of this capacity is projected to be commercially feasible within the short-term (to 2021), and around half (13,000 dwellings) feasible within the medium term (Figure 36). Rototuna, Chartwell and the Central City contain the largest amount of commercially feasible dwelling capacity within the short-term. Over the medium-term, infill development capacity becomes commercially feasible across a greater range of areas in Hamilton City.

Over the long term a high share (89%) of this capacity is expected to become commercially feasible (2017-2046). In the long-term, the largest share of the commercially feasible infill capacity under the subdivision setting, is located in Rototuna. Other areas that make up significant portions of the total feasible infill capacity, include Melville (10%), the Central City (9%) and Fariview/Enderley (9%). Almost all of the plan enabled infill subdivision capacity within the Central City, Chartwell and Rototuna is projected to become commercially feasible over the long-term.

Figure 37 - Infill (Incl. Redevelopment) Commercially Feasible Capacity in Hamilton City

Location	Plan Enabled Capacity Infill (incl. redevelopment)	Commercially Feasible Capacity Infill (incl. redevelopment) 2017	2021	2026	2046
1 (Te Rapa north)	-	-	-	-	-
2 (Te Rapa)	107	-	-	-	106
3 (Rotokauri)	28	-	-	-	-
4 (Nawton)	6,097	189	534	1,191	4,038
5 (Dinsdale)	6,617	193	550	1,285	4,795
6 (Temple View)	534	-	17	50	391
7 (Frankton)	777	64	119	191	496
8 (Melville)	7,332	39	468	1,264	5,475
9 (Peacocke)	904	87	121	150	199
10 (Silverdale)	4,794	206	460	1,322	3,831
11 (East/University)	4,152	370	607	1,114	2,595
12 (Ruakura)	-	-	-	-	-
13 (Fairview/Enderley)	6,023	137	416	902	4,510
14 (East/Claudelands)	4,809	350	446	782	4,063
15 (Chartwell)	5,850	333	1,073	1,796	4,587
16 (Rototuna)	12,463	1,233	3,027	4,216	9,695
17 (St Andrews)	5,712	118	585	1,647	4,695
18 (Beerescourt)	3,944	133	324	640	3,082
19 (Central City)	46,490	3,109	4,411	5,607	28,412
20 (Hamilton Lake)	3,244	331	485	832	2,579
TOTAL	**119,841**	**6,819**	**13,596**	**22,942**	**83,505**

The plan enabled infill capacity in Hamilton totals 120,000 additional dwellings when redevelopment is taken into account. In the short-term (to 2021), nearly 14,000 of these dwellings are projected to be commercially feasible, increasing to nearly 23,000 commercially feasible dwellings in the medium-term (to 2026) (Figure 37). The Central City and Rototuna form the largest areas of commercially feasible capacity in the short-term.

In the medium to long-term infill redevelopment capacity becomes commercially feasible across a greater range of areas. Much of this capacity occurs within the General Residential and CBD zones. Within the East/University, Central City and Silverdale areas a significant share of the capacity occurs within the Residential Intensification Zone.

Over the long term (2017-2046) 70% of this capacity is expected to become commercially feasible. Under the redevelopment setting, a smaller proportion of the infill capacity is projected to be commercially feasible over the long term, than under the subdivision setting, i.e. 70% compared with 89%.

Over the short term, (to 2021) 11% of the plan enabled capacity is projected to become feasible. This situation improves over time as more of the plan enabled capacity becomes commercially feasible, increasing to 19% in the medium-term and 70% in the long-term. Through time, as demand grows with expansion of the population base, both the scarcity and value of location increases. More intensive forms of dwelling typologies become feasible across different locations.

Figure 38 – Greenfields Commercially Feasible Capacity (Excluding Infrastructure Constraints) in Hamilton City

	Commercially Feasible Capacity (no constraint) Scenario 1					Commercially Feasible Capacity (infrastructure constraint) Scenario 1				
	2017	2021	2026	2036	2046	2017	2021	2026	2036	2046
Location						Year 0	Year 1-3	Year 4-10	Year 11-20	Year 21-30
1 (Te Rapa north)	-	-	37	-	457	-	-	-	-	203
2 (Te Rapa)	-	-	-	-	-	-	-	-	-	-
3 (Rotokauri)	621	674	2,084	1,331	8,942	87	140	1,973	1,223	8,831
4 (Nawton)	-	-	-	-	-	-	-	-	-	-
5 (Dinsdale)	-	-	-	-	-	-	-	-	-	-
6 (Temple View)	-	-	-	-	2,543	-	-	-	-	-
7 (Frankton)	-	-	-	-	-	-	-	-	-	-
8 (Melville)	-	-	-	-	-	-	-	-	-	-
9 (Peacocke)	1,463	1,559	4,163	4,145	9,240	42	42	520	4,088	9,240
10 (Silverdale)	-	-	-	-	-	-	-	-	-	-
11 (East/University)	-	-	-	-	-	-	-	-	-	-
12 (Ruakura)	2,598	2,598	3,210	3,210	3,302	2,013	2,140	3,064	3,137	3,229
13 (Fairview/Enderley)	-	-	-	-	-	-	-	-	-	-
14 (East/Claudelands)	-	-	-	-	-	-	-	-	-	-
15 (Chartwell)	-	-	-	-	-	-	-	-	-	-
16 (Rototuna)	1,455	1,616	2,549	1,652	3,455	1,454	1,615	2,549	1,652	3,455
17 (St Andrews)	-	-	-	-	-	-	-	-	-	-
18 (Beerescourt)	-	-	-	-	-	-	-	-	-	-
19 (Central City)	-	-	-	-	-	-	-	-	-	-
20 (Hamilton Lake)	-	-	-	-	-	-	-	-	-	-
TOTAL	**6,137**	**6,446**	**12,043**	**10,338**	**27,939**	**3,596**	**3,937**	**8,106**	**10,100**	**24,958**

Figure 38 shows the commercially feasible dwellings within Hamilton's greenfield areas with and without considering infrastructure constraints. With no constraints, in the short-term (to 2021), the largest areas of feasible capacity are in Ruakura, Rototuna and Peacocke, followed by Rotokauri. When taking infrastructure into account, Ruakura and Rototuna remain significant areas of capacity, while capacity is reduced in Peacocke and Rotokauri. The total feasible capacity within the short-term, when taking account of infrastructure provision, is 4,000 dwellings within the greenfield areas.

Over the medium-term (to 2026) the feasible capacity is projected to increase to 12,000 dwellings within Hamilton's greenfield areas (when not taking into account infrastructure constraints). These occur in similar areas to the short-term, with the largest areas of feasible capacity occurring in Peacocke, Ruakura, Rototuna and Rotokauri. When taking infrastructure into account, the capacity is substantially reduced in Peacocke as the bulk of infrastructure within this location is planned to be supplied in the long-term. Overall, the medium-term feasible capacity, when considering infrastructure, is projected to be around 8,000 dwellings within Hamilton's greenfield areas.

While some of these areas have differences in feasible capacity with and without infrastructure in the short and medium-term, it is important not to directly equate this with demand for additional infrastructure within the same time period. These results show the total options that are commercially feasible for the market, which is an important difference to actual growth and uptake. The effect of any constraint in infrastructure supply instead becomes binding when considering the level of growth and uptake – i.e. while a large share of the greenfield areas in these locations may be commercially feasible in the short-term beyond the area of planned infrastructure provision, their growth may not be constrained where the rate of uptake is adequately met by the other areas served by infrastructure within Hamilton.

In the long-term (to 2046), as the population base expands outwards, the commercially feasible capacity increases to 28,000 dwellings (without considering infrastructure), or 25,000 dwellings when taking infrastructure into account where nearly all greenfield locations (except Temple View) have infrastructure planned for the long-term. In the long-term, nearly all (98%) of the infrastructure-supplied plan enabled capacity within Hamilton's greenfield areas is projected to become commercially feasible. The main areas of feasibility are similar to the short and medium-term, although significant increases in feasible capacity are projected to occur between the medium and long-term in Rotokauri, Peacocke and, to a lesser extent, Rototuna. Increases in feasible capacity over the long-term within these areas align with the timing of infrastructure provision. This can be observed where the same patterns of increase are projected to occur when infrastructure constraints are excluded.

The modelling shows that only around half of the capacity within Temple View is likely to become commercially feasible in the long-term if infrastructure were supplied to this area.

Figure 39 – Combined Infill (Subdivision and Redevelopment) and Greenfields Commercially Feasible Capacity in Hamilton City

	Greenfields and Infill (excl. redevelopment) Scenario 1				Greenfields and Infill (incl. redevelopment) Scenario 1			
	Year 0	Year 1-3	Year 4-10	Year 11-30	Year 0	Year 1-3	Yeat 4-10	Year 11-30
Location	2017	2021	2026	2046	2017	2021	2026	2046
1 (Te Rapa north)	-	-	-	203	-	-	-	203
2 (Te Rapa)	-	-	-	-	-	-	-	106
3 (Rotokauri)	87	140	1,973	8,831	87	140	1,973	8,831
4 (Nawton)	189	493	1,032	1,868	189	534	1,191	4,038
5 (Dinsdale)	153	378	900	1,945	193	550	1,285	4,795
6 (Temple View)	-	17	36	97	-	17	50	391
7 (Frankton)	43	62	92	194	64	119	191	496
8 (Melville)	39	384	965	2,428	39	468	1,264	5,475
9 (Peacocke)	42	42	520	9,240	130	164	671	9,440
10 (Silverdale)	157	339	906	1,605	206	460	1,322	3,831
11 (East/University)	132	179	330	673	370	607	1,114	2,595
12 (Ruakura)	2,013	2,140	3,064	3,229	2,013	2,140	3,064	3,229
13 (Fairview/Enderley)	113	376	750	2,097	137	416	902	4,510
14 (East/Claudelands)	325	385	543	1,861	350	446	782	4,063
15 (Chartwell)	299	949	1,509	1,891	333	1,073	1,796	4,587
16 (Rototuna)	2,479	4,044	5,865	7,221	2,687	4,642	6,765	13,150
17 (St Andrews)	76	374	1,025	1,711	118	585	1,647	4,695
18 (Beerescourt)	110	225	345	1,077	133	324	640	3,082
19 (Central City)	642	647	660	2,164	3,109	4,411	5,607	28,412
20 (Hamilton Lake)	191	272	392	701	331	485	832	2,579
TOTAL	**6,952**	**11,335**	**20,826**	**48,957**	**10,415**	**17,533**	**31,049**	**108,463**

Overall, Hamilton City has a projected 11,300 dwellings that are commercially feasible in the short-term (to 2021) within infill and greenfield areas that are served by infrastructure, without taking into account redevelopment (Figure 39). If redevelopment is taken into account, this increases to 17,500 dwellings. Over the medium-term (to 2026), the total number of commercially feasible dwellings is projected to increase to 21,000, and 31,000 dwellings if redevelopment is taken into account. In the long-term, 49,000 dwellings are projected to become commercially feasible, with the capacity increasing to 108,000 dwellings if redevelopment is taken into consideration.

4.2.4 Hamilton City – Current Market Situation

Subsequent central government interpretation of the NPS-UDC requires a comparison between the current market capacity situation and the level of demand over the short, medium and long-term. This section provides a snapshot of the level of commercial feasibility of capacity within the current 2017 market. It reflects the dwelling sale prices and construction costs (incl. land) and as at 2017 and is not a reflection of the capacity that is likely to become commercially feasible to construct in the future as costs and prices change. It also does not reflect the changes in costs and prices that are likely to occur as the population base geographically expands into new greenfield locations and new areas of intensification within the existing urban area into the future. Within this snapshot, changes in the level of feasibility are entirely a function of infrastructure supply where new areas of greenfield capacity are added with the timing of infrastructure provision.

Figure 40 – Current Profit Margin of Potential Dwelling Capacity in Hamilton City in 2017

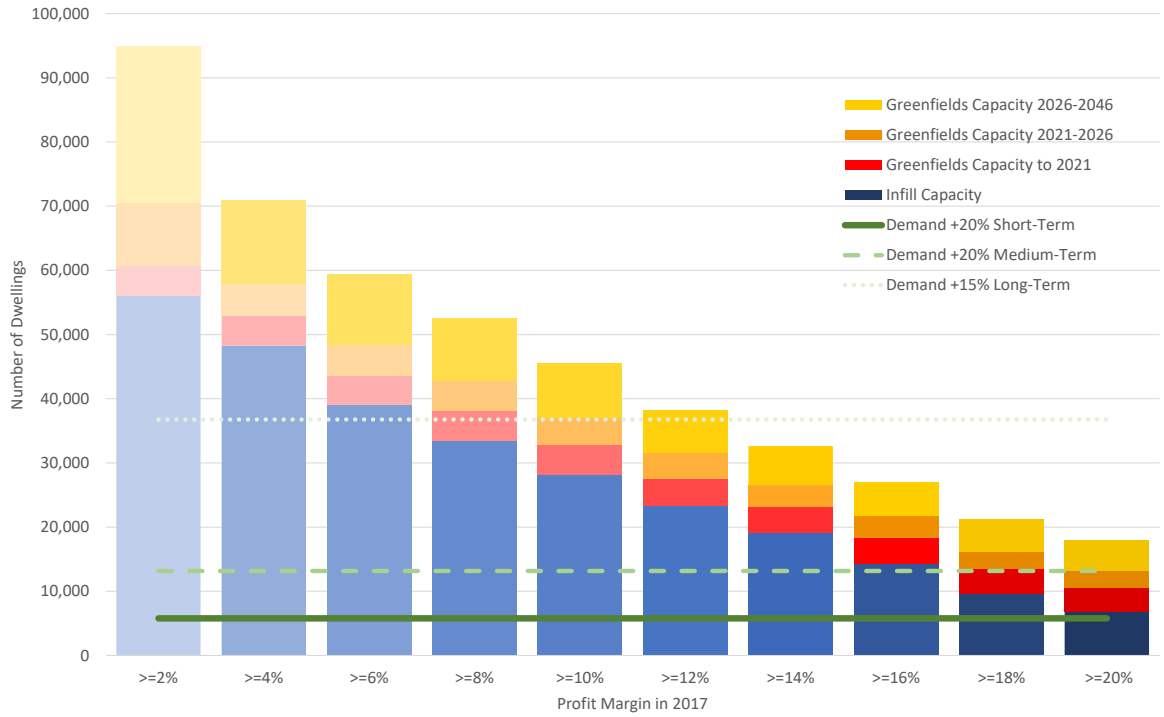


Figure 40 shows the profit margin of development capacity within Hamilton City in the year 2017. In total, it shows that there is a capacity of 18,000 dwellings (across both existing urban and greenfield areas) that have a profit margin of 20 per cent or greater in 2017. It shows a capacity of around 30,000 dwellings with a profit margin of 15 per cent or greater in 2017; and 45,500 dwellings with a margin of 10 per cent or greater.

The blue component of each bar represents the capacity contained within the existing urban area. The red component shows the capacity within the greenfields area where infrastructure will be provided by 2021. The orange and yellow bars represent the additional capacity in greenfields areas where infrastructure will be provided by 2026 and 2046.

4.2.5 Waipa District – Future Capacity Projections

In the short-term (to 2021), under the Operative District Plan[22], there is commercially feasible capacity for approximately 3,300 dwellings within the Waipa District. This rises to over 4,000 dwellings in the medium-term (to 2026); and to around 5,200 dwellings in the longer-term (to 2046). Around three-quarters of this capacity occurs within the greenfield areas. The following tables present the detailed results of the commercially feasible capacity within Waipa District.

Figure 41 – Infill (Subdivision) Commercially Feasible Capacity in Waipa District

Location	Plan Enabled Capacity Subdivision	Commercially Feasible Capacity Subdivision 2017	2021	2026	2046
Other Areas	2	-	-	-	-
Cambridge	584	57	147	299	462
Cambridge Outer	6	-	-	-	-
Hamilton Edge	84	30	32	45	75
Karapiro	46	30	31	37	42
Kihikihi	248	24	37	49	71
Ngahinapouri	11	8	9	10	11
Ohaupo	12	2	6	11	12
Pirongia	179	6	6	2	56
Pukeatua	7	1	1	1	1
Rukuhia	-	-	-	-	-
Te Awamutu	473	91	244	386	452
Te Awamutu Outer	99	97	98	98	99
Te Miro	6	-	-	-	-
Te Pahu	1	1	1	1	1
Tokanui	-	-	-	-	-
Wharepapa South Surrounds Unzoned	-	-	-	-	-
TOTAL	**1,759**	**334**	**599**	**934**	**1,281**

In the short-term (to 2021) approximately 600 dwellings are projected to be commercially feasible through subdivision infill development within Waipa District's existing areas of development (Figure 41). Around half of these are in the Residential Zone, a smaller share than the share of plan enabled capacity within this zone. Almost all of these are within the largest urban towns of Cambridge, Te Awamutu and Kihikihi. The remaining half are within the Large Lot Residential Zone around the edges of these townships and other smaller settlements (particularly Karapiro where prices are high) within the District.

The number of commercially feasible dwellings through infill subdivision development is projected to increase to around 900 dwellings in the medium-term (to 2026).

Over the long term (2017-2046), the commercially feasible capacity is projected to increase to 1,300 – approximately 72% of the plan enabled subdivision capacity. Te Awamutu[23] contains 43% of the commercially feasible subdivision capacity, with a further 36% in Cambridge. Other areas that make up

[22] This analysis does not include any capacity which is likely to be enabled within the Growth Cells in Plan Change 5.

[23] Te Awamutu and Te Awamutu Outer.

significant portions of the total feasible infill capacity, include Kihikihi (6%) and the area around the edge of Hamilton (6%).

Approximately one-quarter of the infill subdivision capacity is projected to be feasible in Cambridge in the short-term, increasing to around 80% in the long-term. In Te Awamutu, approximately half (52%) of the infill capacity is projected to be feasible in the short-term, increasing to nearly all of the capacity within the long-term. In Kihikihi, the shares a lower – 15% in the short-term, increasing to 29% in the long-term – reflecting the lower prices and demand within the township (relative to Cambridge and Te Awamutu).

Figure 42 - Infill (Redevelopment) Commercially Feasible Capacity in Waipa District

		Commercially Feasible Capacity			
		Redevelopment			
Location	Redevelopment	2017	2021	2026	2046
Other Areas	7	-	-	-	-
Cambridge	1,791	62	115	199	698
Cambridge Outer	6	-	-	-	1
Hamilton Edge	131	28	31	39	87
Karapiro	110	33	36	41	81
Kihikihi	378	28	45	57	87
Ngahinapouri	26	4	6	10	11
Ohaupo	15	6	8	10	11
Pirongia	287	9	54	83	128
Pukeatua	13	1	1	1	1
Rukuhia	-	-	-	-	-
Te Awamutu	1,459	11	25	116	603
Te Awamutu Outer	145	90	102	104	122
Te Miro	12	-	-	-	-
Te Pahu	5	1	1	1	3
Tokanui	-	-	-	-	-
Wharepapa South Surrounds Unzoned	1	-	-	-	-
TOTAL	**4,387**	**250**	**423**	**660**	**1,832**

Figure 42 shows that over the long term (2017-2046) a smaller share (42%) of the plan enabled infill (redevelopment) capacity is expected to become commercially feasible, i.e. 1,800 feasible dwellings. That is to say, a much smaller proportion of the infill capacity is projected to be commercially feasible over the long term when redeveloping the land, as opposed to subdividing. Redevelopment is less likely to be a commercially feasible option in smaller locations, such as the towns within Waipa District, with less demand and lower prices.

Low shares of the capacity within the main urban settlements of Cambridge (6%) and Te Awamutu (2%) is projected to be commercially feasible for redevelopment within the short-term. This increases to around 39% and 41% respectively in the long-term.

Figure 43 - Greenfields Commercially Feasible Capacity (Excluding Infrastructure Constraints) in Waipa District

	Commercially Feasible Capacity							
	Scenario 1				Scenario 4			
Location	2017	2021	2026	2046	2017	2021	2026	2046
Other Areas	-	-	-	-	-	-	-	-
Cambridge	1,483	1,696	1,744	1,764	1,125	1,295	1,302	1,317
Cambridge Outer	-	-	-	-	-	-	-	-
Hamilton Edge	364	499	499	563	277	381	381	428
Karapiro	88	118	118	118	65	85	85	85
Kihikihi	559	638	642	842	477	481	593	632
Ngahinapouri	4	2	11	122	7	88	88	88
Ohaupo	5	0	63	63	25	47	47	47
Pirongia	2	65	182	182	134	134	134	134
Pukeatua	1	1	1	1	1	1	1	1
Rukuhia	2	7	70	70	2	54	54	54
Te Awamutu	1,311	1,311	1,319	1,319	993	993	993	993
Te Awamutu Outer	33	33	210	235	160	179	179	179
Te Miro	-	-	-	-	-	-	-	-
Te Pahu	9	9	9	9	9	9	9	9
Tokanui	1	1	1	1	1	1	1	1
Wharepapa South Surrounds Unzoned	-	-	-	-	-	-	-	-
TOTAL	**3,818**	**4,354**	**4,847**	**5,267**	**3,240**	**3,726**	**3,845**	**3,946**

A further 3,700 to 4,400 dwellings are projected to be commercially feasible within Waipa District's greenfield areas (without taking into account infrastructure constraints) in the short-term (to 2021) (Figure 43). The largest areas of projected capacity within the short-term include the main townships of Cambridge and Te Awamutu, followed by Kihikihi. In the medium- term (to 2026), the commercially feasible dwellings within the greenfield areas are projected to increase to between 3,800 and 4,800 dwellings, with similar geographical patterns to the short-term.

In the long-term (to 2046), the commercially feasible capacity is projected to increase to between 3,900 and 5,300 dwellings. This means 94% of the plan enabled greenfield capacity is expected to be commercially feasible, under both scenarios 1 and 4. Disregarding infrastructure constraints, nearly all of the plan enabled capacity around the main urban settlements, and a number of the smaller settlements, is projected to become commercially feasible into the long-term.

Figure 44 – Greenfields Commercially Feasible Capacity (Including Infrastructure Constraints) in Waipa District

	Scenario 1 Infrastructure Timing				Scenario 4 Infrastructure Timing			
	1-3 Years	1-3 Years	4-10 Years	11-30 Years	1-3 Years	1-3 Years	4-10 Years	11-30 Years
Location	**2017**	**2021**	**2026**	**2046**	**2017**	**2021**	**2026**	**2046**
Other Areas	-	-	-	-	-	-	-	-
Cambridge	1,040	1,040	1,040	1,266	758	758	758	932
Cambridge Outer	-	-	-	-	-	-	-	-
Hamilton Edge	364	499	499	563	277	381	381	428
Karapiro	88	118	118	118	65	85	85	85
Kihikihi	398	398	398	672	294	294	294	502
Ngahinapouri	-4	-2	11	122	-7	88	88	88
Ohaupo	-5	0	63	63	25	47	47	47
Pirongia	-2	65	182	182	134	134	134	134
Pukeatua	-1	-1	-1	1	-1	-1	-1	1
Rukuhia	2	7	70	70	2	54	54	54
Te Awamutu	599	599	599	690	445	445	445	514
Te Awamutu Outer	-7	-7	170	170	129	129	129	129
Te Miro	-	-	-	-	-	-	-	-
Te Pahu	-9	-9	-9	9	-9	-9	-9	9
Tokanui	-1	-1	-1	1	-1	-1	-1	1
Wharepapa South Surrounds Unzoned	-	-	-	-	-	-	-	-
TOTAL	**2,462**	**2,706**	**3,139**	**3,905**	**2,111**	**2,404**	**2,404**	**2,902**

Figure 44 demonstrates that if infrastructure constraints are taken into account, Waipa District's commercially feasible capacity within greenfield areas decreases to 2,400 to 2,700 dwellings in the short-term (to 2021), compared to 3,700 to 4,400 dwellings if infrastructure constraints are ignored. The largest differences occur in Cambridge and Te Awamutu when infrastructure constraints are taken into account showing that there is commercially feasible greenfield capacity beyond the areas that have planned infrastructure provision.

The number of infrastructure-served commercially feasible dwellings projected in the greenfield areas increases to 2,400 to 3,100 dwellings in the medium-term (to 2026). This compares to 3,800 to 4,800 dwellings if infrastructure constraints are ignored.

In the long-term (to 2046), the number of commercially feasible dwellings served by infrastructure is projected to increase to 2,900 to 3,900 dwellings. This compares to 3,900 to 5,300 dwellings if infrastructure constraints are ignored.

In Cambridge, Kihikihi and Te Awamutu[24] all of the plan enabled greenfield capacity (including infrastructure constraints) is feasible from the outset, under scenario 1. In the Hamilton Edge area only three-quarters of the plan enabled capacity is feasible over the short term, but by 2046 nearly 90% of the capacity is feasible.

Over time, into the long-term, higher shares of the plan enabled capacity becomes commercially feasible across a number of the smaller settlements.

[24] Te Awamutu and Te Awamutu Outer

Figure 45 – Combined Infill (Subdivision) and Greenfields Commercially Feasible Capacity in Waipa District

	Scenario 1 Infrastructure Timing				Scenario 4 Infrastructure Timing			
	1-3 Years	1-3 Years	4-10 Years	11-30 Years	1-3 Years	1-3 Years	4-10 Years	11-30 Years
Location	**2017**	**2021**	**2026**	**2046**	**2017**	**2021**	**2026**	**2046**
Other Areas	-	-	-	-	-	-	-	-
Cambridge	1,097	1,187	1,339	1,728	815	905	1,057	1,394
Cambridge Outer	-	-	-	-	-	-	-	-
Hamilton Edge	394	531	544	638	307	413	426	503
Karapiro	118	149	155	160	95	116	122	127
Kihikihi	422	435	447	743	318	331	343	573
Ngahinapouri	4	7	21	133	1	97	98	99
Ohaupo	3	6	74	75	27	53	58	59
Pirongia	8	59	180	238	128	128	132	190
Pukeatua	3	3	3	3	3	3	3	3
Rukuhia	2	7	70	70	2	54	54	54
Te Awamutu	690	843	985	1,142	536	689	831	966
Te Awamutu Outer	90	91	268	269	226	227	227	228
Te Miro	-	-	-	-	-	-	-	-
Te Pahu	8	8	8	8	8	8	8	8
Tokanui	1	1	1	1	1	1	1	1
Wharepapa South Surrounds Unzoned	-	-	-	-	-	-	-	-
TOTAL	**2,796**	**3,305**	**4,073**	**5,186**	**2,445**	**3,003**	**3,338**	**4,183**

Overall, in both infill and greenfield areas, Waipa District is projected to have around 3,300 commercially feasible dwellings that are served by infrastructure in the short-term (to 2021) (Figure 45). In the medium-term (to 2026) this is projected to increase to 3,300 to 4,100 dwellings. Over the long-term (to 2046) feasible capacity is projected to increase to 4,200 to 5,200 dwellings.

Approximately a third (33%) of the total feasible capacity is located in Cambridge, and around 27% in Te Awamutu[25]. Other areas where significant proportions of feasible capacity is located, include Kihikihi (14%) and the Hamilton Edge area (12%).

4.2.6 Waipa District – Current Market Situation

Subsequent central government interpretation of the NPS-UDC requires a comparison between the current market capacity situation and the level of demand over the short, medium and long-term. This section provides a snapshot of the level of commercial feasibility of capacity within the current 2017 market. It reflects the dwelling sale prices and construction costs (incl. land) and as at 2017 and is not a reflection of the capacity that is likely to become commercially feasible to construct in the future as costs and prices change. It also does not reflect the changes in costs and prices that are likely to occur as the population base geographically expands into new greenfield locations and new areas of intensification within the existing urban area into the future. Within this snapshot, changes in the level of feasibility are entirely a function of infrastructure supply where new areas of greenfield capacity are added with the timing of infrastructure provision.

[25] Te Awamutu and Te Awamut Outer.

Figure 46 – Current Profit Margin of Potential Dwelling Capacity in Waipa District in 2017

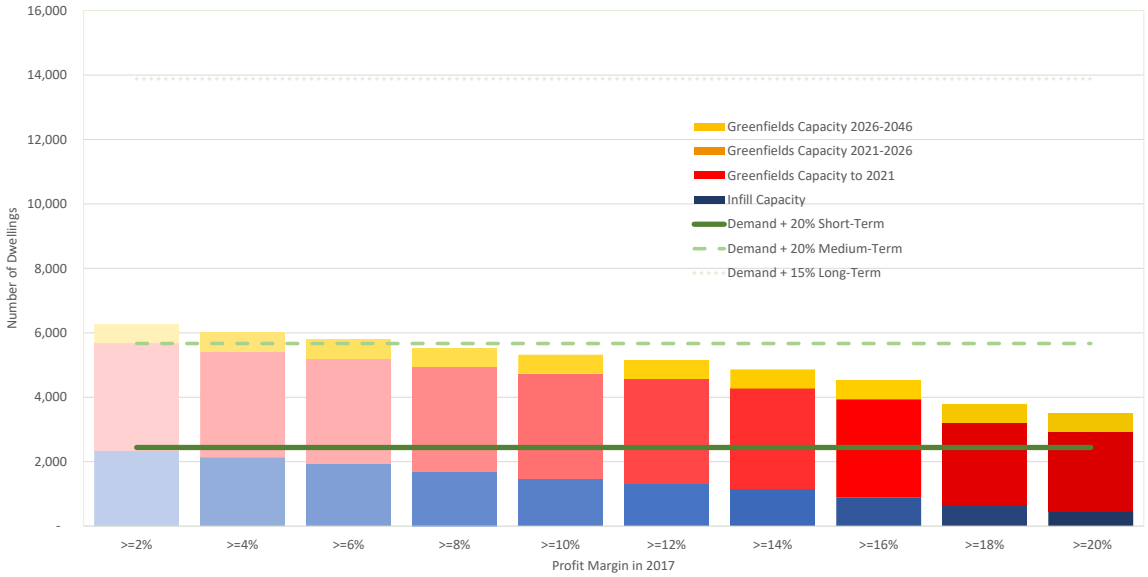


Figure 46 shows the profit margin of development capacity within Waipa District in the year 2017. In total, it shows that there is a capacity of 3,500 dwellings (across both existing urban and greenfield areas) that have a profit margin of 20 per cent or greater in 2017. It shows a capacity of around 4,800 dwellings with a profit margin of 15 per cent or greater in 2017; and 5,300 dwellings with a margin of 10 per cent or greater.

The blue component of each bar represents the capacity contained within the existing urban area. The red component shows the capacity within the greenfields area where infrastructure will be provided by 2021. The orange and yellow bars represent the additional capacity in greenfields areas where infrastructure will be provided by 2026 and 2046.

5 Sufficiency of Capacity

This section draws together the analyses of housing demand and potential dwelling supply, to assess the sufficiency of housing capacity in the FPP area. The mechanics of the assessment are straightforward, with a direct comparison of projected demand as against potential capacity, to identify whether or not any shortfall is likely. At the highest level, consideration of sufficiency starts with total sufficiency - total housing needs and total housing capacity, for the short (2017-2021), medium (2021-26) and long terms (2026-2046).

The sufficiency of capacity must also be considered in terms of housing costs/values, by comparing housing demand with potentially available supply at various price points, as well as considering the potential availability of different dwelling types, and capacity across different locations, particularly urban capacity, and within each area.

The consideration of future sufficiency is inevitably subject to key assumptions about the future circumstances in the FPP area. These include the projected population and household numbers, and also key questions about the urban rural split, the implications of economic growth on housing market parameters, and the importance of the current housing estate.

5.1 Assessing Sufficiency

The core estimate of the sufficiency of housing capacity is direct comparison of projected demand with assessed supply in total and in each value band. At the highest level, the comparison is total demand at each point in time (2021, 2026 and 2046) compared with total estimated supply, with total supply including the existing dwelling estate.

It is also important to consider the components of demand, in order to understand sufficiency by dwelling value band, in particular because this directly influences households' capability to secure housing – as owners or tenants – and by location, and dwelling type which relate to housing choices.

The measure of sufficiency which is applied is total feasible supply compared with total demand, where sufficiency is measured as the shortfall/surplus in terms of dwelling numbers, and the percentage share of demand for which there is likely to be feasible supply. The simple percentage reflects the shortfall or surplus relative to demand, while the dwelling count indicates the scale of the shortfall/surplus.

The standard approach used here is the shortfall surplus in each property value band, since that is the soundest indicator of potential supply shortfall relative to the purchasing power of the community.

This approach is applied here to the FPP area initially at the city and district level, over each time period (2017-2021, 2017-2026, and 2017-2046).

The feasibility assessment (Section 4) has examined a range of outcomes, where different drivers have effect on the number of dwellings and their value bands. The assessment covers each of the three scenarios, and considers the average outcome.

5.1.1 Total demand and total dwelling estate

The existing dwelling estate is adjusted to allow for longer term decrease in relative values, as the total housing estate grows, and new dwellings become progressively more important within the total structure.

It is not appropriate to consider just the net increase in demand against the net increase in housing capacity. This is because demand for new dwellings is not limited to new households in an economy. There is considerable "churn" in any housing market in New Zealand (and overseas) as households are mobile within the housing estate. On average, some 6% to 7% of all dwellings change hands in any year, and over a 30-year or even a 10-year period a large proportion of households will move between dwellings.

Typically, this movement is upward during peoples' lifecycle in terms of dwelling value as the pattern for many is gradual accumulation of assets/wealth which makes a more valuable dwelling relatively more affordable over time. This is a key reason why households which are new to the market tend to enter at lower value points, and may move up over time - as reflected in the relationships between household age and property value, and household income and property value.

By comparing total dwelling demand (existing and net new households) by value band with total dwelling supply (existing estate plus new feasible capacity), these changes are at least broadly incorporated, and the longer term comparisons better reflect the demand and supply contexts at the future points of 2021, 2026 and 2046.

5.1.2 Values of the Existing Estate

The existing FPP housing estate will not remain unchanged into the future, and individual property values will shift over time, within the context of the wide whole-of-estate shift. It is important to take this into account, because such changes will have direct effects on the values of the future property estate.

A core issue is that as economies grow, the value of the existing dwelling estate can also be expected to increase in real terms. One key driver of this is the general increase in the potential uses for any land parcel as the economy grows, which means the value of the land parcel also increases.

At the same time, however, the value of the existing dwelling estate can be expected to grow more slowly than the total dwelling estate. This is because an important component of the increase in value is the progressive addition of new dwellings which both incorporate technology gains, and reflect the viable development intensity at the time of construction. Total property value has just two components, land value and improvement value. Land values tend to increase commensurate with the growth in an economy - predominantly district growth but with some benefit also from regional and national growth trends – driving its underlying potential. In contrast, the improvements on any parcel are to a considerable degree anchored to the point in time at which those improvements were added. Even where improvements represented maximum feasible development potential at that point in time, ongoing growth in an economy means that potential continues to grow. At the same time, built structures such as dwellings are subject to

direct depreciation – in terms of the construction materials – and relative depreciation from ongoing technological improvements which are incorporated in new dwellings.

A dwelling which is at the 85th percentile for value (for example) in 2016 (with 2016 construction norms) cannot expect to hold that position over the next 30 years, because new dwellings with the latest construction norms will progressively overtake that position, and the dwelling will be subject to depreciation. This means that even though the value of improvements tends to increase over time with the general uplift in property values – whether or not material improvements are made to existing dwellings – the general pattern is for the value of improvements on residential properties tends to increase more slowly than the value of residential land[26]. This is commonly evident in the three-yearly cycle of property revaluation (usually by QVNZ) where individual valuations greater increase in land than improvements. It is more evident in faster growing economies such as Hamilton, Queenstown Lakes and Auckland, where the improving potential of the land is more readily apparent.

This economic process affects two key aspects of any assessment for the NPS-UDC. One effect is on the feasibility of development and redevelopment of residential (and business) property, as the progressively increasing disparity between current use – anchored by existing improvements – and current potential makes redevelopment progressively more viable over time.

The second effect is on the value of the existing property estate in real terms. Over time, the existing estate gradually drops in value in real terms relative to new housing. This is a very important consideration given the 30-year long term time frame of the NPS-UDC. The assessment of sufficiency has to take account of the existing housing capacity together with future feasible capacity, in relation to the total housing demand from the resident population, and visitors.

One implication is that when examining total future demand against total dwelling capacity in each value band, it is important to specifically allow for some reduction of the existing property estate in real terms, to reflect (at least) direct and relative depreciation. This does not mean a reduction in property values in nominal $ terms, however it does imply some relative shift in the overall distribution of values of the existing estate, especially in the longer term. We note that all the feasibility assessment is in current $2016 terms

The effect for the assessment of sufficiency is that the total dwelling estate is made up of the feasible new capacity in each value band, together the existing estate with some downward adjustment.

5.1.3 Feasibility scenarios

The commercial feasibility model calculates the dwelling sales price(s) at which a dwelling is estimated to be commercially feasible to construct on each parcel. It is important to understand the price distribution of the feasible dwelling capacity as price is an important consideration in the sufficiency of capacity in meeting demand.

[26] There was detailed analysis of residential value patterns in the Auckland economy over the 1995 to 2015 period, undertaken for the Auckland Unitary Plan hearings. This showed a long term trend of land values increasing at 1.5 to 2.0 times the value of improvements, even without adjustment for the addition of new dwellings to the total estate acting to lift average values.

As the model tests a range of different dwelling typologies and sizes, there are often multiple dwellings, at different prices, which are commercially feasible on each parcel. Three scenarios have been developed where the model selects *one* commercially feasible option on each parcel to provide a total number of feasible dwellings within each price band without double counting the number of feasible dwellings.

The feasibility scenarios include:

i. The Maximum Profit Scenario where the market is assumed to be driven the largest profit margin. Here, the model selects, out of the commercially feasible options, the combination of dwelling size and typology on each parcel that delivers the greatest profit margin.
ii. The Maximum Dwelling Scenario where the market is assumed to be driven by providing the largest number of dwellings on each parcel. Here, the model selects, out of the commercially feasible options, the combination of dwelling size and typology on each parcel that delivers the greatest number of dwellings.
iii. The Cheapest Dwelling Scenario where the market is assumed to be driven by providing the cheapest commercially feasible dwellings. Here, the model selects, out of the commercially feasible options, the combination of dwelling size and typology on each parcel that has the cheapest estimated sales price.

The feasibility scenarios have provided a range of results, where the housing market is assumed to be driven by maximum profit potential on all dwellings, or by maximising the number of dwellings which may be feasibly built, or by providing for the lowest cost dwellings.

Each and all of these drivers are present in the residential construction sector, and it is not realistic to assume that one will be dominant in every residential development decision, particularly when there are many individual entities involved in residential construction, and their decision-making includes a range of influences, including profitability but also taking into account the degree of competition, and the opportunity to work profitably in specific market niches. This means in particular that maximising profit may result from not just developing the dwelling with the greatest margin, but building profitably in niches where there is demand but less competition from other providers, lower marketing and sale costs, shorter time lags between completion and sale, and so on.

The consequence of this mix of drivers for a well informed supply sector is that the likely feasible supply outcome will be close to the average volume of supply across the three scenarios, rather than a single supply outcome being representative. This means that the average of the sufficiency estimates is an appropriate indicator.

5.2 Hamilton City Housing Sufficiency 2021-2046

5.2.1 Dwelling Demand by Value Band

Figure 47 summarises the growth in housing demand (including the demand margin) in Hamilton City, by dwelling value band, over the short, medium and long terms. Throughout the planning period, demand growth is most heavily directed in the lower and lower-middle positions in the housing market, with 10%-

12% in the lowest band (under $300,000), and 25-36% in the lower middle value band ($300,000 to $440,000). Overall, around 70% of the net increase would be for dwellings in the bands below $580,000.

These demand estimates by value band are drawn on for the sufficiency assessment.

Figure 47 – Hamilton City – Projected Demand Increase by Dwelling Value Band 2017-2046

Value Band	2017-21	2017-26	2017-46	2017-21 %	2017-26 %	2017-46 %
Under $300k	590	1,400	4,320	10%	11%	12%
$300k-$440k	1,440	3,380	9,540	25%	26%	26%
$440k-$580k	1,500	3,700	11,640	26%	28%	32%
$580k-$730k	1,240	2,710	7,010	21%	21%	19%
$730k-$880k	660	1,340	3,270	11%	10%	9%
$880k-$1.02m	220	410	580	4%	3%	2%
$1.02m-$1.17m	70	140	210	1%	1%	1%
$1.17m-$1.31m	30	60	90	1%	0%	0%
$1.31m-$1.45m	10	30	50	0%	0%	0%
$1.45m-$1.75m	10	20	50	0%	0%	0%
$1.75m-$2.05m	-	-	10	0%	0%	0%
$2.05m+	10	10	20	0%	0%	0%
TOTAL	**5,780**	**13,200**	**36,790**	**100%**	**100%**	**100%**

5.2.2 Estimating Sufficiency

Figure 48 shows the projected outcome in the short term (2017-2021) for Hamilton City. The figure shows the calculation, where the current dwelling estate and additional feasible supply drive the Total Supply estimates. Total Demand (+ a 15%/20% margin) is based on the household projections in each locality in the city. The "Net Sufficiency" column is simply Supply less demand, while the "Net Sufficiency %" column is Supply expressed as a percentage of Total Demand (incl. the 15%/20% margin). For ease of interpretation, where Net Sufficiency is negative, the cells are shaded.

Figure 48 – Hamilton City – Short-term Sufficiency – Max Profit Scenario

Value Band	Current Estate	Additional Supply	Total Supply	Total Demand	Net Sufficiency	Net Sufficiency %
Under $300k	5,510	-	5,510	5,540	- 30	99%
$300k-$440k	18,610	1,330	19,940	20,040	- 100	100%
$440k-$580k	18,770	1,310	20,080	20,570	- 490	98%
$580k-$730k	8,790	3,490	12,280	10,210	2,070	120%
$730k-$880k	2,910	1,740	4,650	3,630	1,020	128%
$880k-$1.02m	1,050	10	1,060	1,290	- 230	82%
$1.02m-$1.17m	450	430	880	530	350	166%
$1.17m-$1.31m	270	1,310	1,580	300	1,280	527%
$1.31m-$1.45m	160	10	170	170	-	100%
$1.45m-$1.75m	150	-	150	160	- 10	94%
$1.75m-$2.05m	50	-	50	50	-	100%
$2.05m+	50	-	50	60	- 10	83%
TOTAL	**56,770**	**9,630**	**66,400**	**62,550**	**3,850**	**106%**

Projected demand growth (+20% margin) is just under 6,000 households, while the estimated additional feasible supply would be 9,600 dwellings - in this case assuming maximum profit drives the construction sector. The table shows that in total here is sufficient feasible dwelling capacity, a surplus of nearly 4,000 dwellings or +6%.

However, examination of the dwelling value bands shows a mix of surplus and shortfall, with small capacity shortfalls (1% overall) in the three lowest value bands, then surplus in the $580,000 to $880,000 value bands (+22% overall) (Figure 48). In most of the value bands above $580,000 there are surpluses indicated, where potential feasible supply exceeds estimated demand.

Figure 49 – Hamilton City – Short-term Sufficiency – Max Profit and Redevelopment

Value Band	Current Estate	Additional Supply	Total Supply	Total Demand	Net Sufficiency	Net Sufficiency %
Under $300k	5,510	3,810	9,320	5,540	3,775	168%
$300k-$440k	18,610	1,680	20,290	20,040	250	101%
$440k-$580k	18,770	1,450	20,220	20,570	- 350	98%
$580k-$730k	8,790	4,630	13,420	10,210	3,210	131%
$730k-$880k	2,910	2,180	5,090	3,630	1,460	140%
$880k-$1.02m	1,050	30	1,080	1,290	- 210	84%
$1.02m-$1.17m	450	500	950	530	420	179%
$1.17m-$1.31m	270	1,360	1,630	300	1,330	543%
$1.31m-$1.45m	160	10	170	170	-	100%
$1.45m-$1.75m	150	-	150	160	- 10	94%
$1.75m-$2.05m	50	-	50	50	-	100%
$2.05m+	50	-	50	60	- 10	83%
TOTAL	**56,770**	**15,640**	**72,410**	**62,550**	**9,860**	**116%**

Figure 49 shows the projected outcome where allowance is made for redevelopment, adding some 6,000 feasible dwellings. Projected demand growth is just under 6,000 households, while the estimated additional feasible supply would be 15,600 dwellings – again assuming maximum profit drives the construction sector. The table (Figure 49) shows that in total there is sufficient feasible dwelling capacity, a surplus of some 9,900 dwellings or +16%.

Examination of the dwelling value bands shows a surplus across most value bands. The two, albeit small, main shortfalls occur in the $440,000 to $580,000 and $880,000 to $1.02m value bands. However, surpluses occur in the value bands on either side of these bands. A large surplus occurs within the lowest value band, with apartments within the City Centre making a substantial contribution in this band.

Figure 50 – Hamilton City – Short-term Sufficiency – Cheapest Dwellings Scenario

Value Band	Current Estate	Additional Supply	Total Supply	Total Demand	Net Sufficiency	Net Sufficiency %
Under $300k	5,510	770	6,280	5,545	735	113%
$300k-$440k	18,610	1,900	20,510	20,040	470	102%
$440k-$580k	18,770	4,560	23,330	20,570	2,760	113%
$580k-$730k	8,790	1,940	10,730	10,210	520	105%
$730k-$880k	2,910	200	3,110	3,630	- 520	86%
$880k-$1.02m	1,050	-	1,050	1,290	- 240	81%
$1.02m-$1.17m	450	280	730	530	200	138%
$1.17m-$1.31m	270	1,090	1,360	300	1,060	453%
$1.31m-$1.45m	160	10	170	170	-	100%
$1.45m-$1.75m	150	-	150	160	- 10	94%
$1.75m-$2.05m	50	-	50	50	-	100%
$2.05m+	50	-	50	60	- 10	83%
TOTAL	**56,770**	**10,740**	**67,510**	**62,550**	**4,960**	**108%**

Figure 50 shows the projected outcome, without allowance for redevelopment, and assuming a focus on the cheapest dwellings. The total outcome is similar to the Maximum Profit scenario, but the surplus and shortfall figures are apparent in different dwelling value bands. Under the Cheapest Dwellings scenario, there is significant surplus within the lower value bands, and a shortfall within the mid to high-value bands of $730,000 to $1.02m.

The three tables above illustrate the available detail for the assessment relative to NPS requirements, and the underlying method for assessing sufficiency. The following tables provide summary information, for Hamilton City in short, medium and long terms, under varying supply assumptions.

It is very important to recognise that the figures do not indicate a hard and fast shortfall or deficit, and allowance needs to be made for the housing market to operate within this wider market situation. For example, a surplus of potential capacity in one value band and a deficit in the adjacent value band is likely to see adjustment in the supply side (more dwellings in the deficit bands) and/or the supply side (some demand re-directed). However, it is also important to recognise that adjustments in demand are easiest if downward towards lower value bands (since upward movements may not be affordable), and adjustments in supply are easiest if upward towards higher value bands.

5.2.3 Hamilton City Short Term Sufficiency

The short term outlook would see Hamilton's household count increasing by 4,800 to 61,600 (or 62,500 with a margin applied) by 2021 from 56,800 in 2017. Figure 51 shows the short-term Net Sufficiency outcomes for Hamilton City, to 2021, for each supply scenario, and the average across all scenarios.

5.2.3.1 Excluding Redevelopment

Excluding allowance for future capacity through urban redevelopment, in net terms there would be sufficient dwelling capacity for Hamilton household demand to 2021 (Figure 51). Over the supply scenarios, Net Sufficiency would be 106% to 108%.

The Maximum Dwellings and Cheapest Dwellings scenarios would have a net surplus in the lowest value bands (up to $440,000), with small shortfalls in a number of the mid to high value bands. The largest areas of surplus, under these scenarios, would occur in the $580,000 to $880,000 value band for the Maximum Dwellings scenario, and in the lower to mid value band of $440,000 to $580,000 under the Cheapest Dwellings scenario. Conversely, the Maximum Profit scenario (with its greater focus on larger and more costly dwellings) would have a limited shortfall across the lowest three value bands (up to $580,000).

Figure 51 – Hamilton City – Short-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios	2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios
Under $300k	5,510	- 30	725	735	476	99%	113%	113%	109%
$300k-$440k	18,610	- 100	50	470	140	100%	100%	102%	101%
$440k-$580k	18,770	- 490	- 200	2,760	690	98%	99%	113%	103%
$580k-$730k	8,790	2,070	1,940	520	1,510	120%	119%	105%	115%
$730k-$880k	2,910	1,020	1,070	- 520	523	128%	129%	86%	114%
$880k-$1.02m	1,050	- 230	- 240	- 240	- 237	82%	81%	81%	82%
$1.02m-$1.17m	450	350	350	200	300	166%	166%	138%	157%
$1.17m-$1.31m	270	1,280	1,280	1,060	1,207	527%	527%	453%	502%
$1.31m-$1.45m	160	-	-	-	-	100%	100%	100%	100%
$1.45m-$1.75m	150	- 10	- 10	- 10	- 10	94%	94%	94%	94%
$1.75m-$2.05m	50	-	-	-	-	100%	100%	100%	100%
$2.05m+	50	- 10	- 10	- 10	- 10	83%	83%	83%	83%
TOTAL	56,770	3,850	4,960	4,960	4,590	106%	108%	108%	107%

5.2.3.2 Including Redevelopment

If allowance is made for redevelopment the estimated feasible supply increases by around 6,000 dwellings (Figure 52). In net terms there would be sufficient dwelling capacity for Hamilton household demand to 2021, over all supply scenarios.

With the additional capacity from redevelopment focusing on the lower value end of the market, there would be substantial net surplus in the lowest value band (under $300,000). Much of the surplus in the lowest value band would occur through small apartment development within the City Centre. A small net shortfall would occur in the $880,000 to $1.02m value band, although the value bands on either side would have a net surplus under two of the scenarios. There would be net surplus in the higher value bands ($1.02m to $1.31m) across all three scenarios.

Figure 52 – Hamilton City – Short-term Sufficiency – Including Redevelopment

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios	2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios
Under $300k	5,510	3,775	3,935	3,955	3,888	168%	171%	171%	170%
$300k-$440k	18,610	250	570	1,040	620	101%	103%	105%	103%
$440k-$580k	18,770	-350	-60	3,820	1,137	98%	100%	119%	106%
$580k-$730k	8,790	3,210	3,470	1,120	2,600	131%	134%	111%	125%
$730k-$880k	2,910	1,460	1,660	-210	970	140%	146%	94%	127%
$880k-$1.02m	1,050	-210	-240	-230	-227	84%	81%	82%	82%
$1.02m-$1.17m	450	420	390	220	343	179%	174%	142%	165%
$1.17m-$1.31m	270	1,330	1,330	1,100	1,253	543%	543%	467%	518%
$1.31m-$1.45m	160	-	-10	-10	-7	100%	94%	94%	96%
$1.45m-$1.75m	150	-10	-10	-10	-10	94%	94%	94%	94%
$1.75m-$2.05m	50	-	-	-	-	100%	100%	100%	100%
$2.05m+	50	-10	-10	-10	-10	83%	83%	83%	83%
TOTAL	56,770	9,860	11,020	10,780	10,553	116%	118%	117%	117%

5.2.4 Hamilton City Medium Term Sufficiency

The medium term outlook would see Hamilton's household count increasing by 11,000 to 67,750 by 2026 (or 70,000 with a margin applied) from 56,800 in 2017.

5.2.4.1 Excluding Redevelopment

Figure 53 shows that excluding allowance for future capacity through urban redevelopment, in net terms there would be sufficient dwelling capacity for Hamilton household demand to 2026. Over the supply scenarios, Net Sufficiency would be 108% to 110%.

However, there are variations across the value bands. In all supply scenarios, there would be substantial net surplus in the lowest value band (under $300,000). In the Maximum Profit and Maximum Dwellings scenarios, there would be a significant net shortfall within the remainder of the lower value bands of $300,000 to $580,000 (-6%), with significant surplus in the mid to upper value bands of $580,000 to $1.31m. Conversely, within the Cheapest Dwellings scenario, the net surplus would extend across the four lowest value bands (up to $730,000), equating to 10%. As indicated above, there would be scope for both demand-side and supply-side adjustment, which is likely to see sufficient capacity across the under $580,000 value band.

There would be small net shortfalls in the high value bands ($1.31m and higher), although these are less significant from the perspective of housing affordability, and there is generally plenty of scope for purchasers able to afford these higher value dwellings to find alternatives. In any case, the shortfall numbers are small, 30 dwellings or fewer over a decade.

Figure 53 – Hamilton City – Medium-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios	2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios
Under $300k	6,810	460	1,260	1,360	1,027	107%	120%	121%	116%
$300k-$440k	18,650	- 1,690	- 1,490	40	- 1,047	92%	93%	100%	95%
$440k-$580k	18,060	- 1,070	- 1,010	3,160	360	95%	96%	114%	102%
$580k-$730k	8,370	1,610	1,570	1,470	1,550	114%	113%	113%	113%
$730k-$880k	2,780	1,150	1,200	- 1,080	423	127%	128%	75%	110%
$880k-$1.02m	1,010	470	460	- 260	223	132%	131%	82%	115%
$1.02m-$1.17m	440	2,410	2,410	990	1,937	502%	502%	265%	423%
$1.17m-$1.31m	260	2,460	2,450	1,180	2,030	845%	842%	458%	715%
$1.31m-$1.45m	160	- 20	- 30	- 30	- 27	89%	84%	84%	86%
$1.45m-$1.75m	140	- 30	- 30	- 30	- 30	82%	82%	82%	82%
$1.75m-$2.05m	50	-	-	-	-	100%	100%	100%	100%
$2.05m+	50	- 10	- 10	- 10	- 10	83%	83%	83%	83%
TOTAL	56,780	5,730	6,780	6,780	6,430	108%	110%	110%	109%

5.2.4.2 Including Redevelopment

Figure 54 shows the medium-term outcome including allowance for future capacity through urban redevelopment. That redevelopment potential indicates a further 9,000 to 10,000 dwellings could be feasibly supplied to 2026. Over the supply scenarios, Net Sufficiency would be 121% to 124%.

Similar to the short-term, most value bands have a net surplus, with some areas of shortfall. The areas of shortfall are similar between the Maximum Profit and Maximum Dwellings scenarios where shortfalls occur in the lower to mid value bands ($300,000 to $580,000). The Cheapest Dwellings scenario has large surpluses across all of the lower to mid value bands (up to $730,000), with some shortfall within the mid to higher value bands of $730,000 to $1.02m.

There would be small net shortfalls in the high value bands ($1.31m and higher), which are considered to be not significant given their scale and position at the upper end of the market.

Figure 54 – Hamilton City – Medium term Sufficiency – including Redevelopment

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios	2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios
Under $300k	6,810	5,220	5,370	5,500	5,363	182%	185%	187%	184%
$300k-$440k	18,650	-770	-200	1,720	250	96%	99%	108%	101%
$440k-$580k	18,060	-540	-400	5,110	1,390	98%	98%	122%	106%
$580k-$730k	8,370	3,310	4,200	2,530	3,347	128%	136%	122%	129%
$730k-$880k	2,780	1,970	2,180	-390	1,253	146%	151%	91%	129%
$880k-$1.02m	1,010	500	470	-250	240	134%	132%	83%	116%
$1.02m-$1.17m	440	2,700	2,630	980	2,103	550%	538%	263%	451%
$1.17m-$1.31m	260	2,500	2,460	1,170	2,043	858%	845%	455%	719%
$1.31m-$1.45m	160	-20	-30	-30	-27	89%	84%	84%	86%
$1.45m-$1.75m	140	-30	-30	-30	-30	82%	82%	82%	82%
$1.75m-$2.05m	50	-	-	-	-	100%	100%	100%	100%
$2.05m+	50	-10	-10	-10	-10	83%	83%	83%	83%
TOTAL	56,780	14,820	16,650	16,290	15,920	121%	124%	123%	123%

5.2.5 Hamilton City Long Term Sufficiency

The long term outlook would see Hamilton's household count increasing by 32,000 to 88,700 by 2046 (or 93,600 with a margin applied) from 56,800 in 2017.

This overall growth is expected to result in substantial demand growth in the middle and lower middle bands of the dwelling market, with an additional 11,700 households in the $440,000 to $580,000 dwelling value band, and 9,500 households in the $300,000 to $440,000 value band (including a margin) (see Figure 47, above).

5.2.5.1 Excluding Redevelopment

Figure 55 shows that excluding allowance for future capacity through urban redevelopment, in net terms there would be sufficient dwelling capacity for Hamilton household demand to 2046. Over the supply scenarios, Net Sufficiency would be 108% to 112%.

However, in the longer term there are variations across the value bands. In the Maximum Profit and Maximum Dwellings supply scenarios, there would be substantial net shortfalls in the lower and middle value bands (under $880,000). There would be net surplus in feasible capacity across most of the $880,000 and upward value bands. Conversely, within the Cheapest Dwellings scenario, there would be a substantial net surplus within the lower value bands (up to $580,000), with shortfalls across the mid to higher value bands of $580,000 to $1.02m.

In the long term, the differences between the supply scenarios become much more evident. The Maximum Profit and Maximum Dwellings scenarios, with their focus on larger and more costly dwellings would see substantial shortfalls in the value bands below $880,000.

However, the indicated shortfalls are much less in the Cheapest Dwellings scenario, with its focus on lower cost feasible dwellings. Taking an average of the supply scenarios, there would be a shortfall of around -10,000 dwellings in the $880,000 and under bands, within the overall outcome of a surplus of feasible capacity over demand of some 10,000 dwellings.

The extent to which external initiatives such as KiwiBuild – which the Government has indicated would be some 50,000 additional dwellings outside of Auckland priced at under $500,000 – may apply to Hamilton and the FPP area is not known at this stage.

It is also important to consider that any shortfalls within these value bands are likely to be lower as a substantial portion of the demand at these lower value bands will have been met through being constructed across the short and medium-terms when prices were lower[27]. To provide an approximation[28], the modelling compares the additional supply (between 2026 and 2046) within each value band under each scenario to the additional demand within each value band. Under the Maximum Dwellings and Maximum Profit scenarios, shortfalls still emerge across the lower to mid value bands. Within the Cheapest Dwellings scenario, the shortfall is predominantly limited to the $580,000 to $730,000 value band, with significant surplus within the lower value bands. In combination, this suggests there is scope for the market to adjust under a combination of the different supply scenario drivers to meet a larger share of demand over the long-term.

Figure 55 – Hamilton City – Long-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios	2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios
Under $300k	9,600	330	2,880	4,410	2,540	104%	131%	148%	127%
$300k-$440k	18,720	-8,050	-7,450	2,550	-4,317	71%	74%	109%	85%
$440k-$580k	16,550	-5,970	-5,820	5,520	-2,090	81%	81%	118%	93%
$580k-$730k	7,470	-3,630	-3,630	-1,680	-2,980	77%	77%	89%	81%
$730k-$880k	2,500	-420	-420	-1,380	-740	93%	93%	78%	88%
$880k-$1.02m	920	5,030	5,040	-230	3,280	405%	405%	86%	299%
$1.02m-$1.17m	410	16,780	16,870	1,700	11,783	2604%	2618%	354%	1859%
$1.17m-$1.31m	240	3,440	3,520	170	2,377	1056%	1078%	147%	760%
$1.31m-$1.45m	160	150	130	40	107	171%	162%	119%	151%
$1.45m-$1.75m	130	-70	-70	-70	-70	65%	65%	65%	65%
$1.75m-$2.05m	50	-10	-10	-10	-10	83%	83%	83%	83%
$2.05m+	40	-30	-30	-30	-30	57%	57%	57%	57%
TOTAL	56,790	7,520	11,010	10,990	9,840	108%	112%	112%	111%

[27] The Model identifies the capacity that is available at each point in time relative to the currently existing supply. The price point of capacity reflects the price at which it would be feasible to construct at the point in time of the model run year. It is important not to confuse the Model with a growth model, which would allocate a level uptake within each location. However, when assessing sufficiency, it is important to understand that a level of capacity is likely to be up-taken at each point in time, and therefore capacity identified in later model years (where prices are higher) is likely to contain a share which has already been constructed (at lower prices) in earlier years.

[28] This would over-state any shortfalls within the lower value bands as it does not take account of gradual depreciation of the existing dwelling stock through time.

5.2.5.2 Including Redevelopment

Figure 56 shows that including allowance for future capacity through urban redevelopment, in net terms there would be more than sufficient dwelling capacity for Hamilton household demand to 2046. Over the supply scenarios, Net Sufficiency would be 166% to 175%.

This is because the greater dwelling yields from redevelopment would add very substantially to the potentially feasible supply. Much of this would be in the lower-middle and middle value bands, with considerable net surplus indicated. There would also be considerable scope for adjustment by the market such that the surpluses and shortfalls might balance out.

A large share of the additional supply within the lowest value band occurs through small apartments within the City Centre. However, the sufficiency of capacity within this value band is not substantially reliant on this capacity to meet demand given the corresponding large surplus within this value band.

Figure 56 – Hamilton City – Long term Sufficiency – Supply Scenarios Compared including Redevelopment

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios	2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios
Under $300k	9,600	26,530	26,710	30,910	28,050	386%	388%	433%	403%
$300k-$440k	18,720	- 2,800	- 2,460	19,170	4,637	90%	91%	168%	116%
$440k-$580k	16,550	7,320	10,820	15,710	11,283	124%	135%	151%	137%
$580k-$730k	7,470	320	4,720	- 320	1,573	102%	130%	98%	110%
$730k-$880k	2,500	870	1,550	930	1,117	114%	125%	115%	118%
$880k-$1.02m	920	6,720	8,360	- 40	5,013	507%	607%	98%	404%
$1.02m-$1.17m	410	18,140	16,460	1,560	12,053	2807%	2557%	333%	1899%
$1.17m-$1.31m	240	4,700	4,090	1,180	3,323	1406%	1236%	428%	1023%
$1.31m-$1.45m	160	230	210	100	180	210%	200%	148%	186%
$1.45m-$1.75m	130	- 70	- 70	- 70	- 70	65%	65%	65%	65%
$1.75m-$2.05m	50	- 10	- 10	- 10	- 10	83%	83%	83%	83%
$2.05m+	40	- 30	- 30	- 30	- 30	57%	57%	57%	57%
TOTAL	56,790	61,910	70,350	69,100	67,120	166%	175%	174%	172%

5.2.6 Hamilton City – Sufficiency by Location

This section considers the sufficiency of feasible supply by location across Hamilton City. It compares the net increase in demand with the additional feasible capacity in each location in the short, medium and long-term.

Figure 57 shows that there is demand for 4,800 additional dwellings in Hamilton City in the short-term, or around 5,900 if a margin of 20% is included. This compares to capacity of 11,500 feasible dwellings (excluding the potential for redevelopment), suggesting a surplus of 5,600 dwellings at the city level[29].

A large surplus in capacity is projected to occur in Ruakura and Rototuna, corresponding to the supply of greenfield land for expansion in the short-term. A significant surplus is also expected to occur within the Central City due largely to the potential for further infill development within the CBD, and within Chartwell.

Several suburban areas across Hamilton City are projected to experience a shortfall in feasible capacity within the short-term, with the main areas being Peacocke and East/University. However, this does not necessarily imply the need to provide further capacity through increased zoning provisions within these locations as demand is able to be met within other locations across the city. Importantly, the household projections supplied to M.E contain the underlying demand arising from natural increase and migration within each local area of Hamilton and are not intended to reflect resulting patterns of growth (which will differ depending on the location of supply).

[29] The surplus within the price modelling is slightly lower as the modelling excludes the share of capacity within the greenfield areas that is allocated to higher density dwelling typologies. The allocation of capacity to higher density typologies forms part of separate, subsequent modelling based on assumptions agreed with Hamilton City Council. As such, the price modelling is conservative in this respect.

Figure 57 - Comparison of Short-Term (2017-2021) Demand and Feasible Capacity in Hamilton City (Excluding Redevelopment Capacity)

Location	Demand 2017-2021	Demand + 20% 2017-2021	Capacity 2021	Capacity vs. Demand +20%
1 (Te Rapa north)	- 10	-	-	-
2 (Te Rapa)	- 26	-	-	-
3 (Rotokauri)	141	170	140	- 30
4 (Nawton)	400	480	493	13
5 (Dinsdale)	306	367	378	10
6 (Temple View)	6	7	17	10
7 (Frankton)	102	122	62	- 60
8 (Melville)	335	402	384	- 17
9 (Peacocke)	273	327	42	- 285
10 (Silverdale)	113	135	339	204
11 (East/University)	377	452	179	- 273
12 (Ruakura)	- 36	-	2,140	2,140
13 (Fairview/Enderley)	294	353	376	24
14 (East/Claudelands)	185	222	385	163
15 (Chartwell)	213	256	949	694
16 (Rototuna)	1,625	1,950	4,044	2,094
17 (St Andrews)	191	230	374	145
18 (Beerescourt)	104	124	225	100
19 (Central City)	132	159	647	488
20 (Hamilton Lake)	103	124	272	148
TOTAL	**4,828**	**5,880**	**11,447**	**5,567**

Figure 58 shows that when including redevelopment capacity, the city-level surplus increases to nearly 12,000 dwellings.

Under the redevelopment scenario, the Central City, Rototuna, Ruakura and Chartwell remain the main areas of capacity surplus, with the surplus increasing substantially within the CBD. Taking into account redevelopment removes the capacity deficit within East/University and results in smaller amounts of additional capacity across many of Hamilton's suburban areas.

Figure 58 - Comparison of Short-Term (2017-2021) Demand and Feasible Capacity in Hamilton City (Including Redevelopment Capacity)

Location	Demand 2017-2021	Demand + 20% 2017-2021	Capacity (R) 2021	Capacity vs. Demand +20%
1 (Te Rapa north)	- 10	-	-	-
2 (Te Rapa)	- 26	-	-	-
3 (Rotokauri)	141	170	140	- 30
4 (Nawton)	400	480	534	54
5 (Dinsdale)	306	367	550	182
6 (Temple View)	6	7	17	10
7 (Frankton)	102	122	119	- 3
8 (Melville)	335	402	468	67
9 (Peacocke)	273	327	164	- 163
10 (Silverdale)	113	135	460	325
11 (East/University)	377	452	607	155
12 (Ruakura)	- 36	-	2,140	2,140
13 (Fairview/Enderley)	294	353	416	64
14 (East/Claudelands)	185	222	446	224
15 (Chartwell)	213	256	1,073	818
16 (Rototuna)	1,625	1,950	4,642	2,692
17 (St Andrews)	191	230	585	356
18 (Beerescourt)	104	124	324	199
19 (Central City)	132	159	4,411	4,252
20 (Hamilton Lake)	103	124	485	361
TOTAL	**4,828**	**5,880**	**17,581**	**11,702**

Figure 59 shows a capacity surplus of around 7,600 dwellings in the medium-term in Hamilton at the city level in the medium-term, excluding any feasible redevelopment capacity.

Large capacity surpluses are projected to occur across many areas of Hamilton City in a combination of both greenfield and infill capacity. The largest areas of surplus are projected to occur in the greenfield areas of Ruakura, Rototuna and Rotokauri. Within the infill areas, significant areas of surplus are also expected to occur in Chartwell, St Andrews and Silverdale, with smaller surpluses across a range of other areas.

Deficits are projected to mainly occur in Peacocke and East/University in the medium-term, with smaller deficits in Frankton and Nawton. However, this does not necessarily imply the need to provide further capacity through increased zoning provisions within these locations as demand is able to be met within other locations across the city. Importantly, the household projections supplied to M.E contain the underlying demand arising from natural increase and migration within each local area of Hamilton and are not intended to reflect resulting patterns of growth (which will differ depending on the location of supply).

Figure 59 - Comparison of Medium-Term (2017-2026) Demand and Feasible Capacity in Hamilton City (Excluding Redevelopment Capacity)

Location	Demand 2017-2026	Demand + 20% 2017-2026	Capacity 2026	Capacity vs. Demand +20%
1 (Te Rapa north)	- 7	-	-	-
2 (Te Rapa)	- 40	-	-	-
3 (Rotokauri)	650	780	1,973	1,193
4 (Nawton)	955	1,146	1,032	- 114
5 (Dinsdale)	631	757	900	142
6 (Temple View)	28	33	36	3
7 (Frankton)	209	251	92	- 159
8 (Melville)	690	828	965	137
9 (Peacocke)	1,117	1,340	520	- 819
10 (Silverdale)	274	328	906	578
11 (East/University)	818	981	330	- 652
12 (Ruakura)	- 36	-	3,064	3,064
13 (Fairview/Enderley)	605	726	750	24
14 (East/Claudelands)	421	505	543	38
15 (Chartwell)	422	506	1,509	1,004
16 (Rototuna)	3,085	3,702	5,865	2,163
17 (St Andrews)	449	539	1,025	486
18 (Beerescourt)	243	291	345	54
19 (Central City)	275	329	660	330
20 (Hamilton Lake)	196	235	392	157
TOTAL	**10,983**	**13,279**	**20,908**	**7,629**

Figure 60 shows that when including redevelopment capacity, the city-level surplus increases to nearly 18,000 dwellings.

Under the redevelopment scenario, nearly all areas of Hamilton City are projected to have a surplus of capacity. The largest of these are projected to occur in the Central City, followed by Ruakura and Rototuna. Under this scenario, capacity surpluses continue to grow in many of the infill areas in the medium to long-term as redevelopment becomes more commercially feasible. A deficit remains within Peakcocke.

Figure 60 - Comparison of Medium-Term (2017-2026) Demand and Feasible Capacity in Hamilton City (Including Redevelopment Capacity)

Location	Demand 2017-2026	Demand + 20% 2017-2026	Capacity (R) 2026	Capacity vs. Demand +20%
1 (Te Rapa north)	- 7	-	-	-
2 (Te Rapa)	- 40	-	-	-
3 (Rotokauri)	650	780	1,973	1,193
4 (Nawton)	955	1,146	1,191	45
5 (Dinsdale)	631	757	1,285	527
6 (Temple View)	28	33	50	17
7 (Frankton)	209	251	191	- 60
8 (Melville)	690	828	1,264	436
9 (Peacocke)	1,117	1,340	671	- 669
10 (Silverdale)	274	328	1,322	994
11 (East/University)	818	981	1,114	132
12 (Ruakura)	- 36	-	3,064	3,064
13 (Fairview/Enderley)	605	726	902	176
14 (East/Claudelands)	421	505	782	277
15 (Chartwell)	422	506	1,796	1,291
16 (Rototuna)	3,085	3,702	6,765	3,063
17 (St Andrews)	449	539	1,647	1,108
18 (Beerescourt)	243	291	640	349
19 (Central City)	275	329	5,607	5,277
20 (Hamilton Lake)	196	235	832	597
TOTAL	**10,983**	**13,279**	**31,097**	**17,818**

In the long-term a capacity surplus of around 12,000 dwellings is projected to occur at the city level in Hamilton, excluding any redevelopment capacity (Figure 61).

Surpluses are projected to occur across most locations within Hamilton, with the exception of East/University, Nawton and Frankton where deficits are projected to occur (without considering redevelopment capacity).

Figure 61 - Comparison of Long-Term (2017-2046) Demand and Feasible Capacity in Hamilton City (Excluding Redevelopment Capacity)

Location	Demand 2017-2046	Demand + 20% 2017-2046	Capacity 2046	Capacity vs. Demand +15%
1 (Te Rapa north)	1	2	203	201
2 (Te Rapa)	- 1	-	-	-
3 (Rotokauri)	4,601	5,291	8,831	3,540
4 (Nawton)	2,949	3,391	1,868	- 1,523
5 (Dinsdale)	1,388	1,597	1,945	348
6 (Temple View)	75	86	97	11
7 (Frankton)	510	586	194	- 392
8 (Melville)	1,740	2,001	2,428	427
9 (Peacocke)	6,721	7,729	9,240	1,512
10 (Silverdale)	590	679	1,605	926
11 (East/University)	1,910	2,196	673	- 1,523
12 (Ruakura)	- 49	-	3,229	3,229
13 (Fairview/Enderley)	1,413	1,625	2,097	472
14 (East/Claudelands)	930	1,069	1,861	792
15 (Chartwell)	921	1,060	1,891	832
16 (Rototuna)	5,634	6,480	7,221	741
17 (St Andrews)	1,028	1,182	1,711	529
18 (Beerescourt)	525	604	1,077	473
19 (Central City)	724	832	2,164	1,331
20 (Hamilton Lake)	372	428	701	273
TOTAL	**31,982**	**36,837**	**49,037**	**12,200**

If redevelopment is taken into consideration, Figure 62 shows that a surplus of 72,000 dwellings is projected to occur at the city level in Hamilton in the long-term. Under this scenario, all locations (except Frankton) within Hamilton are projected to have a capacity surplus. The largest areas of surplus are projected to be the Central City, followed by Rototuna, Rotokauri, Chartwell, St Andrews, Melville and Dinsdale.

Figure 62 - Comparison of Long-Term (2017-2046) Demand and Feasible Capacity in Hamilton City (Including Redevelopment Capacity)

Location	Demand 2017-2046	Demand + 20% 2017-2046	Capacity (R) 2046	Capacity vs. Demand +15%
1 (Te Rapa north)	1	2	203	201
2 (Te Rapa)	- 1	-	106	106
3 (Rotokauri)	4,601	5,291	8,831	3,540
4 (Nawton)	2,949	3,391	4,038	647
5 (Dinsdale)	1,388	1,597	4,795	3,198
6 (Temple View)	75	86	391	305
7 (Frankton)	510	586	496	- 90
8 (Melville)	1,740	2,001	5,475	3,474
9 (Peacocke)	6,721	7,729	9,440	1,711
10 (Silverdale)	590	679	3,831	3,152
11 (East/University)	1,910	2,196	2,595	399
12 (Ruakura)	- 49	-	3,229	3,229
13 (Fairview/Enderley)	1,413	1,625	4,510	2,885
14 (East/Claudelands)	930	1,069	4,063	2,994
15 (Chartwell)	921	1,060	4,587	3,528
16 (Rototuna)	5,634	6,480	13,150	6,670
17 (St Andrews)	1,028	1,182	4,695	3,513
18 (Beerescourt)	525	604	3,082	2,478
19 (Central City)	724	832	28,412	27,579
20 (Hamilton Lake)	372	428	2,579	2,151
TOTAL	**31,982**	**36,837**	**108,508**	**71,671**

5.2.7 Hamilton City – Sufficiency by Dwelling Type[30]

As a significant and growing urban economy, Hamilton City has demand for a range of different dwelling types and densities as people make trade-offs between different levels of space consumed, location and style of living. These range from standalone houses on large lifestyle blocks on the outer edges of the City, to apartments in higher density living areas within the Central City. The Plan enables different types of dwellings and densities within each zone, providing for a range of dwelling options.

In the short-term, nearly three-quarters (72%) of the demand within Hamilton City is projected to be for standalone dwellings, with the remaining demand for attached dwellings. Attached dwellings are typically higher density, ranging from two houses joined together as duplexes, up to medium to high rise

[30] At the request of the project team, capacity for attached dwellings within Waikato and Waipa Districts has not been assessed and therefore not assessed for sufficiency. These districts are characterised by lower density dwellings (standalone dwellings) and the district plans make no distinction between dwelling typologies within these locations (meaning the plan enabled capacity for attached vs. detached dwellings is equal).

apartments. The share of demand for standalone dwellings is projected to gradually decrease through time, to account for just under two-thirds (65%) of demand for dwellings in the long-term.

M.E have conducted further modelling[31] to assess whether sufficient capacity exists within Hamilton City to meet the demand for different dwelling types. Hamilton's District Plan makes distinction between different dwelling types and density requirements within each zone meaning that the total yield within each parcel is a function of the dwelling typologies constructed.

Assessment of capacity shows that the largest shares of capacity within infill areas occur for attached dwellings, with smaller amounts of capacity for standalone dwellings. This, combined with the larger share of demand for standalone dwellings, meant that a scenario was modelled to assess capacity where priority was given within the model to feasible standalone dwellings. If a standalone dwelling was not feasible on a particular site, then, under this scenario, the feasibility of attached dwellings were assessed[32].

Figure 63 shows the outputs of this modelled scenario. It shows there are projected to be a maximum of 3,400 feasible standalone dwellings in the short-term, excluding any capacity for redevelopment. In the medium-term this increases to 7,300 dwellings, and in the long-term, to 24,500 dwellings. When redevelopment is taken into consideration then the capacity for feasible standalone dwellings ranges from 4,200 in the short-term up to 26,250 dwellings in the long-term.

Figure 63 then compares the demand for different dwelling types with the feasible capacity of different dwelling types within Hamilton City. It shows that while a surplus of capacity exists in total in the short, medium and long-term, there is a shortfall of capacity of feasible standalone dwellings compared to demand in the short-term, and in the medium-term if the additional 20 per cent margin on demand is included.

In the short-term, there is a shortfall in standalone dwelling capacity of around 750 dwellings, however, this shortfall disappears once redevelopment is taken into account. A shortfall of 1,000 to 2,000 standalone dwellings is projected to occur in the medium-term. Over the long-term, there is no shortfall of standalone dwellings, with a surplus of 700-2,500 standalone dwellings emerging. This is due to the combination of a gradual change in demand (toward a greater share of attached dwellings than currently) together with an increase in the commercial feasibility of capacity through time.

Despite a shortfall of standalone dwellings in the medium-term, this does not necessarily imply that additional capacity needs to be supplied for standalone dwellings. It is likely that demand can be met through the market adjusting where demand can be met through different dwelling typologies. It is important to consider that attached dwellings contain a range of different dwelling types from a pair of attached houses (such as those attached only through a car port or garage) up to higher density apartment dwellings. Consequently, it is likely that some of the demand for standalone dwellings will be met through

[31] An additional scenario was run within the model to allocate the selected development type on each parcel to a standalone dwelling where it was feasible, thus requesting he model to return the maximum number of standalone dwellings.

[32] As such, total capacity under this scenario is lower (than earlier modelled result) where standalone dwellings typically have a lower density than attached dwellings. i.e. if a site is redeveloped to standalone houses, then a smaller number of dwellings would result than if it were redeveloped into apartments or duplexes.

lower density forms of attached dwellings where households make trade-offs between dwelling typology and size, location and price.

Figure 63 – Comparison of Feasible Capacity by Dwelling Type in Hamilton City, Short, Medium and Long-Term

	YEAR		
	2021	2026	2046
Demand (+ margin) for Standalone Dwellings	4,190	9,300	23,770
Demand (+ margin) for Attached Dwellings	1,600	3,880	13,010
TOTAL DEMAND (+ MARGIN)	**5,790**	**13,180**	**36,780**
Max Standalone Dwellings (Excl. Redevelopment)	3,440	7,300	24,470
Max Attached Dwellings if all Standalone Uptaken (Excl. Redevelopment)	6,350	11,610	21,780
TOTAL CAPACITY (Excl. Redevelopment)	**9,790**	**18,910**	**46,250**
Max Standalone Dwellings (Incl. Redevelopment)	4,210	8,270	26,250
Max Attached Dwellings if all Standalone Uptaken (Incl. Redevelopment)	11,180	19,650	76,210
TOTAL CAPACITY (Incl. Redevelopment)	**15,390**	**27,920**	**102,460**

5.2.8 Hamilton City – Comparison of Current Market to Future Demand

The capacity in 2017 at profit margins of 20% or greater, 15% or greater and 10% or greater is compared to the level of future demand in the short, medium and long-term in Figure 64. The points of comparison also take into account the timing of infrastructure provision within the greenfield areas. The level of capacity at each profit margin in 2017 is shown in the left hand side of the table, while the demand in the short, medium and long-term is displayed in the right hand side.

Figure 64 – Comparison of Current Dwelling Capacity by Profit Margin in 2017 with the Level of Future Demand in Hamilton City

	Capacity by Profit Margin in 2017			Demand + 15/20%		
	>= 20% (Immediate to Short-Term)	>=15% (Short to Medium-Term)	>=10% (Medium to Long-Term)	Short-Term	Medium-Term	Long-Term
Infill + Greenfield with 2021 Infrastructure	10,540	21,020	32,800	5,790		
Infill + Greenfield with 2026 Infrastructure	13,180	24,390	37,040		13,180	
Infill + Greenfield with 2046 Infrastructure	17,990	30,420	45,460			36,780

Capacity which is currently feasible with a margin of 20% or greater is most likely to be constructed first and is therefore compared to the level of demand across the short-term. In 2017, it is estimated there were

10,500 dwellings with a profit margin of 20% or greater across Hamilton City's infill areas and greenfield areas where infrastructure will be supplied within the short-term. This compares to a short-term demand (+ margin) of 5,800 dwellings.

Capacity which currently (in 2017) has a profit margin of 15% or greater is likely to represent the capacity which is constructed later beyond the short-term as population demand expands into new areas of greenfields and existing urban intensification. It is most appropriate to compare this level of capacity with demand across the medium-term. The table shows that in 2017 it is estimated there were 24,400 dwellings with a profit margin of 15% or greater across Hamilton City's infill areas and greenfield areas where infrastructure will be supplied within the short and medium-term. This compared to a medium-term demand (+ margin) of 13,200 dwellings.

Capacity which currently (in 2017) has a profit margin of 10% or greater is likely to represent the capacity which is constructed next past the short and medium-term as population demand expands into new areas of greenfields and further urban intensification. It is most appropriate to compare this level of capacity with demand across the medium to long-term. The table shows that in 2017 it is estimated there were 45,500 dwellings with a profit margin of 10% or greater across Hamilton City's infill areas and greenfield areas where infrastructure will be supplied within the short, medium and long-term. This compared to a long-term demand (+ margin) of 37,000 dwellings.

5.3 Waipa District Sufficiency

5.3.1 Dwelling Demand by Value Band

Figure 65 summarises the growth in housing demand (including a margin) in Waipa District, by dwelling value band, over the short, medium and long terms. Throughout the planning period, demand growth is most heavily directed in the lower and lower-middle positions in the housing market, with 11-12% in the lowest band (under $300,000), and some 49% in the lower middle value band ($300,000 to $440,000). Overall, over four-fifths of the net increase would be for dwellings in the bands below $580,000.

These demand estimates by value band are drawn on for the sufficiency assessment.

Figure 65 – Waipa District – Projected Demand Increase by Dwelling Value Band 2017-2046

Value Band	2017-21	2017-26	2017-46	2017-21 %	2017-26 %	2017-46 %
Under $300k	264	655	1,732	11%	12%	12%
$300k-$440k	1,191	2,752	6,818	49%	49%	49%
$440k-$580k	566	1,321	3,177	23%	23%	23%
$580k-$730k	254	579	1,335	10%	10%	10%
$730k-$880k	107	229	507	4%	4%	4%
$880k-$1.02m	49	98	243	2%	2%	2%
$1.02m-$1.17m	10	22	44	0%	0%	0%
$1.17m-$1.31m	-	11	22	0%	0%	0%
$1.31m-$1.45m	-	-	-	0%	0%	0%
$1.45m-$1.75m	-	-	-	0%	0%	0%
$1.75m-$2.05m	-	-	-	0%	0%	0%
$2.05m+	-	-	-	0%	0%	0%
TOTAL	**2,440**	**5,667**	**13,879**	**100%**	**100%**	**100%**

5.3.2 Waipa District Short term Sufficiency

The short-term outlook would see Waipa's household count increasing by 2,000 to 21,900 by 2021 (or 22,400 if a margin is applied) from 19,950 in 2017. Figure 66 shows the short-term Net Sufficiency outcomes for Waipa to 2021, for each supply scenario, and the average across all scenarios.

In net terms there would be sufficient dwelling capacity for Waipa household demand to 2021. Over the supply scenarios, Net Sufficiency would be 105%.

In the Maximum Profit and Maximum Dwellings scenarios, there would be a deficit within the lower dwelling price band of $300,000 to $440,000 and minor deficit within several of the middle to upper value bands. In the Cheapest Dwellings supply scenario, there would be net surplus in the lower to mid value bands (under $880,000), and a small net shortfall in the $880,000 to $1.02m value band. There would be net surplus in the higher value bands of $1.02m and over.

Figure 66 – Waipa District – Short-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios	2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	2021 Average All Scenarios
Under $300k	2,705	6	6	6	10	100%	100%	100%	100%
$300k-$440k	8,925	- 1,311	- 1,311	59	- 850	87%	87%	101%	92%
$440k-$580k	4,959	- 12	- 12	38	-	100%	100%	101%	100%
$580k-$730k	2,121	787	787	377	650	133%	133%	116%	127%
$730k-$880k	707	- 118	- 118	22	- 70	86%	86%	103%	92%
$880k-$1.02m	328	- 59	- 59	- 39	- 50	85%	85%	90%	87%
$1.02m-$1.17m	72	1,000	1,000	570	860	1328%	1328%	800%	1155%
$1.17m-$1.31m	51	710	720	90	510	1495%	1514%	277%	1101%
$1.31m-$1.45m	10	120	140	10	90	1279%	1475%	199%	984%
$1.45m-$1.75m	10	0	0	0	-	101%	101%	101%	100%
$1.75m-$2.05m	-	-	-	-	-	*na*	*na*	*na*	*na*
$2.05m+	-	-	-	-	-	*na*	*na*	*na*	*na*
TOTAL	**19,888**	**1,123**	**1,153**	**1,133**	**1,150**	**105%**	**105%**	**105%**	**105%**

5.3.3 Waipa District Medium term Sufficiency

The medium-term outlook would see the Waipa household count increasing by 4,700 to 24,600 by 2026 (or 25,600 if a margin is applied) from 19,950 in 2017.

Figure 67 shows that there would be a net shortfall in capacity of around 1,300 dwellings across all supply price scenarios. Over the supply scenarios, Net Sufficiency would be at 95 per cent.

All three scenarios are projected to have supply deficits within the lower to mid value bands (up to $580,000) and smaller net shortfalls within the $730,000 to $1.02m value bands. The Cheapest Dwelling scenario has a deficit across all value bands up to $1.02m, although deficits within the $300,000 to $580,000 value bands are smaller than under the other scenarios. The deficit within these bands is projected to be largest within the lower range of the band for the Maximum Profit and Maximum Dwellings supply scenarios.

Net surpluses are projected for the higher value price bands across all three scenarios ($1.02m to $1.45m). However, there is limited demand within these price brackets, with demand oriented toward the lower end of the price spectrum. A significant share of the capacity within these price brackets are likely to be higher value lifestyle block properties, particularly around the edge of Hamilton.

Figure 67 – Waipa District – Medium-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Sufficiency				Sufficiency %			
		2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios	2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios
Under $300k	2,705	- 389	- 389	- 389	- 390	87%	87%	87%	87%
$300k-$440k	8,925	- 2,700	- 2,700	- 1,170	- 2,190	77%	77%	90%	81%
$440k-$580k	4,959	- 705	- 715	- 445	- 620	89%	89%	93%	90%
$580k-$730k	2,121	400	400	- 10	260	115%	115%	100%	109%
$730k-$880k	707	- 78	- 48	- 8	- 40	92%	95%	99%	96%
$880k-$1.02m	328	- 108	- 98	- 78	- 90	75%	77%	82%	79%
$1.02m-$1.17m	72	1,298	1,288	698	1,090	1489%	1479%	847%	1266%
$1.17m-$1.31m	51	649	659	79	460	1142%	1158%	227%	838%
$1.31m-$1.45m	10	300	320	10	210	2988%	3181%	195%	2123%
$1.45m-$1.75m	10	- 0	- 0	- 0	-	99%	99%	99%	100%
$1.75m-$2.05m	-	-	-	-	-	*na*	*na*	*na*	*na*
$2.05m+	-	-	-	-	-	*na*	*na*	*na*	*na*
TOTAL	**19,888**	**- 1,333**	**- 1,283**	**- 1,313**	**- 1,310**	**95%**	**95%**	**95%**	**95%**

5.3.4 Waipa District Long term Sufficiency

The long-term outlook would see Waipa's household count increasing by 12,000 to 32,000 by 2046 (or 33,800 if a margin is applied) from 19,950 in 2017.

This overall growth is expected to result in substantial demand growth in the middle and lower middle bands of the dwelling market, with an additional 6,800 households (including a margin) in the $300,000 to $440,000 dwelling value band, and 3,200 households in the $440,000 to $580,000 value band (including a margin) (see Figure 65, above).

Figure 68 shows that Waipa District is projected to experience a shortfall in sufficiency for dwelling capacity into the long-term, where net sufficiency would be at 76 to 77 per cent across all three supply scenarios.

Deficits in sufficiency are expected to occur across the lower to mid-price brackets in all three scenarios (up to $1.02m, with the exception of the $580,000 to $730,000 value band) in the long-term. Similar scales of deficit are expected within each of the supply scenarios, with the largest deficits projected to occur within the lower parts of this price range. Net sufficiency within the lower to mid (up to $580,000) price brackets is projected to range from 56 to 75 per cent.

In this circumstance where the shortfall is across a consistent band of values, and in the lower end of the market, there is considerably less scope for adjustment by the market such that the surpluses and shortfalls might balance out. However, it should be noted that part of these shortfalls are likely to be mitigated where dwelling stock is constructed within these bands in the short to medium-term (where prices would be lower) in response to demand[33].

[33] The Model identifies the capacity that is available at each point in time relative to the currently existing supply. The price point of capacity reflects the price at which it would be feasible to construct at the point in time of the model run year. It is important not to confuse the Model with a growth model, which would allocate a level uptake within each location. However, when assessing

Figure 68 – Waipa District – Long term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Sufficiency				Sufficiency %			
		2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios	2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios
Under $300k	2,705	- 1,468	- 1,468	- 1,468	- 1,470	65%	65%	65%	65%
$300k-$440k	8,925	- 6,934	- 6,934	- 4,054	- 5,970	56%	56%	74%	62%
$440k-$580k	4,959	- 2,362	- 2,392	- 2,032	- 2,260	71%	71%	75%	73%
$580k-$730k	2,121	193	293	- 597	- 40	106%	108%	83%	99%
$730k-$880k	707	- 509	- 499	- 439	- 480	59%	59%	64%	61%
$880k-$1.02m	328	- 53	27	- 113	- 50	91%	105%	81%	91%
$1.02m-$1.17m	72	2,166	2,176	666	1,670	1963%	1972%	673%	1537%
$1.17m-$1.31m	51	277	257	37	190	475%	448%	150%	357%
$1.31m-$1.45m	10	590	660	10	420	5681%	6344%	192%	4075%
$1.45m-$1.75m	10	- 0	- 0	- 0	-	97%	97%	97%	100%
$1.75m-$2.05m	-	-	-	-	-	*na*	*na*	*na*	*na*
$2.05m+	-	-	-	-	-	*na*	*na*	*na*	*na*
TOTAL	**19,888**	**- 8,100**	**- 7,880**	**- 7,990**	**- 7,990**	**76%**	**77%**	**76%**	**76%**

5.3.5 Waipa District – Sufficiency by Location

This section considers the sufficiency of feasible supply by location across the Waipa District. It compares the net increase in demand with the additional feasible capacity in each location in the short, medium and long-term.

Figure 69 shows that demand for 2,400 additional dwellings across Waipa District (including a margin) in the short-term. This compares to capacity of 3,300 feasible dwellings, suggesting a surplus of around 900 dwellings at the district level.

By location, a surplus of capacity exists in the short-term across the main townships of Cambridge, Te Awamutu and Kihikihi within the district. A significant capacity surplus is also projected to occur in the area around the edge of Hamilton in the short-term, which mainly includes lifestyle block properties. A small surplus is also projected to occur in Karapiro.

Outside of these areas, mainly deficits in feasible capacity are projected to occur across most of the smaller settlements within the more remote rural locations across the district.

sufficiency, it is important to understand that a level of capacity is likely to be up-taken at each point in time, and therefore capacity identified in later model years (where prices are higher) is likely to contain a share which has already been constructed (at lower prices) in earlier years.

Figure 69 – Comparison of Short-Term (2017-2021) Demand and Feasible Capacity in Waipa District

Location	Demand 2017-2021	Demand + 20% 2017-2021	Capacity 2021	Capacity vs. Demand + 20%
Other Areas	144	173	-	-173
Cambridge Combined	899	1,079	1,187	108
Hamilton Edge	70	83	531	448
Karapiro	100	120	149	28
Kihikihi	241	289	435	146
Ngahinapouri	63	75	7	-68
Ohaupo	19	23	6	-17
Pirongia	52	63	59	-4
Pukeatua	11	13	-3	-16
Rukuhia	-	-	7	7
Te Awamutu Combined	396	475	935	460
Te Miro	-	-	-	-
Te Pahu	34	41	-8	-49
Tokanui	4	5	-1	-6
Wharepapa South Surrounds	-	-	-	-
TOTAL	**2,033**	**2,440**	**3,305**	**865**

In the medium-term, a capacity deficit of around 1,600 dwellings is projected to occur at the district level in Waipa District (Figure 70). Deficits are projected to occur across most locations, including the main urban settlements of Cambridge and Kihikihi. Infrastructure constraints in greenfield areas contribute to the projected deficits in these areas. However, in Cambridge, the level of feasible capacity on greenfield land is also a function of the underlying commercial feasibility of the land. Te Awamutu is projected to have a very small surplus (13 dwellings) of feasible capacity.

In the medium-term, most other locations across the district are projected to have capacity deficits. The exception is a significant surplus in the area around the edge of Hamilton, and smaller surpluses in Rukuhia, Pirongia and Ohaupo.

Figure 70 - Comparison of Medium-Term (2017-2026) Demand and Feasible Capacity in Waipa District

Location	Demand 2017-2026	Demand + 20% 2017-2026	Capacity 2026	Capacity vs. Demand + 20%
Other Areas	305	366	-	- 366
Cambridge Combined	2,000	2,400	1,339	- 1,060
Hamilton Edge	165	198	544	347
Karapiro	228	274	155	- 119
Kihikihi	545	654	447	- 207
Ngahinapouri	140	168	21	- 147
Ohaupo	49	59	74	15
Pirongia	129	154	180	25
Pukeatua	29	35	- 3	- 38
Rukuhia	-	-	70	70
Te Awamutu Combined	1,034	1,240	1,254	13
Te Miro	-	-	-	-
Te Pahu	82	98	- 8	- 106
Tokanui	17	21	- 1	- 22
Wharepapa South Surrounds	-	-	-	-
TOTAL	**4,722**	**5,667**	**4,073**	**- 1,594**

Figure 71 shows that in the long-term, Waipa District is projected to have a capacity deficit of 8,700 dwellings at the district level. Deficits are projected to occur across all locations, with the exception of lifestyle properties around the edge of Hamilton and in Rukuhia.

The largest deficits are projected to occur in the main urban towns of Cambridge, Te Awamutu and Kihikihi where the largest amounts of demand growth are expected to occur. This is partly driven by infrastructure constraints in greenfield areas in the longer-term in both Te Awamutu, and to a lesser extent Cambridge.

Both Cambridge and Te Awamutu face capacity deficits in the long-term even when compared with plan enabled capacity (including infrastructure constraints). In Cambridge, there is plan enabled capacity for 2,100 dwellings within greenfield and infill areas (or 3,300 dwellings if redevelopment is included). This compares to a total demand of around 5,600 dwellings in the long-term. As such, even if all the redevelopment capacity was taken up (only 39% of which is projected to be feasible in the long-term), then Cambridge would still be projected to experience a capacity shortage in the long-term under this population growth scenario. If infrastructure was supplied to the rest of the greenfield land, then this would increase plan enabled capacity in greenfield areas by 500 dwellings, which would still result in a shortage.

Te Awamutu is in a similar situation, but to a lesser scale than Cambridge. Plan enabled redevelopment and infrastructure-serviced greenfield capacity totals 2,600 dwellings – approximately 600 dwellings less than the projected demand. A large share (1,600 dwellings) of this plan enabled capacity is through redevelopment, which is unlikely to be taken up (with current projections of 41% take-up in the long-term). If infrastructure was supplied to the rest of the greenfield land, then this would increase plan enabled capacity in greenfield areas by 700 dwellings, which would still result in a shortage.

Figure 71 - Comparison of Long-Term (2017-2046) Demand and Feasible Capacity in Waipa District

Location	Demand 2017-2046	Demand + 20% 2017-2046	Capacity 2046	Capacity vs. Demand + 15%
Other Areas	669	770	-	- 770
Cambridge Combined	4,887	5,620	1,728	- 3,891
Hamilton Edge	438	504	638	134
Karapiro	564	648	160	- 489
Kihikihi	1,409	1,620	743	- 877
Ngahinapouri	313	360	133	- 226
Ohaupo	141	163	75	- 87
Pirongia	333	382	238	- 145
Pukeatua	74	85	- 3	- 88
Rukuhia	-	-	70	70
Te Awamutu Combined	3,054	3,512	1,412	- 2,100
Te Miro	-	-	-	-
Te Pahu	156	179	- 8	- 187
Tokanui	32	36	- 1	- 37
Wharepapa South Surrounds	-	-	-	-
TOTAL	**12,069**	**13,879**	**5,186**	**- 8,693**

5.3.6 Waipa District – Comparison of Current Market to Future Demand

The capacity in 2017 at profit margins of 20% or greater, 15% or greater and 10% or greater is compared to the level of future demand in the short, medium and long-term in Figure 72. The points of comparison also take into account the timing of infrastructure provision within the greenfield areas. The level of capacity at each profit margin in 2017 is shown in the left hand side of the table, while the demand in the short, medium and long-term is displayed in the right hand side.

Figure 72 – Comparison of Current Dwelling Capacity by Profit Margin in 2017 with the Level of Future Demand in Waipa District

	Capacity by Profit Margin in 2017			Demand + 15/20%		
	>= 20% (Immediate to Short-Term)	>=15% (Short to Medium-Term)	>=10% (Medium to Long-Term)	Short-Term	Medium-Term	Long-Term
Infill + Greenfield with 2021 Infrastructure	2,920	4,180	4,730	2,440		
Infill + Greenfield with 2026 Infrastructure	2,920	4,180	4,730		5,670	
Infill + Greenfield with 2046 Infrastructure	3,510	4,770	5,320			13,880

Capacity which is currently feasible with a margin of 20% or greater is most likely to be constructed first and is therefore compared to the level of demand across the short-term. In 2017, it is estimated there were 2,900 dwellings with a profit margin of 20% or greater across Waipa District's infill areas and greenfield areas where infrastructure will be supplied within the short-term. This compares to a short-term demand (+ margin) of 2,400 dwellings.

Capacity which currently (in 2017) has a profit margin of 15% or greater is likely to represent the capacity which is constructed next past the short-term as population demand expands into new areas of greenfields and existing urban intensification. It is most appropriate to compare this level of capacity with demand across the medium-term. The table shows that in 2017 it is estimated there were 4,200 dwellings with a profit margin of 15% or greater across Waipa District's infill areas and greenfield areas where infrastructure will be supplied within the short and medium-term. This compared to a medium-term demand (+ margin) of 5,700 dwellings.

Capacity which currently (in 2017) has a profit margin of 10% or greater is likely to represent the capacity which is constructed later beyond the short and medium-term as population demand expands into new areas of greenfields and further urban intensification. It is most appropriate to compare this level of capacity with demand across the medium to long-term. The table shows that in 2017 it is estimated there were 5,300 dwellings with a profit margin of 10% or greater across Waipa District's infill areas and greenfield areas where infrastructure will be supplied within the short, medium and long-term. This compared to a long-term demand (+ margin) of 13,900 dwellings.

5.4 Waikato District

The long-term outlook would see Waikato's household count increasing by 16,900 to 42,300 by 2046 (or 44,800 if a margin is applied), from 25,400 in 2017. This includes growth of some 2,600 households by 2021, and 5,900 by 2026. A medium-series household projections have been used at the request of the Future Proof Partners. Alternative household projection series include higher rates of growth with a share of growth being driven by overflow demand from the Auckland region.

5.4.1 Dwelling Demand by Value Band

Figure 73 summarises the growth in housing demand (including a margin) in Waikato District, by dwelling value band, over the short, medium and long terms. Throughout the planning period, demand growth is most heavily directed in the lower and lower-middle positions in the housing market, with 31% in the lowest band (under $300,000), and some 38% in the lower middle value band ($300,000 to $440,000). Overall, over four-fifths of the net increase would be for dwellings in the bands below $580,000.[34]

These demand estimates by value band are drawn on for the sufficiency assessment.

[34] However, we also note that currently around half of all Waikato District households reside on lifestyle properties, which are generally much higher value than the average residential dwelling in towns such as Huntly, Ngaruawahia and Raglan. This means that the projections may overstate the growth in the lower value bands.

Figure 73 – Waikato District – Projected Demand Increase by Dwelling Value Band 2017-2046

Value Band	2017-21	2017-26	2017-46	2017-21 %	2017-26 %	2017-46 %
Under $300k	1,001	2,282	6,102	32%	32%	31%
$300k-$440k	1,224	2,750	7,475	39%	39%	38%
$440k-$580k	505	1,152	3,245	16%	16%	17%
$580k-$730k	243	554	1,562	8%	8%	8%
$730k-$880k	68	141	399	2%	2%	2%
$880k-$1.02m	29	65	166	1%	1%	1%
$1.02m-$1.17m	29	54	155	1%	1%	1%
$1.17m-$1.31m	19	43	133	1%	1%	1%
$1.31m-$1.45m	-	22	66	0%	0%	0%
$1.45m-$1.75m	10	22	66	0%	0%	0%
$1.75m-$2.05m	-	11	33	0%	0%	0%
$2.05m+	-	11	22	0%	0%	0%
TOTAL	**3,128**	**7,108**	**19,425**	**100%**	**100%**	**100%**

5.4.2 Waikato District Short term Sufficiency

The short-term outlook would see Waikato's household count increasing by 2,600 to 28,000 by 2021 (or 28,500 if a margin is applied) from 25,400 in 2017. Figure 74 shows the short-term Net Sufficiency outcomes for Waikato to 2021, for each supply scenario, and the average across all scenarios.

In net terms there would be sufficient dwelling capacity for Waikato household demand to 2021. Over the supply scenarios, Net Sufficiency would be 114 per cent to 115 per cent at the district level.

While net surpluses are projected in total, in all three supply scenarios, shortfalls in capacity are projected to occur within the lower price brackets (up to $580,000; and for the Cheapest Dwelling scenario, up to $440,000). Within these price brackets, net sufficiency is projected to be around 91 to 97 per cent. However, in the Cheapest Dwelling supply scenario, a net surplus (with 114% net sufficiency) is projected to occur in the mid-range price bracket of $440,000 to $580,000. It is likely that some of the supply within this price bracket is able to meet part of the shortfall occurring in the price bracket below.

All three scenarios experience net surpluses in sufficiency within the mid to higher price brackets, with the largest surpluses occurring within the $1.02m to $1.17m bracket. A large share of this is likely to occur as higher value lifestyle properties within the district. It is unlikely that supply within this price bracket will be able to meet demand in other parts of the price spectrum as there is limited demand for dwellings of this value range within the district, with demand concentrated into the lower to mid-price brackets.

Figure 74 – Waikato District – Short term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Net Sufficiency				Net Sufficiency %			
		2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	Average All Scenarios	2021 Max Profit	2021 Max Dwellings	2021 Cheapest Dwellings	Average All Scenarios
Under $300k	9,192	- 739	- 739	- 739	- 740	93%	93%	93%	93%
$300k-$440k	8,516	- 1,095	- 1,095	- 445	- 880	89%	89%	95%	91%
$440k-$580k	4,304	- 535	- 545	705	- 130	89%	89%	114%	97%
$580k-$730k	1,865	816	856	1,776	1,150	138%	140%	183%	154%
$730k-$880k	533	492	492	1,152	710	180%	180%	288%	216%
$880k-$1.02m	236	741	801	741	760	380%	402%	380%	387%
$1.02m-$1.17m	225	2,361	2,371	671	1,800	1027%	1031%	363%	807%
$1.17m-$1.31m	215	1,471	1,451	101	1,010	728%	719%	143%	531%
$1.31m-$1.45m	113	491	551	91	380	538%	591%	181%	439%
$1.45m-$1.75m	82	- 10	- 10	- 10	- 10	89%	89%	89%	89%
$1.75m-$2.05m	41	0	0	0	-	*101%*	101%	101%	100%
$2.05m+	31	0	0	0	-	*101%*	*101%*	*101%*	100%
TOTAL	**25,353**	**3,992**	**4,132**	**4,042**	**4,050**	**114%**	**115%**	**114%**	**114%**

5.4.3 Waikato District Medium Term Sufficiency

The medium-term outlook would see Waikato household count increasing by 5,900 to 31,300 by 2026 (or 32,500 if a margin is applied) from 25,400 in 2016.

Figure 75 shows that Waikato District is expected to experience a net surplus of capacity of around 2,300 to 2,500 dwellings in the medium-term. This equates to a net sufficiency of 107 to 108 per cent at the total level.

However, all three supply scenarios show shortfalls of capacity within the lower price brackets (up to $580,000; and the cheapest dwelling scenario up to $440,000). Net sufficiency within these price brackets is projected to be at between 75 per cent to 90 per cent in the medium-term.

Difference exists between the three supply scenarios. The net deficits are largest (at around 4,800 dwellings) within the lower price brackets within the Maximum Profit and Maximum Dwellings scenario, with net sufficiency at around 75 to 82 per cent. The deficits are projected to be smaller within the Cheapest Dwelling scenario, with a net deficit of around 3,100 dwellings, and net sufficiency of between 82 and 90 per cent. A surplus of 1,300 dwellings is projected to occur within the mid price bracket ($440,000 to $580,000) within the Cheapest Dwelling supply scenario, which may be able to meet some of the shortfall in demand within the lower price bracket.

Net surpluses in capacity are projected to occur in the mid to higher price brackets across all three supply scenarios in the medium-term. The largest surpluses are projected for the $1.02m to $1.17m price bracket in the Maximum Profit and Maximum Dwellings supply scenarios. However, it is unlikely that surpluses within this price bracket will be able to play any significant role in meeting demand elsewhere in the price spectrum. With the largest deficits projected to occur in the much lower price brackets.

Figure 75 – Waipa District – Medium-term Sufficiency – Supply Scenarios Compared

Value Band	Current Estate	Sufficiency				Sufficiency %			
		2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios	2026 Max Profit	2026 Max Dwellings	2026 Cheapest Dwellings	2026 Average All Scenarios
Under $300k	9,192	- 2,037	- 2,037	- 2,037	- 2,040	82%	82%	82%	82%
$300k-$440k	8,516	- 2,789	- 2,789	- 1,159	- 2,250	75%	75%	90%	80%
$440k-$580k	4,304	- 648	- 648	1,292	-	88%	88%	123%	100%
$580k-$730k	1,865	95	245	1,635	660	104%	110%	166%	127%
$730k-$880k	533	378	368	1,478	740	155%	154%	316%	208%
$880k-$1.02m	236	1,075	1,155	565	930	457%	484%	288%	409%
$1.02m-$1.17m	225	3,745	3,755	565	2,690	1437%	1440%	302%	1060%
$1.17m-$1.31m	215	1,986	1,956	86	1,340	865%	854%	133%	616%
$1.31m-$1.45m	113	598	678	78	450	543%	602%	158%	434%
$1.45m-$1.75m	82	- 22	- 22	- 22	- 20	79%	79%	79%	81%
$1.75m-$2.05m	41	- 11	- 11	- 11	- 10	*79%*	79%	79%	81%
$2.05m+	31	- 11	- 11	- 11	- 10	*74%*	*74%*	*74%*	76%
TOTAL	**25,353**	**2,360**	**2,640**	**2,460**	**2,480**	**107%**	**108%**	**108%**	**108%**

5.4.4 Waikato District Long term Sufficiency

The long-term outlook would see Waikato's household count increasing by 16,900 to 42,300 by 2046 (or 44,800 if a margin is applied) from 25,400 in 2017.

This overall growth is expected to result in substantial demand growth in the middle and lower middle bands of the dwelling market, with an additional 7,500 households (including a margin) in the $300,000 to $440,000 dwelling value band, and 6,100 households (including a margin) in the $440,000 to $580,000 value band (see Figure 73, above).

Figure 76 shows that the Waikato District is projected to have a net deficit in capacity of around 6,000 to 6,400 dwellings in the long-term. This equates to a net sufficiency of between 86 and 87 per cent.

The largest shortfalls in capacity are projected to occur within the lower to mid price brackets (up to $730,000) under the Maximum Profit and Maximum Dwelling supply scenarios. Within these scenarios, the net sufficiency would range from 54 to 96 per cent within these price brackets. However, it should be noted that part of these shortfalls are likely to be mitigated where dwelling stock is constructed within these bands in the short to medium-term (when prices would be lower) in response to demand[35].

Under the cheapest dwellings supply scenario, shortfalls in capacity are projected to occur within the lower price brackets (up to $440,000), with net sufficiency equating to between 62 and 77 per cent. It is likely

[35] The Model identifies the capacity that is available at each point in time relative to the currently existing supply. The price point of capacity reflects the price at which it would be feasible to construct at the point in time of the model run year. It is important not to confuse the Model with a growth model, which would allocate a level uptake within each location. However, when assessing sufficiency, it is important to understand that a level of capacity is likely to be up-taken at each point in time, and therefore capacity identified in later model years (where prices are higher) is likely to contain a share which has already been constructed (at lower prices) in earlier years.

that a small share of this demand can be met within the middle price brackets ($440,000 to $730,000) where a surplus of capacity exists. However, the surplus of around 1,700 dwellings within these mid price brackets is more than offset by the net deficit of around 9,500 dwellings within the lower price brackets.

Similar to the short and medium-term, the largest net surplus of dwelling capacity occurs within the higher price brackets (under the Maximum Profit and Maximum Dwellings supply scenarios) where there is limited demand.

It is important to consider that the projections may overstate demand for lower value properties and correspondingly understate demand for higher value lifestyle properties, particularly around the edges of the main urban settlements, and Auckland and Hamilton. This would act to exacerbate the shortfalls in capacity at the lower end of the market.

Figure 76 – Waikato District – Long term Sufficiency – Supply Scenarios Compared

Under $300k	Current Estate	Sufficiency				Sufficiency %			
		2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios	2046 Max Profit	2046 Max Dwellings	2046 Cheapest Dwellings	2046 Average All Scenarios
Under $300k	9,192	- 5,891	- 5,891	- 5,741	- 5,840	61%	61%	62%	61%
$300k-$440k	8,516	- 7,424	- 7,424	- 3,734	- 6,190	54%	54%	77%	62%
$440k-$580k	4,304	- 3,137	- 3,137	53	- 2,070	59%	59%	101%	73%
$580k-$730k	1,865	- 411	- 151	1,609	350	88%	96%	146%	110%
$730k-$880k	533	170	190	1,100	490	118%	120%	217%	152%
$880k-$1.02m	236	923	1,013	313	750	329%	351%	178%	286%
$1.02m-$1.17m	225	5,054	5,024	484	3,520	1424%	1417%	227%	1022%
$1.17m-$1.31m	215	3,195	3,165	45	2,140	1014%	1005%	113%	712%
$1.31m-$1.45m	113	1,343	1,493	- 37	930	845%	928%	79%	616%
$1.45m-$1.75m	82	- 66	- 66	- 66	- 70	55%	55%	55%	53%
$1.75m-$2.05m	41	- 33	- 33	- 33	- 30	*55%*	55%	55%	60%
$2.05m+	31	- 22	- 22	- 22	- 20	*58%*	*58%*	*58%*	62%
TOTAL	**25,353**	**- 6,300**	**- 5,840**	**- 6,030**	**- 6,040**	**86%**	**87%**	**87%**	**87%**

5.4.5 Waikato District – Sufficiency by Location

This section considers the sufficiency of feasible supply by location across the Waikato District. It compares the net increase in demand with the additional feasible capacity in each location in the short, medium and long-term.

Figure 77 shows demand for 3,100 additional dwellings across Waikato District in the short-term. This compares to capacity of 7,000 feasible dwellings, suggesting a surplus of 3,900 dwellings at the district level.

By location, a surplus of capacity exists in the short-term across most of the main urban settlements (Te Kauwhata, Ngaruawahia, Pokeno, and Taupiri, and, to a lesser extent Huntly and Tuakau). A significant surplus also exists in the area around the edge of Hamilton, and, in aggregate, 'other areas' across the district, which mainly includes lifestyle block properties.

The largest areas of deficit occur outside of the main urban settlements, across smaller settlements in the largely rural areas. The largest of these deficits occur across the areas to the northeast of Hamilton, although this deficit is adjacent to Hamilton Edge, an area of significant surplus.

Figure 77 - Comparison of Short-Term (2017-2021) Demand and Feasible Capacity in Waikato District

Location	Demand 2017-2021	Demand + 20% 2017-2021	Capacity 2021	Capacity vs. Demand + 20%
Other Areas	-	-	668	668
Hamilton Edge	88	106	1,649	1,543
Horotiu	36	43	157	114
Huntly	181	217	392	175
Mid-West Waikato	153	183	-	-183
Ngaruawahia	152	183	986	803
Ngaruni Beach	70	84	29	-55
North East of Hamilton	577	693	-	-693
North Eastern Waikato	101	121	-	-121
North West of Hamilton	122	146	86	-60
Northern Edge	142	171	53	-118
Pokeno	438	526	1,248	723
Port Waikato	-	-	-	-
Raglan	107	128	67	-61
SH1 North	80	96	5	-92
Taupiri	3	4	277	274
Te Kauwhata	149	179	1,281	1,102
Tuakau	209	250	309	59
TOTAL	**2,606**	**3,128**	**6,987**	**3,859**

Over the medium-term, Waikato District has a capacity surplus at the district level of around 2,300 dwellings (Figure 78).

Most of the larger urban towns and settlements (Te Kauwhata, Ngaruawahia, Tuakau, Taupiri and Pokeno) continue to have a capacity surplus in the medium-term. The surplus in Tuakau increases in the medium-term as more infrastructure is supplied for greenfield development. A deficit in Raglan continues to widen, and a deficit emerges in Huntly due mainly to greenfield infrastructure constraints.

The largest areas of deficit are projected to continue to be the aggregations of smaller settlements within the wider rural areas of the district.

Figure 78 - Comparison of Medium-Term (2017-2026) Demand and Feasible Capacity in Waikato District

Location	Demand 2017-2026	Demand + 20% 2017-2026	Capacity 2026	Capacity vs. Demand + 20%
Other Areas	7	9	1,017	1,008
Hamilton Edge	215	258	1,909	1,651
Horotiu	81	97	210	113
Huntly	390	468	441	- 27
Mid-West Waikato	366	439	1	- 438
Ngaruawahia	319	383	1,133	750
Ngaruni Beach	182	218	38	- 180
North East of Hamilton	1,307	1,568	68	- 1,500
North Eastern Waikato	210	251	-	- 251
North West of Hamilton	310	372	95	- 277
Northern Edge	350	420	57	- 364
Pokeno	866	1,039	1,283	244
Port Waikato	-	-	-	-
Raglan	237	285	69	- 216
SH1 North	217	261	5	- 256
Taupiri	12	15	397	383
Te Kauwhata	338	406	1,636	1,230
Tuakau	515	618	1,235	617
TOTAL	**5,923**	**7,108**	**9,440**	**2,332**

Figure 79 shows that in the long-term, a deficit of capacity is projected to emerge at the Waikato District level of around 6,400 dwellings.

At this point, capacity deficits emerge in the larger urban settlements of Pokeno and Tuakau. In the case of Pokeno, infrastructure provision within the greenfield areas becomes a constraint on feasible capacity in the long-term where there is a difference of around 1,300 dwellings when comparing feasibility with and without infrastructure constraints.

A large surplus is projected to occur in Taupiri in the long-term as more greenfield capacity is supplied with infrastructure. Te Kauwhata and Ngaruawahia are projected to continue to experience capacity surpluses into the long-term. However, these surpluses may become smaller if higher shares of demand become concentrated into the main urban settlements into the future.

Deficits in feasible capacity are projected to continue to occur across the aggregations of smaller settlements in the wider rural areas of the district in the long-term. The largest of these continues to be within the area to the northeast of Hamilton, which, in the long-term, exceeds the capacity surplus in the adjacent area of Hamilton Edge.

Figure 79 - Comparison of Long-Term (2017-2046) Demand and Feasible Capacity in Waikato District

Location	Demand 2017-2046	Demand + 20% 2017-2046	Capacity 2046	Capacity vs. Demand + 15%
Other Areas	-	-	1,225	1,225
Hamilton Edge	672	773	2,389	1,616
Horotiu	257	295	277	- 19
Huntly	911	1,048	463	- 585
Mid-West Waikato	1,097	1,261	154	- 1,107
Ngaruawahia	810	932	1,643	711
Ngaruni Beach	629	723	44	- 679
North East of Hamilton	3,402	3,912	68	- 3,844
North Eastern Waikato	533	613	-	- 613
North West of Hamilton	1,050	1,207	417	- 790
Northern Edge	955	1,098	68	- 1,031
Pokeno	1,986	2,284	1,402	- 882
Port Waikato	-	-	-	-
Raglan	655	754	574	- 180
SH1 North	857	985	148	- 837
Taupiri	27	31	858	827
Te Kauwhata	1,158	1,331	2,113	782
Tuakau	1,898	2,183	1,317	- 866
TOTAL	**16,891**	**19,425**	**13,062**	**- 6,363**

5.4.6 Waikato District – Comparison of Current Market with Future Demand

The capacity in 2017 at profit margins of 20% or greater, 15% or greater and 10% or greater is compared to the level of future demand in the short, medium and long-term in Figure 80. The points of comparison also take into account the timing of infrastructure provision within the greenfield areas. The level of capacity at each profit margin in 2017 is shown in the left hand side of the table, while the demand in the short, medium and long-term is displayed in the right hand side.

Figure 80 – Comparison of Current Dwelling Capacity by Profit Margin in 2017 with the Level of Future Demand in Waikato District

	Capacity by Profit Margin in 2017			Demand + 15/20%		
	>= 20% (Immediate to Short-Term)	>=15% (Short to Medium-Term)	>=10% (Medium to Long-Term)	Short-Term	Medium-Term	Long-Term
Infill + Greenfield with 2021 Infrastructure	5,660	7,660	9,000	3,130		
Infill + Greenfield with 2026 Infrastructure	7,630	9,180	10,480		7,110	
Infill + Greenfield with 2046 Infrastructure	8,690	10,200	11,790			19,430

Capacity which is currently feasible with a margin of 20% or greater is most likely to be constructed first and is therefore compared to the level of demand across the short-term. In 2017, it is estimated there were 5,700 dwellings with a profit margin of 20% or greater across Waikato District's infill areas and greenfield areas where infrastructure will be supplied within the short-term. This compares to a short-term demand (+ margin) of 3,130 dwellings.

Capacity which currently (in 2017) has a profit margin of 15% or greater is likely to represent the capacity which is constructed later beyond the short-term as population demand expands into new areas of greenfields and further urban intensification. It is most appropriate to compare this level of capacity with demand across the medium-term. The table shows that in 2017 it is estimated there were 9,200 dwellings with a profit margin of 15% or greater across Waikato District's infill areas and greenfield areas where infrastructure will be supplied within the short and medium-term. This compared to a medium-term demand (+ margin) of 7,100 dwellings.

Capacity which currently (in 2017) has a profit margin of 10% or greater is likely to represent the capacity which is constructed next past the short and medium-term as population demand expands into new areas of greenfields and existing urban intensification. It is most appropriate to compare this level of capacity with demand across the medium to long-term. The table shows that in 2017 it is estimated there were 11,800 dwellings with a profit margin of 10% or greater across Waikato District's infill areas and greenfield areas where infrastructure will be supplied within the short, medium and long-term. This compared to a long-term demand (+ margin) of 19,400 dwellings.

6 Concluding Remarks

The Future Proof area is projected to experience considerable growth over the next 30 years, particularly within the Hamilton City and Waikato District areas. Demand for dwellings is projected to increase by around 60 per cent, from 102,000 dwellings in 2017 to 163,000 in 2046. This equates to a demand for an additional 61,000 dwellings across the three partnership areas (or 70,000 dwellings if a margin on demand is applied). This level of demand arises from a combination of low (Hamilton City) and medium-series (Waikato and Waipa Districts) household projections[36], with growth potentially higher if an Auckland-driven growth scenario is applied with additional demand overflowing from the adjacent Auckland region.

The anticipated growth in dwelling demand creates important challenges for the Future Proof Partnership area in how to respond to growth and seek the best urban form outcomes for sustainable urban form and growth into the future.

The Councils' District Plan's and future infrastructure supply provisions enable considerable capacity across the Future Proof Partnership area through a combination of urban intensification and outward urban expansion into greenfield areas. As well as large areas of greenfield expansion, Hamilton's District Plan has a series of zones which enable large amounts of urban intensification through a range of dwelling typologies and intensities. Provision for urban intensification is highest within the more central areas, as well as having substantial plan enabled capacity for intensification across the wider residential suburban areas. Waikato and Waipa Districts' also enable urban intensification and expansion, albeit with a lesser range of zone types than the more complex urban economy of Hamilton.

The modelling undertaken by M.E for the NPS-UDC has produced two main outputs for the assessment of sufficiency. It has produced a stocktake of the current market as at 2017. This analysis compares the levels of capacity that are currently feasible at different profit margins within the 2017 market, with the level of demand projected to occur at different points in the future. The modelling also produces future projections of feasible capacity and compares these to the corresponding levels of future demand. Within growing urban economies, as population bases expand and demand for dwellings increases and moves into new greenfield areas and areas of further intensification, more capacity becomes feasible through time. The mechanisms behind these fundamental drivers of urban growth and intensification – central components of affordability – are set out in an associated technical paper on future feasible capacity prepared as part of the NPS-UDC response[37].

Hamilton City, the dominant urban economy within the Future Proof Partnership area, has sufficient feasible capacity to cater for growth across the short to long-term. Sufficient capacity exists even when excluding the potential for urban redevelopment, which is likely to become increasingly feasible into the future. The modelling shows there is likely to be some constraints in meeting demand through feasible supply shortfalls across some of the lower dwelling value bands; and in the number of feasible standalone

[36] These projection series were supplied to M.E by the Future Proof Partners and M.E were requested to use a low series projection for Hamilton City and a medium-series projection for the Waikato and Waipa Districts.

[37] Fairgray, D., Akehurst, G., Fairgray, S. and Yeoman, R. 2018. *NPS-UDC: CURRENT FEASIBILITY PROVISIONS Discussion Paper,* prepared for Auckland Council, Greater Christchurch Partnership, Future Proof Partnership, Queenstown Lakes District Council and Smart Growth Partnership, July 2018, Market Economics Ltd.

dwellings over the medium-term. However, the market is likely to have the capacity to respond both in terms of changes in supply side drivers as well as a level of demand-side substitution where households make trade-offs between dwelling size/type, location and price.

When considering the current market in 2017, there is sufficient capacity within Hamilton City that is currently feasible (with a profit margin of 20% or greater) to meet the level of demand projected to occur over the short and medium-term. Substantial future capacity, above the level of long-term demand, also exists. The analysis shows these as being currently at lower profit margins, which are likely to improve progressively into the future.

The modelling shows that Waikato District is likely to have capacity surpluses at the district level across the short and medium-term. Surpluses are projected to occur across most of the main urban settlements across both the short and medium-term, with capacity increasing within Tuakau with planned infrastructure provision in the medium-term. Deficits in capacity are projected to begin to emerge due to infrastructure constraints.

Waikato District is projected to have a deficit of around 6,600 feasible dwellings in the long-term. This occurs mainly across the wider rural areas containing mainly lifestyle properties and smaller urban settlements, but significant shortfalls would occur across a number of the main urban settlements where infrastructure becomes a constraint.

Sufficient feasible supply within the lower dwelling value bands may become an issue within the Waikato District. However, this effect may be partly over-stated where a higher share of the demand currently occurs within the higher value lifestyle properties.

When considering the current market in 2017, there is sufficient capacity within Waikato District that is currently feasible (with a profit margin of 20% or greater) to meet the level of demand projected to occur over the short and medium-term.

The modelling shows that Waipa District is likely to have sufficient feasible capacity to cater for short-term demand. Surpluses occur across the main urban settlements of Cambridge and Te Awamutu, and Kihikihi, as well as lifestyle properties around the edge of Hamilton City.

A capacity deficit is projected to occur in Waipa District in the medium-term of around 1,600 dwellings. Areas of deficit also include Cambridge and Kihikihi across the medium-term. The capacity deficit is projected to increase over the long-term, to reach nearly 9,000 dwellings. It is projected to occur across nearly all areas of the district, with the largest deficits in the main urban settlements of Cambridge, Te Awamutu and Kihikihi where the highest demand is projected to occur.

The projected deficits are a function of both infrastructure constraints and constraints in the capacity enabled under the Operative District Plan, where the projected demand exceeds the capacity enabled under the Plan.

Sufficient feasible capacity within the lower value bands is also likely to become an issue within Waipa District over the medium to long-term. However, similar to Waikato District, this is likely to be over-stated where are higher proportion of the current dwelling stock is within the higher value lifestyle properties.

To meet the NPS-UDC requirements, the assessment of capacity within the Future Proof Partnership area is based on the capacity currently provided within the Operative District Plans. Waikato and Waipa District are currently undergoing district plan reviews and plan changes, which are each anticipated to enable substantial additional capacity across the districts. This is likely to occur within the growth areas identified within the Waikato District Plan review and the Growth Cells identified in Plan Change 5 notified for the Waipa District. Both of these include significant additional greenfield residential capacity in the areas surrounding the main urban settlements.

Analysis of the additional capacity enabled within the Growth Areas and Growth Cells can be undertaken in future updates to the capacity assessment of the Future Proof Partnership area. This process has developed the important modelling structures and local area analysis for the area, which can be updated through time as additional data and information becomes available.

Appendix A – Classification of Infill and Greenfield Areas

The following maps show how land within the study area of Waikato District, Hamilton City and Waipa District has been classified as either infill or greenfield areas. Infill areas are shaded in red and greenfield areas are shaded in green. Further explanation of the classification process is contained in Section 2.4.

Figure 81 – Infill and Greenfield Areas in Waikato District - Total

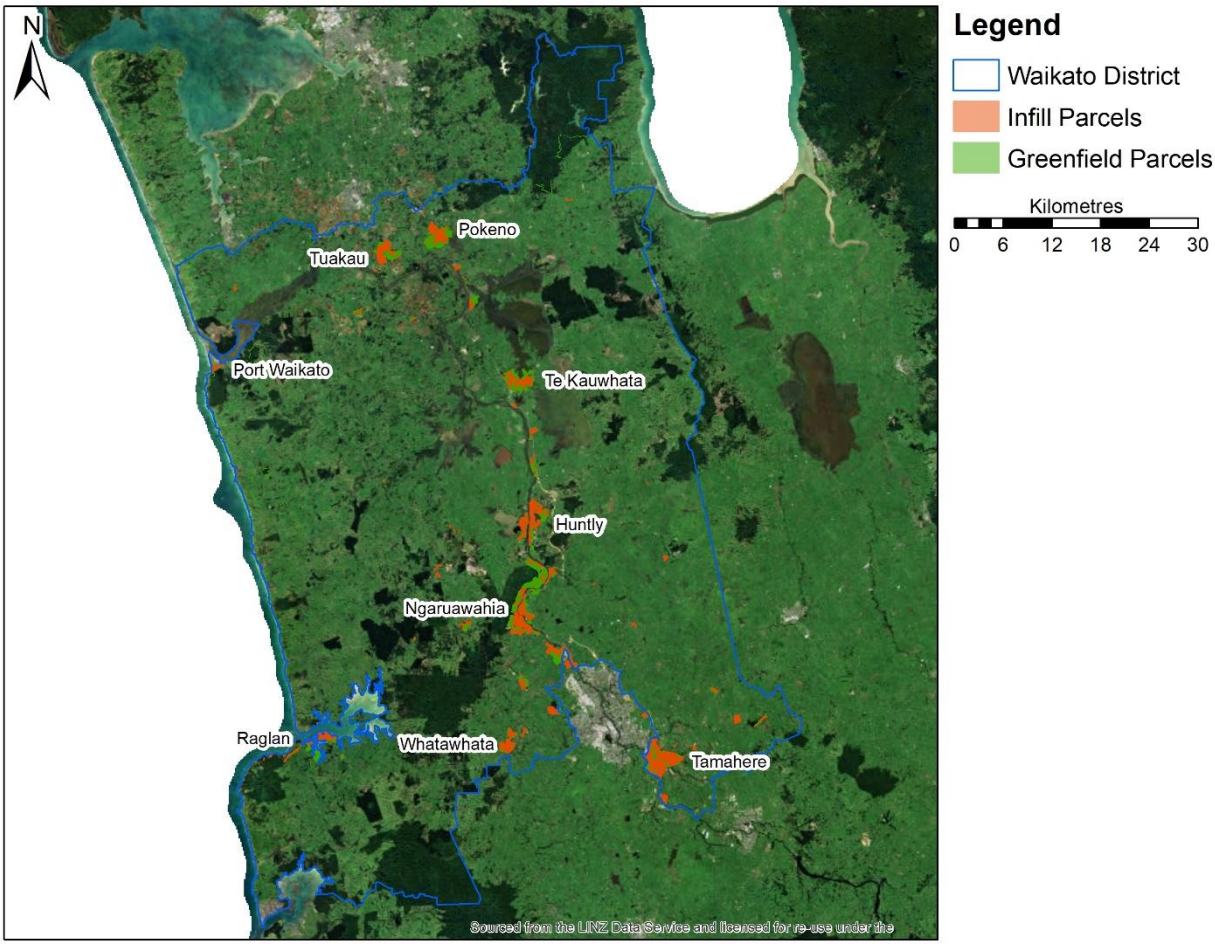


Figure 82 – Infill and Greenfield Areas in Waikato District – Pokeno

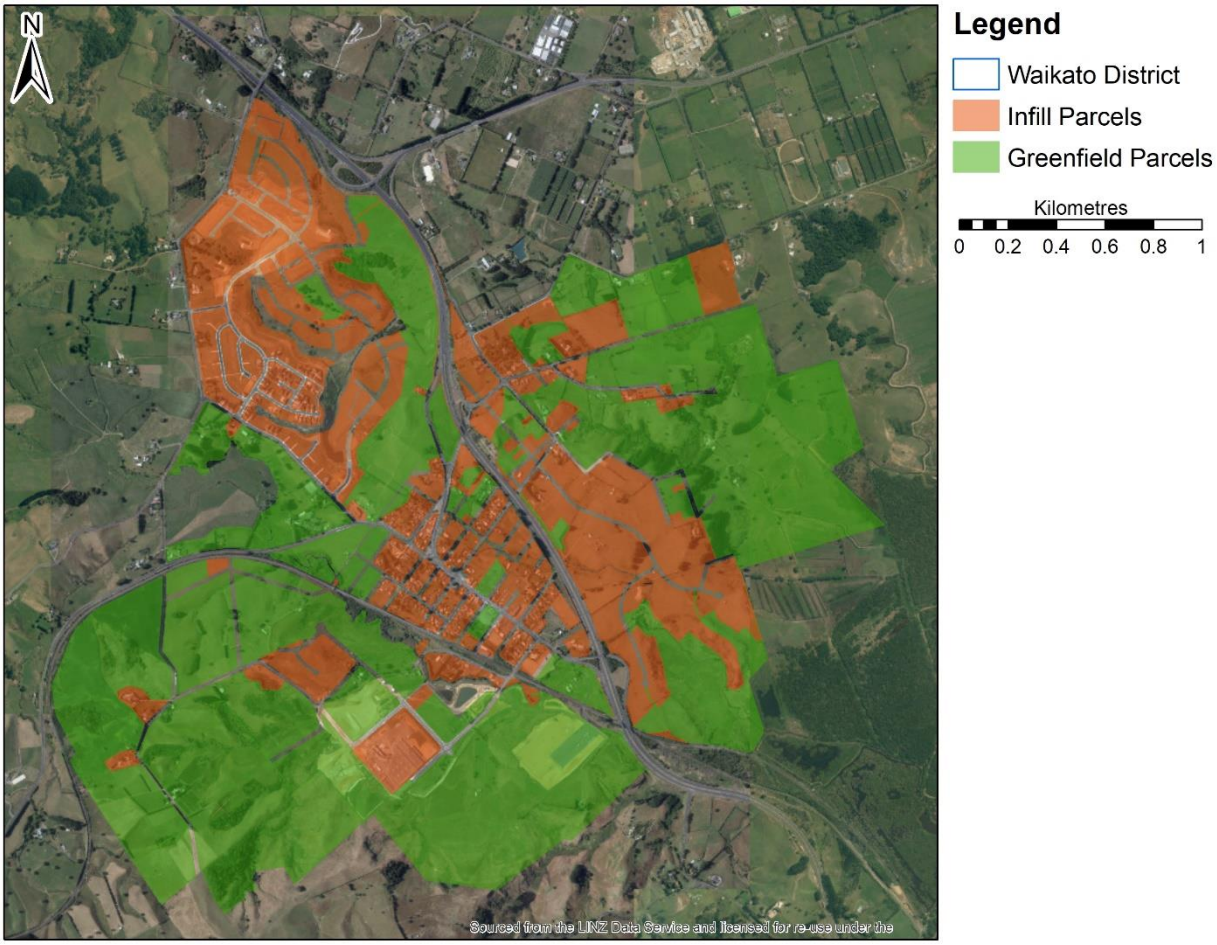


Figure 83 - Infill and Greenfield Areas in Waikato District – Tuakau

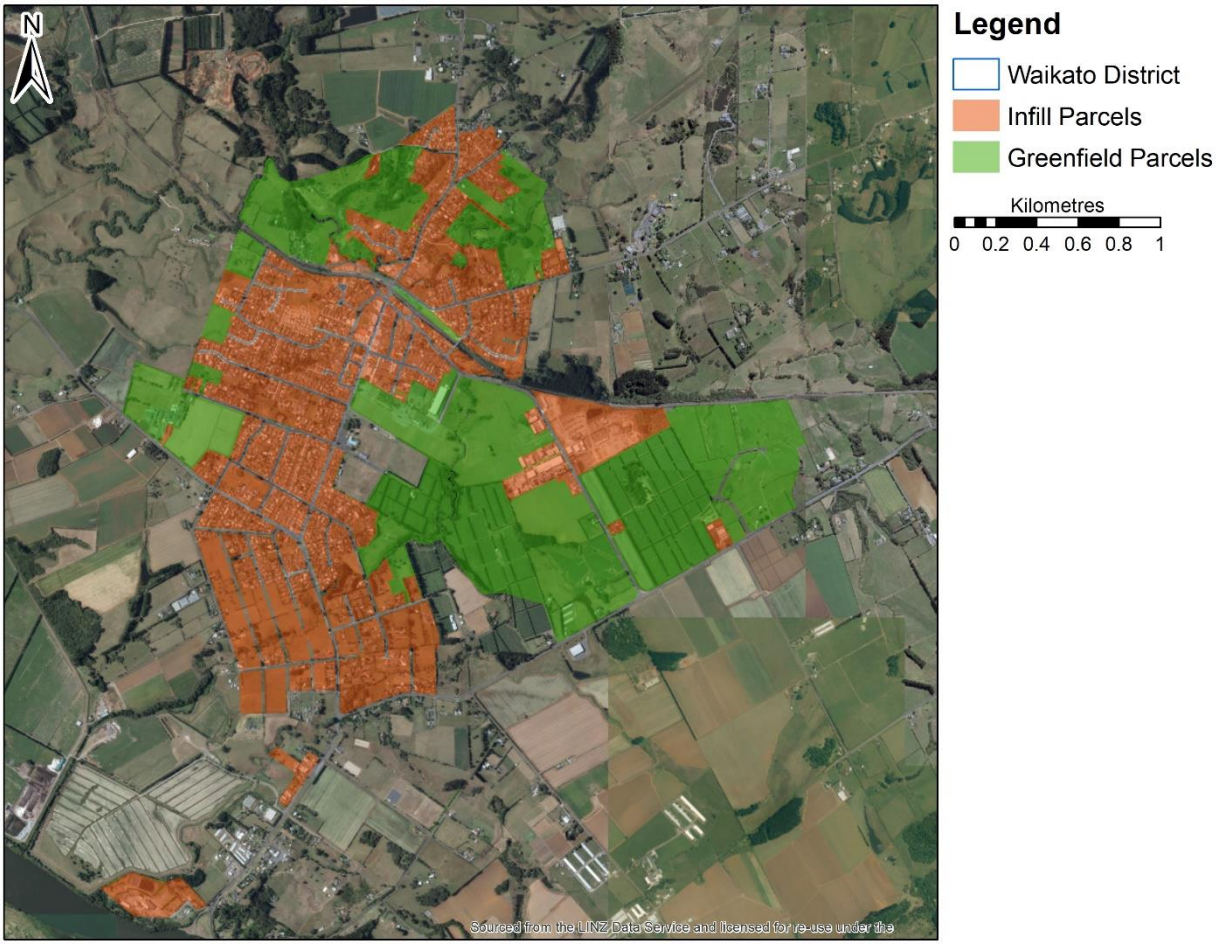


Figure 84 - Infill and Greenfield Areas in Waikato District – Huntly

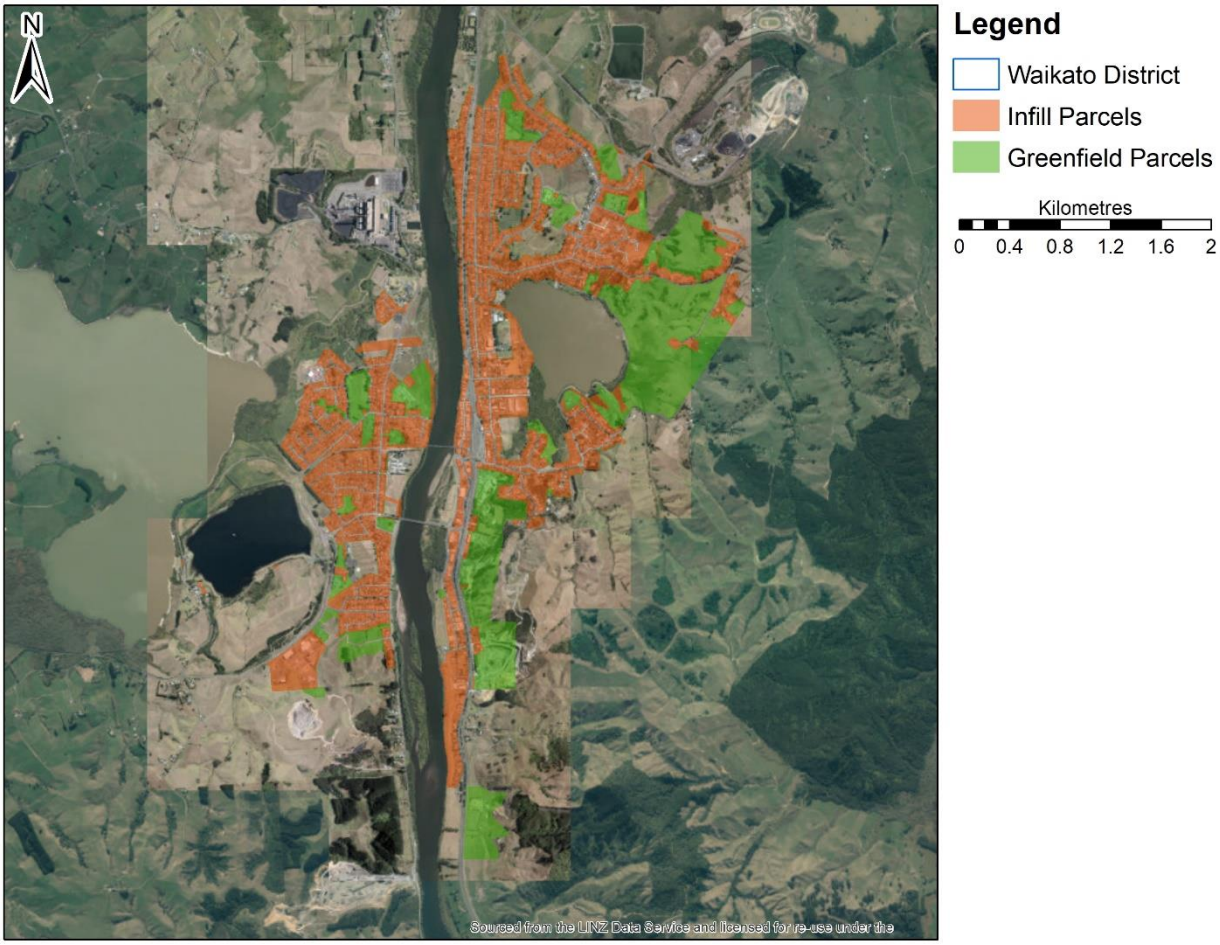


Figure 85 - Infill and Greenfield Areas in Waikato District – Te Kauwhata

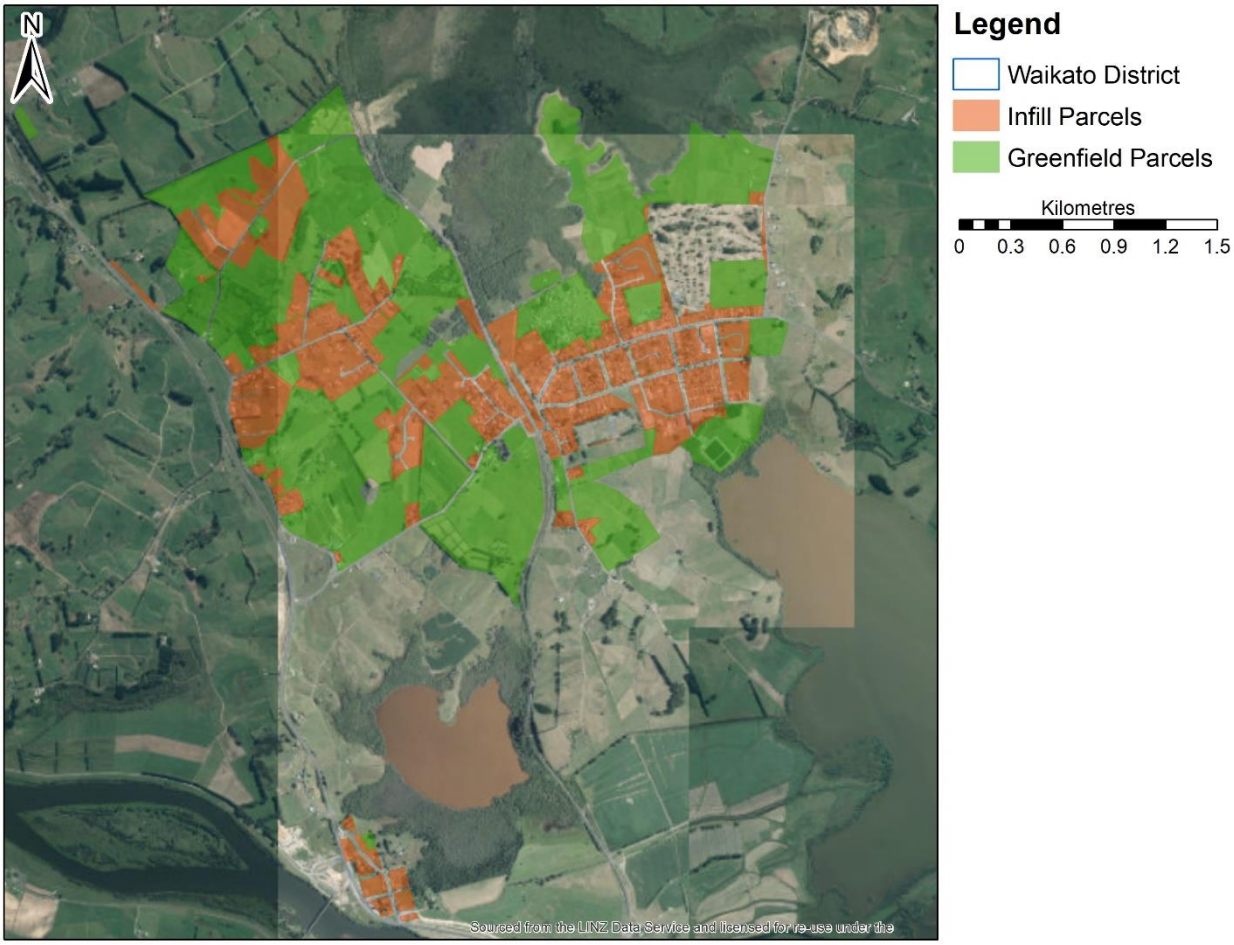


Figure 86 - Infill and Greenfield Areas in Waikato District – Ngaruawahia and Taupiri

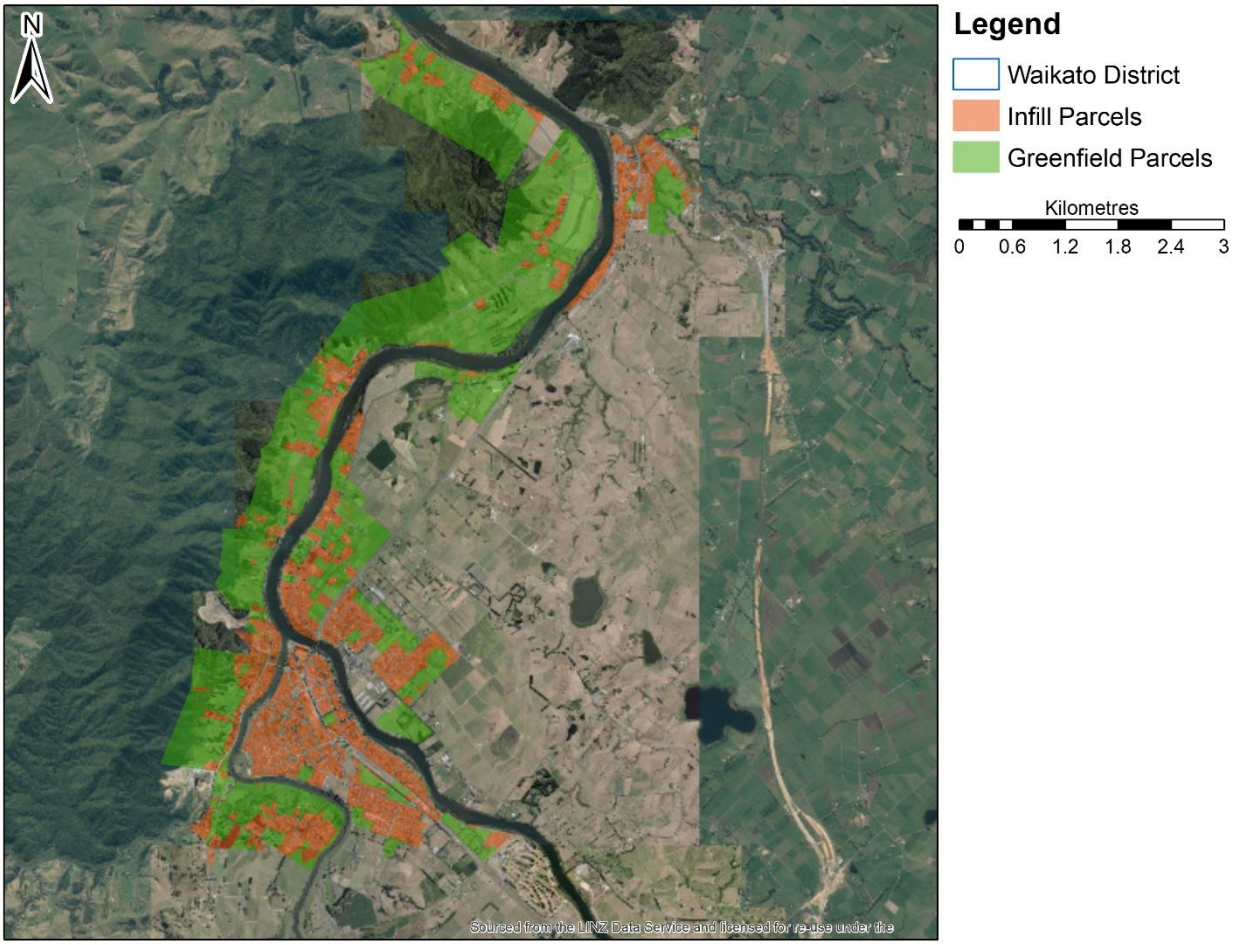


Figure 87 - Infill and Greenfield Areas in Waikato District – Raglan

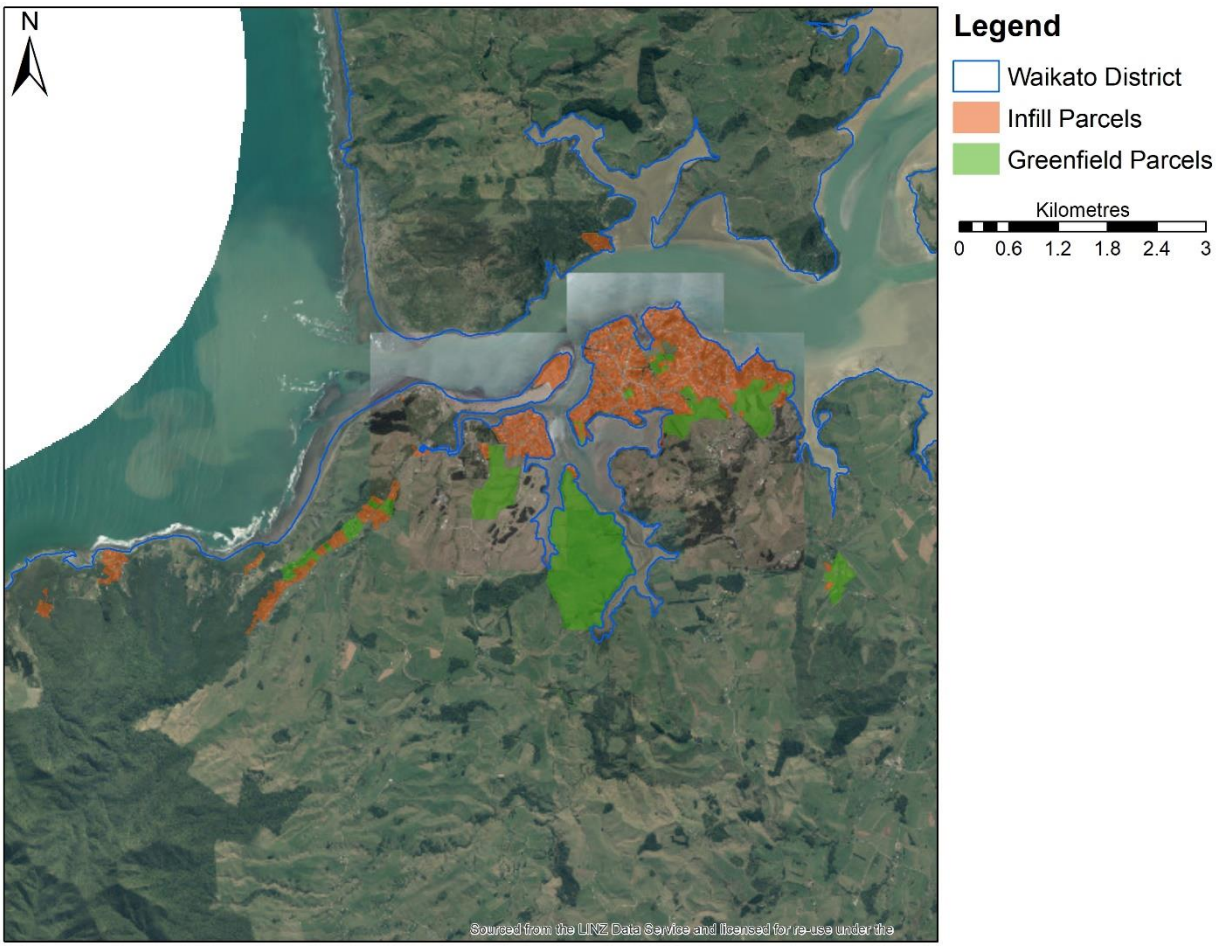


Figure 88 – Infill and Greenfield Areas in Hamilton City - Total

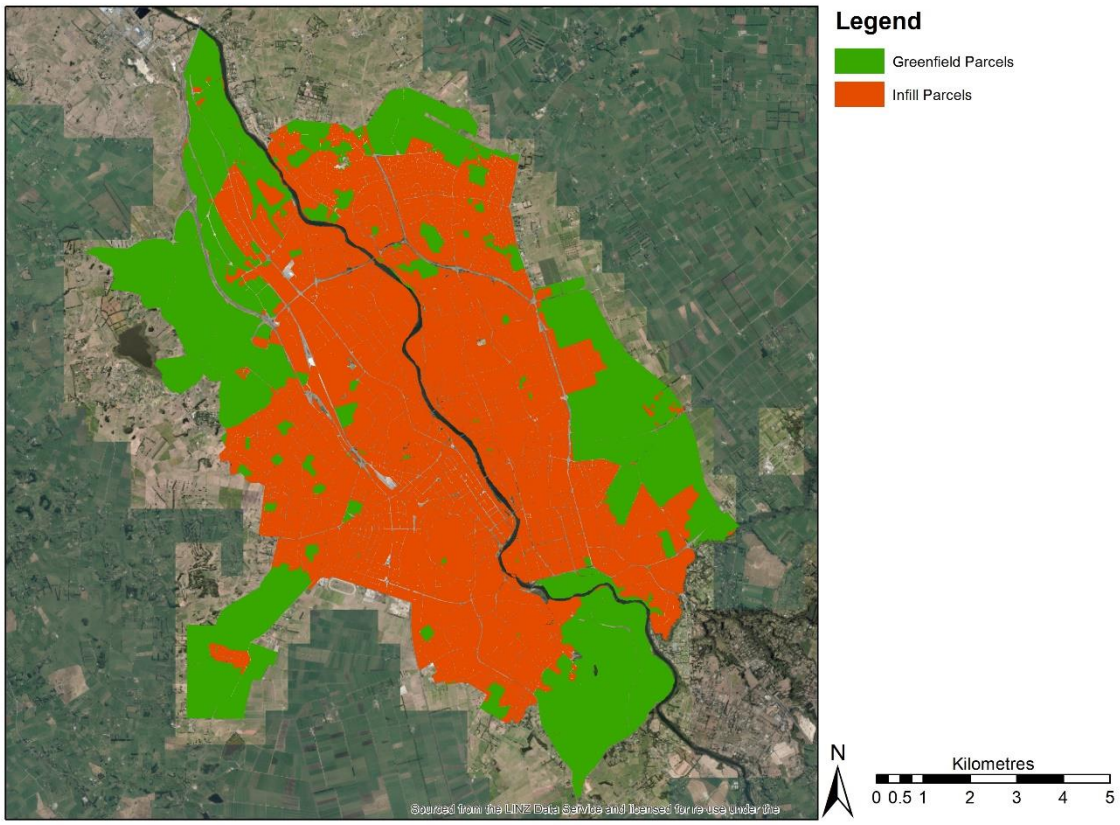


Figure 89 – Infill and Greenfield Areas in Waipa District - Total

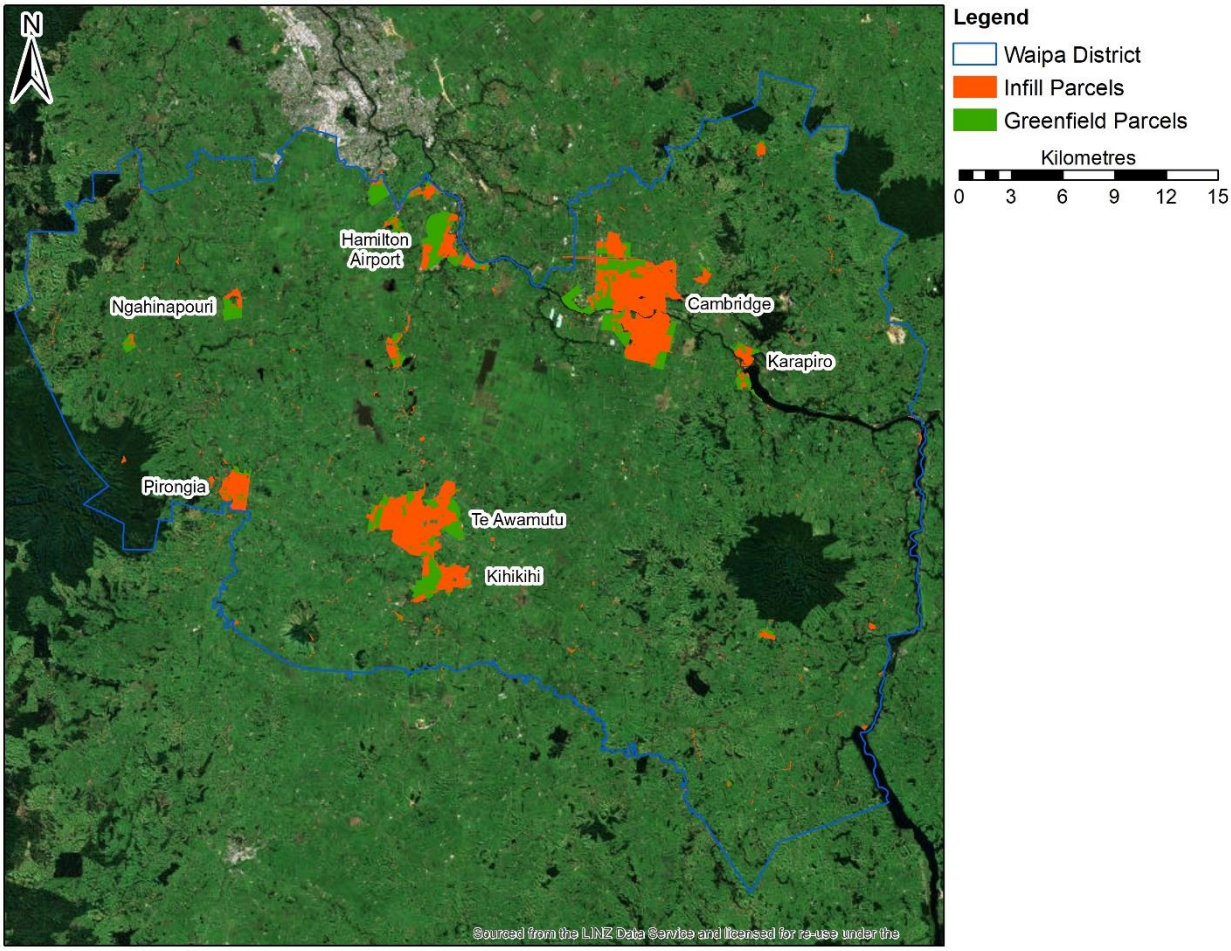


Figure 90 – Infill and Greenfield Areas in Waipa District – Cambridge

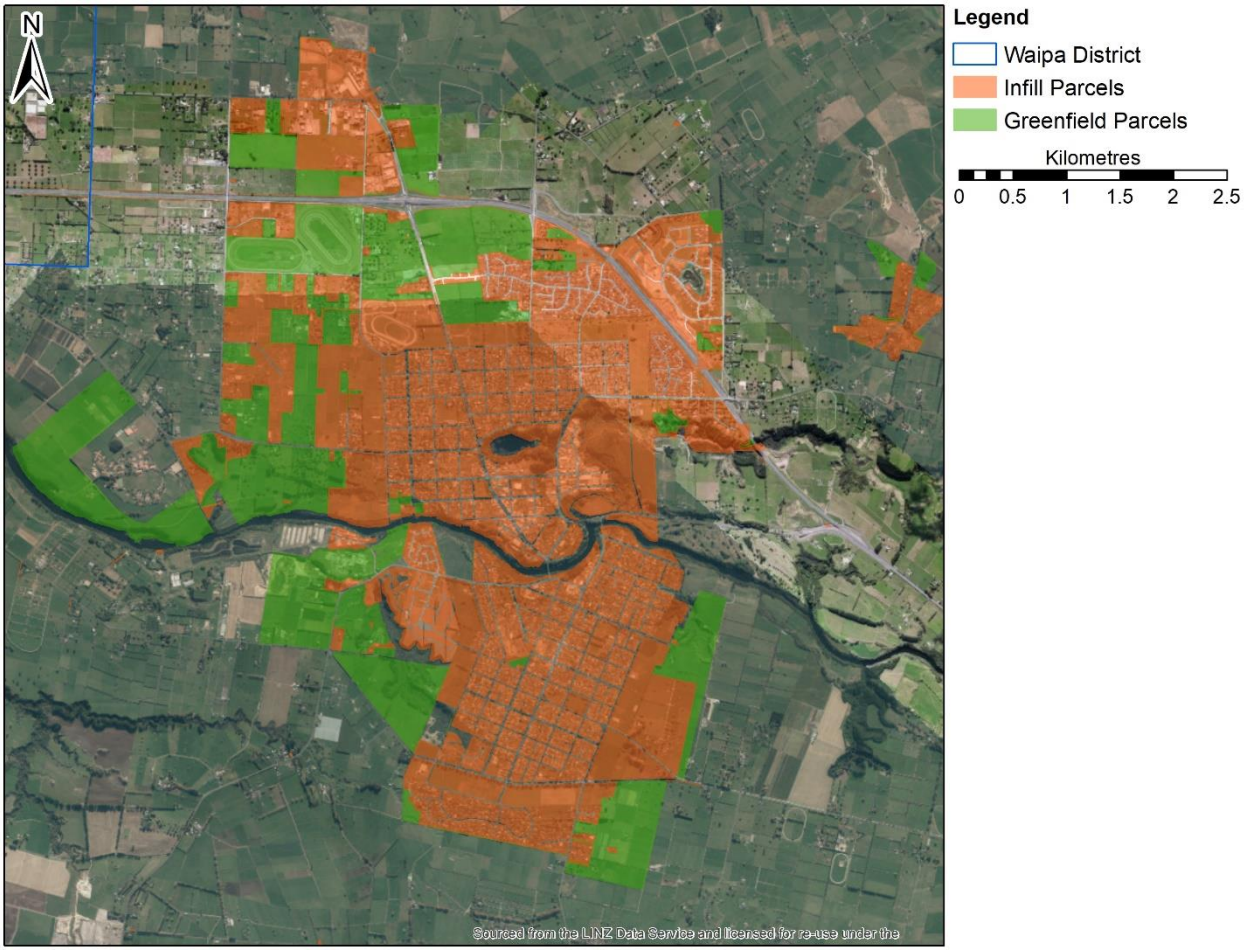


Figure 91 – Infill and Greenfield Areas in Waipa District – Te Awamutu and Kihikihi

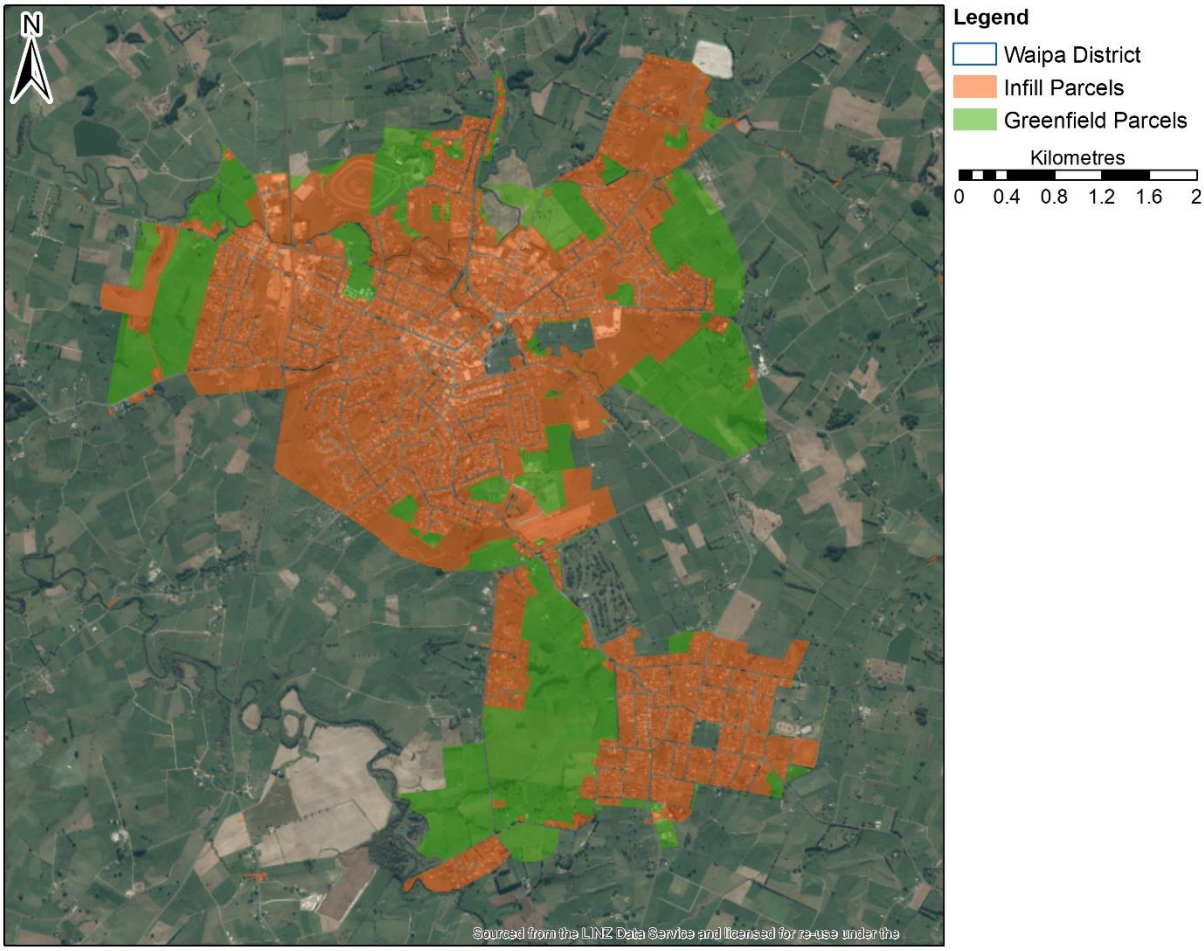


Figure 92 – Infill and Greenfield Areas in Waipa District – Pirongia