Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

Kāpiti Coast Growth Strategy Review – Growth Scenarios Report

For Kāpiti Coast District Council

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REPORT INFORMATION AND QUALITY CONTROL

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1 INTRODUCTION

1.1 Purpose of report

The purpose of this report is to outline scenarios for future growth in the Kāpiti Coast District (the District) over the next 30 years. The growth scenarios are purposely contrasting models and are intended to illustrate and test different visions for growth in the District, focusing on different spatial distributions and densities with varied levels of intensification and greenfield development.

The development of the growth scenarios is being undertaken as part of the wider review of the 2007 '*Kāpiti Coast Choosing Futures: Development Management Strategy*'. Significant growth is projected for the District over the next 30 years (estimated approx. 30,000 increase in population from 2020-2050) and Kāpiti Coast District Council (Council) has recognised the need to plan for and accommodate this growth to maximise the opportunities it presents and reduce the risk of poor outcomes through of ad hoc development. This report has been prepared by 4Sight Consulting (4Sight) with input from Council staff and has been informed by elected member Briefings, including a draft set of growth principles to test the scenarios. It has also been informed by an analysis of economic context for growth in the district undertaken by Market Economics, which is attached as **Appendix A**.

The four growth scenarios outlined in this document are conceptual models that explore a mix of densities, housing typologies and locations for growth, with different degrees of intensification and greenfield development. The purpose of the growth scenarios is to identify broad options for growth, indicative population growth enabled under each scenario, and some of the key trade-offs to consider. Each scenario emphasises particular forms and locations for growth while recognising that future growth in the District will need to comprise of a range of housing typologies and locations to meet market demand (and statutory requirements) and the needs of Kapiti's communities. There are also some 'fixed attributes' which are common across all scenarios that reflect key outcomes for the District. Each of the scenarios have been assessed, with a focus on how these are aligned with Council's draft principles for growth and identifying key trade-offs within each scenario.

The high-level scenarios identified and assessed in this report are:

- Scenario 1 – A high density compact city
- Scenario 2 – Town (local) centres
- Scenario 3 – Growing up and growing out
- Scenario 4 - Maximising greenfield development.

This report also provides an overview of the status quo, which is based on the 2019 Housing and Business Land Development Capacity Assessment[1] (HBA) prepared by Council, to provide a baseline to consider the scenarios against.

This report is focused on growth within the District. However, it is recognised that growth within Kāpiti is not isolated from neighbouring districts and trends within the wider region but rather there are a range of interactions and linkages affecting the district. Enabling and managing growth is also not just about housing capacity, but rather it is about achieving urban form and the creation of places that best stimulate social, economic and environmental cohesion, resilience and sustainability.

1.2 Structure of report

This report is structured as follows:

- **Section 2** – overview of the context for the refresh of District growth strategy
- **Section 3** – approach to developing the scenarios

[1] Kāpiti Coast District Council (2017), 'Housing and Business Development Capacity Assessment': wellington-regional-hba-chpt-5-Kāpiti - coast-district-council.pdf

- **Section 4** – overview of status quo
- **Sections 5-8** – overview of the four growth scenarios
- **Section 9** – summary of results
- **Section 10 –** conclusion.

This report includes the following appendices:

- **Appendix A:** Economic context and analysis by Market Economics
- **Appendix B**: Methodology
- **Appendix C**: Key statutory directions for growth.

2 CONTEXT

2.1 Growth in the district

The Kāpiti Coast District has historically experienced periods of significant growth and this level of growth is forecasted to continue over the next 30 years. Kāpiti continues to be an attractive place to live due to its climate, proximity to Wellington, and access to recreational and lifestyle opportunities. In recent years, there have also been some significant changes influencing growth in the District:

- Significant roading and rail projects have been completed, or are nearing completion, making the district more accessible and connected to the wider region as a place to live and work.
- There has been a significant increase in in the proportion of people working at home, reflecting a change in preferences which is expected to increase in a post-COVID-19 environment.

Recent forecasts of population growth from Council to inform the 2021 Long-Term Plan have estimated an additional 30,000 people living in the district by 2050 and demand for approximately 12,000 new dwellings. This is almost twice the level of population growth estimated in the 2017 HBA and will see the District grow from a population of 55,500 people to 85,500 people. This will require Council to provide significantly more development capacity to meet demand for housing over the short, medium and long-term to meet requirements of the National Policy Statement for Urban Development 2020 (NPS-UD).

As with much of the Wellington Region, the topography and natural features within the District constrain the ability to continue to develop outwards across the District. While there are a number of areas identified for future greenfield development within the Proposed District Plan (PDP), constraints in other areas mean that opportunities to develop and increase density within existing urban areas will be increasingly important to meet future demand. Providing for a greater mix of housing typologies and choice across the District is also necessary to meet the requirement of the NPS-UD and provide more affordable housing options.

2.2 Statutory and strategic directions for growth[2]

There are a number of statutory and strategic directives for urban development and growth at the national, regional and district level that Council must give effect and respond to. The key statutory and strategic directives for growth are summarised in Appendix C and a more detailed overview is provided in the 4Sight report "*Kāpiti Coast District Growth Strategy Review – Statutory and Strategic Context"* (January 2021). The sections below provide a high-level summary of the NPS-UD and draft Wellington Regional Growth Framework (WRGF) as the key statutory and strategic planning instruments relevant to future growth in the District.

2.2.1 National Policy Statement for Urban Development 2020

The NPS-UD was gazetted in July 2020 and came into force on 20 August 2020. It is highly relevant for future growth planning for the District. The NPS-UD aims to recognise the national significance of:

- Having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future; and
- Providing sufficient development capacity to meet the different needs of people and communities.

The NPS-UD includes a mix of directive and more generic objectives, policies and implementation requirements and territorial authorities must give effect to these provisions either within the specified timeframes in the NPS-UD or "as soon as practicable". A key focus of the NPS-UD is requiring local authorities to provide more development capacity (grow up and out) to support competitive land markets. The NPS-UD requires all local authorities to provide **at least**

[2] For more information see 4Sight report "*Kāpiti Coast District Growth Strategy Review – Statutory and Strategic Context"* (January 2021) and **Appendix 3**.

sufficient development capacity[3] to meet demand for housing and business land over the short- (up to three years), medium- (3-10 years), and long-term (10-30 years).

The NPS-UD applies more directive provisions to 'Tier 1' urban environments, which includes Kāpiti Coast District as part of the wider Wellington regional urban environment. Policy 3 of the NPS-UD includes specific requirements for Tier 1 urban environments to enable higher levels of intensification as follows:

- Building heights of at least 6 storeys in metropolitan centre zones; and
- Building heights of at least 6 storeys within at least a walkable catchment of 'existing and planned rapid transit stops' and the edge of metropolitan centre zones.

Plan changes to give effect to Policy 3 of the NPS-UD must be notified within two years (August 2022).

The NPS-UD also requires that planning decisions contribute to a 'well-functioning urban environment' (as defined in Policy 1) that:

- Provide for a range of housing typologies
- Have good accessibility to employment, services, natural and open spaces, active and public transport
- Support reductions in greenhouse gas emissions
- Are resilient to current and future effects of climate change.

Overall, the NPS-UD provides clear direction to local authorities to provide more development capacity to meet demand, including greater intensification in certain areas while achieving well-functioning urban environments.

2.2.2 Wellington Regional Growth Framework

The draft WRGF is a draft 30 plus year spatial plan for the region, developed in partnership by central government, local government and iwi. The draft WRGF takes into account current growth strategies and plans and sets the strategic and spatial direction for growth in the region going forward. It does not fully meet the requirements of a Future Development Strategy under the NPS-UD, but future updates of the framework will meet these requirements.

On the Kāpiti Coast District, the draft WRGF identifies brownfield intensification areas in Paraparaumu central (**Urban Renewal – Major Centre**) and Waikanae and Ōtaki (**Urban Renewal - Nodes**):

- Urban Renewal in major centres are to provide higher density housing (with densities influenced by local context), frequent public transport/rapid transit, multi-modal transport linkages, major employment opportunities and education services, primary shopping areas and a range of leisure and community facilities.
- Urban Renewal Nodes will be walkable neighbourhoods around rapid transit stops/railway stations with medium density housing, and where people are able to provide for a number of their daily needs within a 10–20-minute walk from home.

The draft WRGF also identifies Waikanae North and Ōtaki North as '**Future Urban Areas'**, where transformative greenfield development is to occur to accommodate regional growth. Greenfield development under the WRGF will need to accommodate medium density housing, ensure access to frequent public transport, have neighbourhood centres with shops, local schools, community services, green spaces and health services where possible. Employment areas would be expected within larger greenfield developments. The draft WRGF also identifies two **Further Study Areas** (Paraparaumu North and Te Horo/Peka Peka) where greenfield growth may occur in the future if supported by further growth studies.

For the purposes of this report, the urban renewal and future urban areas identified in the draft WRGF are referred to as 'priority growth areas'. The two future study areas are referred to as potential 'future greenfield areas'. These areas are shown in Figure 1 below.

[3] To be sufficient, development capacity must be: 1) Plan enabled; 2) Infrastructure ready; 3) feasible (commercially viable); and 4) 'reasonably likely to be realised' (housing) or suitable (business land). Tier one local authorities must also include an additional 'competitiveness margin' (20% or 15% for long-term).

Figure 1: Brownfield and greenfield growth areas and future study areas identified in draft WRGF.

2.3 Review of the District Growth Strategy

To respond to the statutory requirements and the projected growth in the District outlined above, Council has commenced a review of its approach to managing growth in the district with the intention to finalise a revised growth strategy by the end of 2021. The new growth strategy will replace the '*Kāpiti Coast Choosing Futures: Development Management Strategy*' which was prepared in 2007. The process to develop the new growth strategy is summarised in Figure 2.

Figure 2: Process to develop the new growth strategy for the District.

The 2007 district growth strategy identifies opportunities for growth and established positive growth principles around sustainable development which were ahead of its time. However, it has an underlying focus on managing rather than enabling growth, protecting the local character and amenity of Kāpiti's local centres, and has limited recognition of Kāpiti 's connection to the wider region. The Development Management Strategy was prepared in a different era where the demand and outlook for growth was much smaller.

A new growth strategy will better align Council's approach to **enabling and managing** growth with new statutory requirements and enable Council to better respond to the significant growth projected for the district. Ultimately, the new growth strategy aims to shape how the district grows and develops over time. It provides an opportunity for Council to proactively plan and direct growth to maximise the opportunities this presents and reduce the risk of poor outcomes from ad-hoc development.

The new growth Strategy will be one of a number of strategies that Council has recently or is in the process of developing. These strategies include the Economic Development Strategy, Open Space Strategy, Cycleway, Walkway and Bridleway Strategy, Sustainable Transport Strategy, Takutai Kāpiti (Coastal) Strategy, Climate Change Framework, and Stormwater framework. The growth strategy will also sit within a suite of planning documents including the 2021-2041 Long-term plan, the 30 Year Infrastructure and Financing Strategy and associated asset management plans and the District Plan.

The new growth strategy will help:

- Implement and respond to the NPS-UD and draft WRGF.
- Provide an evidence base and framework for planning and investment, to plan for what infrastructure is needed, at the right time and in the right place.
- Take a planned approach to adapting and mitigating the impacts of climate change and natural hazards.
- Position the District in regional and central government conversations about strategic growth.

2.4 Draft principles for growth

As the first step to develop a new District Growth Strategy, Council has developed a set of draft principles to guide and reflect what good future growth should look like for Kāpiti. These principles have been developed through workshops and briefings held with elected members and iwi partners. The six draft principles for growth are outlined in Figure 3 below.

1) Supporting mana whenua aspirations
This means supporting mana whenua to provide for their own needs, by enabling choices in the use of their land for business, housing, educational and cultural purposes.
2) Respect for the natural environment.
This means that we protect the environmental values that remain, and seek to enhance or restore natural values where we can. We are respectful of the impact of urban form on landscape and natural resources – meaning we can intensify / build higher where there is little impact on landscape values or increased degradation of water quality.
3) Fostering a low-carbon economy
This means we seek to develop a future urban form that both puts people and communities first, and encourages greater density at centres, hubs, and where there is good transport links, thus improving accessibility and connectivity.
4) Developing "City thinking"
This means we take full advantage of the benefits that envisaging our District as a city might bring, without losing sight of what makes Kāpiti special.
5) Creating and enhancing a sense of place in our localities
This means fostering an approach that will create and enhance a sense of place and character across localities by supporting change and enabling development that is coherent, creates sense of identity and community and enhances the demarcation between those communities and our main centres.
6) Creating choice
This means enabling a wide range of housing typologies that will suit the needs of our future population, diverse living styles, including social and affordable options and papakāinga, tertiary educational choice within the district that supports career choice and delivering of the skills particularly necessary and in demand by Kāpiti District's economy for people of all ages and mana whenua aspirations in business, education and social endeavour.

Figure 3: Council's draft principles for growth.

These growth principles are consistent with the key themes of the '*What Matters Most*?'[4]; consultation that Council undertook in late 2020 to inform the preparation of the draft Long-term Plan 2021 (LTP). Some of the key themes from this consultation relevant to growth in the district are outlined in Table 1 below.

[4] http://haveyoursay.Kāpiti coast.govt.nz/what-matters-most

Table 1: Key themes from community consultation undertaken in 2020 'What Matters Most' to inform the 2021 LTP.

Protecting the environment, wildlife and responding to climate change	Connected communities	Planning for quality growth
Maintaining, managing and improving infrastructure as the population grows	Affordable housing	A Council that works with the community for the community
Protecting and maintaining existing (and providing new) parks, playgrounds and open spaces	Keeping the airport	The social function of libraries

2.5 Economic considerations for growth

A key focus of the scenarios is testing the relative proportion of intensification and greenfield development. As detailed in the memo from Market Economics in **Appendix A**, intensification and greenfield development have different economic effects and different public and private benefits and costs that need to be carefully considered and managed to achieve the best urban outcomes.

At a broad level, the key benefits associated with intensification include less loss of land (e.g. highly productive land) and reduced infrastructure costs due to a smaller urban area to service (although upgrading infrastructure can be more costly than new in some situations). Intensification increases the viability and vitality of commercial centres, through increased amenity and improved services. Well-designed intensive development around city centres also results in better urban sustainability. It encourages walkability, reducing reliance of private vehicle travel and promotes engagement with the community. This leads to greater community identity with the local area and a greater share of household expenditure being directed to local businesses. The key challenge for intensification in the District relates to market feasibility and ensuring there are the right incentives in place to achieve good urban outcomes.

Conversely, there are less barriers to greenfield development, which represents the traditional way that the majority of New Zealand cities have grown. Developers find it easier to develop greenfield land as they are able to secure large blocks of land that have relatively low private costs to develop and can be supplied to the market in a measured manner over time, securing a consistent work and income stream. However, there are typically greater public costs associated with greenfield development, including increased infrastructure and congestion costs and less efficient urban form patterns. Greenfield development often sees community character diminish or become diluted across a larger area, and communities can lose their sense of identity. Furthermore, a dilution of urban amenity across a wider, lower density of urban extent results in greater costs to the wider community. Greenfield development also often occurs at the expense of rural production at a time when there is a growing importance to having our food grown locally.

The public and private benefits of intensification and greenfield development are detailed in the **Appendix A -** memo from Market Economics, which states: "*Broadly, the public benefit from Intensification, while the private developers benefit from Greenfields development*".

3 DEVELOPING THE SCENARIOS

This section provides an overview of how the scenarios were developed and modelled, with more details on the methodology provided in **Appendix B**.

3.1 The purpose and focus of scenarios

The purpose and focus of the scenarios are to test different visions for growth in the District on a continuum from high density, compact urban form through to an expansive greenfield focused scenario. Within this spectrum a number of scenarios were identified, rationalised and refined in conjunction with Council staff. The four high level scenarios are:

- Scenario 1 - High-density compact city
- Scenario 2 - Town (local) centres
- Scenario 3 - Growing up and growing out
- Scenario 4 - Maximising Greenfield development.

3.2 Modelling the scenarios

GIS modelling was then used to map and model the spatial extent of growth in each scenario, the scale of density for different growth areas, and development expectations for all scenarios. This included identifying 'no-go' constraints and 'go-carefully' constraints, where no growth would occur or where development would be limited. Maps of the 'no-go' and 'go-carefully' constraints are provided in **Appendix B**. Each scenario and the status quo were then modelled using the methodology as set out in **Appendix B**.

Property and parcel data were then applied against the different densities and expected typologies/use of areas to identify potential development capacity for each scenario. Table 2 below outlines the different densities and expected typologies/use that are described in the scenarios and used in the population capacity modelling[5].

Table 2: Densities and housing typologies used in the scenarios.

Density		Dwellings/ Ha	Expected typology[6]
High Density		100	High-rise mixed-use apartment/commercial buildings **Buildings up to 12 storeys**
Medium-High		80	Mid to high-rise mixed-use apartment/commercial buildings **Buildings between 4 to 6 storeys**
Medium Density		60	Low to mid-rise mixed-use apartment/commercial buildings **Buildings up to 6 storeys**
Medium- Low Density		40	Medium density townhouses/terraced houses. Business uses on the ground floor only. **Buildings up to 3-4 storeys.**
Low Density		20	Detached houses/semi-detached townhouses. No business uses. **Buildings up to 2 storeys.**

[5] The densities and expected typologies are informed by those used by both the WRGF and by other districts in the region, such as Beca (2019), 'Wellington City – Planning for Future Growth Preliminary Baseline Scenario Development', refer: WCC Preliminary Baseline Scenario Development (wellington.govt.nz)

[6] Business uses are only provided for within new towns and land currently zoned for business use, with the exception of industrial land (see methodology in Appendix B).

3.3 Projected population capacity for scenarios

Each scenario has been modelled to provide a projected population capacity. This includes some basic assumptions about the actual likely take up of development within each scenario and the resulting additional population it could accommodate (see methodology as set out in **Appendix B**). The capacity modelled for the Status Quo represents the '**realisable capacity' out to 2047** and is derived from the 2019 HBA numbers. The capacity modelled for the scenarios represent estimates of the '**maximum theoretical capacity'** out to 2050. This modelling provides high level estimates of growth capacity that could be accommodated within the district under each scenario, but also reflects assumptions for the likely uptake of capacity for each scenario and resulting additional population it could accommodate. These numbers therefore do not reflect housing development capacity as under the NPS-UD that must be 'feasible' or 'reasonably likely to be realised' nor are they intended to be. Council is currently undertaking an update of the housing component of the HBA in line with NPS-UD requirements, which will provide an updated assessment of the sufficiency of the current PDP (Status Quo).

3.4 Qualitative assessment of scenarios

Traffic Light Assessment Scale

Alignment with Draft Principles for Growth is:

- Good
- Partial
- Poor

A qualitative assessment of the status quo and each scenario against Councils draft principles for growth (with the exception of supporting mana whenua aspirations, see section 3.6 below) was then carried out, using the following 'traffic-light' rating scale. This assessment was informed by a Councillor briefing session in early April and further input from Council staff. It is intended to be an indicative assessment to inform the development of a proposed growth management approach by identifying how the different scenarios, and aspects of the scenarios, align with Councils key principles for growth.

Consideration was then given to some of the key trade-offs under each scenario[7], which are outlined for each scenario in section 5-8 below. The consideration of the 'housing market feasibility and affordability' trade-off has been informed by the economic analysis from Market Economics in **Appendix B**.

3.5 Fixed attributes for all scenarios

The scenarios have been developed based on the assumption that there are number of 'fixed attributes' that remain unchanged across each of the scenarios. These fixed attributes were provided by Council staff as key outcomes for all scenarios. These reflect matters of importance to the local community and key directives for growth set out in Council strategic planning documents and statutory requirements.

The fixed attributes are outlined in Figure 7 below. The key challenge moving forward is how to best achieve all of these attributes or aspirations, given that there are naturally some trade-offs and tensions between them (e.g. providing for sufficient development capacity while protecting natural ecosystem values and highly productive land).

Fixed attributes for scenarios

- ***Respect Mana Whenua Values:*** *upholding key kaupapa of local iwi*
- ***Provision for Iwi Aspirations****: including supporting iwi economic development aspirations and provision for papakāinga.*
- ***Avoiding Significant Hazards and responding to Climate Change:*** *consider the effects of sea level rise, earthquake fault avoidance areas and the location of river and stream corridors.*
- ***Transitioning to a Zero-Carbon Future****; support the district's carbon reduction aspirations.*
- ***Protecting Natural Ecosystem Values:*** *protect and improve ecological connections across the district, including protecting significant natural areas, habitats, ecosystems, wetlands, freshwater quality, freshwater resources with significant value and indigenous biodiversity (as per the proposed NPS-IB and NPS-FM).*

[7] While not a focus of this assessment, this includes identifying key trade-offs within each scenario's delivery of the fixed attributes.

- ***Protecting Sites of Cultural and Historical Significance:*** *protecting sites of wāhi tapu, cultural and historical significance, and mahinga kai.*
- ***Maintaining Significant Landscapes and the Open Space Network:*** *maintaining areas of outstanding natural features and landscapes, existing environmental protections, and protecting and enhancing open space networks and public amenity.*
- ***Protecting Highly Productive Land****: retain the productive potential of highly productive land.*
- ***Delivering Efficient Active and Public Travel Networks:*** *supporting active travel and the provision of efficient regular public transport.*
- ***Preservation of Natural Coastal Areas:*** *managing development along currently non-urbanised coastal margins, preserving natural coastal character.*
- ***Sufficient Development Capacity:*** *meet the demands of population growth over the next 30 years with the flexibility for development capacity to be brought forward if growth is faster than expected.*
- ***Build Infrastructure Capacity:*** *reflect infrastructure requirements and the necessary flexibility in infrastructure capacity to meet growth.*
- ***Retention of Business Land Capacity:*** *all business land will be retained for business use. Mixed uses will be supported on commercial land where higher densities provide for both additional floorspace and provides for both residential and additional commercial use.*

Figure 4: Fixed attributes for all scenarios.

3.6 Mana Whenua aspirations

One of the draft principles for growth, and two of the fixed scenario attributes, relate to supporting the aspirations of mana whenua and upholding and respecting mana whenua values. Council's iwi partners are being engaged in the development of the draft principles and strategy. The list below captures some early discussions with iwi representatives, as well as some kaupapa from iwi documents and existing district strategies[8]. Key aspirations from this early engagement with mana whenua and review include:

- Education and representation of **whakapapa** to whenua and water, keeping the culture alive and safe.
- Unlocking **Māori owned land** and providing for mana whenua **business and papakāinga aspirations**, including providing locally for the growth of iwi.
- Careful location and implementation of development in relation to **freshwater management** and **mahinga kai**, (particularly with respect to 3waters and effects on water catchments and tributaries).
- Ensuring **wāhi tapu** and other taonga are protected - a wāhi tapu register shared between iwi and council, that is private and respects the intellectual property of iwi might be useful.
- Maintaining **customary rights and access**.
- Enabling iwi to exercise **kaitiakitanga,** ensuring the sustainable utilisation of land, caring for the healthy **wairua** and **mauri** of the environment, the people and the community.
- Growing the capacity and skills of **rangatahi and whānau** and to support their economic wellbeing.
- Decision-making informed by mana whenua.
- The **kaupapa** of Te Whakaminenga o Kāpiti and Te Haerenga Whakamua; including Pūkengatanga, Ūkaipōtanga, Manaakitanga, Kaitiakitanga, rangatiratanga, whanaungatanga, wairuatanga and te reo, as well as the founding Treaty of Waitangi principles of partnership and active protection.

<u>Note:</u> the above is not a comprehensive or final list of mana whenua aspirations for growth in the District. This report does not assess each scenario against mana whenua aspirations and values, as we understand that this assessment will be undertaken by mana whenua through their ongoing discussions and partnership with Council as the new District growth strategy is developed.

[8] Te Haerenga Whakamua (2012), *'A Review of the District Plan Provisions for Māori: A Vision for Māori*, prepared by Hāpai Whenua Consultants, "*Whakarongotai o te moana Whakarongotai o te wa*" Kaitiakitanga Plan for Te Ātiawa Ki Whakarongotai.

4 THE STATUS QUO

4.1 Overview

The status quo is the situation provided for under current planning regulation for urban development and growth under the Proposed District Plan (PDP) and includes Future Urban Development Zones (FUDZs) identified in the PDP. The status quo does not include the intensification requirements of the NPS-UD, future greenfield areas and future study areas identified in the draft WRGF, or known or potential private plan change applications for greenfield areas. It is essentially the projected growth based on the 2019 HBA for the District.

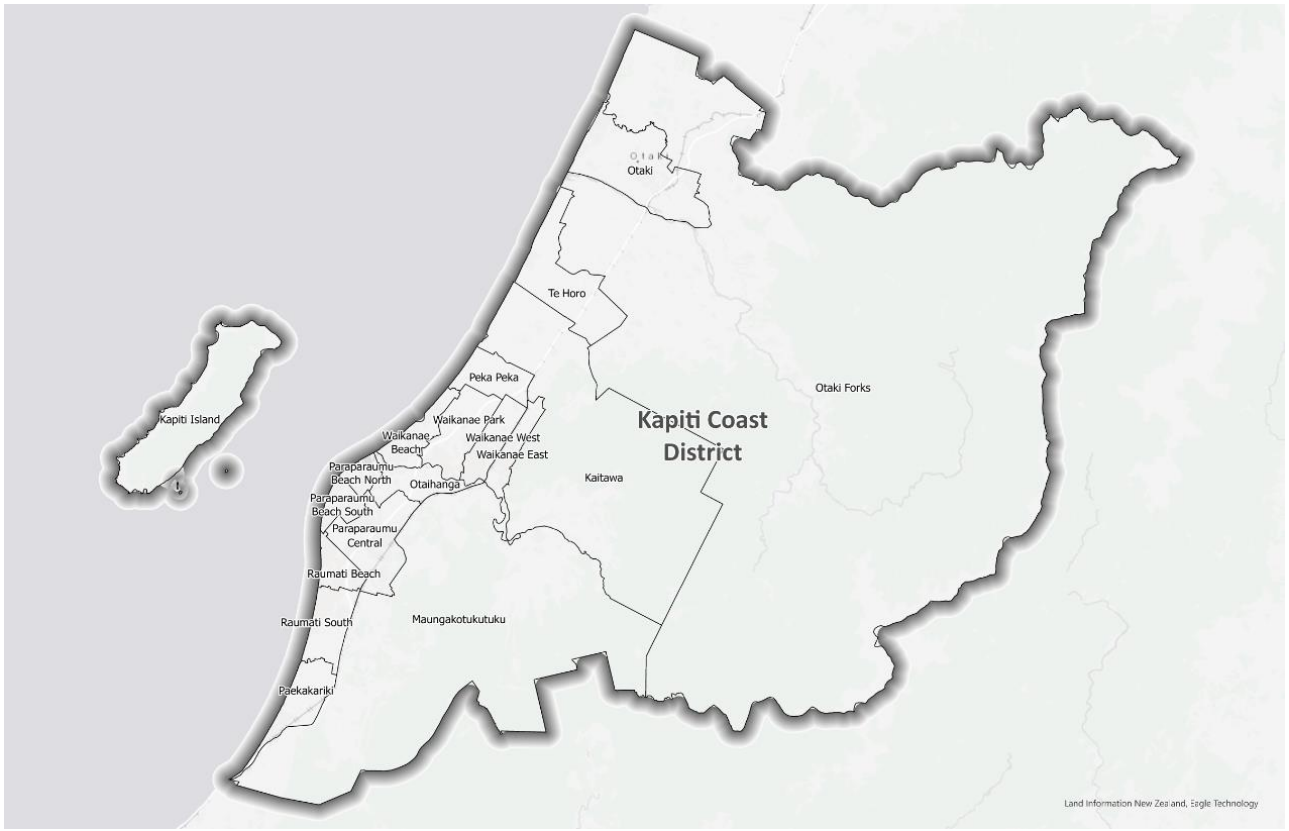

Figure 5: Map of statistical areas in the District.

4.2 Projected growth

Projected growth under the status quo has been derived from the residential capacity model completed for the 2019 HBA. The residential capacity model provides a parcel-by-parcel assessment of the redevelopment opportunities within Kāpiti that are enabled by the PDP. The model provides the total realisable housing capacity from 2017-2047, with realisable development being determined by an assessment against a number of market factors to determine what is economically feasible and the rate of development uptake. The model determined that standalone housing typologies as the only typology likely to be realised across Kāpiti at the time as shown in Figure 8 below.

Housing type	2017-2020		2020-2027		2027-2047	
	Demand	Realisable Capacity	Demand	Realisable Capacity	Demand	Realisable Capacity
Stand-alone housing	532	576	1,208	1,344	3,780	3,015
Terraced housing, flats and apartments	79	0	177	0	537	0

Figure 6: Demand and realisable capacity over short, medium and long-term in 2019 HBA (Table 16).

Realisable capacity from the model was aggregated based on Statistics New Zealand 2013 area unit boundaries shown in Figure 6. These do not align with the statistical area 2 (SA2) used for current population projections. Consequently, where the status quo has been incorporated into scenarios, the modelled outputs have been aggregated based on the SA2 and spatial extents for each scenario. Additional population has been calculated based on the population per dwelling assumption in this modelling for standalone, low density housing typologies of residents per dwelling.

Table 3: Realisable population growth by area unit under the Status Quo by 2047.

Statistical Area	Additional Population	% of growth
Kaitawa	80	1%
Maungakotukutuku	45	0%
Otaihanga	85	1%
Ōtaki	4,573	37%
Ōtaki Forks	65	1%
Paekākāriki	48	0%
Paraparaumu Beach North	103	1%
Paraparaumu Beach South	288	2%
Paraparaumu Central	130	1%
Peka Peka	198	2%
Raumati Beach	545	4%
Raumati South	1,048	8%
Te Horo	0	0%
Waikanae Beach	355	3%
Waikanae East	330	3%
Waikanae Park	3,598	29%
Waikanae West	850	7%
Total	**12,338**	100%

Additional population accommodated by the status quo:

12,338

Proportion of additional growth within the existing urban footprint:

44.4%

Proportion of additional growth within greenfield areas (including FUDZ):

55.6%

Table 4: Proportion of population growth by building typology under the status quo by 2047.

Density type	**Building typology**	**Proportion of realisable capacity**
Stand-alone housing		100%
Terraced housing, Flats, apartments		0%

4.3 Alignment with growth principles and key trade-offs

Table 6 provides an assessment of the status quo against Council's draft growth principles using the qualitative assessment and rating scale explained in section 3.

Table 5: Assessment of the Status Quo against Council's draft growth principles

Draft Principles[9]	Alignment[10]	Status Quo
Respect for the natural environment	Good	The status quo protects natural and landscape values outside of the existing urban area and FUDZs, and Council's open space strategy seeks to improve access to and quality of the natural environment.
Fostering a low-carbon economy	Poor	The District's car dependent low-density urban form[11] and increasing greenhouse gas emissions from transport[12] mean that decarbonising the status quo is reliant on changing personal private vehicle choices and would require a rapid shift of the district's private vehicle fleet to electric vehicles.
Developing "City thinking"	Poor	The status quo is focused on maintaining an urban form that protects the low-density character of Kāpiti's local centres.
Creating and enhancing a sense of place in our localities	Partial	The status quo has a strong sense of place and community; however, the current framework is not supportive of change that enhances the demarcation between communities and main centres.
Creating choice	Poor	Does not provide sufficient capacity for the anticipated population growth (with a shortfall of 17,612) or provide a wide range of housing typologies to suit the diverse needs of the district's future population and counter housing affordability issues.

Key trade-offs/considerations

- **Character**: unchanged, with the exception of the FUDZs where residential development can occur once structure plans are in place.
- **Housing and affordability**: Familiar building densities and typologies. Provides for limited greenfield growth. Housing typology choice will not improve. Unlikely to deliver affordable housing options to market.
- **Community services and employment**: no change to planned service provision or employment initiatives.
- **Transport:** Good north/south rail connections. Limited east-west bus connection and cycling infrastructure. Open space strategy may improve active transport linkages, but urban areas will largely continue to prioritise car use.
- **Infrastructure[13]:** Infrastructure upgrades will be required to support population growth. Extending commuter rail services from Waikanae to Levin, investigating the potential for new train station within the district and investigating public transport options to new 'Future Urban Area developments' are anticipated as identified the draft WRGF.
- **Resilience**: Parts of the existing urban area are vulnerable to sea level rise and other natural hazards which may limit intensification of these areas.

[9] Council is engaging directly with mana whenua to assess how the status quo delivers on supporting mana whenua aspirations.
[10] This assessment is limited to consideration of the draft growth principles and relies on the current settings of the District Plan and existing council strategies. The Status Quo is not fully aligned with the NPSUD or draft WRGF.
[11] KCDC (2020) Sustainable Transport Strategy.
[12] Gross district emissions rose 11%, and net emissions rose 43%, between 2001 and 2019. Transport emissions account for 57% of the total gross emissions within the district, and road transport emissions have increased 48% over the last two decades. Source: AECOM (2020), '*Kāpiti Coast District Greenhouse Gas Inventory*'.
[13] Infrastructure costs are not assessed, and consideration of infrastructure implications are limited. For all scenarios, accommodating the predicted growth will require significant infrastructure investment and detailed feasibility assessment for infrastructure provision.

5 SCENARIO 1 - A HIGH DENSITY COMPACT CITY

5.1 Scenario concept

Scenario 1 focuses on accommodating growth within the existing urban footprint, with the highest concentrations of growth within central Paraparaumu and Ōtaki. This scenario also assumes increased densities in central Waikanae. Outside of these district centres, it is expected that growth will be accommodated by a higher density of infill urban subdivision (terraced housing) than would occur under the status quo.

Under Scenario 1, Paraparaumu would become a high-quality urban metropolitan centre, providing vibrant commercial activities, pedestrian and cyclist focused urban spaces and a range of smaller sized residential dwellings (predominantly apartments). Ōtaki would become a high-quality urban town centre that provides vibrant service based commercial activities, with pedestrian and cyclist focused urban spaces and a range of smaller sized residential dwellings.

Scenario 1 represents the most dramatic typology and density shift from the status quo. It does not include all of the intensification requirements of the NPS-UD (with no intensification around Paekākāriki train station) and it excludes future greenfield areas[14] identified in the draft WRGF.

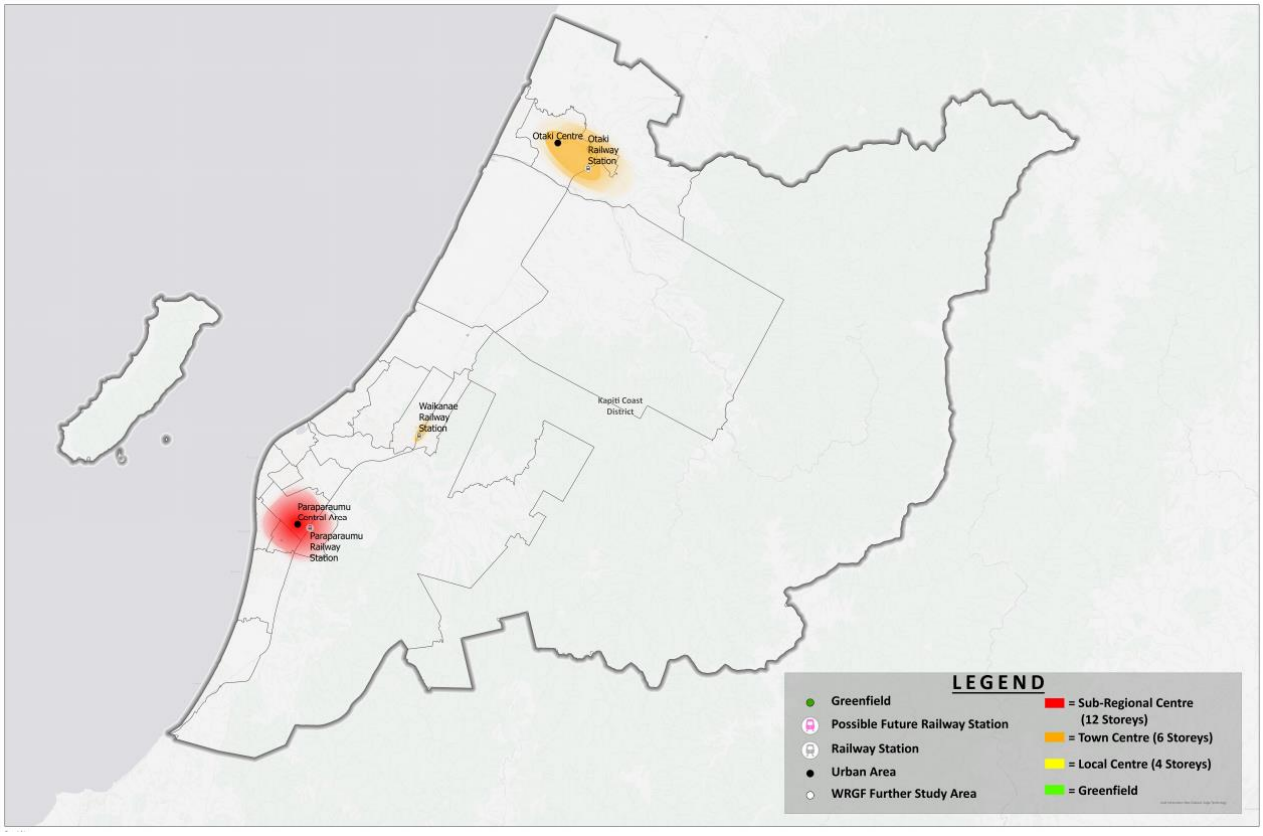

Figure 7: Growth focus areas under Scenario 1.

[14] This refers to the 'Future Study Areas' identified in the draft WRGF – Paraparaumu North and Te Horo/Peka Peka.

The images below provide a feel for the development typologies anticipated within each of the growth locations under Scenario 1.

Paraparaumu Central	Apartment up to 12 Floors - mixed use within business zones  
Otaki Central to Otaki Railway Station and Waikanae Central	Apartments between 4 to 6 Floors - mixed use within business zones  
Urban infill outside the main district centres above	Terraced housing up to 3 floors - ground floor commercial/retail within business zones  

5.2 Scenario assumptions

The assessment of Scenario 1 is based on a number of assumptions, including a number of key requirements that are essential to the success of the scenario in the District. These include:

- High quality re-development of urban centres that prioritises active travel modes, improves active and public transport linkages within the district to its main centres.
- Improved network capacity, efficiency and frequency of service on the Kāpiti rail line.
- Electrification and double tracking of the railway line to Ōtaki and increased service provision.

- High density development is feasible and attractive to both new businesses and residents. This scenario is not fully aligned with the NPS-UD or draft WRGF in that it does not provide for intensification around Paekākāriki train station) and it excludes future greenfield areas identified in the draft WRGF.
- Significant investment in the social and physical infrastructure that will underpin and support denser living, and creating vibrant, pleasant and safe urban environments. Urban design guides, incorporated into the district plan, will play a role in ensuring developments contribute positively to the character of the revitalised main centres.
- Infill development outside of Paraparaumu central, Waikanae and Ōtaki will comprise medium-low density development, however not all existing low-density residential properties will be subdivided or redeveloped.

5.3 Simple model results – maximum theoretical population growth

The modelled numbers below represent the **maximum theoretical population growth** under Scenario 1.

Overall population growth[15]	Additional[16] population growth	Additional growth within urban centres	Additional urban infill growth outside of urban centres	Additional greenfield growth
28,733	**20,182**	**94%**	**6%**	**0%**

Table 6: Additional population growth by density and anticipated building typology – scenario 1

Density type	Building typology	Additional growth in Scenario 1
High		16.7 %
Medium-High		28.7%
Medium		29.9 %
Medium-Low		24.6 %
Low		0 %

Table 7: Population by area – Scenario 1.

Statistical Area	Current population	Status Quo Growth	Additional growth - Scenario 1	% of additional growth - Scenario 1	Total 2050 Population
Paraparaumu Sub-Regional Centre	11,892	675	8,358	41%	20,925
Otaki	5,336	4,573	9,247	46%	19,156
Waikanae – Higher density areas	6,996	1,180	1,271	6%	9,447
Infill outside of scenario	24,576	2,123	1,305	6%	28,004
Total	**48,800**	**8,551**	**20,182**	**100%**	**77,532**

[15] Population growth including enabled status quo growth outside of the scenario study areas.
[16] Population growth additional to the status quo.

5.4 Alignment with growth principles and key trade-offs

Table 9 provides an assessment of the Scenario 1 against Council's draft principles using the qualitative assessment and rating scale explained in section 3.

Table 8: Assessment of Scenario 1 against Council's draft growth principles.

Draft growth principles[17]	Alignment	High Density Compact City Scenario
Respect for the natural environment	Good	By focusing additional growth within the existing urban footprint this scenario retains rural landscape and natural values. It would also require the potential impacts of intensification on the natural environment within the urban footprint to be mitigated.
Fostering a low-carbon economy	Good	Growth is focused within main centres with good public transport links, improving accessibility and connectivity. This scenario represents an opportunity to reduce reliance on cars, by focusing additional population within the main centres close to services and facilities although there would still be some reliance on cars to travel from smaller centres to the main centres.
Developing "City thinking"	Good	This scenario focuses growth on a high-density revitalised Paraparaumu city centre and medium-high density Ōtaki centre that are attractive to new business and health, social and educational services, bringing the scale benefits of a city to the District while retaining the character of existing local centres and connections to open spaces.
Creating and enhancing a sense of place in our localities	Good	There will be a focus on revitalised main centres that support walkable lifestyles, provide communal spaces and services to support community-building and create a sense of place. There will be a clear demarcation between main urban centres and the terraced housing supported in lower density urban areas.
Creating choice	Good	Overall, this scenario will significantly increase the range of available housing typologies within the district and provide more affordable housing options; however, this scenario does not provide for new low-density developments or for development outside of the existing urban footprint. New commercial office spaces and high-quality urban environments could help to attract and support new employment, education and training and business opportunities closer to where people live.

Key trade-offs/considerations

- **Character**: A significant change to the character of main urban centres; however, opportunities for regeneration with new, vibrant, pedestrian-focused buildings and public spaces. The character of rural areas and large parts of the current urban environment are unchanged from the status quo.
- **Housing market feasibility and affordability**: It will achieve increased housing typology choice and bring more affordable options to market. However, it provides unfamiliar building densities and typologies and does not provide for greenfield growth. Achieving the densities enabled under the scenarios would require a major shift in demand typology profile and the development of higher risk dwelling typologies than for the current market. The demand for this typology may not occur meaning realisable capacity is significantly lower than the maximum

[17] Council is engaging directly with mana whenua to establish growth options within the district support mana whenua aspirations.

theoretical population growth projected. It is unlikely to meet NPS-UD requirements in providing sufficient, feasible, realisable development capacity, within the short-term in particular, and the lack of greenfield development opportunity may have a negative effect on land prices in the short term.

- **Community services and employment**: Key focus on urban centres for social infrastructure, community services and employment opportunities with little change to services provided by local centres.
- **Transport:** Prioritisation of walking and cycling over car use with improved public transport bus and rail infrastructure. Inner-city car parking options reduced but replaced with public spaces and planting. Some inner-city areas will be less accessible for cars, and alternative routes will be required.
- **Infrastructure[18]:** Infrastructure upgrades required in main centres; urban infill development will need to be designed around hydraulic neutrality overall. While this scenario can rely on existing water supply and wastewater networks initially, it will need capacity upgrades, including in capacity of reticulation and treatment facilities. Double tracking and increased frequency of train services required to Ōtaki.
- **Resilience**: Densification is focused away from the coast and areas vulnerable to sea level rise, although parts of the main centres are vulnerable to other natural hazards[19]. This scenario will likely lead to better protection of productive soils and rural production activities.

[18] Infrastructure costs are not assessed and consideration of infrastructure implications are limited. For all scenarios, accommodating the predicted growth will require significant infrastructure investment and detailed feasibility assessment for infrastructure provision.

[19] Including earthquake hazards, rising groundwater levels and other flood hazards. Note: Council flood hazard mapping for the existing urban environment is currently being updated.

6 SCENARIO 2 – TOWN (LOCAL) CENTRES

6.1 Scenario concept

Scenario 2 focuses on accommodating most growth around local centres. Medium-high density development will be provided for in Paraparaumu, Ōtaki, Waikanae and Paekākāriki, and medium density development around Raumati Beach and Paraparaumu Beach centres. The future development zones identified in the PDP will be prioritised for medium-low density greenfield development. Infill development in other urban areas is not assumed to be greater than under the Status Quo (low density).

Scenario 2 assumes double tracking of the railway line and increased frequency of rail provision to Ōtaki.

Under this scenario, the future development zones identified in the PDP will be prioritised for medium-low density greenfield development. This scenario includes all of the intensification requirements of the NPS-UD and the 'priority growth areas'[20] identified by the draft WRGF but excludes 'future greenfield areas'[21] identified in the draft WRGF.

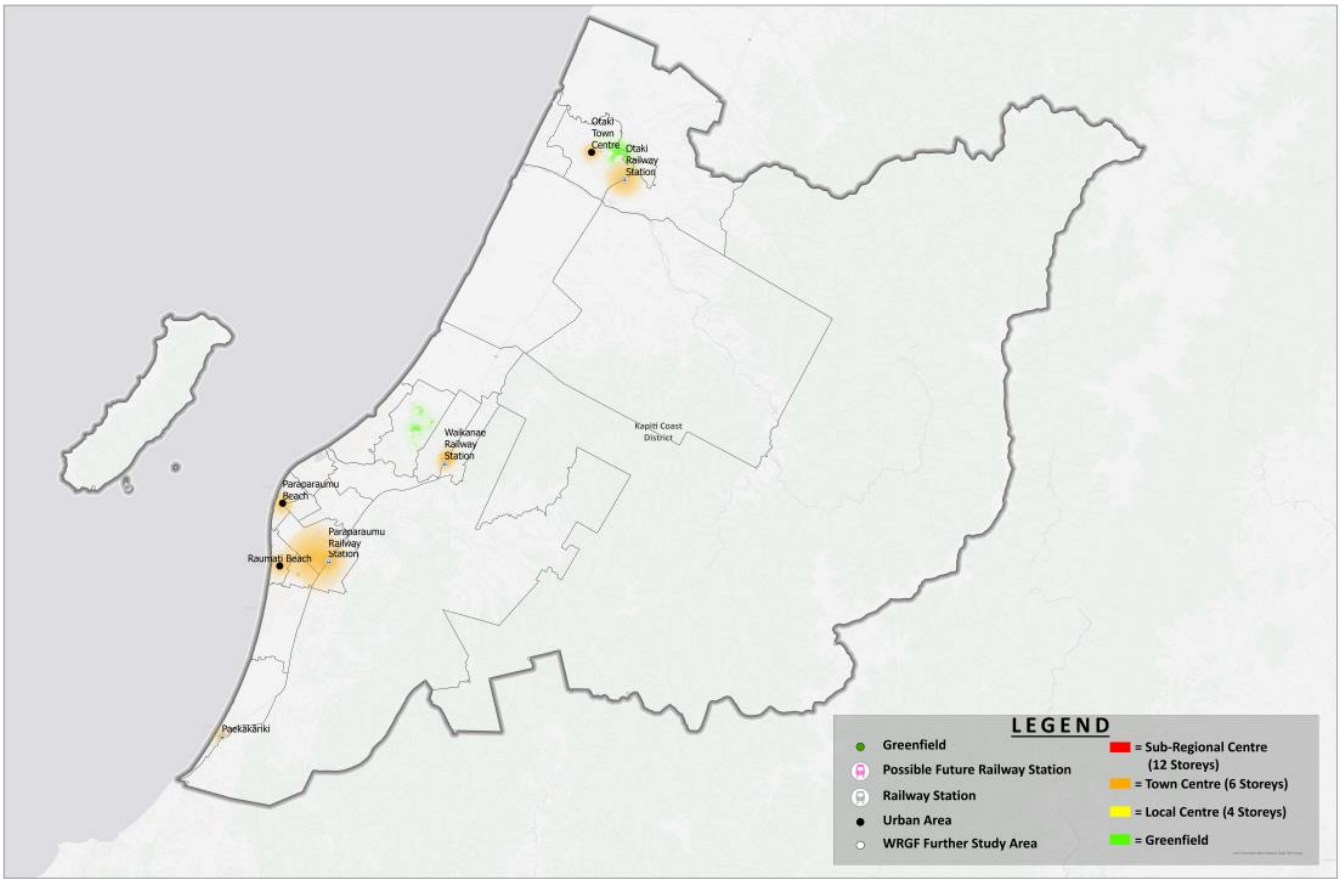

Figure 8: Growth areas under Scenario 2.

[20] This refers to both the 'Urban Renewal' brownfield intensification areas identified in the draft WRGF (Paraparaumu, Waikanae, Otaki) and the 'Future Urban Areas' for greenfield development identified in the draft WRGF (Waikanae North and Otaki North).
[21] This refers to the 'Future Study Areas' identified in the draft WRGF – Paraparaumu North and Te Horo/Peka Peka.

The images below provide a feel for the development typologies anticipated in each of the growth focus locations under Scenario 2.

Paraparaumu sub-regional centre, Ōtaki town centre, Ōtaki railway station, Waikanae and Paekākāriki.	Apartments between 4 to 6 Floors - mixed use within business zones  
Raumati Beach, Paraparaumu Beach	Terraced housing and apartments up to 6 floors - mixed use within business zones  
Future Urban Development Zone Greenfields	Terraced housing up to 3 floors  
Urban infill outside the areas above	Stand-alone dwellings up to 2 floors - ground floor commercial/retail in business zones  

6.2 Scenario assumptions

The assessment of Scenario 2 is based on a number of assumptions, including a number of key requirements that are essential to the success of the scenario in the District. These include:

- Revitalisation of local centres will focus on prioritising active and public transport modes with a particular focus on walkability and social cohesion based around and linking community centres, requiring investment in active and public transport infrastructure.
- Improved network capacity, efficiency and frequency of service on the Kāpiti rail line and the bus network.
- Double tracking and electrification of the railway line to Ōtaki and increased service provision.
- Medium-high and medium density development of local centres is feasible and attractive to both new businesses and residents. Significant investment in the social and physical infrastructure that will underpin and support denser living, and creating vibrant, pleasant and safe urban environments. Urban design guides, incorporated into the district plan, will play a role in ensuring developments contribute positively to the character of the revitalised local centres.

6.3 Simple model results – maximum theoretical population growth

The numbers below, generated by the modelling, represent the **maximum theoretical growth** under Scenario 2.

Overall population growth[22]	Additional[23] population growth	Additional growth within urban (town) centres	Additional urban infill growth outside of urban centres	Additional greenfield growth
34,332	**21,787**	**84.4%**	**0%**	**15.6%**

Table 9: Additional population growth by density and anticipated building typology – scenario 2.

Density type	Building typology	Additional growth in Scenario 2
High		0 %
Medium-High		17.7%
Medium		16.4%
Medium- Low		65.1 %
Low		0.1 %

Table 10: Population by area – Scenario 2.

Statistical Area	Current population	Status Quo Growth	Additional growth - Scenario 2	% of additional growth - Scenario 2	Total 2050 Population
Paraparaumu Sub-Regional Centre	11,758	610	4,875	22%	17,243
Otaki	5,336	4,573	11,602	53%	8,759

[22] Population growth including enabled Status Quo growth outside of the scenario study areas.

[23] Population growth additional to the Status Quo.

Waikanae – Higher density areas	6,996	1,180	583	3%	
Paekākāriki	1,802	48	362	2%	2,212
Town Centres	6,686	560	957	4%	8,203
Greenfield	2,957	3,663	3,407	16%	10,027
Infill	18,433	1,913	0	0%	20,346
Total	**53,967**	**12,545**	**21,787**	**100%**	**88,299**

6.4 Alignment with growth principles and key trade-offs

Table 13 provides an assessment of the Scenario 2 against Council's draft principles using the qualitative assessment and rating scale explained in section 3.

Table 11: Assessment of Scenario 2 against Council's draft growth principles.

Draft growth principles[24]	**Alignment**	**Town (Local) Centres Scenario**
Respect for the natural environment	Good	By focusing additional growth within the existing urban footprint and areas already identified within the district plan as FUDZ, this scenario provides ongoing protection of the rural landscape and natural values.
Fostering a low-carbon economy	Good	Growth is focused within local centres with good public and active transport linkages. This scenario is focused on distributing services throughout local centres within the district, so that communities do not have to travel as far to meet their daily needs.
Developing "City thinking"	Good	This scenario will provide for revitalisation of local centres and increased population densities while retaining connections to open spaces. This scenario may attract the business, health, social and educational services and investment associated with a city, in particular within the larger Paraparaumu centre, and possibly extending out to nearby Paraparaumu Beach and Raumati Beach centres.
Creating and enhancing a sense of place in our localities	Good	This scenario is focused on creating and enhancing local communities, with opportunities to create a revitalised sense of place in local centres. There will be a clear demarcation between the identity of local centres and the rest of the urban environment.
Creating choice	Good	This scenario will increase the range of available housing typologies within the district, provide options for smaller and more affordable new units as well as some greenfield development. This scenario envisions vibrant local centres, which may attract new business, training and employment choices and opportunities close to where people live. This scenario provides for the widest distribution of services and facilities throughout the district, better supporting people within the community who work from home.

[24] Council is engaging directly with mana whenua to establish growth options within the district support mana whenua aspirations.

Key trade-offs/considerations

- **Character:** A significant change to the character of local centres; however, it will result in opportunities for improvements to amenity, accessibility, services and housing typology choice, providing ongoing support for developing local identity and "community spirit". The character of rural areas is unchanged.
- **Housing market feasibility and affordability**: It will achieve increased housing typology choice and bring more affordable options to local centres. However, there are also some unfamiliar building densities and typologies with limited options for greenfield growth. The scenario still requires a significant shift from the current housing market demand in the District to low-rise apartments and medium density terrace housing, which may not be realisable in the short-medium term. This option may also provide insufficient greenfield capacity to meet market requirements while demand for higher density typologies grows.
- **Community services and employment**: Provision of services distributed between local centres, improving access to social facilities for local communities. Focus on employment within local centres and supporting flexible ways of working, with Paraparaumu providing district services and amenity.
- **Transport:** Prioritisation of walking and cycling over car use with some improved public transport bus and rail infrastructure. Good connectivity and access across the district and to Paraparaumu centre also required. Car parking options reduced in local centres. Road space within local centres no longer prioritised for car travel.
- **Infrastructure[25]:** Infrastructure upgrades required in local centres and FUZs, to be designed around hydraulic neutrality overall. Some network upgrades likely in some centres (e.g. Paekākāriki, Peka Peka). Some increase in impervious area will require additional stormwater management capacity and add to water contamination load. Double tracking and increased frequency of train services required to Ōtaki.
- **Resilience**: Densification is largely focused away from the coast, however some local centres are vulnerable to sea level rise and other natural hazards[26]. This scenario will likely lead to better protection of productive soils and rural production activities.

[25] Infrastructure costs are not assessed, and consideration of infrastructure implications are limited. For all scenarios, accommodating the predicted growth will require significant infrastructure investment and detailed feasibility assessment for infrastructure provision.

[26] Including earthquake hazards, rising groundwater levels and other flood hazards. Note: Council flood hazard mapping for the existing urban environment is currently being updated.

7 SCENARIO 3 – GROWING UP AND GROWING OUT

7.1 Scenario concept

This scenario focuses on "growing up and out" by finding a balance between intensification within existing urban areas and new greenfield development. It seeks to maximise housing development capacity within the District in line with NPS-UD objectives.

Under Scenario 3:

- Medium-high density development will be provided for in Paraparaumu, Ōtaki (town centre), Waikanae, Raumati Beach and Paraparaumu Beach.
- Medium density development is provided for in Paekākāriki, Raumati South, Kena Kena, Waikanae beach, Ōtaki Beach and around the Ōtaki railway station.
- Infill development in other urban areas will be the same as the status quo.
- The future development zones identified in the district plan, and the future study areas identified by the draft WRGF will be prioritised for medium-low density greenfield development.
- In addition, a significant new greenfield area would be opened up near Otaraua Park (North Paraparaumu).

Scenario 3 assumes double tracking of the railway line and increased frequency of rail provision to Ōtaki and identifies potential new railway station locations for servicing the new greenfield development areas at Te Horo and Otaraua Park and Peka Peka. There will be a mix of development densities and typologies within the new greenfield developments, with higher medium densities around new town centres.

Scenario 3 includes all of the intensification requirements of the NPS-UD and the priority growth areas identified in the draft WRGF. It also includes the future greenfield study areas identified in the draft WRGF.

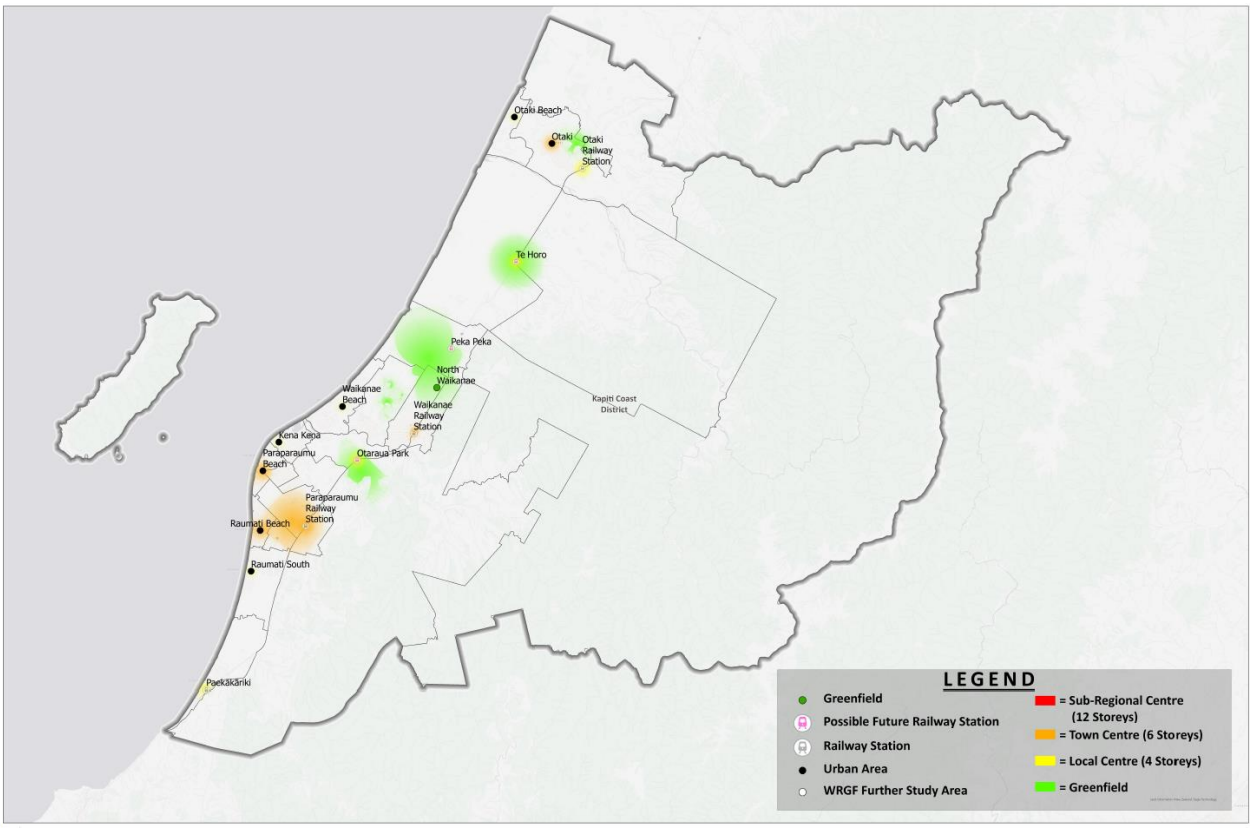

Figure 9: Growth focus areas under Scenario 3.

The images below provide a feel for the development typologies anticipated in each of the growth focus locations under this scenario.

Paraparaumu, Ōtaki town centre, Waikanae, Raumati Beach, Paraparaumu Beach	Apartments between 4 to 6 Floors - mixed use within business zones  
Paekākāriki, east of Raumati South, Kena Kena, Waikanae Beach, Ōtaki Beach, Ōtaki railway station New town centres at Otaraua, Te Horo and Peka Peka.	Terraced housing and apartments up to 4 floors - mixed use within business zones and new town centres  
FUDZ and all other new Greenfields	Terraced housing up to 3 floors  
Urban infill outside the area listed above	Stand-alone dwellings up to 2 floors  

7.2 Scenario assumptions

The assessment of Scenario 3 is based on a number of assumptions, including some key requirements that are essential to the success of the scenario in the District. These include:

- Revitalisation of local centres will focus on prioritising active and public transport modes with a particular focus on walkability and social cohesion based around and linking community centres, requiring investment in active and public transport infrastructure.
- Improved network capacity, efficiency and frequency of service on the Kāpiti rail line and the bus network.
- Double tracking and electrification of the railway line to Ōtaki and increased service provision.
- Medium-high and medium density development of local centres is feasible and attractive to both new businesses and residents.
- Significant investment in the social and physical infrastructure that will underpin and support denser living, and creating vibrant, pleasant and safe urban environments. Urban design guides, incorporated into the district plan, will play a role in ensuring developments contribute positively to the character of the revitalised local centres.
- Biodiversity corridors incorporated within new urban areas to maintain connectivity across the district.
- New train stations at Te Horo, Peka Peka and Otaraua Park are viable. Bus connections and services within new Greenfields.

7.3 Simple model results – maximum theoretical population growth

The modelled numbers below, represent the **maximum theoretical growth** enabled under Scenario 3.

Overall population growth[27]	Additional[28] population growth	Additional growth within urban centres	Additional urban infill growth outside of urban centres	Additional greenfield growth
113,635	**101,090**	**15.6%**	**0%**	**84.4%**

Table 12: Proportion of overall population growth by density and anticipated building typology – Scenario 3.

Density type	Building typology	Additional growth in Scenario 3
High		0 %
Medium-High		4.1 %
Medium		13.9 %
Medium-Low		37.4 %
Low		44.6 %

Table 13 Population by area – Scenario 3.

Statistical Area	Current population	Status Quo Growth	Additional growth - Scenario 3	% of additional growth - Scenario 3	Total 2050 Population

[27] Population growth including enabled status quo growth outside of the scenario study areas.

[28] Population growth additional to the status quo.

Paraparaumu	11,758	610	5,530	5%	17,898
Waikanae	6,996	1,180	984	1%	9,160
Otaki	5,336	4,573	7,334	7%	17,243
Paekākāriki	1,802	48	266	0%	2,115
Town Centres	6,686	560	1,292	1%	8,537
Local Centres	13,309	1,505	355	0%	15,169
Greenfield (Waikanae FUDZ)	2,154	3,598	2,385	2%	8,137
Waikanae Greenfield (Peka Peka)	635	278	36,631	36%	37,543
Te Horo Greenfield	2,274	65	33,028	33%	35,367
Paraparaumu Greenfields (Otaraua Park)	2,215	130	13,284	13%	15,629
Infill outside of scenario extents	0	0	0	0%	0
Total	**53,164**	**12,545**	**101,090**	**100%**	**166,797**

7.4 Alignment with growth principles and key trade-offs

Table 17 provides an assessment of the Scenario 3 against Council's draft principles using the qualitative assessment and rating scale explained in section 3.

Table 14: Assessment of Scenario 3 against Council's draft growth principles.

Draft growth principles[29]	**Alignment**	**Growing Up and Growing Out Scenario**
Respect for the natural environment.	Partial	This scenario would see the urban footprint extend over large areas of the rural environment, resulting in the loss of some open spaces and natural values. Large rural and natural areas are retained. Most greenfield areas are connected to the existing urban fringe, with the exception of a new town located at Te Horo.
Fostering a low-carbon economy	Partial	This scenario provides for intensification and higher densities at local centres and new towns centred around new or existing public and active transport infrastructure. Private consumer travel choices and a shift towards electric vehicles will play a role in decarbonising the economy. New higher density greenfield areas serviced by new railway stops.
Developing "City thinking"	Good	The development within this scenario effectively connects up the urban area from Raumati South to Peka Peka/North Waikanae, creating a sprawling low-medium density city area with intensification greatest around local centres. This scenario may attract the business, health, social and educational services and investment associated with a city, particularly within the intensified Paraparaumu centre.
Creating and enhancing a sense of place	Partial	This scenario focuses on both developing up, through intensification within existing urban areas, and out into new greenfield areas. This scenario will offer opportunities to foster communities around new and revitalised town centres. However, the demarcation between centres will be less pronounced.

[29] Council is engaging directly with mana whenua to establish growth options within the district support mana whenua aspirations.

in our localities		
Creating choice	Good	This scenario will result in a varied mix of housing typologies in different locations, providing for diverse lifestyle demands. This scenario envisions vibrant intensified main and local centres, which may attract new business, training and employment choices and opportunities.

Key trade-offs/considerations

- **Character**: Significant provision of new greenfield, resulting in significant changes to the character of some rural areas. Changes to the character of local centres; however, it will result in opportunities for improvements to amenity, accessibility, services and housing typology choice.
- **Housing market feasibility and affordability**: New housing typology choices, providing more affordable options and options for different lifestyles within intensified local centres, as well as provision of medium and low-density housing in new greenfield development areas. Provides a large level of greenfield capacity relative to demand so up zoning and infrastructure provisions would need to be sequenced to avoid widespread urban sprawl and associated costs. The level of greenfield capacity provided under the scenario may also further disincentivise intensification of urban centres, which already requires a significant shift in the current housing market.
- **Community services and employment**: Provision of services distributed between existing and new local centres, improving access to social facilities for local communities. Focus on employment within local centres and supporting flexible ways of working.
- **Transport:** Prioritisation of walking and cycling over car use with some improved public transport bus and rail infrastructure. Car parking options reduced in local centres. Road space within local centres no longer prioritised for car travel. Increases in car travel may eventuate, particularly within new Greenfields, which may lead to increased congestion on the local road network. WRGF anticipates that good public transport links required to support new greenfield areas.
- **Infrastructure**[30]: Significant extensions and upgrades to the 3 Waters network to cover new greenfield areas and existing urban areas outside of the network (such as Paekākāriki and parts of Peka Peka). Some increase in impervious area will require additional stormwater management capacity and add to water contamination load. Hydraulic neutrality will be a requirement for development within new urban areas. Double tracking and increased frequency of train services required to north of district.
- **Resilience**: Densification within some coastal communities will increase vulnerability to sea level rise. Greenfield growth areas are generally located away from the coast and so are more protected. This scenario will likely lead to a loss of productive soils and some rural production activities. Detailed natural hazard risk modelling (i.e. flooding and earthquake fault avoidance areas) are not available in some of the greenfield locations. Parts of the district are vulnerable to other natural hazards[31].

[30] Infrastructure costs are not assessed, and consideration of infrastructure implications are limited. For all scenarios, accommodating the predicted growth will require significant infrastructure investment and detailed feasibility assessment for infrastructure provision.

[31] Including earthquake hazards, rising groundwater levels and other flood hazards. Note: Council flood hazard mapping for the existing urban environment is currently being updated.

8 SCENARIO 4 – MAXIMISING GREENFIELD DEVELOPMENT

8.1 Scenario concept

Scenario 4 focuses on active planning and facilitation of greenfield development, with most new growth located outside of the existing urban footprint. Greenfield development under Scenario 4 is low density and medium-low density development, provided for by detached standalone dwellings and townhouses.

The future development zones identified in the PDP, and the future study areas identified by the draft WRGF will be prioritised for medium-low density development. New low-density greenfield areas include Raumati South, Valley Road, Otaraua, Waikanae South, Waikanae North, Te Horo and North Otaki. New village centres in Otaraua, Raumati South and Te Horo will accommodate medium-low density development.

Infill development in urban areas will be low density.

While Scenario 4 includes all of the future greenfield areas identified in the draft WRGF, it does not deliver on the draft WRGF urban densification areas, or the minimum NPS-UD intensification requirements around Paraparaumu central, Waikanae, Ōtaki or Paekākāriki.

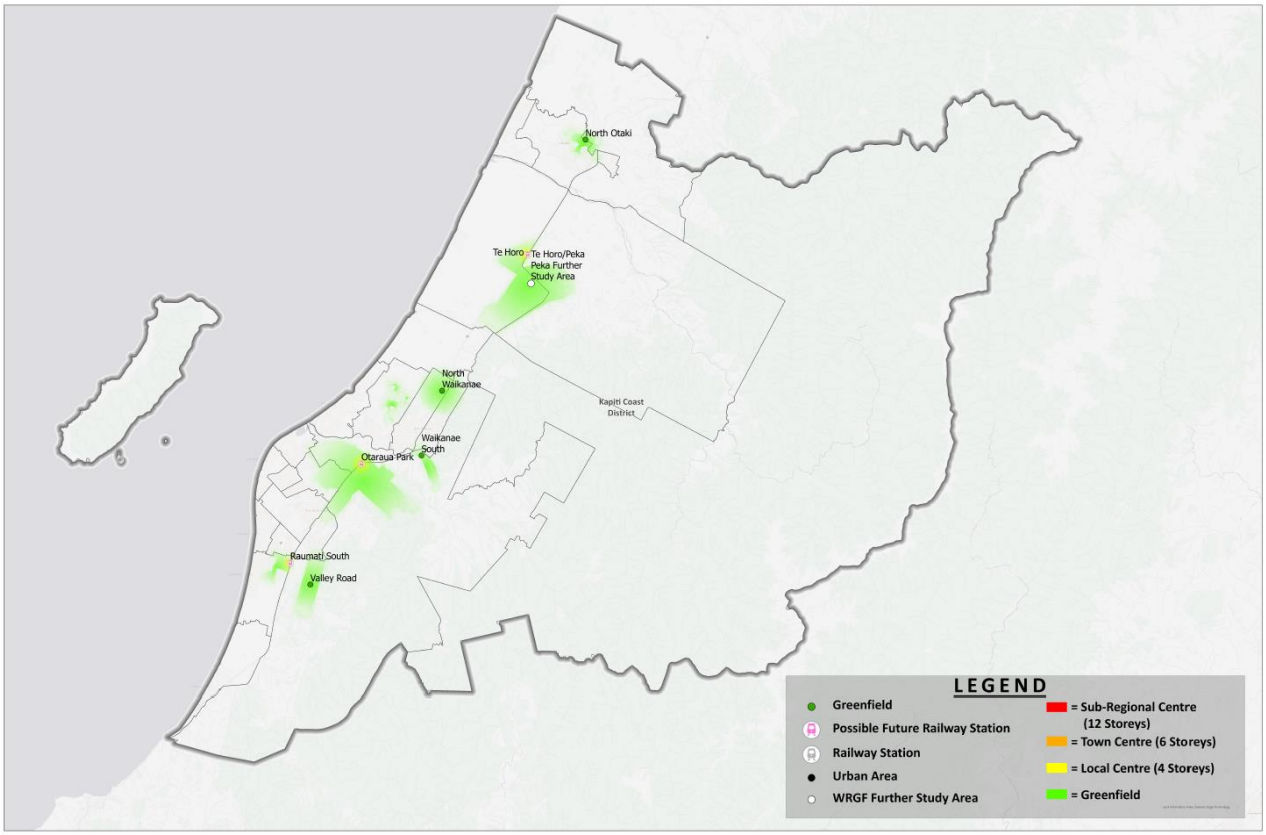

Figure 10: Growth focus areas under Scenario 4.

The images below provide a feel for the development typologies anticipated in each of the growth focus locations under Scenario 4.

New village centres at: ▪ Otaraua/Otaihanga ▪ Te Horo ▪ Raumati south	Terraced housing up to 4 floors Ground floor commercial/retail in new village centres  
Future Urban Development Zones, urban infill and all other greenfields (Te Horo, Peka Peka interchange, Otaraua/Otaihanga/ east of SH1, Valley Road, Waikanae South/Reikorangi, and east of Raumati South).	Stand-alone dwellings up to 2 floors Existing provisions apply to business uses within business zones  

8.2 Scenario assumptions

The assessment of Scenario 4 is based on a number of assumptions, including some key requirements that are essential to the success of the scenario in the District. These include:

- High quality new village centres with a particular focus on walkability and public transport connections. Urban design guides, incorporated into the district plan, will play a role in contributing to the character of new village centres.
- Improved network capacity, efficiency and frequency of service on the Kāpiti rail line.
- New bus connections and services within new greenfield areas.
- New cycling and walking linkages to and within new greenfield areas.
- Medium-low density development at new centres is feasible and attractive to both new businesses and residents.
- Biodiversity corridors incorporated within new urban areas to maintain connectivity across the District. New train stations at Te Horo, Raumati South and Otaraua Park are viable.

8.3 Simple model results – maximum theoretical population growth

The numbers below, generated by the modelling, represent the **maximum theoretical growth** under Scenario 4.

Overall population growth[32]	Additional[33] population growth	Additional growth within urban centres	Additional urban infill growth outside of urban centres	Additional greenfield growth
124,648	**113,358**	**0%**	**0%**	**100%**

Table 15: Additional population growth by density and anticipated building typology – Scenario 4.

Density type	Building Typology	Additional growth in Scenario 4
High		0%
Medium-High		0%
Medium		0 %
Medium-Low		58.3%
Low		41.7 %

Table 16 Population uptake by area – Scenario 4

Statistical Area	Current population	Status Quo Growth	Additional growth - Scenario 4	% of additional growth - Scenario 4	Total 2050 Population
Ōtaki Greenfields	4,291	4,638	6,323	6%	15,251
Waikanae Greenfield (Waikanae North, FUDZ)	9,150	4,778	12,981	11%	26,909
Te Horo Greenfield	2,274	80	53,595	47%	55,949
Paraparaumu Greenfields (Otaraua Park, Valley Road, Ruamati South)	9,779	260	40,459	36%	50,498
Infill outside of scenario extents	19,474	1,535	0	0%	21,009
Total	**44,968**	**11,290**	**113,358**	**100%**	**169,616**

[32] Population growth including enabled status quo growth outside of the scenario study areas.

[33] Population growth additional to the status quo.

8.4 Alignment of growth principles and key trade-offs

Table 21 provides an assessment of the Scenario 4 against Council's draft principles using the qualitative assessment and rating scale explained in section 3.

Table 17: Assessment of Scenario 4 against Council's draft growth principles.

Draft growth principles[34]	Alignment	Maximising Greenfield Development Scenario
Respect for the natural environment	Poor	This scenario would see the greatest reduction and permanent loss of open space and rural land within the district to urban expansion. Large rural and natural areas are retained. Most greenfield areas are connected to the existing urban fringe, with the exception of a new village located at Te Horo.
Fostering a low-carbon economy	Partial	This scenario sees all new development focused outside of the existing urban footprint and focuses growth on the lowest densities of any scenario. Medium-low density development around new railway stations could promote some sustainable north-south travel and is an improvement on the status quo. Transitioning to a low carbon economy however will remain reliant on private consumer travel choices and a rapid shift towards electric vehicles.
Developing "City thinking"	Poor	This scenario does not provide well for Council's Developing City thinking" growth principle, as it only provides for urban sprawl. The economic and social benefits which densification might bring are not provided for.
Creating and enhancing a sense of place in our localities	Poor	While new medium-low density village centres are envisioned at Otaraua, Te Horo and Raumati south, this scenario will result in urban sprawl and some new neighbourhoods that are far from the community services provided by town and district centres.
Creating choice	Poor	While scenario will result in some medium-low townhouse style developments around new village centres, the majority of development will be sprawling and low density. This scenario will not significantly expand the choice of housing topologies and is therefore unlikely to provide affordable options or diverse living styles that suit the needs of the future population.

Key trade-offs/considerations

- **Character**: Significant provision of new greenfield areas and significant change for rural areas. Some small new local centres provided for in Raumati South, Te Horo and Otaraua. Few changes to urban areas.
- **Housing market feasibility and affordability**: Introduction of medium-low density typologies around three new village centres, however otherwise very little change from the status quo. It is likely to result in large scale urban spawl which will have a number of public costs in terms of infrastructure provision, congestion and urban sustainability. The location of greenfield areas next to existing urban edge (compared to scenario 3) will help to reduce these costs as will the sequencing of up zoning and infrastructure provision.
- **Community services and employment**: Provision of some services and employment opportunities in existing and new local centres; however, new social infrastructure investment focused away from existing communities. The district will continue to be reliant on neighbouring districts and other parts of the region for some services, including hospitals and tertiary education.

[34] Council is engaging directly with mana whenua to establish growth options within the district support mana whenua aspirations.

- **Transport:** While this scenario focuses growth around the rail network and improved walking, cycling, rail and bus networks, increases in car travel are likely which will increase congestion on the local road network. More park and rides are likely to be required.
- **Infrastructure[35]:** Significant extensions and upgrades will be required to the 3 Waters network to cover new greenfield areas. The impervious area will increase dramatically, requiring additional stormwater capacity and adding to the water contamination load. Hydraulic neutrality will be a requirement for development within new urban areas.
- **Resilience**: All new development areas are located away from the coast and areas vulnerable to sea level rise. This scenario will likely lead to a loss of productive soils and some rural production activities. Detailed natural hazard risk modelling (i.e. flooding and earthquake fault avoidance areas) are not available in some of these locations. New growth areas may therefore be vulnerable to other natural hazards[36].

[35] Infrastructure costs are not assessed, and consideration of infrastructure implications are limited. For all scenarios, accommodating the predicted growth will require significant infrastructure investment and detailed feasibility assessment for infrastructure provision.

[36] Including earthquake hazards, rising groundwater levels and other flood hazards. Note: Council flood hazard mapping for the existing urban environment is currently being updated.

9 SUMMARY TABLES OF RESULTS

This section provides a summary of the results from the simple modelling of the scenarios and the qualitative assessment of the scenarios against Council's draft principles for growth.

Table 18: Status Quo Modelling

Results	Status Quo
Status quo growth within existing urban areas (infill)	44.4%
Status quo growth in greenfield areas (FUDZ)	55.6%
Additional realisable population growth under the status quo[37]	**12,338**

Table 19: Scenario modelling

Results	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Additional urban growth (intensification)	100%	84.4%	15.6%	0%
Additional greenfield growth	0%	15.6%	84.4%	100%
Additional[38] population growth (Maximum theoretical)	**20,182**	**21,787**	**101,090**	**113,358**
Overall population growth (maximum theoretical additional scenario growth, plus the status quo growth outside of the scenario focus areas)	28,733	34,332	113,635	124,648

Table 20: Alignment of the scenario and status quo with Council's draft growth principles

Draft growth principles[39]	Status Quo	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Respect for the natural environment	Good	Good	Good	Partial	Poor
Fostering a low-carbon economy	Poor	Good	Good	Partial	Partial
Developing "City thinking"	Poor	Good	Good	Good	Poor
Creating and enhancing a sense of place in our localities	Partial	Good	Good	Partial	Poor
Creating choice	Poor	Good	Good	Good	Poor

[37] Only modelled for the status quo, based on data from the HBA.
[38] Population growth additional to the status quo.
[39] Council is engaging directly with mana whenua to establish growth options within the district support mana whenua aspirations.

Table 21: Comparison of densities and building typologies (estimated current and projected additional)

Density type	Building Typology	HBA estimate 2017-2020[40]	Additional Status quo	Additional growth Scenario 1	Additional growth Scenario 2	Additional growth Scenario 3	Additional growth Scenario 4
High		0 %	0%	16.7 %	0 %	0 %	0%
Medium-High		0 %	0%	28.7%	17.7%	4.1 %	0%
Medium		0 %	0 %	29.9 %	16.4%	13.9 %	0 %
Medium-Low		16.5%	0 %	24.6 %	65.1 %	37.4 %	58.3%
Low		83.5%	100%	0 %	0.1 %	44.6 %	41.7 %

[40] Based on HBA projected district rate and average of new build residential supply based on historic performance (Table 10 of the HBA). For the purpose of this comparison we have assumed that the terraced housing, flats and apartments in the HBA (following historical patterned) would largely made up of medium-low density of four stories or less.

10 CONCLUSION

The purpose of the scenarios is not to set out how the District will or should growth – rather the purpose is to illustrate different spatial options and visions for growth within the District, focusing on different levels of intensification and greenfield growth.

The scenarios are purposely contrasting, to test different visions for growth, and how these align with Council's draft growth principles. Scenarios 1 and 4 represent two extremes, with 100% development in either the existing urban footprint or in new greenfield areas. As discussed in the economic and market commentary from Market Economics in **Appendix A**, intensification and greenfield development have different public and private benefits and costs; with greenfield development generally having greater private and less public benefits. Achieving the right balance of intensification and greenfield development and the right sequencing of development to meet demand will therefore be a key challenge moving forward.

The modelling found that the overall population growth reached 30,000 new residents by 2050 under each scenario, with the exception of Scenario 1 (which was approximately 1,300 short). However, it is important to emphasise that the modelling provides **maximum theoretical capacity**, and it is expected that more detailed housing capacity assessments will determine that the 'feasible' and 'reasonably likely to be realised' capacity under each scenario is much less.

It is anticipated that some level of new greenfield development will be necessary to provide 'sufficient development capacity' to meet the projected demand for housing over the next 30 years in addition to increasing levels of intensification. This is particularly relevant for scenario 1 and 2 which are based on high-level of intensification and limited greenfield development. This would require a significant shift in the housing market which is unlikely in the short-medium terms based on the current market in the District and urban markets and growth patterns in other major centres in New Zealand.

Scenario 1 provides one of the best mixes of housing typologies, particularly when taking into consideration the residual existing low-density development as part of the mix. Scenario 4 does not provide a mix of housing typologies and is additionally poorly aligned with Council's draft principles for growth. Both Scenario 1 and 4 do not completely deliver on the NPS-UD requirements for intensification, nor provide for the priority growth areas identified in the draft WRGF. Neither scenario is therefore considered to be appropriate for future growth in the District.

Conversely Scenario 2 and 3 both deliver on the intensification requirements for the NPS-UD, the priority growth areas identified in the draft WRGF, are more aligned with the Council's draft growth principles for the District, and therefore represent more feasible and realisable options for growth in the District. This is consistent with the memo from Market Economics in **Appendix A** which states:

> *Our recommendation is to have a combination of intensification provisions such as those within Scenario 2 and 3 together with sufficient greenfield areas of expansion more appropriately scaled to the projected level of future dwelling demand. The intensification provisions, as they are applied. around existing commercial centres, gives the market plenty of scope to intensify in areas of higher accessibility within the district. We consider that the application of further height gradients within these areas would better focus growth into the centres and immediately adjacent areas, which would reinforce the vitality and viability of centres (and create a greater diversity of housing options across the urban area).*
>
> *It is important to also provide for greenfield development as it would likely be inadequate to rely heavily on intensification to meet future growth demand, particularly within a smaller urban economy such as Kapiti Coast District. However, greenfield growth needs to be more appropriately scaled to future demand. It should be contiguous with the existing urban edge and be enabled through a live zoning timing that is integrated with a clear infrastructure timing and sequencing strategy.*

Under Scenario 2, 65% of additional housing under it will be medium-low density terraced housing, with the remaining provision split fairly evenly between medium and medium high-density apartment living. Almost 85% of additional growth under scenario 2 is located within existing town centres, with 15.6% of growth located in new greenfield areas. When taking into account of status quo infill growth and residual existing low-density development, Scenario 2 provides for a wide range of housing typologies (with the exception of high-density housing which would require a significant shift in the current housing market).

Scenario 3 seeks to maximise urban intensification and greenfield development, but in terms of housing topologies it does not deliver a significant amount of medium-high density development. The majority of new housing is low density greenfield development, a significant proportion of medium-low density terraced housing and a small proportion of medium density apartment living. Scenario 3 delivers a higher overall proportion of low-density development than Scenario 4 (although the maximum population growth allowed for is smaller under Scenario 3). When taking into account infill growth under the status quo and residual existing low-density development, the overall growth under Scenario 3 is dominated by low density housing typologies. The majority of growth under Scenario 3 is additional greenfield (almost 85%) with only 15.6% of new housing within the existing urban footprint.

Overall and moving forward, the preferred growth scenario for the District is likely to be a combination of Scenario 2 and 3 that delivers on the NPS-UD intensification requirements, provides for a range of housing typologies, and provides for some level of greenfield growth to ensure development capacity is feasible and likely to be realised (while ensuring this is appropriately scaled and timed for release). This is consistent with feedback from Council staff and elected member workshops and will be tested further through the development a new draft District growth strategy and subsequent public consultation.

Appendix A:

Economic context and analysis: Market Economics

11 Memo

To: 4Sight Consulting

From: Greg Akehurst, Director and Susan Fairgray, Associate Director

Date: 20 April 2020

Re: Kāpiti Coast Growth Scenarios – Economic and Market Commentary

Introduction

The purpose of this memo is to provide a high-level overview of the economic and urban form implications of the alternative growth options that Kāpiti Coast District Council are considering for their updated growth strategy. Under the NPS-UD Kāpiti Coast District (KDC) area a Tier 1 Council. This means they have to provide evidence of capacity to cater for reasonably foreseeable growth plus a 20% margin in the short to medium term and plus 15% in the long term (10 – 30 years). This is to ensure that their residential markets are competitive and that the effects of growth are catered for without generating significant pressure of house prices to increase.

Four scenarios (growth options) are being considered that range from maximising greenfield development (a land extensive solution) to a high-density compact city form (a land intensive solution). Between these 2 extremes there are 2 other scenarios; one focusing on medium density development around town and local centres, and a hybrid scenario that combines elements of medium density development around centres and greenfields in key areas.

Approach

At a high level it is important to understand the type and nature as well as the potential range of economic effects associated with the alternative growth scenarios. Economic effects arise as a result of; the manner and nature of physical construction of the dwellings, the act of providing infrastructure to service the needs of households that inhabit the dwellings, the activities of households in different living arrangements and the way they meet their needs, and finally, the opportunity costs associated with the urban form decisions taken to meet growth needs of the district.

While options 2 and 3 are likely to inhabit a middle ground between the two extremes, understanding (at a high level) the different effects of each extreme helps decision makers understand the range and therefore the potential economic effects of all options. In the following sections, economic effects associated with Intensification and Greenfields developments generally are explored.

Intensification

Intensification growth strategies usually focus on a mix of apartment and town house dwellings providing the bulk of dwelling capacity. Intensification is targeted around city and town centres as land values are high enough to support intensive forms of development and remain commercially feasible. Achieving intensification is typically dependent on redevelopment of existing urban area. A fragmented land ownership structure can be a constraint to achieving intensification as high-rise developments usually require an amalgamation of adjoining titles to enable a comprehensive development. Even when the sale value of land is high, not all landowners are incentivised to sell and move elsewhere so that redevelopment can take place.

Intensifying the core of commercial centres (or mixed-use business areas) faces the additional challenge of existing businesses being pushed out while redevelopment occurs. They may seek an alternative location so that they can continue to trade. Depending on where other vacant capacity is available, this can have unintended distribution effects. Often the value of the new tenancies (once redeveloped) are much higher and those same businesses may not be able to afford to move back to the same location.

A relevant consideration for intensifying the core of Paraparaumu is the fact that the 'centre' is dominated by a low density and land extensive shopping mall (in single ownership). Achieving a mixed-use development outcome (commercial on ground and lower floors and residential apartments above for example) on this site presents additional challenges that need to be considered. If this site did not redevelop in the medium-long term, what does this mean for the overall urban form outcomes anticipated by intensification growth strategies? Are incentives needed to help facilitate the desired outcomes?

Private Costs and Benefits

Higher density housing offers a number of economic advantages for households in that they are often available at a lower cost as they are generally a smaller footprint for a similar bedroom count than standalone dwellings and they have a significantly smaller land footprint. They are economically beneficial also in that they are located closer to areas of employment and retail, meaning that households face lower costs to meet their weekly income and retail needs. They are closer to the commercial and community centres meaning that recreational and cultural activities are able to be undertaken with more frequency and at a lower cost.

Individual households face trade-offs living in intensive environments, in that they have less private space both in terms of a yard and internally to the dwelling. In addition, they are living in more densely populated environments which – if poorly planned and developed can lead to higher levels of noise, congestion and disorder.

Public Costs and Benefits

More intensive growth futures generate a range of public benefits and some costs. In terms of benefits, the key one is that by developing in a more intensive manner, the population overall requires less land for a set amount of population. This has a range of outcomes. First, in areas of highly productive soils – and the majority of New Zealand cities have been developed in highly productive areas (most started as the centres of rural production) - then consuming less land for dwellings leaves more land available for productive agricultural activities. Second, by constraining the size of an urban area, less investment in roads and other linear infrastructure such as pipes and lines (power, fibre) is required. This pattern of growth means that infrastructure can be more efficiently provided.

There are a range of other public benefits from intensification. It increases the viability and vitality of commercial centres, with a wider benefit, through increased amenity, to the catchments they serve. By providing a large market close to a towns CBD, retailing, cafés and restaurants as well as cultural and recreational services that tend to locate in the centre are more heavily used. This makes them more sustainable and attracts others, providing depth and variety within the city or town centre. In addition, the higher volumes of people activity focused on the centre adds to the social amenity the city provides. It generates a 'buzz' that makes the centre a more attractive place to be, attracting more businesses and people. It is a virtuous circle that results in a healthy and vibrant town centre.

Well-designed intensive development around city centres results in better urban sustainability. It encourages walkability, reducing reliance of private vehicle travel and promotes engagement with the community. This leads to greater identification with the local area and potentially to a greater share of household expenditure being directed to local businesses.

By concentrating population close to and within the town centre makes providing social and community services significantly easier and more effective. For example, the library can be centralised and made larger with a deeper and broader offer – rather than splitting resources across 2 or more (for example). The delivery of social services for those in need becomes easier without significant distances involved to travel. Social engagement is higher.

In terms of other infrastructure, concentrating development in areas that are already developed takes advantage of existing infrastructure capacity – reducing the need for extremely high cost new infrastructure on the urban fringe. In addition, concentrating populations around centres makes public transport more feasible, further reducing congestion and greenhouse gas emissions.

Externalities around commuting also reduce as workers have (often) significantly less distance to travel to work. While this is a private choice that might maximise private utility, the public bears the cost of the externalities it generates by way of congestion, leading to time delays and greenhouse gas emissions.

Public costs focus on the potential for competing land uses on land close to the centre. This may lead to a less than optimal location for some commercial services – if they are outbid for sites that end up being developed for residential uses. This potentially occurs in larger CBD type locations and may not be an issue in Kāpiti Coast.

Greenfields

Greenfield strategies for accommodating growth centre around development of rural land on the urban fringe, often (but not always) in an extensive manner providing stand-alone houses to the market. In terms of the proposed growth scenarios, Option 4 targets a majority of growth in greenfield environments, in either low density or medium low-density dwellings. One consideration of growth strategies that place more households greater distances from existing centres is that the network of convenience centres often needs to be expanded – with some provided in new growth areas – to help ensure accessibility to convenience goods and services is maintained across the total urban environment. If greenfield catchments are sufficiently large or distant from existing centres, then the provision of larger commercial centres may also need to be planned.

Private Benefits

Traditionally, Greenfields expansion has been the way that the majority of New Zealand cities have grown. Developers find it easier to develop greenfield land as they are able to secure large blocks of land that have relatively low private costs to develop and can be supplied to the market in a measured manner over time, securing a consistent work and income stream. The dwellings themselves are often cheaper to construct on a per sqm basis as they are usually 1 or 2 levels and the developments are easier to finance as the banks understand the land/house market well (lower risk).

Private Costs

Private costs associated with Greenfield developments are borne by individual homeowners who now face longer distances to meet their needs and to work. In general, the rest of the costs are borne by the rest of society rather than the individual homeowner.

Public costs

Undeveloped land on the urban fringe is often less expensive per square metre, as it does not come with infrastructure or amenities. While the Development Contributions schemes most councils operate recoup a portion of the infrastructure costs, the majority of the bulk infrastructure costs are not borne by the developer. These include the initial costs of provision as well as the additional ongoing costs of servicing and maintaining a less efficient pattern of infrastructure. This skews the market towards favouring greenfield land development as the rest of the city partially subsidises it. In summary, the market price of greenfield land is unlikely to reflect the full social costs of its development. Those are borne by the rest of society.

The extent of public costs of greenfield development are great. They are borne by hospitals, schools, emergency services as well as by the 3 waters providers and road network. Greenfield development often sees community character diminish or become diluted across a larger area and communities can lose their sense of place. Furthermore, a dilution of urban amenity across a wider, lower density urban extent results in greater costs to the wider community in accessing this type of urban structure.

Greenfields for urban development can occur at the expense of rural production. This often means that new agricultural land must be found elsewhere – often resulting in the conversion of natural habitats, or marginal land to production. This causes the loss of (free) ecosystem services that natural habitats provide. This is an environmental cost but directly linked to the economy and economic output (although one that the proposed NPS-HPL is seeking to better manage).

Summary

There are a range of public and private costs and benefits associated with Intensification and Greenfield growth outcomes. In addition, the distribution of costs and benefits is uneven with developers and individual new homeowners potentially gaining the private benefits associated with Greenfield development at the expense of the wider community that bear a range of infrastructure and congestion costs. In Intensification heavy growth strategies, residents trade off private space for public amenity, the dwellings are often smaller with smaller or no associated sections. The wider public tends to capture the benefits associated with this strategy by way of lower congestion, and lower greenhouse gas emissions and more sustainable centres and public transport options. In addition, the urban footprint is smaller meaning rural activities can continue over a wider space (and are less constrained by urban expansion pressure).

Broadly, the public benefit from Intensification, while the private developers benefit from Greenfields development.

Scenario Specific Commentary

The following provides more specific economic and market commentary pertaining to the proposed growth scenarios/options provided to Market Economics as they indicatively apply on the ground. The economic issues described above will also apply to these scenarios but are not repeated here.

Growth Scenario 1 – High Density Compact City Focus

Growth Scenario 1 largely contains growth within the existing urban area. It heavily concentrates growth around the existing centres of Otaki and Paraparaumu, with some intensification also provided for around Waikanae and a lower extent across the remainder of the urban area.

In this scenario, total capacity would be increased substantially within the existing urban areas, with extensive potential change in the typology from single or double level dwellings seen in the District today to

highly intensive dwellings typologies (apartments and townhouses). The scenario anticipates densities of 100 dwellings per hectare, at up to 12 storeys, across a 500-800m extent around Paraparaumu, with further intensification (60 dwellings per hectare) beyond this area. An extensive area of intensification of 4 to 6 storeys (80 dwellings per hectare) is provided for in Otaki between the existing centre and railway station, with large areas of further intensification (at 60 dwellings per hectare) beyond these areas.

It is possible that apartments could be constructed at these densities and offered to the market at price bands within a substantial share of the total market dwelling value band demand profile. However, this would require a major shift in the demand typology profile. It would also require the development of higher risk dwelling typologies, which usually require high demand (due to the higher risk). This is significantly different from the current market, which is currently only producing 33 dwellings per year in higher density attached typologies (based on consent data). It would require a large-scale shift in the operation of the market (including developer preferences and housing demand preferences). It would require development of high-rise apartment buildings that are only currently built in the central areas of the biggest cities in New Zealand (i.e. Auckland, Christchurch and Wellington).

We consider that it is unlikely that there would be sufficient amenity value within the existing Kāpiti Coast centres to attract significant volumes of the higher scales of plan-enabled development. The centres are small relative to other major centres where development of this scale occurs. The smaller size of the district's urban area means that there are not the equivalent trade-offs between distance to amenity and space that occur within the larger urban economies where these higher density developments occur. The development would be requiring households to accept significantly smaller dwellings and would be competing with other forms of lower density development, which would also be relatively accessible to the district's main centres.

While there may well be high rise apartment developments in Kāpiti Coast in the future, it would not be prudent to rely heavily on this capacity within the coming few decades. We consider that much of the increase in plan enabled capacity that has been suggested for Scenario 1 may not be developed (reasonably expected to be realised) in the coming decades. As such the risk of capacity running out will not be alleviated by this option.

Scenario 1 provides an estimated dwelling capacity of 72,300 dwellings across the areas of intensification, and a further 45,400 dwelling infill capacity across the remaining existing urban area[41]. The modelled scenario estimates that 10% of the capacity within the intensification areas would be taken up over the long term (i.e. next 30 years), with three-quarters as medium to high density dwelling typologies.

The extent of plan enabled intensification around the centre areas is also geographically expansive in relation to the enabled height and the overall extent of the urban economy. A generally homogenous plan-enabled

[41] Dwelling capacity figures include existing dwellings. They are not net increases in additional dwelling capacity.

height across these areas could undermine the ability to develop general levels of higher intensity use surrounding the centres, that decrease with distance from the commercial area. It could result in a few large apartment building developments that could absorb a large share of the future demand[42]. These could occur anywhere within the extensive intensification areas under this scenario, meaning that the emerging patterns of growth are not sufficiently concentrated around the core commercial centres (and the benefits of intensification are not achieved/maximised). This could potentially undermine the ability for more widespread intensification to surround the key centre areas.

If this growth scenario were to occur, then it may result in some change to the spatial economic structure of Kāpiti District. Currently, Paraparaumu is the largest urban centre, which would be reinforced under this scenario. The scenario would also encourage the growth of Otaki as another main centre; and provides a greater overall level of estimated additional dwelling capacity in Otaki than Paraparaumu. The basis for establishing another centre in the north of the district is unclear. The main patterns of commuting and access to amenity offered by larger urban areas occur in Wellington City to the south of the district. There is likely to be a lower market demand for development of an urban centre in the far north of the district, further away from the influence of the larger urban economy of Wellington in the south.

Growth Scenario 2 – Town (Local) Centres Focus

The second growth scenario also focuses on intensification within the existing urban area, together with limited amounts of greenfield growth, as already provided for, within the Proposed District Plan. In addition to Paraparaumu, growth is focused around the district's other town and local centres. It provides the market with further opportunity to intensify within the areas of higher demand within the district.

In this scenario Paraparaumu is defined as a sub-regional centre with an intensified walkable catchment of at least 800m, and specified density (up to 6 storeys as specified in the NPS-UD). While Waikanae, Paraparaumu Beach, Raumati Beach, and Ōtaki/Ōtaki railway station are defined as local centres with intensified walkable catchments of 400m and specified density (4 to 6 storeys). Also, the rail stations at Waikanae, Paraparaumu and Paekākāriki with a walkable catchment of 400m and specified density (up to 4 storeys).

This scenario increases the total capacity in the existing urban areas by a smaller amount, with some change in the typology from single or double level dwellings seen in the District today to intensive dwellings typologies (apartments and townhouses). In this scenario the plan enabled capacity may be increased by around 42,400 dwellings. The anticipated growth is for a less intensive dwelling typology structure than

[42] For example, if all growth were to occur up to the enabled height levels, then intensification would only need to occur across a small share (1% to 3%) of the enabled area to meet demand.

Scenario 1 – around two-thirds of the growth is envisaged to occur as medium to low density dwellings. This results in slightly less capacity overall than Scenario 1, although spread across a wider range of locations.

Scenario 2 also requires a significant shift from the current market operation. It would require development of a large number of low-rise apartment buildings that are only currently built in the inner suburbs of the large cities in New Zealand (i.e. Auckland, Christchurch and Wellington) and the central parts of some of the small cities (Hamilton, Tauranga and Queenstown). These urban centres have much higher levels of amenity than those in the district, and offer much greater relative differences in the level of accessibility to alternative areas of greenfield development that is much further away in larger cities. While there may well be low-rise apartment developments in Kāpiti Coast in the future, it would not be prudent to rely heavily on this capacity within the coming few decades (i.e. it may not all be reasonable expected to be realised).

Scenario 2 provides an estimated dwelling capacity of 42,400 dwellings across the areas of intensification/growth. The modelled scenario estimates that 10% of the capacity within the intensification areas would be taken up, with around one-third as medium to high density dwelling typologies. This amounts to over 4,000 dwellings within higher density, multi-level developments. Two-thirds of the development would occur as low-medium density, which is more similar to the higher density end of the development currently being delivered in the greenfield areas.

It is likely that a portion of the lower density development typologies are currently feasible within the district's main urban areas. Higher density developments could also be constructed by the market (with a sufficient margin) and offered at prices that are within a substantial share of the total market dwelling value band demand profile. However, this would require a significant shift in the dwelling typology preferences across a large share of the market, requiring households to make trade-offs between size and location, whereby they would be shifting into substantially smaller dwelling typologies than those currently predominantly offered by the market. Similar to Scenario 1, these types of developments would be competing with larger standalone houses in areas that are not too distant from the main commercial centres.

Scenario 2 contains some greenfield capacity (around 5,000 additional dwellings) in the locations already provided for in the Proposed District Plan. These are reasonably well located in relation to the existing urban area where they form a continuation of the surrounding areas of urbanised land.

We consider that the greenfield areas may contain insufficient capacity for the projected level of growth (+12,200 dwellings over 30 years[43]). Therefore, Scenario 2 would require a high share of growth to be met

[43] We note that this is a high level of projected growth. It has been provided by KCDC as an input assumption to the analysis. However, it is around double the dwelling demand (+ margin) of the 2017 HBA, and around 50% higher than a 2038 to 2050 linear extrapolation of the Statistics New Zealand high series household projections.

through intensification of existing urban areas, with a significant portion in dwelling typologies that represent a large shift to the predominant patterns of market demand.

Growth Scenario 3 – Growing Up and Growing Out

Scenario 3 contains a combination of intensification within the existing urban area and greenfield urban expansion. Intensification is enabled across a number of commercial centres, with a focus on developing Paraparaumu as a sub-regional centre. Paraparaumu would have development of up to 6 storeys within an 800m walkable catchment centred around the district centre and rail station. The local centres (Waikanae, Paraparaumu Beach, Raumati Beach, and Ōtaki) would be intensified as in Scenario 2 and there would be higher intensity walkable catchments around all rail stations (400m, up to 4 storeys).

This scenario also includes provision for large scale urban expansion. It includes around 1,700 ha of greenfield area (including that provided for within the Proposed District Plan), with an estimated capacity of 48,500 dwellings. This occurs in a range of locations, with most of the greenfield provision in areas that are not contiguous with the existing urban edge. Some of these are located around current and potential future railway stations.

The level of greenfield capacity provided is very large relative to the projected demand for the district. This is likely to result in wide-spread patterns of urban sprawl that may not occur in a logical sequential process relative to the urban edge (unless it is sequenced through infrastructure timing).

An abundance of greenfield capacity is likely to result in low density patterns of development, particularly where it is located away from the urban edge. Low density development represents a lower risk option for developers due to existing well-established patterns of dwelling demand and cheaper per m2 construction rates. The lack of contiguity of these areas with the urban edge means that there is less demand incentive to increase densities to increase access to amenity as they would have only a marginal effect on accessibility to the commercial centres.

Together, these effects are likely to result in costly patterns of infrastructure provision and ongoing servicing. Low density urban expansion generally requires greater infrastructure investment per dwelling than higher density forms of development, as well as greater main infrastructure extensions to serve a greater urban extent. The latter is exacerbated by the location of greenfield areas away from the existing urban edge and the potential for growth to occur out of sequence within the large extent of the greenfield area. Expansive patterns of development are also likely to result in lower urban sustainability where households have to travel greater distances to meet their needs.

Part of this effect could be mitigated through the development of a clear strategy of infrastructure timing and sequencing. This could be integrated with a land use strategy where greenfield areas become live-zoned with the timing of infrastructure provision or demonstrated growth need for capacity.

It is unlikely that the market would deliver the higher densities of development enabled within some of the greenfield areas within the short or medium-term (unless strict controls could be put in place requiring these densities to be delivered early on (maybe in conjunction with any new commercial areas)). If these areas anticipated for higher densities were instead developed at lower densities within these timeframes, then it would also likely restrict the ability for the higher densities to be achieved in the long-term as it would be unlikely to be commercially viable to redevelop these areas. Development at these higher greenfield densities would involve a significant market shift in the patterns of development typically occurring within the outer areas of the district, or often even in greenfield expansion at the urban edge. This is compounded by the limited amenity incentive (beyond the railway station) to develop at higher densities within these areas. Competition between developers, through the abundance of greenfield areas, may further disincentivise the delivery of higher density patterns of development that require a shift in patterns of household demand.

The scale of greenfield provision is likely to reduce the incentive to intensify around commercial centres within the existing urban area, even if plan enabled under this scenario. The proposed intensification around the urban centres would already require significant shifts in the current dwelling market operation across a sizeable portion of the market to achieve the planned scale and density. This is even less likely to occur where a large supply of alternative opportunities is present.

Growth Scenario 4 – Maximising Greenfield Development

Scenario 4 contains a strong focus on greenfield development. There is no further intensification enabled within the existing urban area beyond that already provided for within the Proposed District Plan. This scenario anticipated that all future growth will be met through a large expansion of the existing urban footprint with greenfield development of rural and rural residential areas.

The scenario contains a very large amount of capacity within greenfield areas relative to the long-term projected level of dwelling demand (+12,200 additional dwellings required). There is 2,070 ha of currently rural area identified for expansion (including the existing Future Urban Zone under the Proposed District Plan). This has an estimated dwelling capacity of 60,300 additional dwellings - around five times the level of future long-term demand.

Similar to Scenario 3, this scenario is likely to result in low density large scale urban sprawl for the same reasons. This would correspondingly have similar effects in relation to the efficiency of infrastructure provision and urban sustainability. The absence of intensification provision within the existing urban area will further facilitate these effects. An integrated live zoning and infrastructure provision and sequencing strategy may offset part of this effect (as well as out of sequence growth in relation to the urban edge), although this would not prevent inefficient patterns of growth in comparison to urban intensification.

The location of greenfield areas under Scenario 4 differs to that of Scenario 3. Scenario 4 generally has greater contiguity with the existing urban edge, particularly in relation to the greenfield area of Otaraua Park and the absence of Peka Peka (included in Scenario 3). This is a more efficient pattern of growth than development away from the existing urban edge.

Scenario 4 also contains several areas where greenfield urban expansion occurs in a linear spatial structure. These include Valley Road and Te Horo and the area to the eastern edge of Otaraua Park. Of these, the capacity at Valley Road is likely to result in low density rural residential lifestyle properties. The narrow structure of this area, together with its' positioning away from other urban development, may inhibit the development of a suburban density subdivision with an interconnected road network.

12 Conclusions and Recommendations for the Evaluation of Growth Options

The above assessment has provided an overview economic analysis of proposed Kāpiti Coast District growth options within the context of the effects of different types of growth patterns. It has considered the spatial structure of the growth scenarios, taking into account the distribution between different types of growth (i.e. intensification vs. greenfield expansion) and the distribution across different urban areas.

The assessment has considered the indicative densities and how these are likely to be achieved within the context of the existing (and likely future) local market. As part of this, it considers the relativities between the urban centres within Kāpiti Coast District and other urban economies where the planned densities have occurred.

Scenarios 1 and 2 focus heavily on urban intensification. Both scenarios, but particularly Scenario 1, would require large market shifts across a substantial share of the future dwelling demand. While some of this development may occur, the scale of it in relation to the demand base, would be out of alignment with the district's relativity to patterns of development within other urban economies. It would not be recommended to rely on this level of planned intensification to meet future dwelling demand growth, with both scenarios likely to contain insufficient greenfield development options.

Scenarios 3 and 4 are more heavily focussed on greenfield urban expansion. In particular, Scenario 4 has future growth being met entirely through urban expansion, with no provision made for intensification within the existing urban area.

The scale of greenfield provision within both of these scenarios is very large relative to the projected future demand and is likely to result in very limited intensification occurring within existing urban areas around commercial centres. Greenfield expansion and only limited intensification generally represents an inefficient pattern of urban development with lower levels of urban sustainability.

Moreover, the very large scale of greenfield provision may result in inefficient, out of sequence patterns of urban expansion that would exacerbate inefficiencies of infrastructure provision and undermine the objectives to achieve higher density nodes within these areas.

Our recommendation is to have a combination of intensification provisions such as those within Scenario 2 and 3 together with sufficient greenfield areas of expansion more appropriately scaled to the projected level of future dwelling demand. The intensification provisions, as they are applied around existing commercial centres, give the market plenty of scope to intensify in areas of higher accessibility within the district. We consider that the application of further height gradients within these areas would better focus growth into the centres and immediately adjacent areas, which would reinforce the vitality and viability of centres (and create a greater diversity of housing options across the urban area).

It is important to also provide for greenfield development as it would likely be inadequate to rely heavily on intensification to meet future growth demand, particularly within a smaller urban economy such as Kāpiti Coast District. However, greenfield growth needs to be more appropriately scaled to future demand. It should be contiguous with the existing urban edge and be enabled through a live zoning timing that is integrated with a clear infrastructure timing and sequencing strategy.

Appendix B: Methodology

METHODOLOGY

The scenarios and development assumptions detailed in this report have been informed by a number of workshops with Council staff between February and April 2021.

This included a workshop with Council staff in February to agree on four growth scenarios for high level testing and to discuss the status quo, density assumptions and development expectations for all scenarios.

Seven high-level scenario options were presented to Council, representing a range of densities and hosing typologies. These included:

- High density compact city;
- Sprawling city;
- Intensification around local centres focus;
- Growing up and out;
- Maximising Greenfields;
- Protecting and restoring natural values; and
- Hazard resilience.

The four high level scenarios which were chosen by Council staff for development were a high-density compact city, town (local) centres, growing up and growing out and maximising Greenfields.

GIS mapping of the chosen high-level scenarios was then developed. A workshop with council staff in early March included review the spatial extent for growth under the four chosen scenarios as mapped and identification of additional areas for inclusion under each scenario. Further refinement of GIS mapping was then undertaken in consultation with council staff. At this workshop the assumptions for modelling each scenario where agreed (as set out in the tables below).

A workshop with Council asset managers was also held in mid-March to discuss key infrastructure issues. This discussion informed the assessment of key trade-offs for each scenario.

Approach to Constraints and Business Land[44]

A separate workshop with council staff was held in early March to agree the categorisation of constraints into 'no-go', 'go carefully' and 'other' constraint categories. The approach taken to each of these constraints was agreed with council[45]. In summary,

- **'No-go' constraints:** are constraints which a so significant that new development is precluded. Areas where these constraints are present were excluded from scenario growth modelling. The features were sourced from publicly available data from the PDP and GWRC.
- **'Go Carefully' Constraints:** reflect constraints that might not outright preclude development. However, they may introduce challenges that need to be overcome before new development can be supported. Without detailed site assessment, the precise impact of each of these constraints on development densities is uncertain. To reflect that development density may be affected where these constraints were present, a modifier was applied (whereby the modelled densities were changed down one 'density classification' wherever these constraints were present).
- **'Other' constraints:** are potential constraints which have not been factored into the high level modelling of each scenario. The reason for excluding each is identified in the tables below.

The tables below list the constraints in each of the categories above. Best available mapping has been incorporated into the modelling to represent each of these constraints.

Table 22: 'No-go' constraints (excluded from modelling).

'No-go' constraints (excluded from modelling)

[44] Feasibility assessment of infrastructure provision and detailed hazard/constraint analysis not undertaken as part of this work.

[45] See GIS methodology below.

Coastal Hazard Area – 1% AEP and 1.2m SLR hazard[46]
PDP River Corridor and Stream Corridor
Fault Avoidance Areas ▪ PDP Well Defined Fault Avoidance Areas ▪ PDP Well defined Extension Fault Avoidance Areas
PDP Zoned Industrial land
Water collection/protection areas ▪ KCDC Water Collection Area ▪ GWRC Drinking Water Groundwater Protection Area ▪ GWRC Surface Drinking Water Protection Area ▪ GWRC Surface Drinking Water Supply River ▪ GWRC Drinking water groundwater protection area
Infrastructure ▪ National Grid Yard (PDP National Grid Developed Area/12m either side of PDP HV Transmission Lines and National grid assets). ▪ PDP Expressway designations (M2PP, PP2O, MacKays Overbridge) ▪ PDP Railway Designation ▪ PDP TG Designation ▪ PDP Airport Precinct (with the exception of the 'Potential Residential Area overlay) ▪ PDP Natural Gas pipeline ▪ PDP Quarry ▪ PDP CWB LINK Priority Connections ▪ Wastewater Plant
Wetlands GWRC Wetlands
Other Ecological Sites ▪ PDP Ecological Sites ▪ GWRC Key native ecosystems
Natural Character and Significant Landscapes ▪ PDP Areas of Outstanding Natural Character ▪ PDP Outstanding Natural Features and Landscapes ▪ PDP Geological Features ▪ PDP Geological Areas
PDP Waahi Tapu
Recreation land ▪ PDP Open Space Zones (All four, including Private Recreation and Leisure) ▪ QEII covenant areas
Land parcel data layer exclusions ▪ Identified QV Property Use Codes for Crematoria, Cemetries, Utility Services, and Outdoor Recreation

[46] Best available mapping. We understand that KCDC are currently updating their coastal hazard model, however this was not available to us. If available, would be 1.4m SLR would have been used for areas of new development).

Figure 11: Map showing extent of mapped 'no-go' constraints within the district.

Table 23: 'Go Carefully' Constraint List (density modifier applied)

'Go Carefully' Constraint List (density modifier applied)
All other KCDC flood layers
All other Fault Avoidance Areas and GNS Active Faults
GWRC Flood Mapping (1% and 2% AEP)
LUC 1-3
▪ Historic Heritage Areas ▪ Historic Heritage Places
▪ PDP Special Amenity Landscapes ▪ PDP Areas of High Natural Character
SH1 Designation – applies to the section between Paraparaumu Central and Waikanae (revocation pending).
Airport Noise Boundaries
Airport take off and Approach Surfaces – District Plan height limits applied.

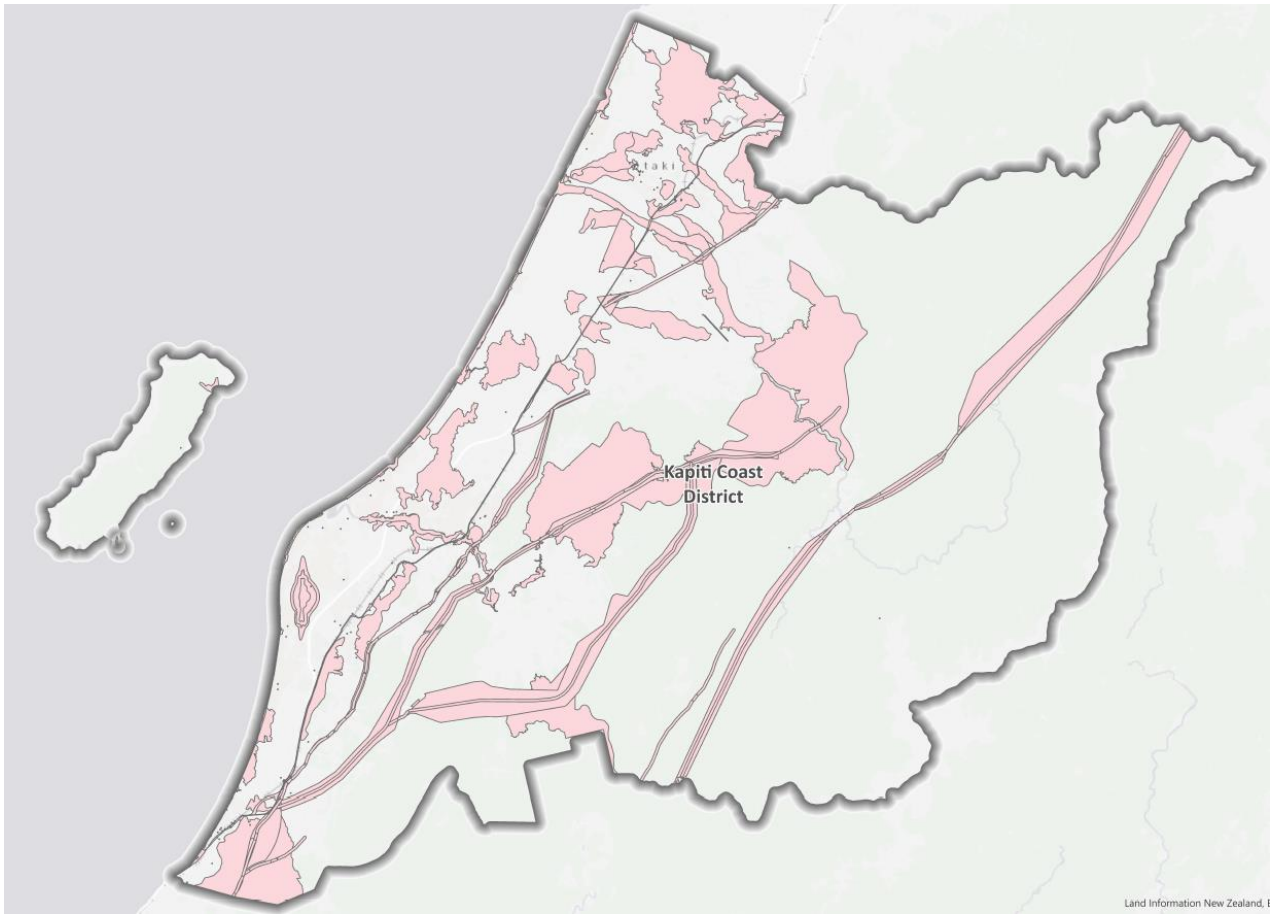

Figure 12: Map showing extent of mapped 'go-carefully' constraints within the district.

Table 24 'Other constraints' (not factored into modelling)

'Other constraints' (not factored into modelling)	Reason/Assumptions
Liquefaction	Engineering solution could be absorbed into the cost of any development.
Rising groundwater/water tables	
GWRC Ground shaking and slope failure	
Peat soils	
GWRC Rural Wildfire Risk	
Tsunami Notification Areas	
Slopes over 28 degrees	
Whaitua/Water quality limits	As the Whaitua process is not well progressed within the district, there is a lack of information on catchment water quality. It is therefore assumed that any development within 'maxed out' catchments will be enabled by offsetting elsewhere within the catchment (i.e. sufficient reduction in existing urban areas).
Airport runways, Conical surface, horizontal surface	All scenarios see a maximum building height of 50m high, so no anticipated issues.

Airport DBA, Airport Noise Boundaries	Any sensitive new activities will need to ensure ambient indoor air quality is appropriate for the proposed use.
Transport Hierarchy	Roads already excluded (see above).
Notable Trees, Key Indigenous Trees	It is assumed that any new development within a site could occur while avoiding any impact on any present notable or key indigenous trees.
Notional Roads, Ōtaki North indicative Roads	There is potential for future road layouts to change if there are significant amendments to growth assumptions and strategies.
Westfield Building Extension Zone	Mapping assumes opportunities for mixed use development in areas currently zoned for business purposes (see above).
District Centre Zone Structure Plan Precinct, Ihakara Street Precinct	Assuming heights between 6 and 12 floors (depending on the scenario) where unconstrained within 30 years.
Medium density and low-density housing precincts	The scenarios cover most of these areas and represent new densities of development.
District plan zones, with the exception of those covered in the tables above.	The purpose of the scenarios is to test growth scenarios assuming different District Plan settings.
PDP Coastal Environment	Coastal areas of high and outstanding natural character, special amenity landscapes, ecological sites, wetlands, rivers, open spaces, streams, and outstanding natural features and landscapes are already listed in the tables above. Within any other areas covered by the PDP Coastal Environment layer, it is assumed that any new developments would be undertaken in a way that enhances connections to the coastal environment location (through design and siting), and contribute positively to the visual quality and amenity of the coast.
Statutory Acknowledgement Areas	Development of a statutory acknowledgement would require consultation with iwi to determine whether there would be any adverse effect on the statutory acknowledgement area. However, most of the existing statutory acknowledgements in the district are already 'no-go constraint' sites due to other restrictions above (i.e. Queen Elizabeth Park).
Likelihood of uncovering a new archaeological record	There is potential for archaeological records to be discovered throughout the district. This mapping is based on discovered archaeology, meaning that the record is often best within existing urban areas (as it is influenced by excavations uncovering new records).
Contaminated land (HAIL sites)	Potentially contaminated sites will need to be investigated and potentially remediated when there is a change of use, regardless of the density of development.

Higher densities around city, town and village centres include some mixed-use activities. Centres are assumed to deliver additional services and amenities (health, tertiary, business etc) if supported by scale.

Table 25: Mixed use modifier for Zoned Business Land

Business Land density modifiers	Modifier
All business land, with the exception of industrial land	With the exception of industrial land, approximately 75% of building space on business land is assumed to be available for residential uses (mixed use buildings). Commercial and other business uses are assumed to make up approximately 25% of the uses within these buildings, comprising: ▪ The lower 3 floors of 12 story buildings; ▪ The lower 1-2 floors of 6 story buildings; and ▪ The ground floor of 3-4 story buildings.
Industrial land	As above, this is a no-go constraint for new residential development. Industrial land uses are assumed to comprise single story industrial development.

Key Growth Assumptions

The tables below demonstrate key growth assumption that were workshopped and agreed with Council staff.

This includes the different densities and associated expected typologies that are described in the scenarios above and were used in population capacity modelling, infill density assumptions outside the scenario focus growth areas and uptake/yield assumptions.

Higher densities around city, town and village centres include some mixed-use activities. Centres are assumed to deliver additional services and amenities (health, tertiary, business etc) if supported by scale.

Table 26: Density assumptions for scenarios growth focus areas.

Density	Example application within the scenarios (S1, S2, S3 and S4)	Dwellings/Ha	Indicative number of Floors	Indicative Population per dwelling
High	Paraparaumu Centre (S1)	100	≤ 12	2
Medium-High	Paraparaumu Centre (S2 and S3), Waikanae, Ōtaki	80	4 - 6	2 .5
Medium	Other Local Centres (S2 and S3) (including new Greenfields around railway stations), Raumati beach.	60	4 - 6	2.5
Medium- Low	FUDZ (S2 and S3), new village centres (S4)	40	≤ 3	2.5
Low	Greenfields (S4), Other Greenfields (S3)	20	≤ 2	3

Table 27: Infill Density Assumptions Outside of Scenario Growth Focus Areas

Scenario	Description	Infill density outside of focus areas covered by each scenario
1	High density compact city	Methodology to calculate higher infill development vacant urban zoned land located outside of Paraparaumu central, Waikanae and Ōtaki: For all residential zones: ▪ Exclude all lots less than 400m^2, that cannot be subdivided to create a minimum two allotments of 200m^2. ▪ Total remaining area in each zone and divide this by the minimum lot size to get the capacity. Apply a 4% uptake for these allotments[47].
2 - 4	All other Scenarios	Status Quo

Table 28: Uptake/Yield Assumptions

Area	Yield
Greenfield	70% uptake assumed over 30 years
Intensification areas	10% uptake assumed over 30 years

Each scenario has been modelled to provide projected population growth overall and within key growth areas, and to show modelled additional population growth by density and anticipated building typology. The capacity modelled for the Status Quo represents the '**realisable capacity'**. The status quo numbers have been derived from the 2019 HBA and allocated spatially by statistical areas to align with the scenario extents. The HBA identified the realisable capacity within the district out to 2047.

The capacity modelled for the scenarios represent estimates of the '**maximum theoretical capacity'** out to 2050. Population growth numbers were modelled using land parcel data to identify the total developable area within each scenario and then applying assumptions around density and development uptake. The development uptake numbers are based on those used in the draft WRGF but modified for greenfield development to reflect the timeframes to develop new large greenfield areas. The development uptake numbers used in the population capacity numbers are shown in the table above.

This modelling provided high level estimates of growth capacity that could be accommodated within the district under each scenario. These numbers therefore do not reflect housing development capacity as under the NPS-UD that must be 'feasible' or 'reasonably likely to be realised' nor are they intended to be. Council is currently undertaking an update of the housing component of the HBA in line with NPS-UD requirements, which will provide an updated assessment of the sufficiency of housing capacity to meet demand.

GIS Modelling

The methodology followed to model at a high-level population growth numbers under each scenario is summarised below. The capacity modelled for the Status Quo represents the realisable capacity. The capacity modelled for the scenarios represents the maximum theoretical capacity.

Input Data

- **Scenario Extents**
  - The spatial extents for all scenarios were determined through consultation process with KCDC to create polygons for each scenario
- **Property and Parcel Data**

[47] This is based on the HBA releasable uptake rates of 3.97% (ForecastID) and 3.78% (StatsNZ).

- This was obtained from KCDC and is a join of their property and ratings databases
- This data only included rateable land (i.e. no road or hydro parcels were included)

- **No Go's and Go Carefully Layers**
  - The listed 'No Go' layers were merged into one layer
  - The listed 'Go Carefully' layers were merged into one layer

Calculation of Developable Land

1. Select parcels by location using scenario spatial extents polygons. Parcels with centres within 10m of the scenario extent polygons were included. Create new layer for each scenario.
2. Parcel Exclusions:
   a. Select parcels by location using the 'No Go' polygons. Parcels with centres within 10m of the polygons were included in the selection and removed from the parcel layer for each scenario. Where larger parcels were selected that did not have over 50% of their area subject to a No Go overlay, these parcels were retained.
   b. QV Property Use codes were then used to screen the remaining land. All land classified as property codes for cemeteries and crematoria (47), outdoor recreational (53 and 55), Utility services (60-67)
   c. All land zoned Industrial under the PDP was excluded from consideration.
3. All remaining parcels were then dissolved to remove overlapping geometries to create final property parcel information.
4. Spatial join with the relevant reporting units e.g., SA2

Calculation of Development Densities

1. Created and calculate field for Density for each property parcel. This was set according to the parcel's location within each scenario extent.
   a. Densities were adjusted based on proximity to the scenario centre, with densities reducing as distance from centres increased. These are shown in the table below:

Scenario	Distance/Buffer	Density
Paraparaumu SC1	0m-800m from District Centre	100 dwellings per hectare
	800m-1200m	60 dwellings per hectare
Otaki SC1	Central corridor	80 dwellings per hectare
	Outside corridor	60 dwellings per hectare
Paraparaumu SC2 and SC3	0m-400m from District Centre Zone	80 dwellings per hectare
	400m-800m	40 dwellings per hectare
Waikanae SC2	Inside corridor	60 dwellings per hectare
	Outside corridor	40 dwellings per hectare

2. Densities for all parcels currently within a commercial zone under the PDP were reduced by 25% to reflect non-residential activities also occurring on the site.
3. All parcels subject to 'Go Carefully' polygons. Parcels with centres within 10m of the 'Go Carefully Polygons were lowered by one level (i.e. 80 dwellings per hectare to 60 dwellings per hectare).

Calculation of Population Yield

1. Population yields were based on the relevant dwelling per hectare density and population per dwelling per scenario density assumptions under each scenario to get theoretical dwelling capacity and population.
2. Assumed all remaining land available within each scenario for comprehensive redevelopment with maximum site coverage, at the maximum potential density within all areas of the scenario extent.
3. Applied a low uptake modifier of 10% for all existing urban areas in each scenario.
4. Applied an uptake modifier of 70% for all greenfield development.
5. Population outputs were calculated based on the required reporting units.

Calculation of Status Quo

Realisable capacity from the residential capacity model was aggregated based on Statistics New Zealand 2013 area units' boundaries for the HBA. These do not align with the statistical area 2 (SA2) used for current population projections. The following process was adopted for the incorporation of status quo growth:

1. Assign area unit boundaries according to intersection with the spatial extents for each scenario. All area units that intersect a scenario extent have their calculated realisable capacity aggregated for each scenario extent.
2. Where an area unit does not intersect a scenario extent, these have been left unassigned and aggregated as infill outside of scenario extents.

Realisable capacity from the residential capacity model was reported as dwellings. The following process was used to convert realisable capacity to population growth under the status quo:

1. Population growth has been calculated based on the dwellings multiplied by population per dwelling. As all realisable capacity was identified as standalone housing typologies, population per dwelling has been based on the low-density scenario assumptions.

Qualitative Assessment

2. A qualitative assessment of the status quo and each scenario against Councils draft principles for growth (with the exception of supporting mana whenua aspirations see section 3.6 above) was then carried out, using the following 'traffic light' rating scale. This assessment was informed by an elected member workshop in early April 2021 and further input from Council staff.

Traffic Light Assessment Scale

Alignment with draft Principles for Growth is:

- Good
- Partial
- Poor

3. Consideration was then given to some of the key trade-offs under each scenario, which are outlined in this report above. The fixed scenario attributes were not the focus of this assessment, as it was assumed that all scenarios would need to deliver upon those attributes. The assessment was informed by meetings with Council staff.

Appendix C: Key Statutory directions for growth

SUMMARY OF KEY STATUTORY AND STRATEGIC DIRECTIVES FOR GROWTH[48]

There is a wide range statutory and strategic directives and requirements relevant to growth in the Kāpiti Coast district. Some of these are very directive and others provide more flexibility, and there are tensions and trade-offs that need to be carefully considered and managed (e.g. provide for development capacity while maintaining and improving water quality). In summary, the key directives for growth in the district in the relevant statutory planning documents are as follows:

- Council must provide at least 'sufficient development capacity' to meet demand for housing and business land (approx. 30,000 increases in population and 12,000 new dwellings based on recent projects);
- Council must provide for intensification (at least six storeys) in and around city centre (Paraparaumu) and within 'walkable catchments' of rapid transit stops (Waikanae and Otaki);
- Council must achieve well-functioning urban environments that provide a range of housing typologies, improve housing affordability, have good accessibility to a range of activities and services, open and natural places, active and public transport;
- Maintain compact urban form that integrates transport, land use and urban form;
- Urban development and growth protects and enhances the natural environment, maintains water quality and avoids sites with significant natural values, including wetlands and significant natural areas;
- Urban environments are resilient to the future effects of climate change and avoid an increase in risk from coastal hazards;
- Urban environments support reductions in greenhouse gases and the transition to a low emissions economy;
- Urban development provides for Mana Whenua aspirations and values, protects areas of wāhi tapu, and supports the development of Māori land to achieve social, economic and cultural outcomes; and
- The adverse effects of stormwater and wastewater discharges from urban land uses must be improved over time.

Some key directives for growth in the relevant strategic planning documents are consistent with those above and also include:

- Higher densities of development in some areas of the district, particularly Paraparaumu central, Waikanae, Ōtaki, Waikanae North and Ōtaki North, will be important to help accommodate projected levels of regional growth over the next 30 years;
- Work in partnership with iwi;
- Support mana whenua initiatives to allow rangatahi and whanau to reach their economic potential;
- Development should consider and improve the districts' open space network, community facility network, public transport, walking network, cycling network and bridleway network connections;
- Improve the quality of the built environment so that urban areas are attractive places to live, have walking access to services and are well-connected to public transport;
- Walking-dominant design and streetscape improvements should be prioritised within centres;
- High quality lifestyle, training opportunities and start-up opportunities are some important factors to attracting new businesses and investment;
- Improve environmental quality and protect high quality soils;
- Recognise the importance of the arts, cultural histories and the natural environment to the identity of the district;
- Consider natural hazards and natural landform elements when locating new growth;
- Infrastructure capacity planning is an important part of accommodating new growth; and
- Plan water catchments to ensure there is sufficient water to maintain the life supporting capacity of the waterbody first, provide for human uses second.

[48] As summarised in the 4Sight report '"*Kāpiti Coast District Growth Strategy Review – Statutory and Strategic Context"* (January 2021).