



BUILDING A BETTER WORLD

Hastings Medium Density Housing Strategy - Stage 2

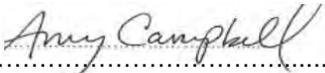
Prepared for Hastings District Council

April 2014

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Executive Summary

The Hastings District Council, Napier District Council, and Hawke's Bay Regional Council jointly adopted the Heretaunga Plains Urban Development Strategy (HPUDS) in August 2010. HPUDS (which is discussed in more detail below) is a strategy for the integrated urban development of the Heretaunga Plains for the years 2015 to 2045.

This Strategy (Hastings Medium Density Housing Strategy – Stage 2) follows on from the recommendations of HPUDS. The purpose of this strategy is to articulate a comprehensive and coherent approach to the intensification (through medium density housing development) of a number of identified “host neighbourhoods”. The strategy is considered necessary to assist in the achievement of the intensification targets of the Heretaunga Plains Urban Development Strategy, 2010 (HPUDS) and the desired outcomes from the Hastings Urban Design Framework 2010 (UDF).

The strategy provides guidance to the community, developers and other agencies and has been developed to assist in the achievement of the intensification targets of HPUDS. The Strategy is designed to be an intensification toolkit which provides a number of tools that all contribute to the achievement of the HPUDS targets. It is anticipated that this strategy will be utilised to inform future district plan, long term plan and asset management plan reviews and will provide guidance to the Hastings development community.

The Strategy is focused around eight individual yet integrated workstreams, namely:

- **Changing perception and capability** – explores perceptions of medium density housing and providing recommendations of how to manage negative perceptions and build capability and confidence within the development community.
- **Promoting quality design and amenity** – assessing the character values of the host neighbourhoods and developing design guides which recognise and respond to existing character and promote quality outcomes in general.
- **Responsive and effective regulation** – reviewing and modifying the district plan to better provide for medium density housing, while ensuring quality development.
- **Building local amenity and open space** – reviewing public open space provision servicing the host neighbourhoods and considering whether it is suitable to provide for anticipated intensification.
- **Medium density ready services** – explores infrastructure capacity within host neighbourhoods to ensure there is capacity to support intensification.
- **Cost competitive development** – exploring the potential levels of demand for medium density housing and looking at what interventions are available to Council to make medium density housing more competitive within the general housing market.
- **Managing greenfield land supply** – exploring the relationship between greenfield residential development and intensification. In particular, the effects on housing affordability caused by restricting greenfield development.
- **Socially integrated development** – explores the social and demographic structures of likely medium density housing developments and provides recommendations of what facilities are required to support them and help assimilate them into the host neighbourhoods.

All of these to some degree affect the market and therefore viability and community acceptance of medium density housing development and are interrelated. From the outset of the project, it was understood that there are a number of relationships and inter-dependencies between the workstreams. As such it is fundamental to ensure a good understanding of each workstream and to be aware of what is required from which workstream before tasks can be advanced in other workstreams.

Through the research and investigations of this strategy, a number of conclusions and recommendations are made for further actions the Hastings District Council should undertake. In particular, it is recommended that Hastings District Council should:

Chapter	Recommendation
Definition	1) Adopt the following definition of medium density housing: Housing at densities of more than 250m ² and less than 350m ² gross area of land per unit.
Changing Perceptions of Medium Density Housing	2) When referring to housing typologies (e.g. in district plans, growth strategies etc.) avoid the use of terms such as medium density housing. Consider using terms such as comprehensive housing development and compact housing. 3) Initiate early engagement of real estate agents to assist in determining likely markets and suitable levels of affordability. 4) Develop an education strategy targeted at the community and development community to address negative perceptions of medium density housing. This strategy should include: <ul style="list-style-type: none"> a. Identification and responses to common misconceptions. b. Demonstrations and examples of good practice. Preferably within a local context (i.e. Hastings / Hawkes Bay) or if not available, national context. 5) Undertake a business case for the development (e.g. through a joint venture partnership) of a demonstration model to provide evidence to stakeholders that medium density housing can be successful. 6) Review resource consent requirements for medium density housing to ensure they are as efficient and relatively risk free (e.g. potential of non-notification clauses, enabling activity status in appropriate locations) as possible. Consideration should also be given to: <ul style="list-style-type: none"> a. Opportunities for reducing consent requirements for medium density housing; b. Other methods of enabling the development of medium density housing (e.g. case officers, use of design panels etc. 7) Ensure that the development community and other stakeholders are well aware of any design guidance through good education programmes and consultation. For example, consider providing “how to” guides and development checklists.

Removing Barriers and Building Capacity	8) Investigate and adopt potential fast track consent processes for medium density housing proposals based on a pre-approved Council accredited applicant process. 9) Explore and adopt other ways of reducing the risk and increasing the certainty of consent processes associated with medium density housing development. 10) Facilitate the early input (e.g. pre-lodgement of resource consents) from senior planners in consent processes. 11) Investigate development finance options (e.g. cash grants, tax incentives and other financial assistance) to understand whether further financial assistance can be provided to developers of medium density housing. 12) Review the potential role of Council as a landowner and acquirer to de-risk the development of medium density housing
Promoting Quality Design and Amenity	13) Develop and adopt design guidelines for medium density housing and ensure that compliance with them is a statutory requirement of the development process to ensure that appropriate amenity values are achieved. 14) Ensure the Hastings design panel are informed of the adopted medium density guidelines and are able to give pre-application advice and to assist in fast-tracking the processing of medium density housing proposals.
Responsive and Effective Regulation	15) Promote positive (in terms of policy framework) and appropriate (in terms of methods) district plan provisions for medium density housing as described above.
Building Local Amenity and Open Space	16) Provide additional pieces of playground equipment on Ebbett Park, St Leonards Park, Queens Square, Havelock North Domain and Windsor Park in order to cater for the increase in household numbers in the residential intensification areas (alternatively for Windsor Park contribute to the development of a new playground on the southern side of Windsor Park to address an existing level of service deficit with regard to playground provision plus growth). 17) Consider providing additional entry points to Ebbett Park should the opportunity arise in the future, particularly along the northern end of Gordon Road. 18) Prioritise the development of a new playground in Duke Street Reserve in the Reserves Strategy as part of addressing an existing level of service deficit (funded by the general rate and a contribution from growth funded by growth). 19) Require the growth community in the intensification areas to contribute \$79 each toward the increased provision of play pieces. 20) Prioritise the provision of a playground in the existing Norton Road Reserve, or new reserve acquired as above, to meet the existing level of service deficit relating to playground facilities (funded by the general rate); 21) Prioritise the acquisition of a new reserve on the southern side of the Heretaunga Street East intensification area in the

	<p>Reserves Strategy as part of addressing an existing level of service deficit (funded by the general rate);</p> <p>22) Contribute to additional pieces of playground equipment to the new playground being provided on either Norton Road Reserve, or the new reserve as acquired above, in order to cater for the increase in household number in the residential intensification area;</p> <p>23) Consider improving the accessibility of Anderson Park to better serve the southern extremity of the Havelock North intensification area.</p> <p>24) Part II of the Greening Streets Strategy should give priority to amenity upgrades in the intensification areas, in conjunction with roading and infrastructure upgrade</p>
<p>Medium Density Ready Services</p>	<p>25) Ensure provision is made for medium density housing in the intensification areas when undertaking works between now and 2015.</p> <p>26) Undertake the further investigations identified in this report to better inform the 2015-2025 Long Term Plan and to optimise the investment required.</p> <p>27) Prioritise and make provision for the works identified in this report in the 2015-2025 Long Term Plan.</p> <p>28) Advocate for the planning for and prioritisation of public transport services provided by the Hawke's Bay Regional Council that support medium density intensification areas.</p> <p>29) Make appropriate allowance for the recovery of the marginal costs for the works through the Development Contributions Policy and the Policy for Calculating Growth Components for Development Contributions on Capital Works Projects adopted by the Key Growth Project Review Board.</p> <p>30) At each LTP and AP survey the development community on it their forward intentions for medium density to optimise the timing of infrastructure works.</p> <p>31) Prepare Local Area Amenity and Infrastructure Plans (LAPs) to integrate above and below ground infrastructure and recommendations from the Openspace and Amenity Work Stream.</p> <p>32) LAPs should be published in a user friendly manner so that host communities can see some of the benefit of hosting medium density development.</p>
<p>Cost Competitive Development</p>	<p>33) Undertake a review of the current development contributions policy in accordance with the analysis and recommendations of this strategy and amend development contributions policy to ensure the distribution of costs of greenfield development (both local and external) are fairly distributed.</p> <p>34) Revise the current approach to development contributions to</p>

	identify other options for potentially: <ol style="list-style-type: none"> a. Reducing the contribution required for medium density housing; and/or b. Enabling the delay of payment until such time as the developer has acquired financial return for investment in medium density housing.
Managing Greenfield Land Supply	35) Review the current approach to the management of greenfield land to ensure it aligns with HPU DS development targets and develop methods to constrain the supply of greenfield development land to increase the relative competitiveness of urban intensification 36) Develop monitoring programmes for the uptake of greenfield land focussed on monitoring: <ol style="list-style-type: none"> a. Immediate supply of vacant greenfield sections b. Near-term potential supply of vacant greenfield sections (land zoned residential but not yet with infrastructure in place (i.e. no s224)) c. Medium-term potential supply of vacant greenfield sections (land identified as target for re-zoning to residential) d. Immediate supply of vacant brownfield sections e. Near-term supply of vacant brownfield sections (those sites that are feasible for small-scale site redevelopment) f. Other potential supply of vacant brownfield sections (large sites currently used for other purposes that can be redeveloped) g. The relative difference between local and national section and dwelling sale prices and volumes. 37) Continue with structure planning and enabling District plan provisions to allow the supply of greenfields land to aligned with fluctuating overall housing demand 38) Be cautious of releasing more greenfields land than is dictated by overall housing demand.
Socially Integrated Development	39) Identify sites within a 5 minute walk of the northern portion of the Parkvale host neighbourhood that could be rezoned to suburban commercial in the future to better provide for the future needs of the intensification area as it develops. 40) Identify sites within a 5 minute walk of the southern portion of the Mahora host neighbourhood that could be rezoned to suburban commercial in the future to better provide for the future needs of the intensification area as it develops. 41) Consult with the Ministry of Education and relevant private school providers regarding the potential implications of intensifying the host neighbourhoods, particularly so for the northern portion of the Heretaunga Street East intensification area. 42) Promote housing supply that reflects the demographic and socio-economic profiles of likely future residents within the Hastings context. 43) Develop an affordable housing strategy that determines whether

greater level of Council intervention (e.g. affordable housing policy) is required in the housing market to ensure housing affordability. This strategy should recognise the role of medium density housing in affordable housing and consider the costs and benefits of the approaches to avoiding social housing clusters.

- 44) Investigate options for freeing up under-utilised housing stock. For example, the development of further retirement villages may encourage elderly, smaller households occupying traditional large sites to relocate thus freeing inefficiently used resources for more efficient uses.

Hastings District Council

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APPENDICES

- Appendix A Medium Density Ready Services -Transportation
- Appendix B Medium Density Ready Services – Water Services
- Appendix C Testing of Comprehensive Residential Development Rule Structure
- Appendix D Economic Overview

1 Introduction

The Hastings District Council, Napier District Council, and Hawke's Bay Regional Council jointly adopted the Heretaunga Plains Urban Development Strategy (HPUDS) in August 2010. HPUDS (which is discussed in more detail below) is a strategy for the integrated urban development of the Heretaunga Plains for the years 2015 to 2045.

Between November 2009 and January 2010 the Heretaunga Plains community had the opportunity to provide feedback and comment on three scenarios outlined in the Heretaunga Plains Urban Development Strategy 2015 to 2045 consultation document. As a result of consultation, the following scenario was adopted as the preferred scenario for the Heretaunga Plains: Compact Development (Within Existing Boundaries).

This scenario:

- Promotes a major shift in approach to ensure long term sustainability for the Heretaunga Plains versatile soils by controlling the outward expansion of existing urban areas and new greenfield development.
- Advocates for a clear recognition by all sectors of the community that the versatile soils are a valued natural resource.
- Provides for housing choice but recognises that densities need to be higher to accommodate growth whilst ensuring the protection of versatile soils.

Recognising that this scenario represented a significant shift from traditional development patterns, the final strategy adopted provided a transition from greenfields development to redevelopment within existing boundaries over time. A key component of future development, as outlined in HPUDS, is the achievement of identified residential density targets in order to achieve a more compact growth pattern. To achieve these targets will require some intensification of the existing Hastings urban area. Urban intensification means development within an existing urban area that achieves higher densities than currently prevail.

There are risks associated with urban intensification if poorly conceived and executed. In such circumstances urban intensification can create poor urban environments with low amenity values.

Within Hastings, the most common form of intensification undertaken to date constitutes infill development, where an individual lot is subdivided to create an additional one or two lots. It is considered that this approach by itself will be insufficient to achieve the HPUDS targets, nor achieve high quality urban environments. In addition, infill development is often sporadic which can create pressures on infrastructure. HPUDS recognises this by noting that intensification targets will not be met by traditional infill methods and that alternative intensification models should be actively pursued.

To achieve the intensification targets of HPUDS, whilst ensuring appropriate residential amenity is provided, requires a change in development methods towards a more comprehensive design approach to intensification. In this regard, Hastings District Council have determined that to achieve the HPUDS density targets in a manner that ensures appropriate residential amenity, medium density housing development should be encouraged within identified areas of Hastings District.

2 Purpose of the Strategy

The purpose of this strategy is to articulate a comprehensive and coherent strategy for the intensification (through medium density housing development) of a number of the "host neighbourhoods" identified through the Hastings Urban Issues and Urban Design Framework (UDF), namely:

- Heretaunga Street East;
- Raureka;
- Havelock North;

- Parkvale; and
- Mahora.

This strategy provides guidance to assist in the achievement of the intensification targets of HPUDS and forms the basis for the development of an intensification toolkit as recommended by HPUDS. It is anticipated that this strategy will be utilised to inform future district plan, long term plan and asset management plan reviews and will provide guidance to the Hastings development community.

This Strategy is focussed around eight individual yet integrated workstreams, namely:

- **Changing perception and capability** – explores perceptions of medium density housing and providing recommendations of how to manage negative perceptions and build capability and confidence within the development community.
- **Promoting quality design and amenity** – assessing the character values of the host neighbourhoods and developing design guides which recognise and respond to existing character and promote quality outcomes in general.
- **Responsive and effective regulation** – reviewing and modifying the district plan to better provide for medium density housing, while ensuring quality development.
- **Building local amenity and open space** – reviewing public open space provision servicing the host neighbourhoods and considering whether it is suitable to provide for anticipated intensification.
- **Medium density ready services** – explores infrastructure capacity within host neighbourhoods to ensure there is capacity to support intensification.
- **Cost competitive development** – exploring the potential levels of demand for medium density housing and looking at what interventions are available to Council to make medium density housing more competitive within the general housing market.
- **Managing greenfield land supply** – exploring the relationship between greenfield residential development and intensification. In particular, the effects on housing affordability caused by restricting greenfield development.
- **Socially integrated development** – explores the social and demographic structures of likely medium density housing developments and provides recommendations of what facilities are required to support them and help assimilate them into the host neighbourhoods.

The following diagram reflects the inter-relationships between these workstreams and how this strategy aligns in the context of the Stage 1 Strategy and future work:

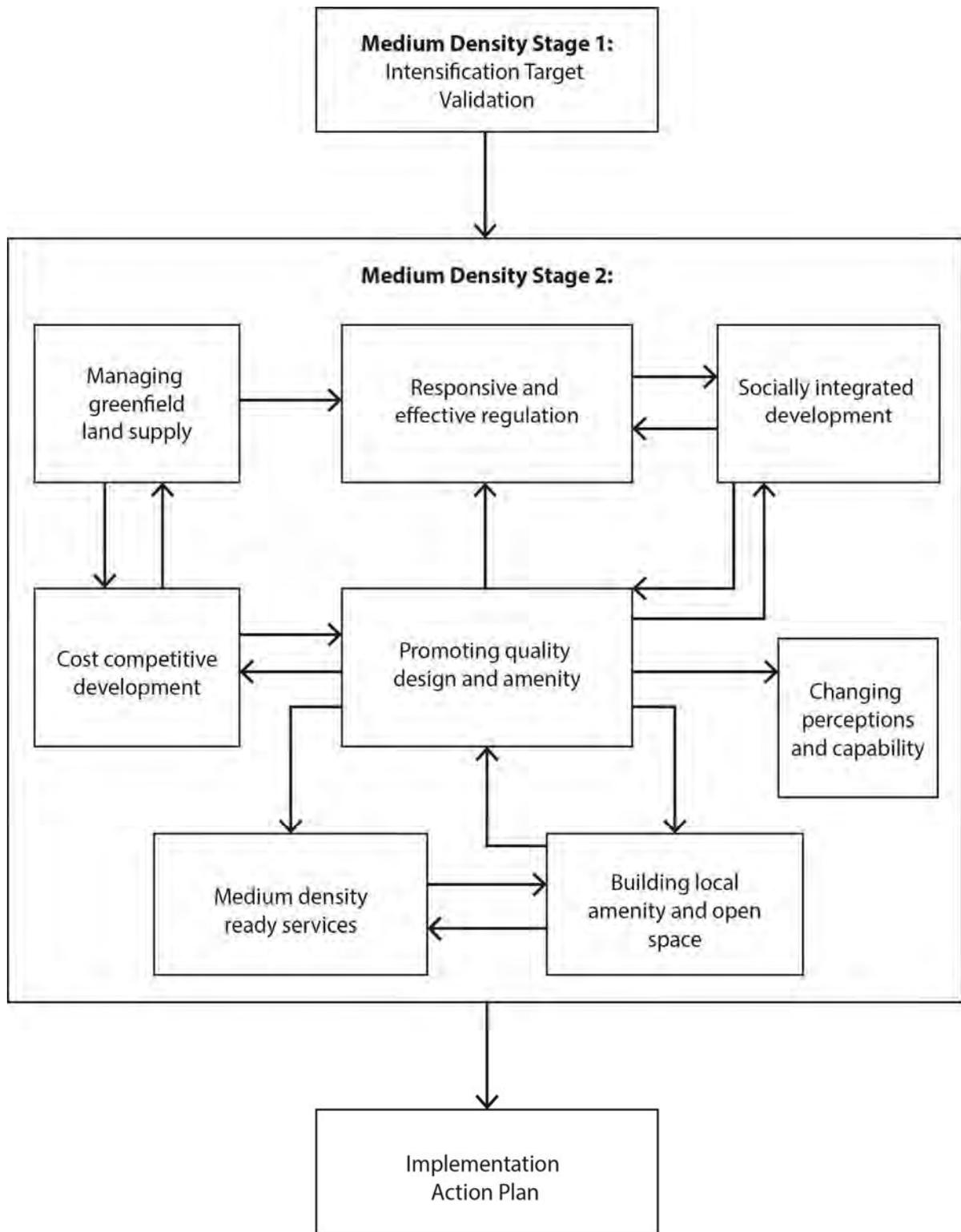


Figure 3.1-1: Relationship of Workstreams

3 Background

There are a number of existing strategies, plans and investigations that have previously been developed and which underpin this Strategy. The following is a summary of some of the key documents and projects.

3.1 Hastings District Council Long Term Plan 2012/22

The Hastings District Council Long Term Plan 2012/22 (LTP) identifies the following objectives for Hastings District:

- A nurtured environment for future generations through the care, protection and best use of resources.
 - Best use of productive land
 - Healthy drinking water & wise water use
 - Managing negative impacts on people, air, land and water
 - Wasting less
 - Energy efficiency and choices
 - Neighbourhoods which provide a safe, healthy, vibrant and attractive place to live and work.
 - Attractive location to live
 - Diversity in housing choice
 - Attractive and useable public spaces
 - Safe, multi-functional urban centres and neighbourhoods
 - Connected open space
 - Urban areas resilient to hazards and shocks
- A place full of life, opportunities and activities, where we work together, have fun and embrace the diversity of our people.
 - Places and spaces for learning and interaction
 - Places and spaces for recreation and fun
 - Strong district identity
 - People at the centre of planning & service
 - Effective working relationships with mana whenua
 - Young people connect and develop positively within the community
 - Appropriate services and facilities for an aging population
 - A future we can fund
- Safe, enjoyable, quick, and clean transport options that will enable our communities to stay connected.
 - People move around safely
 - Attractive and safe walking and cycling environment
 - Accessible transport options
 - Efficient movement of goods
- Shared economic prosperity, built on traditional strengths, new opportunities and the development of our people.
 - Enhanced traditional economic base

- New and diversified business investment
- Appealing visitor destination
- Skilled and enterprising people
- Responsive Council services

Well executed urban intensification can make a positive and valuable contribution to many of these objectives when integrated with other initiatives.

3.2 Heretaunga Plains Urban Development Strategy, 2010

HPUDS constitutes a collaborative approach by the Hastings District Council (HDC), Napier City Council (NCC) and Hawkes Bay Regional Council (HBRC) to plan for urban growth in the years ahead. HPUDS will apply from 2015 and will provide a framework out to 2045 (whilst being regularly reviewed). The purpose of HPUDS is to provide a comprehensive integrated and effective growth management strategy for the Heretaunga Plains. It takes a long term view of land-use and infrastructure. Each of the partner councils has made a commitment to the development and implementation of the Strategy and the way growth will be managed across the Heretaunga Plains for the next 30 years.

As discussed above, HPUDS identifies a preferred settlement pattern which seeks to move towards a more compact approach to development. This approach is underpinned by the following aims:

- Avoid encroaching onto the Heretaunga Plain;
- Increase densities and intensification in suitable locations;
- Reduce the spread of both Napier and Hastings;
- Provide for a range of housing types;
- Encourage walking, cycling and public transport as an alternative to the private motor vehicle.

HPUDS allocates a growth target for intensification within existing urban boundaries of 4,048 households across the Heretaunga Plains (through infill, site redevelopment and brownfields) at 50% of total household growth (55% of urban growth) when averaged over the 2015 – 2045 study period (based on a sliding scale over three 10-year periods) with urban intensification closing on 60% of total growth by the end of the period. The HPUDS targets include intensification through brownfields and multi-site redevelopment to achieve target densities for development of 20-30 households per hectare and a total of 4,048 between 2015 and 2045. HPUDS allocates 2,024 of these to the main urban areas of Hastings, Havelock North and Flaxmere.

3.3 Hastings Urban Issues and Urban Design Framework 2010

The Hastings Urban Issues project was initiated in August 2009 in order to generate new approaches to urbanism that more closely reflect the shifting priorities and challenges associated with achieving more sustainable urban growth. The aim of the project was to outline an urban design framework for Hastings that can coordinate future streams of work within HDC as they respond to current and future urban issues. The Hastings Urban Issues and Urban Design Framework (UDF) recommended a number of projects be undertaken by HDC, in particular:

- Recommendations for Hastings CBD green space(s)
- Recommendations relating to the improved functioning of the Hastings CBD
- Developing specific design responses to prevent urban sprawl – identification of the best locations for residential intensification in Hastings, Flaxmere and Havelock North, including direction on design requirements
- A comprehensive understanding of how the three centres (Hastings, Flaxmere and Havelock North) work as a whole, with particular regard to infill housing, urban transportation networks and the best directions for any future expansion, having regard to urban sustainability
- Urban policy direction for the District Plan; and

- To look at any Havelock North and Flaxmere specific issues not covered by existing urban design frameworks

Relevant to this project, the UDF provided a number of further specific recommendations:

- Reduce expansion into versatile soils
- Enable residential intensification of the CBD, Heretaunga St East and Mahora
- Support medium density residential in Flaxmere and Havelock North
- Assess development economics and market conditions of residential intensification
- Assess infrastructure in intensification areas

A crucial aspect of success for urban intensification is its location in relation to facilities and services, local amenity and access to transportation and other infrastructure. The UDF provided strong guidance on where intensification should occur and be supported.

3.4 Medium Density Strategy – Stage 1

Following on from HPUDS and the UDF and as a precursor to this project, HDC undertook Stage 1 of a Medium Density Strategy. The key objectives of Stage 1 were as follows:

- To identify forms and examples of housing typologies for medium density development that are appropriate to the character and physical conditions of the District's primary urban centres;
- To determine the physical capacity of the existing urban areas (previously identified) to accommodate the HPUDS intensification targets from 2015 – 2045 and in doing so, identify physical constraints and any associated costs associated with mitigating these constraints;
- Identify and assess the fundamental financial conditions necessary for the market to accept the HPUDS intensification targets and in doing so, identify the existing financial and market constraints and any potential or likely interventions required to overcome these conditions;
- Identify likely patterns of medium density development under existing conditions (financial and regulatory), and an aspirational pattern of medium density development to ensure HPUDS targets can be achieved taking account of infrastructural constraints and requirements, costs, required financial and market conditions over the study timeframe and the likely timing of any potential interventions required; and
- Make recommendations based on the study outcomes and identify key streams of 'follow on' work.

The Key findings of the Medium Density Strategy – Stage 1 are:

- The intensification targets set out by HPUDS can be met via a mixture of infill and comprehensive site redevelopment; but
- The conditions do not currently exist to warrant the market (unaffected) to facilitate the composition and location by which medium density housing is achieved. The market for medium density housing is currently constrained by differential land values that favours fringe or greenfield locations which are perceived to exhibit higher amenity, create greater efficiencies and have a higher degree of desirability.
- Intervention of the residential housing market will be required to achieve the intensification targets set out by HPUDS. Intervention will need to focus on restricting land supply in the short to medium term to improve the relative value of developing and living in identified urban locations, thereby forcing the market to use existing residential land in a more efficient way.
- The costs and benefits of Council taking intervention need to be better understood prior to undertaking any intervention.

In this regard, the Medium Density Strategy Stage 1 made the following recommendations:

- Undertake a cost benefit analysis on the options before the Council to understand the relative net benefits to the Hastings District Community and merits of directing residential development to accommodate growth.

- Identify an appropriate activity status for medium density residential development (including comprehensive and master planned residential development) and associated development standards and assessment criteria to carry into the District Plan review.
- Consider restricting the future provision of planned greenfield land provision.
- Undertake a full review of residential character in the identified areas and develop good practice housing development guidelines.
- Undertake further detailed assessment of infrastructure capacity.
- Develop a model medium density development project demonstration model.

4 Medium Density Housing - Definition

At this point, it is worth noting that, at present there is no definition of either “density” or “Medium Density Housing” within the Hastings District Plan. In this regard, it is considered useful to consider what we mean by “density” and “medium density housing.” According to the Australian Model Code for Residential Development (AMCORD), density is:

- A measure of population or the number of dwellings per unit of area; or
- A measure of the form of the built environment; or
- A measure of development potential.

A consistent finding of research on medium density housing is the view that the concept of “density” and the nature of “medium density housing” have no universal standard or application. In other words scales of density (low, medium or high) are subjective as they are based on perception and human experience. By way of example, Australian planning systems recognise that a medium density definition relevant to Brisbane or Darwin is different from one applicable to the inner suburbs of Sydney or Melbourne. In New Zealand terms, what would be considered to be an appropriate density of medium density housing in inner city Auckland or Wellington is unlikely to be transferable to Hastings or other similar New Zealand cities.

The most common definition (or variants thereof) of medium density housing in current use in New Zealand (used by Housing New Zealand and a number of District and City Councils) is: Housing at densities of more than 150m²/unit and less than 350m²/unit, or 30-66 dwellings per hectare (dph). Australian literature further defines medium density housing as including either one or several of the following features or characteristics:

- Small lot subdivision;
- Multi-unit development;
- Attached;
- No lifts;
- Horizontally attached;
- Rarely exceed three stories;
- Individual access and private open space.

Taking the above into account, it is considered that the adoption of a definition of medium density housing in Hastings should be undertaken with caution, particularly so if approaches from other cities are to be utilised. Regardless of this point, it is necessary to adopt a definition of medium density housing for this Strategy therefore, building on the work of Stage 1 and HPUDS (i.e. necessary densities to ensure achievement of density targets) and through consultation with relevant Council staff, medium density housing in the Hastings District context is considered to be:

Housing at densities of more than 250m² and less than 350m² gross area of land per unit¹.

¹ Higher densities of around 150m² in terraced housing or apartment formats may however be appropriate in or near CBDs and other locations with special amenity value.

It is considered that the above density range is both adequate to achieve the HPUDS density targets whilst being acceptable to the Hastings housing market.

Recommendations

Hastings District Council should:

- 1) *Adopt the following definition of medium density housing: Housing at densities of more than 250m² and less than 350m² gross area of land per unit.*

5 Benefits and Risks of Medium Density Housing

HDC has identified medium density housing as being integral to the achievement of the HPUDS density targets, recognising that there are significant benefits of more compact forms of development, not least the avoidance of urban sprawl. The following provides a discussion of the benefits and risks of intensification and medium density housing.

5.1 Benefits of Medium Density Housing

Encouraging more intensive development can have positive impacts on the community, including making it practical to extend public transport, improving interaction between neighbours, increasing energy efficiency and improving housing affordability and choice (Leitmann, 1999; Nelson, 2000; Searle, 2004). The following provides a summary of some of the key perceived benefits of housing intensification.

5.1.1 Protection of Valuable and Sensitive Land Resources

Higher density living enables the housing of people in a smaller geographic area than can be achieved with lower density living. In resource management terms, higher density living generally constitutes an efficient and sustainable use of resources. Higher density development reduces pressure to use valuable, sensitive, or potentially unsafe land for development.

In the case of Hastings District, encouraging intensification will reduce the pressure to develop the highly productive land of the Heretaunga Plains.

5.1.2 Reduced Reliance on Private Transportation and Reduced Pollution

Globally a key driver for intensification is to reduce dependence on private transport. As a result higher densities are usually encouraged in areas that have good access to services, employment and public transport. Residents of medium density housing generally benefit from shorter journeys to work, facilities and services which provides opportunities for residents to walk, cycle or in some cases use public transport for journeys that would traditionally be longer and thus reliant on increasingly expensive private transportation.

In addition, higher density areas mean more people within a smaller geographic area which increases the sustainability and in some cases feasibility of public transport.

As a result of the reduced reliance on private transportation and the increase of alternative modes of transport, higher density areas are believed to produce less pollution (e.g. as a result of a reduction in single person car journeys) and reduced travel costs (construction on roading and daily household income) than lower density areas (based on similar population bases).

5.1.3 Greater Opportunities for Social Interaction and Support

Higher density housing means a higher concentration of people and their activities. A higher density neighbourhood can potentially establish a greater variety of leisure, shopping, amenities, work, and travel options and increased opportunities for social interaction.

Opportunities for social interaction may increase as a result of the proximity of neighbours with shared socio-demographic characteristics and values. Greater social interaction inevitably leads to greater opportunities to develop relationships and to build support networks.

Children and young people are likely to find a greater catchment of peers to play and associate with within walking distance of their home.

Child safety may be enhanced in cluster configurations where natural surveillance of shared open space permits adults to monitor small children's play. In addition, the wide cross-section of people and their activities also makes for a culturally rich area. Higher density areas are associated with diversity, social unity and cultural growth. There is also indication that more concentrated neighbourhoods have a greater sense of kinship, cooperative spirit and vivacity – fundamentally because a wide range of people with a different set of beliefs and values are in closer contact with one other.

5.1.4 More Efficient Provision of Social Infrastructure

Higher density areas can be provided with social infrastructure (parks, community facilities etc.) in a more efficient manner than lower density areas as there is a concentration of people within a smaller geographical area. In this regard, Councils are able to provide a more cost efficient level of service.

5.1.5 Public Investment Benefits

The cost of intensification versus the cost of new infrastructure within greenfield areas suggests that infrastructure, such as roads and street lighting, can be offered more cost-effectively per capita within a more densely developed area than greenfield development. Larger and more equitable distribution of services such as, schools, and many other public services and institutions is possible in centrally located intensification areas compared to an outlying greenfield area. Greater Housing Choice

Medium density housing constitutes another housing product within the current Hastings market. For potential purchasers the introduction of well-designed medium density housing provides a greater range of housing choice, which are better able to meet peoples lifestyle and lifestage choices and needs.

5.1.6 Other Benefits

In addition to those benefits above there are a number of benefits cited by residents of higher density developments. For example, many residents of higher density developments report their satisfaction with a small yard or garden, having found a large garden a burden. In many case studies, older people have noted an appreciation for locations close to services and facilities, reporting that the stress of travel in low density settings was a problem for them.

Many case study examples have also alluded to a sense of personal safety and security of property as a result of living in closer proximity to their community.

In addition, many residents have also suggested that smaller housing forms and associated outdoor spaces reduce both the effort and cost of maintenance. Well-designed smaller dwellings can be easier and less expensive to heat and cool and clever innovative use of space can provide many of the benefits of larger building footprints.

5.2 Risks of Medium Density Housing

As noted above, there are however, a number of risks associated with medium density housing, many of which are associated with people's perceptions of medium density housing. It is important to recognise these so they can be effectively managed in the design and execution of medium density housing development.

Medium density housing is often viewed in negative terms and there is extensive research exploring these perceptions of medium density housing and this is discussed in greater detail below in Chapter 6.

There is a perception that medium density housing is inferior to larger housing products and is primarily for an economically sub-standard market i.e. simply affordable housing. In this regard, there is a risk that these perceptions are further perpetuated through the development of poor quality medium density housing, in which case the perception becomes the reality.

Perceptions of medium density housing are generally derived from past experiences of unsuccessful poor quality intensification, often received through third parties (e.g. media).

The perceptions outlined above (and discussed in greater detail in Chapters 6 and 7 of this strategy) raise a number of often inter-related risks for a range of stakeholders:

- A risk that potential house buyers will not view medium density housing as an acceptable housing choice
- A risk that developers will not view medium density housing as a viable product
- A risk that banks and investors will not view medium density housing as a viable investment
- A risk that potential neighbours and host communities will view medium density housing as an unacceptable neighbour
- A risk that councillors will view supporting medium density housing as politically sensitive and thus subsequently that Council will view medium density housing as an unacceptable development form

It is considered that in a broad sense, the risks associated with medium density housing (as discussed above) generally arise from perceptions of medium density housing.

Accordingly addressing perceptions is an important first step minimising risk, although there are signs (nationally) of greater market acceptance beginning to emerge. If these perceptions are not taken into account and addressed through further development of well-designed and located medium density housing there is a risk that medium density housing will not be accepted by the community and the benefits will be lost.

6 Changing Perceptions of Medium Density Housing

International research (Breheny, 1997) suggests that the perceived benefits of medium density housing should be put to three tests:

- Veracity: will the environmental benefits be delivered?
- Feasibility: can we make medium density housing a feasible housing option taking into account other competing housing types, including traditional greenfield development?
- Acceptability: will the community affected accept it?

This section of the Strategy focusses primarily on the third test, being the acceptability of medium density housing to the community. Other sections of the Strategy discuss the other two points.

The development of medium density housing is often believed to be more risky than traditional development from a developer perspective and less desirable than traditional housing from a community perspective.

This is considered to be (largely) a result of prevailing perceptions of medium density housing both within the development community and within the housing market. To ensure medium density housing is viewed as a viable housing choice and investment, it is necessary understand and address the negative perceptions of medium density housing.

This is particularly pertinent given research (Centre for Housing Research, 2011) into the housing markets and demographics in New Zealand identified a need for around 25,000 new dwellings a year nationally within New Zealand. There is an expectation that a growing share of new homes will be by way of medium density housing, climbing from around 20% to 25% currently to well over a third of the total new build housing stock. To date, there has been a lower than expected uptake of medium density housing nationally, which suggests the persistence of market preferences for detached, suburban housing.

Negative perceptions of medium density housing create a barrier to the success of medium density housing as a viable housing and investment choice. Research in New Zealand confirms this by recognising a “general resistance in the population at large.”

In 2001, medium density housing in the Auckland Region was described as: a relatively new phenomenon which has changed the region’s housing landscape and widened the range of available housing choices. It is a response both to changing lifestyles and preferences, as well as the outcome of

a regional commitment to intensification...Given that medium density housing is a decidedly new way of living, it is not surprising that it has become a hot topic for public debate. (Dixon, J, Issues in Medium Density Housing, 2001). In this context, community includes:

- Potential and existing residents;
- Potential and existing purchasers;
- The development community;
- Potential and existing neighbours.

Taking the above into account, it is considered pertinent to consider what contributes or creates these negative perceptions. Research suggests that there is a perceived relationship between increasing densities and the lowering of residential amenity values. For example, Katz (1993) suggests that the majority of the public views higher density development as an unattractive residential setting, associated with (amongst other things):

- Noise,
- Loss of visual privacy,
- Lack of green space; and
- Traffic and parking problems.

6.1 The Prospective Resident Perspective of Medium Density Housing

Research undertaken on behalf of the Centre for Housing Research (CHR) in 2011 explored the perceptions of medium density housing from the perspective of prospective buyers (i.e. people currently actively engaged in the housing market). Participants of the research were asked:

- What their views of medium density housing were; and also
- What attributes might lead to greater acceptance of medium density housing

The following table provides a summary of the key findings:

Table 6.1-1 - Prospective Buyers/Occupants Perspectives of Medium Density Housing

Perspective Buyer Perceptions of Medium Density Housing	Attributes that may lead to Greater Acceptance
<ul style="list-style-type: none"> • Characterless; • Drab; • Monotonous; • Cramped; • Leaky; • Subject to complications of body corporates; • Lacking privacy; • Noisy; • Insecure; • Lacking an outlook; • Lacking hobby and storage space; • Having parking problems; • Not allowing pets; • Poor prospects for capital gains; • Associated with a high proportion of rental occupiers. 	<ul style="list-style-type: none"> • Physical separation from neighbours; • Physical outdoor space; • Large garages connected to the dwelling; • Open plan design and a feeling of spaciousness; • A modern, light home with a sunny aspect; • Quality materials and architect standard design; • A mix of housing styles, ideally with nothing over two storeys; • Nearby parks, playgrounds and safe places for children to play; • A sense of security built into access and design; • Cul-de-sac layouts, perhaps creating distinctive, small neighbourhoods; • Quality controls by means of covenant; • On and off-street parking.

6.2 The Resident Perspective of Medium Density Housing

Research undertaken in 2001 for Waitakere City Council explored the success or otherwise of medium density housing by investigating the perceptions of groups of residents and non-resident stakeholders. The following provides a discussion of the findings of the research of residents.

Table 6.2-1 - Resident Perspective of Medium Density Housing

Question	Resident Responses
Reason for living in medium density housing development	<ul style="list-style-type: none"> • Less household and yard maintenance than traditional housing. • Convenience and proximity to shops and services. • Design features and amenities provided by the development. • Favourable location.
What do residents specifically like about the medium density housing development	<ul style="list-style-type: none"> • Safety and security provided by the design of the development. • Value of the community and neighbours created by the design and proximity of the development. • Convenience and proximity to amenity. • Range of facilities. • The design and layout of the development. • Well-designed traffic flow.
What do residents specifically dislike about the medium density housing development	<ul style="list-style-type: none"> • Their neighbours. • Crowding. • Lack of privacy. • Not having sufficient storage space.
What works well in the medium density housing development	<ul style="list-style-type: none"> • Rubbish collection. • Noise levels outside units. • Parking. • Traffic flow.
What doesn't work well in the medium density housing development	<ul style="list-style-type: none"> • Body corporate.
What do residents look for in housing choice and is this satisfied by the medium density housing development.	<ul style="list-style-type: none"> • Privacy. Most residents were satisfied with the privacy of their indoor space. Fewer were satisfied with the privacy of their outdoor space. • Sunny environment. Over 90% reported that their outdoor and indoor spaces were sunny. • Safety. Majority of respondents reported a high level of safety during the day. This decreased at night.

Other comments of note include:

- A significant number of respondents used the park and found walking around the development a comfortable and safe experience. Walking was a popular activity amongst residents.
- All respondents had at least some positive contact with their neighbours.
- Car ownership per household was very high and car usage patterns had changed little from respondents' previous place of residence.
- There was a slight increase in the use of public transport. The bus was the most common form and improvements in frequency, connections, time-tabling and lower costs were all cited as factors that would increase usage.
- The majority of respondents felt that the medium density housing development was a good place for children to live.

6.3 The Non-Resident Perspective of Medium Density Housing

Research undertaken in 2001 for Waitakere City Council explored the success or otherwise of medium density housing by investigating the perceptions of groups of residents and non-resident stakeholders. Non-resident stakeholder groups included developers, architects and designers, managers of body corporates, off-site owners, neighbours and local retailers.

Table 6.3-1 - Non-resident Perspectives of Medium Density Housing

Non-resident Group	Key Issues	Key points	Notes
Developers	Critical Factors for investment	Important to ensure good timing. There is potential for good long term capital growth. Providing low maintenance units is attractive. Availability of a proven body corporate manager was influential in the decision to invest.	The role of real estate agents (in determining the likely market and levels of affordability) was a critical factor in developers deciding to invest. Important to be the first developer.
	Obtaining Council approvals	Consenting processes were difficult and time wasting. Very bureaucratic processes.	Important to get commitments in writing; Design guidelines presented good ideas but were too slack as no statutory requirement.
	Developing good medium density housing	Incorporating urban design principles is an important factor. Having sufficient economies of scale is a fundamental requirement. Avoiding co-location with other developments. The location of the site is very important. Needs to be serviced by good access to shops, transport facilities etc. Tension between providing quality housing and maintaining profitability.	Awareness of design principles was recognised as important as was meeting client needs and efficiency.
Designers and architects	Obtaining Council approvals	Consenting processes were slow and difficult. Guidelines were hugely time consuming with doubtful outcomes. Generic guidelines can add value – important to set principles without	Council responded well to a well presented and researched scheme despite complex requirements. One interviewee suggested Council should consider

Non-resident Group	Key Issues	Key points	Notes
		restricting design flexibility.	requiring the input of professional designers.
Managers of body corporates	Operation of body corporates	Language barriers can be an issue. Tenants not always informed of the rules. Tenants rather than owner occupiers can be a concern.	Suggestions to improve body corporates: The operation of an active owners committee; Addressing language barriers; The employing of a part time building manager to deal with rubbish and car parking issues.
	Developing good medium density housing	Units need to be supplied with adequate parking for residents and visitors. There needs to be a building manager for multiple unit developments. Having a long term maintenance plan is important. Attention to design details (sound proofing, satellite dishes, good quality fittings) is very important. Important to ensure that units are well designed with good privacy and space (both within the unit and outside).	
Off-site owners	Reasons for investing in medium density housing	Knew the builder or developer. Proximity to public transport and retail centre was attractive. Units were low maintenance and easy to rent. Suitable for their children when they got older.	Majority of off-site owners were happy with their investment.
	Owning medium density housing	Believe the units had insufficient parking on-site. Problems in construction. Problems with the body corporate. Increasing number of tenants (compared with owner occupiers) resulting in a decline in the area. Some tagging of exterior walls. Not enough space for children to play.	
	Designing good medium density housing	Need for good construction quality and design (privacy, courtyards, soundproof walls, retractable clotheslines). Need to have sufficient on-site parking. Need to have adequate green areas/reserves. Requires a location close to amenities and facilities for families without cars. Reduced density levels to avoid the creation of future ghettos.	

Non-resident Group	Key Issues	Key points	Notes
Neighbours	Impact of medium density housing	Brought diversity of people to the area. Loss of wildlife and wetlands. Depressing effect on the area. Lowered the capital value of their house. Pressure on infrastructure. Increased traffic. Failure to improve public transport and provision for pedestrians. A lack of recreational space.	
	Future issues	Impact of increased traffic and lack of sufficient parking. The significant number of properties rented. Potential to turn into slums.	When asked how to avoid these issues, interviewees suggested: Be selective in determining the type of houses to be built. Large numbers of developments in one area should not be permitted. Diversity of housing type is important.
	Designing good medium density housing	Increased on-site parking. More open space. Lower density and more mixed housing types. More consideration of the effects on infrastructure. Council should have more control and not allow commercial interests to override other considerations.	
Local retailers	Impact of medium density housing	Generally a positive impact on business.	
	Future issues	Likely to turn into slums in the future.	
	Designing Good medium density housing	Sufficient space and garden areas. Good security. Low maintenance. Adequate living space for families. Lower density housing. Ensuring smaller scale and attractive developments.	

6.4 Further Negative Perceptions of Stakeholders

In addition to the above, international research concluded that perceptions of medium density housing tended to be more negative when:

- Development or redevelopment was undertaken on a large scale;
- Building design was considered to be of poor quality or monotonous;
- There had been a large amount of redevelopment as opposed to new buildings on un-built land (e.g. greenfield);
- It involves the loss of historic or traditional buildings;
- It involves the loss of land considered to be of value to the community (e.g. recreation land);
- It changes the social character of an area (e.g. different demographic groups or types of tenure);
- It involves significant amounts of non-residential activities (i.e. mixed use);
- It is not located in close proximity to necessary services (shops, community facilities etc.) and public transport.

The UDF and this strategy attempt to deal with all of these through good location and design, through the district plan, design guidance and education, and supported by appropriate investments in targeted amenity and infrastructure investment).

6.5 Where Medium Density Housing Has Been Successful

It should be noted that not all perceptions of medium density housing are negative and there are numerous circumstances where medium density housing has been very successful. In particular, where increased densities have been achieved they have generally been driven by distinctive demographic groups such as:

- Young people in education or early career stages
- Singles and couples
- Retirees
- Non-family households; and
- Frequent movers

In addition, research suggests that the people that medium density housing may appeal to are generally more likely to:

- Not want to spend time gardening or on house maintenance;
- Like something new and modern;
- Like the idea of living in a community where friends are made and people look out for one another;
- Like the orderliness of style that accompanies medium density housing (in contrast to the traditional “haphazard” development in typical NZ suburbs);
- Accept constraints on personal freedoms in return for a better communal environment and the prospect of secure or rising property values.
- Trade off capital gains for lifestyle benefits.

Many of the above preferences are reflected in the resident feedback to research discussed above.

6.6 Conclusions

Analysis of the above findings leads to the following conclusions:

- Many prospective house buyers have negative perceptions of the term medium density housing which means that they are less likely to consider medium density housing as a viable housing choice. In this regard the label of “medium density housing” is likely to be a deterrent and a more descriptive and positive term should be used in promoting the emergence of newer higher density housing products.
- Prospective house buyers suggest that separation from neighbours, clever and innovative building design and areas of open space may lead to greater acceptance².
- Residents of medium density housing identify convenience (e.g. low maintenance gardens, proximity to services,) as a key reason for why they chose medium density housing. In this regard, it is worth considering how this (desire for convenience) likely relates to demographic groups in terms of likely housing markets.
- Many of the perceptions and factors that may lead to greater acceptance can be addressed through selective location and good design, such as smaller scale developments, variety in building design, private open space, adequate garaging and sufficient parking, sunny aspect, personal safety, inside storage and consideration to maintenance and rubbish collection. This conclusion will be discussed in more detail in other workstreams

According to developers:

- The role of real estate agents in identifying the likely market and levels of affordability was a critical factor in investing in the development and should be engaged in promoting higher density housing choices;
- The location of the site is very important. Good access to shops, transport options etc. is fundamental and has largely been addressed through the UDF;
- The key issue is the tension between providing quality housing and maintaining profitability, which require clever design, innovation and flair amongst designers and developers.
- Designers, architects and developers all pointed at costly and difficult resource consent processes as being a big deterrent to undertaking further medium density housing development.

² At \$1,200-1,400/m² building rates, clever use of seemingly expensive technologies and design approaches such as cavity sliding doors, fold/pull/slide furniture and cabinetry, and spacer appliances can often pay for themselves if integrated into the design at the outset through the reduced building footprint achieved. This also helps with buyer appeal as being “clever and compact”.

Recommendations

Hastings District Council should:

- 1) *When referring to housing typologies (e.g. in district plans, growth strategies etc.) avoid the use of terms such as medium density housing. Consider using terms such as comprehensive housing development and compact housing.*
- 2) *Initiate early engagement of real estate agents to assist in determining likely markets and suitable levels of affordability.*
- 3) *Develop an education strategy targeted at the community and development community to address negative perceptions of medium density housing. This strategy should include:*
 - a. *Identification and responses to common misconceptions.*
 - b. *Demonstrations and examples of good practice. Preferably within a local context (i.e. Hastings / Hawkes Bay) or if not available, national context.*
- 4) *Undertake a business case for the development (e.g. through a joint venture partnership) of a demonstration model to provide evidence to stakeholders that medium density housing can be successful.*
- 5) *Ensure that the development community and other stakeholders are well aware of any design guidance through good education programmes and consultation. For example, consider providing “how to” guides and development checklists.*
- 6) *Ensure that the development community and other stakeholders are well aware of any design guidance through good education programmes and consultation. For example, consider providing “how to” guides and development checklists.*

7 Barriers to and Solutions for the Building and Development Community Engaging in Medium Density Housing

There are a number of barriers to the building and development industry in engaging in medium density housing. To address these barriers, Hastings District Council should give consideration to the range of approaches available to build capacity within the development community, and the range of potential partners that can assist.

Building capacity within the development community has been approached in terms of the willingness of the market to supply appropriately located and designed medium density housing. This is linked to the ability of the developer to gauge the risk in the market which can be primarily assessed through the perceived level of demand for medium density housing. Both supply and demand factors need to be considered in conjunction with each other as the housing market operates slowly in terms of change.

Generally speaking, developers will not opt to supply medium density housing unless they are sure of a market and the ability to minimise their risk. In this regard, their engagement is highly dependent on the perspective of purchasers. As discussed at length above, the involvement of purchasers is often influenced by a range of perceptions both economic and non-economic.

As part of the development of this Strategy a series of workshops and interviews were held with representatives of the Hastings development community, focussing on what they perceived to be barriers to the building and development industry in engaging in medium density housing.

Overall there was a high level of agreement with the findings of this Strategy regarding perceptions and barriers to medium density housing.

The following provides a summary of some of the Hastings development community's feedback:

- Margins are tight and there are many layers and groups involved in developing housing.
- The cost of land in Hastings is too high.
- The market range is broader in Havelock North than it is in Hastings, however so is the competition.
- Hastings District has historically developed in an ad-hoc manner, particularly so in terms of building design. This needs to be recognised in building design for medium density housing.
- New developments need to be supported by established vegetation to ensure the impact of new development is softened. This is costly.
- Good marketing and being able to demonstrate quality (e.g. show homes and demonstrations) are very important and are costly.
- Very important to consider who the potential market are. In a place like Hastings this is even more difficult as the potential market is small and thus to be viable any housing product needs to be marketable to all people.
- No particular demographic group to focus on in Hastings due to the scale of the market.
- Must be of a high quality whilst fitting into the market. This comes at a cost.
- Open space needs to be orientated towards the sun. This is difficult to achieve on smaller lots.
- Council processes are inefficient which leads to significant cost. A specific account manager should be provided to fast-track the consenting process.
- The current District Plan does not provide for medium density housing development.

In addition, and according to developers involved in a 2001 Waitakere City study:

- The role of real estate agents in identifying the likely market and levels of affordability was a critical factor in investing in the development and should be engaged in promoting higher density housing choices;
- The location of the site is very important. Good access to shops, transport options etc. is fundamental³;
- The key issue is the balance between providing quality housing and maintaining profitability, which require clever design, innovation and flair amongst designers and developers;
- Designers, architects and developers all pointed at costly and difficult resource consent processes as being a big deterrent to undertaking further medium density housing development.

The following section of this report explores the barriers the development and building community faces engaging in medium density housing development, provides recommendations for approaches to addressing those barriers and thus building capacity within the development community and identifies potential partners and the roles they can play in assisting Council

7.1 A Lack of Understanding/Education

7.1.1 Barriers to the Building and Development Community

As discussed at length above, the perceptions associated with medium density housing can be negative. The difficult form of medium density housing is not always well understood by the house buying public, planners, politicians, developers or other stakeholders. This point is further supported by the previous discussion on perceptions of medium density housing. Research shows that real estate agents are sometimes reported to be unsure about its merits and they are a key part of the property market.

7.1.2 Approaches to Building Capacity and Stimulating Market Demand

There is a need for a range of stakeholders in medium density housing to actively promote different housing styles and communicate the benefits to residents and the wider community.

Better education and access to information regarding medium density housing is required to achieve greater levels of acceptance and demand within the market. Providing the community with improved information is important for the acceptance of medium density housing as a viable housing choice.

Research into the issues surrounding medium density housing has found that the rationale is based on perceptions rather than a factual understanding (as discussed above). The acceptance of this product and ultimately its demand will depend on engaging the community in ownership of this product and a greater understanding of the benefits both individually and for the community.

To build capacity within the development community to develop medium density housing, significant efforts should be put into improving the education of all stakeholders to address the negative perceptions. There are many examples around the world of education programmes dedicated to addressing negative perceptions of medium density housing and intensification.

Approaches include:

- Myth busting pamphlet's (e.g. Auckland Council – Unitary Plan);
- Demonstration projects;
- Community and stakeholder workshops and education programmes;
- Fieldtrips with key stakeholders to successful examples.

7.1.2.1 Potential Partners

There are a number of potential partners that can assist Council in building capacity through education. For example:

- Central government (e.g. MfE, Housing New Zealand, Department of Building and Housing) – research and analysis of medium density housing projects to identify what has been successful and what has not.

³ It is considered that this matter has largely been addressed through the UDF.

- Real estate agents – assist in community education.
- Local development community – assist in community education.
- Credible champions within the community who have experienced medium density living.
- Multi-disciplinary advocacy groups (e.g. developers, community groups, council representatives)

7.2 Relative Competitiveness with Other Housing Choices

7.2.1 Barriers to the Building and Development Community

Many factors influence competitiveness, but in this context it means the acceptance in the market of different products and the risk involved in operating outside those historical boundaries. Historically the market has had a clear preference for larger sites and has resorted (in the NZ context) to smaller sites only as a trade-off. Whilst the trend for quarter acre block is reducing, there is still a trend towards larger (e.g. 650m²) sites.

In addition to larger sites, there has traditionally been a preference in the New Zealand development community for greenfield development as opposed to brownfield or redevelopment. There is a general developer perspective that greenfield development is cheaper and easier (e.g. rarely requires site amalgamation unlike urban intensification) in most cases, likely to be more acceptable to the market and the community. This is despite the associated increased public costs of having to provide new infrastructure to service new development and owners relative distance from employment and services. It should also be noted that, with comprehensive housing development, site amalgamation can also be difficult and costly.

Developers are essentially risk averse and will continue to provide to the market the easiest sale. This approach is due to the fact that an individual developer is unlikely to be able change market perceptions themselves and so they are forced to follow the market.

7.2.2 Approaches to Building Capacity and Stimulating Market Demand

To build capacity within the development community to develop medium density housing, efforts must be undertaken to address the lack of relative competitiveness of medium density housing compared with other more traditional housing typologies (e.g. greenfield development). This is discussed in more detail elsewhere in the Strategy.

7.2.2.1 Potential Partners

To increase the relative competitiveness of urban intensification, central government (e.g. MfE, Housing New Zealand) has a role as a potential partner through research and analysis of approaches to increasing the competitiveness of urban intensification.

7.3 Timing and Planning Delays

7.3.1 Barrier to the Building and Development Community

The time required for consenting (often complex and/or controversial) medium density housing projects can often span more than one property cycle, adding significantly to development cost and risk. The slow process of gaining resource consents can have a significant negative impact on the cost of development and its financing. As a result, procedural delays are likely to reduce the range of developers in the market, favouring those with substantial financial backing which increases their access to and reduces their dependence on loan capital.

At the same time, the potential reduction in returns associated with higher holding, planning and development, and construction costs reduces the attractiveness of large scale development as an equity investment. The recent property market crash and the consequences for developers have highlighted this sensitivity to delays and the consequences by way of a loss of capacity in the development and construction sector. One possible response of such delays may be a move towards smaller scale developments involving less capital and less risk, but more likely to be acceptable to the community and market. Unfortunately, under current circumstances small scale developers, who are usually more highly geared and often dependent on pre-sales off the plans to complete a development, will also face difficulties raising finance.

7.3.2 Approaches to Building Capacity and Stimulating Market Demand

Given the emphasis on public benefits of intensification, many stakeholders feel the public sector (local council or central government) should take a lead in promoting such developments. The Council must be seen to allow (e.g. through appropriate planning provisions) appropriately located and designed development to provide the community with exposure to quality medium density housing to facilitate these changes.

To build capacity within the development community to develop medium density housing Hastings District Council should look to make the consenting process as simple, flexible and certain as possible, within the need for a design based assessment process to ensure quality outcomes, including assigning key account managers.

7.3.2.1 Potential Partners

Potential partners that can assist Council in building capacity through addressing planning delays include:

- Central government (e.g. MfE, Housing New Zealand) – providing best practice guidance for planning processes and possible pilot programme funding.
- Local development community – engaging with Council to identify key constraints of planning process and provide recommendations for improvement.

7.4 District Plan Issues

7.4.1 Barrier to the Building and Development Community

Difficulties (including delays and significant cost) for the development community can result from a lack of understanding within the consent authority (i.e. district council) of the market and requirements for medium density housing and a focus instead on gross density targets in plans.

The prescriptive nature of district plan rules can deter innovation in medium density housing as well as pushing up the costs of execution. Developers have reported that designs may simply be modified to meet the planners' requirements to avoid delays. Where expediency has ruled, there is a tendency to do the minimum. Examples of problems/issues identified through this research, and arising from District Plan rules includes:

- Road widths being too narrow;
- Shading from neighbourhood buildings;
- Inappropriate locations of garages;
- Proximity of houses to public road.

More serious issues concerned the relative location of retail centres, drainage engineering issues and the requirements for infrastructure provision. These matters are discussed in more detail within the UDF and other workstreams.

7.4.2 Approaches to Building Capacity and Stimulating Market Demand

To build capacity within the development community to develop medium density housing, Hastings District Council should look to make the resource consenting process as simple, flexible and certain as possible. Any development that requires a resource consent introduces a delay and an uncertainty that are costly – costs that are either passed onto the property purchaser eventually or prevent the development proceeding in the first place.

Council, as part of the development of this strategy, has looked at current district plan objectives, rules and methods and promoted changes through the Proposed District Plan to provide for the development of medium density housing (e.g. positive policy framework, appropriate rules//). This matter is discussed further in Chapter 9.

In addition, HDC should also consider whether current resource consent requirements for medium density housing are appropriate. Reducing the requirements for resource consent (this is the inference to be taken from both the Australian and New Zealand Productivity Commission studies) is one approach.

Council should also look at methods to facilitate the resource consenting process. HDC council staff already make themselves available for two free pre-application meetings which is seen as a way of assisting the development community. In addition, HDC also ensure early input (e.g. pre-lodgement of resource consents) from senior planners to ensure developers do not meet unexpected opposition further into the consent process. HDC should examine current approaches to facilitating the resource consent process for medium density housing to determine whether:

- They are appropriately enabling medium density housing; and
- Whether there are further approaches to facilitating the resource consent process that can be utilised.
- Whether staff capability is sufficient, and if further staff training is required.

Further, consideration should also be given to the role of the Hastings urban design panel. There are many examples within New Zealand of urban design panels being adopted to facilitate the resource consent process through, for example providing pre-application design advice.

7.4.2.1.1 Potential Partners

Potential partners that can assist Council in building capacity through addressing district plan issues include:

- Central government (e.g. MfE, Housing New Zealand) – providing best practice guidance for district plan drafting and associated processes etc.
- Local development community – engaging with Council to identify key constraints of planning process and provide recommendations for improvement.

7.5 Development Contributions and Other Costs

7.5.1 Barrier to the Building and Development Community

In addition to costs associated with delays, developers have faced high fees for development contributions. These have increased noticeably in recent years. Development contributions are seen as a deterrent to the development community. Often, areas suited to intensification have poor infrastructure and the full costs of upgrading is levied on developers, often well before returns are realised. Issues with development contributions will be discussed in more detail elsewhere in this Strategy.

In addition to development contributions, developers have identified a range of further costs which they may incur in order to facilitate the development of medium density housing. For example:

- A developer having to purchase adjoining properties to remove objections from neighbours;
- A requirement to install infrastructure well beyond the boundary of the property;
- Funding for consultants to help resolve engineering and retail issues in the neighbourhood;
- Funding for a project manager within the local authority due to a shortage of resources.

7.5.2 Approaches to Building Capacity and Stimulating Market Demand

To build capacity within the development community to develop medium density housing, consideration should be given to (note: this is discussed in more detail in other workstreams):

- Whether the current development contributions policy can be modified to better facilitate medium density housing. Consideration should be given to whether the current development contribution can be reduced or whether a payment delay can be introduced. There may be a case for reducing the development contribution where infrastructure capacity exists with the urban boundary. To the extent that the development contribution charged exceeds the actual costs then the charge is contributing to an inefficient use of resources. Eventually an infrastructure capacity constraint will be reached but, even then, there is the possibility that the wider community benefits from any infrastructure enhancement and, hence, there may be a case for a reduced Development Contribution charge. While the former Auckland Regional Council pointed to a US study that estimates a US\$100 billion infrastructure saving over 25 years in the

US from more compact forms, the NZ Productivity Commission warns that diminishing returns exists, hence the focus should be what is the extent of spare infrastructure capacity in Hasting.

- What types of other costs the local development community face and what can be done by the council (e.g. non-notification clauses in the District Plan) to assist.

7.5.2.1.1 Potential Partners

Potential partners that can assist Council in building capacity through addressing development contributions and other costs include:

- Central government (e.g. MfE) – providing best practice guidance for the development of development contributions policy, amendments to the Local Government Act.
- Local development community – engaging with Council to identify key constraints of planning processes etc. that have contributed to significant other costs and provide recommendations for improvement.

7.6 A Lack of Public Infrastructure

7.6.1 Barriers to the Building and Development Community

It is essential that infrastructure is capable of accommodating medium density development, however areas suited to intensification often have poor infrastructure. This issue is discussed further in Hastings' context in Chapter 11, however according to research the full cost of upgrading infrastructure has often been levied on developers through development contributions (see above discussion). Often, where intensification has failed, development contributions are taken well before any returns for the developer are realised, meaning a significant financial burden on the developer.

In addition, often there can be a lack of public investment in 'soft' infrastructure which is a key requirement required to support medium density housing (discussed further below). Planning for enhancing the public realm (e.g. parks and reserves, the quality of the street frontage, parking provision etc.) has often not adequately responded to or reflected the private sector investment in medium density housing.

7.6.2 Approaches to Building Capacity and Stimulating Market Demand

To build capacity within the development community to develop medium density housing, consideration should be given to:

- Ensuring infrastructure services and capacity are available to service the development;
- Ensuring the equitable distribution of costs for upgrading infrastructure;
- Ensuring the public realm (e.g. street design) responds to the proposed development and
- Ensuring sufficient supply of public reserves and parks to service the increased population provided by the development.

7.6.2.1.1 Potential Partners

Potential partners that can assist Council in building capacity through ensuring appropriate infrastructure is in place include:

- Network utility providers – for example by ensuring infrastructure provision and upgrades are aligned with anticipated intensification
- Local development community – for example by ensuring timing of development is well aligned with infrastructure provision.

7.7 Development Finance

7.7.1 Barrier to the Building and Development Community

Interviews with trading banks identified challenges for medium density housing. There are no hard and fast rules with each case being treated on its merits. However the two banks interviewed (through CHR research) suggested similar lending criteria would apply. A maximum of 65% of the completed market value would be available for the developer, provided the developer was able to demonstrate a market for the finished product. This provision leaves around 10% of the cost to be found elsewhere from equity investors or mezzanine finance, both of which are in short supply at present.

Banks reluctance to lend at higher debt ratios are considered to be a result of the risk involved in the resale of the product due to existing perceptions about the product in the market.

Finance is often quoted as a restricting factor. It is important, though, to differentiate between a lack of finance due to market imperfections and a lack of finance due to the poor credit risk of the proposal. Banks will lend across a range of credit risks but will vary the collateral, covenants and price requirements. Should any perceived lack of finance be the result of market imperfections then a range of financial assistance policies are available:

- Cash grants – specific, case-by-case test, high transaction cost, sunk cost
- Loans – also specific and case-by-case, also high transaction cost but some (not all due to credit write-offs) cost recovery relative to grants policy
- Tax incentives – rate reductions, grace periods, payment delay but also reduced council revenue
- Insurance – if future liability (e.g. pollution, breach of property rights) an impediment
- Liability relief – same costs as insurance provision but without any ‘premium’ income from the developer
- Capital attraction incentives – guarantees and/or assurances, possibly only of a non-financial nature (e.g. assure priority given to consent assessment or assure cooperation of local industry)
- Planning assistance – zoning and/or purchasing land (see Bartsch & Wells 2003, 2005 examples)
- Finance assistance – revolving loan funds, benefit sharing loans, (in the UK) Planning-gain Supplement.

Financial assistance has not been generally used in Australia and New Zealand by local authorities, suggesting that finance is either not the core constraint for developers or that credit risk is likely to be significant for liabilities assumed by the council. Similarly, provision of financial assistance comes with high transaction costs and risks undermining traditional finance markets developing.

7.8 Approaches to Building Capacity and Stimulating Market Demand

Given the strategic importance of protecting high quality soils through intensification, consideration should, be given to whether Hastings District Council can provide alternative development financing options to assist in the reduction of developer risk and on what basis (e.g. short term equity investor, land acquirer).

7.8.1 Potential Partners

Potential partners that can assist Council in building capacity through the provision of development finance include:

- Central government – for example, lobbying the financial sector to better provide for the needs of medium density development;
- Financial sector – for example providing better debt ratios than currently occurs to medium density development.

7.9 Further Options to Stimulate Market Demand

In addition to the above, the following approaches to stimulating market demand for medium density housing also exists:

7.9.1 Purchase Properties to Prepare for Redevelopment

In Australia, government-owned land organisations are often called on by government to engage in projects or activities that may be considered too risky or unprofitable by the private sector. For example, they might 'de-risk' a site by consolidating land for infill development and obtaining the necessary approvals before passing the site to private developers. Some Australian and NZ local councils will also undertake land development, typically targeted at specific issues (or the result of selling surplus land holdings).

While there are some sites in HDC that may benefit from 'de-risking', it is the challenge of fragmented holdings that could be reduced by council purchases of property. This could take the form of buying single or multiple properties within the district with the aim of on-selling to a developer that intended combining properties (e.g. to buy suitable properties from older people wishing to shift to a smaller dwelling, either directly or by taking out options to buy).

7.9.1.1 Potential Partners

Potential partners that can assist Council in providing public land for redevelopment include:

- Central government – for example, by freeing up under-utilised public sector land (e.g. ex-state schools, MOD land) for medium density housing development.
- Council Property Company
- Possible Joint Venture Partners

7.9.2 Set Up a Council Redevelopment Entity

The use of an independently run government land organisation (GLO) is common in Australian states, involving themselves in housing development (often in partnership and typically for a commercial return) and other functions such as providing advice to government, coordinating land release and providing infrastructure. The Australian Productivity Commission states "If infill targets are to be achieved without changes to the current planning regimes, there is likely to be a greater need for the involvement of GLOs."

7.9.3 Facilitate the Development of Housing Options for The Elderly

Facilitating the development of a retirement village or other housing options for the elderly will potentially bring large sections with older dwellings onto the market. It is noted that a large element of expected population growth is the ageing of the population resulting in a larger number of older people. It is also noted that older people form a significant share of the occupants of older dwellings on large sections i.e. sites of high potential for redevelopment. A couple of observations from developers with regard the preference of older people who do shift: the majority of new occupants in a right-to-occupy village are drawn from the surrounding neighbour; and, from the inhabitant perspective, there is a preference to stay within their current neighbourhood and, when shifting, to only shift once (i.e. no rental situation while the new dwelling is constructed). The confluence of factors suggests there may be merit in the Council promoting the construction of one (or more) retirement villages (or similar elderly accommodation) in neighbourhoods with large concentrations of older occupants of large sections, effectively freeing up a supply of property for re-development. Similarly, the opportunity may exist to promote re-development of a large brownfield site, with priority given to smaller dwellings suitable for older people.

7.9.3.1.1 Potential Partners

Potential partners that can assist Council in facilitating the development of housing options for the elderly include:

- Central government – for example, by freeing up under-utilised public sector land (e.g. ex-state schools, MOD land) for development;
- Private sector developers – for example by working in a joint venture with Council.

- Not-for Profit Social Housing Agencies

7.10 Conclusions

Taking the above into account it is clear that there are a number of barriers to the development of medium density housing. However, there are also a range of options available for Council to actually respond to these barriers and build capacity within the development community.

Interviews with the local development community indicates that many of the barriers identified through national research are reflected within the Hastings development context.

Taking the above discussion into account, the following recommendations are made to build capacity within the development community with regards to the development of medium density housing and to address perceptions:

Recommendations

Hastings District Council should:

- 1) *Review resource consent requirements for medium density housing to ensure they are as efficient and relatively risk free (e.g. potential of non-notification clauses, enabling activity status in appropriate locations) as possible. Consideration should also be given to:*
- 2) *Opportunities for reducing consent requirements for medium density housing;*
- 3) *Other methods of enabling the development of medium density housing (e.g. case officers, use of design panels etc.*
- 4) *Ensure that the development community and other stakeholders are well aware of any design guidance through good education programmes and consultation. For example, consider providing “how to” guides and development checklists.*
- 5) *Investigate and adopt potential fast track consent processes for medium density housing proposals based on a pre-approved Council accredited applicant process.*
- 6) *Explore and adopt other ways of reducing the risk and increasing the certainty of consent processes associated with medium density housing development.*
- 7) *Facilitate the early input (e.g. pre-lodgement of resource consents) from senior planners in consent processes.*
- 8) *Investigate development finance options (e.g. cash grants, tax incentives and other financial assistance) to understand whether further financial assistance can be provided to developers of medium density housing.*
- 9) *Review the potential role of Council as a landowner and acquirer to de-risk the development of medium density housing.*

8 Promoting Quality Design and Amenity

The successful delivery, acceptance and uptake of medium density housing will depend heavily on the indoor and outdoor functionality and aesthetic quality of the development as well as its ability to assimilate into and enhance existing neighbourhood character. Providing high standards of amenity and good quality design are intrinsically related and required to ensure successful delivery and acceptance. As discussed in Chapter 6 above:

- Much of the debate about medium density housing has centred on how to provide for more intensive residential use of a site without reducing what is perceived to constitute accepted levels of neighbourhood urban amenity.
- Broadly speaking, perceptions of medium density housing from all stakeholders generally align, however the relevance and importance of the perception is influenced by their interests in medium density housing.
- There is general consistency with stakeholder views regarding what contributes to urban amenity.

As such, it is considered that ensuring medium density housing development demonstrably achieves and reflects appropriate urban amenity values (within the Hastings context) should go some way (in addition to education etc.) towards minimising those negative perceptions of medium density housing and ensuring the acceptance of medium density housing as a viable housing option. In this regard, it is worth considering what is meant by urban amenity, and the relationship that urban amenity has with design and subsequently perceptions and the acceptability of medium density housing.

8.1 Housing Type Definitions

Both nationally and internationally, there are many terms used, often interchangeably to describe housing typologies. For the purpose of this Strategy, and to avoid confusion, the following terms and definitions are adopted:

- Detached house – a stand-alone dwelling sharing no party walls with any other dwelling.
- Semi-detached house – a dwelling that shares a party wall (but no more than one) with another dwelling.
- Terraced housing – three or more dwellings in a row that all share at least one party wall.

8.2 Promoting Quality Urban Amenity

In 2000, the Ministry for the Environment (MfE), undertook a research project to explore what contributes to, or comprises urban amenity. The purpose of the research being to develop a series of urban amenity indicators that can be utilised on a national basis. The research concluded that, because urban amenity has the greatest meaning locally it is difficult to develop a national set of urban amenity indicators, however the research did recommend 12 core areas that are commonly referred to as being of significance to the management of urban amenity. The 12 core areas being (in no order):

- Noise and vibration;
- Nuisance effects;
- Open space;
- Urban density (including population and housing density);
- Vegetation;
- Landscape;
- Urban design;
- Cultural and heritage features;
- Character of neighbourhoods;

- Visual amenity and views;
- Public and person safety and accessibility;
- Sense of well-being.

The MfE research concluded that a suite of indicators being used to manage these key attributes can then be applied at a local level in relation to the vision and values of the local community (i.e. many of the above indicators are subjective and responsive to local characteristics).

Building on the MfE research and taking into account the local Hastings context, the following urban amenity indicators for Hastings District have been developed. It is considered that, adopting urban amenity indicators and using them to inform design approaches can provide a robust methodology for promoting quality design and amenity.

Table 8.2-1 - Hastings Urban Amenity Indicators

Urban Amenity	Urban Amenity Indicator
• Noise and vibration	• An absence of noise or vibration nuisance.
• Privacy	• Dwellings provide residents opportunities for privacy from neighbours and the public realm.
• Open Space	• A provision of appropriate area and quality of public/private open space.
• Sunlight	• Habitable rooms and open spaces gain sufficient access to sunlight.
• Urban density	• A sense of openness and avoidance of a sense of enclosure.
• Vegetation and landscape	• The provision of sufficient and quality green areas.
• Built design and functioning	• High quality built form.
• Cultural and heritage	• The recognition and relationship with cultural and heritage features.
• Neighbourhood character	• A sense of and connection with the character of a neighbourhood and the avoidance of monotony.
• Visual amenity and views	• Recognition of visual links to the wider area and any significant landscapes.
• Safety	• A feeling of safety and security within the neighbourhood.
• Accessibility	• The availability of efficient and safe access to social infrastructure, shops and public transport.
• General wellbeing	• Health (including mental and economic health) of people is not adversely affected by the built environment.

8.3 Promoting Quality Design

As discussed above, it is considered that, for medium density housing to be successfully delivered and accepted it must achieve an appropriate level of urban amenity (taking into account the local understanding of what constitutes appropriate urban amenity). Design has an integral relationship with amenity. Poor design of the built environment generally leads to poor urban amenity. For example, a subdivision design that creates narrow, enclosed alleyways will inherently lead to a low amenity value in terms of a feeling of safety and security in the neighbourhood. In this regard the design of the development is of fundamental importance.

To ensure the achievement of appropriate urban amenity (see above indicators), it is best practice to consider design at a range of scales:

- Neighbourhood context

- Site context
- Streetscape
- Site layout
- Building form and appearance
- Internal configuration

The following section considers what promoting quality design means within the Hastings context.

8.3.1 Neighbourhood Context

Consideration at this scale focuses on the location of the development within the wider context of Hastings. The key design indicator is:

- Whether the development is in the appropriate location to meet residents' needs.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-1 Neighbourhood Context Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the development is in the appropriate location to meet residents' needs.	<ul style="list-style-type: none"> • Proximity to community facilities 	<ul style="list-style-type: none"> • The development should be well connected (within a 500m walk) with necessary community facilities such as schools, community halls, libraries etc.
	<ul style="list-style-type: none"> • Proximity to places of employment 	<ul style="list-style-type: none"> • The development should be well connected (e.g. located close to public transport options) with areas of employment.
	<ul style="list-style-type: none"> • Proximity to commercial facilities 	<ul style="list-style-type: none"> • The development should be well connected (within a 500m walk) to commercial facilities that will provide for the daily needs of residents e.g. dairies, supermarkets etc.
	<ul style="list-style-type: none"> • Proximity to recreational facilities 	<ul style="list-style-type: none"> • The development should be well connected (within a 500m walk) to a public park and/or other recreational facilities.
	<ul style="list-style-type: none"> • Proximity to public transport 	<ul style="list-style-type: none"> • The development should be well connected (within a 500m walk) to public transport opportunities (e.g. bus stop).
	<ul style="list-style-type: none"> • Ensuring socially integrated development 	<ul style="list-style-type: none"> • The scale of any development or the combination of medium density housing developments within a neighbourhood should not create a socially unbalanced community. • Medium density housing development should be limited in scale to reflect the host neighbourhoods ability to assimilate it. • Where larger scale medium density housing developments are proposed or where several medium density housing developments are proposed in a single neighbourhood, Council may require a social impact assessment. • Medium density housing developments should be 'pepper potted' within a neighbourhood to ensure they do not become the dominant housing typology.

8.3.2 Site Context

Consideration at this scale focuses on the integration of the development within the immediate context of the site. The key design indicator is whether the development is well integrated into the existing local context of the development.

In this context, integration means both responding appropriately to the conditions as well as capitalising on opportunities offered by the location.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-2 Site Context Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the development is well integrated into the existing local context of the development.	<ul style="list-style-type: none"> Sunlight 	<ul style="list-style-type: none"> The design elements should be oriented in such a way that important internal (e.g. habitable rooms) and outdoor spaces are sunny, while at the same time ensuring that negative aspects of the sun can be easily dealt with. The design should include principles of passive solar design;
	<ul style="list-style-type: none"> Wind 	<ul style="list-style-type: none"> The design should ensure that important outdoor spaces are sheltered against the negative effects of wind (e.g. avoid creating wind tunnels), by taking into account the prevailing wind directions.
	<ul style="list-style-type: none"> Views 	<ul style="list-style-type: none"> Where relevant, the design should capitalise on the opportunities that the site offers in terms of views to public and communal spaces. Opportunities for views include those onto public parks or hills (e.g. Te Mata Peak).
	<ul style="list-style-type: none"> Landform 	<ul style="list-style-type: none"> Where relevant, the design should both address the challenges resulting from a sloping site, whilst also endeavouring to utilise it to its advantage. Examples of the former include the minimisation of large retaining walls and creation of open spaces that are walkable. An example of the latter includes the use of the slope for semi-basement parking.
	<ul style="list-style-type: none"> Vegetation 	<ul style="list-style-type: none"> Where possible, existing valuable vegetation should be retained on the site and integrated into the design.
	<ul style="list-style-type: none"> Heritage buildings 	<ul style="list-style-type: none"> Where possible valuable buildings that exist on the site should be retained and celebrated as features that provide character to the development. At the same time, where heritage buildings are found within the immediate context of the site, development should look to complement the heritage buildings, particularly in terms of bulk and location and should consider replicating the heritage building design in terms of the use of materials and other architectural elements.
	<ul style="list-style-type: none"> Materials 	<ul style="list-style-type: none"> Where there is a predominant trend of building materials present within the proximity of the site, the development should, if possible look to follow this.

8.3.3 Streetscape

Consideration at this scale focuses on the relationship between the development and the streetscape immediately surrounding the site. The key design indicator is:

- Whether the development makes a positive contribution to the public streetscape.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-3 Streetscape Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the development makes a positive contribution to the public streetscape.	<ul style="list-style-type: none"> • Street boundary treatment 	<ul style="list-style-type: none"> • Physical and visual separation between the public realm and private property should ensure the protection of residents' privacy.
	<ul style="list-style-type: none"> • Public safety 	<ul style="list-style-type: none"> • The development should contribute to the safety and perceived safety of the adjacent public street. This could be achieved in the following ways: <ul style="list-style-type: none"> ○ At least one of the indoor living spaces (lounge, kitchen, dining) should be located on the ground floor and to the front of the dwelling with windows facing the street. In accordance with CPTED-principles. This will provide opportunities for residents to overlook the street, which contributes to the perception of safety whilst also being a real deterrent for crime. ○ Front fences, walls or hedges should be kept low in order to allow for overlooking from the indoor living spaces. In order to avoid conflict with the objective of the residents' privacy, the primary private open space should not be located between the dwelling and the public street.
	<ul style="list-style-type: none"> • Attractiveness for walking 	<ul style="list-style-type: none"> • Development should make walking along the adjacent street more attractive in many ways, including: <ul style="list-style-type: none"> ○ Measures aimed at promoting public safety (see above) ○ By avoiding dominance of garage doors by recessing garages behind the main front of the dwelling. ○ High quality design (see below).
	<ul style="list-style-type: none"> • Legibility (how easy it is to find your way) 	<ul style="list-style-type: none"> • Building entrances should be placed in locations that are visible from the public street in order to connect new development with the street and avoid confusion about how dwellings are laid out relative to the public realm.

8.3.4 Site Layout

Consideration at this scale focuses on how the development is laid out on the site. The key design indicator is:

- Whether the development is fitting with the size and proportions of the site.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-4 Site Layout Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the development is fitting with the size and proportions of the site.	<ul style="list-style-type: none"> • Bulk location and 	<ul style="list-style-type: none"> • Buildings should be arranged on the site with consideration of: <ul style="list-style-type: none"> ○ The minimisation of overshadowing effects; ○ The promotion of the privacy of residents both within the site and living adjacent to it; and ○ The promotion of the feeling of spaciousness.
	<ul style="list-style-type: none"> • Public private vs. 	<ul style="list-style-type: none"> • For security, privacy and legibility purposes a clear distinction should be made between what is public and what is private. This could be achieved by separating the public sides of dwellings from the private sides of dwellings as much as possible. Fronts should be turned towards fronts (or sides) across public or common spaces, backs should be turned toward other backs (or sides) and, should not abut the public realm or common spaces.
	<ul style="list-style-type: none"> • Private open space 	<ul style="list-style-type: none"> • Each dwelling should be provided with sufficient and quality private open space. In this respect the following should be considered: <ul style="list-style-type: none"> ○ Provision of the space – This could be in the form of a garden and/or a balcony. ○ Quantity and dimensions – The space should be large enough and have the right proportions for it to be useable. ○ Location relative to indoor living spaces – The primary portion of the private open space should be directly accessible from one of the main indoor living spaces (lounge, dining or kitchen), as opposed to being accessible only via a bedroom, bathroom, study etc. ○ Quality – The private open space should be demonstrably sunny for a large proportion of the day throughout the year, it should be private, sheltered, and flat enough for it to be useable. ○ Public open space – whether the development is well serviced by sufficient quality public open space and the degree to which this provision is considered to offset any lack of private open space

Design Indicator	Design Attributes	Guidelines
		provision.
	<ul style="list-style-type: none"> On-site landscaping 	<ul style="list-style-type: none"> There should be sufficient space to integrate attractive, high quality landscaping in common spaces including space to grow vegetables and fruit trees.
	<ul style="list-style-type: none"> Stormwater management 	<ul style="list-style-type: none"> There should be sufficient space to appropriately manage stormwater. Design should seek to reduce the reliance on council stormwater facilities.
	<ul style="list-style-type: none"> Car parking and access 	<ul style="list-style-type: none"> Development should be laid out with consideration of the safety and practicality of car parking and vehicle access. This includes visibility around garages and car ports. There should also be a clear distinction between resident and visitor parking if the latter is accommodated on the site.
	<ul style="list-style-type: none"> Service areas and utilities 	<ul style="list-style-type: none"> Development should be laid out with consideration of residential service areas and utilities. This includes at least the following: <ul style="list-style-type: none"> Washing lines – Residents should be able to use washing lines and other ways of drying clothes naturally. Visibility of utilities – Utilities such as air conditioning units, meter boxes, satellite dishes etc. should be designed in such a way that they do not detract from the visual appearance of the development. Visibility (i.e. avoiding visibility) from the public realm should be a particular consideration. There should be space on site to allow for the house number/name to be easily visible from the road in case of emergencies. There should be space on site for the provision of efficient and adequate facilities for household waste and recycling storage and collection as part of the development, including methods employed (particularly if collection is proposed within the site) to: <ul style="list-style-type: none"> Manage ongoing waste and recycling, including the size, design and location of any combined storage facility and where appropriate a waste management plan or private waste management contract (depending on the scale of development); Avoid visual detraction and positively contribute to the amenity context of the site, neighbouring uses and residential street appearance, and; Minimise odour and to keep the area hygienic, free from vermin, infestations and

Design Indicator	Design Attributes	Guidelines
		protected from theft and vandalism

8.3.5 Building Form and Appearance

Consideration at this scale focuses on the buildings that form part of the development. The key design indicator is:

- Whether the development is of an appropriate architectural quality and is aesthetically pleasing.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-5 Building Form and Appearance Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the development is of an appropriate architectural quality and is aesthetically pleasing.	<ul style="list-style-type: none"> • Mass and proportions 	<ul style="list-style-type: none"> • The building masses should be well-proportioned to ensure they are fitting for their context and provide a sense of spaciousness and visual interest. In the Hastings context this also means that terraced dwellings should be expressed as separate entities to generate a greater sense of ownership and 'street appeal'.
	<ul style="list-style-type: none"> • Diversity and repetition 	<ul style="list-style-type: none"> • Development should avoid excessive repetition. Varying dwelling types should be considered, however, minor architectural variations (e.g. building form, secondary design elements, colour and materials) in development that contains the repetition of one dwelling design can present significant benefits.
	<ul style="list-style-type: none"> • Roofs and floors 	<ul style="list-style-type: none"> • The form of roofs should be of a high quality and fitting with the rest of the dwelling and with the dwellings surrounding the site (taking into account the above design indicator). The slope and eaves of roofs should be designed with consideration of overshadowing effects on neighbouring dwellings and private open spaces. Eaves can also be used to block the high sun in summer, whilst letting in the low sun in winter. • Quality ceiling and floor insulation should be provided, without gaps, holes or tucks visible. • Traditional, wooden floors should be damp proofed;
	<ul style="list-style-type: none"> • Windows and doors 	<ul style="list-style-type: none"> • Proportions and sizes of façade openings should add to the visual character of the building, and be logical and reflective of their function. Front doors should also provide good shelter for visitors, be well lit at night, allow for the convenient movement of furniture, and be designed with the location of mailboxes in mind. • Windows should be double glazed with thermally broken timber or PVC frames. • Provide secure locks and catches on all ground floor doors and windows;
	<ul style="list-style-type: none"> • Façade detailing and materials 	<ul style="list-style-type: none"> • Careful consideration should be given to building materials for each development. Durable materials and simple structures should be used. The visual character and overall success of a

Design Indicator	Design Attributes	Guidelines
		development often relies on the care and attention for building design at a detailed level.
	<ul style="list-style-type: none"> Energy efficiency 	<ul style="list-style-type: none"> Options to enable renewable energy to be generated on site should be considered. E.g. photovoltaic solar panels on the roof; All lighting should be efficient bulbs, either compact fluorescent or LEDs; Provide a heat pump water heater or ENERGY STAR qualified solar water heating system to reduce the reliance on electricity. Include adequate space to separate and collect recyclable materials for council collection and compost green waste.
	<ul style="list-style-type: none"> Water efficiency 	<ul style="list-style-type: none"> The design should allow for the easy installation of water efficient products such as: <ul style="list-style-type: none"> Dual flush toilets; Efficient shower that use less than 9 litres per minute; Water efficient kitchen and bathroom taps; Water efficient dishwasher and washing machine; Large size rain water tanks that can plumb into the house for reuse.

8.3.6 Internal Configuration

Consideration at this scale focuses on the buildings that form part of the development. The key design indicator is:

- Whether the internal arrangement of spaces and functions in the dwellings of the development is useable, efficient and pleasant.

To ensure that this design indicator is achieved, the following guidelines should be adopted:

Table 8.3-6 Internal Configuration Guidelines

Design Indicator	Design Attributes	Guidelines
Whether the internal arrangement of spaces and functions in the dwellings of the development is useable, efficient and pleasant.	Internal / external relationship.	There shall be a direct connection between the main private open space and one of the key indoor living spaces (e.g. living room, dining room). Also important is the connection between a possible upstairs balcony and how it relates to space indoors.
	Size of rooms and spaces.	Rooms and spaces shall be: Of sizes and proportions that make them useable for the activity that they are intended for; Appropriately proportioned to allow for ease of movement from room to room. Provided with appropriate space to allow for sufficient storage for the likely household size.
	Layout	Rooms and spaces should be intelligently laid out to ensure liveability and appropriate amenity. E.g. bathrooms should not be located adjacent to kitchens or habitable rooms.
	Visual and aural privacy both within the dwelling and between	This should include: Careful placement and proportioning of windows in order to avoid overlooking of neighbours' private

Design Indicator	Design Attributes	Guidelines
	neighbouring dwellings	open spaces and habitable rooms. Sufficient insulation of party walls as well as indoor walls. Locating neighbouring dwellings with similar functions abutting each other (e.g. a garage next to a garage, a kitchen next to a kitchen etc.).
	Orientation / passive solar energy.	Dwellings should be laid out in such a way that key living spaces will generally receive direct sunlight. This means that where possible the living room, dining room, kitchen and possibly the main bedroom should be located to the north, west or east, while a garage, storage room, study or bathroom could be located on the southern side of the dwelling.
	Natural ventilation.	Dwellings should be designed in such a way that windows in opposite or different sides of the rooms can be opened for natural cross ventilation.
	Views	Dwellings should be designed in such a way that views that provide visual benefit (e.g. onto open space or distant landscape features) from key indoor living spaces are provided.
	Parking and garaging	Where possible, access from the garage or other parking space to the dwelling should be direct (i.e. without the requirement to be outdoors).

8.4 Host Neighbourhood Character Assessment

The following assessment of host neighbourhoods is based on:

- Work undertaken as part of the Urban Issues project (now Urban Development Framework -UDF), report March 2010.
- Medium Density Strategy - Stage 1, by Beca and others for HDC, report July 2011.
- Hastings Residential Character Area Assessment, September 2012
- Observations during site visits on 10 October 2012.

The host neighbourhoods are identified as:

- Havelock North
- Heretaunga Street East
- Parkvale
- Mahora
- Raureka

8.4.1 Havelock North



The Havelock North intensification areas delineated in red

The Havelock North area has a radial urban structure with six streets intersecting at one roundabout in the centre of the village. The strong focus on the village centre is one of the main contributors to the distinct village feel of the area. Te Mata Peak to the southeast of the village is visible from many locations in the public realm. The village itself is gently rising towards the southeast, which adds to the perception that it is located on the lower slopes of Te Mata Peak.

Lot sizes and shapes are largely varied. Dwellings outside the village centre are generally single storey, mixed with the incidental double storey building. Most buildings are standalone structures with varying distances between buildings. Where buildings are attached, they are generally orientated perpendicular with the street. Buildings are set back from the front boundary, generally by 3m or more. Garages are set back from the street frontage and are not dominant features in the streetscape.

A wide range of architectural styles is present, with large variations in material use and building age.

Small multi-unit developments exist on the large, deep lots in and around the village centre, generally in the form of retirement and semi-retirement accommodation.

The wide road reserves contain planting, generally footpaths and street parking on both sides, sometimes in an angled arrangement. In places a central planted median exists.

Extensive mature planting is present in the public realm, particularly on the higher order streets. Diverse planting, consisting of low planting, shrubs and trees in the front yards in lower order residential streets, supplement public vegetation. Fences, walls and hedges on private properties facing the street are typically low.

Particularly in the block on the south-western side of Havelock Road that has been identified for intensification, there are some examples of non-residential activities at the front, combined with residential activities at the back.

8.4.1.1 Specific Opportunities

It is considered that the areas identified in Havelock North for intensification can accommodate more intense residential development. The following specific opportunities should be considered:

- The Havelock North Village Centre framework -2008 (and subsequent amendment), which has a guiding principle of *“creating a Village Centre that is safe and attractive, that encourages walking and cycling, offers a choice of lifestyles, has mixed use at its core, and has a sense of belonging”* should be referred to.
- Redevelopment in Havelock Road combining non-residential activities at the front and residential at the back should be considered.
- A specific brownfield opportunity exists at the Scout Hall site on the corner of Napier Road and Bennelong Place.
- Constructing a footpath on the north-western side of Middle Road immediately south-west of Porter Drive should be considered.

8.4.2 Heretaunga Street East



The Heretaunga Street East intensification areas delineated in red

The Heretaunga Street East area is located in close proximity to the Hastings CBD. A distinction should be made between Heretaunga Street East itself and the surrounding area located away from Heretaunga Street East (which is still part of the host neighbourhood) and thus for the purpose of this assessment they are considered as two separate areas. This section focusses on Heretaunga Street East.

Heretaunga Street functions as a strategic movement route connecting multiple urban nodes - the CBD, eastern Hastings suburbs and Havelock North. It provides access to a mixture of land uses, including a large component of commercial. Several motels and other types of multi-unit accommodation can be found along this street.

Buildings vary in style and age. Residential buildings are mostly detached with varying distances between buildings. Buildings are a mixture of single and double storey. Where residential buildings are attached they are generally attached perpendicular with the street.

Despite the above, there are several blocks of terraced flats that run parallel to the street, particularly so as Heretaunga Street East approaches the Hastings CBD. This portion of Heretaunga Street East has generally comprised proportionately higher residential densities for many years. In addition, the blocks of shops, motels service stations and other commercial activities located in this area mean that this area has a much greater intensity of urban form than the rest of Heretaunga Street East and the other host neighbourhoods.

Setbacks from boundaries are often limited, with front setbacks of approximately 5m in many places. Some commercial buildings are attached and built to the street boundary.

High fences can be found on many front boundaries. Garages and sheds are often set back and not dominant features in the streetscape. They are often positioned alongside and adjacent to the main dwelling, concealing the rear yard.

The road corridor is wide, footpaths are of basic quality and Public Street planting is sparse.

8.4.2.1 Specific Opportunities for Heretaunga Street East

This area can accommodate more intense residential development. The following specific opportunities should be considered:

- Redevelopment on Heretaunga Street could include a mix of uses, including commercial where the development involves existing non-residential buildings.
- The emergence of a high amenity medium density streetscape differentiated in built form character from the more open general residential areas of Hastings.
- Maximising the potential to support intensification provided by proximity to the CBD (e.g. access to the public transport route, cycleways, supermarkets etc.).
- Walkability to the commercial facilities and bus stops on Heretaunga Street East should be promoted.
- The Heretaunga Street East streetscape could be improved.

8.4.3 The Area Surrounding Heretaunga Street East

The surrounding residential neighbourhood can be characterised as established. The land is flat and the urban structure features a traditional rectilinear urban grid structure with quiet streets generally intersecting at cross roads. Road reserves are long, straight and wide.

The streetscapes of several streets seem recently renewed with footpath upgrades, resealing of the carriageway and street trees (mostly deciduous). The latter most notably contributes to a uniform character in the public realm of several streets. Road corridors are generally very wide and provide ample on street parking.

The backs of (un-subdivided) lots face other backs, and fronts face other fronts across a public street. The urban structure is of a finer grain and consists of smaller blocks near Queens Square, which reduces the walking distance from many properties to the park. Typical un-subdivided lots are rectangular, 15 to 20m wide, and 40 to 55m deep, with varying orientation. Some denser redevelopment and/or intensification has already taken place in the area.

Dwellings are predominantly post war, vary in style and age, are mostly detached, and consist of a mixture

of single and double storey. Where buildings are attached, they are generally perpendicular with the street. Setbacks from boundaries are varying, with front setbacks of approximately 5m in many places. Front fences, walls and hedges do not follow a distinct pattern in terms of style and height.

Garages and sheds are often set back and not dominant features in the streetscape. They are often positioned alongside and adjacent to the main dwelling, concealing the rear yard.

Queens Square in the north-western part of the area is a strong focal point. It is a relatively large park, featuring a playground, fitness trail and a large grassed playing field for passive recreation. The character of the area around it is assessed by Graham Linwood (2012) and identified as suitable for comprehensive redevelopment for more intensive housing.

8.4.3.1 Specific Opportunities for the Area Surrounding Heretaunga Street East

This area can accommodate more intense residential development. The following specific opportunities should be considered:

- The greatest opportunities for residential intensification exist in the areas one block and further back from Heretaunga Street.
- Walkability around Queens Square should be promoted.
- Views onto Queens Square could be provided by double storey development in blocks in proximity.
- The Council should continue with the implementation of street trees in order to tie the streetscape (which accommodates a wide variety of architectural styles and sizes) together.

8.4.4 Parkvale



The Parkvale intensification areas delineated in red

The character of this area is largely defined by Windsor Park, located in the middle of the area identified for residential intensification. The park accommodates Splash Planet, a large swimming pool with associated play areas and car parks. Netball courts are located in the western corner of the park, a holiday park in the southern corner, and sport fields along the south-eastern and north-western edges. Karamu High School is located immediately to the south-east of the park.

The south-western edge of the park is located behind the backs of properties on Albert Street. The public park edges are planted with mature trees and provide visual amenity for the residential properties across the surrounding roads. Little public planting however exists on the residential side of the street. The swimming pool and associated car parks are located away from the park edges and do not seem to negatively impact on the residential amenity.

Grove Road and Windsor Avenue are both busy streets and act as a barrier between the park and the surrounding residential neighbourhood.

Carriageways are generally wide. Little formal crossing opportunities exist on these streets as well as on Sylvan Road. Footpaths are generally flanked by grassed verges on either side of it, and parallel on-street parking is provided for.

The area is flat and consists of largely rectilinear blocks, with long, straight streets. Typical un-subdivided lots are arranged in a back-to-back formation. They are rectangular (with a few exceptions), 15 to 20m wide, and 35 to 50m deep, with varying orientation.

Dwellings are predominantly post war, vary in style, age, form and orientation, and are mostly detached. Where buildings are attached they are generally attached perpendicular with the street. Buildings consist of a mixture of single and double storey. Several examples of relatively intensive site coverage on small sections and cross leased sites exist. A wide variety in front setback distances exists in the area, varying from under 5m to greater than 10m. Several large trees can be found on un-subdivided sections, including in front yards.

The front fence heights and styles are also varied. Several properties do not have a front fence or hedge at all, some have a medium height, and some are as high as 1.8m. Garages are sometimes located at the front of the site, but are generally set back from the street frontage and are not dominant features.

8.4.4.1 Specific Opportunities

This area can accommodate more intense residential development. The following specific opportunities should be considered:

- Views onto Windsor Park should be capitalised upon.
- Crossing opportunities on Grove Road, Windsor Avenue, Sylvan Road to access the park should be provided.
- Further (in addition to recent work improving walking and cycling paths along Windsor Avenue and Grove Road) improvements for walking and cycling opportunities along the Sylvan Road edge of Windsor Park.

8.4.5 Mahora



The Mahora intensification areas delineated in red

This area is located approximately 1.5-2km from the CBD. The character of the area is influenced by several non-residential activities including the Mahora commercial area on the corner of Tomoana Road and Frederick Street and the Watties factory on King Street. Large employment facilities including Heinz Watties on King Street, and Turners and Growers Cool Stores are located in the south-eastern and eastern parts of the area. The area is serviced by bus routes and school buses, and is located on a recognised east-west movement route.

The area is focussed around Cornwall Park, a large park of approximately 370m by 220m, which accommodates several types of passive recreational activities and three cricket pitches. Due to the many tall trees, this park is a strong visual feature, not only in the streets on the edges of the park, but also in the surrounding streets that are set back further from the park. Traffic volumes on Cornwall Road and Roberts Street are such that pedestrians can cross with ease in order to access the park. Tomoana Road on the north-western side of the park forms a greater barrier to access Cornwall Park.

The area is flat and consists of largely rectilinear blocks, with long, straight streets. Typical un-subdivided lots are arranged in a back-to-back formation and are rectangular (with a few exceptions), 15 to 20m wide, and 40 to 60m deep, with several even deeper lots. A row of very deep lots on Nelson Street backs onto the Heinz Watties property. The orientation of the residential lots in the area varies.

Hastings District Council has identified a number of “Character areas” within the Mahora host neighbourhood. In summary, HDC recognise the wide variety in the architectural style, age and quality of the dwellings within these areas. The following provides relevant commentary of the HDC character assessment as it relates to identified areas of the Mahora host neighbourhood. Discussion of the remainder of the host neighbourhood is provided further below.

8.4.5.1 Mahora Character Areas

- Fitzroy Avenue (area along Fitzroy Avenue from Nelson Street to Hinau Street on the south side and Titoki Street on the north side. The area also includes Wellwood Street and Grays Road from Wellwood Street to Fitzroy Avenue) – the housing varies from timber weatherboard and stucco villas to two storey tiled roof stucco clad houses with some 1980’s, 199’s replacement housing. The linking features of the area is a commonality of setback of houses from the street and the scale and intensity of the trees and landscaping. Apart from a few exceptions where more intensive development has occurred, the setback from the road is around 7m minimum. Parts of the street can be particularised as to the era of the houses and the nature of the planting. As a while the differing parts of the street form a cohesive collection of early villas, substantial English houses and bungalows which together exhibit the values of their periods to provide a distinctive character area. A number of sites have been redeveloped with three of these as multi-unit developments. One site incorporates the existing older two storey house as part of the development with a neighbouring site developed with high quality town houses. The other site, nearer Nelson Street employed a lower standard of design incorporating a single storey front residence and two storey residence behind. This cluster pays little respect to the style and character of the surrounding houses. Two other more recent two storey houses are also out of character in the area. The redevelopment of sites in the 1970’s and 1980’s has led to three single storey multi-unit developments in the same vicinity. These are out of character with the earlier villas and bungalows. The mixture of the built character would allow for quality designed multi-unit development in the future.
- Tomoana Road (area on the western side of Tomoana Road at Fitzroy Avenue and continuing through to Mairangi Street and including the houses on the southern side of Duke Street from Tomoana Road to Duke Street Park) – the housing stock within this area is a mixture of 1920’s to 1990’s houses and town houses including a former rest home. Most of the earlier houses have heritage value and the older trees present a pleasant streetscape with mixed aged housing. Cornwall Park is directly opposite the houses and the trees and open space of the park add to the street character. The earlier houses in the area range from early twentieth century and include a substantial two storey weatherboard villa, a Marseilles tile roofed weatherboard bungalow, a two storey stucco English style home and a number of stucco and weatherboard villas. About seven sites starting from Fitzroy Avenue towards Duke Street have been redeveloped with 1980’s and 1990’s town houses, mostly out of character with the original homes. The most inappropriate redevelopment is the former rest home which is now a dominant landmark in the centre of the area. Care should be taken in this area to avoid further indiscriminate development that would further reduce the amenity value of the area. Quality medium density housing could be considered in this area as long as design is cognisant of the existing built and landscape environment.
- Cornwall Road (in its entirety) – the original houses in this street were built in the early 1900’s through to the 1930’s and many of these have been sacrificed to make way for town houses and one infill house. The main feature of the street is the relationship to Cornwall Park to the south and the remaining older stock of houses with their associated landscaping and trees. The earlier houses in the street date from the early twentieth century and are timber weatherboard and stucco villas and bay villas. Many of the original houses have given way to 1970’s and 1980’s houses and townhouses that pay little respect to the original remaining building stock of the area. The one new two storey house on a front site was built in the 1990’s and doesn’t fit to the style of the street. Medium density housing could fit to this area if the designs are of a high quality. The existing diversity of style in the street would not rule out the application of modern design.
- Nelson Street (area stretches from Fitzroy Avenue to Cornwall Road on both sides of the street and includes those houses on the east side of the industrial zone) – the area was developed in the 1920’s to 1930’s and is characterised by the villas and bungalows with deep front yards and substantial planting and landscaping. Two larger two storied houses near the centre of the west side with large trees near the street add to the flavours as does the rest home on the corner of

Nelson Street and Cornwall Road with its large trees linking the site to Cornwall Park adjacent. A group of eight sites in the centre of the west side of the street have been redeveloped in modern form. This area has a mix of architectural styles. The centre area of the west side of the street has been redeveloped were eight 1970's townhouses and single residence have been built. These are out of context with the rest of the area. Any further loss of the original houses in the area may adversely affect the character of the area.

8.4.5.1.1 Mahora - Remaining Area

Dwellings are mostly detached and consist of a mixture of single and double storey. Where buildings are attached they are generally attached perpendicular with the street. A wide variety in front setback distances exists in the area, varying from under 5m to greater than 10m.

Front fence heights and styles vary. Several properties do not have a front fence or hedge at all, some have a medium height, and some are as high as 1.8m. Particularly on the park edges, front fences and walls have been kept low. Garages are sometimes located at the front of the site, but are generally set back from the street frontage and not dominant features.

Several examples of more intensively developed lots already exist within the area and particularly in the streets on the park edges. These include rear site subdivisions and complete site redevelopments. In many of these, the dwelling on the street is single-storey, with one or more dwellings behind it being double-storey. The building coverage is generally high with limited vegetation. A few older dwellings on well landscaped sites and often mature trees still exist. More opportunities for residential intensification seem to exist one or more blocks away from the park, where a greater proportion of the lots have not been subdivided.

Streets in the area consist of a generally wide carriageway with on-street parking, basic quality footpaths on both sides of the street, grassed berms and very limited street tree planting. The streets on the park edges contain significant trees, but only on the park side.

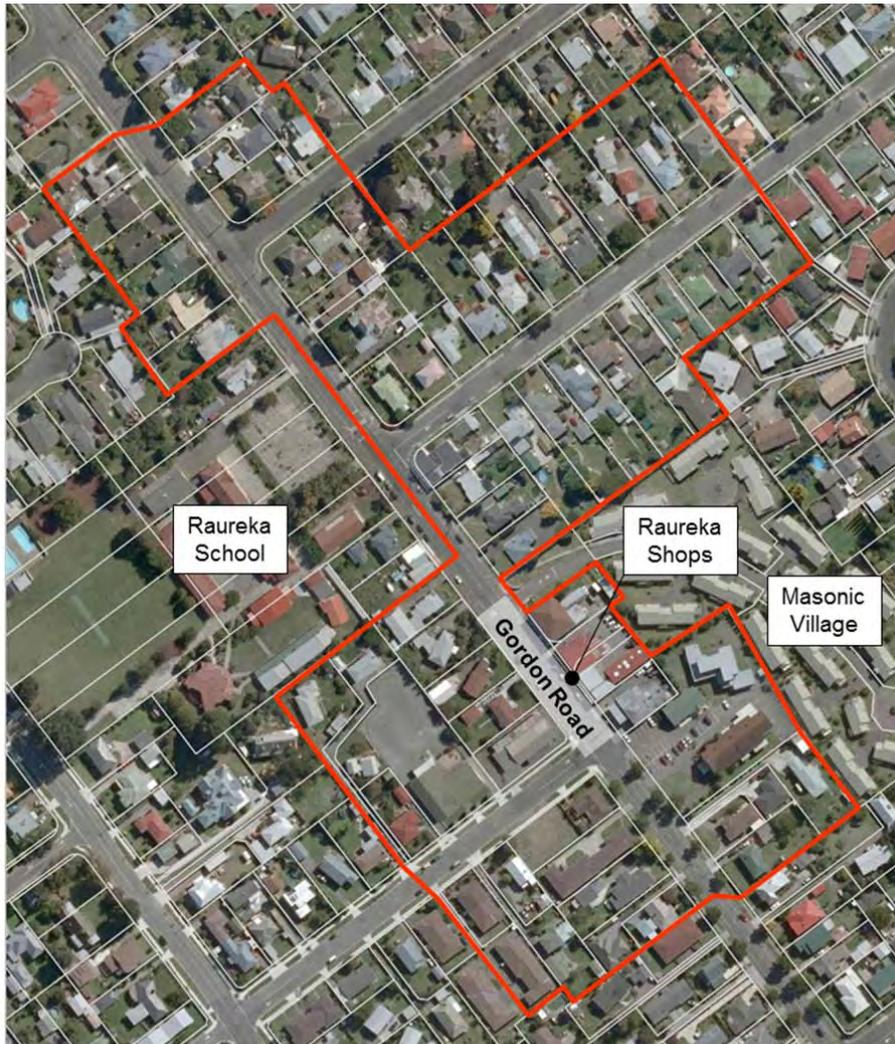
Two special features should be noted; a 120m by 20m rose garden flanking Roberts Street near the Fitzroy Avenue intersection; and the Eversley Lifestyle Care and Village, occupying a corner of Cornwall Park and fronting onto Cornwall Road.

8.4.5.2 Specific Opportunities

Generally speaking, this area (both character and non-character areas) can accommodate more intense residential development, however special care is required within the character areas to ensure that significant character values are not adversely affected. The following specific opportunities should be considered:

- Views onto Cornwall Park should be capitalised upon by any intensification.
- Significant care should be taken with medium density housing development within the character areas identified above to ensure existing character is not adversely affected.
- Redevelopment of up to three storeys should be considered, particularly in the streets setback from the park in order to provide distant outlook onto the park and over lower buildings.
- Formal pedestrian crossings on Tomoana Road should be considered in order to improve pedestrian access to Cornwall Park.
- Walkability around Cornwall Park should be promoted and additional pedestrian connections (e.g. from Burnett and Frederick Streets) should be considered.
- Street trees should be considered for the streets further away from the park.

8.4.6 Raureka



The Raureka intensification areas delineated in red

This area is located approximately 1.5km from the CBD. The character of the area is influenced by several non-residential activities, including the Raureka shops along Gordon Road, Raureka School, several churches, day-care facilities, and the Masonic Village.

The area is flat and consists of largely rectilinear blocks, with a greater proportion of cul-de-sacs than in the other areas considered and larger access barriers, resulting in poorer connectivity. Typical un-subdivided lots are arranged in a back-to-back formation, fronting onto the street. Most lots within the identified area are rectangular, often 18m by 40m, with some examples of lot depths up to 50m. Several have been subdivided into a front and rear sections, with the originally large lots with small houses transformed into multi-townhouse developments.

The traditional dwelling typology appears to be post-war brick and tile with hipped roofs, although there are several examples of art Deco houses. Buildings are generally single storey, and detached with varying distances between buildings. The original dwellings are orientated towards the street with large front and rear yards and separate garages located to the rear of the dwelling. Front setbacks are generally greater than 3m. Front fences and walls are generally low or absent, however there are several examples of high front fences. Front yard planting is significant.

Planting in the fairly narrow road reserve is limited to a narrow grass verge at the property boundary with very few street trees. Overhead power lines are dominant features in the streetscape.

Footpaths are located on both street edges. On-street parking is provided for in a parallel arrangement, except for the area by the school on Gordon Road, where angled parking is facilitated. A kerb build-out and a pedestrian crossing work as traffic calming features near the school. No pedestrian crossings exist near the shops.

Ebbett Park is located just outside this area. This park is used for passive recreation and is located in the middle of an urban block, accessed by three public walkways. The park is surrounded by the backs of residential properties, which is likely to result in safety issues. Another, larger area of open space is the racecourse, located to the south-east and within walking distance of the identified area.

8.4.6.1 Specific Opportunities

This area can accommodate more intense residential development. The following specific opportunities should be considered:

- Walkability around the commercial, community and recreational facilities in and around the area should be promoted and additional pedestrian crossings should be considered for Gordon Road.
- Street trees should be considered for all streets in the area, as opportunities for on-site trees will diminish with comprehensive redevelopment.
- Development of more affordable housing for younger families should be considered.

8.5 Host Neighbourhood Character Principle Assessment

Taking into account the above, the character values and overall character of the host neighbourhoods can be assessed.

The following tables provide a character principle assessment for each of the host neighbourhoods. The assessment is based on an assessment of:

- **Character principles** – those aspects of an area that are considered to contribute to the overall neighbourhood character.
- **Character principle value** – on a scale of 1 – 10 (1 least important, 10 most important), how important is the character principle to the overall character value of the neighbourhood character.
- **Overall character value** – on a scale of 1 – 10 (1 least significant, 10 most significant), how significant is the overall character value.
- **Assimilative capability** – is the host neighbourhood capable of accommodating intensification without significant adverse effects on any significant character value.

In addition, recommendations are provided where it is considered that certain design responses are required to ensure successful integration of intensification.

Table 8.5-1 Host Neighbourhood Character Assessment - Havelock North

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Village is orientated towards the village centre. Radial structure. 	8	6	8	<ul style="list-style-type: none"> Good access to the village centre is important.
<ul style="list-style-type: none"> Predominately single storey buildings. Single storey character. 	4			<ul style="list-style-type: none"> Multi-storey development should be sensitive to its context.
<ul style="list-style-type: none"> Gently sloping topography. 	6			<ul style="list-style-type: none"> Re-contouring of development sites should be limited on sloping sites.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Wide range of architectural styles. Ad-hoc building design. No dominant style. 	8			<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Wide range of front fence styles and heights. Generally low/no front fencing on arterial roads. 	8			<ul style="list-style-type: none"> Fences on road frontages should be low or not provided.
<ul style="list-style-type: none"> Street tree planting very prominent on arterial roads. 	6			<ul style="list-style-type: none"> Street tree planting should be retained.
<ul style="list-style-type: none"> Private landscaping very prominent on local roads. 	4			<ul style="list-style-type: none"> Development on local roads should provide private landscaping.
<ul style="list-style-type: none"> No consistent building setback from the road. Generally 3m or greater. Very few buildings built to road boundary. 	6			<ul style="list-style-type: none"> Development should be setback from road frontage (at least 3m).
<ul style="list-style-type: none"> Most dwellings are stand-alone structures. No consistent distances between buildings. 	8			<ul style="list-style-type: none"> Each medium density housing development should look to provide a mix of detached, semi-detached and terraced dwellings (dependant on scale of development etc.) Avoid the creation of unusable space between buildings.

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Where buildings are attached, they are generally perpendicular to the road. 	6			<ul style="list-style-type: none"> Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.

Table 8.5-2 Host Neighbourhood Character Assessment - Heretaunga Street East

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Ad-hoc building design. No distinctive style or character. 	4	4	8	<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Busy arterial road with a mix of uses. 	9			<ul style="list-style-type: none"> Maximising the potential to support intensification provided by proximity to the CBD (e.g. access to the public transport route, cycleways, supermarkets etc.). Walkability to the commercial facilities and bus stops on Heretaunga Street East should be promoted. Redevelopment on Heretaunga Street could include a mix of uses, including commercial where the development involves existing non-residential buildings.
<ul style="list-style-type: none"> Wide road corridor. 	4			<ul style="list-style-type: none"> Formalised, strategically located pedestrian crossings should be considered.
<ul style="list-style-type: none"> Residential buildings predominantly free standing. Some commercial buildings attached. No consistent distances between buildings. 	4			<ul style="list-style-type: none"> The potential for limited terracing along Heretaunga Street East should be considered. Avoid the creation of unusable space between buildings.
<ul style="list-style-type: none"> Some commercial buildings. 	6			<ul style="list-style-type: none"> Potential for mixed use (both vertical and horizontal) development should be provided for through the redevelopment

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
				of existing non-residential buildings.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Where residential buildings are attached, they are generally perpendicular to the road. 	2			<ul style="list-style-type: none"> Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.
<ul style="list-style-type: none"> Some commercial buildings built to road boundary. 	4			<ul style="list-style-type: none"> The potential for building to road boundary should be considered.
<ul style="list-style-type: none"> Fence height in Heretaunga Street East is predominately high. 	7			<ul style="list-style-type: none"> Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.
<ul style="list-style-type: none"> A mix of 1 and 2 storey buildings. 	4			<ul style="list-style-type: none"> Multi-storey development is considered appropriate.

Table 8.5-3 Host Neighbourhood Character Assessment - Streets off Heretaunga Street East

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Predominately post war buildings. 	4	4	8	<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Ad-hoc building design. No distinctive style or character. 	6			<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Quiet, less busy streets and residential in character. 	8			<ul style="list-style-type: none"> Retain residential character.
<ul style="list-style-type: none"> Grid street layout.. Long, straight streets. 	7			<ul style="list-style-type: none"> Retain grid layout of public streets. Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Significant street tree planting. 	8			<ul style="list-style-type: none"> Street tree planting should be retained and continued.
<ul style="list-style-type: none"> Wide road corridors. 	6			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> Predominantly free standing buildings. No consistent distances between buildings. 	4			<ul style="list-style-type: none"> The extent of attached dwellings should be limited. Avoid the creation of unusable space between buildings.
<ul style="list-style-type: none"> Where buildings are attached, they are generally perpendicular to the road. 	4			<ul style="list-style-type: none"> Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.
<ul style="list-style-type: none"> No consistent building setback from the road. Generally 3m or greater. Very few buildings 	4			<ul style="list-style-type: none"> Development should be setback from road frontage (at least 3m).

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
built to road boundary.				
<ul style="list-style-type: none"> No distinct pattern of fencing style or height. 	2			<ul style="list-style-type: none"> Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.
<ul style="list-style-type: none"> A mix of 1 and 2 storey buildings. 	2			<ul style="list-style-type: none"> Multi-storey development should be sensitive to its context.

Table 8.5-4 Host Neighbourhood Character Assessment – Parkvale

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Predominately post war buildings. 	4			<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Ad-hoc building design. No distinctive style or character. 	6			<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Long, straight streets. 	4			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> 2 dominant, busy roads (Grove Road and Windsor Avenue). Act as a barrier between residential areas and the park. 	8	4	8	<ul style="list-style-type: none"> Traffic calming measures should be considered. Formalised, strategically located pedestrian crossings should be considered.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Little public planting on residential sides of the main roads. 	6			<ul style="list-style-type: none"> Consider the development of a footpath running parallel with main roads on park side. Increase public planting on residential

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
				side of the main roads. <ul style="list-style-type: none"> Encourage private planting on residential side of the roads.
<ul style="list-style-type: none"> Significant trees around the park. 	8			<ul style="list-style-type: none"> Planting should be retained and continued. Consider the development of a footpath running parallel with main roads on park side.
<ul style="list-style-type: none"> Wide road corridors. 	4			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> Predominantly free standing buildings. No consistent distances between buildings. 	2			<ul style="list-style-type: none"> The extent of attached dwellings should be limited. Avoid the creation of unusable space between buildings.
<ul style="list-style-type: none"> Where buildings are attached, they are generally perpendicular to the road. 	2			<ul style="list-style-type: none"> Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.
<ul style="list-style-type: none"> No consistent building setback from the road. Generally 3m or greater. Very few buildings built to road boundary. 	4			<ul style="list-style-type: none"> Development should be setback from road frontage (at least 3m).
<ul style="list-style-type: none"> No distinct pattern of fencing style or height. 	2			<ul style="list-style-type: none"> Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.
<ul style="list-style-type: none"> A mix of 1 and 2 storey buildings. 	2			<ul style="list-style-type: none"> Multi-storey development should be sensitive to its context.

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Focussed around Windsor Park, however the park is predominately private. Very few public facilities. 	6			<ul style="list-style-type: none"> Capitalise views into Windsor Park. Consider the provision of additional public facilities within Windsor Park.

Table 8.5-5 Host Neighbourhood Character Assessment – Mahora

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Predominately post war buildings. 	2	5	8	<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Ad-hoc building design. No distinctive style or character. 	6			<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Long, straight streets. 	4			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> Tomoana Road is a barrier to access to Cornwall Park 	2			<ul style="list-style-type: none"> Consider provision of additional strategically located formal crossings of Tomoana Road.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Little public planting on residential sides of the roads on the park edges. 	4			<ul style="list-style-type: none"> Continue with minimal public planting on the residential sides of the roads on the park edges. Where there are building setbacks, ensure a proportion of the setback is landscaped.
<ul style="list-style-type: none"> Limited public planting in streets away from Cornwall Park. 	4			<ul style="list-style-type: none"> Consider the addition of further street tree planting on roads away from Park edge.
<ul style="list-style-type: none"> Significant public planting on park side of the roads on the park edge. 	8			<ul style="list-style-type: none"> Planting should be retained and continued.
<ul style="list-style-type: none"> Wide road corridors. 	4			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
				considered.
<ul style="list-style-type: none"> Predominantly free standing buildings. No consistent distances between buildings. 	2			<ul style="list-style-type: none"> The extent of attached dwellings should be limited. Avoid the creation of unusable space between buildings.
<ul style="list-style-type: none"> Where buildings are attached, they are generally perpendicular to the road. 	2			<ul style="list-style-type: none"> Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.
<ul style="list-style-type: none"> No consistent building setback from the road. Generally 3m or greater. Very few buildings built to road boundary. 	4			<ul style="list-style-type: none"> Dwellings should be setback from road frontage at least 3m. Where dwellings face the park, building setbacks of 0m – 3m should be considered where it can be undertaken in an appropriate manner.
<ul style="list-style-type: none"> No distinct pattern of fencing style or height. 	2			<ul style="list-style-type: none"> Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.
<ul style="list-style-type: none"> Dwellings facing Cornwall Park generally have low or no front fencing. 	6			<ul style="list-style-type: none"> Continue this theme to utilise visual amenity of Cornwall Park.
<ul style="list-style-type: none"> A mix of 1 and 2 storey buildings. 	2			<ul style="list-style-type: none"> Multi-storey development should be sensitive to its context.
<ul style="list-style-type: none"> Strong focus on Cornwall Park 	8			<ul style="list-style-type: none"> Capitalise views into Cornwall Park.
<ul style="list-style-type: none"> Trees within the Park are visible several blocks away from the Park. 	5			<ul style="list-style-type: none"> Utilise visual amenity of Cornwall Park. Consider benefits of multi storey units to take advantage of visual amenity provided by the Park.
<ul style="list-style-type: none"> Significant employment source within the local area. 	4			<ul style="list-style-type: none"> Consider who would benefit from proximity to employment sources.

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Some commercial services within the local area. 	4			<ul style="list-style-type: none"> Manage the interface with employment uses. Consider who would benefit from proximity to commercial services. Manage the interface with commercial uses. Consider potential of vertical mixed uses.

Table 8.5-6 Host Neighbourhood Character Assessment – Raureka

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Predominately post war buildings. 	2	3	8	<ul style="list-style-type: none"> Repetitive building design should be avoided.
<ul style="list-style-type: none"> Ad-hoc building design. No distinctive style or character. 	6			<ul style="list-style-type: none"> Repetitive building design should be avoided. Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage.
<ul style="list-style-type: none"> Gordon Road is the focus of the area. 	4			<ul style="list-style-type: none"> Traffic calming measures should be considered. On street parking arrangement should be considered.
<ul style="list-style-type: none"> Garages generally set back from street frontage. Not dominant features. 	4			<ul style="list-style-type: none"> Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.
<ul style="list-style-type: none"> Little public planting. 	4			<ul style="list-style-type: none"> Consider additional public planting. Where there are building setbacks, ensure a proportion of the setback is landscaped.

Character Principles	Character Principle Value	Overall Character Value	Assimilative Capabilities	Recommendations
<ul style="list-style-type: none"> Significant private planting. 				<ul style="list-style-type: none"> Encourage private planting.
<ul style="list-style-type: none"> Predominantly free standing buildings. No consistent distances between buildings. 	2			<ul style="list-style-type: none"> The extent of attached dwellings should be limited. Avoid the creation of unusable space between buildings.
<ul style="list-style-type: none"> No consistent building setback from the road. Generally 3m or greater. Very few buildings built to road boundary. 	4			<ul style="list-style-type: none"> Dwellings should be setback from road frontage at least 3m. Where dwellings face Gordon Road, building setbacks of 0m – 3m should be considered where it can be undertaken in an appropriate manner.
<ul style="list-style-type: none"> No distinct pattern of fencing style or height. 	2			<ul style="list-style-type: none"> Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.
<ul style="list-style-type: none"> Predominately single storey buildings. 	2			<ul style="list-style-type: none"> Multi-storey development should be sensitive to its context.
<ul style="list-style-type: none"> Some commercial services within the local area. 	4			<ul style="list-style-type: none"> Consider who would benefit from proximity to commercial services. Manage the interface with commercial uses. Consider potential of vertical mixed uses.
<ul style="list-style-type: none"> Some community facilities within the local area. 	4			<ul style="list-style-type: none"> Consider who would benefit from proximity to community services. Manage the interface with community uses.

8.6 Development of Medium Density Housing Site and Dwelling Typologies

In order to provide guidance on the preferred outcomes for medium density housing within the host neighbourhoods, a series of illustrative typical development models, or site typologies, have been designed using a range of interchangeable dwelling typologies (but not architectural styles). These site typologies provide a wide variety of examples of the many ways of how intensification within the boundaries of the design guidelines could take place.

In some instances a balance has been struck between seemingly conflicting guidelines (e.g. fronting onto the street and orientation of private open space) and this is considered to be a fair reflection of the reality of development. In this regard, it is recommended that a degree of flexibility is needed in the consideration of design guidelines.

Both the Urban Design Framework and the Stage 1 Strategy identified that redevelopment of two or three un-subdivided neighbouring residential lots (whereby all or most of the existing dwellings will be demolished or relocated off the site) are likely to be the most feasible development options. For this reason the design of the typologies is based on two and three typical lots.

Desktop analysis of the host neighbourhoods has identified that typical un-subdivided lots are block-shaped, usually located with their shortest side fronting the street, typically 15 to 20m wide and 35 to 50m deep. This informed the decision to base the design on sites with the following dimensions:

- Three small lots: site of 45m wide and 35m deep (1,575m²);
- Two large lots: 40m wide and 50m deep (2,000m²): and
- Three large lots: 60m wide and 50m deep (3,000m²).

Designing typologies for two small lots (a site of 30m wide and 35m deep) has been considered, but discarded, as the site size of approximately 1,000m² proved too small for an efficient layout.

As typical sites will have only one street frontage and three boundaries abutting other private boundaries, it is accepted that the design is based on a private / shared access way with one connection off the street.

Although each typology has been designed to relate to the street as much as possible, designs that are somewhat internally focused cannot be avoided. In the design of the typologies the shared access ways have been designed to be as direct and short as possible.

In order to ensure optimal solar access to the private open spaces the typology design process has considered the orientation of the site. For each typical site size there is at least one version with the street located more or less to the south and one version with the street more or less to the north.

The average gross area of land per dwelling has been set at ranging between 250 and 350m². As discussed above, density of one dwelling per 250m² was regarded by HDC as the acceptable minimum; while a density of one dwelling per 350m² has been identified in the Stage 1 project as sufficient to achieve the HPUDS target.

Each typology is presented below, alongside an overview of their key details. The arrows in the images depict where the most active elevations of the dwellings should be located. Generally this is the front of the dwelling, whereby the front door, as well as the lounge, dining or kitchen is located towards the street or the shared access way. This will provide both outlook over and an address on the street or access way. In some instances the side elevation of a dwelling is facing the public street, due to the orientation of the dwelling and the associated private open space relative to the sun. In these instances the arrow depicts that care should be taken to make this side elevation as active as possible. Means to achieve this include locating the front door and / or a bay window towards the street. Only minor internal rearrangements to the dwelling typologies are required in order to accommodate a front door in the side elevation. In addition to this, the fence between the street and the side elevation facing the street should be kept low to secure a visual relationship between the dwelling and the public realm.

The different shades of green on private properties depict the difference between private outdoor space that could be fenced off using a higher fence, hedge or wall (darker green), and private open space that

could be demarcated by only a low fence or hedge in order to promote passive surveillance and a feeling of openness.

The site typologies contain a number of dwelling typologies and minor variations of those, depicted by letters A-G on the images. It should be noted that the dwelling typologies used within the site typologies could be replaced by other dwelling typologies, as long as the following is adhered to:

- Dwellings are located in such a way that the front or the most active side elevation of the dwellings face the street and if possible the shared access way.
- Locating the side of the garage adjacent to the shared access way should be avoided, in order to avoid a situation where the blank side elevation of the garage faces the access way and the private driveway is located immediately adjacent to the access way.
- The dwelling is positioned on the lot in such a way that the main private open space is oriented towards the sunny side of the dwelling (either to the rear or the side, but not to the front of the dwelling), while allowing for a direct connection (i.e. a door, no steps, no other room to go through) between this private open space and a habitable room on the ground floor, i.e. living, dining, kitchen.
- Setback distances are no less than those used in the site typologies, especially for double-storey elements.
- Rooms could be rearranged within the footprint of the dwelling as long as one or more habitable rooms face the street and if possible the shared access way.

Although a variety of dwelling typologies are applied in all Site typologies, it is realistic to assume that in order to help with the viability some form of repetition is required, which will reduce design and construction costs. This does however not mean that all dwellings based on the same typology should be identical. Minor variations within dwelling typologies is encouraged. Examples of these include, but are not limited to:

- The room above the garage;
- An optional balcony which could be replaced by a bay window;
- A bay window in the place of a normal window;
- The location of the front door in case the dwelling is located on both the street and the shared access way; and
- Variations in colours and materialisation of secondary architectural elements.

The dwelling typologies are illustrated below.

All designs are based on the assumption that most dwellings will be double storey and will contain two to three bedrooms, although most site typologies also contain a number of single-storey dwelling typologies with two or three bedrooms. This mixture is introduced in order to provide for a wider housing choice. The dwelling typologies are presented following the site typologies.

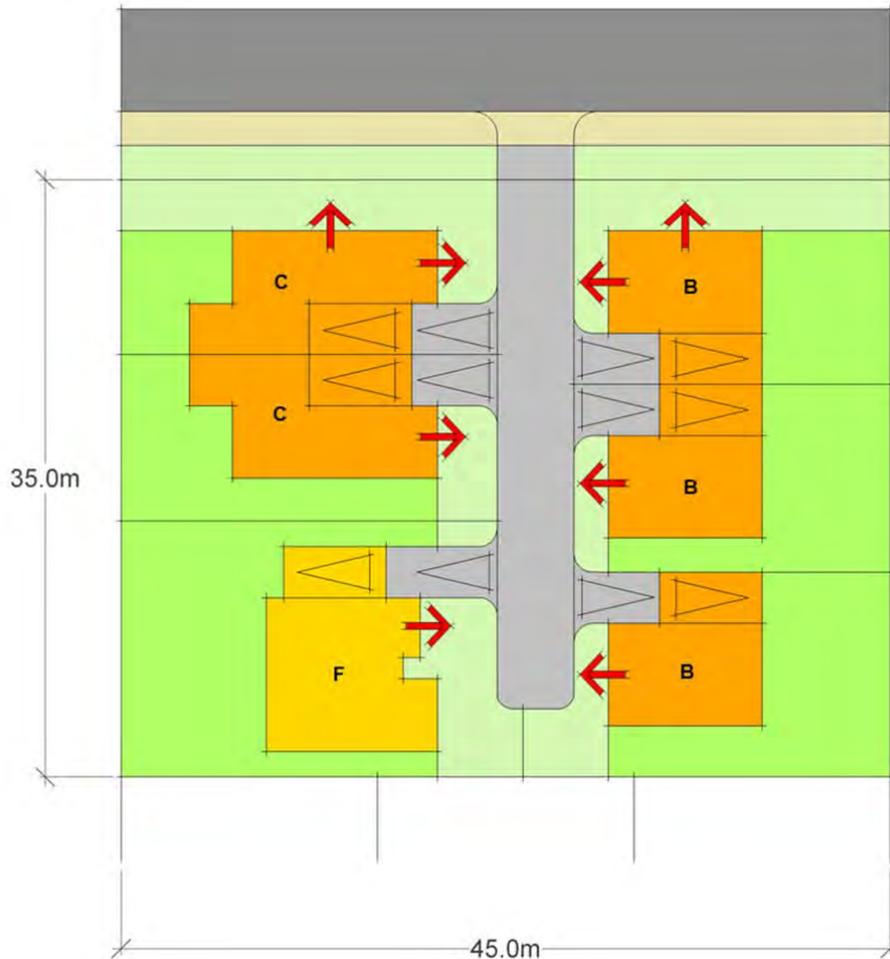
8.6.1 Site Typologies

8.6.1.1 Site Typology 1

This typology is based on a site consisting of an amalgamation of three original 35m x 15m side-by-side lots, located more or less to the south of the street. The width of the site allows for the shared access way with two lot depths on either side. All lots are located in an east-west direction in order to achieve an outcome where the main private open spaces of all dwellings are located either to the west or the east of the dwelling and south-facing backyards are avoided. Additional advantages resulting from this are the relatively large dwelling setbacks to the external side boundaries of the site. A single-storey dwelling is located on the southern side of the site in order to minimise overshadowing and visual effects on the neighbouring site to the south of it.

The two dwellings on the street side are addressing both the street and the access way. These dwellings should present a side elevation to the street that is as active as possible through the placement of windows and the possibly the front door, with associated letter box, street number, canopy

etc. The will provide continuity and consistency, being most likely situated between dwellings with the front door on the street side. The fence between the side elevation and the street should be kept low. This and the active side elevation will contribute to the security and attractiveness of the streetscape. The privacy in the backyards could be secured by allowing a higher fence located at the same or a greater distance from the street as the dwelling is set back from the street.

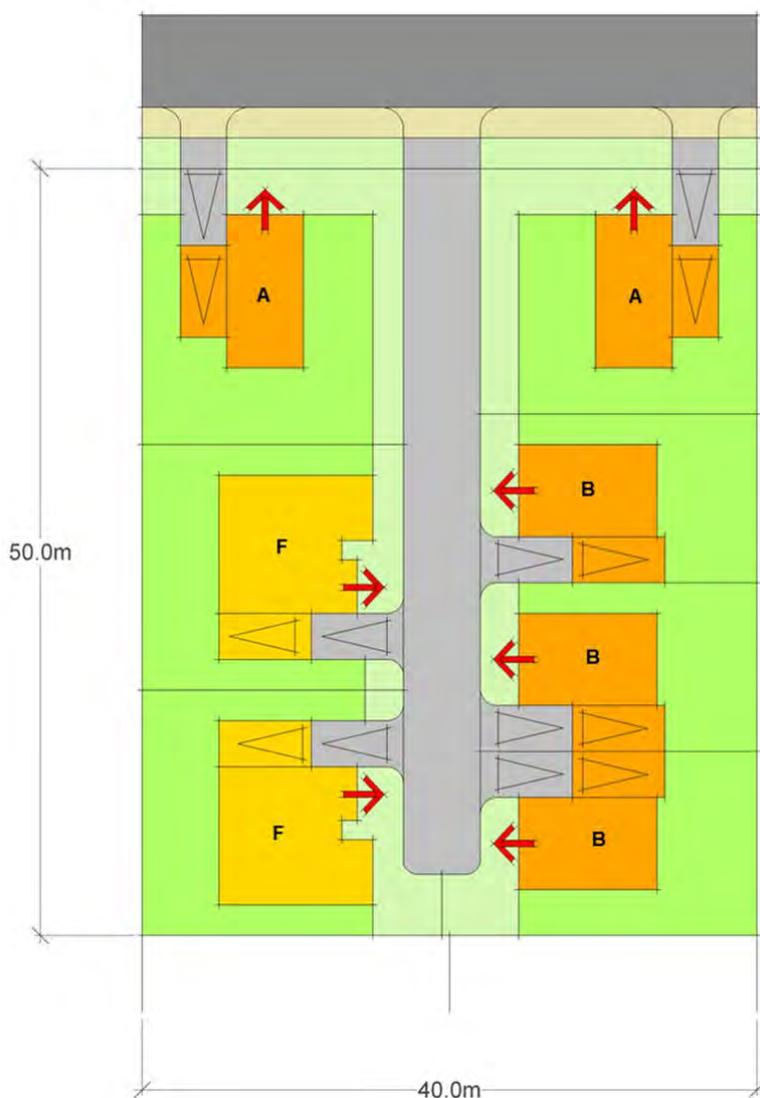


Site Typology 1	
Site Size	1,575 m ²
Number of dwellings	6
Density (dwellings per hectare)	38 / ha
Average gross lot size	263 m ²
Average dwelling size (Gross Floor Area)	129 m ²
Preferred orientation	The street should be located towards the north or south
Dwelling typologies included	B, C, F

8.6.1.2 Site Typology 2

This typology is based on a site consisting of an amalgamation of two original 50m x 20m side-by-side lots, located more or less to the south of the street. The width of the site does not allow for the shared access way with two lot depths on either side, as is the arrangement in Typology 1, unless very shallow dwelling typologies are selected. This typology demonstrates a possible response to the orientation of the site, whereby the main private open spaces of the two dwellings fronting the street are located to the side of the dwelling. Locating it to the north-facing front would have led to either a high fence over a long length directly on the street boundary, or compromised privacy with a low fence. Locating it to the back would have led to a south-facing backyard, often overshadowed by the double-storey dwelling. Unlike single-storey dwelling typology F, the dwelling typology selected for the street side is suited for a side-yard, as a direct connection between the yard and the living, dining or kitchen can be provided. Single-storey typology G could replace Typology A in the north-western corner of the site, although decreasing the lots that accommodate the F-typologies is required. Replacing Typology A in the north-eastern corner of the site would lead to a reduction in the number of dwellings on the site.

All other lots are located in an east-west direction in order to achieve an outcome where the main private open spaces of all dwellings are located either to the west or the east of the dwelling and south-facing backyards are avoided. Additional advantages resulting from this are the relatively large dwelling setbacks to the external side boundaries of the site. Locating a single-storey dwelling on the southern side of the site minimises overshadowing and visual effects on the neighbouring site to the south of it.



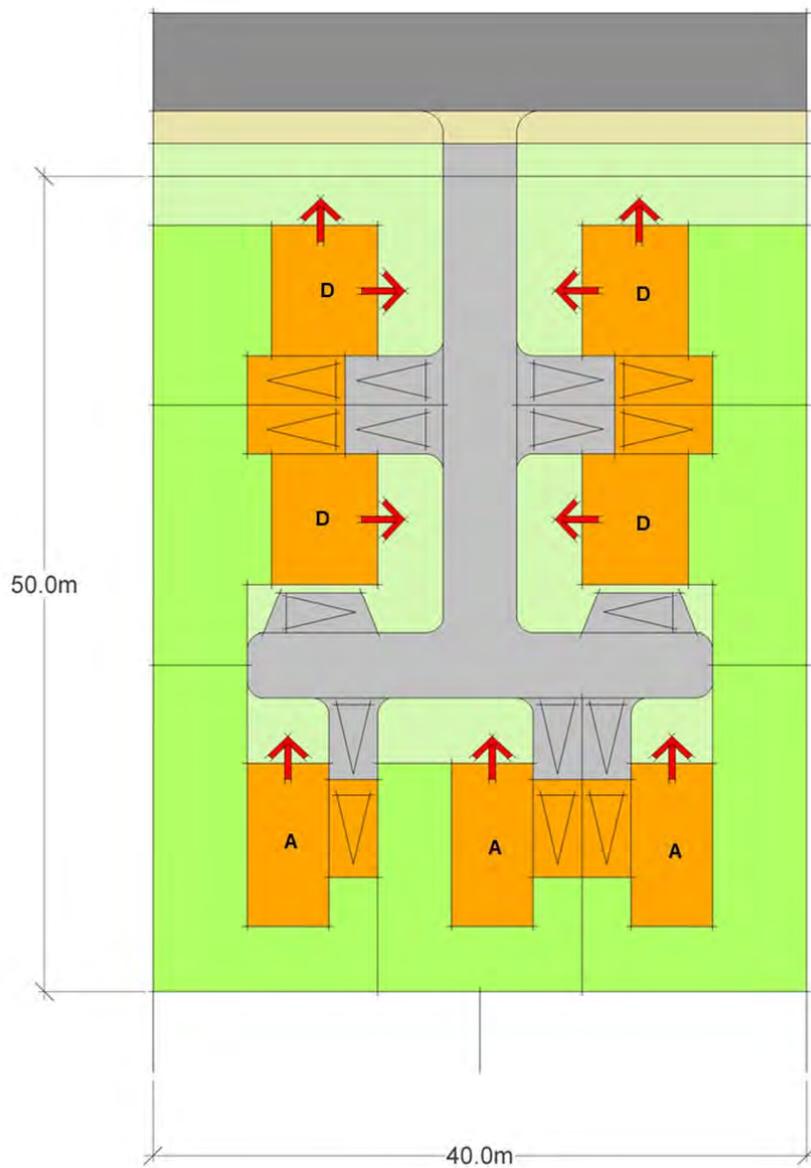
Site Typology 2	
Site Size	2,000 m ²
Number of dwellings	7
Density (dwellings per hectare)	Approximately 35 / ha
Average gross lot size	286 m ²
Average dwelling size (Gross Floor Area)	124 m ²
Preferred orientation	The street should be located towards the north or south
Dwelling typologies included	A, B, F

8.6.1.3 Site Typology 3

Like Typology 2, this typology is based on a site consisting of an amalgamation of two original 50m x 20m side-by-side lots, located more or less to the south of the street. The width of the site does not allow for the shared access way with two lot depths on either side, as is the arrangement in Typology 1, unless very shallow dwelling typologies are selected. The lots in the northern part of the site are located in an east-west direction in order to achieve an outcome where the main private open spaces of all dwellings are located either to the west or the east of the dwelling and south-facing backyards are avoided. Additional advantages resulting from this are the relatively large dwelling setbacks to the external side boundaries of the site.

The two dwellings on the street side are addressing both the street and the access way. These dwellings should present a side elevation to the street that is as active as possible through the placement of windows and the possibly the front door, with associated letter box, street number, canopy etc. This will provide continuity and consistency, being most likely situated between dwellings with the front door on the street side. The fence between the side elevation and the street should be kept low. This and the active side elevation will contribute to the security and attractiveness of the streetscape. The privacy in the backyards could be secured by allowing a higher fence located at the same or a greater distance from the street as the dwelling is set back from the street.

In the southern part of the site the dwellings are arranged in such a way that the main private open spaces of the dwellings are located to the side of the dwellings. Locating it to the north-facing front would have led to either a high fence on the access way or compromised privacy with a low fence. Locating it to the back would have led to a south-facing backyard, often overshadowed by the double-storey dwelling. The dwelling typology selected is suited for a side-yard, as a direct connection between the yard and the living, dining or kitchen can be provided.



Site Typology 3

Site Size	2,000 m ²
Number of dwellings	7
Density (dwellings per hectare)	Approximately 35 / ha
Average gross lot size	286 m ²
Average dwelling size (Gross Floor Area)	138 m ²
Preferred orientation	The street should be located towards the north or south
Dwelling typologies included	A, D

8.6.1.4 Site Typology 4

This typology is based on a site consisting of an amalgamation of three original 50m x 20m side-by-side lots, located more or less to the south of the street. This typology demonstrates a possible response to the orientation of the site, whereby the main private open spaces of the four dwellings fronting the street are located to the side of the dwelling. Locating it to the north-facing front would have led to either a high fence over a long length directly on the street boundary, or compromised privacy with a low fence. Locating it to the back would have led to a south-facing backyard, often overshadowed by the double-storey dwelling. A high fence on the street boundary is acceptable in this situation, as it is well set back and leaving the visual connection between the dwelling and the street intact. Acceptance of the high fence on either side of the shared driveway is a result of a balance that should be struck between the orientation of the private open space and the street relationship of the dwelling. The location of the fence should leave room for planting directly beside the access way. The dwelling typology selected for the street side is suited for a side-yard, as a direct connection between the yard and the living, dining or kitchen can be provided. A similar approach, based on dwellings with side-yards, is applied to the southern part of the site.

Between the row of A-typologies in the north and E-typologies in the south two east-west lots are located. These two lots are interchangeable; Typology C could be replaced by Typology G and vice versa.

Removing the room above the garage in one or all of the E-Typology dwellings could be considered in order to reduce the height of these ancillary buildings and reduce the visual impact of and the overshadowing caused by these two couples of semi-detached dwellings.



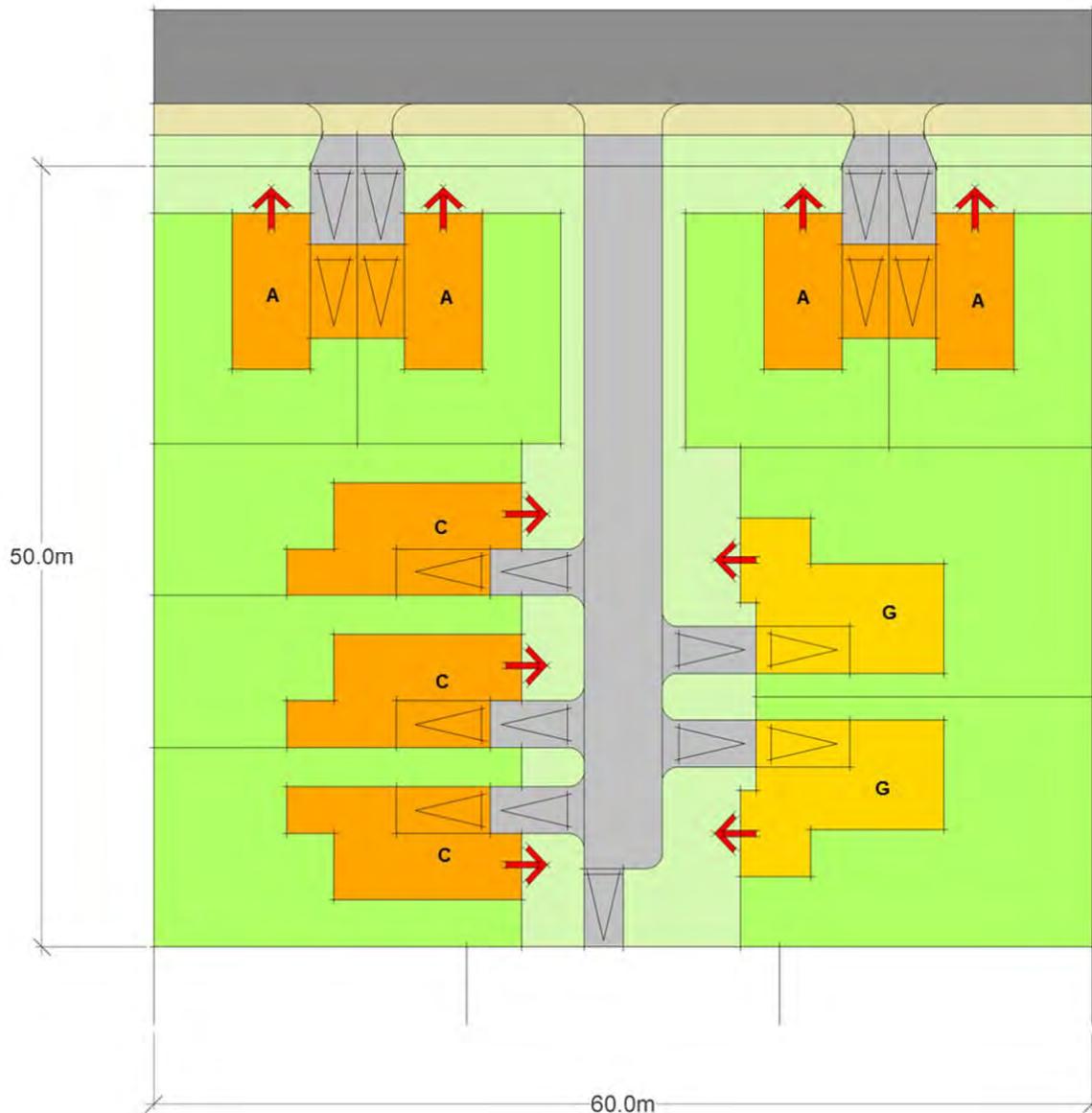
Site Typology 4

Site Size	3,000 m ²
Number of dwellings	10
Density (dwellings per hectare)	Approximately 40 / ha
Average gross lot size	300 m ²
Average dwelling size (Gross Floor Area)	138 m ²
Preferred orientation	The street should be located towards the north or south
Dwelling typologies included	A, C, E, G

8.6.1.5 Site Typology 5

Like Site Typology 4, this typology is based on a site consisting of an amalgamation of three original 50m x 20m side-by-side lots, located more or less to the south of the street. The northern half of the site contains the same response to the orientation as Site Typology 4. The southern part contains five dwellings on lots arranged in an east-west direction. This arrangement leads to a good orientation of the backyards relative to the sun as well as generous setbacks from external boundaries, particularly the side boundaries.

Several variations in arrangement of the dwellings are possible within the main layout of the typology. The two G-Typologies could be replaced by three C-Typologies and vice versa. The A-Typologies in the northeast of the site could be replaced by G-typologies, with a minor decrease in the lots to the south of it.

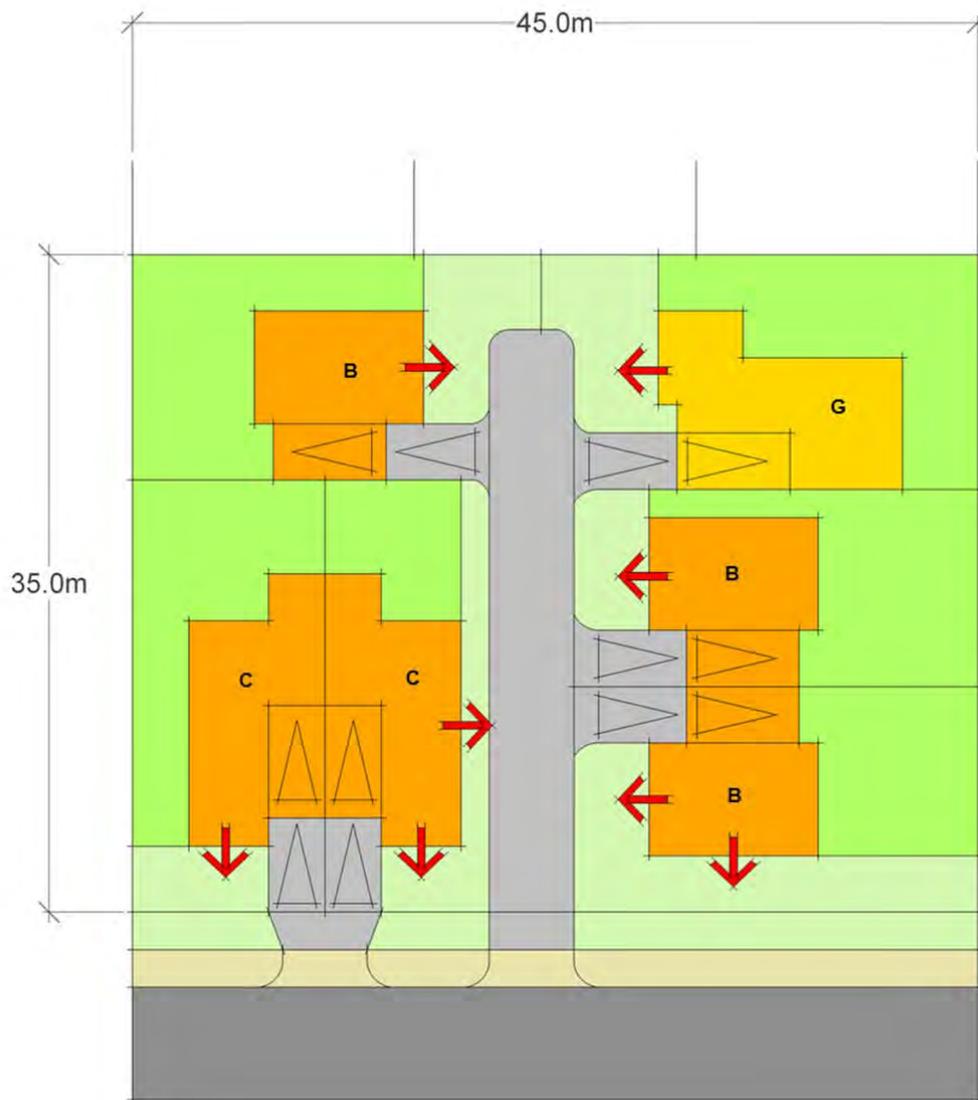


Site Typology 5	
Site Size	3,000 m ²
Number of dwellings	9
Density (dwellings per hectare)	Approximately 30 / ha
Average gross lot size	333 m ²
Average dwelling size (Gross Floor Area)	132 m ²
Preferred orientation	The street should be located towards the north or south
Dwelling typologies included	A, C, G

8.6.1.6 Site Typology 6

This typology is based on a site consisting of an amalgamation of three original 35m x 15m side-by-side lots, located more or less to the north of the street. To one side of the shared access way two relatively deep lots with narrow semi-detached dwellings are located in a north-south direction on the street side, allowing for good frontage onto the street and north-facing backyards. To the north of these dwellings an east-west oriented lot is located, capturing sun from the north and west in its backyard. In order to minimise overshadowing and bulk effects, the room above the garage of this dwelling could be removed, resulting in a double-storey dwelling with a single-storey garage located directly on the internal boundary with dwelling typologies C. Alternatively, dwelling B in the northwest could be replaced by the single-storey dwelling G in the north-east.

To the other side of the driveway are three lots located in an east-west arrangement, allowing for good solar access into the backyards. The dwelling on the street side is addressing both the street and the access way. This dwelling should present a side elevation to the street that is as active as possible through the placement of windows and the possibly the front door, with associated letter box, street number, canopy etc. The will provide continuity and consistency, being most likely situated between dwellings with the front door on the street side. The fence between the side elevation and the street should be kept low. This and the active side elevation will contribute to the security and attractiveness of the streetscape. The privacy in the backyard could be secured by allowing a higher fence located at the same or a greater distance from the street as the dwelling is set back from the street.



Site Typology 6

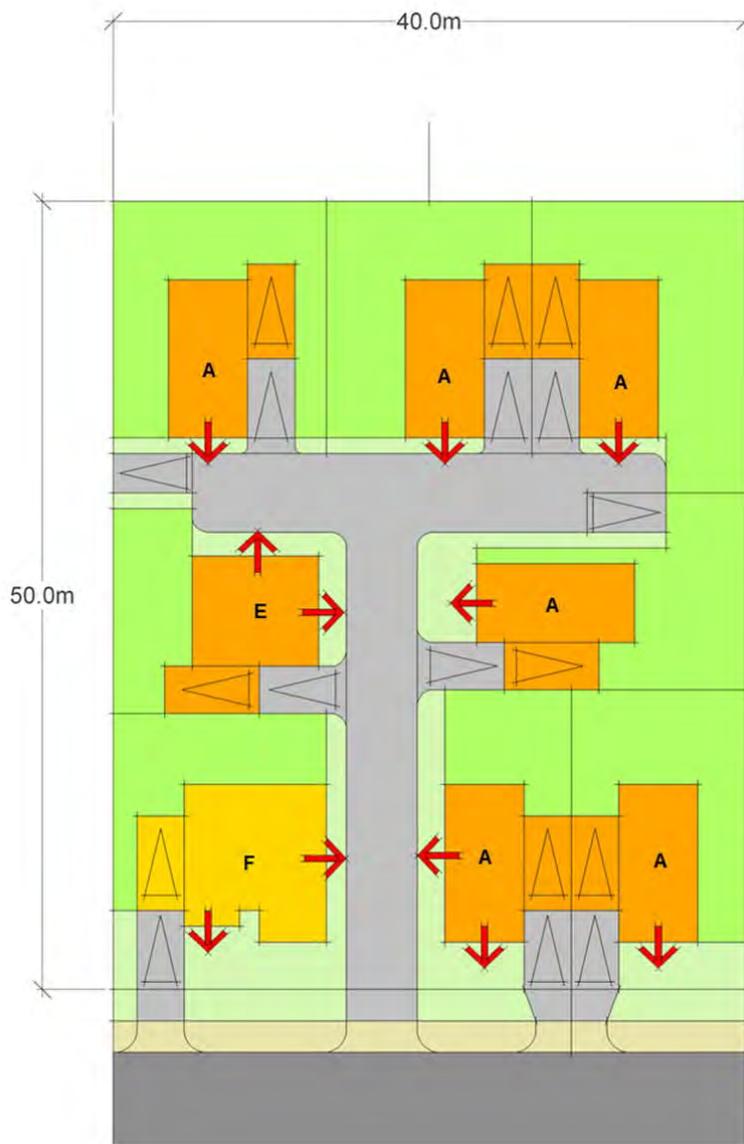
Site Size	1,575 m ²
Number of dwellings	6
Density (dwellings per hectare)	Approximately 38 / ha
Average gross lot size	263 m ²
Average dwelling size (Gross Floor Area)	128 m ²
Preferred orientation	The street should be located towards the south or east
Dwelling typologies included	B, C, G

8.6.1.7 Site Typology 7

This typology is based on a site consisting of an amalgamation of two original 50m x 20m side-by-side lots, located more or less to the north of the street. The three dwellings on the street side are arranged in a north-south direction, fronting onto the street and having backyards to the north. The side elevations of these dwellings should activate the access way through the placement of windows and keeping the fences around the side yards low.

Behind these dwellings are two dwellings located in an east-west direction, overlooking the access way and allowing for good solar access into the backyards. In order to minimise overshadowing and the visual effect of a double-storey building element on the boundary, the rooms above the garages of these two dwellings could be removed, resulting in a single-storey garage, attached to a double-storey dwelling.

To the rear of the site are three dwellings, similar to the three dwellings in the front arranged in a north-south direction with frontage onto the access way and backyards to the north. The width of the site allows for good setback distances relative to external boundaries, even if the semi-detached dwellings would be separated by a small distance.



Site Typology 7	
Site Size	2,000 m ²
Number of dwellings	8
Density (dwellings per hectare)	Approximately 40 / ha
Average gross lot size	250 m ²
Average dwelling size (Gross Floor Area)	133 m ²
Preferred orientation	The street should be located towards the south or east
Dwelling typologies included	A, E, F

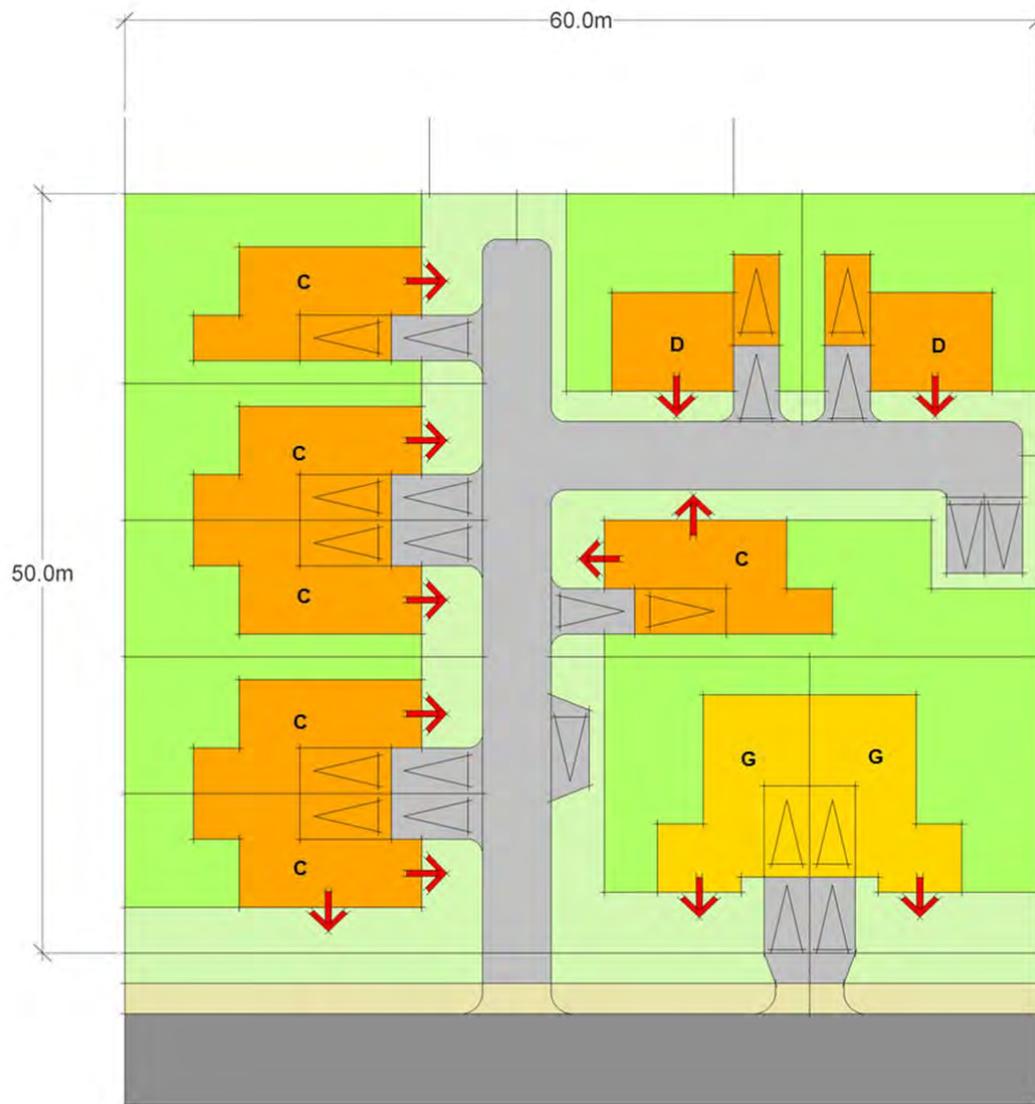
8.6.1.8 Site Typology 8

This typology is based on a site consisting of an amalgamation of three original 50m x 20m side-by-side lots, located more or less to the north of the street. To one side of the shared access way are five dwellings located and arranged in an east-west direction, fronting onto the shared access way and allowing for west-facing backyards with good solar access. The dwelling on the street side should also address the street by means of windows, other architectural features and possibly locating the front door in the side elevation. The dwelling typology allows for these interventions. Particularly the double-storey elements of these dwellings are well set back from the external site boundaries. The distances between the sets of semi-detached dwellings in combination with the single-storey elements reduce the visual impact of the bulk of this row of five dwellings. The fact that the row is situated perpendicular with the street diminishes its visual impact relative to the street.

On the other side of the access way are another five dwellings, of which two are facing the street. These semi-detached single-storey dwelling typologies provide a good transition to neighbouring possibly single-storey dwellings, which may be desirable depending on the situation. The dwellings provide an active frontage to the street and have their main private open spaces located to the side and back.

Behind these semi-detached dwellings is a dwelling located in an east-west arrangement, with frontage to the access way and a private north-east facing backyard. Its single-storey element is located on the south side, reducing the overshadowing of the private open spaces of the two dwellings to the south.

At the rear of the site are a further two dwellings. A relatively wide and shallow dwelling typology is applied in order to maximise the size of the private open spaces to the north of these dwellings. This site typology shows these two dwellings as stand-alone, however, these could be combined as semi-detached, resulting in a greater side-yard and greater setback from the external site boundary.

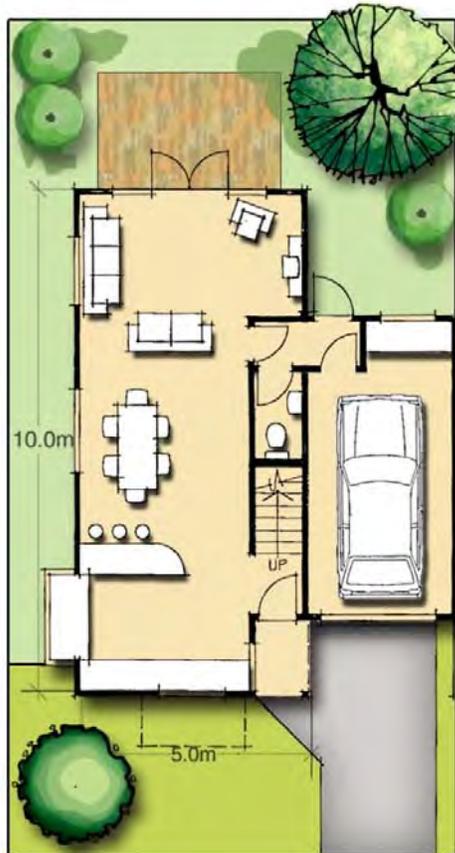


Site Typology 8

Site Size	3,000 m ²
Number of dwellings	10
Density (dwellings per hectare)	Approximately 33 / ha
Average gross lot size	300 m ²
Average dwelling size (Gross Floor Area)	132 m ²
Preferred orientation	The street should be located towards the south or east
Dwelling typologies included	C, D, G

8.6.2 Dwelling Typologies

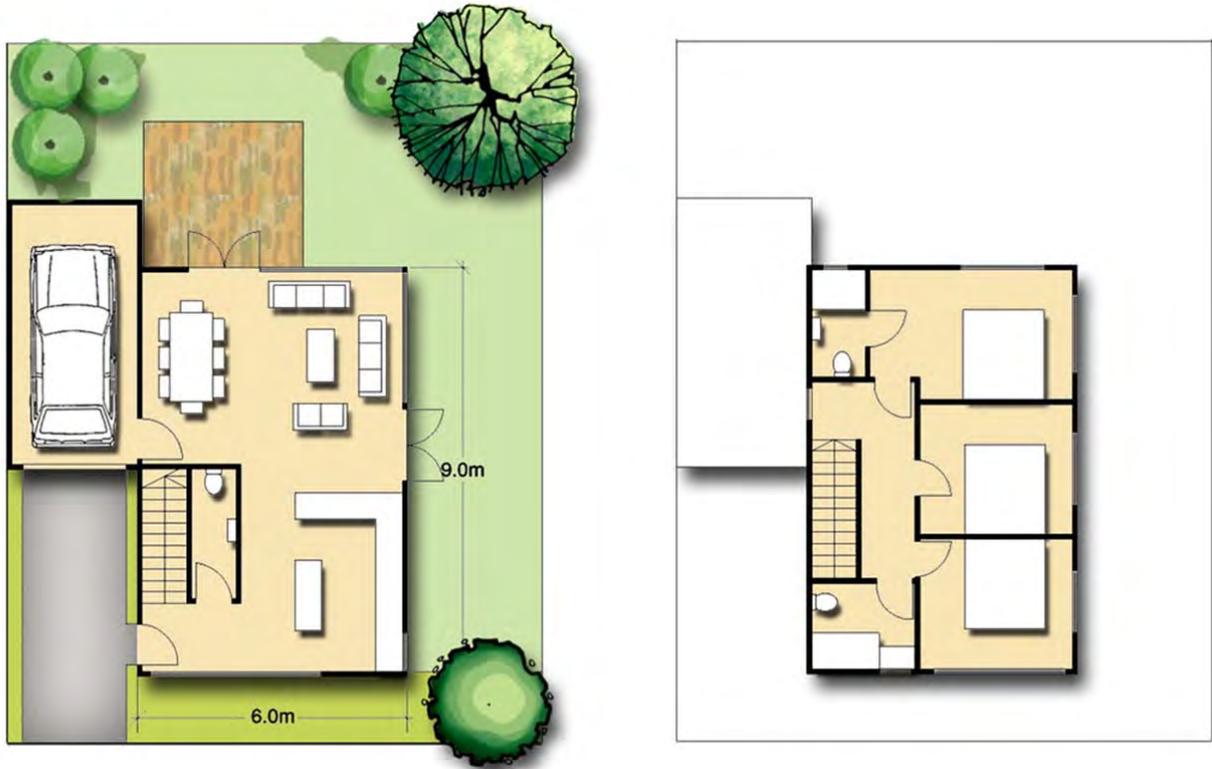
8.6.2.1 Dwelling Typology A



Dwelling Typology A

Gross Floor Area	136 m ²
Building footprint	68 m ²
Number of storeys	2
Number of bedrooms	3
Garaging / off-street parking	Single garage, single driveway

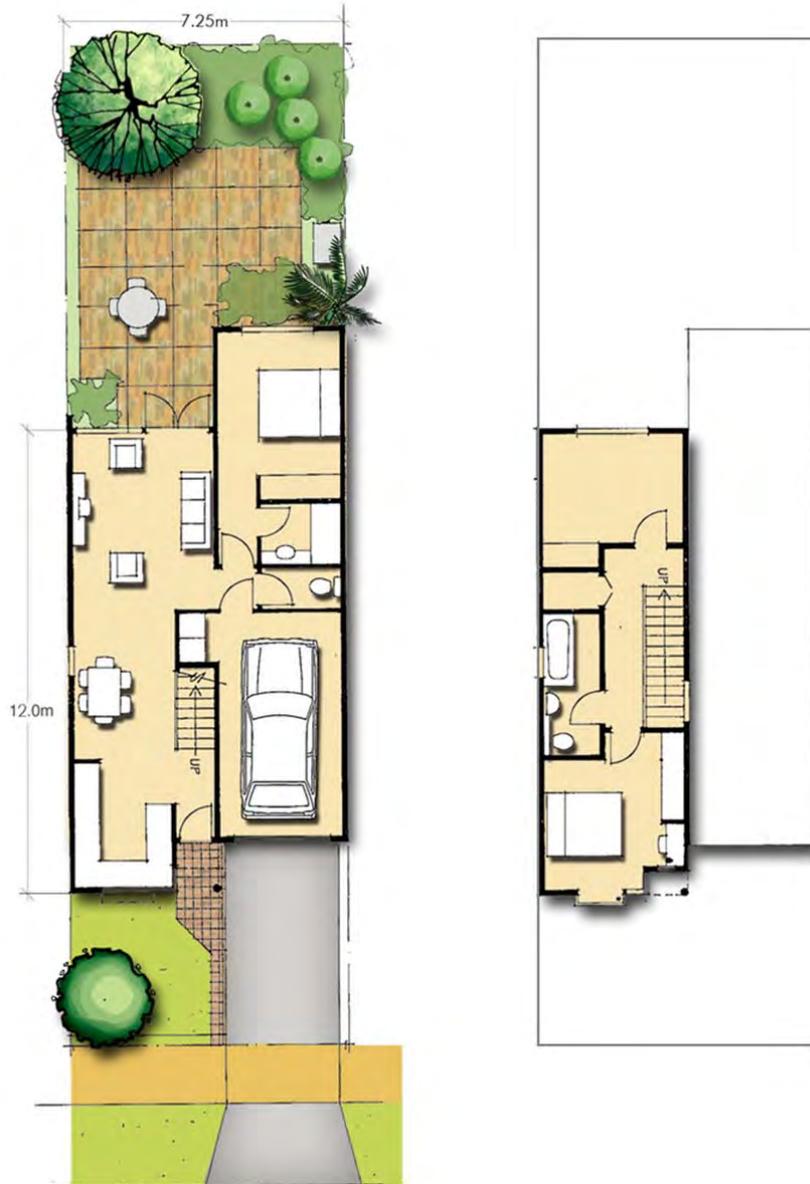
8.6.2.2 Dwelling Typology B



Dwelling Typology B

Gross floor area	130 m ²
Building footprint	72 m ²
Number of storeys	2
Number of bedrooms	3
Garaging / off-street parking	Single garage, single driveway

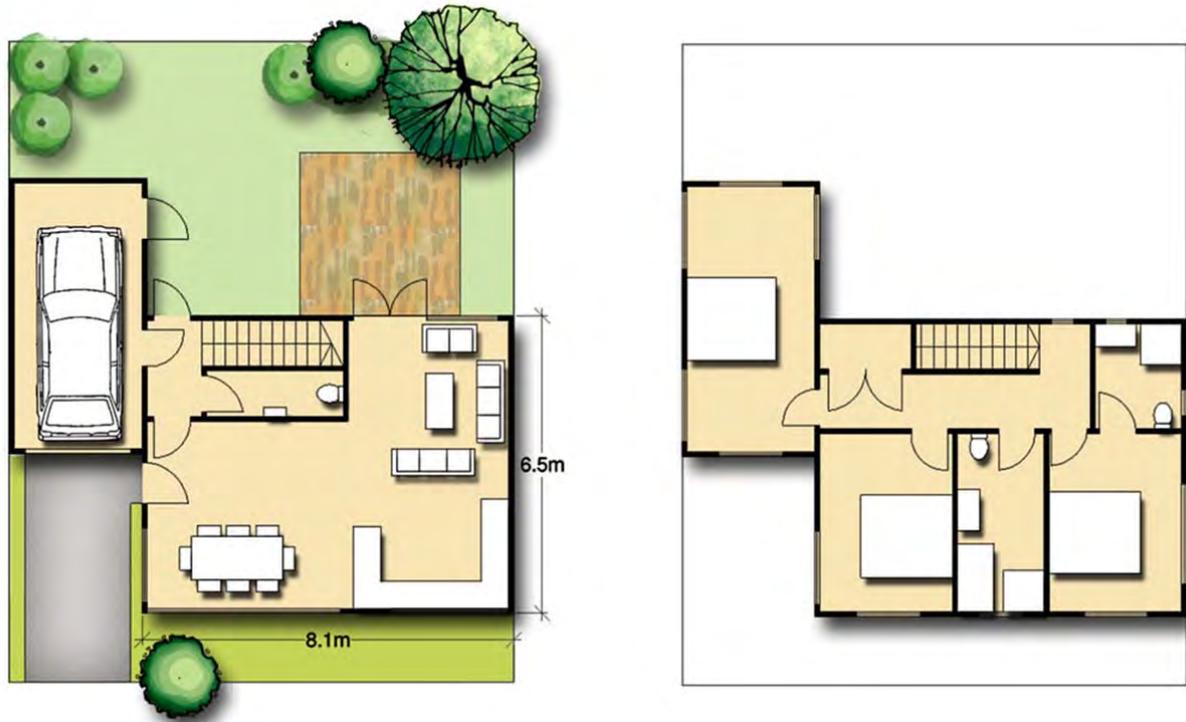
8.6.2.3 Dwelling Typology C



Dwelling Typology C

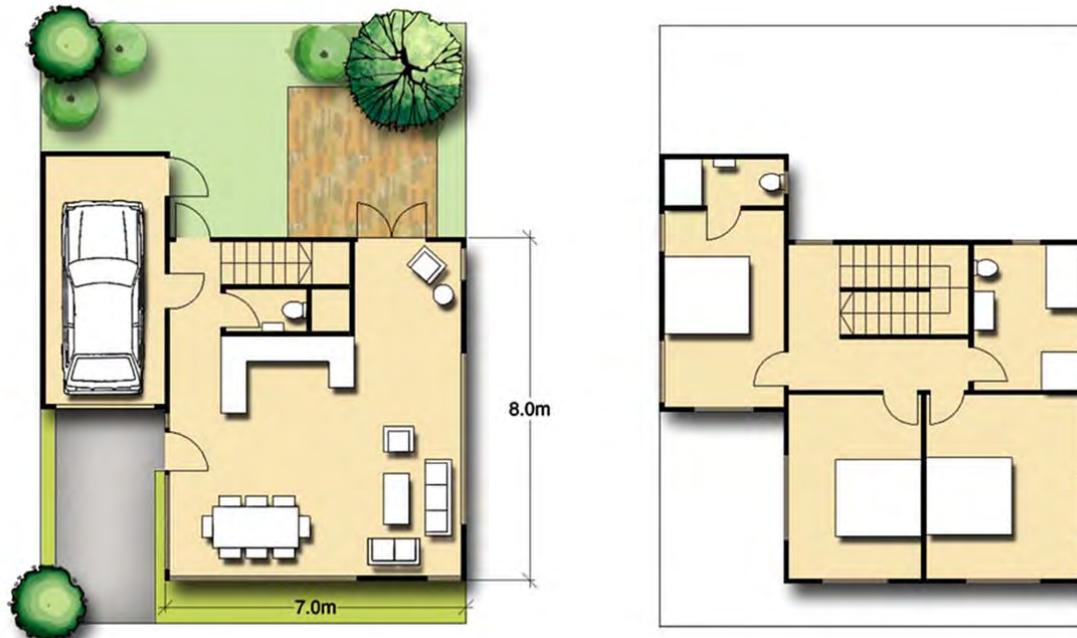
Gross floor area	140 m ²
Building footprint	89 m ²
Number of storeys	2
Number of bedrooms	3
Garaging / off-street parking	Single garage, single driveway

8.6.2.4 Dwelling Typology D



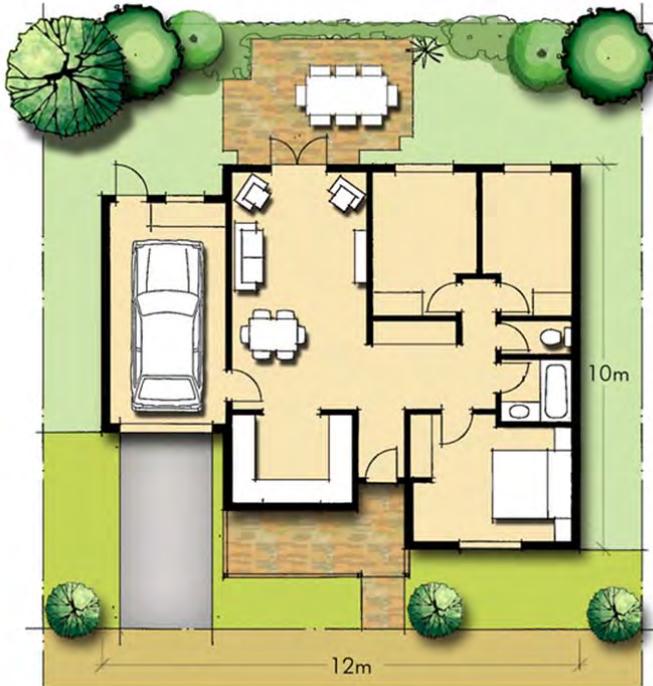
Dwelling Typology D	
Gross floor area	140 m ²
Building footprint	70 m ²
Number of storeys	2
Number of bedrooms	3
Garaging / off-street parking	Single garage, single driveway

8.6.2.5 Dwelling Typology E



Dwelling Typology E	
Gross Floor Area	148 m ²
Building footprint	74 m ²
Number of storeys	2
Number of bedrooms	3
Garaging / off-street parking	Single garage, single driveway

8.6.2.6 Dwelling Typology F



Dwelling Typology F	
Gross Floor Area	102 m ²
Building footprint	102 m ²
Number of storeys	1
Number of bedrooms	3 (of which one single bedroom)
Garaging / off-street parking	Single garage, single driveway

8.6.2.7 Dwelling Typology G



Dwelling Typology G	
Gross Floor Area	100 m ²
Building footprint	100 m ²
Number of storeys	1
Number of bedrooms	2
Garaging / off-street parking	Single garage, single driveway

8.6.3 Rationale Behind the Design of the Site Typologies

The site typologies have been designed in response to the Quality Design Indicators introduced and explained above. The table below indicates how the designs generally respond to these.

Table 8.6-1 Site Typology Responses

Quality Design Indicator	How the Site Typologies Respond
The development is in the right location to meet residents' needs.	<ul style="list-style-type: none"> • <i>These aspects mostly depend on the location within the District and within the host neighbourhood.</i>
The development is well integrated into the existing local context.	<ul style="list-style-type: none"> • The main private open space is located to the north of the dwelling as much as possible. • Living spaces (lounge, dining, and kitchen) are located on the northern, western, eastern side of the dwelling as much as possible. • Garages are located on the southern side of the dwelling as much as possible to make room for living spaces on the northern, western and eastern sides. • The layout is arranged in such a way that from as many dwellings as possible one can see the public street (and possibly public open spaces beyond that).
The development makes a positive contribution to the public streetscape.	<ul style="list-style-type: none"> • As many dwellings as possible are located on a public street, although it is accepted that not all dwellings can be located on a public street, due to typical site proportions. • As many dwelling fronts as possible are facing the public street; alternatively well-designed side elevations are located on the street with a small setback. • Small building setbacks from the street and the shared access way are applied. These should be planted. • The private open space is generally located on the most private side of the dwelling, in order to minimise the need for high fences on the street or the shared access way. • All dwellings are proportioned such (at least 7.25m wide) that at least a front door and a kitchen (or dining, or lounge) can be located on the ground floor at the front of the dwelling. • Garages are recessed behind the main front of the dwelling by at least 1m.
The development is fitting with the size and proportions of the site.	<ul style="list-style-type: none"> • Double storey elements are set back from external boundaries by at least 2.5m. Single storey garages are sometimes built to the external property boundary. • Double storey elements are set back from internal boundaries by at least 3m, unless the dwelling is built to the boundary. • The extent of private open space located to the south of double storey elements of the dwelling is minimised. • A balance between maximised yield and residential amenity has been aimed for. The typical yield is between 3 and 4 units per 1000m². • The fronts of properties are facing fronts or sides of other properties across public or common open spaces. The backs of properties are facing the backs or sides of other properties. • Most dwellings contain private open space that can accommodate a 4.5m diameter circle. • In all dwelling typologies there is a direct connection between the main private open space and one of the main indoor living spaces (lounge, kitchen, dining). • Private open spaces face north, west or east where possible. Private

Quality Design Indicator	How the Site Typologies Respond
	<p>open spaces located to the south of double storey building elements are minimised.</p> <ul style="list-style-type: none"> • There is space for landscaping around the shared access way. • All private driveways are at least 5m long. • All dwellings contain a single garage and a private driveway. • Vehicle manoeuvring is designed to safely and comfortably take place on the shared access way. • In almost all cases there is an internal connection between the garage and the dwelling. • The garage is generally located away from the sunny side of the property. • A small number of visitor car parks are accommodated on-site. Visitor parking is also meant to take place on the private driveway of the resident that the visitor is visiting. • Private open spaces are designed to be large enough and in such a way that the functions of a service area can be fulfilled in it.
<p>The development is of a high architectural quality and aesthetically pleasing.</p>	<p><i>Most of these aspects will have to be covered by architectural design following the design of the higher scale site layout of the typologies.</i></p> <p>Aspects already covered in the design of the typologies include:</p> <ul style="list-style-type: none"> • Terracing on the street frontage has been avoided, semi-detached has been regarded as acceptable. • Setbacks from the public street are at least 3m. • All dwelling typologies allow for high quality architectural design that appropriately addresses building form and appearance.
<p>The internal arrangement of spaces and functions in dwellings is useable, efficient and pleasant.</p>	<p><i>Most of these aspects will have to be covered by architectural design following the design of the higher scale site layout of the typologies.</i></p> <p>Aspects already covered in the design of the typologies include:</p> <ul style="list-style-type: none"> • In all dwelling typologies there is a direct connection between the main private open space and one of the main indoor living spaces (lounge, kitchen, dining). • Key living spaces (lounge, dining, and kitchen) are as much as possible located on the northern, western, eastern side of the dwelling. • Garages are as much as possible located on the southern side of the dwelling to make room for living spaces on the northern, western and eastern sides. • Neighbouring attached dwellings are mirrored where possible in order to combine like with like for aural privacy reasons. • Site typologies are based on dwelling typologies with acceptable dimensions. • Dwelling typologies allow for high quality architectural design that appropriately addresses privacy and ventilation.

8.6.4 Comparison Between Stage 2 Site Typologies and Stage 1 Typologies

Both during Stage 1 of the Strategy and as part of the Urban Issues work (UDF) several site typologies (and during Stage 1 also dwelling typologies) were introduced and promoted. Although there are some similarities with these typologies, there are several reasons for refining the typologies previously introduced and recommending the above typologies as part of the Stage 2 work.

The key reasons include:

- The Stage 1 typologies generally deliver lower yields (particularly the 'compliant' typologies), which is unlikely to be financially feasible. The Stage 2 typologies aim for a balance between yield and amenity and achieve an amenity that is (in many cases) greater than that of the Stage 1 typologies.
- The Stage 1 typologies contain a larger proportion of double and tandem garages, which contributes to a loss of efficiency and lower yields. The Stage 2 typologies consistently provide two car parks per dwelling of which one in a garage and one on a private driveway.
- Some of the Stage 1 typologies contain dwelling fronts facing dwelling backs across the shared access way. In the Stage 2 typologies fronts consistently face fronts or sides and backs face backs or sides.
- Some of the Stage 1 typologies contain shared accessways that are less efficient than the Stage 2 typologies.
- In some of the Stage 1 typologies there are some very small setback distances between double storey elements and external boundaries. These are generally larger in the Stage 2 typologies
- In some of the Stage 1 several properties back onto the public street, resulting in either high fences on the street, or backyards that lack privacy.
- In some of the Stage 1 typologies there is not enough consideration of the orientation of private open space relative to the sun.

8.6.5 Integrating Typologies within Host Neighbourhoods

All site typologies have been designed to be applicable in the context of all host neighbourhoods and comply with the recommendations for the host neighbourhoods. The key criteria for the selection of a typology to apply to the Hastings context include dimensions and orientation of the site. This is in addition to criteria relating to feasibility, such as target yield. These criteria differ from site to site, rather than from neighbourhood to neighbourhood.

In order to illustrate applicability of the typologies, one site within each host neighbourhoods has been selected and a typology that is both more or less fitting within the proportions of the site and appropriate for its context has been applied. In some cases the typology had to be flipped in order to optimise solar access into private open spaces. The results of this exercise are presented below. It should be emphasised that it is in no way suggested that these properties should or would be available for redevelopment, or that financially feasible redevelopment can be undertaken, now or in the near future.

8.6.6 Site Typologies within Host Neighbourhoods

8.6.6.1 Site Typology 2: Parkvale



Figure 8.6-1 Site Typology 2: Parkvale

Two lots on Windsor Avenue in Parkvale have been identified for their potential to be redeveloped, using Site typology 2, with minimal adjustments. This typology is suitable for this site located more or less to the south of the street. Private open spaces associated with the double-storey dwellings are located predominantly to the west or north of the dwellings. The two single-storey dwellings have private open spaces located towards the southwest of the dwelling, but this is considered acceptable as the shadows of these dwellings will be shorter than those of double-storey dwellings. The two dwellings in the southern part of the site are single-storey, which minimises the overshadowing effects on neighbouring properties. It should also be noted that the footprint of the set of semi-detached dwellings is very similar in size as the neighbouring dwellings.

The table below shows how this typology aligns with the recommendations made as part of the host neighbourhood character assessment.

Table 8.6-2 Parkvale Typology 2 Neighbourhood Response

Recommendations	Response
Repetitive building design should be avoided.	<ul style="list-style-type: none"> Seven dwellings, three dwelling typologies. Minor architectural variations could be possible.
Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.	<ul style="list-style-type: none"> Two single garages are fronting onto the street, but these are setback well behind the main volumes of the dwellings..
Encourage private planting on	<ul style="list-style-type: none"> Dwellings are set back from the street boundary by

Recommendations	Response
residential side of the roads.	3m, which provides sufficient space for planting. Furthermore, all dwellings have private open spaces large enough for planting.
Planting should be retained and continued.	<ul style="list-style-type: none"> • Detailed information on the location of current trees is required in order to identify whether existing trees could/should be retained.
The extent of attached dwellings should be limited.	<ul style="list-style-type: none"> • Four dwellings are detached and the two semi-detached dwellings are both perpendicular with the street and well set back.
Avoid the creation of unusable space between buildings.	<ul style="list-style-type: none"> • Spaces between dwellings are used for common access. Side yards are wide enough to provide access to the side elevation (for possible maintenance), for a clothesline, or to provide access to the backyard (e.g. while using a wheel barrow).
Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage to avoid	<ul style="list-style-type: none"> • Building design variations are easily achievable for this typology.
Development should be setback from road frontage (at least 3m).	<ul style="list-style-type: none"> • Buildings are set back from the street by at least 3m.
Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.	<ul style="list-style-type: none"> • The main private open spaces of all dwellings are located away from the street. In order to optimise the sun access into the backyards (taking into account the orientation of the site) there are two instances where over a short length a high fence to the side of the dwelling and parallel to the street boundary is required in order to protect privacy. These fences will be set back from the property boundary and aligned with the dwelling in order to make the dwelling (and not the fence) the dominant feature in the streetscape.
Multi-storey development should be sensitive to its context.	<ul style="list-style-type: none"> • Double-storey building elements are set back from external boundaries by at least 2.5m.
Capitalise on views into Windsor Park.	<ul style="list-style-type: none"> • Views of the park could be provided, especially from upstairs.

8.6.6.2 Site Typology 3: Raureka



Figure 8.6-2 Site Typology 3: Raureka

Two lots on Gordon Road in Raureka have been identified for their potential to be redeveloped, using Site typology 3, with minimal adjustments. This typology is suitable for this site located more or less to the south of the street. Private open spaces associated with the majority of the dwellings (all double-storey) are located predominantly to the north or west of the dwellings. The two dwellings in the eastern part of the site have private open spaces located towards the southeast of the dwelling and will be reliant on morning sun. It should also be noted that the footprint of the sets of semi-detached dwellings is very similar in size as the dwellings surrounding the site.

The table below shows how this typology aligns with the recommendations made as part of the host neighbourhood character assessment.

Table 8.6-3 Site Typology 3: Raureka Neighbourhood Response

Recommendations	Response
Repetitive building design should be avoided.	<ul style="list-style-type: none"> Seven dwellings, two dwelling typologies. Minor architectural variations could be possible.
Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.	<ul style="list-style-type: none"> No garages located on the street front.
Where there are building setbacks, ensure a proportion of the setback is landscaped.	<ul style="list-style-type: none"> Buildings are set back from the street by 3m, allowing for a planted front yard.
Encourage private planting.	<ul style="list-style-type: none"> Private open spaces are large enough for planting.
The extent of attached dwellings should be limited.	<ul style="list-style-type: none"> Two sets of two semi-detached dwellings are located perpendicular with the street. Two further semi-detached dwellings are located away from the street frontage.

Recommendations	Response
Avoid the creation of unusable space between buildings.	<ul style="list-style-type: none"> Side yards are at least 3m wide.
Where dwellings face Gordon Road, building setbacks of 0m – 3m should be considered where it can be undertaken in an appropriate manner.	<ul style="list-style-type: none"> Buildings on Gordon Road are set back from the street by 3m.
Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.	<ul style="list-style-type: none"> The two lots on the street side are located sideways towards the street, whereby the extent of high fence on the street boundary is minimised. This is to optimise sun access into backyards, taking into account the orientation of the site, The high fences on the side boundaries of the backyards are envisaged to be placed in line with the dwellings in order to ensure that the dwellings (and not high fences) are dominating the streetscape.
Multi-storey development should be sensitive to its context.	<ul style="list-style-type: none"> All envisaged dwellings are two storeys, similar to the current dwelling on the site.
Consider who would benefit from proximity to commercial services.	<ul style="list-style-type: none"> The site typology incorporates seven three-bedroom dwellings, with an average size of 138m², which will likely attract a mixed demographic.
Manage the interface with commercial uses. Consider potential of vertical mixed uses.	<ul style="list-style-type: none"> There is no direct interface between the development and commercial services.
Consider who would benefit from proximity to community services.	<ul style="list-style-type: none"> The site typology incorporates seven three-bedroom dwellings, with an average size of 138m², which will likely attract a mixed demographic.
Manage the interface with community uses.	<ul style="list-style-type: none"> Development is in proximity of Raureka School, but direct negative effects are not expected.

8.6.6.3 Site Typology 4: Mahora



Figure 8.6-3 Site Typology 4; Mahora

Three lots on Roberts Street in Mahora have been identified for their potential to be redeveloped, using Site typology 4, with minimal adjustments. This typology is suitable for this site located more or less to the south of the street. All private open spaces are located to the northeast (early and longer sun) or southwest (afternoon and evening sun) of the dwellings. Predominantly double-storey development would likely be acceptable in this location, as dwellings on the properties to the south-east and south-west are generally well set back from the boundaries of the site. It should also be noted that the footprint of the sets of semi-detached dwellings is very similar in size as the dwellings surrounding the site.

The table below shows how this typology aligns with the recommendations made as part of the host neighbourhood character assessment.

Table 8.6-4 Site Typology 4: Mahora Neighbourhood Response

Recommendations	Response
Repetitive building design should be avoided.	<ul style="list-style-type: none"> Ten dwellings, four dwelling typologies. Minor architectural variations could be possible.
Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.	<ul style="list-style-type: none"> Four garages are fronting onto the street, all well set back from the street and behind the main front of the dwelling.
Where there are building setbacks, ensure a proportion of the setback is landscaped.	<ul style="list-style-type: none"> Buildings on the street side are set back by 3m.
Planting should be retained and continued.	<ul style="list-style-type: none"> Detailed information on location of current trees is required in order to identify whether existing planting could be retained.
The extent of attached dwellings should be limited.	<ul style="list-style-type: none"> Four couples of semi-detached dwellings, and two stand-alone dwellings.

Recommendations	Response
Avoid the creation of unusable space between buildings.	<ul style="list-style-type: none"> Spaces between dwellings are used for the shared access way or yards larger than 3m. The two single-storey dwellings have side yards of at least 1.5m, which is enough width to provide access to the side elevation (for possible maintenance), for a clothesline, or to provide access to the backyard (e.g. while using a wheel barrow).
Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage to avoid	<ul style="list-style-type: none"> Building design variations are easily achievable for this typology.
Dwellings should be setback from road frontage at least 3m. Where dwellings face the park, building setbacks of 0m – 3m should be considered where it can be undertaken in an appropriate manner.	<ul style="list-style-type: none"> Buildings on the street side are set back by 3m.
Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.	<ul style="list-style-type: none"> There are four instances where a high fence adjacent to the dwellings and over a short length is required for privacy, due to the orientation of the site. These fences will be set back from the street boundary and aligned with the dwellings in order to make the buildings the dominant features in the streetscape, rather than the fences.
Continue the theme of low front fences to utilise visual amenity of Cornwall Park.	<ul style="list-style-type: none"> High fences between dwellings and Cornwall Park are not required as private open spaces are located behind and to the sides of dwellings.
Multi-storey development should be sensitive to its context.	<ul style="list-style-type: none"> There is some double-storey development already existing on the site and in its proximity.
Capitalise on views of Cornwall Park. Consider benefits of multi storey units to take advantage of visual amenity provided by the Park.	<ul style="list-style-type: none"> Views of the park could be provided, especially from upstairs.
Consider who would benefit from proximity to employment uses and commercial services.	<ul style="list-style-type: none"> The site typology incorporates eight three-bedroom dwellings and two two-bedroom dwellings, with an average size of 138m², which will likely attract a mixed demographic.

8.6.6.4 Site Typology 6: Havelock North



Figure 8.6-4 Site Typology 6: Havelock North

A site on Duart Road in Havelock North has been identified for its potential to be redeveloped, using Site typology 6, with minimal adjustments. This typology is suitable for this site located more or less to the east of the street. All private open spaces are located to the north-east and north of the dwellings. Predominantly double-storey development would likely be acceptable in this location, as the space to the south of the site (most sensitive to overshadowing effects) is used as a driveway. The double-storey dwellings on the northern side of the site are well set back from the site boundary. It should also be noted that the footprint of the sets of semi-detached dwellings is very similar in size as the dwellings surrounding the site.

The table below shows how this typology aligns with the recommendations made as part of the host neighbourhood character assessment.

Table 8.6-5 Site Typology 6: Havelock North Neighbourhood Response

Recommendations	Response
Multi-storey development should be sensitive to its context.	<ul style="list-style-type: none"> • Double-storey buildings are set back from the boundary. There is already some double-storey development present in the area.
Re-contouring of development sites should be limited on sloping sites.	<ul style="list-style-type: none"> • Based on desktop analysis, no or very limited re-contouring required.
Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.	<ul style="list-style-type: none"> • Two single garages fronting onto the street, well set back from the street and behind the main front of the dwellings.
Repetitive building design should be avoided.	<ul style="list-style-type: none"> • Six dwellings, three dwelling typologies. Minor architectural variations could be possible.
Fence heights where development adjoins arterial roads should be low or not provided.	<ul style="list-style-type: none"> • High fences on the street boundary are not required as private open spaces are located to the rear of the dwellings. The dwelling in the north-western corner of

	<p>the site has its private open space located to the side of dwelling (when viewed from the street). The privacy of this space should be protected by a high fence (or similar), which should be set back from the street boundary and aligned with the dwelling in order to make the dwelling, rather than the fence, the dominating feature in the streetscape.</p>
<p>Development on local roads should provide private landscaping.</p>	<ul style="list-style-type: none"> • Setback distances on the street boundary are large enough to allow for private landscaping on the public street.
<p>Development should be setback from road frontage (at least 3m).</p>	<ul style="list-style-type: none"> • Buildings are set back from the street boundary by at least 3m.
<p>The extent of attached dwellings should be limited.</p>	<ul style="list-style-type: none"> • Two sets of semi-detached dwellings, whereby one set is located perpendicular with the street.
<p>Avoid the creation of unusable space between buildings.</p>	<ul style="list-style-type: none"> • Spaces between buildings are used for common access and backyards of at least 5m. Two dwellings have side yards of more than 3m in width, which is more than sufficient for access, a clothesline, a storage shed, etc.
<p>Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage to avoid</p>	<ul style="list-style-type: none"> • Building design variations are easily achievable for this typology.

8.6.6.5 Site Typology 7: Heretaunga Street East



Figure 8.6-5 Site Typology 7: Heretaunga Street East

Two lots on Queen Street East in the Heretaunga Street East area have been identified for their potential to be redeveloped, using Site typology 7, with minimal adjustments. This typology is suitable for this site located more or less to the northeast of the street. The main private open spaces of most dwellings are located to the north-east and north-west of the dwellings. Double-storey development on the south-eastern side of the site (most sensitive to overshadowing effects) would likely be acceptable in this location, as the neighbouring site is occupied by a double storey church building. Double-storey buildings are generally well set back from other boundaries. The single-storey dwelling on the street side may assist with the integration of the development within a context of both single- and double-storey buildings. It should also be noted that the footprint of the sets of semi-detached dwellings is very similar in size as the dwellings surrounding the site.

The table below shows how this typology aligns with the recommendations made as part of the host neighbourhood character assessment.

Table 8.6-6 Site Typology 7: Heretaunga Street East Neighbourhood Response

Recommendations	Response
Repetitive building design should be avoided.	<ul style="list-style-type: none"> Eight dwellings, three dwelling typologies. Minor architectural variations could be possible.
Retain residential character.	<ul style="list-style-type: none"> No non-residential development component.
Retain grid layout of public streets.	<ul style="list-style-type: none"> Development would be accessed by a shared access way off the public street.

<p>Continue pattern of garages away from street frontage. Dwelling should be dominant building on site.</p>	<ul style="list-style-type: none"> The three single garages fronting onto the street are well set back from the street and behind the main front of the dwellings.
<p>The extent of attached dwellings should be limited.</p>	<ul style="list-style-type: none"> The development consists of four detached and two sets of semi-detached dwellings.
<p>Avoid the creation of unusable space between buildings.</p>	<ul style="list-style-type: none"> Spaces between buildings are used for the shared access way and backyards of at least 5m. Some dwellings have narrow side yards that are large enough for access (e.g. for maintenance, or with a wheelbarrow).
<p>Building design variation (e.g. differing setbacks, bay windows, roofline variations) of attached buildings should be adopted particularly at the public street frontage to avoid</p>	<ul style="list-style-type: none"> Building design variations are easily achievable for this typology.
<p>Development should be setback from road frontage (at least 3m).</p>	<ul style="list-style-type: none"> All dwellings are set back from the street boundary by at least 3m.
<p>Maximise privacy of private open space at the rear of lots to allow for the reduction of fence heights.</p>	<ul style="list-style-type: none"> Private open spaces are located away from the street, reducing the need for high fences on the street boundary.
<p>Multi-storey development should be sensitive to its context.</p>	<ul style="list-style-type: none"> Double-storey elements are set back from the external boundaries. A church with the equivalent of two residential storeys is located to the south-eastern side of the development site.

8.6.7 Assessment of Site and Dwelling Typologies against the Hastings District Council Best Practice Guide for Subdivision and Infrastructure Development

The purpose of the Subdivision and Infrastructure Development in Hastings District – Best Practice Guide (SIDHDC) is to give developers and subdivision designers a design process and guidelines on best practice subdivision and infrastructure design.

The SIDHDC sets a series of design principles that underpin the guidance. The following table provides an assessment of how the proposed typologies and recommended design approach respond to the SIDHDC design principles.

Table 8.6-7 Assessment Against Best Practice Guide

Design Principle	Design guidelines
<p>Select – A suitable site for subdivision or retrofitting. Some locations have greater ability to absorb development than others and some sites are more suitable for retrofitting due to the conditions of the infrastructure.</p>	<ul style="list-style-type: none"> • This principle is mostly dependant on the location within the District and within the host neighbourhood. • See medium density housing ready services workstream.
<p>Integrate – Natural elements, patterns and processes into the design. This could include vegetation, landforms and waterbodies to enhance the existing character, create identity and maintain and enhance natural ecosystems.</p>	<ul style="list-style-type: none"> • Where relevant, the design should both address the challenges resulting from a sloping site, whilst also endeavouring to utilise it to its advantage. • Attempts should be made to retain existing valuable vegetation on the site and integrate it into the design.
<p>Retain – heritage and special character areas, drainage patterns, landform, view corridors, open space, natural features and links with other areas.</p>	<ul style="list-style-type: none"> • Where relevant, the design should capitalise on the opportunities that the site offers in terms of views to public spaces. • Where possible valuable buildings that exist on the site should be retained and celebrated as features that provide character to the development. • Where relevant, the design should both address the challenges resulting from a sloping site, whilst also endeavouring to utilise it to its advantage. • Attempts should be made to retain existing valuable vegetation on the site and integrate it into the design.
<p>Enhance – ecological systems and processes in a way that accommodates development while improving ecology. Use plantings which are compatible with Hastings District ecosystems and climate, suitable for the site, and of a scale that relates to the underlying and surrounding landscape.</p>	<ul style="list-style-type: none"> • Attempts should be made to retain existing valuable vegetation on the site and integrate it into the design.
<p>Respond – to community expectations and needs, cultural diversity and climate change. Urban subdivisions and retrofitting should complement the local identity of the Hastings District and respond to site,</p>	<ul style="list-style-type: none"> • Where there is a predominant trend of building materials present within the proximity of the site, the development should, if possible look to follow this. • Where possible, existing valuable vegetation should be retained on the site and integrated into the design.

Design Principle	Design guidelines
<p>neighbourhood characteristics and local aspirations. Design for resilience to changing influences such as climate change.</p>	<ul style="list-style-type: none"> • Options to enable renewable energy to be generated on site should be considered. E.g. photovoltaic solar panels on the roof; • All lighting should be efficient bulbs, either compact fluorescent or LEDs; • Provide a heat pump water heater or ENERGY STAR qualified solar water heating system to reduce the reliance on electricity. • Include adequate space to separate and collect recyclable materials for council collection and compost green waste. The design should allow for the easy installation of water efficient products such as: <ul style="list-style-type: none"> ○ Dual flush toilets; ○ Efficient shower that use less than 9 litres per minute; ○ Water efficient kitchen and bathroom taps; ○ Water efficient dishwasher and washing machine; ○ Large size rain water tanks that can plumb into the house for reuse.
<p>Reduce – the impact of land and infrastructure development and stormwater runoff and other infrastructure through the use of low impact design principles and practices and reduce the reliance on vehicular transport through encouraging walking/cycling friendly neighbourhoods.</p>	<ul style="list-style-type: none"> • There should be sufficient space to appropriately manage stormwater. • Design should seek to reduce the reliance on council stormwater facilities. • The development should be well connected (within a 500m walk) with facilities such as schools, community halls, churches etc. • The development should be well connected (e.g. located close to public transport options) with areas of employment. • The development should be well connected (within a 500m walk) to commercial facilities that will provide for the daily needs of residents e.g. dairies, supermarkets etc • The development should be well connected (within a 500m walk) to a public park and/or other recreational facilities. • The development should be well connected (within a 500m walk) to public transport opportunities (e.g. bus stop).
<p>Safe – and healthy developments are those that provide for visual surveillance over public spaces such as roads, reserves and open spaces, where traffic speeds are compatible with pedestrians/cyclists and where subdivisions are orientated to maximise solar gain.</p>	<ul style="list-style-type: none"> • Physical and visual separation between the public realm and private property should ensure the protection of residents' privacy. • The development should contribute to the safety and perceived safety of the adjacent public street. This could be achieved in the following ways: <ul style="list-style-type: none"> ○ At least one of the indoor living spaces (lounge, kitchen, dining) should be located on the ground floor and to the front of the dwelling with windows facing the street. In

Design Principle	Design guidelines
	<p>accordance with CPTED-principles. This will provide opportunities for residents to overlook the street, which contributes to the perception of safety whilst also being a real deterrent for crime.</p> <ul style="list-style-type: none"> ○ Front fences, walls or hedges should be kept low in order to allow for overlooking from the indoor living spaces. In order to avoid conflict with the objective of the residents' privacy, the primary private open space should not be located between the dwelling and the public street.
<p>Connect – with the surrounding community through walkways, cycleways and the roading network. This can provide greater accessibility and travel choices reducing travel distances and vehicle emissions. Connect publicly accessible open spaces and reserves to the wider recreation network.</p>	<ul style="list-style-type: none"> ● Development should make walking along the adjacent street more attractive in many ways, including: <ul style="list-style-type: none"> ○ Measures aimed at promoting public safety; ○ By avoiding dominance of garage doors by recessing garages behind the main front of the dwelling. ○ High quality design ● Building entrances should be placed in locations that are visible from the public street in order to connect new development with the street and avoid confusion about how dwellings are laid out relative to the public realm.
<p>Choice – of lots sizes, housing community and recreational facilities and transportation options will respond to the changing needs of the community and enhance the diversity of the community.</p>	<ul style="list-style-type: none"> ● Medium density housing developments should be 'pepper potted' within a neighbourhood to ensure they do not become the dominant housing typology.
<p>Deliver – best practice subdivision and infrastructure to create great places to live, work and play through enabling, encouraging, engaging and exemplifying. This includes improved pre-lodgement processes, the use of multi-disciplinary teams in responding to subdivision design and in the design of infrastructure upgrades and retrofitting, Council "walking the talk" through demonstration projects and through community engagement.</p>	<ul style="list-style-type: none"> ● See demonstration model.

This the above provides the basis for a comprehensive "how to" process for developers and designers to evaluate and design development to a stage where financial and consenting feasibility can be undertaken, but short of full architectural design. It is proposed that this chapter be developed further into a stand-alone design guideline for use by developers and builders wishing to undertake medium density developments, within and beyond the identified intensification areas.

8.7 Demonstration Model

The Stage1 Report suggested that one method for addressing perception barriers to the delivery of medium density housing is for the Council to undertake a demonstration medium density housing project to provide a repeatable model for private sector developers and showcase the benefits of medium density housing to the market. To provide the foundations for this, the section of the report:

- Identifies an appropriate site for a demonstration model;
- Demonstrates how it can be developed in accordance with the medium density housing design guidance;
- Demonstrates how the identified site provides flexibility of development both in terms of site layout (and yield), and building design;
- Provides a three dimensional model with variations to assist in visualisation of the demonstration model.

It should be stressed at this point that the demonstration model, while using real sites, is a theoretical demonstration model and does not signal an intention for the Council to acquire these specific properties and undertake a development. The intention is to demonstrate what is achievable in a real situation today. It is also noted that the Council's Property Company in conjunction with a local developer is currently developing a 12 unit brownfields development at the lower end of the medium density range on surplus land in Fitzroy Avenue. This will showcase a medium density sustainable housing development, which will help to change market perceptions and stimulate more interest in medium density, but as a brownfields development it does not entirely represent a replicable model of comprehensive redevelopment of existing residential housing stock.

8.7.1 Demonstration Model Selection

Several real sites for a possible demonstration project were identified during a site visit in October 2012. These sites are all located within the host neighbourhoods. More specifically, four of these are located in Mahora, one in the Heretaunga Street East area and one in Parkvale.

Several options for concept layouts were then prepared for these sites, in order to identify which of the options is the most useful in the context of this project. The following key criteria were regarded relevant:

- Likely economic feasibility – How financially viable the development would be. This is based on a basic feasibility assessment. It takes into account, among many other things, acquisition, construction and other costs, and possible sales results. The current RVs for the sites have been used as the acquisition costs, which in the current market is considered reasonable.
- Location – How the site is located relative to nearby amenities, such as public open space, community, commercial and employment facilities.
- Ability to be successfully integrated – What passers-by would experience of the development. The key consideration is how the development would fit into the existing urban fabric, also taking into consideration the host neighbourhood character assessment.

- Effects on immediate neighbours – How much impact the development would have on the neighbouring sites. The key consideration is how the proposed activities impact on the neighbours. For example, buildings and driveways located in close proximity to the external boundaries of the site would be seen as a negative attribute.
- Residents' overall amenity – What the residential amenity of the development would be. The key consideration is how much common and private open space as well as built space there is for possible prospective residents. Issues such as extensive terracing, inappropriately located backyards, and smaller dwellings were regarded to be seen as negative attributes.
- 'Replicability' – How easy it would be to replicate the model and apply it to other sites. The key consideration pertains to the dimensions and shape of the site. A rectangular site with a width and depth common to the host neighbourhoods is therefore preferred.

The concept design for a site consisting of three properties on the south-eastern side of Nelson Street was considered most favourable for a variety of reasons.

The Nelson Street site was the largest of the sites tested, containing three dwellings with each site comprising 1033m² and so is less typical of the majority of potential redevelopment sites, but was also at the upper level of the Improved Value to Land Value Ratio of 70% identified in the Stage 1 work as the average trigger level for viability.

The Mahora and Parkvale sites were also able to demonstrate the required feasibility (These are contained in Appendix D), although the margins were smaller and retention of one of the dwellings potentially more critical to achieving the necessary trigger feasibility. Having said that, developers may be more likely to accept a lower profit and risk requirement on the smaller developments than the minimum 30% used in the test feasibilities, than would be the case with the larger Nelson Street development.

Against this background the Nelson Street site was selected for further exploration as it represented a likely upper range of redevelopment intensity which might be expected on a single development within a neighbourhood (with the exception of specific brownfields sites) and better able to demonstrate the variety of design approaches that can be applied to ensure acceptable levels of on-site and neighbourhood amenity values can be achieved at that scale.

8.7.2 The Nelson Street Demonstration Model - Design Rationale

As a result of the above, three sites in Nelson Street with a combined area of 4,104m² were identified as an appropriate theoretical (parent) development site in order to demonstrate an appropriate form of residential intensification in the Hastings District. The sites are real sites, but the addresses are not identified in this report out of respect for the current owners interests (although in the future the Council may need to be more proactive in using its databases to identify theoretically feasible sites to draw developers and builders attention to, if the full potential is to be unlocked).

The site is located in Mahora, approximately 900m from the centre of the Hastings CBD. Cornwall Park and the Mahora Shops on the corner of Tomoana Road and Frederick Street are within walking distance from the site. Large employment facilities including Heinz Watties on King Street North, and Turners and Growers Cool Stores are also located nearby.

The site is surrounded by residential sections on two sides and the Heinz-Watties complex on the south-eastern side. It fronts onto Nelson Street, orientated towards the northwest. This means that the sunniest areas are located on the street side, which has required a design response that balances the orientation of the private open space, privacy, and visual connections between the properties and the streetscape.

To demonstrate the flexibility provided by the subject site, two potential designs are provided, Model 1 and Model 2. Both models comprise 14 dwellings, with the average gross lot size per dwelling being approximately 293m². Each design has then been worked out into two sub-options, providing variation in roof shape and other architectural details. Neither Model 1 nor 2 retain an existing building on site. The consideration of the retention of a building is discussed in more detail below.

It should be noted that the site designs illustrated below are purely examples of how the site can be developed based on responding to a number of criteria described above. There are other design approaches that could be adopted to achieve the above criteria and similarly there are other appropriate design approaches that would be more responsive to other criteria.

The purpose of the following illustrations is to demonstrate what the site development could look like, not what it should look like. In addition, it should also be noted that the following images do not include detailed architectural design (e.g. colour, materials etc.).

For Model 1 four dwelling typologies have been used (dwelling typologies A, E, F and G).

For Model 2 five dwelling typologies have been used (A, C, D, E and G).

In both design options four dwellings have been located on the edge of Nelson Street, with car and pedestrian access directly off the street. The remaining ten dwellings have been arranged on a T-shaped shared driveway. Dwellings have been set back by 2.5m from the Nelson Street boundary and the garages recessed by at least a further 2m. All double-storey building elements have been set back:

- At least 2.5m from the front Street boundaries;
- At least 5m from all other external boundaries.

In both models twelve of the dwellings are semi-detached and the balance consists of stand-alone dwellings.

All lots contain a private open space that can accommodate a circle with at least a 4.5m diameter. The building mass on all properties has been arranged in such a way that solar access to each private open space is maximised.

Main areas of private open space have generally been located away from the fronts of properties (i.e. not between the dwelling and the street/shared accessway). This is to ensure that high fences at the front of properties are not required and that the street and common spaces can be easily overlooked from living areas, dining rooms and kitchens.

Where the main area of private open space cannot be located at the rear of the property, a location to the side of the dwellings has been opted for. In all instances the main private open space associated with the dwelling is directly accessible via either a lounge or dining room.

All dwellings have a single garage and single driveway long enough to accommodate a single car. An internal access between the dwelling and the garage could be included in all dwellings. Garages have been set back from the main front of the dwelling by at least 1m. This is to reduce the visual dominance of the garage door on the streetscape or the shared space.

This risk of overshadowing between neighbouring dwellings has influenced the distribution of single and double storey dwellings as well as the setback distances within the site.

In Model 1, 11 of the 14 dwellings are double storey and have three bedrooms, with a GFA (including the garage) of between 136m² and 148m². The remaining three dwellings are single storey with two to three bedrooms and a GFA of approximately 100m² (including the garage). It should be noted that the single storey dwelling located closest to Nelson Street could potentially have a higher GFA as there is sufficient space on site.

The average GFA per dwelling is approximately 130m². If required, the GFA and building mass of the double storey typologies could (particularly at the rear of the site) be reduced by only constructing the dwelling as a double storey main volume with a single storey ancillary volume, which accommodates the garage. This would reduce these dwellings to two bedroom dwellings. This reduction of the building bulk would result in a reduction in overshadowing and more stepping between attached dwellings, emphasising the individual dwelling.

In Model 2, the single-storey dwellings have been located on the street side in order to provide an option that has a less dominant visual impact on the streetscape, with most of the existing dwellings being single-storey. In this model, 12 of the 14 dwellings are double-storey and have three bedrooms. If desirable, it is likely that three of the two-storey dwellings (western side of the site) could be single storey. GFAs, including the garage, are between 136m² and 148 m². The remaining two are single-storey with two bedrooms and a GFA of approximately 100m². The average GFA per dwelling is approximately 137m².

8.7.3 The Demonstration Model

The following section provides a series of computer generated images of the demonstration model described above.

8.7.3.1 Demonstration Model – Plan Views

NOTE: This is not a view that people will commonly experience, however it is useful to demonstrate the levels of open space that will be available to individual units and to demonstrate how potential layouts could work.



Figure 8.7-1: Demonstration Model 1



Figure 8.7-2: Demonstration Model 2

8.7.3.2 Demonstration Model – Looking East

NOTE: This is not a view that people will commonly experience, however it is useful to demonstrate the levels of open space that will be available to individual units, how potential layouts could work and the scale of development within the local context.



Figure 8.7-3: Demonstration Model 1 – Hipped Roofs



Figure 8.7-4: Demonstration Model 2 – Hipped Roofs



Figure 8.7-5: Demonstration Model 1 – Gabled Roof



Figure 8.7-6: Demonstration Model 2 – Gabled Roof

8.7.3.3 Demonstration Model – Looking South

NOTE: This is not a view that people will commonly experience, however it is useful to demonstrate the levels of open space that will be available to individual units, how potential layouts could work and the scale of development within the local context.

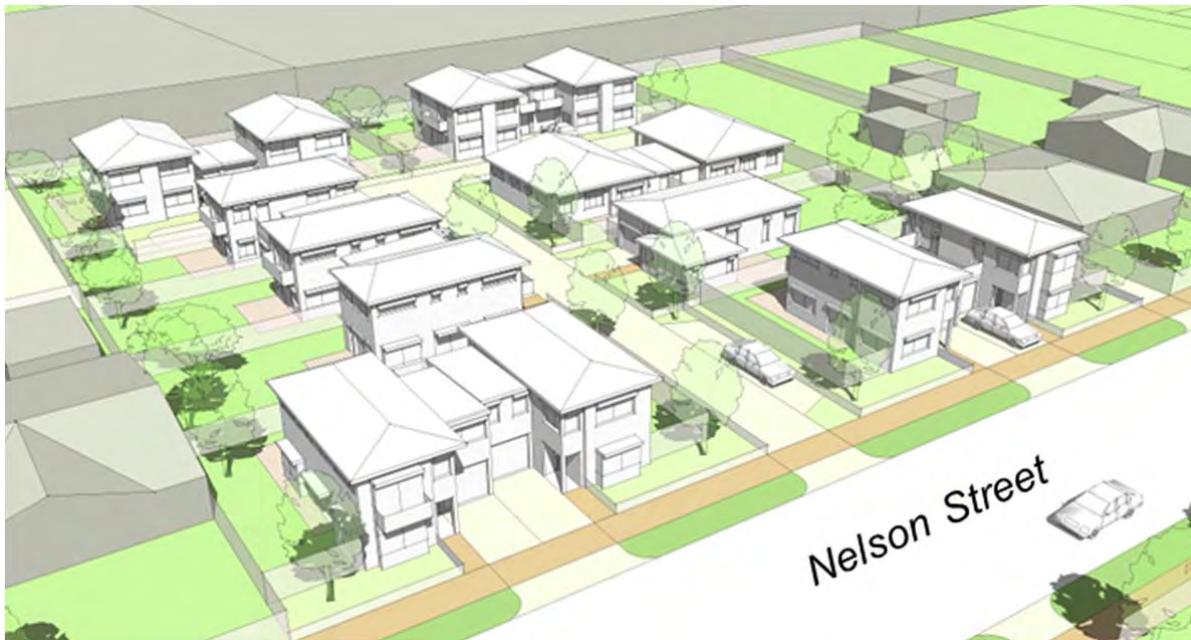


Figure 8.7-7: Demonstration Model 1 – Hipped Roof

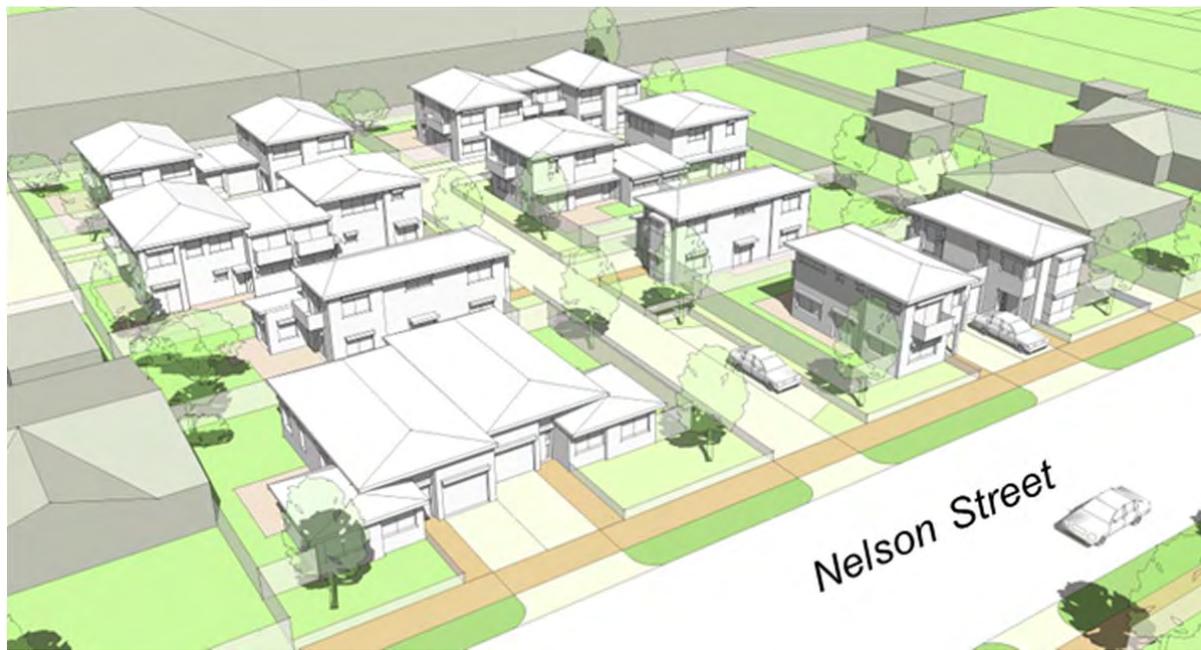


Figure 8.7-8: Demonstration Model 2 – Hipped Roof



Figure 8.7-9: Demonstration Model 1 – Gabled Roof

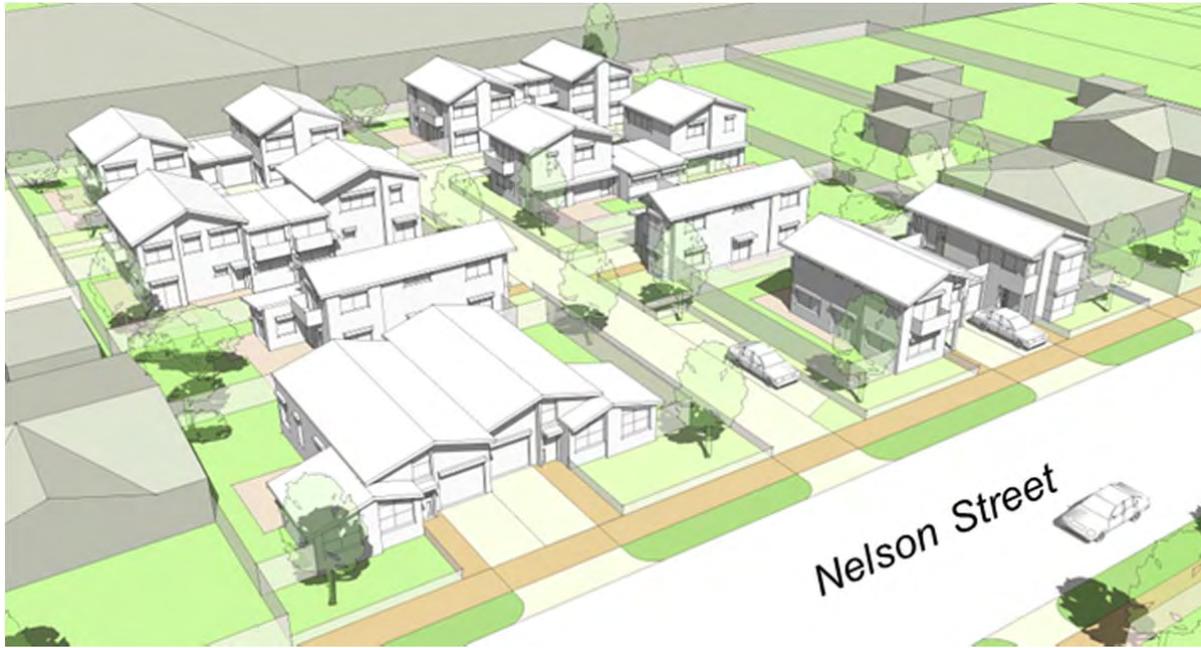


Figure 8.7-10: Demonstration Model 2 – Gabled Roof

8.7.3.4 Demonstration Model – Street View Looking South

This view demonstrates how the potential developments could look from the street. It should be noted that the images do not include architectural features which would significantly affect the view experienced from the audience.



Figure 8.7-11: Demonstration Model – Hipped Roof



Figure 8.7-12: Demonstration Model 2 – Hipped Roof



Figure 8.7-13: Demonstration Model 1 – Gabled Roof



Figure 8.7-14: Demonstration Model 2 – Gabled Roof

8.7.3.5 Demonstration Model – Street View Looking East

This view demonstrates how the potential developments could look from the street. It should be noted that the images do not include architectural features which would significantly affect the view experienced from the audience.



Figure 8.7-15: Demonstration Model 1 – Hipped Roof



Figure 8.7-16: Demonstration Model 2 – Hipped Roof



Figure 8.7-17: Demonstration Model 1 – Gabled Roof



Figure 8.7-18: Demonstration Model 2 – Gabled Roof

8.7.3.6 Demonstration Model – Street View Looking South East

This view demonstrates how the potential developments could look from the street. It should be noted that the images do not include architectural features which would significantly affect the view experienced from the audience.



Figure 8.7-19: Demonstration Model 1 – Hipped Roof



Figure 8.7-20: Demonstration Model 2 – Hipped Roof



Figure 8.7-21: Demonstration Model 1 – Gabled Roof



Figure 8.7-22: Demonstration Model 2 – Gabled Roof

8.7.3.7 Demonstration Model 2 – Hipped Roof –Street View Looking South Visualisation

One of the street view images has been further developed to provide an architectural standard of image. The following image articulates what one of the options (that being demonstration model 2 with hipped roof viewed from street view looking south) taken to a more detailed architectural design (e.g. colour, textures etc.) would look like. The architectural style chosen for this image is deliberately neutral to demonstrate that medium density housing can be assimilated into many Hastings residential environments. Heritage, traditional, contemporary/modern and emerging/futurist styles can also be used to suit individual and neighbourhood contexts.



Figure 8.7-23 Visualisation Example

8.7.4 Standard Financial Feasibility Analysis of Demonstration Model 1

To determine the financial feasibility of demonstration model 1, a detailed feasibility assessment has been undertaken and identifies that the project may be feasible based on the following key assumptions:

- Acquisition of the three properties for a total of \$830,000 (based on current RVs).
- Construction of 14 dwellings.
- Mixture of single (3) and double-storey (11) dwellings.
- Average GFA of 130m².
- Building cost per m²: \$1,575 (averaged to include both single and double storey dwellings).
- All single garage with single driveway.
- 13 three-bedroom dwellings, 1 two-bedroom dwelling.
- Average sale price: \$383,000 each (15% below a full site⁴).

Based on the assumptions above, the development delivers a 30% (of equity) profit. The details of this assessment are presented in the table below.

Table 8.7-1 Nelson Street Demonstration Feasibility

Nelson Street Feasibility 4,100sqm (purchase, develop and sell medium residential dwellings)		26 November 2012	\$	\$
Dwelling & Land cost				
Buildings		1,575	130	\$2,866,500
Land				\$830,000
GST on purchase		15.00%		
Land holding costs:				
Rates				\$10,000
Stamp duty				n/a
Surveying				\$3,500
Total land costs				\$3,710,000
Construction & design costs				
Carparking / driveway				
Land development costs		\$5,612	14	\$78,575
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees				\$11,480
Contingency on construction		5%		\$143,325
Design fees				\$5,000
Singage				
Total design and other construction costs				\$238,380
Other development costs				
Marketing			0.50%	\$26,821
Legal Costs on purchases and sales (\$1,200/site)		\$1,200	14	\$16,800
Reserve contribution (value of 15m2 of land + GST)		\$6,500	14	\$110,754
Development contribution		\$15,000	14	\$166,131
Valuation (negotiate fixed contract)			14	\$1,500
Consultants (planning, engineer, etc)				\$5,000
Design Fee				\$0
Project Management Costs				\$0
Real Estate Fee			2.5%	\$134,106
Subtotal				\$461,112
Interest on holding costs		\$556,500	8.00%	\$44,520
Interest on construction costs		\$2,226,000	9.60%	\$213,696
Loan application fee			1%	\$2,500
Total other development costs				\$721,828
Total Costs				\$4,670,208
Estimated Gross Realisation (15% below full site)				
6x residential sites (inclusive of GST)		\$383,160	14	\$5,364,236
Total				\$5,364,236
Profit Margin				30%
As per Stage 1 Report, it is assumed that a 130m ² dwelling will sell at 15% less than the local average sale price for a similar sized traditional dwelling.				\$694,028

8.7.5 Retention of an Existing Dwelling On-Site

The Stage 1 project identified the possibility of retaining an existing dwelling on-site in the redevelopment as a potential option for developers. This included possible relocation and alteration in order to integrate it with the new development layout as best as possible. It is recommended that in any redevelopment project retention is seriously considered, since possible advantages include the following:

- Retention could reduce waste and the use of resources, particularly if the dwelling is in a good condition.
- Retention of a valuable dwelling may help with the financial feasibility.
- Retention (particularly of an existing characteristic dwelling) may provide character to the surrounding neighbourhood (E.g as in the case of the Fitzroy Ave development).
- Retention may assist in providing an appropriate transition between the development and surrounding properties.

During the design process the retention of one existing dwelling on-site was considered for the above reasons. It was however decided not to retain any of the existing dwellings on-site for the following reasons:

- Design investigations identified that the dwelling with even the smallest footprint would require the same amount of space as two new dwellings.
- Feasibility assessment identified no notable advantage for the financial feasibility of the project. This was however based on assumptions regarding the state of the dwelling that could be retained, which has consequences for both the required investment in and possible sales price of the renovated dwelling.
- The envisaged bulk and location of proposed development was considered appropriate in terms of effects on both the streetscape and surrounding properties.

Selecting the most valuable dwelling (both internal and external), identifying whether it can be relocated and altered, as well as identifying an ideal location, is complicated by the fact that this phase of the demonstration project is desktop-only.

Detailed on-site investigations by qualified experts are required in order to provide sufficient certainty on the above issues. For example, it is potentially feasible that down-scaling an existing dwelling (e.g. from 4/3 bedroom to 2/1 bedroom) may make it a more financially viable option by returning the yield to 14 units. However, for the purpose of this exercise, this has not been considered as the test feasibilities indicated that retention was not needed for this site. In this context it should also be noted that the value of retaining a dwelling on site is likely to vary from site to site and will be influenced by such things as building shape and size, site size and shape, building value etc.

8.7.6 Demonstration Model – Layout Options

As noted above, there are many design solutions that can be developed for the demonstration model site and the illustrations above reflect only a small proportion of options both in terms of site layout and building design.

To demonstrate the flexibility of site layout, six additional site designs have been developed in order to show some of the variables that could be considered for this site, or similar sites. Each of the design options has advantages and disadvantages depending on the drivers of design. For example, some designs seek to retain an existing dwelling on site however this generally results in a reduction of yield. It should be noted that this exercise did not consider the feasibility or potential benefits of down-scaling any existing dwellings (e.g. 4/3 bedroom to 2/1 bedroom).

The key structuring element of all options below is a T-shaped shared access way. In all options the rear of the site accommodates dwellings backing onto the industrial complex behind the site. The front of the site contains dwellings directly accessible off the street, with front doors and living rooms activating the streetscape. Private open spaces to the southern side of the dwellings have been minimised. Where this orientation could not be avoided, wide side-yards have been

introduced. The options below have been developed through a design process in which each option builds onto the previous (or one of the previous), with one or a few variations.

The dwelling typologies used are presented previously in this report and comply with the design principles above. As stated, minor architectural variations (e.g. bay windows, balconies, colour and materialisation) within the dwelling typologies are possible and desirable.

8.7.6.1 Demonstration Model – Alternative Layout Design Option 1

This option is based on retention of one of the existing houses on the site. This desktop exercise assumed that it could be moved to the street front to lessen the visual impact of the development on the streetscape. Depending on the value of the house, the amount required for renovations, and the relocation costs, retaining and relocating could also provide financial benefits. The option accommodates 13 dwellings, of which 10 are duplex units and three are detached. All new units are two storeys high, whereas the existing house is a single-storey dwelling.

Four different dwelling typologies have been used to respond to the characteristics of the site and to enhance the character of the development. Setbacks from the property boundaries of adjoining neighbours have been maximised in order to lessen overshadowing and privacy issues. The new dwellings are well set back from the external site boundaries. The minimum setback from any external site boundary is 4.2m, minimising visual impact and overshadowing, and maximising privacy.



Figure 8.7-1 Demonstration Model – Alternative Layout Design Option

8.7.6.2 Demonstration Model – Alternative Layout Design Option 2

Similar to Option 1, it was assumed that one of the existing houses could be retained, relocated and renovated. In this option it has been moved to the southern corner of the site. Moving the existing house to the back of the property also maximises the site area for the 12 new dwellings.

The option accommodates 13 dwellings, of which 10 are duplex units and three are detached. All new dwellings are two storeys high, whereas the existing house is a single-storey dwelling.

Four different unit typologies have been used due to site restrictions and to enhance the character of the development.

Four duplex units are placed on the street. Although all four are based on the same dwelling typology, minor architectural variations could add interest to how the development would be viewed from the street. The new dwellings are well set back from the external site boundaries. The smallest distance is between the existing relocated single-storey dwelling and the industrial site to the back.



Figure 8.7-2 Demonstration Model – Alternative Layout Design Option 2

8.7.6.3 Demonstration Model – Alternative Layout Design Option 3

This option is similar to Option 2, with the exception of the southern corner which contains two new units, rather than the relocated existing dwelling. The site accommodates 14 double-storey dwellings, of which 12 are duplex units and two are detached.



Figure 8.7-3 Demonstration Model – Alternative Layout Design Option 3

8.7.6.4 Demonstration Model – Alternative Layout Design Option 4

This option is derived from Option 3. In this option two single-storey dwellings are placed on the street in the northern corner in order to tie in with the predominantly single-storey streetscape. Compared to Option 3 this comes at the expense of the dwelling behind these. However, there is space to separate the set of duplexes remaining behind. As a result the site accommodates 13 dwellings, 10 of these are duplex units and three are detached; 11 units are double-storey and the set of duplex units on the street are single-storey.



Figure 8.7-4 Demonstration Model – Alternative Layout Design Option 3

8.7.6.5 Demonstration Model – Alternative Layout Design Option 5

This option is derived from Option 4, whereby the two single-storey duplexes on the street front have been replaced by double-storey dwellings with a small separation distance. Narrow typologies have been selected in order to retain the relatively large side-yards for solar access into the private open spaces.



Figure 8.7-5 Demonstration Model – Alternative Layout Design Option 5

8.7.6.6 Demonstration Model – Alternative Layout Design Option 6

This option has been derived from Option 3, whereby the front and rear rows of the site have been left unchanged, but single-storey dwellings have been placed in the middle of the site. One of the reasons for this is to reduce the development's impact on neighbouring properties, as it is in mostly these areas that buildings on neighbouring sites are located. A variety of single- and double-storey dwellings may also be attractive from a commercial perspective and may add to an experience of openness and space within the development.

Compared to Option 3, the total yield is reduced by one dwelling in order to make space for the single-storey units, which have a larger footprint than the double-storey dwellings. The site thus accommodates a total of 13 dwellings, of which 10 are duplex and three are detached. Eight units are double-storey; five units are single-storey. Private open spaces associated with the single-storey dwellings particularly in the western part of the site have been reduced by the larger footprints. This is however considered acceptable as the orientation of these spaces is ideal (west to northwest) and the single-storey dwellings will result in shorter overshadowing in the morning than double-storey buildings.



Figure 8.7-6 Demonstration Model – Alternative Layout Design Option 6

8.8 Achieving a 7 Star Sustainability Rating

Quality building design and construction is an important amenity indicator. How a building is constructed, the appliances and systems installed and how the dwelling is used all contribute to how well a building performs.

To provide a framework for assessing building performance, it is deemed appropriate to utilise tools such as the Homestar Rating System. The Homestar rating system looks at how a house performs by rating all aspects of a dwelling. This means looking beyond saving energy, to considering whether a dwelling is warm and dry inside, how water use and waste can be minimised, and how planting can be utilised to assist in the efficient functioning of stormwater drainage. Each system (such as heating or water heating) in a house affects how the other systems work.

A 7 star Homestar rating is between high performing and very high performing. To achieve a 7 star rating, the following recommendations are made:

- Provide quality ceiling and floor insulation, without gaps, holes or tucks visible;
- Provide double glazed windows, with thermally broken timber or PVC frames;
- Consider sound insulation, (i.e. solid core doors and double layer plasterboard lining);
- Traditional, wooden floors should be damp proofed;
- An extractor fan should be installed in kitchen and bathrooms;
- Bathroom fittings should have built-in overflow;
- No more than 5 ceiling downlights should be included;
- Eliminate all window and door draughts;
- Install quality thermal curtains throughout the house;
- Provide a covered washing line;
- Include principles of passive solar design;
- Choose an efficient heat pump, log burner or pellet fire for supplementary heating;
- Look at options to enable renewable energy to be generated on site, such as from photovoltaic solar panels on the roof;
- All lighting should be efficient bulbs, either compact fluorescent or LEDs;
- Provide a heat pump water heater or ENERGY STAR qualified solar water heating system to reduce the reliance on electricity;
- Install dual flush toilets;
- Reduce water use by installing an efficient shower that uses less than 9 litres per minute;
- Provide a water efficient kitchen and bathroom taps;
- Provide a water efficient dishwasher and washing machine;
- Include a large size rain water tank and plumb into the house for reuse;
- Include adequate space to separate and collect recyclable materials for council collection and compost green waste;
- Incorporate a worm farm;
- When building a new home, look at ways to reduce construction waste;
- Include space to grow vegetables and fruit trees;
- Provide native planting covering more than 70% of the garden;
- Reduce the reliance on council stormwater facilities;

- Ensure the dwelling is located close to a park, supermarket, dairy or public transport;
- Include a home user guide (HUG), a single folder with information about design features, maintenance, house plans, manuals and warranties and local community information;
- For new buildings choose Environmental Choice NZ (ECNZ) building products;
- Install smoke alarms close to sleeping areas;
- Ensure the name or number of house is easily visible from the road in case of emergency;
- Provide secure locks and catches on all ground floor doors and windows;
- Ensure hot water from kitchen and bathrooms taps no higher than 55 °C
- Provide external security lighting fitted with motion and daylight sensor.

In terms of the demonstration model⁵, it is considered that a number of these criteria are achieved (e.g. principles of passive solar design, locating close to facilities) however a number of these criteria cannot be addressed through this exercise as they relate more to how a household is operated rather than physical elements. In addition, it should be noted that the adoption of all Homestar recommendations (that would be required to achieve a 7 star rating) may not always be achievable dependent on site characteristics, as such, there should not be a “one-size fits all” approach to the adoption of Homestar recommendations.

⁵ It should also be noted that Council is already well advanced in terms of the promotion of sustainable building principles through its BestHomes © initiative and the Fitzroy Avenue Development.

9 Responsive and Effective Regulation

A key element of achieving the Council's strategic direction, to protect the versatile soils of the Heretaunga Plains, is the concept of creating a compact settlement or encouraging the intensification of housing within suitable locations in the urban areas of Hastings.

The HPUDS strategy has set a target of 60% of all new dwellings to be provided through intensification by 2045. Currently 40% of all new houses in the Hastings District are provided through intensification of existing urban sections.

While the current District Plan provisions (allowing 1 residential dwelling per 350m² of land area) would enable a 60% intensification target to be met in this timeframe, there are concerns that the quality of such development under the current District Plan framework would have a significant impact on the character and amenity values of existing residential areas as well as significant issues for the existing stormwater system. To date the amenity outcomes achieved by intensification under the current rules have tended to be poor quality with the majority being in the form of infill housing development (putting an additional house or houses behind an existing house). Those that have been successful in providing a quality residential environment have employed a more comprehensive approach to development.

Therefore the HPUDS vision of "*quality residential environments with high levels of amenity*" could be undermined under the provisions of the Operative Hastings District Plan 2003 which encourage infill development with little guidance or control in respect of design and layout of such housing developments.

Therefore, in order to meet the goals of HPUDS the existing regulatory provisions and framework needs change in order to:

- Encourage compact housing development within the existing urban area in a form that provides quality residential environments for occupants and neighbours alike;
- Address how existing built and streetscape and neighbourhood character will be maintained while moving to a more compact residential environment;
- Encourage the concept of mixed use (commercial and residential) development in major local shopping centres that have the potential to be a catalyst for comprehensive residential development in the surrounding residential area; and
- Promote low impact design solutions for the management of increased stormwater runoff to ensure there are no adverse effects on the existing stormwater network.

Building a framework to enable change is an iterative process. The District Plan regulatory framework will need to evolve to accommodate compact development in Hastings and Havelock North urban areas. The transition of Hastings from a predominantly low density, single storey residential environment to a more compact and built-up environment needs to be managed carefully, considering aspects such as the most appropriate locations through to the detailed design of the individual development.

The proposed regulatory framework reflects the importance of location by providing for comprehensively designed medium density housing developments (termed Comprehensive Residential Development (CRD) and explained further below) in discrete areas that have been identified in the Hastings Urban Design Framework (HUDF) as first order preferences for higher density developments. By zoning these areas specifically for such developments the District Plan signals that these locations are considered the best and most appropriate for medium density housing developments in the Hastings District.

In the areas identified as HUDF second tier preference locations, the District Plan identifies these as suitable for Comprehensive Residential Development through an Appendix map. Council may need to have greater control over decisions to grant resource consent to such developments in these areas. To encourage more compact and efficient development there should be a presumption that

consent would be granted unless the development fails to address the relevant assessment criteria. In all other residential areas (i.e. that are not specifically identified as suitable for CRD) the Council should have full discretion in the assessment of applications for comprehensive residential development.

The use of Activity Status and Zoning are considered the most effective regulatory tools to promote Comprehensive Residential Development in appropriate locations within the Hastings District. These tools will also provide certainty for developers (in terms of identifying the preferred areas for investment), for residents (in knowing where comprehensive residential development will be encouraged and at what density) and for the Council (in terms of the provision of infrastructure and local open space and streetscape amenity upgrades). Zoning also allows such development to be targeted for the most appropriate areas, generally within walking distance of shops, services and amenities.

It is vital that the scale and intensity of comprehensive residential development is compatible with and compliments the surrounding residential area as well as being located close to shops and services. Once the scale, intensity and location of the development is confirmed as appropriate, site size and shape are the next primary ingredients for ensuring good design outcomes. These attributes of a development site determine the potential layout and overall design outcome and are therefore critical to achieving the high quality residential environment that the Council and community desire.

On this basis, the proposed District Plan framework should require a minimum *parent lot* size on which comprehensive residential development can occur rather than encouraging the development of single existing narrow sites, which is a common theme with traditional infill development.

Comprehensive Residential Development (or CRD) is a form of development that incorporates the design of buildings, infrastructure and landscaping together with any proposed subdivision that usually comprises a minimum of 3 residential dwellings (including any existing dwellings on the site) at a density of between 20-40 residential buildings per hectare. The premise of this type of development is that subdivision occurs either at the same time or after the approval of the resource consent for the design and layout of the dwellings rather than prior to the design of the houses. This would be the point of difference as to how Council sees development occurring in the future, particularly at higher densities, compared with the current method of subdividing first and then subsequently selling the sections and individual new owners designing houses to fit the section shape and size independently to the other houses in the development. Comprehensive development allows built form and subdivision layout to be considered at the same time, resulting in a more efficient and integrated development with greater certainty of outcome in terms of onsite and neighbourhood amenity.

Comprehensive Residential Development did occur in Hastings the 1970s and 80s under more supportive District Plan provisions, but has not been a common development type over the past 30 years. To re-establish this type of development as a preferred and desirable option, not only does the regulatory environment need to change, but also new examples need to be designed to provide quality residential environments for occupants and to positively contribute to the existing character of the neighbourhood and City as a whole.

Comprehensive residential development is the preferred form of residential intensification because it results in a better development layout and design due to factors such as; the residential units, access, outdoor living, landscaping and subdivision layout being designed as a complete package. This design approach enables consideration of aspects such as residential privacy between units and external boundaries, streetscape appearance and overall amenity.

Infill residential development has been the primary form of development in Hastings and Havelock North in the recent past. Infill development means subdividing and putting an additional house or houses (generally behind an existing house) on a site. Traditional infill subdivision and development in Hastings tends to occur on long narrow sites which restrict the configuration or layout of dwellings to one behind the other accessed via a long driveway. This situation often results in high fences being erected along the street front boundary to create private outdoor space for the front unit (because the back yard is now occupied with another house), and along the driveway to create privacy for outdoor living spaces of the dwelling(s) located behind. This high and extensive fencing

and often a lack of landscaping is not ideal for the amenity of occupiers and can detract from the residential amenity and character of the area.

HPUDS and the HUDF envisage a change to the traditional infill model of intensification by encouraging comprehensive residential development through the redevelopment of larger and/or multiple sites. Larger site sizes provide greater opportunities and options for dwelling layout and design ensuring best practice planning and urban design principles create the most appropriate development concept rather than constrained development options leading the design process. In this way a more pleasant streetscape and greater amenity for residents living in the development and surrounding neighbourhood can be achieved.

For these reasons the regulatory framework should promote comprehensive residential developments over smaller traditional infill subdivision and development. Within the areas specifically identified as most appropriate for medium density intensification (ie the City Living Zone), infill subdivision and development should be actively discouraged through a non-complying activity status. The rationale for this is to ensure that the land resource zoned for comprehensive residential development is utilised efficiently for developments with the greatest potential housing yield in order to achieve the HPUDS targets and with the greatest potential for high quality residential layout and design outcomes.

Some traditional infill housing development and subdivision will still need to occur in the General Residential Zones as a Permitted Activity to meet the intensification targets, however it should be subject to additional standards including outdoor living areas, fence height limits, the location and size of garages and the need to consider the impacts of the proposed development on the stormwater system.

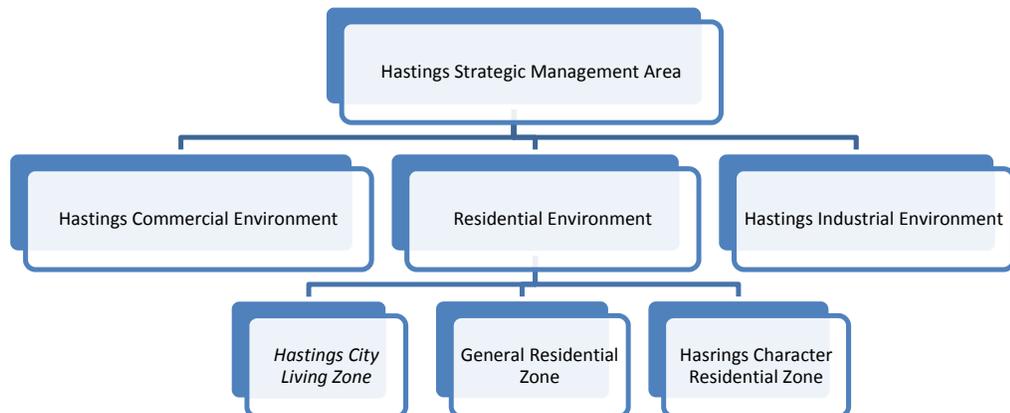
9.1 Proposed District Plan Format

The format of the Proposed District Plan is place based, with specific zones and provisions relating to each specific settlement area combined into individual sections of the plan. Therefore the urban settlements of Hastings and Havelock North will each have their own set of zones and rules which apply to these areas specifically (Flaxmere and some of the smaller settlements do also, but at this point in time they have not been identified to accommodate compact housing). The Proposed District Plan terms these areas as Strategic Management Areas or SMAs.

To ensure that the specific qualities of the different environments within Hastings and Havelock North are taken into account in terms of the provisions of the Plan, specific sections of the plan (the Hastings SMA and the Havelock North SMA) will outline the objectives, policies and rules for activities within the wider SMA and the specific environments and zones within it.

The following diagram outlines this proposed structure using the Hastings example:

Figure 9.1 Proposed Hastings District Plan Structure



9.2 Proposed Zone Structure and Activity Status Framework

9.2.1 Hastings Residential Environments

The proposed zone structure for the Hastings Residential Environment comprises three zones as compared to the current zoning structure which has one General Residential Zone across the whole city. This new zoning structure is outlined below (however, it is noted that this is subject to change through the hearing of submissions on the Proposed Hastings District Plan, 2013):

- a) A **Hastings City Living Zone** will cover two primary locations:-
- Centred on the Mahora shops and School and opposite the Duke St Reserve. Also along the Roberts St edge of Cornwall Park; and
 - Heretaunga Street East (between Hastings Street and Park Road) and around Queen's Square.

The purpose of this zone is to provide an environment where comprehensive redevelopment of large or multiple existing sites is encouraged to produce attractive Comprehensive Residential Developments. This Zone reflects the prime areas for such developments. Residents in these areas will have walking access to shops and services. Comprehensive Residential Developments are Controlled Activities in this zone subject to site size and shape requirements as well as specific standards and terms. Assessment criteria should be specific and tailored to include urban design principles. In these areas it is intended that the character will evolve into a higher density, high amenity area, with multiple comprehensive developments displaying best practice urban design and planning principles.

The use of Controlled Activity status provides certainty and relatively smoother consenting processes for developers, but reinforces the need for design capability to be developed within the Council (including the possible use of external design specialists or review panels) discussed in the Promoting Quality Design and Amenity Chapter 10 to ensure appropriate conditions are applied to achieve good outcomes.

Traditional infill development in this zone will be a Non-Complying Activity and is discouraged to avoid further land fragmentation which would make agglomeration of existing sites to undertake a comprehensive residential development more difficult. However, comprehensive residential development that does not meet the standards and terms including minimum site size and shape requirements will be considered a restricted discretionary activity.

It is very important that the limited land resource of the City Living Zone is not eroded by infill residential activities or other non-residential activities over time. Such development would reduce opportunities for the amalgamation of existing residential allotments to a site of sufficient size to undertake a comprehensive residential development. Future-proofing the zone to ensure there is a potentially viable land supply available for comprehensive residential development now and into the future is fundamental to achieving the Council's strategic direction of a more compact settlement.

- b) A **Hastings General Residential Zone** will cover the majority of the existing residential area. Comprehensive Residential Development in this Zone would be a Restricted Discretionary Activity (non-notified) in specific areas identified under the Hastings Urban Design Framework 2010 (HUDF) as second tier preference areas for medium density housing development. These areas being located around the Raureka Shops and the edge of Windsor Park as well as specific sites identified in the HPUDS Stage 1 Brownfields Sites Study (including the Angus Inn site and the Pakowhai Road and Karamu Road motel sites (refer Appendix 27 of the Proposed District Plan below). In addition, flexibility should be provided to some specific sites identified in the HPUDs Stage 1 Brownfields Sites Study, including Vidals Winery and Restaurant site (Appendix 27) and the Saleyards (stockyards) on Maraekakaho Rd (refer Appendix 27a – which is the subject of a Council submission to the Proposed District Plan). So that should the opportunity arise for a change of land use, Comprehensive Residential Developments would be provided for as Restricted Discretionary Activities. With respect to the existing motel sites on Railway and Pakowhai Roads, any proposal for Comprehensive Residential Development

would be anticipated to occur through full redevelopment of the site rather than as a conversion of the existing motel units.

Comprehensive Residential Development outside these specified areas would be a Discretionary Activity. Such developments may require public notification to ascertain whether the site and wider location is suitable from a community perspective as well as consideration of access to local amenities – parks, transport links and shopping services.

All Comprehensive Residential Developments would also be subject to specific Performance Standards and Terms, and Assessment Criteria, which are based on best practice urban design principles. Infill residential development should still be provided for as a Permitted Activity in terms of the residential buildings (the subdivision would be a controlled activity), but be subject to more control than under the current Plan to ensure that better amenity outcomes are achieved.

- c) A **Hastings Character Residential Zone** covers 13 individual areas which exhibit special characteristics relating to built heritage and streetscape character. Each character area within the Zone would have specific rules that protect the uniqueness of these areas. Streetscape and built heritage character assessments have been carried out for parts of the Hastings residential area which identify specific locations where a combination of characteristics (such as a collection of pre-1950s built form, consistent setbacks from the front boundary and the setting surrounding the houses including the presence of landscaping (both on and off street) and the property boundary definition (low, no or green fences)) create a unique special character environment.

Although in most cases additional subdivision is restricted by large minimum site size standards, there are some parts of these areas which have also been identified as potential locations for comprehensive residential development as they correspond with first order preference areas for medium density housing identified in the HUDF (refer Proposed District Plan Appendix 28 below). In these cases, the Zone activity table would refer to an appendix which identifies sites where comprehensive residential development could take place as a Restricted Discretionary Activity, subject to Specific Performance Standards and Terms, and Assessment Criteria.

In these specific locations, detailed assessment criteria for all activities within the Hastings Character Residential Zone are also explicit about the retention of existing front yard setbacks and pre-1950s dwellings to maintain the special characteristics of these properties and the surrounding area. Furthermore, new buildings within the Character Residential Zone require Restricted Discretionary Activity resource consent and will be assessed against compatibility with the prevailing building style and scale.

9.2.2 Hastings Commercial Environment

While commercial areas do not form part of this strategy, the following comments are made in respect of the Proposed District Plan provisions for commercial areas located on the fringe of residential zones or areas identified as suitable for Comprehensive Residential Development.

9.2.2.1 Hastings Suburban Commercial Zone

Mixed use development is encouraged within this Zone which covers suburban shopping areas in Hastings. This type of development is particularly appropriate in those suburban commercial areas that surround the City Living Zone or those areas of the General Residential zoned identified as suitable for Comprehensive Residential Development.

Local shopping centres are an important anchor for the City Living Zone in terms of providing the amenities (shops and services) for residents of Comprehensive Residential Developments. The boundaries of the Zone have been developed around the Mahora shopping centre and the nearby open space at Cornwall Park, and the Heretaunga Street East shops and Queen Square open space as these amenities are key elements around which population and housing growth will be focussed.

The Activity Table within the Suburban Commercial Zone should allow residential housing above ground or to the rear of the site as a Permitted Activity subject to specific standards including minimum unit size, minimum outdoor living space, car parking and access requirements. Mixed use developments (that include 3 or more residential units) where residential units are located to the rear of the site or above ground level with commercial activities fronting the street are considered on a Restricted Discretionary basis. Residential activities where units occupy the ground floor frontage or where there is no commercial activity on site require Discretionary Activity resource consent to ensure that the existing suburban commercial land supply will be protected for small-scale shops and other commercial activities that will contribute to vibrant suburban centres.

9.2.2.2 Hastings CBD

While commercial areas do not form part of this strategy, they contribute by promoting Comprehensive Residential and Mixed Use Developments in order to assist in providing vibrant commercial centres and will therefore help to meet HPUDS targets. Specific guidance within the Proposed District Plan ensures that a combined residential and commercial environment does not impact on the viability of the CBD and that residents enjoy a high standard of urban amenity.

Currently, there is a limited supply of inner city living opportunities in Hastings. However, as new inner city parks are developed and large vacant commercial buildings and land is redeveloped, opportunities for inner city residential developments to take advantage of new amenities are becoming more apparent.

The following maps illustrate the areas in Hastings identified for Comprehensive Residential Development either through zoning (ie the City Living Zone) or being land identified as suitable for Comprehensive Residential Development through an Appendix to the District Plan.

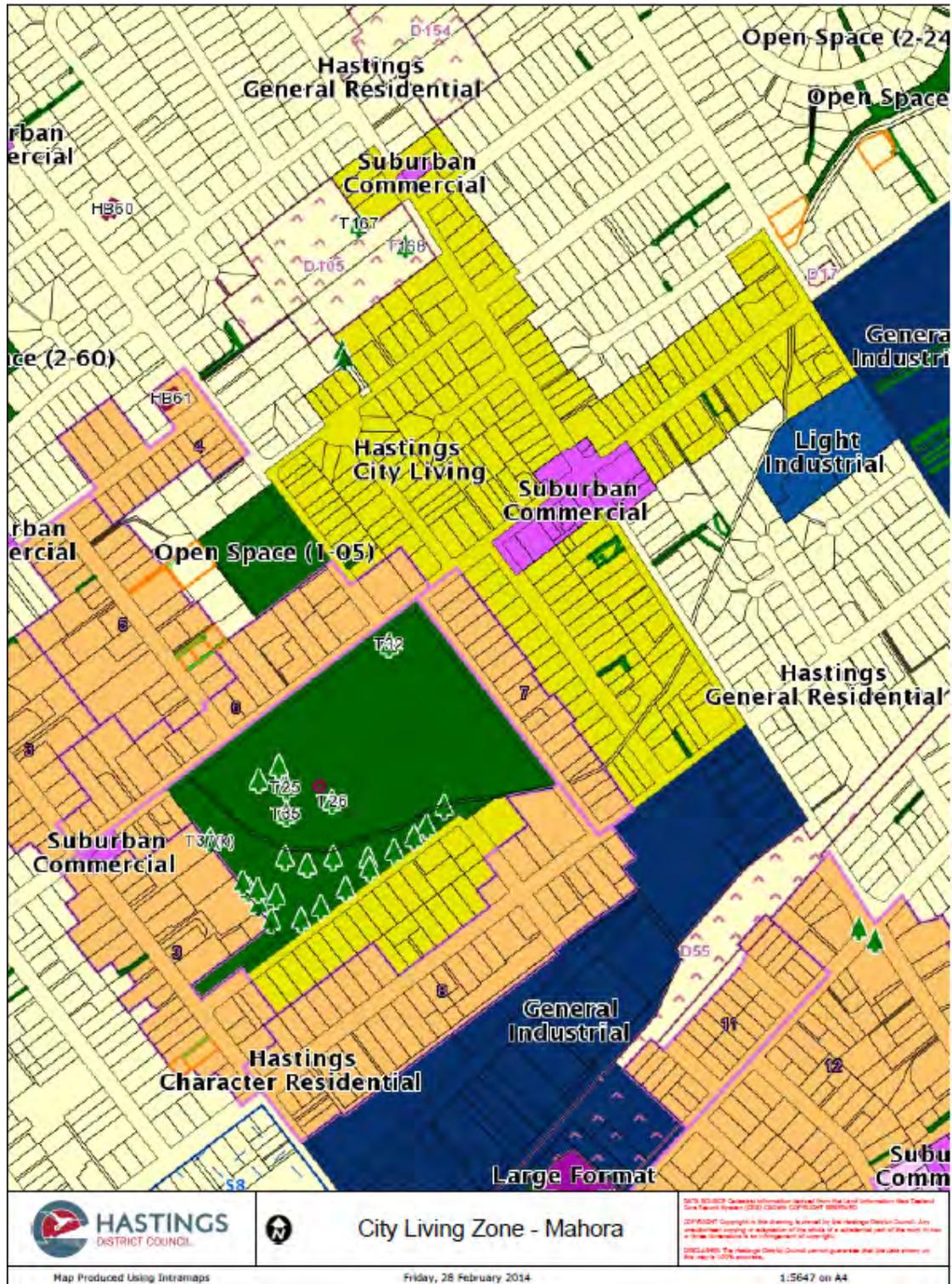


Figure 9.2-1 Hastings City Living Zone – Mahora Area

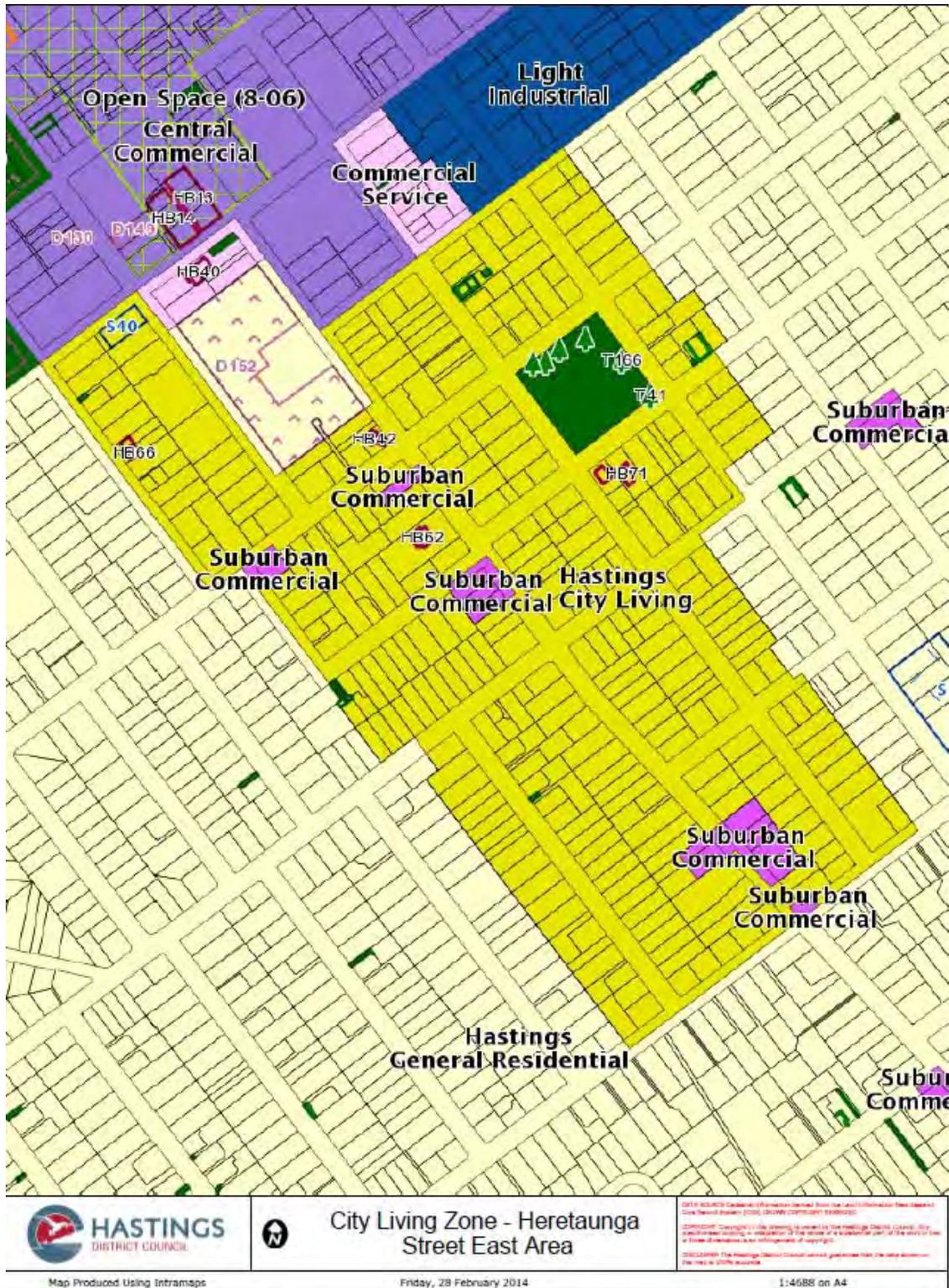


Figure 9.2-2 Hastings City Living Zone – Heretaunga Street East Area



Figure 9.2-3 Raureka General Residential Zone Appendix 27 Land



Figure 9.2-4 Parkvale General Residential Zone Appendix 27 Land



Figure 9.2-5 Pakowhai Road General Residential Zone Appendix 27 Land



Figure 9.2-6 Karamu Road General Residential Zone Appendix 27 Land

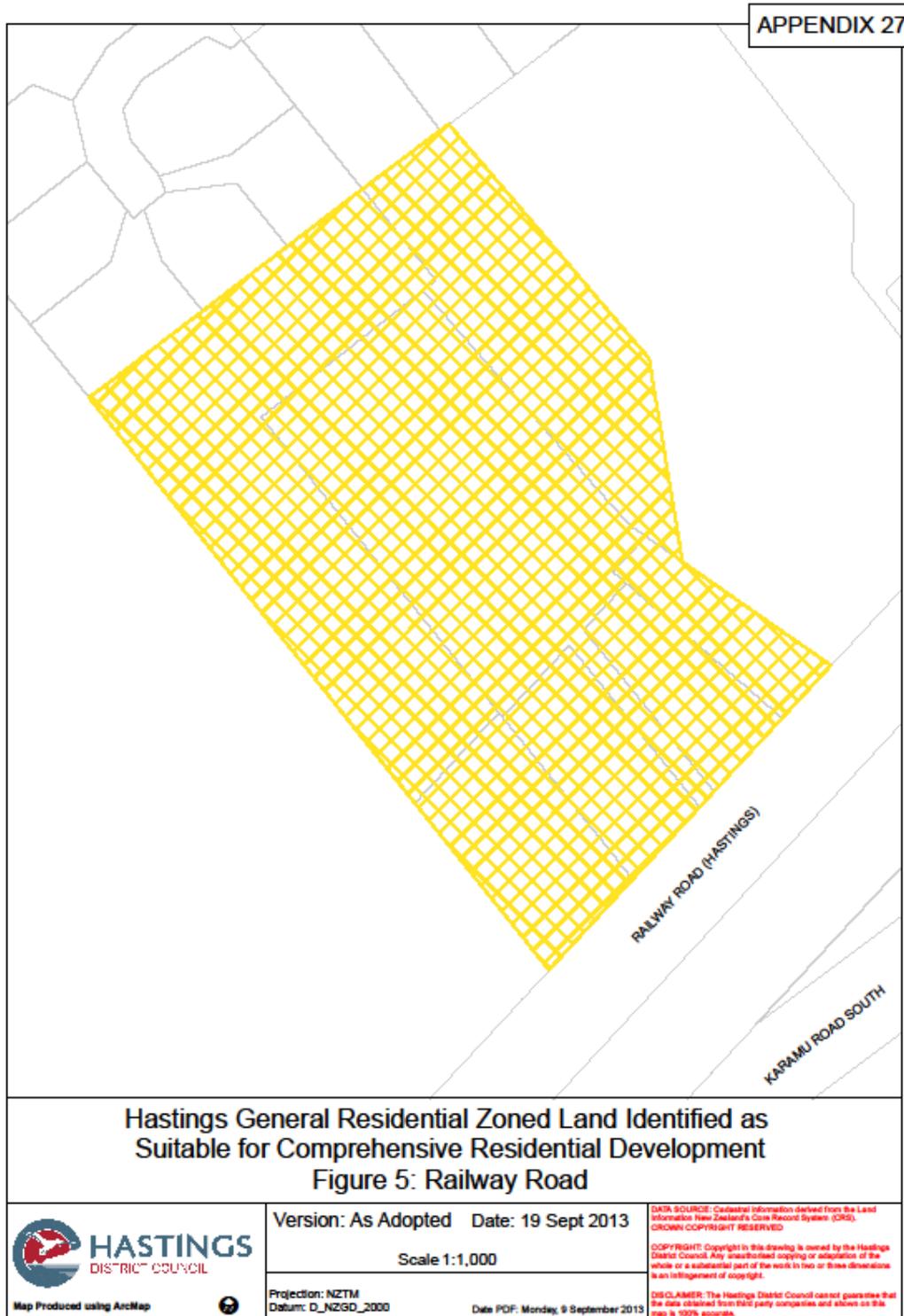


Figure 9.2-7 Railway Road General Residential Zone Appendix 27 Land

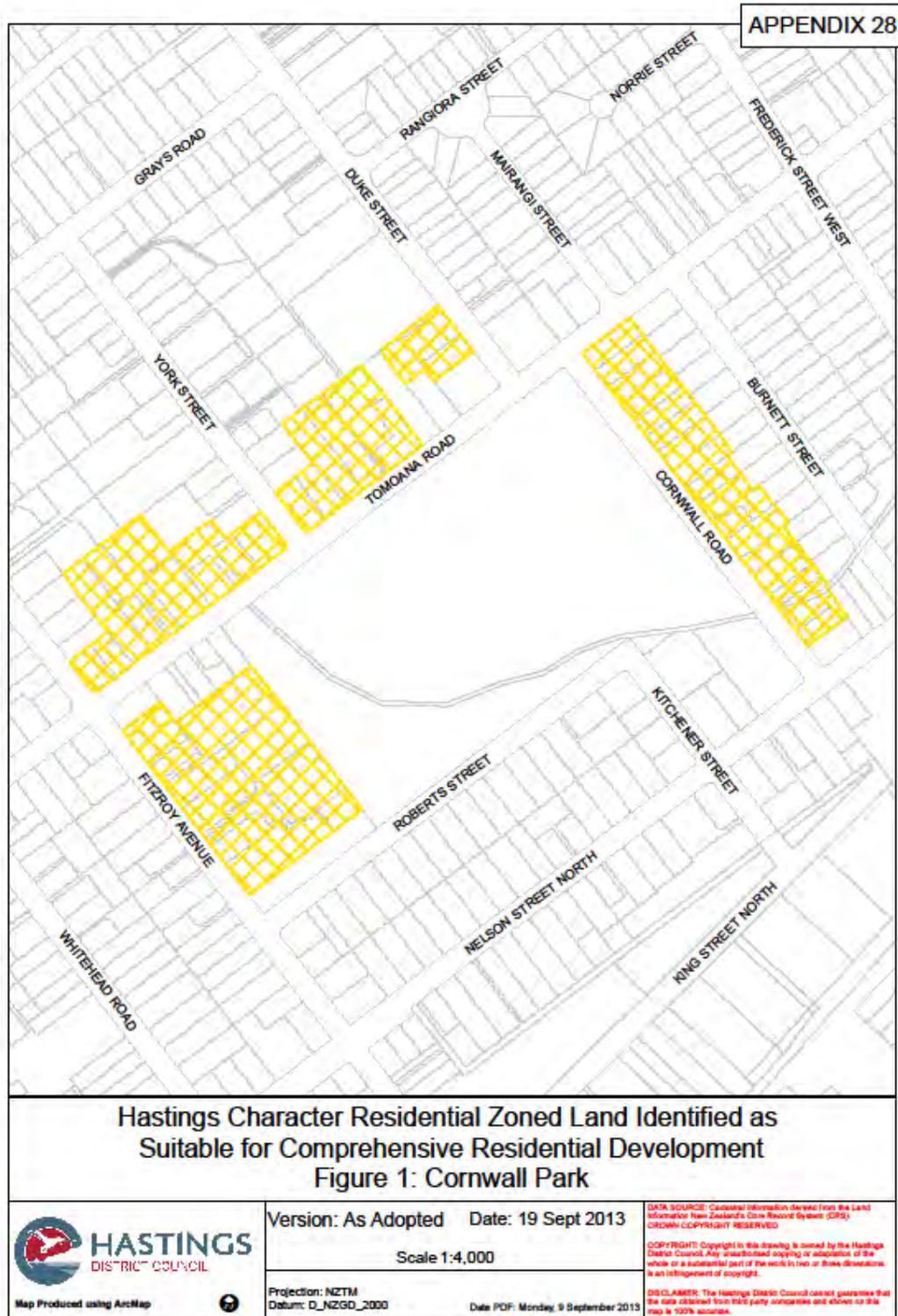


Figure 9.2-8 Mahora Character Residential Zone Appendix 28 Land

9.2.2.3 Havelock North

Havelock North's residential character is a result of its evolution over time and its community has a keen desire to maintain the village feel. There is a strong focus on ensuring the urban area does not expand and spill onto the versatile Heretaunga Plains land that surrounds it; at the same time there is concern that intensification and building a compact form may undermine much of the village's established character. The District Plan regulatory framework for Havelock North therefore seeks to provide for a more compact form whilst ensuring that higher density housing is of quality design and is located in appropriate areas.

The Havelock North Residential Environment is divided into two residential zones – a General Residential Zone and a Character Residential Zone. The boundaries between the two zones largely reflect changes in topography, but these areas also vary in terms of architectural style, landscaping and subdivision pattern. Within the General Residential Zone density is limited to 1 residential dwelling per 350m² net site area, with a density of 1 residential dwelling per 400m² net site area within the new urban development areas. Lower densities (1 residential dwelling per 700m² net site area) are sought in the Character Residential Zone given the steeper topography and desire to retain the garden landscape, open space and greenness of the area. In addition, within the Havelock North Character Residential Zone, the Toop Street character area provides for a density of 1 residential dwelling per 1,000m² in order to protect and maintain the characteristics of this area that are unique.

Comprehensive residential development is provided for in Havelock North; however it is only appropriate in certain locations, typically on the fringe of the Village Centre where amenities are a short walking distance and parks and reserves are close by. As such this type of development is envisaged in the General Residential Zone and would not be encouraged in the Character Residential Zone. Comprehensive Residential Development will be assessed in terms of its compatibility with the existing residential environment. Of particular concern is provision for adequate site size and street frontage, outdoor living areas, and a quality living environment.

Comprehensive Residential Development is therefore provided for as a Restricted Discretionary Activity in specific areas of the Havelock North General Residential Zone (refer to the map following). These areas were identified in the HUDF as second preference locations for intensification.

Comprehensive Residential Development in these areas is proposed to be subject to the same specific standards and terms (including assessment criteria) as outlined for Hastings. It is also noted for completeness that Comprehensive Residential Development and mixed use development are also provided for within the Havelock North Village Centre Zone (however, residential development in commercial zone areas is outside the scope of this strategy).

9.2.2.4 Flaxmere Village Centre

Residential development at medium densities is limited to elderly housing or retirement village complexes within the commercial service or commercial / residential precincts of the Flaxmere Village Centre. Housing within the Flaxmere village centre is focussed on providing for family accommodation and therefore the density thresholds are set at a much lower level than what is envisaged in this strategy.

APPENDIX 29

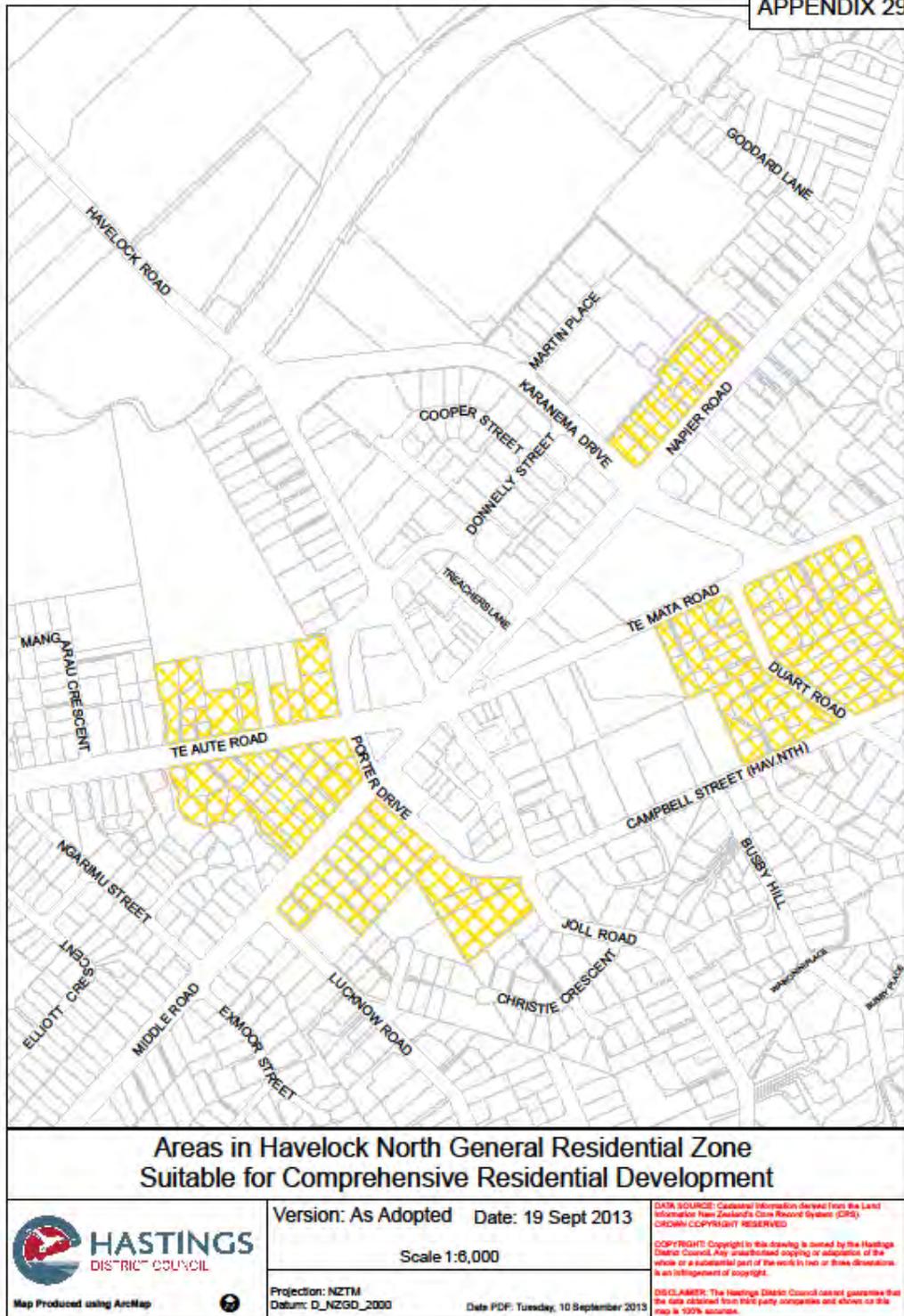


Figure 9.2-9 Havelock North General Residential Zone Appendix 28 Land

9.3 Proposed Activity Status Comparison

The following table summarises the activity status for Comprehensive Residential Development, Infill development and comprehensive residential development of Brownfields sites within the residential zones of Hastings and Havelock North. The activity status of subdivision associated with any of the above activities follows in a separate table.

Table 9.3-1 Land Use Activities

	Comprehensive Residential Development (CRD) – a development that comprises 3 or more residential buildings at a density of 20-40 residential buildings per hectare of land and that incorporates an overall integrated design of buildings, infrastructure and landscaping.	Infill Development (one additional dwelling or 2 new dwellings)	Brownfields Development (e.g. Angus Inn Site, existing motel sites in Pakowhai Rd & Karamu Rd, the Saleyards Site)
Hastings City Living Zone	Controlled	Non-complying	n/a – no identified sites
Hastings General Residential Zone (HGRZ)	Discretionary	Permitted subject to standards incl. density	Specific brownfields sites are identified in Appendix 27 and 27a of the Hastings Proposed District Plan. CRD in these areas is a Restricted Discretionary Activity
HGRZ identified for CRD (refer Proposed District Plan Appendix 27 above)	Restricted Discretionary (non-notified)	Permitted subject to standards incl. density	
Hastings Character Residential Zone (HCRZ)	Non-complying	Permitted subject to standards incl. density	
HCRZ identified for CRD (refer Proposed District Plan Appendix 28 above)	Restricted Discretionary	Permitted subject to standards incl. density	
Havelock North General Residential Zone (HNGRZ)	Discretionary	Permitted subject to standards incl. density	
HNGRZ identified for CRD (Refer Proposed District Plan Appendix 29 above)	Restricted Discretionary	Permitted subject to standards incl. density	

Havelock North Character Residential Zone	Non-complying	Controlled subject to standards incl. density	
Havelock North Character Residential Toop St Overlay	Non-complying	Restricted Discretionary (non-notified)	

Table 9.3-2 Subdivision Activity Status Table 2

	Comprehensive Residential Development	Infill Development	Comprehensive Residential Development of Brownfields Sites
Hastings City Living Zone	RD(NN)	NC	
Hastings General Residential Zone (HGRZ)	RD (Rule SLD13)	C	RD (NN)
HGRZ identified for CRD (Refer Proposed District Plan Appendix 27 above)	RD(NN)	C	RD(NN)
Hastings Character Residential Zone (HCRZ)	NC	RD(NN)	
HCRZ identified for CRD (Refer Proposed District Plan Appendix 28 above)	RD(NN)	RD(NN)	
Havelock North General Residential Zone (HNGRZ)	RD (Rule SLD13)	C	
HNGRZ identified for CRD (Refer Proposed District Plan Appendix 29 above)	RD (NN)	C	
Havelock North Character Residential Zone	NC	RD(NN)	
Havelock North Character Residential Toop St Overlay	NC	RD(NN)	

9.4 Proposed Rule Structure and Assessment Criteria for Comprehensive Residential and Infill Development

Comprehensive residential developments are primarily encouraged in the City Living zone and on certain sites within the General Residential Zones of Hastings and Havelock North as well as a small number of sites in the Hastings Character Residential Zone around Cornwall Park. In these areas performance standards focus on controlling the layout and placement of dwellings on the development site with assessment criteria guiding the design, internal configuration and external appearance of the residential buildings.

Comprehensive Residential developments are able to take advantage of specific standards which enable an increased development yield and are less restrictive in terms of recession plane, maximum height, and private outdoor living space standards enabling land area to be used more efficiently.

Outside of the abovementioned identified areas, comprehensive residential development will have a more restrictive activity status ensuring that the community are involved in the decision making process and that the suitability of the location in addition to the design and layout of the development are adequately considered.

Infill residential development is defined in the Proposed District Plan as no more than one additional dwelling on an existing site within the urban area. Traditional residential development refers to subdividing sections and selling these prior to building. Infill and traditional residential development can occur at any density level whereas, comprehensive residential development is at medium to high residential densities (in the Hastings context) and is defined as development comprising 3 or more residential buildings at a density of 20-40 residential buildings per hectare of land, that incorporates an integrated design of buildings, infrastructure and landscaping.

While specific comprehensive residential development standards ensure high quality residential environments for these medium density developments, additional standards relating to site amenity (private open space, location and size of garages and height of fences) have been included in the Proposed Plan for traditional residential development. These standards are considered to be sufficient to ensure traditional residential development provides a good quality of life for residents and makes a positive contribution to the existing character of the streetscape and to the neighbourhood in general with no need for a resource consent process.

The following tables provide a comparison of the performance standards and terms associated with Comprehensive Residential Development and Infill or Traditional Residential Development within the different residential zones of Hastings and Havelock North.

Table 9.4-1 Performance Standards

Density Standard	Comprehensive Residential Development	Infill Development \)
Havelock North General Residential Zone including areas identified as suitable for CRD (Appendix 29 of the Proposed District Plan)	A maximum average net site area of 350m ² per residential dwelling. A minimum net site area of 250m ² per residential building	One principal residential building per 350m ² net site area.
Havelock North Character Residential Zone	n/a	One principal residential building per 700m ² (Resource consent required for new dwellings re building design control)
Toop St Character Area	n/a	One principal residential building per 1000m ² (Resource consent required for new dwellings re building design control)
Density Hastings General Residential Zone including areas identified as suitable for CRD (Appendix 27 and 27a)	A maximum average net site area of 350m ² per residential building . A minimum net site area of 250m ² per residential building	One principal residential building per 350m ² net site area.
Density Character Residential Zone - areas identified for CRD (Appendix 28) Fitzroy Ave, Tomoana Rd, Cornwall Rd and Nelson St North	A minimum net site area of 250m ² per residential building. An average net site area of 350m ² per residential building A maximum net site area that accords with the minimum net site area set for each particular character area.	Fitzroy Avenue and Tomoana Rd character areas – 1 residential dwelling per 800m ² Cornwall Rd character areas – 1 residential dwelling per 700m ²
Density Hastings City Living Zone (refer map Appendix 1 and 4)	A minimum average net site area of 250m ² per residential building A maximum average net site area of 350m ² per residential building.	n/a

	Comprehensive Residential Development	Infill Development (relevant zone development standards)												
Stormwater (All Hastings and Havelock North Residential Zones)	<p>The peak stormwater runoff from the site shall not exceed the following standards:</p> <table border="1"> <thead> <tr> <th>Average Recurrence Interval (ARI)</th> <th>Runoff Coefficient</th> </tr> </thead> <tbody> <tr> <td>5 year</td> <td>0.5</td> </tr> <tr> <td>50 year</td> <td>0.6</td> </tr> </tbody> </table> <p>The peak stormwater runoff shall be calculated in accordance with the Rational Method. These methods are described in the New Zealand Building Code, Approved Document E1 – Surface Water</p> <p><i>See Hasting District Council website to assist with calculations</i></p>	Average Recurrence Interval (ARI)	Runoff Coefficient	5 year	0.5	50 year	0.6	<p>The peak stormwater runoff from the site shall not exceed the following standards:</p> <table border="1"> <thead> <tr> <th>Average Recurrence Interval (ARI)</th> <th>Runoff Coefficient</th> </tr> </thead> <tbody> <tr> <td>5 year</td> <td>0.5</td> </tr> <tr> <td>50 year</td> <td>0.6</td> </tr> </tbody> </table> <p>The peak stormwater runoff shall be calculated in accordance with the Rational Method. These methods are described in the New Zealand Building Code, Approved Document E1 – Surface Water. .</p> <p><i>See Hasting District Council website to assist with calculations</i></p>	Average Recurrence Interval (ARI)	Runoff Coefficient	5 year	0.5	50 year	0.6
Average Recurrence Interval (ARI)	Runoff Coefficient													
5 year	0.5													
50 year	0.6													
Average Recurrence Interval (ARI)	Runoff Coefficient													
5 year	0.5													
50 year	0.6													
Maximum Height (All Hastings and Havelock North Residential Zones)	10m	8m												
Height in Relation to Boundary Hastings and Havelock North General Residential Zone and Hastings Character Residential Zone (external parent site boundaries) All internal site boundaries and City Living Zone external parent site boundaries	<p>2.75m + angle determined by recession plane indicator in Appendix 60 Figure 1 of the Plan</p> <p>3m + 45⁰ for southern boundaries, 3m + 55⁰ for northern boundaries (ref Appendix 60 Figure 2).</p> <p>Except that where 2 or more residential units are attached no recession plane applies along that boundary.</p> <p>Recession planes are not applicable from the front public road boundary of a site or where a boundary adjoins a public open space zone.</p>	<p>Building envelope for side or rear boundaries of a site: 2.75m + angle determined by recession plane indicator in Appendix 60 Figure 1 of the Plan</p> <p>Where two or more detached residential buildings are established on a site, the height of any building shall be equal or less than 2.75m + 45⁰ recession plane measured at the midpoint between the shortest distance between the two buildings.</p> <p>Except that where 2 or more residential units are attached no recession plane applies along that boundary.</p>												

	Comprehensive Residential Development	Infill Development (relevant zone development standards)
Maximum Building Coverage (All Hastings and Havelock North Residential Zones)	No limit	45% - Hastings and Havelock North General Residential Zones 35% - Hastings and Havelock North Character Residential Zones
Yards – General Residential Zone Hastings and Havelock North, Hastings City Living Zone	<p>3m Front Yard local roads 5m Front Yard arterial / collector roads</p> <p>An entrance feature may extend up to 1.5m into the front yard setback for a maximum (combined) width of 3.0m.</p> <p>Each residential unit shall have a visible front door entrance and a principal living area window that faces the public street, private road or main pedestrian access or driveway of the unit.</p> <p>1m side or rear yard from Hastings or Havelock North General Residential Zone</p> <p>No side or rear yard setbacks from City Living Zone boundaries</p>	<p>3m Front Yard local roads 5m Front Yard arterial / collector roads</p> <p>1m side and rear yards</p>
Front Yards - Hastings Character Zone areas identified as suitable for CRD	Fitzroy Ave and Tomoana Rd – 6m Cornwall Rd – 7m	Fitzroy Ave and Tomoana Rd – 6m Cornwall Rd – 7m
Side and Rear Yards - Hastings Character Residential Zone areas identified as suitable for CRD	2m	1.5m Side yards and 1m rear yards
Garages – Hastings and Havelock North General Residential Zone, City Living Zone	(a) Garages (including integral garages) and accessory buildings shall be located a minimum of 1 metre behind the front elevation of the dwelling and 5m from	<p>Garages (including integral garages) and accessory buildings shall be located a minimum of 1 metre behind the front elevation of the dwelling, unless the garage door is located at right angles to the street in which case this standard does not apply.</p> <p>Garages (including integral garages) shall not occupy</p>

	<p>the road boundary of the site, or internal private road or vehicle accessway</p> <p>(b) Garages (including integral garages) shall not occupy more than 50% of the width of the front elevation of the residential building.</p>	<p>more than 50% of the width of the front elevation of the residential building.</p>
<p>Garages - Hastings Character Residential Zone</p>	<p>(a) In all character areas, garages and accessory buildings that are integral to the dwelling or located to the side of the residential dwelling <u>and visible from the public road</u> shall have a maximum height of 4m and shall have a maximum floor area of 40m².</p>	<p>The minimum setback of garages or accessory buildings from the front elevation of the dwelling shall be 1m.</p> <p>(a) In all character areas, garages and accessory buildings that are located to the side of the residential dwelling and visible from the public road shall have a maximum height of 4m and shall be have a maximum floor area of 40m².</p> <p>(b) The above standard (b) shall not apply to garages and accessory buildings located wholly behind the existing dwelling on the site.</p> <p>(c) In all character areas, garages (including integral garages) shall not occupy more than 50% of the width of the front elevation of the residential building fronting the street.</p>

	Comprehensive Residential Development	Infill Development (relevant zone development standards)
Landscaping	<p>A minimum of 20% of each individual unit site shall be landscaped with vegetation cover.</p> <p>For every 10m of road frontage of the parent site one specimen tree shall be planted of a minimum height of 2m at the time of planting (PB95).</p>	<p>Hastings General Residential Zone - no requirement</p> <p>Havelock North General Residential Zone Within 3 metres of the road boundary, the front yard shall be landscaped (excluding paved and grassed areas) for a depth of at least 1 metre.</p> <p>Hastings Character Residential Zone: Not more than 30% of the area specified for the front boundary setback of a site shall be used for vehicle access and parking in accordance with Section 26.1 Transport and Parking. The remainder of this area shall be landscaped in grassed lawn, garden beds, trees and shrubs or a combination of the above.</p>
Outdoor Living Space	<p>At least 30m² of outdoor living space shall be provided for each unit. This can be provided through a mix of private and communal areas, at ground level or in balconies.</p>	<p>Each residential unit must have an area of outdoor living space on the site that is no less than 50% of the gross floor area of all buildings on the site, provided that:</p> <p>i) The outdoor living space shall be no less than 50m² and no more than 100m² of area is required.</p> <p>Where there is no garage or carport proposed or existing on the site, the gross floor area must include a notional garage of 20m² (containing a minimum width of 3.6m) per residential unit. This area shall have regard to the 5m standing bay requirement of Section 26.1.</p>
Provision and Screening of outdoor storage and service space	<p>Each residential unit shall be provided with an outdoor service, rubbish and recycling storage space of 5m² with a minimum dimension of 1.5m.</p>	<p>No requirement</p>

	Outdoor service and storage spaces shall not be located between the residential unit and the road boundary and shall be screened from the unit's outdoor living space, any adjoining unit or adjoining public open space or residential zone.	
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	Comprehensive Residential Development	Infill Development (relevant zone development standards)
Fences - Local Roads	1.2m (if solid) or 1.8m if designed in an open style. Solid fences or walls are permitted to provide privacy. They shall be level with or behind the wall of the house fronting the road, private road or main pedestrian access.	1.2m (if solid) or 1.8m if designed in an open style.
Fences – Arterial / Collector Rds	As above	Fences or walls (excluding retaining walls) within the front yard of a site shall have a maximum height of 1.8 metres.
Building Bulk	Comprehensive Residential Developments shall not include more than 3 residential units in a terraced or row configuration (any number of units may be attached if connected by a single level garage).	n/a

9.5 Assessment Criteria Comparison

The assessment criteria (outlined in table 4) for Comprehensive Residential Developments are applicable to all such developments irrespective of their location. Comprehensive Residential Developments within the Hastings Character Residential Zone areas identified (District Plan Appendix 28) will also be assessed against additional assessment criteria that relate to the special characteristics of these areas (refer table 5).

Given infill development is a permitted activity subject to compliance with the standards outlined in the above table, any assessment criteria will only take effect when a standard is breached. Of course subdivisions to facilitate infill development will be subject to the relevant assessment criteria of the subdivision section of the District Plan. Assessment criteria for infill development therefore focus on the outcomes set for each particular standard. These along with the following matters outlined below are proposed to be used to assess any applications for resource consent to breach the standards.

- *The ability of the activity to achieve the particular stated outcome of the general or specific performance standard(s) and terms which it fails to meet. Within the Hastings Residential Zones the outcomes principally relate to design, solar access to dwellings and outdoor living space, appearance, density, traffic effects and effects on streetscape, character and amenity. In these zones amenity centres around the effects on adjoining properties, the scale and intensity of buildings, neighbourhood character and the use of the land for residential or other activities.*

Infill development proposals within the Hastings City Living Zone have a non-complying activity status. The following paragraph explains how these proposals should be assessed.

Infill development proposals are considered non-complying activities in the City Living Zone in order to protect this land resource for comprehensive residential developments. Infill development as well as the redevelopment of sites for non-residential activities has the potential to erode the land resource available for comprehensive residential developments, particularly those that require site amalgamations to comply with the site area and dimension provisions for controlled activities.

Any applications for Infill development or the establishment of non-residential activities would be assessed against the criteria outlined in Table 6 below as well as the objectives and policies of the City Living Zone.

9.6 Comprehensive Residential Development Assessment Criteria

Hastings District Council is a signatory to the New Zealand Urban Design Protocol. As such, the following assessment criteria are based on principles of best practice urban design. The criteria are applicable for all comprehensive residential development within the Hastings Residential Environment – including the City Living, General Residential, and Character Residential Zones and Mixed Use Development within the Hastings Suburban Commercial Zone.

In assessing Resource Consent applications for comprehensive residential or mixed use developments, the matters over which the Council will have control or will restrict the exercise of its discretion are outlined in the following assessment criteria below.

Council reserves the right to engage an Urban Design Specialist in order to assess or peer review Resource Consent applications for Comprehensive Residential Developments or Mixed Use Developments.

Table 9.6-1 Comprehensive Residential Development Assessment Criteria

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT	
A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
<p>1. Site Context</p> <p>Whether the development is well integrated into the existing local context. Regard will be given to the following design attributes:</p> <ul style="list-style-type: none"> a) Sunlight b) Wind c) Views d) Vegetation e) Heritage Buildings f) Materials 	<ul style="list-style-type: none"> a) <i>Principal habitable rooms and outdoor living spaces are oriented to maximise access to sunlight, whilst having the ability to manage the negative aspects of the sun. The design should include principles of passive solar design.</i> b) <i>Where relevant, the design should ensure that key outdoor living spaces are sheltered against negative effects of wind by taking into account the prevailing wind directions.</i> c) <i>Where relevant, the design should maximise opportunities for views to public and shared spaces. Opportunities include overlooking public parks or the distant hills and ranges.</i> d) <i>Where possible, existing valuable landscaping and trees should be retained and integrated into the site design.</i> e) <i>Where possible, heritage buildings that existing on the site should be retained and celebrated as features that provide character to the development. At the same time where heritage buildings are found within the immediate context of the site and in terms of bulk and location and should consider replicating the heritage building design in terms of the use of materials and other architectural elements.</i> f) <i>Where there is a predominant trend of building materials present within the proximity of the site, the development should, if possible look to follow</i>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT	
A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
	<i>this lead.</i>
<p>2. Streetscape Amenity</p> <p>Whether the development makes a positive contribution to the public streetscape. Specific regard will be given to the following design attributes:</p> <p>a) Street boundary treatment b) Public safety c) Appearance d) Legibility (how easy it is to find your way)</p> <p>e) Connection to the street</p> 	<p><i>Physical and visual separation between the public realm (street/park) and private property should ensure the protection residents privacy.</i></p> <p><i>Streets are generally safer when they are easily visible from nearby houses and well-lit. To contribute to the safety and perceived safety of the neighbourhood in the development design should integrate the following design attributes:</i></p> <ul style="list-style-type: none"> • <i>A principal living room should be located on the ground floor enable overlooking of the street (a deterrent for crime)</i> • <i>Low front fences, walls and hedges which enable good views of the street from dwellings.</i> • <i>At the same time, to protect residents privacy, the main garden/outdoor</i> • <i>Private outdoor living space should not locate between a dwelling and the street;</i> • <i>Environments that are enjoyed by pedestrians are based on land use patterns that give a good relationship between users of public and private property.</i> <p><i>The development should also enhance the streetscape. This could be done in the following ways:</i></p> <ul style="list-style-type: none"> • <i>Low fences</i> • <i>Avoid large garage doors (recess garages behind the main front of the dwelling).</i> • <i>High quality design.</i> • <i>Building entrances should be visible from the public street in order to connect are development with the street and avoid confusion about how dwellings are laid out relative to the public realm.</i>
<p>3. Site Layout</p> <p>Whether the development is fitting with</p>	<p><u><i>Bulk and Location</i></u> <i>The arrangement of buildings should consider the following:</i></p>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT

A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
<p>the size and proportions of the site. Specific regard will be given to the following design attributes:</p> <p>a) Bulk and Location b) Public versus private outdoor space c) Private outdoor space d) On-site landscaping e) Stormwater management</p> <p>f) Car Parking and Access Whether the development is designed</p>	<ul style="list-style-type: none"> • <i>Minimise overshadowing of other dwellings and outdoor living spaces;</i> • <i>Privacy for residents both within and adjacent to the site</i> • <i>A clear distinction between public and private space for privacy, security and legibility.</i> • <i>Each dwelling should have sufficient and quality private outdoor space.</i> • <i>Shared outdoor spaces should have enough room to allow for landscaping, a vegie patch and trees.</i> • <i>Integrated, good quality open space and landscaping is essential to support increased density and realise the full potential of the space.</i> <p><u><i>Private Outdoor Space & Landscaping</i></u> <i>For wellbeing of residents outdoor spaces should:</i></p> <ul style="list-style-type: none"> • <i>Have a sunny, sheltered, private area and enable good indoor-outdoor flow, have wide and high openings to maximise this flow;</i> • <i>Provide opportunities for gardening, even small areas of landscaping add value, interest enhance outlook and privacy.</i> • <i>Balconies that maximise exposure to sunlight, whilst remembering that shade is important too for those hot Hawke's Bay days.</i> <p><u><i>Stormwater</i></u> <i>Increasing housing density also increases the area of a site that is covered by hard surfaces and thus decreases the ability of the site to absorb rainwater, this then increases the rate of stormwater runoff.</i> <i>The Council's stormwater system is only designed to accommodate a certain rate of stormwater runoff and if this is exceeded flooding may occur in local streams or on downstream properties.</i> <i>This can be resolved with On Site Attenuation and/or Low Impact Design solutions to slow the rate of discharge to the public stormwater system and reduce the potential for flooding or ponding.</i> <i>Solutions include:</i></p> <ul style="list-style-type: none"> • <i>Minimising impervious surfaces such as concrete or asphalt, instead use pavers with open joints, pea gravel, limestone.</i> • <i>Collect rainwater from roofs in a tank and</i>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT

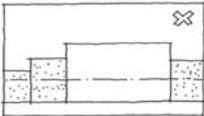
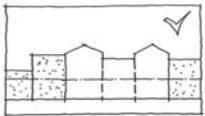
A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
<p>to enable safe and practical car parking and access. Pedestrian and cyclists should also be considered when designing a development.</p> <p>g) Service Areas and Utilities Development should consider the practical and/or discreet location of facilities including:</p> <ul style="list-style-type: none"> - Washing lines - Rubbish Bins - Visibility of utilities - Heat pump boxes etc. - Letter Boxes 	<p style="text-align: right;"><i>use to water the garden, or flush toilets.</i></p> <ul style="list-style-type: none"> • <i>Create a raingarden or a swale</i> • <i>Stormwater Attenuation methods.</i> <p><i>For more information refer to the current Subdivision and Infrastructure Development in Hastings District Best Practice Design Guide 2010.</i></p> <p><u><i>Car Parking and Access</i></u></p> <ul style="list-style-type: none"> • <i>Have a clear distinction between residents and visitor parking.</i> • <i>Locate visitor parking close to site entrances</i> • <i>Car parking areas and garages that do not visually dominate the site.</i> • <i>Minimise the number of vehicle access points.</i> • <i>Vehicle crossings should be as narrow as is operationally possible and demarcate space for pedestrians and cyclists.</i> • <i>Provide safe and secure storage for bicycles.</i> • <i>Lane ways</i> <p><u><i>Service Areas and Utilities</i></u> <i>Consider servicing needs early in the design process. We all need these services, but they are not elements that need to be seen, so locate them in places that are easily accessible, but also screened from public view where possible (letter boxes excluded). Ideas to this include the use of building recesses, fences, landscaping and side yards.</i></p>
<p>4. Building Form, Performance and Appearance</p> <p>Whether the development is an appropriate architectural quality is aesthetically pleasing and contributes positively to the surrounding area. Specific regard will be given to the following design attributes:</p> <p>a) Mass and proportions</p> <p>Whether the development can</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>assimilate with the surroundings.</p>	<p><u><i>Mass and Proportions</i></u> - <i>A comprehensive residential development site within an area of single dwellings should be able to assimilate with the surroundings. Ideas to achieve this are:</i></p> <ul style="list-style-type: none"> • <i>The buildings need to appear as houses, not another type of building. In Hastings residential area, where most house are single storey, new comprehensive dwellings should be no higher than two storey and if building are joined, there should be no more than three in a row and appear as separate entities.</i> • <i>Reduce the bulk of terraced housing with variations in height and roof form, have vertical breaks and recesses in the façade.</i> • <i>A collection of smaller individual buildings is less intrusive than one large single building.</i> • <i>Look at the height and width of the neighbouring</i>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT

A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
<p>b) Diversity Whether the development has a range of dwelling types and sizes for create variation and interest.</p> <p>c) Repetition Whether repeated built form is avoided. Dwellings in long rows are not part of the With Hastings vernacular; dwellings should generally be adjoined together in groups of no more than 3.</p> <p>d) Roofs Should be high quality and fitting with the rest of the dwelling and development.</p> <p>e) Windows and doors</p> <p>f) Façade detailing and materials</p>	<p><i>houses and use this to guide the bulk and form of the development.</i></p> <ul style="list-style-type: none"> • <i>To help fit in with the adjoining buildings, transition the height of the buildings with the neighbouring ones in the following ways:</i> <ul style="list-style-type: none"> - <i>physical separation between the new and old;</i> - <i>introducing boundary setbacks at the upper level/s; and</i> - <i>creating secondary forms with dimensions that mediate between the height/scale of new and old.</i> <p><u>Diversity</u> <i>This will provide greater housing choice and provide for a more diverse population. If this is not possible minor architectural variations (e.g. form, secondary design elements, colour and materials).</i></p> <p><u>Repetition</u> - <i>This is to be avoided as it results in poor design outcomes.</i></p>  <p><u>Roof form</u> <i>Design the slope of eaves with shadowing in mind – of private outdoor space and neighbours properties. Provide quality ceiling and floor insulation – no gaps, holes or tucks visible.</i> <i>Damp Proof Traditional wooden floors</i></p> <p><u>Windows and Doors</u> <i>Proportions and sizes of façade openings should add to the visual character, be logical and reflective of their function.</i> <i>Double glazing with thermally broken timber or PVC frames</i> <i>Secure locks and catches.</i></p>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT	
A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
	<p><u><i>Façade detailing and materials</i></u> Careful consideration of the materials should be given. The visual appearances and overall success of the development relies on the care and attention to building design at this level. Durable materials and simple structures should be used. Avoid complicated shapes and numerous materials which create technically challenging joins. Ensure access for maintenance is considered at design stage. Use materials with a long life, require minimal maintenance and contribute to energy efficiency. Materials like concrete and brick have high mass and absorb and store heat energy, and release it gradually.</p>
<p>5. Visual Quality</p> <p>Whether the development contributes to the visual quality of the site and neighbourhood.</p>	<p><i>For pedestrian and cycle travel to become viable for many users, there is a need for routes to offer stimulation and interest.</i> While frontage and connection help to ensure a coherent, functional and safe environment, attention to visual quality is additionally necessary. This can be achieved with the following solutions:</p> <ul style="list-style-type: none"> ▪ <i>A variety of colours and materials in the front façade of units;</i> ▪ <i>Continuation of house style to fencing and walls (not just plain timber palings that detract from a well-detailed house);</i> ▪ <i>Seek to use eaves and recesses to create shadow lines and more visual interest;</i> ▪ <i>Respond to local character in the design and use of materials, tree species, roof form, the proportions of windows etc.;</i> ▪ <i>Consider how materials and finishes will weather over time;</i> ▪ <i>In the context of streets, treatments such as landscaping, differentiated surface treatments; and calming measures (speed tables, chicanes etc.) not only add visual amenity but can help to prompt appropriate driver behaviour and speed.</i>
<p>6. Internal configuration</p> <p>Whether the internal arrangements of spaces and functions in the dwellings of the development is useable, efficient and pleasant. Specific regard will be given to the following design attributes:</p>	
<p>a) Internal/external relationship</p>	<p><u><i>Internal / external flow</i></u> For wellbeing of residents units should have good</p>

TABLE 7.2.7H COMPREHENSIVE RESIDENTIAL DEVELOPMENT	
A) CRD ASSESSMENT CRITERIA	EXPLANATION / GUIDE
	<i>private outdoor living space (e.g. the place a person sits to have a coffee or quietly read in the garden, usually close to the dwelling).</i>
<p>7. On-Site Car Parking</p> <p>Whether the development is laid out with consideration of the safety and practicality of car parking and vehicle access. This includes visibility around garages and car ports. There should also be a clear distinction between resident and visitor parking if the latter is accommodated on the site.</p>	
<p>8. Orientation & Passive Solar Energy</p> <p>Whether the residential units have access to sunlight and daylight, both within the Comprehensive Residential Development and those external to the parent site. Specific regard will be given to the following design attributes:</p> <p style="margin-left: 40px;">a) Sunlight and Daylight</p> <p style="margin-left: 80px;">i) The design and layout of proposed buildings and additions to existing buildings enables adjoining land or buildings to be protected from significant loss of sunlight and daylight; and</p> <p style="margin-left: 80px;">ii) That sufficient sunlight and daylight reaches into, between and around proposed buildings and additions to existing buildings.</p> <p style="margin-left: 40px;">b) Orientation /passive solar energy - maximise the energy from the sun to warm the dwelling</p> <p style="margin-left: 40px;">c) Natural ventilation - with sufficient opening windows in each dwelling</p> <p style="margin-left: 40px;">d) Views - Visual Outlook - Design the dwelling so that principal living areas (lounge, kitchen) benefit from the longest outlook. (e.g. overlook the garden, open space or distant landscape features).</p>	

9.7 Assessment Criteria for All Activities in the Hastings Character Residential Zone

- 1. All Activities within the Zone**
- a) Compatibility with Context** The extent to which the new dwelling or building, addition or alteration is compatible with any existing dwelling on site and those in the surrounding character area.
- b) Effect on the Character of the Zone**
- 1) The extent to which the proposed work adversely affects the existing character of the area in which it is located and what measures have been taken to avoid, remedy or mitigate any potential adverse effects. Specific regard will be given to the

Explanation

Character areas are an important part of the District's original architectural history and provide high quality residential environments. As recognised in the objectives and policies, the character or appearance of a character area should be preserved or enhanced. This does not mean that old styles must be copied, but the emphasis must be on compatibility with the existing character or appearance of an area and ensuring that both new dwellings and buildings within this Zone as well as more intensive housing developments in identified character areas maintain the intrinsic qualities of the area.

following:

- (a) Location and form of new construction relative to any existing residential building retained on site and/or in the specific character area in terms of scale, balance and proportion:
 - Whether the scale of any new building is the same or similar in character to those residential buildings existing in the specific character area;
 - Whether the proportions of window and door openings in the front façade of the new building are similar in character to those residential buildings existing in the specific character area; and
 - Whether the balance of glazing or openings to wall space in the front façade is similar to those residential buildings existing within the specific character area
- (b) Architectural style and quality of new construction.
- (c) Construction materials and detailing.
- (d) Whether the proposal is sympathetic to the early subdivision and original building setback patterns of the area, including consideration of the following in respect of comprehensive residential developments on identified sites:
 - the larger sites within a comprehensive residential development should be located adjacent to the street frontage to maintain a sense of spaciousness (being a characteristic of the Zone).
- (e) Whether any significant existing building features would be removed, obscured or otherwise compromised.
- (f) Whether any new building (in particular the front façade of any new building) will incorporate elements of the design and character of existing residential buildings in the specific character area, for example elements such as parapets, roofs pitch, walls, columns, windows and door openings, veranda detailing and other decorative elements
- (g) Location and design of services, such as heat pump external units, gas bottles, utility access

points.

- 2) **Landscaping** - A landscaping plan is submitted with the application (for comprehensive residential development on identified sites in the Character Residential Zone), showing how the character and amenity of the neighbourhood will continue to be maintained. The landscaping plan shall consider the following matters:
- a) The extent to which existing vegetation is retained.
 - b) The extent to which new tree plantings are proposed, and whether this adequately softens the effect of built form. This may include an assessment of the species selection and whether replacement plantings adequately replace the loss of existing trees.
 - c) The configuration of the site and whether enforcement of the standard would place an unreasonable burden on neighbouring properties due to shading or leaf drop.

2. Total or Substantial Demolition of the front façade of a pre-1950s dwelling or Removal of a Pre-1950s Dwelling off site and additions and alterations to the front façade of a pre-1950s dwelling.

The extent to which the proposed work adversely affects the existing character of the area and streetscape in which the dwelling is located and what measures have been taken to avoid, remedy or mitigate any potential adverse effects.

To determine whether to approve or decline the application for demolition or removal of the dwelling or for additions and alterations to the front façade the following considerations shall be made:

- (a) Its contribution to streetscape character of the area.
- (b) The legacy value of the dwelling by reference to its architectural style, whether as an exemplar of the type or as being representative of type.
- (c) The integrity of the front façade of the dwelling in its current state, having regard to its architectural form and style and authenticity of its component parts.
- (d) Its relationship to other adjacent dwellings and buildings, whether it contributes to a group in such a way that its loss would result in the loss

of a character value attributable to the group.

- (e) Its contribution to streetscape character by reference to surrounds within the site, and/or to the public street, and/or relationships to open space shared with adjacent buildings.
- (f) The practicability and cost of any necessary rehabilitation, and the inability to achieve reasonable amenity for occupants and reasonable compliance with any requirement of the Building Act.
- (g) Whether alternatives to removal, total or substantial demolition have been considered including partial demolition (retaining the front façade in its entirety but demolishing the rear of the dwelling not visible from the street) or relocation of the dwelling within the site (i.e. further toward the street front or closer to the side boundary) to allow development to the rear of the site.

9.8 Assessment Criteria for Activities (Other Than Comprehensive Residential Development) within the Hastings City Living Zone

- (a) **Future Proofing for Comprehensive Residential Development**
- a) The extent to which the activity is required for the social wellbeing of the immediate community to be located within the City Living zone;
 - b) Whether the activity is to be established within an existing or relocatable building.
- (b) **Cohesion with the surrounding Residential Environment**
- i) The extent to which the building(s) associated with the activity is legible, has a coherent architectural style that integrates well into the streetscape and contributes to its quality.
 - ii) Height, bulk, form and scale - The extent to which the building(s) associated with the activity achieves a positive scale relationship to surrounding residential buildings and public spaces.
- (c) **Access and Parking**
- i) The extent to which the development provides adequate and safe access to both vehicles and pedestrians and whether the vehicle access and car parking areas dominate the street frontage; and
 - ii) The potential for the activity to generate adverse effects in terms of noise, dust, glare, vibration, traffic and parking and to which mitigation options have been considered and evaluated.

9.9 Testing of Comprehensive Residential Development and Infill Development in Terms of Housing Yield and Effects Management

9.9.1 Housing Yield

Any comparisons of housing yield are more appropriately derived between the different zones and areas specifically identified as suitable for Comprehensive Residential Development where the comprehensive residential development standards apply and those locations where the zone standards are applicable.

9.9.1.1 Hastings City Living Zone

Within the Heretaunga St East / Queens Square area of the Hastings City Living Zone, existing dwelling densities range from 16 dwellings / hectare to 25 dwellings / hectare gross (ie including driveways and access lots). Testing carried out by Frank Busch (Architectural Designer) on the Maddison Street site within this zone illustrates that net densities of between 33-37 dwellings per hectare (minimum site sizes of 270m² – 304m²) can be achieved while complying with all the relevant development standards for comprehensive residential developments and using a range of dwellings types and site layouts.

Within the Mahora part of the Hastings City Living Zone, Roberts Street stands out as the most densely developed area currently. The gross density in this street is 18 dwellings per hectare, and is therefore just on the cusp of what is considered to be medium density.

9.9.1.2 Hastings and Havelock North General Residential Zone

Within the Raureka area identified for Comprehensive Residential Development, existing gross dwelling densities average out at 12 dwellings per hectare. Within the Windsor Park area identified for Comprehensive Residential Development, existing gross dwelling densities average 15 dwellings per hectare.

In both cases above, under the zone provisions, these densities could be increased to a gross figure of 28 dwellings per hectare (minimum site size of 350m²). Under the Comprehensive Residential Development Provisions this could be increased to 40 dwellings per hectare (minimum site size of 250m²). However, testing undertaken by Frank Busch (see Appendix C) illustrates that in reality densities of 40 dwellings per hectare would be very difficult to achieve while complying with all the comprehensive residential development standards. Densities in the range of 30-35 dwellings per hectare are more likely to achieve the development standards as well as meet the design intent of the assessment criteria for a quality residential environment.

9.9.1.3 Hastings Character Residential Zone

Current dwelling density levels within the Hastings Character Residential Zone areas identified for Comprehensive Residential Development, range from 10 dwellings per hectare (approximately one dwelling per 1025m²) in a section of Tomoana Rd from Fitzroy Ave – Mairangi St to 13 dwellings per hectare (approximately one dwelling per 750m²) in Cornwall Rd.

In order to retain the special characteristics of the different areas within this zone, Comprehensive Residential Development proposals should aim to provide a range of site sizes between the minimum of 250m² and maximum of 700-800m², and thereby comply with the 350m² average provision. Yields for comprehensive residential developments within this zone are therefore significantly greater than what currently exists or what could be achieved through infill development, but are less than the yields anticipated and allowed for in the General Residential and City Living Zone areas discussed above. This scaling of density is appropriate and acknowledges the need for sensitivity in developing sites within the Hastings Character Residential Zone.

9.9.2 Effects Management

One of the key factors that distinguish typical infill development from comprehensive residential development is the requirement for comprehensive development dwelling design to occur concurrently or prior to subdivision of the land. This factor ensures that dwelling design and layout details are at the forefront of planning for the development.

Early on in the preparation of this regulatory framework it was considered that new development at higher densities should be promoted in this manner in order to achieve the best possible environmental outcomes. Traditional residential development is able to occur as of right but is subject to additional development standards that seek to ensure a reasonable standard of living and amenity levels at this comparatively lower density level..

9.9.2.1 Acceptability of Effects and Workability for Proposed Standards

The zone and comprehensive residential development standards were formed after consideration of standards used in other provincial and metropolitan cities (including Napier City, Kapiti Coast District, Christchurch City, Franklin District, Waitakere City, and Selwyn District) as well as research of overseas examples including the City of Portland, Oregon and Melbourne's Victoria Code.

The acceptability and workability of the comprehensive residential development standards in the context of the settlements of Hastings and Havelock North is assessed below in respect of the development scenarios prepared by Frank Busch (Architectural Designer) for testing.

Option A (see Appendix C for details of all options including site layout and elevations)

Option A is a very standard development of nine primarily 3 bedroom single storey homes. The layout of the development is simple with residential units located one behind the other. This layout is representative of the typical infill development of three individual sites rather than a truly comprehensive approach to development of the parent site as a whole. While all the development standards are met, much of the land is taken up with driveways and turning areas, the fencing of which could create adverse visual effects, however the fencing provisions should go some way to mitigating these. The landscaping provisions requiring mature street front plantings should help to soften the development from the street. However, the lack of architectural detail in the dwelling design and lack of creativity in the layout would not meet the intent of the assessment criteria and therefore illustrates the importance of the plan standards being supported by assessment criteria to produce good quality outcomes.

Option B comprises eight, 3 bedroom dwellings, attached in a duplex configuration (i.e. four blocks of two) with a central right of way creating vehicle access to the rear units. This access splits the site in half and effectively creates a lane which could be used by neighbouring sites if they were to develop in the future. The units are of an appropriate scale with a small second storey providing for the master bedroom upstairs. The placement of this second storey towards the front of the sites ensures that any effects on rear neighbours are minimised. The architectural detail (dormer windows and exposed eave rafters) of the dwellings create visual interest from the street. The two private and sunny (N and NW aspect) courtyards provide outdoor space for enjoyment at different times of day. Utility areas are provided for on-site and also within the right of way area at the street front, effective screening (landscaping and fencing) should ensure that this area would not be untidy, in addition to the fact that only four units would require the use of this space for rubbish / recycling collection.

Overall, this option complies with the intent of development standards and assessment criteria for comprehensive developments and would create a good quality residential environment.

Option C comprises two sets of attached duplex, 3 bedroom dwellings (outlined in the above option) and five detached two storey 3 bedroom units with a double garage. The site layout is primarily the same as option B with the two sets of duplex units located to the front of the site and the 5 two storey units located along the rear boundary of the site. The bulk of the two storey units overlooking neighbouring properties may create adverse effects in terms of scale and privacy for these residents. Privacy issues could be mitigated through high sill windows and / or skylights to allow light into the master bedroom on the second floor. However, the issue of whether the scale and bulk of a row of these units, which all look the same and are all setback the same distance from the rear boundary is

more difficult to reduce without significant alterations to the layout and dwelling typology used in this proposal. The dominance of the garage door while arguably recessed from the first floor deck does detract from the design of the dwelling.

Overall, while there could be debate over complete compliance with the comprehensive residential development standards, this proposal would not meet the design intent of the assessment criteria in terms of the effects of repetition, scale and bulk of the five two storey units on the residents' neighbouring the rear boundary of the site.

Option D comprises nine units in total – three detached single storey units located to the rear of the site and two sets of three unit two storey terraces to the front of the site facing the street. The site layout is similar to Options B and C with a central driveway. However, in this design the right of way provides vehicle access to all nine units and ticks the criteria for containing garaging and parking away from the site frontage and street. The space is tight though and has resulted in a reduction of the standing bay for the 6 terraced units. Locating the three single storey units along the back boundary of the site minimises overlooking and ensures privacy for neighbouring properties to the rear. It also provides for a transition in terms of graduating the density of the development away from the rear neighbours to the front of the site and the public street. The amenity for occupants of the middle terraced unit is reduced in comparison with the end units where the eastern or western orientated side elevations provide additional solar access to the dwelling. The complying landscaping areas and dual outdoor living spaces also add to the overall site amenity.

Overlooking from the terraced units towards the single storey detached units is minimised as the second storey is set toward the street frontage well away (at least 12.5m) from the rear dwelling sites. The bulk and scale of the front and rear elevations of the terraced units could cause adverse effects on the streetscape and could be significantly out of scale with and dominate the single storey units to the rear. This may be able to be reduced by setbacks or steps that break up the front elevation bulk but would create other issues in terms of reducing compliance with outdoor living space and landscaping requirements. Reducing the terraces to two sets of two units each would significantly improve the scale and bulk of the terrace building but would also reduce the overall development yield.

Overall, this development would require restricted discretionary activity consent for landscaping and vehicle standing bay infringements. The site layout and the location of car parking and vehicle access wholly to the rear of the front units is positive as is the use of attached two storey dwellings located appropriately on site. However, the development does raise the question of whether the building bulk and amenity outcomes for occupants of the middle unit of three unit terraced houses are appropriate for the Hastings context.

9.9.3 Conclusion

The testing of the four development scenarios (options A-D) as well as a review of existing medium density developments within Hastings has revealed that in order for housing yields to reach the higher densities allowed by the Comprehensive Residential Development provisions, attached dwelling types and creative site layouts will be needed to ensure that the environmental outcomes generated meet the rationale and design intent behind the comprehensive residential development standards and assessment criteria. In this respect it is noted that the assessment criteria as they stand require further explanation including direct links to a design guide which provides examples of how these criteria should be applied in the context of the different zones within the Hastings and Havelock North residential environment.

Simply complying with the development standards would not be sufficient. An assessment of the design of development proposals in terms of how they fit with the existing residential environment (in respect of general residential and character residential zoned areas) or how the new compact residential environment they will create (in terms of the Hastings City Living Zone) will provide occupants within the development and those on neighbouring residential properties with a good quality of life, will be essential to ensure the success of comprehensive residential developments and hence the acceptability of a more compact living environment.

Recommendations

Hastings District Council should:

1. *Promote positive (in terms of policy framework) and appropriate (in terms of methods) district plan provisions for medium density housing as described above.*

10 Building Local Amenity and Open Space

The provision of sufficient and quality open space (both private and public) is a key requirement of ensuring an appropriate level of urban amenity. Insufficient provision or access to open spaces can lead to both negative perceptions of an area and poor amenity values.

Where housing density increases, it is likely that there will be a correlating reduction in the provision/availability of private open space and greater need and demand for public open space. Residential Intensification can have a number of implications including:

- Increased pressure on existing public open spaces and their facilities
- Demand for a greater quantity of public open spaces which can be difficult to provide in fully developed urban centres
- Demand for improved quality of public open spaces and their facilities

The provision of good quality and quantity public open space is necessary to ensure the achievement of appropriate levels of amenity.

With regards to the provision of public open space, the vision for Hastings District is that:

‘The needs of the community for open space and recreation opportunities are met through the provision of a variety of open space, which includes high quality gardens and active recreation uses; coastal and river access and protection; and local neighbourhood and amenity areas’.

This section of the Strategy considers the current provision and level of service of public open space to the host neighbourhoods and provides recommendations for improvements to levels of service where relevant.

10.1 Residential Development Private Open Space Requirements

At present, the Hastings District Plan does not set any private open space requirements within the residential zones beyond those associated with retaining streetscape characteristics (building setbacks) and open character (site coverage). It is noted that no provisions focus on the provision of recreation (either passive or active) opportunities. However, taking into account the density standards of the Plan, it is considered likely that traditional residential development within Hastings District is generally well serviced for private open space.

10.2 Public Open Space Provision

The Reserves Strategy, adopted in 2006, identifies existing public open spaces, analyses current and future demand, and identifies current deficiencies and future needs for each type of reserve by community.

The 2006 Reserves Strategy identified a total of 720ha of reserve land equating to 10.05ha/10000. This provided Council with a measure in which to estimate how much reserve land would be needed as a result of the growth of an area. It was recommended that the Hastings District aim to maintain this minimum level of provision into the future.

The 2006 Reserves Strategy is currently under review, involving a reassessment of all the public open spaces owned by Council in the District, existing provision and reserve categories.

The 2013 Draft Strategy categorises the 177 reserves into 8 categories (largely based on NZRA national standards): Sport and Recreation, Community, Public Gardens, Open Space, Linkages, Cultural Heritage or Civic Space, as identified in the table below.

Table 10.2-1 –Hastings District Reserve Categories and Provision

Category	Number	Size (ha)	Provision per 1,000 residents
Sport & Recreation	15	168.683	2.3
Community	46	73.554	0.99
Public Gardens	3	17.59	0.24
Open Space	37	268.46	3.65
Linkage	53	59.389	0.81
Cultural Heritage	9	20.986	0.29
Civic Space	14	7.539	0.10
Total	177	616.569	8.38
Te Mata Peak	1	94.65	
TOTAL	178	711.22	9.67

These 178 reserves total 711.22ha, equating to a 2013 level of service provision of 9.67ha/1000 residents. This is calculated on the Council projected population as at 2012/13 of approximately 73,570 (based on the 2006 Census data and the median Statistics New Zealand growth rate). For the purposes of this assessment, these revised 2013 figures will be used, despite the 2013 Reserves Strategy being yet to be adopted.

Recent acquisitions include the Regional Sports Park, Whenua Takoha Reserve and William Nelson Park, along with a number of Neighbourhood Reserves in Lyndhurst, Arataki and Northwood, which have added over 37ha to the overall area provision since the last Strategy was prepared in 2006. Despite this, the actual provision has not increased since 2006 as a number of reserves not in Council ownership have now been removed (Waipatiki Scenic Reserve), and Nelson Park has been sold.

However, as noted in the Stage 1 report, Council is in the process of moving away from this 'ha/1000' measure, given its inability to accurately reflect the distribution, function and usability of areas of public open space. In addition, it does not include the significant tracts of non-Council owned open space land available to the community.

The Stage 1 report states that: An approach which Council have indicated they may be moving towards is a catchment based approach which defines a 500m 'walking circle' around reserve and open space with play equipment (i.e. every resident should have a good level of 'local' reserve and open space provision within 500m of their residence). Council have also noted that as part of the overall strategy, focus should be placed on the need for improving and/or upgrading the accessibility, quality and safety of the existing reserve and open space network.

10.2.1 Proposed Policy and Level of Service

The 'ha/1000' level of service provides guidance to Council on the existing provision of public open space which can be extrapolated to identify future requirements to meet the needs of predicted population growth. However, as stated above, this has limitations in that it is a crude measure that does not take into account distribution, function and usability.

It is therefore proposed to introduce a more tangible measure that will provide greater assistance in identifying provision (or deficit) in proposed areas of residential intensification. The measure proposed is a level of service to ensure that every household in the District (including in residential intensification areas) be within 500 metres of open space and neighbourhood playgrounds.

While this has yet to be adopted, it is based on the accepted distribution of playgrounds in the 2006 Strategy, and national best practice. It is, therefore, proposed for the purpose of this study that every household shall be within 500m walking distance of a local area reserve, via a convenient, attractive and safe route, which provides:

- a) adequate space for different ages and activities to play at the same time (3,000-5,000m²); and
- b) play equipment, comprising at least 4 individual play pieces.

The rationale for this approach is as follows:

1. The identification of 500m is a widely accepted measure for the distance someone is willing to walk to a park or playground, and this typically equates to a 5-10 minute walk. This is based on national best practice, as well as the 2008 Play Strategy and 2006 Reserves Strategy. The route should also be convenient and safe, without significant barriers such as major roads or railway lines.
2. The optimal size of a local area reserve is based on the identified size of a Neighbourhood Reserve (now Community Reserve) in the 2006 Reserves Strategy. This size is considered adequate to provide open space for children to kick a ball, and for playground pieces to be located. Smaller sizes may be acceptable, dependent on their location, layout, topography and facilities.
3. The adequacy of the play equipment in a particular reserve can be determined by an analysis of the number of play pieces provided at each reserve

Hastings District Council produced its first Play Strategy, 'Coming out to Play' in 2004 which was revised in 2008. The intent of the document was to provide clear direction and guidance for the provision of play in public spaces in the District.

There are currently 38 playgrounds within the District. Hastings has 12 with the recent playgrounds installed in Whenua Takoha, Northwood and William Nelson Park. Flaxmere has 9, Havelock North has 5, and there are 12 within the Rural Areas of Clive (3), Whakatu (2), Bridge Pa (1), Eskdale (1), Puketapu (1), Haumoana (1), Te Awanga (1), Puketitiri (1) and Waimarama (1). They all vary in age and type of equipment, type of surfacing and level of play value.

The Play Strategy however identifies the following minimum level of service for 'local neighbourhood' playgrounds:

Local Neighbourhood playgrounds should serve a local area (500m radius) that are well within walking distance of the local neighbourhood and include:

- o Playground surfacing that allows access to inclusive activities/equipment; 4 plus play pieces utilising play equipment that addresses: physical motor skill development, social interplay and creative and imaginative development;
- o Barrier-free seating;
- o Shaded areas.

In order to provide identify the current provision of playground pieces serving households within a 500m radius, three local parks were assessed that are typical sized parks with an adequate playground serving the local area: (1) St Leonards Park; (2) Ebbett Park; and (3) Queens Square. The number of households within 500m of these playgrounds was divided by the number of individual pieces of playground equipment provided to give an indication of how many pieces of play equipment cater for a particular number of households.



Figure 10.2-1: Map 500m Circle from Existing Reserves

Table 10.2-2 - Hastings Playgrounds Level of Service

Park	No. of play pieces	Households within 500m radius	Pieces/Household
St Leonards Park	3	523	1/174
Ebbett Park	4	650	1/163
Queen Square	4	894	1/193
Average	3.7	689	1/186

As can be seen from the table above, these local area parks average 3.7 pieces of play equipment, servicing an average of 689 households within a 500m radius, meaning an existing average provision of 1 piece per 186 households. This standard then enables a calculation of how many additional play pieces would be required to be added to an existing playground, in order to cater for the increased growth for each residential intensification area.

10.2.2 Existing Distribution and Provision

The table below shows the results of analysis of the open space provision within Hastings and Havelock North, where the five proposed residential intensification areas are located. The total number of households in Hastings and Havelock North are based on 2006 census figures.

All of the current reserves and playgrounds within Hastings and Havelock North have been mapped with 500m buffers applied. These maps identify those areas and households that are currently outside the identified level of service, and therefore represent the existing deprivation areas. 1153 (11%) households in Hastings are not within 500m of an area of public open space. This figure increases to 6,031 (55%) that are not within 500m of a public playground.

Table 10.2-3 - Open Space Level of Service in Hastings District and Havelock North

Scenario	HASTINGS (10,920)		HAVELOCK NORTH (4,725)	
	Number	Percentage	Number	Percentage
Dwellings within 500m of Open Space	9767	89%	4632	98%
Dwellings within 500m of Playground	4889	45%	1644	35%

10.2.3 Open Space Provision in Residential Intensification Areas

The table below identifies the forecast increase in household numbers for each of the five intensification areas, and the number and percentage of these that are currently outside 500m of: (1) an existing open space, or (2) existing playground.

Table 10.2-4 - Open Space Provision in Residential Intensification Areas

Intensification Area	Increase No. Households	Outside 500m radius of Public Open Space		Outside 500m of Public Playground	
		Number	%	Number	%
Raureka	66	0	-	0	-
Parkvale	145	0	-	32	22%
Heretaunga Street E	516	75*	14.5%	75	14.5%
Mahora	370	0	-	119	32%
Havelock North	98	0	-	38	39%
TOTAL	1195	75	6.3%	264	22.1%

As can be seen from the table, the only proposed intensification area that is outside the 500m radius of an existing public open space is the southern end of Heretaunga Street East, comprising 75 households. The catchment for these 75 households is adequately covered by Norton Road Reserve. However this reserve does not meet the proposed policy, given its size of only 1,100m² in size with no playground, and relates to an existing level of service deficit (not related to growth). The remainder of the area is within the catchment served by Queens Square.

All proposed intensification areas (except Raureka) have areas that are located outside the 500m radius of an existing playground. All of these areas are however existing playground deficit areas. The only contribution therefore appropriate would be to the cost of providing additional playground pieces to accommodate the increased growth (based on 1 playground piece per 186 households and an average cost of \$10,000 per piece). Based on the projected growth of 1195 across all 5 intensification areas, this would require a contribution towards additional playground pieces of \$53.80 per household.

Table 10.2-5 - Open Space Provision in Residential Intensification Areas – Costs to meet shortfall

Intensification Area	Increase No. Households (2015-2045)	Additional playground pieces required (LoS= 1/186 households)	Total contribution for play piece (\$15,000)	Total contribution/ household
Raureka	66	0.35 pieces	\$5,250	\$79.
Parkvale	145	0.78 pieces	\$11,700	\$79.
Heretaunga Street E	516	2.77 pieces	\$41,550	\$79.
Mahora	370	2 pieces	\$30,000	\$79.
Havelock North	98	0.53 pieces	\$7,950	\$79.
TOTAL	1195	6.42 pieces	\$96,300	\$79

Where a proposed intensification area does not meet the proposed level of service, an increase in the provision of public open space would be a justifiable response. Where this occurs, reserve contributions can be obtained from the growth area to enable Council to purchase additional public open space in those areas. There are three exceptions, and reserve contributions should not be charged to the growth community where:

- 1) the growth area is located within an existing level of service deficit area;
- 2) the existing level of service (provision of open space) can meet the proposed increase in growth due to its size and location;
- 3) the existing level of service (provision of playgrounds) can meet the proposed increase in growth due to its size and number of play pieces
- 4) Given the above, reserve contributions can be justified only where the growth community will exceed the existing level of service provision.

Where existing deprivation areas are located within 500m of proposed areas of residential intensification, it would be prudent to recommend the prioritisation of acquisition in these areas in the Reserves Strategy, in order to improve the attractiveness of the area for medium density living.

10.3 Description of Host Neighbourhood Relationships with Public Open Spaces

The following section provides a discussion of the current provision of public open space within each of the proposed areas of residential intensification (500m walk) and is informed by the Reserve Strategy and the Stage 1 Report.

10.3.1 Hastings

As can be seen in the table below, the current provision for the Hastings urban area is 130.33ha, equivalent to 4.39ha/1000 residents (based on a 2012 population of 29,677):

Table 10.3-1 - Hastings City Reserve Provision

Category	No. Reserves	Total Area (ha)	Provision (ha/1000)
Sport & Active Recreation	7	96.43	3.25
Community	9	8.703	0.29
Public Gardens	1	8.51	0.31
Open Space	0	0	0
Linkage	13	2.775	0.09
Cultural Heritage	2	9.486	0.32
Civic Space	7	4.424	0.15
Total	39	130.33	4.39

There are 9 Community Reserves within Hastings City totalling 8.703ha. Whilst there are a number of Sport and Recreation Reserves, Public Gardens and Civic Spaces that provide play and neighbourhood reserve recreation activity, there are significant gaps in provision, in keeping with the proposed policy that a Neighbourhood or alternative reserve should be available within ten minutes easy walk or approximately 500m from each residential property.

This is further emphasised within the Stage 1 report which notes that the reserve and open space provision within Hastings is poor. It is however recognised that it is neither practical nor affordable for the existing community to acquire additional neighbourhood reserve land in the short term. The fully developed nature of existing urban areas means the supply of vacant land suitable for reserve is non-existent.

The following deficit areas are identified in the Reserves Strategy for the acquisition of additional reserve land to meet current open space needs:

Table 10.3-2 - Hastings Open Space Deficits

Area	High Priority	Medium Priority	Within 500m of Intensification Area
<ul style="list-style-type: none"> • <u>Saint Leonards</u> (Tomoana Rd/Heretaunga St West) 	*		-
<ul style="list-style-type: none"> • Mayfair (Karamu Rd N & Frederick St/Grove Rd) 	*		-
<ul style="list-style-type: none"> • Akina (Park Rd South & Outram Rd) 	*		Yes
<ul style="list-style-type: none"> • Central/Mayfair (Karamu Road & St Aubyn St) 		*	-
<ul style="list-style-type: none"> • Raureka (Maraekakaho Rd & Oliphant Rd) 		*	-

The Strategy recommends that the shortfall be acknowledged and if opportunities arise in the future, additional Neighbourhood Reserve be acquired in identified areas.

10.3.2 Raureka

The Raureka Intensification Area has a projected growth profile of an additional 66 households between 2015-2045.

It is located in close proximity to St. Leonards Park (Sport & Recreation Reserve), Ebbett Park (Community Reserve) and Whenua Takoha Reserve (Community Reserve). All three of these open spaces have playgrounds.

- St Leonards Park is 4.87ha in size and includes 3 individual playground components: (seesaw, slide and swings)
- Ebbett Park is 3.36ha in size and includes 4 individual playground components: (swings, see saw, combi-unit with slide and a track ride)
- Whenua Takoha is 0.16ha in size and includes 3 individual playground components: (swings, combi-unit and climbing frame)

All proposed new households are located within 500m of at least one of three reserves and associated playgrounds. Ebbett Park however has limited entry points which restrict its accessibility, and this could be improved in the future if the opportunity to acquire additional land arose, particularly along the northern end of Gordon Road.

10.3.3 Parkvale

The Parkvale Intensification Area has a projected growth profile of an additional 145 households between 2015-2045.

The proposed intensification area is adjacent to Windsor Park (Sport & Recreation Reserve). Parts of the intensification area are also located within reasonable proximity to Bill Mathewson Park (Sport & Recreation Reserve).

- Windsor Park is 26.8ha in size and includes 3 individual playground components: (seesaw, swings and a slide).
- Bill Mathewson Park is 3.6ha in area, with no playground facilities (nor any space for a future playground).

The whole intensification area is within a 500m walk of Windsor Park therefore well within the existing level of service for open space. However, 32 households (22%) are located outside of a 500m distance from the nearest playground. This could be addressed by the provision of an additional playground on the southern side of Windsor Park, which would also address an existing deficit area for playground provision.

10.3.4 Heretaunga Street East

The Heretaunga Street East Intensification Area has a projected growth profile of an additional 516 households between 2015-2045.

The majority of these households (85.5%) within the Heretaunga Street East proposed intensification area are located within the 500m catchment either provided by Queens Square (Community Reserve) or Civic Square (Civic Space). Both of these areas of open space have playgrounds.

The remaining 14.5% of households within the Heretaunga Street East proposed intensification area (southern end towards Havelock North) are located within the 500m catchment provided by Norton Road Reserve. However this reserve does not meet the proposed policy, given its size of only 1,100m² in size with no playground, and relates to an existing level of service deficit (not related to growth).

- Queens Square is 1.0ha in size and includes 4 brand new individual playground components: (combi-unit, slide, swings, rocker)
- Civic Square is 2.11ha in size and includes 3 individual playground components (combi-unit, slide and swings)
- Norton Road Reserve is 0.11ha in size, with no playground facilities.

This means that a proportion of the southern part of the future intensification area (very few of which are anticipated to be feasible until post 2020) would potentially be underserved for public open space without further provision.

To ensure all intensification areas achieve appropriate levels of service for public reserves, consideration should be given to whether additional reserves should be provided to service the southern side of the Heretaunga Street East intensification area prior to 2020.

Given the proximity of the existing Akina deprivation area to the Heretaunga Street East Proposed Medium Density Area, it is recommended that the acquisition of a new local area reserve be prioritised in this area, in order to improve its future attractiveness. This would not be funded by the growth community.

10.3.5 Mahora

The Mahora Intensification Area has a projected growth profile of an additional 370 households between 2015-2045.

All of the Mahora intensification area is located within the 500m catchment areas provided by Cornwall Park (Sport and Recreation Reserve), Duke Street Reserve (Community Reserve) and to a lesser extent Northwood Reserve (Community Reserve).

- Cornwall Park is 8.5ha in size and includes 9 individual playground components: (combi-unit, scales, swings, rocking frog, swings, truck, play centre swings, liberty swing and a new Splash Pad).
- Duke Street Reserve is 1.2ha in size, with no playground facilities.
- Northwood Reserve is 0.14ha in size and includes 4 brand new playground components.

While 119 households (32%) are not located within 500m of a public playground, they are within the 500m catchment of Mahora School, which does provide a playground. However, as access to this playground cannot be guaranteed at all times, it may be desirable to prioritise the provision of a playground within this existing deficit area in the Reserves Strategy (funded by general rate), and require these households to contribute to the provision of additional play pieces.

10.3.6 Havelock North

As can be seen in the table below, the current reserve provision for Havelock North is 171.387ha, equivalent to 12.97ha/1000 residents, (based on a 2012 population of 13,219).

Table 10.3-3 - Havelock North Reserve Provision

Category	No. Reserves	Total Area (ha)	Provision (ha/1000)
Sport & Active Recreation	3	19.313	1.46
Community	9	9.795	0.74
Public Gardens	2	9.48	0.71
Open Space (including Te Mata Peak)	9	126.97	9.61
Linkage	6	2.229	0.17
Cultural Heritage	2	2.80	0.21
Civic Space	1	0.82	0.06
Total	32	171.387	12.97

However, over two thirds of the total reserve areas within Havelock North comprise Open Space Reserves. While this provides attractive amenity and walking opportunities, their use for other recreation is limited. There has been little emphasis on acquiring neighbourhood reserves suitable for play and other active recreation through the hilly residential areas.

As a result (and in the context of providing a neighbourhood reserve or similar within 500m easy walk of all residential properties), the Reserve Strategy concludes that there are currently significant gaps in provision within the Havelock North area. However, the Stage 1 Report concludes that provision within

the vicinity of the intensification area is reasonably good with the provision of the Havelock North Domain (Sport & Recreation Reserve) and Anderson Park (Sport & Recreation Reserve).

- Anderson Park is 9.04ha in size and currently includes 4 individual playground components: (climbing frame, swings, dippy disk and dolphin teeter).
- Havelock North Domain is 1.71ha in size and currently includes 5 individual playground components: (combi-unit with 8+ platforms, whale see-saw, swings (standard and toddler) and skate bowl).

The Havelock North Intensification Area has a projected growth profile of an additional 98 households between 2015-2045.

It is considered likely that all areas of the intensification area can gain access to one or both of Anderson Park and Havelock North Domain within a 500m walk. However, it is considered that additional accesses to Anderson Park could be considered to improve access from some areas of the intensification area.

10.4 Streetscape and Amenity

Streets are valuable public open space and, where appropriate, traffic calming measures and landscaping can assist to mitigate effects of intensification and improve the streetscape and maximise its public use.

A Draft 'Green Streets' Strategy has recently been prepared, to enable the realisation of Council's vision to strengthen the District's street tree infrastructure by consolidating and extending a relatively well established existing street tree network. Part I focuses on the key routeways into the district's urban areas, with Part II focusing on the neighbourhood streetscapes. Part II is yet to be produced however the objectives of this section are identified below.

Greening initiatives within the Neighbourhood Streetscapes are based on analysis of existing street tree frameworks, understanding of local environmental conditions, appropriate species selection for urban situations, appropriate scale, and minimising on-going maintenance requirements. These initiatives are presented as colour coded maps for the individual neighbourhoods.

The social benefits of 'Greening Streets' include

- pedestrian and vehicular 'way-finding' by creating focal points and landmarks;
- active and passive recreation;
- maintaining historical associations;
- fostering community identity;
- increased safety;
- positive experiential values;
- increased urban amenity;

One of the key objectives of the Greening Streets Strategy is to improve residential amenity, including:

- enhance the public domain by creating visually pleasing spaces for pedestrians, cyclists and drivers;
- slow traffic speeds by reducing the perceived width of streets;
- balance typical urban infrastructure and green infrastructure initiatives;
- improve environmental amenity by providing shade and shelter within streets;
- enhance the legibility of the district using vegetation, tree lined streets provide orientation;
- ensure the district's streets are safe places to be through the use of CPTED principles.

These are all important ingredients in making residential intensification attractive to the market. Part II of the Greening Streets Strategy should give priority consideration to the intensification areas and alignment with road network and underground infrastructure upgrades discussed in Chapter 11 below.

10.5 Conclusions

From the above, it can be concluded that:

- 94% of households within the proposed intensification areas are located within 500m of an existing area of public open space*
- 78% of households within the proposed intensification areas are located within 500m of an existing public playground.

The 6% of proposed households within the intensification areas outside a 500m catchment of a public open space are those on the southern side of the Heretaunga Street East. While it is within the 500m catchment provided by Norton Road Reserve, this is only 1,100m² in size with no playground. It therefore does not meet the proposed policy above, and relates to an existing level of service deficit (not related to growth).

The 22% of proposed households within the intensification areas outside a 500m catchment of a public playground include all of the proposed areas except Raureka (which is well supplied by 3 playgrounds in different areas of public open space). While all of these relate to an existing level of service deficit (not related to growth), the growth community should provide a contribution to the increase in service level provision (ie provide a contribution to additional play pieces required to meet the playground pieces/household threshold).

Therefore in summary:

- Even though there is a current deficit of reserves within Hastings, there is no requirement to acquire any additional areas of public open space as a result of the increase in number of households in the intensification areas.
- There is a requirement to improve the level of service with regard to playground facilities on the existing areas of public open space within the 500m buffer areas.
- In this regard, the following recommendations are made:

Recommendations

Hastings District Council should:

- 1) Provide additional pieces of playground equipment on Ebbett Park, St Leonards Park, Queens Square, Havelock North Domain and Windsor Park in order to cater for the increase in household numbers in the residential intensification areas (alternatively for Windsor Park contribute to the development of a new playground on the southern side of Windsor Park to address an existing level of service deficit with regard to playground provision plus growth).
- 2) Consider providing additional entry points to Ebbett Park should the opportunity arise in the future, particularly along the northern end of Gordon Road.
- 3) Prioritise the development of a new playground in Duke Street Reserve in the Reserves Strategy as part of addressing an existing level of service deficit (funded by the general rate and a contribution from growth funded by growth).
- 4) Require the growth community in the intensification areas to contribute \$79 each toward the increased provision of play pieces.
- 5) Prioritise the provision of a playground in the existing Norton Road Reserve, or new reserve acquired as above, to meet the existing level of service deficit relating to playground facilities (funded by the general rate);
- 6) Prioritise the acquisition of a new reserve on the southern side of the Heretaunga Street East intensification area in the Reserves Strategy as part of addressing an existing level of service deficit (funded by the general rate);
- 7) Contribute to additional pieces of playground equipment to the new playground being provided on either Norton Road Reserve, or the new reserve as acquired above, in order to cater for the increase in household number in the residential intensification area;
- 8) Consider improving the accessibility of Anderson Park to better serve the southern extremity of the Havelock North intensification area.
- 9) Part II of the Greening Streets Strategy should give priority to amenity upgrades in the intensification areas, in conjunction with roading and infrastructure upgrade

11 Medium Ready Services

11.1 Introduction

If medium density development is to be promoted and facilitated, the necessary infrastructure services need to be planned for and provided in an efficient and cost effective manner. This means ensuring network capacity is available ahead of time where it can be integrated into existing work programmes. This may include minor programme adjustments if the marginal cost is not significant. This includes transportation infrastructure such as street configuration, traffic management, parking public transport and walking and cycling infrastructure and networks.

The high-level infrastructure analysis undertaken in Stage 1 has confirmed that infrastructure services are not expected to significantly constrain an increase in the density proposed in the identified housing, intensification areas, nor are there expected to be significant financial costs to the community in terms of potential upgrading requirements.

It did not however, evaluate in depth the extent of any individual capacity constraints, or the possible development impacts on the network infrastructure and whether these may become restricted. This chapter identifies any location specific upgrades required and any misalignment between Council's infrastructure renewal and upgrade programmes and the likely timing and density of medium density development identified in Stage 1.

It make recommendations for prioritising infrastructure renewal and upgrades in Council's future work programme to ensure services are available with sufficient capacity in advance or just in time to support medium density development.

The medium density areas included in this assessment are listed below:

- Heretaunga Street East
- Havelock North
- Mahora
- Parkvale
- Raureka

11.2 Approach

An underground services capacity assessment was undertaken at a site specific level based on the spatial and temporal intensification maps produced in Stage 1. This identified how the likely projected developments will impact on services from the development to the nearest appropriate mains, the mains themselves, any downstream bottlenecks of inter-connections and cumulatively on pump stations, treatment stations, reservoirs or the discharge point, to identify any physical or infrastructural constraints/opportunities including:

- water
- wastewater
- stormwater
- other network utilities

The upgrade works necessary to overcome these constraints or 'gaps' and the anticipated costs and timing of these works were then identified. Recommended changes to the forward capital works programme can ensure infrastructure is "medium density ready" where that is cost effective as follows:

The scheduled renewal or upgrade project and its current timing was identified

New timing and scope adjustment for the works if any is recommended.

The marginal cost of the scope adjustment and the cost of capital resulting from advancing project timing.

Methods to align development timeframes to reduce excessive costs have been considered.

In terms of transportation, Medium density development needs to be supported by an appropriate level of service in terms of alternative transport modes, service proximity and personal safety and security. Any misalignment between the current Public Transport and walking and cycling and traffic management improvement programmes and the desired level of service for the medium density development nodes were assessed and any desirable changes recommended as follows:

- Existing and proposed Bus, Walking and Cycling routes and infrastructure were evaluated in terms of the level of service provided to the likely development sites.
- Low cost changes or further upgrades that will improve the level of service have been recommended
- An estimate of costs and any associated disadvantages to other current and potential users has been undertaken

- Conflicts between the road classification within the likely growth areas and the recommendations from the above elements and the other work streams have been identified and appropriate solutions recommended together with any cost impacts.

Suitable Drawings and diagrams that can be used in the Quality Design and Amenity and Changing Perception and Capability Work Streams have also been recommended from the Infrastructure Code of Practice as a guide for future Placed Based or Local Area planning work and scheduled upgrades.

The cost items have feed into the Cost Competitive Development work stream in terms of impacts on Development Contributions.

Supporting technical reports are attached covering this work as Appendix A Transportation and B Services

11.3 Findings Sewer Infrastructure

11.3.1 General

The existing sewer infrastructure downstream of the medium density areas to the first trunk sewer or pump station servicing each catchment has been identified assessed for both the existing catchment and proposed medium density catchment. From this comparison any constraints have been identified.

The difference in pipe capacity from a change in diameter is significant so small differences in the demand assumptions (population and dwelling density) do not have a significant impact on the assessed infrastructure upgrade requirements. Further analysis on changes in population density confirmed that there is no change to the individual upgrades identified due solely to medium density development. This should however, be further considered during investigations into the pump stations and rising mains that may be impacted by intensification.

Where there are existing 100mm internal diameter slip lined sections of sewer pipe, they not only have less capacity but experience a high number of blockages requiring increased maintenance. A number of these constraints are already known issues within the sewer network based on the current population. In these instances the impacts of medium density development have been considered in addition to these current capacity issues.

11.3.2 Heretaunga Street East

The Park Road rising main is subject to additional flows during wet weather events and capacity can be compromised in significant and prolonged rain events. The impact of medium density development on the rising main and its associated pump stations has not been evaluated. Wet weather flow assessments in the rising main and pump stations should be investigated further, before medium density proceeds to determine with accuracy the capacity that is available to service future growth. This main not be an issue depending on timing and what options there are to reduce wet weather flows.

A number of existing small diameter slip lined pipe sections have been identified within the Heretaunga Street East areas. These slip lined pipes are a known issue within the sewer network and will require renewal prior to medium density development.

11.3.3 Mahora

A large proportion of the area discharges via sewer rider mains directly to the western interceptor trunk sewer and Brick-arch trunk sewer which have sufficient capacity to cater for the increase in flow from medium density development. Two smaller areas of medium density development discharge into the Waipuna Street and Frederick Street pump stations. It is not anticipated that the small increase in flow to these pump stations will cause any issues.

The largest area of medium density development will enter the Brick-arch trunk sewer via a very deep sewer on Frederick Street. There are historical issues with the very deep pipe in Frederick Street. HDC are currently investigating a complete change in conveyance in the future moving to a shallow pumped system. Allowance for the medium density development can be made as part of that investigation.

11.3.4 Havelock North

A wider network issue currently exists with the Havelock North sewer system. The single trunk sewer main that conveys wastewater to the treatment plant currently experiences surcharging in wet weather events. HDC are currently investigating options to substantially increase capacity and reduce stormwater inflows. Planning is in the design phase with physical works programmed to be completed by 2015/2016. The timing of medium density development will be after this work is completed.

Two areas in Joll Road and Duart Road are slip lined pipes and have been identified as requiring renewal prior to medium density development. A 100m length 150mm diameter concrete pipe from Duart Road to Karanema Drive has been identified as requiring upgrading due to medium density development upstream.

11.3.5 Parkvale

Two sections of slip line pipe have been identified as requiring renewal before medium density development proceeds, but do not need upsizing.

11.3.6 Raureka

A single length of slip line pipe has been identified as requiring renewal prior to medium density development proceeding, but do not need upsizing.

11.3.7 Summary

The table below summarises all upgrades identified and differentiates those that are existing issues within the HDC sewer network and those that will result specifically from medium density development. The date where items are due for renewal is from the HDC asset database, but are not necessarily currently programmed for renewal. Apart from the Havelock North pipe upscale, medium density will create no up-sizing requirement or need for new assets. For the other works, some may need to be prioritised earlier than the asset renewal date, but as these are required to resolve existing deficiencies the financial cost of the asset life write off is not a relevant consideration

Table 11.3 Sewer Network Upgrades Required

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
Heretaunga Street East	132m of 125mm HDPE slip lined pipe on Heretaunga Street needs renewing with a 150mm pipe.	2031	Nil	2015
	280m of 186mm HDPE slip lined pipe on Lumsden Road needs renewing with a 200mm pipe.	2030-2032	Nil	2015
	114m of 186mm slip lined pipe on Heretaunga Street needs renewing with a 200mm pipe	2046	Nil	2015
	330m of 125mm slip lined pipe on Queen Street East needs renewing with a 150mm pipe	2038-2044	Nil	2015
	245m of 125mm HDPE slip lined pipe on Avenue Road West needs renewing with a 150mm pipe	2031-2050	Nil	2015
	350m of 186mm HDPE slip lined on Princes Street needs renewing with a 200mm pipe	2031-2049	Nil	2015
Mahora	112m of 125mm HDPE slip lined pipe on York Street needs renewing with 150mm pipe	2043	Nil	2015
	A wider issue currently exists with the existing gravity sewer on Frederick Street. HDC are currently investigating options to resolve. This may result in a change in conveyance and may move to a shallow pumped system or redirected gravity system	2015	Nil	2015/2025
Havelock North	242m of 125mm slip lined pipe in Duart Road needs renewing with a 150mm pipe.	2043	Nil	2015
	Nil	2024	100m of 150mm concrete pipe needs renewing with 200mm pipe and upstream manhole re-haunched	2015
	225m of 125mm slip lined pipe in Joll Road needs renewing with a 150mm pipe.	2044	Nil	2015

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
Parkvale	174m of 125mm slip lined pipe in Grove Road needs renewing with a 150mm pipe.	2041	Nil	2015
	150m of 125mm slip lined pipe in Sylvan Road needs renewing with a 150mm pipe.	2031-2034	Nil	2025
Raureka	72m of 125mm slip lined pipe needs renewing with 150mm pipe	2125	Nil	2015
Flaxmere	Nil	-	Nil	-

The table below summaries the single upgrade required that are directly related to medium density development.

Area	Issue Resulting from Medium Density Development	Estimated		
		Year Required	Total Cost	Estimate
Havelock North	100m of 150mm concrete pipe needs to be upsized with 200mm diameter pipe and upstream manhole re-haunched.	2018	\$80,000	\$22,000

Note: The total and marginal cost estimates in the above table do not allow for the cost to write off the remaining asset value to renew the asset prior to the end of its useful life as the difference is only three years and the medium density programmed date is highly indicative commencement date only. The actual capacity trigger date will be determined by the market.

11.4 Findings Stormwater Infrastructure

11.4.1 General

The existing stormwater infrastructure downstream of the medium density areas has been considered through to the discharge into the receiving open drain for both existing catchment and proposed medium density catchment design flows. From this comparison any constraints have been identified.

The capacity of the open drainage system (to which HDC's stormwater discharges into) has not been considered as affecting any medium density housing proposals. This is based on current knowledge of the wider system and HDC's approach which is to mitigate (where possible) the impacts of development to pre-existing levels.

Road hierarchy has been taken into consideration where the existing pipe network is insufficient for medium density development. Stormwater systems may need to be upgraded or duplicated on any arterial or collector roads with insufficient pipe capacity. This may not be necessary for local roads and lanes as a greater level of ponding within the road is acceptable.

All medium density development will be required to have on site detention to limit the volume and peak rate of stormwater being discharged to HDCs stormwater system during short duration rain events. It

consists of a stormwater tank connected to the roof area or portion of, with a small outlet pipe that controls the peak discharge rate.

11.4.2 Heretaunga Street East

In the Lower Southland Drain Catchment a single length of existing 450mm diameter stormwater pipe on Willowpark Road has been identified as deficient requiring upgrading to 525mm diameter to cater for the existing catchment and 600mm diameter to cater for medium density development. This section of Willowpark Road is an arterial road; therefore it should be a priority to upgrade. A length of 375mm diameter pipe on Eastbourne Street has also been identified as potentially marginal, but St Joseph's School, and its grass fields, means in practice the existing pipe will likely be sufficient.

In the Riverslea Drain Catchment 172m of 450mm diameter and 300m section of 525mm diameter stormwater pipe on Heretaunga Street from Maddison Street to Park Road is sufficient for the current catchment however, would require upgrading or duplication to cater for medium density development. This section of Heretaunga Street is an arterial road; therefore it should be a priority to upgrade as part of medium density development.

11.4.3 Mahora

In the Tomoana Drain Catchment a 108m length of 375mm diameter and 132m length of 450mm diameter stormwater pipe on Frederick Street West from Waipuna Street to Tomoana Road is insufficient for the current catchment and requires upgrading or duplication. This upgrade or duplication would need to be further increased to cater for the medium density development. This section of Frederick Street is a collector road; therefore, it should be a priority to upgrade as part of medium density development.

Burnett Street currently has very little stormwater infrastructure however a 1350mm trunk main cuts across the road with sufficient capacity for the proposed medium density development. Burnett Street is a local road so may be suitable for conveyance to the 1350mm trunk main. The inlet capacity at the trunk main will need to be upgraded as part of medium density development and the road carrying capacity confirmed to ascertain whether new piped infrastructure needs to be extended up Burnett Street.

In the Waikoko Drain Catchment the 1350mm diameter stormwater trunk outlet pipe is currently undersized based on this desktop study; however there are no significant ponding issues in the surrounding area to confirm this. The trunk main may have greater capacity than assumed, or may operate sufficiently under surcharged conditions. It is recommended HDC investigate this further before medium density development occurs in the area.

11.4.4 Havelock North

The Havelock North area has multiple discharges to both the Mangarau and Karamu Stream. The Mangarau and Upper Karamu Catchments cover the western side of the Havelock North area and include multiple connections to the Mangarau stream from 225mm to 525mm in diameter. It is recommended that medium density development on Middle and Te Aute Roads include internal stormwater networks that discharge directly to the Mangarau Stream as the road is higher than most properties and the existing pipe network is suitable only for road run off.

A 300m length of the existing 300mm diameter pipe on Havelock Road is currently undersized. However, the existing 600mm diameter pipe that passes through Anderson Park, just behind Havelock Road, has surplus capacity. This pipeline provides alternative options to upgrading the existing 300mm diameter by providing an interconnection and all proposed medium density development connecting to the 600mm diameter pipeline.

The Lower Karamu Catchment services the eastern side of the Havelock North area and a substantial area above Campbell Street. The existing 600mm and 450mm diameter pipeline from Campbell Street through to Te Mata Road is insufficient for both the existing and proposed medium density catchments. The pipe network upstream of this also appears to be undersized and disconnected. Further detailed investigation into this catchment is required to understand how it is currently operating and if improvements are required.

A 63m length of existing 225mm diameter pipe on Te Mata Road is insufficient to service medium density development and will require upgrading to 300mm diameter. GIS data indicates that an existing

150mm diameter pipe within private property which will also need to be upgraded as part of development.

A 295m length of 525mm diameter stormwater pipe on Chambers Street between Campbell Street and Te Mata Road is currently undersized and may require upgrading. Chambers Street, however, is a local road and is reasonably graded. As there is no record of historic ponding issues, the road may be capable of conveying surplus run off with minimal nuisance. Investigation of the existing inlet capacity at the Te Mata/Chambers intersection is required.

The stormwater system upstream of Campbell Street is limited to small diameter pipe lines of 225mm or less. It is recommended this area is investigated in the future separate from medium density development.

An 88m length of existing 525mm diameter on Karanema Drive from Napier Road to Donnelly Street is significantly undersized. It is recommended it is duplicated with a 750mm diameter pipe.

11.4.5 Parkvale

In the Collinge Drain Catchment the existing stormwater system on Windsor Ave is sufficient for the existing catchment. Medium density development would require the possible upgrade or duplication of 68m of existing 375mm diameter pipe. As Windsor Ave is a collector road it is unlikely road conveyance of the surplus run off would be acceptable.

Grove Road currently does not have an existing stormwater system but is captured at Jellicoe Street and Windsor Ave. As Grove Road is a collector road, it is unlikely it will be acceptable for the additional run off from medium density development to be conveyed along the road. Pipe lines would need to be extended from Jellicoe Street and Windsor Ave to capture run off at a suitable location. The existing 300mm diameter pipe lines at Jellicoe Street and the Grove/Windsor Ave intersection will require upgrading or duplication to service the proposed medium density development. GIS ponding maps indicate there are historic ponding issues in each of the areas discussed above. Further investigation into this pipe network and any possible outlet constraints is recommended.

In the Windsor Drain Catchment a 73m length of 450mm diameter next to Sylvan Road will require upgrading as part of medium density development. A possible alternative to this upgrade would be to provide an overland flow path through the park.

11.4.6 Raureka

There are two distinct stormwater catchments in the Raureka area both of which ultimately discharge to the Upper Southland drain at Maraekakaho Road. The stormwater system that passes through Cobham and Bledisloe Streets is appropriately sized for both the existing catchment and medium density development.

The existing 450mm and 525mm diameter stormwater system on Maraekakaho Road from Gordon Road to the Upper Southland drain is insufficient for the existing catchment; the GIS ponding maps support this finding. Maraekakaho Road is an arterial road in which all designed movement lanes should be free from stormwater ponding. Based on this it is recommended that further investigations and upgrade of the stormwater system is undertaken to cater for both the existing catchment and medium density development.

11.4.7 Summary

The table below summarises all upgrades identified and differentiates those that are existing issues within the HDC network and those that will result from medium density development. Where the marginal cost equates to the total cost, there are no existing network deficiencies with the system. Conversely where the marginal cost is less than the total cost, there are existing network deficiencies requiring resolution. The costs assume that those pipelines that have been identified as not meeting the current level of service will be upgraded to cater for the current catchment and medium density development by the onset of medium density. This is a conservative approach and Council may decide to accept the existing compromised level of service based on road type and/or historically limited ponding issues that do not cause unacceptable nuisance.

Table 11.4-1 Stormwater Upgrades Required

Area	Issue Resulting from Medium Density Development	Estimated		
		Year Required	Total Cost	Marginal Cost
Heretaunga Street East	Willowpark Road requires pipe upsize to 600mm or duplication with 450mm	2015	\$105,000	\$25,000
	172m of 450mm pipe requires upsize to 525mm or duplication with 300mm on Heretaunga Street West	2019	\$115,000	\$115,000
	300m of 525mm pipe requires upsize to 600mm or duplication with 375mm on Heretaunga Street West	2016	\$225,000	\$225,000
Mahora	Fredrick Street East requires pipe upsize to 525mm or duplication with 300mm	2025	\$80,000	\$25,000
	Frederick Street East requires pipe upsize to 600mm or duplication with 375mm	2025	\$118,000	\$32,000
	Further investigate need to install stormwater infrastructure in Burnett Street if overland conveyance is unacceptable. Cost estimate based on extension of 300mm pipe and sumps.	2025	\$90,000	\$90,000
Havelock North	If medium density development discharges to the existing 600mm pipe no further upgrade will be required. If this is not possible, duplication with a 375mm will be required.	2015	\$225,000	\$52,000
	Required upsize should have available capacity to allow for development. Contribution of flow from proposed medium density area equates to approximately 8%	2015	\$380,000	\$30,000
	63m of 225mm pipe requires upgrading to 300mm on Te Mata Road	2015	\$46,000	\$46,000
	Duplication of existing 525mm (112m) with a 375mm pipe.	2015	\$500,000	\$80,000
	Minimal – existing capacity issue	2015	\$140,000	Nil
Parkvale	67m of 375mm pipe requires upgrading to 450mm on Windsor Ave	2028	\$61,000	\$61,000
	Need to extend stormwater infrastructure in Grove Road from Sussex Ave. Cost estimate based on 300mm pipe and sumps.	2020	\$114,000	\$66,000
	Need to extend stormwater infrastructure in Grove Road from Jellicoe Street. Cost estimate based on 300mm pipe and sumps.	2020	\$144,000	\$79,000

73m of 450mm pipe requires upgrading on Sylvan Road or provide an overland flow path with appropriate inlet and outlets within the park. Cost estimate based on duplication with 300mm diameter.	2026	\$43,000	\$43,000
Total		\$2,386,000	\$969,000
Total 2015-2020		\$1,994,000	\$865,000
Total end of 2015-2025 LTP		\$288,000	\$147,000
Beyond 2025		\$104,000	\$104,000

These rough order cost estimates have been developed based on pipe diameter, length, likely manhole and sumps required. Costs are based on duplication of the existing asset on the basis that existing stormwater asset has a medium to long-term remaining life. In some instances the worst case scenario has been assumed for upgrades to service medium density development. Further investigations and assessment will be required to confirm the appropriate works, if any, to be implemented.

The total cost of stormwater upgrades within the medium density intensification catchments is around \$2.4m and the marginal extra cost for medium density housing being around \$1m of this or an average cost over the 30 year planning period of around \$33,000. Based on the indicative timing of the medium density development however, most of the cost is incurred in the 2015-2025 ten year LTP period at an average annual total cost of \$87,000, with the bulk of the cost being recovered from development contributions. The potential development contributions effect is not expected to be significant for the current exercise (\$300 average based on 2012-2022 LTP using 2015-2022 figures from above for the Cost Competitive Work Stream analysis) and is considered to be a worst case scenario given the conservatism built into all the assumptions.

A cost estimate has also been developed on a per dwelling basis for on-site attenuation. An average medium density dwelling will require a 1000 litre storage tank, with typical installed costs expected to be approximately \$1,000 (excluding GST). However, more cost effective and efficient solutions may be achievable on a development by development basis with common areas within developments and in the street in conjunction with roading and footpath upgrades as discussed later and in the "Building Local Amenity and Openspace Chapter 10. The later would be explored through the progressive development of local area infrastructure and amenity plans to integrate all these elements to achieve multiple outcomes where possible.

11.5 Findings Water Infrastructure

A water network has been used to assess the impact of the medium density areas. Overall medium density development will cause a small pressure drop (between 2m and 7m) during peak demand periods. The Raureka medium density area is the only area to fall below HDCs minimum level of service of 30m.

HDC have already committed works to install a new bore at Frimley and construct a 300mm diameter link from Stock Road to Wall Road via Irongate Road and Maraekakaho Road. When these works are completed the pressure in the Raureka medium density zone will increase to approximately 40m which is deemed sufficient.

There is currently no pressure reduction in the Raureka area. If Council wish to proceed with pressure reduction in the Raureka area in the future further upgrades may be required. These upgrades would include renewing the existing Cast Iron and AC 100mm diameter water mains to 150mm diameter water mains.

11.6 Findings - Walking Infrastructure

11.6.1 General

A maximum 2km walking distance from residential dwellings to key destinations and is accepted as a suitable measure of walking accessibility within New Zealand. Each site has been assessed to determine whether site accessibility is achieved within a 2km walking network. In general, walking accessibility and connectivity to all of the development sites other than Raureka is excellent, but still acceptable.

In addition to the general connectivity of the sites, barriers to pedestrian movements in and around the area are also considered. These barriers can include lack of appropriate crossing opportunities, insufficient footway provision and pedestrian safety issues. For each site, specific deficiencies have been identified for future action.

11.6.2 Havelock North

Direct pedestrian links are provided to the majority of sites and crossing provisions already exist on most of the intersecting roads. In addition, access to recreational areas is generally well catered for. However, a number of minor issues are evident from site assessments as detailed in the Table below.

Table 11.6-1 Havelock North Walking Deficiencies

Location	Deficiency
Te Mata Road/Karanema Drive	Footpaths exist on all quadrants but the link from Duart Road to the crossing at the intersection is disjointed and could be improved by extending a footpath around the outside of the parking area.
Te Mata Road	There is no pedestrian crossing provision in the vicinity of the development sites across Te Mata Road. A crossing provision near Chambers Street would offer a defined connection to local bus routes and would also enhance accessibility between the development and local services such as schools and medical centres.
Campbell Street	Presently there are no footpaths provided along the northern side of Campbell Street adjacent the proposed development. Direct access for pedestrians to these properties is a necessity for medium density housing.
Middle Road	There is currently no footpath on the north-western side of Middle Road. Direct pedestrian access is a necessity for medium density housing.
Middle Road/Porter Drive	There is currently no footpath on the north-western side of Middle Road. Direct pedestrian access is a necessity for medium density housing.
Te Aute Road	The width of Te Aute Road and the provision of parking (both angled and parallel) make crossing this road very difficult at present. A pedestrian refuge island exists at the Porter Drive intersection presently but there is no other crossing facility on Te Aute Road in the vicinity of this development site. A mid-block crossing would provide access to and from the recreational areas and will provide links to educational facilities on Elliot Crescent and Mangarau Crescent.
Havelock Road	There is currently a zebra crossing facility close to the intersection with Porter Drive. However, for pedestrians travelling away from the main centre and wishing to cross Havelock Road near Karanema Drive there is no provision presently. There is a demand for some provision here to link with local dining facilities, swimming pools and educational facilities.
Karanema Drive	No footpath exists on the southern side of the road between Havelock Road and Donelly Street. This results in a disjointed network and reduces

accessibility to local retail areas, recreational areas and medical centres.

11.6.3 Heretaunga Street East

The predominant movement is expected to be along and across Heretaunga Street East. Heretaunga Street East links directly on to the recently completed Havelock Road path which provides direct access to Havelock for people willing to walk this distance. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in the table below:

Table 11.6-2 Heretaunga Street East Walking Deficiencies

Location	Deficiency
Heretaunga Street East / Norton Road	Presently no footway or crossing provision exists east of Norton Road. Pedestrians and cyclists travelling from the Norton Road area towards Havelock Road currently have to cross unaided at this intersection or travel back west to use the existing zebra facility. An additional facility east of the intersection linking to the future Havelock Road Stage 2 scheme would remove this barrier and provide an excellent link for cyclists and pedestrians travelling between Havelock and the Norton Road area.
Heretaunga Street East / Sylvan Road	Pedestrian crossing facilities across this roundabout are currently disjointed and, in one instance, require pedestrians to cross through a parking lay-by with little protection afforded from passing traffic. Given the links to leisure facilities Sylvan Road offers, improvements to this provision should be progressed.
Heretaunga Street East between Sylvan Road and Willowpark Road	No crossing facilities exist along this section at present. Given the cross links present here and the potential linkages to Queen Square afforded to residents of the proposed development, additional facilities should be provided along this section of road. At present, given the traffic volumes using this road, the lack of suitable crossing facilities is a real barrier to pedestrian movements through this area.
Heretaunga Street East / Willowpark Road	The volume and speed of traffic using this intersection creates real difficulties for pedestrians crossing here. Significant improvements to pedestrian provision here, perhaps linked to mid-block facilities from the previous item, should be progressed to ensure appropriate pedestrian connectivity is provided safely. These facilities are also appropriate on Willowpark Road.
Riverslea Road South	A pedestrian refuge is provided at the intersection of Riverslea Road/Heretaunga Street currently. However, this is narrow and does not offer safe refuge for users. In addition, the width of the remaining traffic lanes makes this intersection a barrier to pedestrian connectivity. Improved crossing facilities at this intersection should be considered.

11.6.4 Mahora

The predominant movement is expected to be along Tomoana Road, Frederick Street and Nelson Street. Facilities are well provided on these routes. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in the table below.

Table 11.6-3 Mahora Walking Deficiencies

Location	Deficiency
Tomoana Road	Just one formal crossing provision exists presently between Frederick Street and St Aubyn Street. An additional crossing located between Duke Street and Cornwall Road should be implemented also. This will provide direct links to and from Cornwall Park but will also provide a link between Cornwall Road and Duke Street for pedestrians accessing local schools etc.

11.6.5 Parkvale

Windsor Avenue links with the recently completed Havelock Road path which provides direct access to Havelock for people willing to walk this distance. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in the Table below.

Table 11.6-4 Parkvale Walking Deficiencies

Location	Deficiency
Grove Road	Presently no crossing provision exists between Sylvan Road and Windsor Avenue. This results in access to and from Windsor Park and the adjoining Splash Planet being disjointed for pedestrians. Pedestrian crossing facilities near Splash Planet access and also Sussex Street should be considered.
Sylvan Road	There are no formalised pedestrian crossing facilities between Windsor Avenue and Albert Street. This significantly reduces pedestrian accessibility from the development site on Sylvan Road to and from Windsor Park and the sports courts located here. Options exist to provide pedestrian facilities along the route including utilising the existing traffic calming blister island.
Windsor Avenue	A gap exists in pedestrian crossing provision near Haig Street. A pedestrian linkage here would facilitate access to and from the dairy located on the corner of Louie Street and would also provide a suitable route to schools located on Windsor Avenue and Howard Street.

11.6.6 Raureka

The proposed development sites are located within acceptable walking distance to Hastings CBD and to retail and commercial premises on Heretaunga Street and Maraekakaho Road. As such, it is feasible to assume that a large proportion of residents within this area will have the opportunity to walk to and from their place of work.

The predominant movement is expected to be along Gordon Road and facilities are well provided on this road and no specific deficiencies have been identified.

11.7 Findings – Cycling Infrastructure

11.7.1 General

Significant work has been completed in recent years with the urban areas of Hastings District through the i-Way programme (NZTA Model Communities) to increase and promote walking and cycling. This has resulted in significant lengths of on and off-road cycle facilities being implemented, covering wide areas of the district which can be utilised by the development sites.

Pretty much all of Havelock is accessible within the 5km limit and that the majority of Hastings CBD is similarly located within the 5km boundary. This provides excellent opportunity for residents of the development sites to commute by cycle. Although this network is extensive, some deficiencies exist in the network resulting in a lack of suitable access to some areas of the Hastings and Havelock North.

Further to the cycle network, the proposed intensification units have the opportunity to promote cycling by ensuring suitable facilities are provided within each unit. This could include dedicated cycle storage for each dwelling or communal cycle parking.

11.7.2 Havelock North

The existing cycle network serves the development sites on Napier Road and Te Mata Road well and links these locations to Hastings and beyond. This is also true for part of the development site on Havelock Road. However, some deficiencies exist in the network which does not currently serve the residential areas to the southwest of the main centre, including the proposed development sites on Te Aute Road, Porter Drive and Middle Road. All of these routes previously formed part of the i-Way cycle

network, but have not been implemented on site due to insufficient road widths or conflicts with parking demands. The following issues exist with respect to cycle access to and from the development sites.

Table 11.7-1 Havelock North Cycling Deficiencies

Location	Deficiency
Havelock Road (rural section)	At present a shared walking/cycling facility exists on the northern side of the road with an on-road cycle provision on the southern side. This provides adequate connectivity between Hastings and Havelock North. It is understood that a shared facility is also proposed on the southern side which will further enhance this connections for all users.
Havelock Road (urban section)	The existing route along Havelock Road terminates at Karanema Drive and does not extend in to the CBD or towards the south west of Havelock. This is a defined gap in the cycle network serving Havelock North and should be addressed.
Porter Drive	Cycle provision along this route currently consists of 'Share The Road' signage. This route forms an integral part of the network serving the south west of Havelock North and given the proposed intensification of development, and the traffic volumes present here a more appropriate facility should be implemented along this route.
Te Aute Road	This route is part of the original i-Way network although no measures have yet been implemented on site. Again, this road provides direct access from residential areas, including the proposed development sites, to the main Havelock Centre and on to Hastings. A cycle route should be implemented along this route.
Middle Road	Again, this route is part of the original i-Way network although no measures have yet been implemented on site. Middle Road provides direct access from residential areas, including the proposed development sites, to the main Havelock Centre and on to Hastings. A cycle route should be implemented along this route.

11.7.3 Heretaunga Street East

The existing cycle network runs directly adjacent to the development sites along Heretaunga Street and Norton Road. These cycle routes link to the wider Hastings and Havelock North area via routes along Windsor Avenue, Karamu Road and Havelock Road.

Given the relatively low traffic volumes on the remaining road frontages of the development, specific cycle provisions on these routes is not required. However, there is a gap in the network to the south of the sites through Akina. This results in no direct link with recreational facilities in this area such as Akina Park. In addition, just one link between Heretaunga Street and St Aubyn Street exists presently meaning at Windsor Avenue reduced cycle connectivity through this area. This deficiency is summarised below.

Table 11.7-2 Heretaunga Street East Cycling Deficiencies

Location	Deficiency
Riverslea Road South	Although identified on the i-Way cycle network, no route has yet been provided along this road due to road width constraints. This results in a gap in the network serving the south-west of Hastings. This link should be implemented to provide links from the development to schools and recreational facilities in this area. This should also be linked to crossing provisions on Heretaunga Street identified previously.
Riverslea Road North	Although identified on the i-Way cycle network, no route has yet been provided along this road due to road width constraints. This results in a gap in the network for residents of this area who wish to travel to St Aubyn Street or beyond. This link should be implemented to ensure residents of the new development have suitable cycle connectivity to the wider Hastings area. This should also be combined with crossing facilities identified previously.

11.7.4 Mahora

The existing cycle network runs directly adjacent to the development sites along Tomoana Road and Frederick Street. These cycle routes link to the wider Hastings area via routes along Pakowhai Road, St Aubyn Street and Karamu Road. Given the relatively low traffic volumes on the remaining road frontages of the development, specific cycle provisions on these routes is not required. The only deficiency associated to the cycle network in this area relates to the absence of cycle detectors at the signalised intersections.

Table 11.7-3 Mahora Cycling Deficiencies

Location	Deficiency
Frederick Street / Tomoana Road	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light.
Tomoana Road / St Aubyn Street	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light.
Frederick Street / Karamu Road	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light. In addition, it is not possible to provide cycle markings right to the stop line at this intersection presently due to the location of the central refuge island. This results in cyclists either joining the footway or trying to squeeze past waiting vehicles.

11.7.5 Parkvale

The existing cycle network runs directly adjacent to the development sites on Windsor Avenue and Grove Road. In addition, a shared footway/cycleway has recently been completed along Park Road which links Windsor Park to the St Aubyn Street cycle route. A shared footway/cycleway is also provided in the grass berm along the frontage of Windsor Park on both Grove Road and Windsor Avenue. These cycle routes link to the wider Hastings and Havelock North area via routes along St Aubyn Street, Karamu Road, Heretaunga Street, Havelock Road and Ada Street. No cycle deficiencies have been identified associated to this development site.

11.7.6 Raureka

The existing cycle network circles the development sites and runs along Maraekakaho Road, Southampton Street, Southland Road and Wall Road. These cycle routes form part of the i-Way network and link to the wider Hastings cycle network. Given the relatively low traffic volumes on the remaining road frontages, including Gordon Road, specific cycle provisions on these routes are not required. No cycle deficiencies have been identified associated to this development site.

11.8 Findings - Public Transport

11.8.1 General

An extensive public transport network serves the majority of Hastings and Havelock North. In general, the existing network is located in close proximity to all of the development sites. However, the site specific assessments include consideration of bus stop locations and scheduling also to determine suitability of public transport facilities.

In addition to the existing bus services, a number of future bus service routes are proposed across the district over time. These services will expand the existing network significantly and will also improve bus travel time between the main centres (through dedicated bus lanes). However, no scheduling information is presently available for these proposed routes and as such it is difficult to make too many conclusions in terms of whether these changes will close the existing gaps in the bus service.

Although bus service provision, specific to each development site has been assessed later in this report, some general issues are apparent network wide. These are summarised below including suitable

mitigation measures, which are covered in more details in other studies, but mentioned here for completeness:

Existing services, in general, are limited to daily operating. Bus services should be increased to facilitate more evening services.

Existing services, in general, are limited to weekday operating. Bus services should be increased to facilitate more weekend services.

Outside of the main centres, bus stop facilities consist mainly of a post and sign. Provision of more substantial bus stop infrastructure should be considered at locations that have potential to entice high usage (Heretaunga Street, Tomoana Road etc.).

Real time information should be investigated as bus routes expand.

11.8.2 Havelock North

The existing network fronts all of the development sites with the exception of Napier Road. However, bus stops are located within 300m of this development on Te Mata Road which is within the 400m threshold generally accepted as a maximum distance between bus stops and residential properties. The buses serving Havelock provide links to Hastings CBD and Napier (via Clive). Additional destinations can be reached by changing services at Hastings CBD or Napier.

The Havelock North sites are well served for weekday bus travel presently. This is particularly true for commuter provision given the high number of buses running during the am and pm peak periods.

Future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus will expand the existing network significantly and will also improve bus travel time between Hastings and Havelock North (through dedicated bus lanes). In short, the existing and proposed routes are appropriate to serve the development sites, but the following should be considered.

Table 11.8-1 Havelock North Public Transport Observations

Location	Deficiency
Te Mata Road	Consider provision of bus shelters in vicinity of Karanema Drive.
Havelock Road	Consider provision of bus shelters on Havelock Road, urban section.

11.8.3 Heretaunga Street East

The existing network fronts the majority of the development sites. In addition, bus stops are located within 400m of these developments. Furthermore, the pedestrian links to and from these stops are well catered for with the exception of those issues raised earlier. The buses serving this area provide direct links to Hastings CBD, Havelock and Napier. Additional destinations such as Flaxmere can be reached by changing services at Hastings CBD. Alternatively, these services can be reached directly should residents walk to Hastings Library (approximately 1-2km).

The Heretaunga Street East sites are well served for weekday bus travel presently. This is particularly true for commuter provision given the high number of buses running during the am and pm peak periods. Nonetheless, the reliance on the private car for commuting is reducing significantly due to this public transport provision. In short, the existing and proposed routes are appropriate to serve the development sites, but the following should be considered.

Table 11.8-2 Heretaunga Street East Public Transport Observations

Location	Deficiency
Heretaunga Street East	Provide bus shelter for the westbound bus service in vicinity of Park Road.

11.8.4 Mahora

The existing network fronts the development sites along Tomoana Road and Williams Street. Bus stops are located within 400m of all development sites and the pedestrian links to and from these stops are well catered for with the exception of those issues raised earlier. The buses serving this area provide direct links to Hastings CBD and additional destinations such as to Napier or Flaxmere can be reached

by changing services here. Alternatively, these services can be reached directly should residents walk to Karamu Road (approximately 1-2km)

The Mahora sites are well served for weekday bus travel presently to and from Hastings CBD. This is particularly true for commuter provision given the timing of the first and last services of the day. However, there are significant gaps in this service. The schedule is limited throughout the day and does not run of an evening or weekend. Furthermore, the latest available bus only facilitates workers who finish at or before 5pm. In short, the existing and proposed routes are appropriate to serve the development sites, but the following should be considered.

Table 11.8-3 Mahora Public Transport Observations

Location	Deficiency
Tomoana Road	Provide bus shelters at 2no. stops (one in either direction) on Tomoana Road.

11.8.5 Parkvale

The existing network fronts the majority of the development sites with the exception of parts of Grove Road and Windsor Avenue. However, bus stops are located within 400m of these developments on Grove Road and the proposed future route is expected to be operational prior to completion of the Windsor Avenue development. Furthermore, the pedestrian links to and from these stops is well catered for with the exception of those issues raised earlier. The buses serving this area provide direct links to Hastings CBD and retail areas such as Nelson Park. Additional destinations such as Havelock North and Napier can be reached by changing services at Hastings CBD. Alternatively, these services can be reached directly should residents walk to Heretaunga Street or Karamu Road (approximately 1km).

From the above information it is apparent that, although a bus service is provided in close proximity to these developments, this service is limited in terms of operational hours and destinations. The service does not accommodate commuter travel due to the route timing and no service is provided during the evenings or weekends. The limited service currently provided offers little scope for working families in this area to use public transport as their predominant transport mode choice.

The future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus will expand the existing network significantly in the vicinity of the site. It is encouraging to note that a number of these proposed services will directly front the development sites and fill the existing gaps along Grove Road and Windsor Avenue, but at present no scheduling information is available for these routes. In short, the existing and proposed routes are suitable to accommodate the demands of the development

11.8.6 Raureka

The existing network fronts the development sites along Gordon Road and all sites are within 400m of bus stop facilities. Furthermore, the pedestrian links to and from these stops is well catered for. The buses serving this area provide direct links to Hastings CBD and Hawkes Bay Hospital and additional destinations such as Napier can be reached by changing services here. Alternatively, these services can be reached directly should residents walk to Heretaunga Street (approximately 1km).

The Raureka sites are well served for weekday bus travel presently to and from Hastings CBD. This is particularly true for commuter provision given the timing of the first and last services of the day. However, there are significant gaps in this service. The schedule does not run of an evening or weekend. Furthermore, the latest available bus only facilitates workers who finish at or before 5pm.

Future additional routes within 1-5 years, 5-10 years and 10 years plus will expand the existing network significantly and will provide an additional service directly fronting the development along Gordon Road. However, no scheduling information is presently available for these proposed routes. In short, the existing and proposed routes are appropriate to serve the development sites but the following should be considered.

Table 11.8-4 Raureka Public Transport Observations

Location	Deficiency
Gordon Road	Provide bus shelter at the bus stop on Gordon Road

11.9 Findings – Vehicular Access

11.9.1 General

All development sites are located directly on, or very close to, collector and arterial roads. As such, vehicular access is well catered for. Nonetheless, access requirements and potential operational implications have been considered specific to each location later in this report. Although the Heretunga Plains Transport Study 2012 (HPTS) provides a good overview of the network operation, the model did not account for full development potential of the MDHS sites due to the timing of the model build. As such, this report has tried to estimate any additional impacts not already accounted for within the HPTS although the deficiency report has been used to aid this.

A number of the strategic freight routes run adjacent to the development sites. Although this has some implications in terms of conflict with walking and cycling, it is not expected to result in significant issues, but is more of a consideration with respect to adopting suitable road design cross sections. The assessment is therefore with regards to freight traffic and relates solely to the proposed road cross sections.

11.9.2 Havelock North

All sites within Havelock are located on predominately arterial roads and as such vehicular access is well catered for.

The increase in traffic could be significant in terms of peak hour trips and given the road network layout in Havelock North, these trips are likely to be largely accommodated on only a small number of routes. The biggest impact is expected on Te Mata Road, Porter Drive and Havelock Road given that a large proportion of the development is accessed from these routes.

From the deficiency analysis above it is shown that both Porter Drive and Havelock Road will experience congestion and delays during this period which may be exacerbated by the developments. In addition, the Transport Assessment associated to the Havelock Plan change shows operational issues at the Te Mata Road/Napier Road roundabout intersection also. The Table below details the operational issues associated to the Havelock development sites.

Table 11.9-1 Havelock North Operational Observations

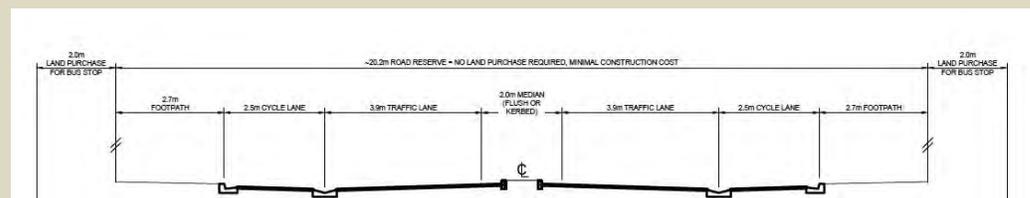
Location	Impact
Te Mata Road/Aute Road/Porter Drive	Existing roundabout experiences some delays during peak periods, particularly pm peak. The deficiency analysis contained within the HPTS confirms this intersection will experience increased delays in future years. In addition, the TA for the Havelock North plan change details significant increases in delays at this intersection following the proposed development works. As such, improvements may be required to mitigate this impact. Given the strategic nature of this route for pedestrian access through the area, any enhancements will need to consider these demands.
Havelock Road (urban)	There is a significant amount of roadside attractions along this part of Havelock Road which results in numerous turning manoeuvres from and onto the network. Roadside parking creates additional conflicts and limits opportunities for substantial cycling facilities. Limiting roadside parking, creating cycle lanes and restricting the number of access points to the proposed development sites will assist in maintaining appropriate operation along this road.
Te Mata Road/Napier Road	The deficiency analysis confirms that this intersection will experience increased delays in future years. This is supported by the Havelock Plan Change TA which confirms operational issues at this intersection in future years. Improvements to the intersection may be required to ensure adequate operation is maintained.
Havelock Road	This road is expected to accommodate the majority of traffic associated to the development sites travelling from Havelock North to Hastings. This road

(rural) accommodates significant traffic volumes currently and operates satisfactorily along its length. Although the increase in traffic associated to the developments is relatively minor, operational issues on Havelock Road could be a reality in future years. This has already been considered in the HRCMP and the mitigation measures identified within this document are being implemented by HDC in stages. This will ensure satisfactory operation of this road for the foreseeable future. The deficiency analysis shows that the volume of traffic along this road in future years will approach saturation levels (on links). This will have some impact on traffic speeds and travel times but intersection operation is shown to remain relatively unchanged.

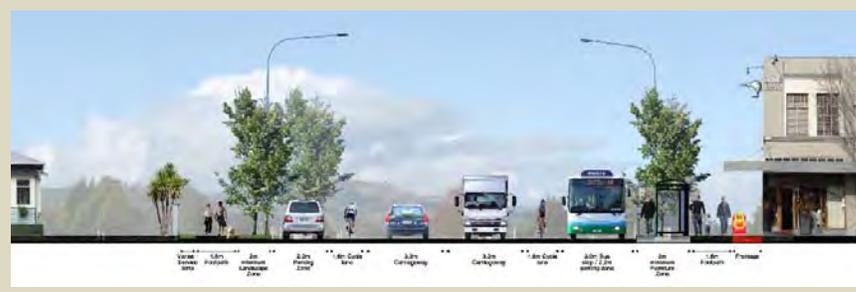
A number of the routes run adjacent to the development sites in Havelock North. These routes consist of Te Aute Road, Middle Road, Havelock Road, Porter Drive, Napier Road and Te Mata Road. Although this has no significant impact on the suitability of these sites for medium density housing, it is important to determine appropriate cross-section treatments for these roads to ensure all demands are accommodated.

Table 11.9-2 Havelock North Cross Section Observations

Location	Requirements
Middle Road	Existing layout is appropriate for this road classification provided a footpath and on road cycle lanes are implemented as identified previously.
Porter Drive (between Havelock Road and Te Aute Road)	Existing layout is sufficient other than the absence of suitable cycle facilities. Provide dedicated cycle facilities on this link.
Porter Drive (between Te Aute Road and Joll Road)	Existing layout is sufficient other than the absence of suitable cycle facilities. Provide dedicated cycle facilities on this link.
Havelock Road (urban section)	Reduce roadside parking, provide cycle provision and reduce number of right turning conflicts. HRCMP includes provision to address this through removal of parking, provision of cycle lanes and public transport facilities in addition to widened pedestrian footpaths detailed below.



Te Aute Road Provision of on road cycle lanes and reduction in angled parking should be progressed to ensure unsuitable conflicts are avoided. Appropriate solutions already identified within HDC Best Practice Design Guide.



Location	Requirements
Campbell Street (north of Duart Road)	Amendments to cross section required to facilitate roadside parking. Appropriate solutions have already been identified in HDC Best Practice Design Guide as detailed below.
	

11.9.3 Heretaunga Street East

The sites are located predominantly fronting Heretaunga Street East, a main arterial route to and from Hastings CBD. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present. However, future operational issues must also be considered with respect to the increased traffic associated to both the development sites and the wider network in general.

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification on Parkvale. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact. This is particularly true for Heretaunga Street East and adjoining intersections.

The HPTS deficiency report has been assessed to determine likely operational issues in the vicinity of this route. In addition, known local issues have been identified. The Table below summarises the potential operational issues associated to the development site at Heretaunga Street East.

Table 11.9-3 Heretaunga Street East Operational Observations

Location	Impact
Heretaunga Street East	The route deficiency analysis confirms that this route will approach saturation in future years. Significant work has been undertaken by HDC already to address this through the completion of the HRCMP. This plan aims to reduce private car usage on this route by implementing numerous strategies including Travel Demand Management options, walking and cycling enhancements and public transport infrastructure. All of these measures will minimise the impact of the proposed intensification. To further aid this, private access points will need to be minimised on to Heretaunga Street.
Heretaunga Street / Windsor Avenue	No right turns are currently permitted at this intersection. As a result, vehicles from the development sites on Windsor Avenue and Grove Road are expected to follow a cumbersome route to access areas to the southeast of Hastings CBD. This results in increased journey length
Heretaunga Street / Sylvan Road	This intersection is expected to accommodate the majority of traffic travelling from the development towards the CBD due to the provision of a roundabout intersection. This intersection can experience some delays at present which are anticipated to increase in future years. Changes to road space allocation on the approach to the roundabout may assist in improving traffic operation here.

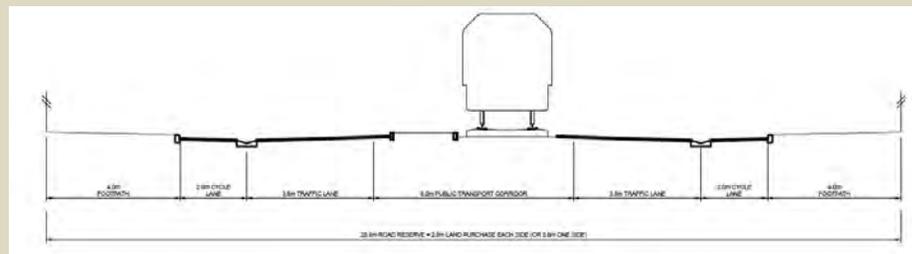
Location	Impact
Heretaunga Street / Riverslea Road	Access from Riverslea Road is currently difficult during peak periods, particularly for right turning vehicles. In addition, the deficiency analysis confirms that the section of road between Riverslea Road and Sylvan Road will experience increased delays in future years. Measures are required to improve both issues to ensure access to the proposed developments is not hindered.

The long term plan for Heretaunga Street proposes to significantly alter traffic operation along this frontage including limited access to and from the corridor (particularly for right turning traffic). As such, all new developments should be designed to minimise the amount of access taken directly from Heretaunga Street East.

Heretaunga Street and Willowpark Road form part of the freight network. and is a consideration when determining suitable measures for improving walking and cycling connectivity along the route.

Table 11.9-4 Heretaunga Street East Cross Section Observations

Location	Requirements
Heretaunga Street East	Reduce roadside parking, provide cycle provision and reduce number of right turning conflicts. HRCMP includes provision to address this through removal of parking, provision of cycle lanes and public transport facilities in addition to widened pedestrian footpaths detailed below.



11.9.4 Mahora

The sites are located predominantly fronting arterial and collector roads although a number of developments are located on local roads. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present.

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification in other areas such as Parkvale. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact. This is particularly true for Tomoana Road, Nelson Street and Frederick Street.

In addition to the HPTS deficiency report the Pakowhai Road Corridor Management Plan has also been assessed to ensure any issues are suitably mitigated. In addition, known local issues have been identified. The table below summarises the potential operational issues associated to the development site at Mahora.

Table 11.9-5 Mahora Operational Observations

Location	Impact
Frederick Street / Karamu Road	This intersection is shown to experience increased delays in future years. This is predominantly a result of the high traffic volumes present on Karamu Road. The development site is expected to contribute to any deterioration here further.

Location	Impact
Tomoana Road / Frederick Street	Minimal delays are experienced at this intersection presently and the deficiency analysis confirms that this intersection will continue to operate satisfactorily. However, the majority of traffic associated to the development will utilise this intersection and as such some deterioration in operation may be observed here.
Tomoana Road / St Aubyn Street	Some delays are experienced at this intersection presently and the deficiency analysis shows this intersection will experience increased delays in future years. Although these delays are not expected to be significant, given the level of development traffic which will utilise this intersection it is possible that operation of the intersection may deteriorate further.

None of the roads fronting the development form part of the freight network. Nonetheless, large vehicle access is maintained along these roads for deliveries and servicing and as such this does not raise any specific concerns. The existing layouts are appropriate to accommodate demands of development, or have already been developed through HDC Best Practice Design Guide.

11.9.5 Parkvale

The sites are located on predominantly residential roads which range from local status to arterial. Current connectivity for vehicular traffic is excellent to all of the development sites. However, future operational issues must also be considered with respect to the increased traffic associated to both the development sites and the wider network in general.

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification on Heretaunga Street East. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact.

The intersections in the vicinity of the development will continue to operate to a satisfactory level in future years. Any delays identified are relatively minor and relate mainly to the Grove Road/Karamu Road intersection. As this is intersection will obviously serve the site it is quite possible that traffic associated to this development will impact upon this operation further.

The route deficiency analysis highlights the high traffic volumes expected on Heretaunga Street East and Karamu Road. These routes are expected to experience some route congestion and a reduced Level of Service. The Table below summarises the potential operational issues associated to the development site at Parkvale from both the deficiency analysis and the known local issues.

Table 11.9-6 Parkvale Operational Observations

Location	Impact
Windsor Avenue / Heretaunga Street East	No right turns are currently permitted at this intersection. As a result, vehicles from the development sites on Windsor Avenue and Grove Road are expected to follow a cumbersome route to access areas to the southeast of Hastings CBD. This results in increased journey length.
Windsor Avenue/St Aubyn Street	The predominant flow at this intersection is right from St Aubyn Street on to Windsor Avenue to Havelock North and vice versa. This can result in queuing on occasions and can impact negatively upon pedestrian movements across the intersection. The road layout does not align with the predominant traffic routing here and could be better arranged to address these issues.
Sylvan Road/Heretaunga Street East	This intersection is expected to accommodate the majority of traffic travelling from the development towards the CBD due to the provision of a roundabout intersection. This intersection can experience some delays at present which are anticipated to increase in future years. Changes to road space allocation on the approach to the roundabout may assist in improving traffic operation here.

Grove Road/Karamu Road

Some minor delays are anticipated at this intersection in future years. Minor amendments to the operation of the signal phasing or changes to the lane designations may assist in improving this situation.

None of the identified freight routes run adjacent to these development sites. Nonetheless, freight access is provided along these routes for servicing and deliveries as required. It is also known that freight trucks serving local orchards currently utilise Windsor Avenue and Grove Road to access Karamu Road and SH2 from the Ada Street area. This does not raise significant concerns in relation to the proposed development sites given the relatively low usage of these routes.

11.9.6 Raureka

The sites are located predominantly fronting a collector road. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present.

The increase in traffic associated with the developments is expected to be minimal in terms of peak hour trips. The majority of this traffic will use the intersections of Gordon Road with Maraekakaho Road or Southland Road, but from the deficiency analysis, these intersections are shown to operate satisfactorily in future years with minimal delays experienced.

None of the roads fronting the development form part of this network. Nonetheless, large vehicle access is maintained along these roads for deliveries and servicing and as such this does not raise any specific concerns. Existing road frontages are appropriate to accommodate proposed developments.

11.10 Conclusions

The analysis has shown that for water and sewer services addressing existing network deficiencies in a timely way will accommodate the medium density development in the identified areas with little additional cost. Only one sewer pipe upgrade in Havelock North is required as a result of the medium density development at a marginal cost of \$22,000 when the existing service is renewed. Accordingly the medium density can be accommodated simply through factoring this consideration into the normal prioritisation programmes for these services.

Stormwater is more problematical as might be expected with increasing density. Concentrating development has a direct effect on some local stormwater networks. Existing level of service deficiencies exist within and beyond the intensification areas (the latter having yet to be fully assessed and the remedial costs identified).

Some existing deficiencies will need prioritisation within the overall service level upgrade programme, once that has been determined, to resolve existing deficiencies in time for medium density development to occur in the intensification areas. While the assessment indicates that some stormwater renewals and upgrades may need to occur earlier than otherwise planned, there is also a direct effect on pipe capacity in many cases. These pipe upsizes to provide sufficient capacity come with a marginal extra cost.

In both the Heretaunga Street East and Havelock north intensification areas however, new infrastructure will be needed to support medium density where there are no existing levels of service deficiency. These become a direct cost to these developments, which should be recovered through development contributions. The extra stormwater cost to meet the demands of intensification within the identified areas could amount to around \$1m over the HPUDS period to be recovered from development contributions.

In general, the assessments have also shown that the proposed sites are positioned in very sustainable locations and are served well by all transport modes. The vast walking, cycling and public transport network already proficient around Hastings means that the development sites have direct access to all transport modes. The proximity of the sites to local centres and sustainable transport links will ensure all residents of the new developments will have opportunity to use adopt sustainable travel choices.

The anticipated impact of the Mahora and Heretaunga Street East medium density developments on traffic operation is expected to result in some operational issues on the network. As these impacts have not been fully modelled at present, it is difficult to quantify these issues. Nonetheless, there is opportunity to address these issues through the adoption of measures already being considered by HDC through various local strategies and works programmes.

Although the assessments have confirmed the accessible nature of the sites, a number of deficiencies have been identified which should be addressed prior to completion of the developments to ensure accessibility and connectivity is maximised. Failure to do this may result in some of the sustainable transport objectives not being fully realised.

The deficiency analysis has identified a programme of suitable transportation works across all modes with a value of approximately \$6.0M. However, not all of this is attributable to the proposed intensification and the majority will provide benefit to the larger population and would most likely be required regardless of the proposed intensification. As such, the contribution required from the proposed developments has been determined by attributing a percentage requirement to each cost. The result is a development contribution requirement of \$464,250 which can be split for each area as follows:

Havelock North - \$124,000

Heretaunga Street East - \$228,250

Parkvale - \$40,500

Mahora - \$71,500

Raureka - \$0

Within the next LTP period of 2015-2025 however, this would require a commitment of \$219,750 over the ten year period and factored into the development contributions policy.

While there are some costs associated with intensification in identified areas, if Council is to achieve its strategic objective of protecting versatile, upgrades to service areas where medium density is encouraged should be afforded a high level of priority. In addition, concentrating intensification in a few areas, rather than dispersed infill may reduce pressure and priority to undertake infrastructure upgrades within other parts of the network, although these are more difficult to quantify.

It should also be recognised that the medium density programmed date however, is a highly indicative commencement date only with the actual capacity trigger date being determined by the market as growth occurs. If the intensification occurs at a slower rate some work can be delayed. If these triggers are being met as planned for, then that indicates the HPUDs strategy and this current work to stimulate medium density development is proving successful. This means less land is being lost to production and the likely greater servicing (capital and operational) costs of expanding beyond the planned greenfields growth areas are avoided in the future.

It is therefore recommended that at each LTP, all of these works be considered specifically for prioritisation depending upon medium density uptake, after consulting with the development community over their forward development intentions so the works are not committed too early. This should include canvassing local developers on their intention for medium density development, ideally annually, but not less than three yearly (to tie into the LTP process), as currently occurs for greenfields development to optimise the timing of the infrastructure provision.

Recommendations

Hastings District Council should:

- 1) *Ensure provision is made for medium density housing in the intensification areas when undertaking works between now and 2015.*
- 2) *Undertake the further investigations identified in this report to better inform the 2015-2025 Long Term Plan and to optimise the investment required.*
- 3) *Prioritise and make provision for the works identified in this report in the 2015-2025 Long Term Plan.*
- 4) *Advocate for the planning for and prioritisation of public transport services provided by the Hawke's Bay Regional Council that support medium density intensification areas.*
- 5) *Make appropriate allowance for the recovery of the marginal costs for the works through the Development Contributions Policy and the Policy for Calculating Growth Components for Development Contributions on Capital Works Projects adopted by the Key Growth Project Review Board.*
- 6) *At each LTP and AP survey the development community on it their forward intentions for medium density to optimise the timing of infrastructure works.*
- 7) *Prepare Local Area Amenity and Infrastructure Plans (LAPs) to integrate above and below ground infrastructure and recommendations from the Openspace and Amenity Work Stream.*
- 8) *LAPs should be published in a user friendly manner so that host communities can see some of the benefit of hosting medium density development.*

12 Cost Competitive Development

The following section of this strategy explores:

- The decision making processes involved in housing development and purchasing;
- The housing market within the Hastings District;
- The implications of the existing Development Contributions Policy; and
- The implications of reviewing the Development Contributions Policy in the context of addressing the inequality of how greenfield and infill housing are provided for.

12.1 Key Factors Influencing Housing Choice

Research undertaken in New Zealand exploring the motivations behind housing choices noted a number of factors that influence housing choice. The most obvious and influential being cost. Generally, Council's have little control over cost, their influence generally being limited to land price (through scarcity or lack of it) zoning management, and its own charges for infrastructure through development contributions. However cost is not the only factor in housing decisions as people will also consider value for money in terms of their own lifestyle and life stage preferences. In terms of influencing a change in preferences away from greenfields land to medium density development, cost competitiveness should not be considered in isolation from value for money factors.

Cost, especially relative cost, is something that Council's have little control over their influence being limited mainly to land price (through scarcity or lack of it) through zoning, and its own charges for infrastructure through development contributions. In terms of value for money however, the Council can have a role to play, particularly in terms of location of medium density housing, design quality and neighbourhood amenity as discussed elsewhere in this strategy and as discussed below. In terms of the decision making process, research found that there are other factors that are considered and 'traded-off' within a price envelope (i.e. an upper spend limit). People may have some ability to pay more for something they really want (and they do) but the range from which they can choose is usually limited. Excluding the price envelope, the following provides a discussion of the key factors influencing peoples housing choices.

12.1.1 Limited Geographical Boundaries

When they move most people like to remain within an easy (e.g. 30 minute) drive of their family, friends and other networks. People living in more intensive developments (e.g. medium density housing) tend to search within a clearly defined geographic area. For many the key is proximity to work and to social precincts.

For younger people the key networks may be based on friends rather than family. Consequently, any preference for the home neighbourhood gives way to preference for a more central location. This reflects a particular transitional phase, to independence, qualification, and careers. It is also associated with the expansion of non-family relationships.

12.1.2 Style of Development

The style of house is a major factor in the decision. Within each housing style (e.g. traditional, medium density housing, apartments) there are possible variations in size, modernity, design, and quality, which can influence the extent to which they may substitute for one another, although there may not be a lot of variation within targeted search areas.

For example, the choice in inner suburbs might be between older villas and bungalows, often poorly positioned for sun and cold, or a new modern townhouse or apartment.

Where people are moving into medium density housing, they are often prompted by a change in household structure (e.g., kids leaving home, a new relationship, or a relationship ending) and a desire for less maintenance work on traditional older houses and gardens. Appearance of the medium density housing is important, both for what it conveys about the residents themselves and for aesthetic reasons.

12.1.3 The Setting

The selection of the dwelling type is made in conjunction with the street or setting for the dwelling. Most importantly, people look for the following attributes:

- Tidy area;
- Safe (from crime and dangerous traffic);
- Quiet;
- Private.

For families with young children this means safe areas to play, ride bikes, kick a ball, or use a skateboard, with the age of children affecting the definition of safety. For younger children, the play area must be visible from the home and protected from entry by strangers. For families with older children, a quiet street near home or a local park may constitute a safe area. For adults it means somewhere safe to walk or cycle around for exercise. This can be influenced by both lighting for night use and how busy the area is.

The quality of locality for suburban development relates to the security of the investment in the property purchased as well as to the inferred personal comfort with the locality. It has to be a “good area”. A trade off may be made between the quality of the house and the quality of the locality as a place to invest, i.e. “good house-bad street” compared with “bad house-good street” (and the shades of grey in between).

The physical security of the building is also important. This is especially so for inner suburb apartments, which may be closer proximity to high crime areas than their suburban equivalents. Location on a busy, well lit street contributes to a sense of safety, while internally things need to look tidy.

Complicating the trade-off between structure and setting may be the form of ownership e.g. a body corporate (unit title) situation or a traditional freehold. A unit title may be viewed as a benefit where shared spaces are valued by the purchaser and where the body corporate is seen as an assurance that the property is well maintained. Others may see the fees and the rules as a negative.

12.1.4 Accessibility

The nature and range of facilities within easy reach and the accessibility of services and facilities will enter the trade-off. These include shops, food outlets schools, banks, and public transport facilities among others. For car dependent households they may be less important criteria than for those for whom the capacity to walk to services is important. For the latter, the range of services in the local environment could be a determining factor in choice.

12.2 The Importance of Housing Choice

How trade-offs in the above factors are made will reflect the values placed on the different attributes by different households. The particular distribution of household types across trade-offs is not obvious given the potential variations of attributes and the ways in which they might be combined in trade-offs, and evidence of considerable diversity in them. The difference between apartment dwellers and others is perhaps the most pronounced. Apartments (particularly small apartments) close to city or central suburbs probably have the clearest demographic target in young professionals, singles, and couples with their preferences for accessibility and their low commitment to particular place or style of housing.

The remainder of the housing stock, including medium density housing has proven to be highly flexible, appealing to a wide range of groups and making it difficult to identify specific target demographics. This is no bad thing because most people want to live in a varied community with different age groups. Conflicts do however arise; for example between people seeking quiet (e.g. retired) and families with young children who want space to ride their bikes and don't respect property boundaries. Yet lifestyle conflicts within developments do not stop a diverse range of household types from occupying apartments close to the CBD (or in greenfield developments), although their reasons for being here may be quite different.

It is considered that the most appropriate response to the complexity of trade-offs is to ensure reasonable flexibility in housing typology, design and functionality regardless of setting. Or in other words, provide for housing choice. As well as ensuring all aspects of the housing market are provided for, this approach also provides significant socio-economic benefits (see socially integrated development Chapter 14 of this report). Given sufficient flexibility, housing stock can appeal to a wide range of people, and cannot be identified exclusively with any particular demographic, cultural or social group. This supports social variety in medium density housing communities, which most people suggest they want. Flexibility in medium density housing design and presentation (see responsive and effective regulation Chapter 9 of this report) also reduces risk to developers and investors.

12.3 Interests of Housing Stakeholders

In addition to the above, it is also of value to give consideration to the decision making processes that the wider stakeholders (i.e. not just house purchasers) in both housing development and purchasing go through.

There are a number of stakeholders associated with medium density housing and housing in general (e.g. Council, developers, house buying public). As discussed at length in this Strategy, there are also a number of consistent perceptions that these stakeholders have with regards to medium density housing.

Whilst there is general alignment in terms of their perceptions, it is worth noting that (regardless of perceptions) the *interests* (or drivers for their involvement in medium density housing or housing) of the various stakeholder groups may not always align.

Where this is the case, it is common for there to be a process of 'trading-off' of these interests. Dependant on the stage of the housing development or purchasing process, these trade-offs may not necessarily be perceptible to other stakeholders, whereas they are hugely influential in the process. For example, the developer may opt for lower quality design of development to ensure lower cost taking that potential trade-off option away from a prospective purchaser or vice versa. This then leads to the prospective purchaser trading off between that 'lower quality' property versus another property in the market and vice versa

The following table demonstrates what the interests of key stakeholders in the housing development and purchasing process are considered likely to be.

Table 12.3-1: Interests of Medium Density Housing Stakeholders

Stakeholder	Urban design principles	Economies of scale	Avoid co- location	Outdoor green space	Flexible development patterns	Adequate parking	Privacy, space and security	Maintenance plan/ manager	Quality construction and design	Infrastructure services	More council control of design	Location near amenities
Residents			X	X		X	X	X	X		X	X
Developers	X	X	X									
Architects / Designers				X	X				X	X		X
Body Corporates						X	X	X	X			
Offsite Owners				X	X				X			X
Neighbours				X	X	X				X	X	
Retailers				X	X		X					
Council	X				X	X					X	

Table 12.3.1 above demonstrates that the interests of various parties involved may not always be compatible. In these circumstances, trade-offs are then required to reconcile differences. The following table demonstrates some of the conflicts that lead to the requirement for trade-offs in the drivers for medium density housing.

Table 12.3-2: Contrasting Interests

Requirement A	Requirement B
<ul style="list-style-type: none"> To provide a range of good quality housing at affordable levels. 	<ul style="list-style-type: none"> Profitability for the developer.
<ul style="list-style-type: none"> Flexibility for the developer in design. 	<ul style="list-style-type: none"> Ensuring certainty for neighbours and new residents.
<ul style="list-style-type: none"> Sufficient outdoor open space and maximising the use of internal space 	<ul style="list-style-type: none"> Minimising off-site impacts such as parking and traffic generation.
<ul style="list-style-type: none"> Transparency about what constitutes private and public space 	<ul style="list-style-type: none"> Recognition of where the trade-offs have occurred.

The above trade-offs are driven by the desires of various stakeholders to pursue and maximise their own interests. As noted above, the problem is that frequently these interests do not coincide. Often they cannot because of the iterative nature of the decision making processes, as the development of an area progresses from a concept to a built reality. As this progression takes place, new parties with new interests become involved and there is increasingly more at stake for everybody concerned. This trading off of interests can perpetuate the risk adverse approach to the housing market by stakeholders and can this inhibit the successful development and uptake of less traditional housing types (e.g. medium density housing).

12.4 The Residential Market in Hastings and the Potential Level of Demand for Medium Density Housing

As part of the development of the Hastings Urban Development Strategy, 1999 (HUDS) a survey of people who had bought or built a new home in the Hawkes Bay over the previous two years was undertaken. The questionnaire included questions relating to household size, property values, reasons for choosing to live in a particular area and household preferences by housing type and locality. Key findings to emerge were:

- Amongst respondents, the major reason for choosing to live in Hawke's Bay appear to be employment related, and to a lesser extent due to a long association with the area and appreciation of the quality of life and climate.
- The majority of respondents live (65%) in houses of less than \$150,000 value, hence the housing market is most active in the mid-price sector.
- Professionals and skilled people have the highest rate of home ownership.
- The most important factor amongst respondents for choosing their current home appears to have been a desire to move to a particular suburb or area and to improve on the quality and location of their previous dwelling.
- The desire to own a newly built home did not appear to be an important factor in their choice of home. This may however have been reflective of the scarcity of new dwellings on the market.
- The level of choice of properties within all price or market sectors was considered to be very limited.
- Within Hastings, access to facilities parks and schools is generally considered to be good.

In addition to the above, a survey of Real Estate agencies and developers was also undertaken. Key findings of this research found that:

- Very few clients were looking to purchase properties over the \$200,000 price range.
- Properties identified as being in high demand were “well maintained” and “low maintenance” properties.
- An areas reputation was the biggest factor in making an area unpopular, in particular social problems and crime.
- There was seen to be a need for more and more varied sections to be available in the market however the strongest demand was for rural-residential blocks located close to town.

The HUDS was revisited in 2005 and the following observations (in relation to residential markets) were made:

- Value for money, section size and house condition along with potential for market gain are considered important factors in the purchase of a new property.
- A safe community, good schools and an area ‘on the up’ are important factors in making an area attractive.
- Respondents considered that the housing market was constrained by a lack of choice.
- New home-buyers felt that prices were currently too high and this is making it difficult for first home buyers to enter the market.
- There was overall agreement that sections are getting smaller due to increasing subdivision development and infill housing.

The above referenced research provides a good indication of housing trends and preferences within Hastings⁶. In summary, it is considered that the research suggests that:

- There is a lack of housing choice and affordability within Hastings;
- Within Hastings, access to schools, facilities and parks is generally good; and
- There is a preference for low maintenance housing.

These conclusions would suggest a market for medium density housing exists in Hastings.

However, the 2005 HUDS interim review also identified that the continuing trend for greenfield residential development that sat above the HUDS parameters prevailed. ‘Greenfield development has accounted for around 45% of all residential development over the review period’.

Figure 12.4-1 below illustrates the geospatial locations of residential building consents over the past 15 years. These show a clear penchant within the residential market for decentralised greenfield development sites. Over the past 6 years since the 2005 HUDS review, greenfield development continued to grow at a rate inconsistent with the targets of HPUDS. In addition, it is considered that, without some form of intervention it is unlikely that HPUDS targets will be achieved.

Revised parameters set an infill target of 15% due to existing capacity. Stage 1 of this MDH Strategy illustrated that there exists more than enough capacity (potentially viable supply) and also potential market demand to fulfil this and longer term targets set out in the Stage 1 report.

⁶ It should be noted that the research was undertaken in 1999 and 2005 as such caution should be taken in interpretation of its findings.

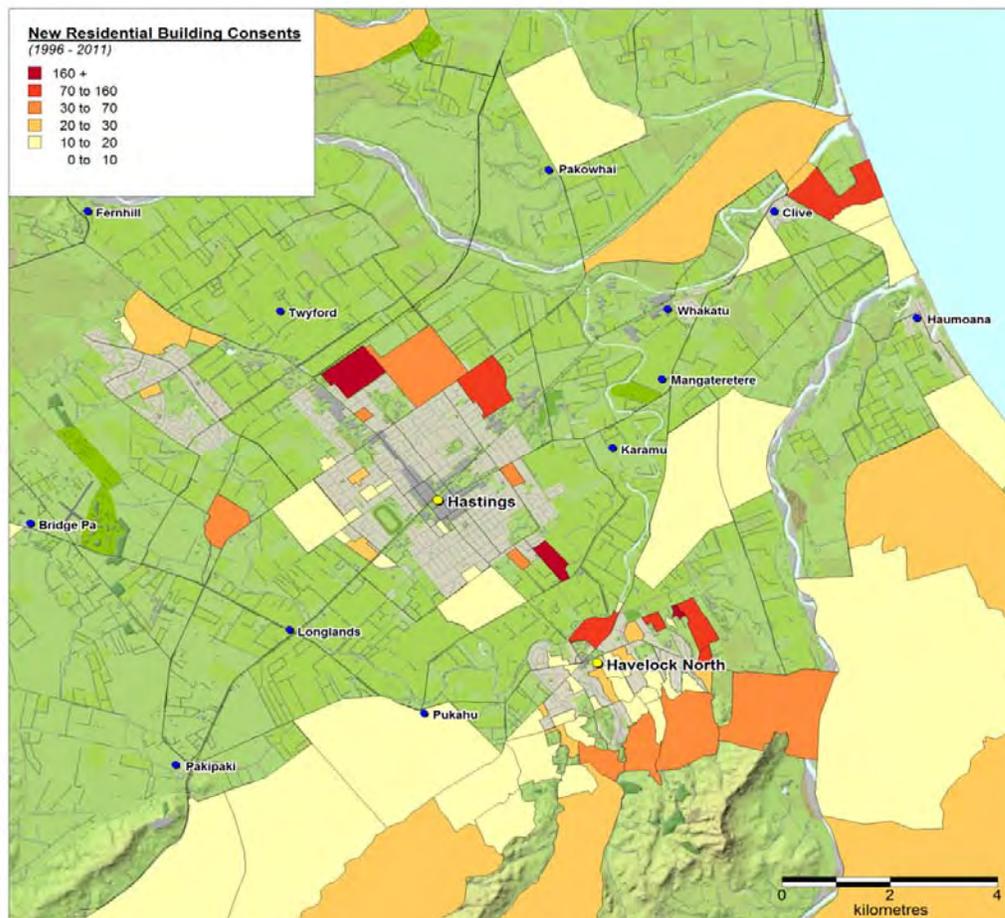


Figure 12.4-1: Residential Building Consents Distribution (1996 – 2011)

The inherent difficulties in reaching these targets in Hastings are on both the supply and demand side. Given the current Hastings District Plan potential development of infill housing represents greater levels of risk that are not recognized in any alleviating way within the Plan itself. For all intents and purposes (in terms of the market) greenfield development is treated in a similar manner with significantly less market risk, costs and therefore larger profit margins. See Chapter 13 of this Strategy for further details.

As discussed in Chapter 12 and further below, it is considered that greenfield development is currently subsidized by infill development and therefore enjoys an inequitable competitive advantage over infill development. In terms of demand, infill areas do not currently exhibit levels of residential intensity that create amenities and other factors that would encourage residents to locate here.

It is considered that, without clear signals to the market (i.e. Council leadership and intervention) the targets of HPUDS are unlikely to occur within the target timeframes.

12.5 Analysis of HDC Development Contributions Policy

It is considered that there is some validity in advocating for Council intervention (i.e. review of development contributions policy) in order to make the development of medium density housing a more attractive proposition (to a developer) than it currently is in Hastings. Chapter 12 of this Strategy explores options for Council intervention within the housing market to facilitate the achievement of HPUDS targets. As recommended in Chapter 12 HDC undertook a desktop analysis that simulated a change in policy based on the current 2012-2022 LTP and DC model, by creating a greenfields catchment and an Infill catchment to apportion growth projects and capital cost where they lay. The following provides a discussion of the analysis undertaken, conclusions reached and recommendations.

12.5.1 Objective of Analysis

The objective of the analysis was:

- To provide a rough estimate of the likely differential of development contributions payable on greenfield, infill and medium density intensification areas; and to subsequently
- Provide an indication of whether a full review of the Council's development contributions model to create separate catchments for greenfields areas, infill development and medium density housing intensification areas (i.e. is the differential sufficient to warrant undertaking this substantial piece of work) was required.

12.5.2 Analysis Methodology

The method adopted for the analysis was to simulate a change in policy based on the current 2012-2022 LTP and DC model, by creating a greenfields catchment and an Infill catchment to apportion growth projects and capital cost where they lie.

12.5.3 Step 1 Capital and Interest Calculations

This step required the extraction of the current development contributions schedule showing the specific projects and capital cost apportionments to growth (thus excluding service level backlog and service level enhancements) for the 2012 – 2022 Long Term Plan. This identified the capital cost, timing of the development and estimated capacity utilization (as a proxy for the timeframe over which contributions for that project are collected).

Only those projects relevant to the existing single urban catchment have been included. Cost relating to ring fenced Industrial development areas such as Irongate and Omaha Road have been excluded as they are funded from within their own catchments, except when a broader community contribution has been specifically identified.

12.5.4 Step 2 Apportionment to Greenfields and Infill

The capital cost of each project was then apportioned by the respective Asset Managers to Greenfields and Infill development drivers to derive the cost apportionment. Base projects (those required to meet growth irrespective of location) e.g. Sports fields or Water Supply Reservoirs) were also identified. The exercise at this point only separated out greenfields generally from infill, not greenfields area by greenfields area (i.e. greenfields generally is treated as one catchment)⁷.

Interest costs needed to be added. To undertake this, rather than providing a separate calculation for each project a selection of projects was extracted and the finance and holding costs calculated. This included finance credits on projects starting later where contributions have been collected in anticipation, and for past projects already constructed where some contributions have already been received.

⁷ It is recommended that, whether further division of greenfields areas is warranted be further investigated if a Development Contributions Review is undertaken.

Estimates for each project were identified as percentage of its capital cost (including interest) taking into account:

- Construction date, i.e. already constructed, earlier or later start projects to account for contributions already paid or collected in advance of the loan.
- Capacity Utilisation date as a proxy for loan period i.e longer loans equal higher interest

From the selection a range of interest cost factors have been applied:

- 20% Later projects with shorter capacity utilisation
- 25-30% Early projects with shorter capacity utilisation periods or later projects with longer capacity utilisation periods.
- 40% Early projects with longer capacity utilisation periods

On the above basis, interest was then added. It should be noted that, should the HDC approach to Development Contribution's change (e.g. through the recommendations of this strategy) then past projects already constructed (i.e. pre 2012) for which Development Contributions have been collected on a single catchment basis may need to be continued to be collected on this basis for legal or possible policy reasons. If so they will need to be treated in the same manner as Base projects. The effect of this is tested by repeating the exercise by separating past and future projects and re-calculating on the same basis. At this point, there is now a total Development Contribution calculated to be recovered from Intensification and Greenfields development and the base to be apportioned back to infill and greenfields development.

12.5.5 Step 3 Reducing Cost to Development Contribution per Household Unit Equivalent

Before apportioning the costs back to the residential Development Contribution, non-residential Household Unit Equivalent contributions need to be removed. For reserves the current model allocates 10% of the cost to rural development. Industrial and Service Development does not contribute to reserves or other community services. Industrial and Service Household Unit Equivalents apply to the hard infrastructure but rural Household Unit Equivalents do not.

In both cases it is assumed that moving from a single catchment to a disaggregated catchment will affect a policy change whereby Non-residential Household Unit Equivalents will only be collected on base projects, not those specifically constructed for intensification or greenfields developments. The effect of this is:

- To increase the residential component to be apportioned; and
- A reduction in the rural and Industrial and Commercial Household Unit Equivalents.

The average residential Household Unit Equivalent will increase, but for this exercise the differential between greenfields and intensification is the issue and this should be constant if such a policy change is not made. The effect of this "discounting" is discussed in 1.5.7.

Rather than a separate Household Unit Equivalent growth calculation for each project, the Household Unit Equivalents for each service for the period of the LTP (or approximating this from the Household Unit Equivalent) census based tables have been used in the first instance to apportion the costs. This will over-estimate the Household Unit Equivalent as Household Unit Equivalents still continue to be collected on projects after then, however the in the summary results the apportioned Development Contribution is factored back to the current residential Development Contribution to take account for this and any inaccuracy in the interest estimate at the aggregated level. As the distribution of greenfields and intensification is projected to change over time as sensitivity test was undertaken by repeating the exercise for projected HUE's to 2031 and 2051. The 2031 series most approximates the current DC so this used for the remaining sensitivity tests discussed next.

12.5.6 Step 4 Medium Density Intensification Areas

This exercise tested whether a further separation between infill generally and medium density intensification area would produce a result worth investigation. Those costs associated with the Medium Density intensification areas for the LTP period have been identified and added to the total costs within each of the service areas for the 2031 HUE series.

12.5.7 Discounting Effect

This exercise assumed that the level of non-residential contribution remains the same (i.e. not discounted to reflect the new approach). This was done for the 2013 HUE series and is shown to have a minimal effect on the greenfield/Intensification DC as was expected, although naturally the actual DCs would be somewhat lower.

12.5.8 Analysis Results

The following tables provide the results from the process described above. The first table is the first round test with past projects in and out of the base for each of three tested Household Unit Equivalent periods. These are GST inclusive figures. As an extra conservative measure the figures have again been factored against the current GST inclusive Development Contribution. The 2031 Zero discount results are included for completeness. The analysis went one step further to see if there could be a case for further separating out the medium density intensification areas from the general infill. A number of different time period assumptions were modelled and a scenario where recovery for past project cost were spread under the existing (In Base) or a possible new policy approach (Not in Base). The assessment supported the intrinsic view that greenfield development did indeed place higher costs for infrastructure on the rest of the community. In an undifferentiated market these costs would be unfairly borne by other forms of residential development (infill) thus skewing demand and supply.

Table 12.5-1: Development Contribution Analysis Base Results

Base Results	Infill	Greenfields	Differential	Average	Differential Base/Not Base	18,904	Infill	Greenfields	Differential
2021 in base	14,005	28,457	14,451	21,231		0.89	12,470	25,337	12,867
Not in Base	14,366	34,876	20,510	24,610	6,059	0.77	11,035	26,790	15,755
2031 in base	13,975	28,237	14,261	20,870		0.91	12,659	25,577	12,918
Not in Base	13,681	34,323	20,643	23,636	6,382	0.80	10,942	27,452	16,510
2051 in base	14,368	29,783	15,415	21,589		0.88	12,581	26,079	13,498
Not in Base	15,249	38,109	22,860	25,934	7,445	0.73	11,115	27,778	16,663
Average	14,274	32,297	18,023	22,978		0.82	11,800	26,502	14,702
In Base			14,709						13,094
Not in base			21,338						16,309
Diff			6,628						3,215
Zero Discount In base	12,192	25,623	13,431	18,904		1.00			
Not in base	9,418	28,430	19,012	18,904		1.00			

(Note: the last three columns of the table above factor the results to the current GST Household Unit Equivalent incl. GST).

The table below presents the results of the test separating out the medium Density Intensification Areas (IA's) for the 2031 Household Unit Equivalent period. The results here are highly influenced by whether past infill projects are in the base and the allocation of these to the MDH IA's.

Table 12.5-2: Development Contribution Analysis Separating Out Intensification Areas

MDH IAs Test	Factor	Infill	MDH IAs	Greenfields	Diff Greenfields Infill	Diff Greenfields MDH IAs	Diff Infill MDH IAs
2031 in base	0.91	12,659		25,577	12,918		
Not in Base	0.80	10,942		27,452	16,510		
2031 in base	0.89	12,982	13,349	25,063	12,081	11,714	-367
Not in Base	0.78	16,794	5,787	26,939	10,145	21,152	11,007

The resulting assessment undertook two development scenarios with and without “past projects” (which have not yet been fully recovered from contributions) being apportioned under the proposed policy shift, or spread evenly over all development as is the the case under the current policy. The differential was found to be approximately \$13,000 and \$16,500 per site respectively, with greenfields rates rising from around \$19,000 per site to \$25-\$27,000 per site. Where Medium Density Intensification Areas were further split out the differential was in the order of a further \$10,000 if past projects were not included in the base infrastructure costs (i.e. not spread evenly as per the current policy) mainly at the expense of the remaining infill, but insignificant if they were.

12.5.9 Analysis Validation

Property Economics (Appendix D) have undertaken a review (July 2013) of the analysis undertaken by the HDC and found that:

It is both appropriate in its approach and valid in its findings. Some potential limitations include:

- *The marginality of the differentials. That is the fact that the less Greenfield development there is in total (given HPUDS direction) the higher the marginal cost of its development essentially increasing the differential⁸.*
- *Currently different areas are not distinguished therefore priority costing areas cannot be established.*

The assessment supported the intrinsic view that Greenfield development, while providing increased housing choice, did indeed place higher costs for infrastructure on the community. In an undifferentiated market these costs would be unfairly borne by other forms of residential development thus skewing demand and supply.

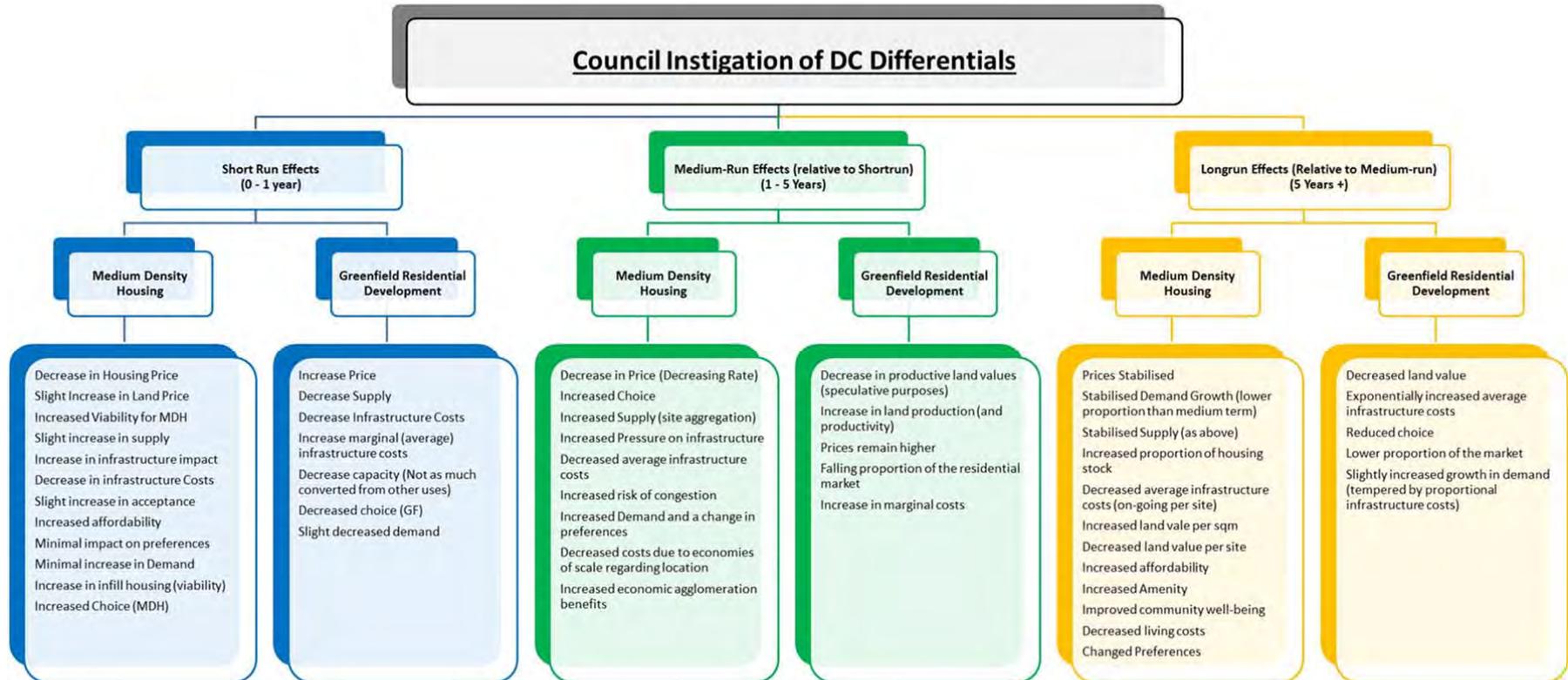
12.5.10 Potential Market Responses to Development Contribution Differentials

It is clear from the above that there is some validity in advocating for Council intervention (i.e. review of development contributions policy) in order to make the development of medium density housing a more attractive proposition (to a developer) than it currently is in Hastings. However, it is considered pertinent to have an understanding of how such a change is likely to influence the housing market in Hastings prior to recommending such action.

The following table provides details of likely short, medium and long term effects on both medium density housing and greenfield development of instigating a review of the HDC development contributions policy (in line with the analysis above).

⁸ Although this is at least partly reflected in the difference in the differential between the 2021 and 2051 HUE scenarios in table 12-5-1 above, the latter reflecting the HPUDS targets of a reducing proportion of greenfields housing development.

Figure 12.5-1: Likely Effects on the Housing Market Caused By a Review of Development Contribution Policy



The above table illustrates the following market reactions:

- The relative change in price for medium density housing and Greenfield development is likely to have an immediate impact on prices and viability for both forms of development.
- This change will have a small short-term impact as the market adjusts the existing development stock and undertakes an evaluation of the markets potential (i.e. it empirically weighs up the risk in the two markets).
- It is the medium term that the real change occurs. The market for Greenfield development has not yet had sufficient time to 'crowd out' the price differential and so demand and supply for medium density housing are driven by price. This in turn will have an increasing effect on preferences.
- Longer term the price differential is likely to be 'crowded out' as Greenfield sites become cheaper prior to development contributions to offset the increase. However the level of environmental change is likely to be sufficient after 10 years to have shifted preferences proportionately towards medium density housing. This occurs as the benefits of medium density housing become more evident to the market given the increased market size.
- Ultimately there is a greater level of efficiency and equity as infrastructure costs are appropriately distributed and are essentially borne through Greenfield profit reductions.

In terms of the quantum of affect, currently the average cost for a site of less than 400m² is \$120,000. The overall impact on price of a \$20,000 differential (as a result of an amended development contribution policy) is likely to be in the order of 5%. This does not factor for the influence of raising the price of alternative (greenfield) housing. Given the current price bands and demand levels that exist in Hastings the price differential alone is likely to shift up to 4% of the market towards medium density housing. Coupled with the existing market propensity for this product type, the change alone has the potential to move over 1,400 households into medium density housing by 2045. This coupled with the sustainable change in the environment through this critical mass generation should be sufficient to meet (HPUDS) targets of over 2,000 households.

12.5.11 Conclusion

Within the current Hastings housing market, there is a clear propensity for Greenfield housing in favour of medium density housing or intensification. The market currently views Greenfield housing as a far less risky proposition than medium density housing and, whilst Greenfield housing clearly has greater external costs, this is in no way reflected within the legislative framework.

Without clear signals to the market, it is considered likely that the targets of HPUDS are unlikely to be reached within the specified timeframes.

Based on the results of the analysis of the HDC approach to development contributions and taking into account the findings of Property Economics, it is clear that the current development contributions approach:

- Constitutes an uneven distribution (between intensification and greenfield) of infrastructure costs in favour of greenfield development; and
- Inhibits the development of medium density housing by inhibiting profit margins.

As noted above, it is anticipated that a change to the development contributions policy in line with what has been discussed above is justified but will have a short term impact on the housing market as the market adjusts (e.g. minimal impact on preference for medium density housing coupled with a greater negative effect on greenfield options), however in the medium and long term it is anticipated that the change will result in:

- A proportional shift in housing preferences towards medium density housing;
- Positive environmental benefits as the growth of the urban footprint is slowed; and
- A greater level of efficiency and equity of infrastructure costs.

As such, it is recommended that Hastings District Council undertake a review of its current development contributions policy with a view to "evening the playing field" between greenfield and brownfield development whereby the costs of servicing greenfields areas and intensification/infill areas are charged

where they fall, rather than the single averaged catchment approach currently employed. A particular focus for the review will be on the legality and fairness considerations of including past project costs in the policy shift.

Recommendations

Hastings District Council should:

- 1) *Undertake a review of the current development contributions policy in accordance with the analysis and recommendations of this strategy and amend the development contributions policy as necessary to ensure the distribution of costs of greenfield development (both local and external) are fairly distributed.*
- 2) *Revise the current approach to development contributions to identify other options for potentially:*
 - a. *Reducing the contribution required for medium density housing; and/or*
 - b. *Enabling the delay of payment until such time as the developer has acquired financial return for investment in medium density housing.*

13 Managing Greenfield Land Supply

New Zealand's urban areas are the focus for investment, growth, and development. Over 85% of the New Zealand population now live in urban areas which in turn provide the focus for most of our community and social infrastructure, including our homes, shops, leisure, cultural facilities, and places of work.

Finding space to create new homes, accommodate economic growth and build the infrastructure needed to serve them whilst maintaining a high quality of life and an attractive environment is a significant challenge.

As noted elsewhere in this Strategy, the preferred HPUDS growth scenario is for compact (medium density housing) development within existing boundaries in a manner that does not reduce residential housing options but provides a range of housing options at appropriate levels. This approach recognises that some residential options generate much greater costs that are often borne by the community as a whole. Often, the argument relating to infill residential development over greenfield development is one of efficiency.

Whilst the majority of this Strategy relates to intensification, it is worth giving consideration to the need to manage greenfield land supply.

This section of the Strategy:

- Explores the issues associated with uncontrolled greenfield development;
- Identifies approaches to managing greenfield development;
- Considers the current Hastings situation regarding greenfield development;
- Provides recommendations for future monitoring of the Hastings situation;
- Considers the relationship between greenfield land supply and house prices.

13.1 Issues Associated with Uncontrolled Greenfield Development

Unplanned and poorly planned greenfield development can lead to what is known as urban sprawl. Urban sprawl is generally defined as the increased development of land in suburban and rural areas outside of their respective urban centres. Urban sprawl constitutes an inefficient use of resources and often leads to urban places that are underutilised and unattractive for residents and businesses alike.

As noted above HPUDS targets are unlikely to be met without Council leadership, planning, investment in infrastructure and amenity, education/demonstration and intervention (adjusted development contributions and managing greenfields land supply) to improve medium density value for money and cost competitiveness respectively.

Justification for intervention in the location and type of residential development is based around the costs of allowing dispersed activity (which can result in urban sprawl) which are significant and are generally not considered by the market.

13.1.1 Costs and Benefits of Greenfield Housing

Despite the above, cheaper land prices and a preference for new, detached housing, significantly contributes towards increasing demand for greenfield housing. If inappropriately managed, this demand for greenfield housing can result in urban sprawl.

In opting for greenfield housing options, buyers often accept a higher cost of transport, typically being longer travel time in the car to work and, to a lesser extent, access to schools and shops. In addition to these costs, there are other costs that generally result from greenfield development that are not necessarily just borne by the buyer and/or developer but are generally borne by the wider community for example, the cost of providing new infrastructure to service greenfield development.

When considering the costs and benefits of greenfield housing, it is useful to think in terms of:

- External costs and benefits – costs and benefits that generally apply to the wider community and/or environment; and
- Local costs and benefits – costs and benefits that generally apply to the end user (e.g. owner/developer).

The external benefits of greenfield development include generally lower-than-otherwise local housing costs and higher-than-otherwise land prices around the fringe of the city (benefit to land owners near the fringe but only if further expansion is possible).

The external costs of greenfield development include:

- The loss option of rural production (beyond payment received by incumbent farmer) which is a cost borne by the local economy and employment market;
- Higher infrastructure costs created by the need to provide new infrastructure, which is generally shared across the wider community, although to a degree this is generally offset by development contributions in the short term (excluding maintenance and renewal);
- The extra vehicle congestion, emission and accident costs, and
- The lower amenity value of the rural environment.

13.1.2 Costs and Benefits of Intensification

The benefits of intensification have been discussed at length elsewhere in this strategy however in summary:

- The external benefits of intensification include the lower-than-otherwise infrastructure costs resulting from greater capacity usage, the potential for more public transport, and the potential for greater social interaction.
- The external costs of intensification also stem from greater social interaction (some people prefer privacy and less noise), plus the loss of space experienced by incumbent neighbours.

It should also be noted that the facilitation and encouragement of medium density housing is not about reducing residential housing options, but is about providing these options at appropriate levels. This includes clear recognition that some residential options generate much greater costs that are often borne by the community as a whole.

13.1.3 Conclusion

Taking the above into account, it is concluded that the market for greenfield development is likely to be perpetuated by the uneven localised costs (low) and benefits (high)⁹ of that type of development as opposed to the external costs (high) and benefits (low).

The costs of controlling greenfield development are potentially increased residential prices and potentially reduced development, however it is considered that these costs are likely to be by far outweighed by the benefits of intensive land utilisation. The continued expansion of the “free market approach” to housing in Hastings will inevitably result in a degree of externalities and loss of efficiencies. If the market is left to determine the level of greenfield development to infill (or medium density housing) it will only consider the private costs associated with greenfield development. Given the levels of residential development in Hastings and the markets propensity towards greenfield development, it is unlikely that there will be a significant impact on competition brought about by the active support of medium density housing, relative to the potential losses to the community from decentralised residential activity.

It is not the role of the Council to restrict competition or protect commercial interests, it is however its role to protect and enhance the community’s social and economic wellbeing. There is an important

⁹ It should be acknowledged that these benefits (which are generally not recognised in purchasing decisions) can be eroded over time (e.g. higher travel costs)

balance to be maintained between protecting community benefits and potentially stifling positive growth. Given the levels of residential development in Hastings however it is more likely that the former will occur with a more managed approach to greenfields land supply. Due to the fact that the potential losses to the community of allowing continued decentralisation are so great, and the likely risks to the economy and community are so limited, it is entirely prudent to assume a less unconstrained stance on greenfields development. Methods of intervention to better allocate the localised and external costs and benefits of greenfield development should therefore be considered. As discussed at length elsewhere in this strategy, because the market is less likely to develop or redevelop higher density housing, it is considered that there is a role for the HDC to support or advocate for higher density housing taking into account the issues (uneven distribution of costs and benefits) discussed above. In other words, it is considered appropriate for the HDC to consider methods of intervention to better allocate the localised and external costs and benefits of greenfield development.

13.2 Hastings District Approach to Greenfield Development

The current approach to greenfield development in HDC is to:

- Target 1,955 new dwellings be developed on greenfield/suburban sites between 2015 and 2045 as per HPUDS targets;
- Identify land intended to be developed in the future as part of a new urban development area and zone Deferred General Residential Zone;
- Monitor development trends and review the Hastings Urban Development Strategy (HUDS) at regular intervals and implement the findings of these through changes to the District Plan, in order to ensure the appropriate and timely provision of residential land to accommodate projected demand.
- Develop a Structure Plan for each large new development area which will be incorporated into the District Plan.
- Require a Development Contribution of \$11,866.50 to subdivide and build a second dwelling on an existing section.

Currently HDC monitor greenfield sites and report regularly. The total supply of greenfield sites was reported in 2009¹⁰ to be equivalent to 15 years supply (1,224 sites with uptake of 84 reducing to 76 sites per annum to 2024) within current or future stages of existing subdivisions. This total expands to beyond 25 years when 'potentially subdivide-able land' is taken into account.

HDC reported a lower supply of sites at December 2012 but the approximate 460 sites within three existing subdivision plus the 400 available in Lyndhurst Stage II equate to over 10 years supply, which added to the 'potentially subdivide-able land' amounts to over 20 years of greenfield land supply. This is in the same order of magnitude of international cities but not near the lower bounds. In other words, it is possible to allow, or reduce the potential supply of greenfield sites and still provide at least a 15 year supply (recommended capacity as per Australian Productivity Commission) of greenfield land (based on current uptake).

13.2.1 The Use of Structure Plans

HPUDS investigated the strategic long term options for residential growth for the Heretaunga Plains sub-region. This included reassessing the direction of urban expansion, which resulted in recommendations for future intensification of the present urban form. HPUDS has identified growth options well beyond the life of the current District Plan.

However the recommendations from the Strategy taken forward will be carefully monitored to ensure that the identified growth areas and the Policy for greater levels of intensification remain valid.

Where appropriate, the Hastings District Council will, for the New Urban Development Areas identified in the District Plan, develop Structure Plans to guide development. These will identify the preferred location of key assets such as Arterial or Collector roads, reserves and trunk infrastructural elements. The Structure Plans

¹⁰ Heretaunga Plains Urban Development Study Phase 2 – Market Demand Brief

may also indicate Council's preferences on the establishment and provision of other amenity elements such as pedestrian linkages, cycling networks, and amenity planting. Subdivisions carried out in the New Urban Development Areas will be required to have regard to the intentions of any relevant Structure Plan.

Overall, the Hastings District approach to managing greenfield development is a relatively "free market" insofar as a reasonably long term capacity of developable greenfield land is provided to the market to determine how and when it should be urbanised. If the market is left to determine the level of greenfield development it will likely only consider the local costs and benefits (as discussed below). As such, it is considered that the current approach (without appropriate monitoring and subsequent response) could result in a range of adverse outcomes including:

- A loss of rural productivity which will detrimentally affect the Hastings economy;
- Not achieving HPUDS intensification targets;
- Increasing the need for additional infrastructure.

13.3 Approaches to Controlling Greenfield Development and Associated Issues

It is considered that some control over greenfield land supply is necessary for the successful achievement of HPUDS density targets within anticipated timeframes and to avoid any significant adverse impact on the Hastings rural economy. There are various approaches to this but generally approaches fall into two high level options:

- 1) The restriction of greenfield residential development;
- 2) The incentivisation of higher density housing in existing urban areas.

In some cases it is likely to be necessary to adopt both of these approaches. The following provides a discussion of a range of methods for controlling greenfield development and, where relevant identifies associated issues.

13.3.1 Urban Growth Boundaries

In simple terms, an urban growth boundary constitutes a defined line around an urban area that differentiates between the anticipated urban growth of the settlement and the rural surrounds.

The use of urban growth boundaries (with associated planning restrictions) is arguably the most effective approach to managing greenfield land supply. Both nationally (e.g. Auckland) and internationally (e.g. Melbourne), there are many examples of urban growth boundaries and many approaches to their implementation, for example:

- Differing approaches to restricting development geographically (e.g. no build areas within a defined area, greenbelts, sequential development requirements);
- Differing approaches to restricting development timing (e.g. moratoriums, staging plans, capacity projections and monitoring).

On the topic of urban growth boundaries, the Australian Productivity Commission noted that:

Urban growth boundaries...are likely to improve planning processes through clarity and transparency in the development of land on the fringes. In combination with wider zones, urban growth boundaries have the potential to improve certainty in land supply processes.

The Australian Productivity Commission went on to recommend that:

- A supply of undeveloped land sufficient to meet 15 years of projected demand is required to both avoid speculative pressure and aid efficient 'production' of land".¹¹

¹¹ Productivity Commission (2011) p124

Similarly, the NZ Productivity Commission put emphasis on this competing supply theme in their study of 2012 Housing Affordability and provided the following recommendations (relevant to the management of greenfield land):

- i. *Increasing land supply for new housing should include moderate-density development of brownfield sites and development of greenfield sites close to existing centres, local employment, and services*
- ii. *Councils interested in densification need to ensure that their local planning rules do not run counter to this objective. Councils should adopt more flexible approaches to achieve a balance between neighbourhood amenity and new development in existing suburbs.*
- iii. *Territorial authorities:*
 - *Take a less constrained approach to the identification, consenting, release, and development of land for housing in the inner city, suburbs, and city edge.*
 - *Adopt a strategy that allows for both intensification within existing urban boundaries and orderly expansion beyond them.*
 - *Develop strategies that promote adequate competition between developers for the right to develop land.*
 - *Ensure alignment between policy objectives, planning rules and consent processing.*

Both the New Zealand and Australian productivity commissions recognised the values of urban growth boundaries in managing greenfield land supply but both also recognised the need for good monitoring and flexibility within the associated planning framework to ensure that the urban growth boundary is responsive to changing markets and trends.

13.3.1.1 Issues Associated With Urban Growth Boundaries

It is generally accepted that the simple exclusion or restriction of greenfield sites is fraught with issues.

The main criticism and/or concern associated with urban growth boundaries, is that they significantly increase house prices within the urban boundaries by restricting housing supply. A New Zealand government report by Arthur Grimes (2007), Chairman of the Board of the Reserve Bank of New Zealand blamed the loss of housing affordability in the nation's largest urban area, Auckland, on prescriptive land use policies including the use of urban growth boundaries. Grimes (2025 Taskforce 2009) found that per-acre prices just inside Auckland's urban growth boundary were ten times that of comparable land on the other side of the urban growth boundary. It should be noted that Grimes' findings are generally what you would expect, i.e. rural land reflecting its productive earning capacity rather than a speculative residential value.

13.3.2 Prescriptive Land Use Zoning

Urban growth boundaries (as discussed above) are often integrated with prescriptive land use zoning. Throughout the world there are many examples of local authorities using land use zoning to manage greenfield land. For example identifying "urban" and "rural" zones and providing for associated land uses accordingly. Within the New Zealand context this ensures that urban development generally cannot occur within the rural zone without a first schedule RMA process.

Prescriptive land use zoning provides certainty to the community of where urban development will and will not occur.

13.3.2.1 Issues with Prescriptive Land Use Zoning

In 2011, The Australian Productivity Commission noted that: *Developments may take place in sub-optimal locations because either the application processes are more streamlined in a given council or insufficient land has been made available in local government areas most suited to given land uses. While a one size fits all approach to zoning (and other development control instruments) across the jurisdictions is not necessary, or even desirable, zones should be broadly framed and more functionally oriented to limit the extent of rezoning required to accommodate unforeseen demand for different land uses. It is clear that:*

- *The wider the definition of allowable uses encompassed in a given zone, the less likely it is that land with that zoning will require rezoning in order to be put to a different use*
- *Wider zoning definitions also provide greater scope for the market to allocate land to its best use, albeit within the uses allowed by the zone*
- *A small number of narrowly defined zones for a local council area increases the likelihood that certain activities will be effectively precluded from that local area.*

The argument against prescriptive land use zoning (consistent with the findings of the Australian Productivity Commission) is that it is unresponsive to market changes and often too slow to meet market demands thus resulting in increased housing demand and pressures and associated costs. Holding costs can make a considerable and variable portion of development costs. A recent study of Queensland costs showed holding costs to be around 9% of the eventual section price, rising to 13% if delayed by 6 months (and eroding the developer margin from 20% to 15% in the process).

In other words, a streamlined process than enables subdivisions to be brought to market quickly both allows quick response to any nascent house price inflation and could potentially provide lower-than-otherwise section prices.

13.3.3 Financial Incentives

Financial incentives can be utilised to manage the supply of greenfield land. For example, and within a New Zealand context:

- Higher development contributions for greenfield development as opposed to brownfield development¹²;
- Rates relief for rural activities undertaken on urban zoned land on the outskirts of the urban area.

With regards, to bullet point one above, it is noted that some New Zealand Councils (e.g. Hamilton City Council) develop different development contribution rates based on greenfield and brownfield catchments that reflect the higher infrastructure costs associated with the development of the greenfield areas. Within Hamilton City, the development contribution for a brownfield lot is approximately \$10,000 compared to \$30,000 for a greenfield lot.

¹² This option is discussed in more detail in Chapter 12 of this Strategy

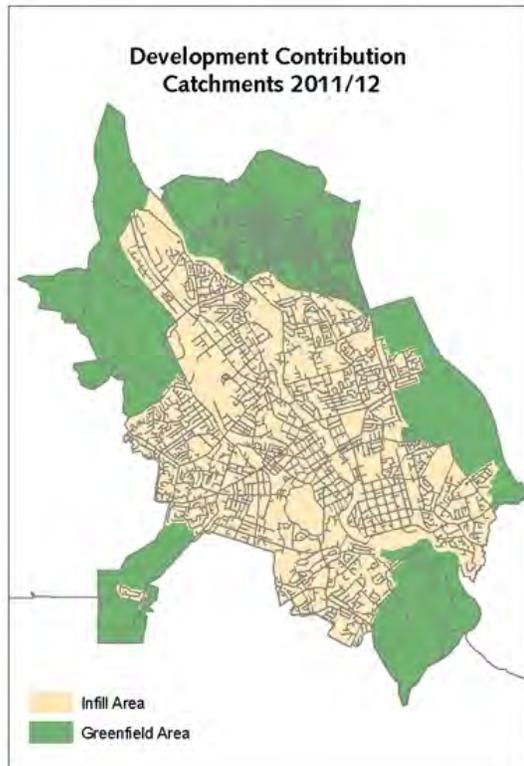


Figure 13.3-1: Hamilton City Council Development Contribution Catchments

With regards to bullet point two, a method often adopted to discourage the development of greenfield land is to provide rates relief to rural landuses within urban zoned land. Where once rural zoned land is rezoned to urban but the actual use of the land remains rural in nature, Council have the option of retaining the rural rate levels to encourage the retention of rural land use until such a time as the Council wish the land use to change to urban (at which point Council can change the rate levels to urban). The Hastings current approach, where rurally used land pays the rural differential even if, zoned residential or deferred residential. The actual rates paid per hectare will still be higher than other rural land as the residential potential is reflected in increase land values irrespective of current usage. In some other cities residential rates are charged as a disincentive to speculative landbanking to force land prices up.

13.3.3.1 Issues with Financial Incentives

Requiring higher development contribution costs for greenfield versus brownfield development is likely to be unpopular with the development community and prospective house buyers who are looking for a greenfield housing option as it will lead to higher housing costs for greenfield sites by redressing a previous imbalance in the distribution of costs (see discussion above regarding external and localised costs). In this regard, it is considered that to be able to adopt this method will require significant justification to support any changes to development contribution rates.

With regards to rates relief it is considered to be a marginal incentive for the protection of greenfield land at best with very little certainty associated with it, as its value is really at the discretion of relevant landowners. In addition, there is the potential risk that providing different rate levels for similarly zoned land may raise issues (fairness) for the community.

13.3.4 Other Methods of Incentivising Intensification

In addition to financial incentives there are a number of other incentives available to HDC for the promotion of intensive housing. Such tools include:

- Creating community development funds;

- Partnering with private sector developers;
- Prioritise investment in public amenity in appropriate areas;
- Facilitating access to public funds for intensive development.

13.3.5 Intensive Greenfield Development

Another approach to managing the release or rather take up of greenfield land is to allow more intense subdivision in greenfield areas. One impediment reported by developers to brownfield intensification¹³ is the cost of fitting within site or neighbourhood constraints. Developers report that it would be less costly to achieve higher density targets in new subdivisions, especially if an average minimum lot size could be achieved over a block (hence allowing for a mix of big and small sections). Likewise developers report some customer demand for smaller, detached dwellings within new subdivisions. In this respect, HPUDS recommended allowing clusters of higher density housing to be provided for in greenfields developments.

It should be noted that while more intense greenfield development can potentially slow urban sprawl it does not necessarily reduce the transport cost externality of such sprawl (assuming commuters are travelling towards the centre of the city).

13.3.5.1 Issues Associated with Intensive Greenfield Development

Allowing more intensive development within greenfield areas will theoretically result in the more efficient use of greenfield land, however it will also likely result in intensifying those adverse effects associated with greenfield development, such as:

- Increasing private transport usage and putting significant pressure on the roading network;
- Increased air pollution as a result of increased car usage;
- Excessive use and cost of energy;
- Expensive infrastructure costs (e.g. through the need to service areas that can be some distance from the existing infrastructure network).

13.4 Measures to Calibrate the Management of Greenfield Land Supply

As can be seen from the above discussion, there a number of approaches to the management of greenfield land supply, however where restrictions are placed on greenfield land supply there is likely to be an impact on housing cost within the greenfields areas, which can make more intensive development within the existing urban area more cost competitive. However if poorly monitored and managed this could have a knock on effect to the rest of the property market and adversely affect housing affordability across the board.

13.4.1 Sequencing of Growth

The sequencing of landuse, infrastructure and funding is fundamental to successful growth management and integrated planning. Sequencing involves identifying order and indicative timeframes for land use which has regard to infrastructure servicing, funding availability and market appeal over time. The aim is to balance the need for orderly development that is well supported by infrastructure while retaining enough flexibility to ensure that land is not overly restricted.

Sequencing provides a clear direction for managing future growth and development. It gives some, but not exact, certainty to developers and the community about the future timing of urban growth areas and can ensure that there is enough zoned and serviced land available to meet growth targets.

¹³ Strategic Risk Analysis Limited (2008)

The sequencing of development for growth areas should be based on the following criteria:

- Availability and costs of infrastructure services (water, wastewater, stormwater, and transport)
- Environmental considerations
- Employment opportunities
- Recreation
- Traffic management
- Social and community considerations
- Funding

Having development sequencing in place:

- Assists with infrastructure and servicing timing;
- Underpins development contributions calculations;
- Guides Long Term Plan budgeting for infrastructure;
- Assists with the Regional Land Transport Programme in terms of transport infrastructure needs and timing;
- Provides direction for the District Plan.

13.5 Conclusion

As noted above, Hastings District Council currently control greenfield land supply through structure plan requirements and deferred zoning (in accordance with HPUDS recommendations). This allows for the long term identification and sequencing of land for development and minimises the risk to ratepayers of too much upfront Council investment in infrastructure on too many fronts relative to expected development contributions payments. Deferments are uplifted when infrastructure is in place, which is installed based on the rate of uptake within the new growth areas, i.e. largely driven by market demand for greenfields development.

HPUDS and this strategy seek to affect a change to housing supply and housing preferences in order to minimise the loss of productive land. Sequencing should align with this objective by not providing so much land that greenfields sites are cheaper to build on than redevelopment of existing sites. Given the levels of development evident in Hastings this should not have a significant affect on housing prices across the board, but nevertheless the supply of land should be responsive to fluctuating housing demand overall. The ability to respond quickly to demand fluctuations is important, so supportive District Plan policies, completed structure plans and deferred zoning triggers need to be in place ahead of demand.

This means that bringing forward or pushing back greenfields land to meet demand should be tied to increases or decreases in the overall housing demand, rather than for a preference for greenfields sites alone. This may mean that short term scarcity of greenfield sites may be evident at from time to time if buyer preferences are out of proportion to the HPUDS target allocations and therefore consume the available land available ahead of schedule. This necessary tension is needed to affect a change in preferences over time but in the medium term land prices and housing choice should remain relatively stable as the scheduled land releases take place.

If the land supply is simply set to meet the market demand preference for greenfields sites (in the absence of other drivers affecting a change in preferences), the urban area will continue to expand over the productive land and HPUDS objectives and targets will likely not be met.

For this approach to be appropriate (e.g. without adverse effects on housing prices across the board) robust monitoring is required. Where issues are identified, consideration can be given to either releasing or not releasing additional land to the market (i.e. ability to respond to market fluctuations and or effects on overall housing prices).

If further constraints on the magnitude of greenfield land is applied, it is recommended that local housing market conditions be monitored closely and that HDC ensure they have the means available to either facilitate or provide significant (and appropriate) greenfield sites if signs of relative house price inflation begin to emerge in Hastings. Factors to monitor would include:

- Immediate supply of vacant greenfield sections
- Near-term potential supply of vacant greenfield sections (land zoned residential but not yet with infrastructure in place (i.e. no s224))
- Medium-term potential supply of vacant greenfield sections (land identified as target for re-zoning to residential)
- Immediate supply of vacant brownfield sections
- Near-term supply of vacant brownfield sections (those housed sites that are feasible for small-scale site redevelopment)
- Other potential supply of vacant brownfield sections (large sites currently used for other purposes that can be redeveloped)
- The relative difference between local and national section and dwelling sale prices and volumes and relatives between section prices availability and house sale prices.

In addition, regular developer forums facilitated by Council can provide a forum for gaining anecdotal information from local industry participants.

In order to be able to respond quickly to changes in demand or price tensions, HDC should continue with its programme to complete structure planning for the identified greenfields sites ahead of predicted demand. In addition the District Plan should contain has sufficient notice of the areas suitable for residential development as identified in HPUDS and enabling provisions to allow rezoning to occur without undue litigation and delay.

Recommendations

Hastings District Council should:

- 1) *Review the current approach to the management of greenfield land to ensure it aligns with HPUDS development targets and develop methods to constrain the supply of greenfield development land to increase the relative competitiveness of urban intensification*
- 2) *Develop monitoring programmes for the uptake of greenfield land focussed on monitoring:*
 - a. *Immediate supply of vacant greenfield sections*
 - b. *Near-term potential supply of vacant greenfield sections (land zoned residential but not yet with infrastructure in place (i.e. no s224))*
 - c. *Medium-term potential supply of vacant greenfield sections (land identified as target for re-zoning to residential)*
 - d. *Immediate supply of vacant brownfield sections*
 - e. *Near-term supply of vacant brownfield sections (those sites that are feasible for small-scale site redevelopment)*
 - f. *Other potential supply of vacant brownfield sections (large sites currently used for other purposes that can be redeveloped)*
 - g. *The relative difference between local and national section and dwelling sale prices and volumes.*
- 3) *Continue with structure planning and enabling District plan provisions to allow the supply of greenfields land to aligned with fluctuating overall housing demand*
- 4) *Be cautious of releasing more greenfields land than is dictated by overall housing demand.*

14 Socially Integrated Development

This section of the Strategy concentrates on the social aspects of intensification and medium density housing relative the host neighbourhoods. This section of the report:

- Looks at the demographic structure of Hastings and the host neighbourhoods. Where possible, data has been sourced from the 2013 census. Where this is not (at the time of writing available, data has been sourced from the 2006 census.
- Assesses the socio-economic profile of a number of medium density housing developments across New Zealand;
- Considers the facilities likely to be required to support medium density housing;
- Considers the current supply of facilities within the host neighbourhoods and provides recommendations for improvement where required; and
- Considers what makes a socially balanced neighbourhood; and
- Undertakes a review of national and international approaches to promoting socially balanced development.

14.1 Demographic Analysis of Hastings District

The following provides a summary of demographic analysis of Hastings District (2013, 2006 Census).

14.1.1 Population

Table 14.1-1 - Total Population of Hastings District, 2013 Census

Area	Population		
	2001	2006	2013
Hastings District	67,428	70,842	73,245
Mahora	3,543	3,768	3,567
Raureka	4,206	4,236	4,218
Parkvale	3,012	3,057	3,123
Heretaunga Street East (Akina)	4,311	4,296	4,494
Havelock North	3,024	3,090	3,090

As at the 2013 census the number of people usually living in Hastings District was 73,245. This is an increase of 2,403 (3.3%) people since the 2006 Census. This is considered to be a fairly modest increase in population. With regards to the host neighbourhoods, they have generally all experienced modest growth since 2001 apart from Raureka (2006 – 2013), Heretaunga Street East (2001 – 2006) which have both experienced decreasing population and Havelock North (2006 – 2013) which experienced no growth.

Table 14.1-2 – Population projections 2006 Census

Projected population age structure and components of change											
Territorial authority areas											
1996–2031 (2006-base, October 2012 update), medium projection											
Territorial authority area ⁽¹⁾	Year	Population ⁽²⁾ by age group (years), at 30 June					Components of population change, five years ended 30 June				Median age ⁽⁷⁾ (years) at 30 June
		0–14	15–39	40–64	65+	Total	Births ⁽³⁾	Deaths ⁽⁴⁾	Natural increase ⁽⁵⁾	Net migration ⁽⁶⁾	
Hastings district	1996	8,800	14,700	10,300	3,900	37,700	...	...	...	...	32.5
	2001	17,700	22,500	20,800	8,500	69,600	5,500	2,700	2,800	-1,300	34.8
	2006	17,500	22,700	23,600	9,400	73,200	5,300	2,900	2,400	1,200	36.5
	2011	17,400	22,500	25,100	10,600	75,500	5,800	2,900	2,900	-500	37.7
	2016	17,000	22,500	25,000	12,700	77,300	5,400	3,000	2,400	-600	38.9
	2021	17,100	22,900	24,200	14,800	79,000	5,400	3,100	2,200	-500	39.4
	2026	16,700	23,700	23,000	17,300	80,600	5,400	3,300	2,100	-500	40.0
	2031	16,700	23,000	22,700	19,500	81,900	5,300	3,600	1,800	-500	41.2
	2011-2031		-700	500	-2,400	8,900	6,400	21,500	13,000	8,500	-2,100

Table 14.1-3 - Total Population by Sex, 2013 Census

Area	Male			Female		
	2001	2006	2013	2001	2006	2013
Hastings District	33,753	35,451	37,548	35,001	37,242	38,610
Mahora	1,650	1,767	1,779	1,857	1,977	1,887
Raureka	2,028	2,001	2,085	2,166	2,163	2,214
Parkvale	1,395	1,464	1,425	1,635	1,656	1,686
Heretaunga Street East (Akina)	2,028	2,049	2,148	2,244	2,196	2,397
Havelock North	1,416	1,470	1,410	1,602	1,650	1,638

As would be expected given the findings of table 14.1-1 above, both the male and female proportions of the Hastings population have experienced modest growth since 2001. Proportionally, whilst in 2013 the female population is still the majority, the proportion of females to males has reduced since 2001 (i.e. the male population of Hastings has increased at a faster rate than the female population). However this is not necessarily reflected in the host neighbourhoods.

14.1.2 Number of Dwellings Counted¹⁴

- There are 25,557 occupied dwellings and 1,920 unoccupied dwellings in Hastings District.
- There are 273 dwellings under construction in Hastings District.

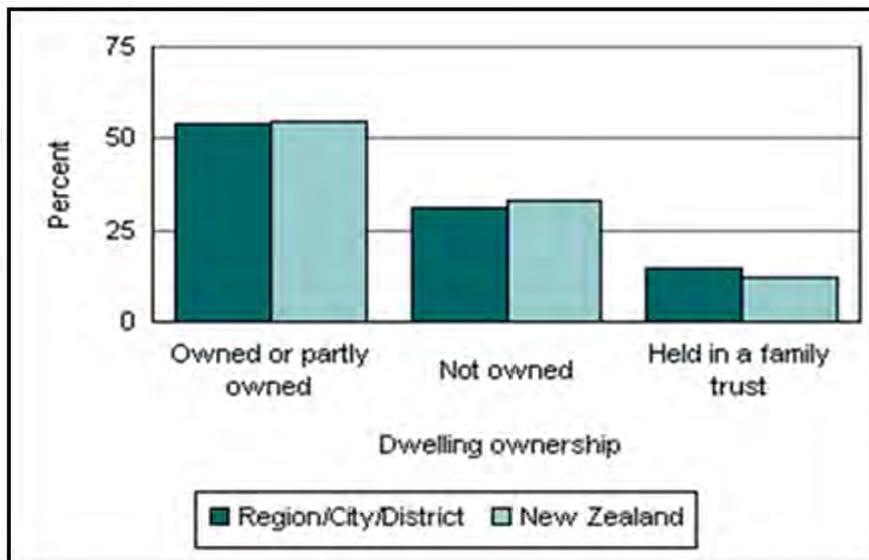
Table 14.1-4 - Hastings District Dwelling Types, 2006 Census

Dwelling Type		Number
Occupied	Private Dwelling	25,422
	Non-private dwelling	135
	Total	25,557
Unoccupied		1,920
Under Construction		273
Total		27,750

14.1.3 Households

- In Hastings District, 54.2% of households in private occupied dwellings own the dwelling, with or without a mortgage. For New Zealand as a whole, 54.5% of households in private occupied dwellings own the dwelling, with or without a mortgage.
- One-family households make up 69.7% of all households in Hastings District. For New Zealand as a whole, one-family households make up 69.1% of all households.
- 5,835 people (or 23.6%) live in one-person households in Hastings District. Throughout New Zealand, one-person households make up 23.0% of all households.
- The average household size in Hastings District is 2.7 people, compared with an average of 2.7 people for all of New Zealand.

Table 14.1-5 - Hastings District Household Ownership, 2006 Census



¹⁴ Note: Unless otherwise stated, all census data from this point forward is sourced from 2006 census data sources.

14.1.4 Employment

- The unemployment rate in Hastings District is 4.6% for people aged 15 years and over, compared with 5.1% for all of New Zealand.
- The most common occupational group in Hastings District is 'Labourers', whereas Professionals' is the most common occupational group in New Zealand.

Table 14.1-6 - Hastings District Household Composition, 2006 Census

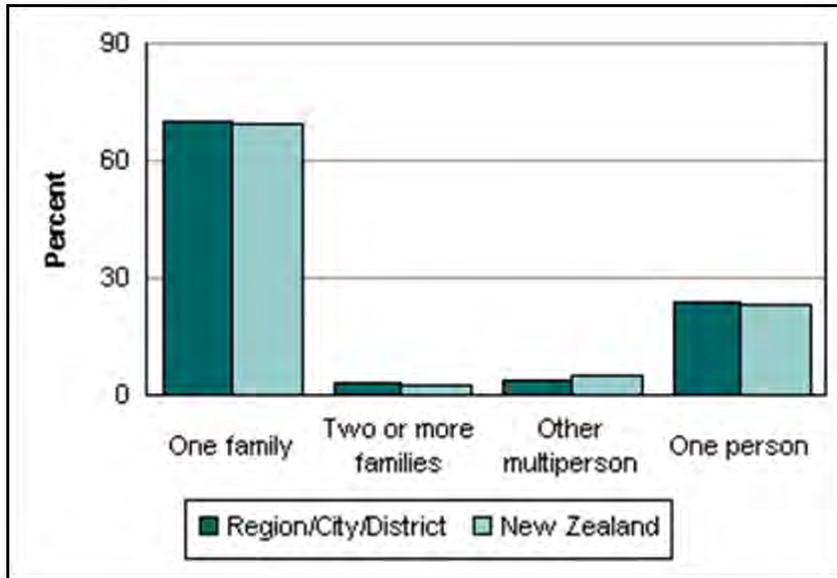
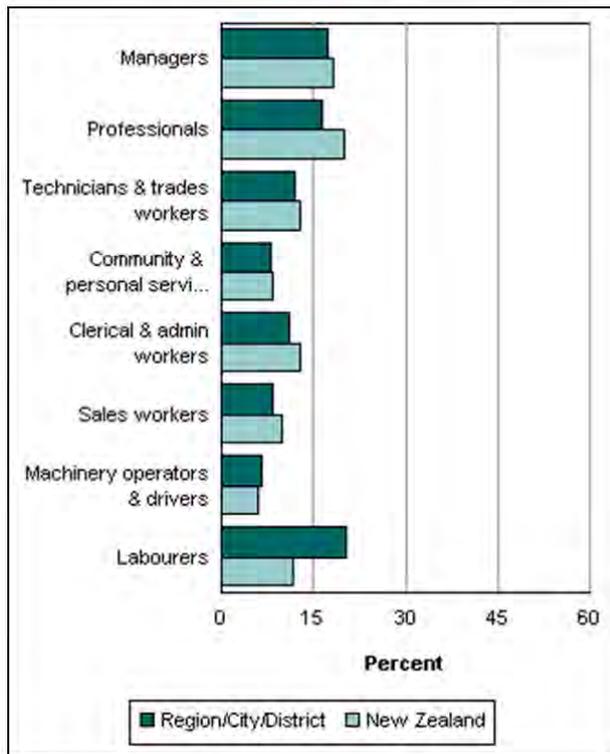


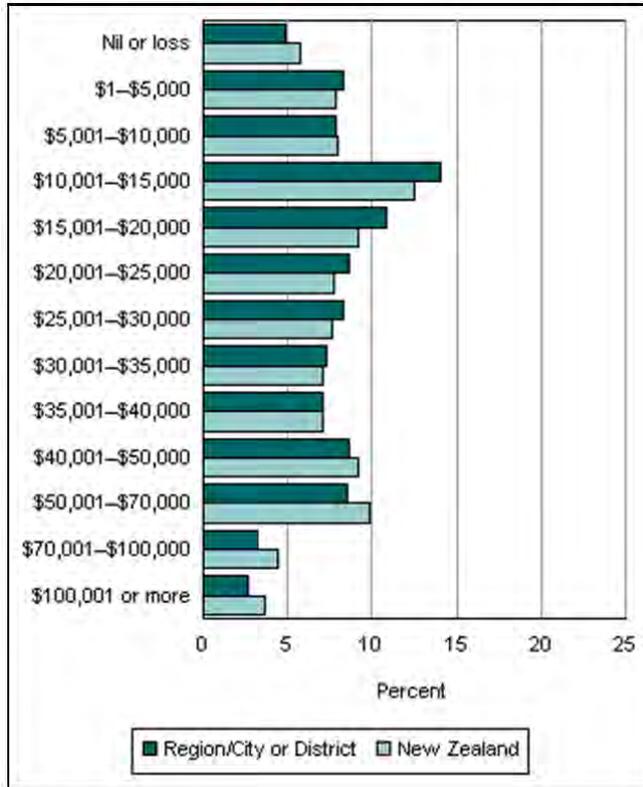
Table 14.1-7 - Hastings District Occupation for Employed People, 2006 Census



14.1.5 Income

- For people aged 15 years and over, the median income (half earn more and half less) in Hastings District is \$22,600. This compares with a median of \$24,400 for all of New Zealand.
- 45.5% of people aged 15 years and over in Hastings District have an annual income of \$20,000 or less, compared with 43.2% of people for New Zealand as a whole.
- In Hastings District, 14.4% of people aged 15 years and over have an annual income of more than \$50,000, compared with 18.0% of people throughout New Zealand

Table 14.1-8 - Hastings District Income, 2006 Census



14.1.6 Conclusions

Taking the above into account and in the context of this strategy, a number of conclusions can be made:

- The proportion of the Hastings District community within the 65+ age group, and the median age of the Hastings community is marginally higher than the New Zealand average.
- The majority of the Hastings community are of European descent; however the proportion of people who belong to the Māori ethnic group is higher than the New Zealand average.
- Hastings generally has a lower proportion of Asian and other ethnic groups (not described above) than the New Zealand average.
- The 65+ age group will account for approximately 95% of population growth in Hastings between 2011 and 2031.
- The average age of the Hastings resident is therefore likely to increase from 37.7 in 2011 to 41.2 in 2031.
- Approximately 2,100 more people will be migrating out of Hastings than will be migrating to Hastings between 2011 and 2031.

14.2 Host Neighbourhood Demographic and Socio Economic Analysis

In addition to the above, the following provides a summary of the host neighbourhood demographic and socio economic data and comparison against District averages. It should be noted that the following is sourced from Statistics New Zealand census area data (2006) which may have different area boundaries than the host neighbourhoods (i.e. cover greater areas than just the host neighbourhoods). As such caution should be taken when relying on the following information.

Table 14.2-1 - Total Population by Age, 2013 Census

Area	Age								
	0 - 14			15 - 64			65+		
	2001	2006	2013	2001	2006	2013	2001	2006	2013
Hastings District	17,433	17,523	16,878	42,882	45,903	47,772	8,442	9,279	11,517
Mahora	819	933	804	2,121	2,256	2,322	570	549	540
Raureka	1,170	1,080	1,005	2,568	2,586	2,709	465	495	582
Parkvale	693	639	624	1,836	1,947	1,914	498	534	570
Heretaunga Street East (Akina)	1,083	1,008	1,089	2,598	2,691	2,877	588	552	573
Havelock North	645	630	597	1,719	1,815	1,695	663	684	768

Again, as noted in table 14.1.1, population growth within Hastings District has been modest as such the increase in age group representation is also generally modest. Some points of note:

- Hastings District 14 and under population is decreasing.
- Proportionately, the largest increase in population growth for Hastings District is in the 65+ age group.
- Heretaunga Street East is the only host neighbourhood to experience growth in the 14 and under age group (albeit modest growth).
- Parkvale and Havelock North have both experienced a decrease in the 15 – 64 age group.
- All host neighbourhoods have experienced growth in the 65+ age group.

Table 14.2-2 - Total Population by Ethnicity, 2013 Census

Area	Year	Ethnic Group						
		Euro	Maori	Pacific Peoples	Asian	Middle Eastern / Latin American / African	Other ethnicity	Not elsewhere included
New Zealand	2001	2,255,508	329,799	141,654	181,899	16,881	585	122,991
	2006	2,072,862	365,406	165,630	277,599	25,194	349,047	134,223
	2013	2,386,245	396,285	190,425	374,508	34,971	55,035	186,912
Hastings District	2001	38,412	9,468	1,845	1,095	132	3	2,364
	2006	35,298	10,365	2,007	1,380	237	6,564	2,055
	2013	40,695	10,887	2,466	2,136	243	1,044	3,507

The proportions of ethnic groups within Hastings generally conforms with national trends (i.e. European is dominant followed by Maori) however, it is noted that the proportion of Asian peoples within Hastings is significantly lower than the national average.

Table 14.2-3 - Household Ownership Percentages Second Level

Census Area	Owner Occupied	Non-Owner Occupied
Havelock North	55.2	44.8
Heretaunga Street East (Akina)	53.4	46.6
Mahora	55.7	44.3
Parkvale	61.1	38.9
Raureka	58.1	41.9
Hastings District	54.2	45.8

Table 14.2-4 - Household Composition Percentages

Household Composition	Havelock North	Heretaunga Street East (Akina)	Mahora	Parkvale	Raureka	Hastings District
One family	69.0	62.4	65.0	63.4	69.4	69.7
One person	26.6	29.9	26.9	31.5	23.8	23.6
Other households	4.4	7.7	8.1	5.1	7.8	6.7
Average household size	2.4	2.5	2.7	2.4	2.8	2.7

Table 14.2-5 - Family Composition Percentages

Family Composition	Havelock North	Heretaunga Street East (Akina)	Mahora	Parkvale	Raureka	Hastings District
Couple without child(ren)	51.6	34.0	34.9	39.7	33.1	38.5
Couple with child(ren)	39.4	37.0	37.8	39.7	41.2	40.4
One parent with child(ren)	9.1	29.0	27.2	20.2	26.1	21.1

Table 14.2-6 - Income

Income	Havelock North	Heretaunga Street East (Akina)	Mahora	Parkvale	Raureka	Hastings District
Median Income	\$28,400	\$20,000	\$20,800	\$21,800	\$21,300	\$22,600
Percentage of people aged 15+ who earn \$20,000 or less	37.9	50.1	48.5	46.6	47.5	45.5
Percentage of people aged 15+ who earn \$50,000 or more	25.9	7.6	11.1	11.3	10.2	18.0

14.2.1 Key Findings of Host Neighbourhood Demographic and Socio Economic Analysis

The following provides a summary of some of the key findings of the host neighbourhood demographic and socio economic analysis:

- The median age of residents and the proportion of people aged 65+ within Havelock North is significantly higher than the District average. This confirms that the resident population of Havelock North is generally older than the rest of the District.
- The resident population of Havelock North comprises a significantly:
 - Higher proportion of European residents than the district average; and
 - Lower proportion of Maori, Pacific peoples and Asian residents than the district average.
- The resident population of Heretaunga Street East, Mahora, Parkvale and Raureka all comprise a higher proportion of Asian residents than the district average although the proportion is still relatively low.
- The resident population of Parkvale comprises a significantly:
 - Higher proportion of European residents than the district average; and
 - Lower proportion of Maori residents than the district average.
- The proportion of households comprising couples without child(ren) is noticeably higher in Havelock North than the district average.
- The proportion of households comprising single parents is noticeably higher in Heretaunga Street East and noticeably lower in Havelock North than the district average.

- The proportion of one person households in Heretaunaga Street East and Parkvale is noticeably higher than the district average.
- Within Havelock North, the median income of residents, and the percentage of residents who earn \$50,000 or more is noticeably higher than the district average.
- The proportion of residents of Havelock North who earn \$20,000 or less is noticeably lower than the district average.
- The proportion of residents of Heretaunaga Street East, Mahora, Parkvale and Raureka who earn \$50,000 or more is significantly less than the District average.

14.2.2 Host Neighbourhood Demographic and Socio Economic Conclusions

The following section provides conclusions of the socio-economic analysis of the host neighbourhoods.

14.2.2.1 Havelock North

- Has the highest median age of all the host neighbourhoods and a significantly higher median age than the district average.
- The majority (58.9%) of residents are aged between 15 and 64 years old.
- Has the highest proportion of residents aged 65+ (22%) of all the host neighbourhoods and a significantly higher proportion than the district average (12.8%).
- Has the highest proportion of European ethnicity (84.2%) of all the host neighbourhoods and a significantly lower proportion of Maori (3.5%), Pacific people (0.3%) and Asian (1.6%) residents when compared to the other host neighbourhoods and the district average.
- The majority of households are owner-occupied.
- The majority of households comprise a single family (69%) and the average household size is 2.4 (0.3 lower than the district average).
- Has the highest proportion of couples with child(ren) households (51.6%) than any other host neighbourhood and is significantly higher than the district average (38.5%). Also has by far the lowest proportion of one parent households (9.1%) which is significantly lower than the district average (21.1%).
- Has the highest median income (\$28,400) of all the host neighbourhoods which is higher than the district average (\$22,600).
- Has the lowest proportion of people who earn \$20,000 or less (37.9%) which is also lower than the district average (45.5%) and the highest proportion of people who earn \$50,000 or more (25.9%) which is higher than the district average (18%).

To summarise the above, according to the census area unit data for Havelock North a typical Havelock North resident is likely to be mid-forties, of European descent, married with children, a home owner and on a relatively high income. Those that don't fit into this description are likely to be older single persons/couples.

14.2.2.2 Heretaunaga Street East (Akina)

- Has the joint lowest median age (33) of all the host neighbourhoods and is lower than the district average.
- The majority (63.5%) of residents are aged between 15 and 64 years old.
- Is generally consistent with the district average in terms of proportions of age groups (63.5% aged 15 – 64, 23.5% aged under 15, 13% aged 65+).
- Is generally consistent with the district average in terms of ethnicity trends (e.g. the most common ethnicity is European), however, has the highest proportion of Asian ethnicity (6.3%) of all the host neighbourhoods which is over twice the district average.
- The majority of households are owner occupied.

- The majority of households comprise a single family and the average household size is 2.5 (0.2 lower than the district average). The proportion of one person households (29.9%) is significantly higher than the district average (23.6%).
- The most common household composition is couples with children (37%) followed by couples without children (34%) and one parent families (29%). The proportion of single parent families is significantly higher than the district average (21.1%).
- Has the lowest median income (\$20,000) than any of the other host neighbourhoods which is lower than the district average (\$22,600). The majority (50.1%) of residents earn \$20,000 or less which is higher than the district average (45.5%). Has the lowest proportion of residents of all the host neighbourhoods that earn \$50,000 or more (7.6%) which is less than half the proportion of the district average (18%).

To summarise the above, according to the census area unit data for Heretaunga Street East (Akina) a typical Heretaunga Street East (Akina) resident is likely to be early to mid-thirties, of European descent, married with or without children, a home owner and on a relatively low income. Those that are not are likely to be older single person households or older couples.

14.2.2.3 Mahora

- Has the second lowest median age (34.5) of all the host neighbourhoods which is lower than the district average.
- The majority (59.7%) of residents are aged between 15 and 64 years old.
- Is generally consistent with the district average in terms of proportions of age groups (59.7% aged 15 – 64, 25.2% aged under 15, 15.1% aged 65+).
- Is generally consistent with the district average in terms of ethnicity trends (e.g. the most common ethnicity is European), however, has a noticeably higher proportion of Asian ethnicity (4.3%) than the district average.
- The majority of households are owner occupied.
- The majority of households comprise a single family and the average household size is 2.7. The proportion of one person households (26.9%) is noticeably higher than the district average (23.6%).
- The most common household composition is couples with children (37.8%) followed by couples without children (34.9%) and one parent families (27.2%). The proportion of single parent families is noticeably higher than the district average (21.1%).
- Has the second lowest median income (\$20,800) of the host neighbourhoods which is lower than the district average (\$22,600). The majority (48.5%) of residents earn \$20,000 or less which is lower than the district average (45.5%). Has the third lowest proportion of residents of the host neighbourhoods that earn \$50,000 or more (11.1%) which is noticeably lower than the proportion of the district average (18%).

To summarise the above, according to the census area unit data for Mahora, a typical Mahora resident is likely to be early to mid-thirties, of European descent, married with or without children, a home owner and on a relatively low income. Those that are not are likely to older single person households or older couples.

14.2.2.4 Parkvale

- Has the second highest median age (38) of all the host neighbourhoods which is higher than the district average.
- The majority (63.5%) of residents are aged between 15 and 64 years old.
- Has the second highest proportion (17.5%) of residents aged 65+ of all the host neighbourhoods which is higher than the district average (12.8%).
- Is otherwise generally consistent with the district average in terms of proportions of age groups (63.5% aged 15 – 64, 23.5% aged under 15, 13% aged 65+).

- Is generally consistent with the district average in terms of ethnicity trends (e.g. the most common ethnicity is European), however, has the second highest proportion of European ethnicity (75.4%) of all the host neighbourhoods, and the second lowest Maori representation (14.6%) which is noticeably lower than the district average (23.9%).
- The majority of households are owner occupied.
- The majority of households comprise a single family and the average household size is 2.4 (0.3 lower than the district average). The proportion of one person households (31.5%) is the highest of all the host neighbourhoods and is significantly higher than the district average (23.6%).
- The most common household composition is couples with children (39.7%) and couples without children (39.7%). One parent families constitutes 20.2%. (29%).
- Has the second highest median income (\$21,800) of the host neighbourhoods which is lower than the district average (\$22,600). The majority (46.6%) of residents earn \$20,000 or less which is higher than the district average (45.5%). 11.3% of residents earn \$50,000 or more which is lower than the district average (18%).

To summarise the above, according to the census area unit data for Parkvale, a typical Parkvale resident is likely to be mid to late-thirties, of European descent, married with or without children, a home owner and on a relatively low income. Those that are not are more likely to be older single person households.

14.2.2.5 Raureka

- Has the joint lowest median age (33) of all the host neighbourhoods which is lower than the district average.
- The majority (61.9%) of residents are aged between 15 and 64 years old.
- Has the highest proportion (26.2%) of residents aged 15 and under of all the host neighbourhoods which is higher than the district average (24.1%).
- Has the lowest proportion (11.9%) of residents aged 65+ of all the host neighbourhoods which is lower than the district average.
- Is generally consistent with the district average in terms of ethnicity trends (e.g. the most common ethnicity is European), however, has the highest proportion of Maori ethnicity (27.3%) of all the host neighbourhoods which is higher than the district average (23.9%). Has an Asian ethnicity proportion (4.5%) which is noticeably higher than the district average (2.85%).
- The majority of households are owner occupied.
- The majority of households comprise a single family and the average household size is 2.8 (0.1 higher than the district average) which is the highest household size of all the host neighbourhoods.
- The most common household composition is couples with children (41.2%) which is the highest proportion of all the host neighbourhoods and slightly higher than the district average. The second most common household composition is couples without children (33.1%) followed by one parent families (26.1%) which is noticeably higher than the district average.
- Has the third highest median income (\$21,300) of the host neighbourhoods which is lower than the district average. A high proportion (47.5%) of residents earn \$20,000 or less which is higher than the district average (45.5%). 10.2% of residents earn \$50,000 or more which is lower than the district average (18%).

To summarise the above, according to the census area unit data for Raureka, a typical Raureka resident is likely to be early to mid-thirties, of European descent, married with children, a home owner and on a relatively low income. Those that are not are likely to be older single person households or couples, but also more likely to be single parent households than in the other neighbourhoods.

14.3 Assessment of the Socio-Economic Profile of Medium Density Housing Occupants

The following section provides a review of existing research into the demographic and socio-economic structures of medium density housing developments. Given the inconsistent approaches to (and drivers for) research, the information is presented in a manner that reflects the level of information available from a number of research sources which includes:

- 1) High level data from a range of medium density housing developments (Auckland, Wellington, Tauranga and Christchurch);
- 2) More detailed analysis of a specific Auckland medium density housing development (Ambrico Place, New Lynn – a large medium density development that was undertaken in the 1990's on the edge of New Lynn town centre) provided in table format with, where possible (and relevant), comparison with Census data (2006) for the relevant Territorial Authority (TA). It should be noted that in some cases there is not a direct comparison between categories adopted for research and those used for Census data collection, however, it is considered that comparison is useful to identify where the demographic or socio-economic patterns of a medium density housing development differ from the wider TA.

The high level case study examples are identified as No.'s 1 – 6 in the tables below.

The following provides further detail on each case study:

- Medium Density Housing Case Study No. 1: Tuscany Towers, New Lynn, Auckland. First of a series of medium density housing developments in a former industrial and mixed use long-established suburb. It is located on Auckland's western railway and major arterial Great North Road. It comprises a series of low rise terraces of two and three storeys and contains 97 households at a gross density of forty two dwellings per hectare.
- Medium Density Housing Case Study No.2: The Aston, Grey Lynn, Auckland. Located on the corner of a major east-west arterial road in a largely commercial environment with good public transport options providing good access to the CBD. The development contains 34 residential units, 10 single storey two bedroom apartments, two detached villas and 22 double storey apartments.
- Medium Density Housing Case Study No. 3: Hanson Street, Newtown, Wellington. Six block apartment block comprising 34 single level one and two bedroomed apartments. The development is around 3km from the CBD.
- Medium Density Housing Case Study No. 4: Addison, Papakura, Auckland. Located approximately 25km south of the Auckland CBD and close to the southern motorway and Papakura railway station. Addison is a community of approximately 400 households at a gross development density of around 20 dwellings per hectare. Comprises mainly detached, semi-detached and terraced housing.
- Medium Density Housing Case Study No.5: Urban Ridge, Tauranga. Located about 6km from the CBD and comprises 25 detached two and three bedroom houses at a density of 15 dwellings per hectare.
- Medium Density Housing Case Study No. 6: Chester courts, Chester Street East, Christchurch. Located to the north east of the Christchurch CBD, the development comprises 15 terraced townhouses at a gross density of 65 dwellings per hectare.

In addition to the above, further detail is provided (beneath each table and summarised at the end of this section) regarding further relevant research undertaken throughout New Zealand.

When considering the following review of research it is pertinent to take into account the differing characteristics of the case study examples. For example, the resident population of Auckland and Wellington is likely to be vastly different in terms of ethnic, economic and demographic structure (and thus associated housing choices) and density expectations than Hastings District. In addition, the issues facing these large urban areas relating to intensification are different to Hastings both in terms of drivers and timing (e.g. the need for intensification has been imbedded into Auckland growth planning since the 1990's whereas in Hastings the main drive has resulted from HPUDS). Further the scale and

densities of a number of the case study developments are likely to be considered inappropriate within the Hastings context and as such are not likely to be instantly transferable.

Taking the above into account, caution is advised when considering the following data within the Hastings context.

14.3.1 Household Composition and Occupancy

Table 14.3-1 - Household Composition and Occupancy Comparison

Medium Density Housing Development	Household Composition and Occupancy
Medium Density Housing No. 1	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Young families ○ Extended families; ○ Older single person; ○ Couples.
Medium Density Housing No. 2	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Singles and couples; ○ 30 and 40 year olds • Some <ul style="list-style-type: none"> ○ Families
Medium Density Housing No. 3	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Single ○ Couples
Medium Density Housing No. 4	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ 30 and 40 year olds ○ Single people ○ Couples ○ Large households ○ Extended families
Medium Density Housing No. 5	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Over 50 years old ○ Singles ○ Couples • Some <ul style="list-style-type: none"> ○ Families
Medium Density Housing No.6	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Single ○ Couples • Some <ul style="list-style-type: none"> ○ Families

Table 14.3-2 - Household Composition and Occupancy Comparison – Specific Auckland Medium Density Housing Development (Ambrico Place, New Lynn)

Household Composition and Occupancy	Medium Density Housing Percentage/Average	TA Percentage/Average
Households containing one person	10%	
Households contained two people	26%	
Households containing three people	34%	
Households containing four people	20%	
Households containing more than four people	10%	
Average household size	2.9	2.7
Occupants are a family	74%	
Non-family occupants	10%	
Single occupiers	10%	
Households containing one adult	10%	
Households containing two adults	54%	
Households containing three adults	26%	
Households containing four adults	10%	
Households containing children	42%	
Households containing one child	30%	
Households containing two children	8%	
Households containing three children	4%	
Contained occupants aged 50 or older	14%	26%
Contained occupants aged between 20 and 49	60%	41%
Contained occupants aged 19 or younger	26%	33%

The above tables identify that:

- The majority of medium density housing developments generally have a higher proportion of households without children (i.e. singles and couples) than with children. 58% of households in the Auckland specific case study do not house children.
- Within the Auckland specific case study, the average household size within the medium density housing development is higher than the TA average. It is noted that this is likely to represent a high proportion of students renting.
- Within the Auckland specific case study, the representation of 20 – 49 year olds in the medium density housing development is greater than the TA average whereas other age groups are under-represented. Again, this is assumed to represent a high proportion of students. A number of other case studies also have a high proportion of 30 – 40 year olds. Some have a high proportion of 50+ year olds.

Table 14.3-3 - Ethnicity and Place of Birth Comparison

Medium Density Housing Development	Household Composition and Occupancy
Medium Density Housing No. 1	<ul style="list-style-type: none"> • Predominantly <ul style="list-style-type: none"> ○ Chinese
Medium Density Housing No. 2	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ European
Medium Density Housing No. 3	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ European • Some <ul style="list-style-type: none"> ○ Maori ○ Indian ○ Chinese
Medium Density Housing No. 4	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ New Zealand European ○ Chinese • Some <ul style="list-style-type: none"> ○ Maori ○ Pacific Island
Medium Density Housing No. 5	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ European • Some <ul style="list-style-type: none"> ○ Maori ○ Chinese ○ Indian
Medium Density Housing No. 6	Unknown.

Table 14.3-4 - Ethnicity and Place of Birth Comparison – Specific Auckland Medium Density Housing Development

Ethnicity	Medium Density Housing Percentage	TA Percentage
Asian	57%	16%
New Zealand European	23%	54%
Other European	11%	
Maori	3%	12%
Pacific Island	3%	14%
Other	3%	4%

Place of Birth	Medium Density Housing Percentage	TA Percentage
Overseas	67%	38%
New Zealand	33%	62%
(Of those born overseas) lived in NZ less than 5 years	66%	
(Of those born overseas) lived in NZ 2 or 3 years	24%	
(Of those born overseas) lived in NZ less than 1 year	19%	

The above tables identify that:

- People of Asian ethnicity have a much higher representation (over three times) within the Auckland specific case study than the TA average.
- Across all case studies, the most common ethnicities of residents of medium density housing are European and Asian.
- Generally, people of Maori and Pacific Island ethnicity have a much lower representation. Within the Auckland specific case study the proportion of population is much lower (over four times) within the medium density housing development than the TA average.

Within the Auckland specific case study:

- People of European ethnicity have a lower representation within the medium density housing development than the TA average.
- Approximately two thirds of people were born overseas whereas approximately two thirds of people within the TA boundaries were born in NZ.

Table 14.3-5 - Work and Occupation Comparison

Medium Density Housing Development	Household Composition and Occupancy
Medium Density Housing No. 1	<ul style="list-style-type: none"> • Predominantly <ul style="list-style-type: none"> ○ Employed
Medium Density Housing No. 2	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Employed
Medium Density Housing No. 3	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Employed ○ Students ○ Retirees
Medium Density Housing No. 4	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Employed ○ Retirees
Medium Density Housing No. 5	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Employed ○ Retirees
Medium Density Housing No. 6	<ul style="list-style-type: none"> • Predominately <ul style="list-style-type: none"> ○ Employed ○ Retirees

Table 14.3-6 - Work and Occupation Comparison – Specific Auckland Medium Density Housing Development

Employment Status	Medium Density Housing Percentage	TA Percentage
In Paid employment	58%	62%
Self-employed	9%	
Retired	8%	
Unemployed	1.7%	5.7%
Adult Student	26%	

The above tables identify that:

- Across all case studies, the majority of residents are employed. There is also some representation of retirees and students.
- Within the Ambrico Place case study, a high proportion of residents are students (as identified previously above).

Table 14.3-7 - Tenure

Medium Density Housing Development	Tenure
Medium Density Housing No. 1	<ul style="list-style-type: none"> • Approximately <ul style="list-style-type: none"> ○ 60% rented ○ 40% owner occupied
Medium Density Housing No. 2	<ul style="list-style-type: none"> • Approximately <ul style="list-style-type: none"> ○ 40% rented ○ 60% owner occupied
Medium Density Housing No. 3	<ul style="list-style-type: none"> • Approximately <ul style="list-style-type: none"> ○ 66% rented ○ 33% owner occupied
Medium Density Housing No. 4	<ul style="list-style-type: none"> • Approximately <ul style="list-style-type: none"> ○ 50% rented ○ 50% owner occupied
Medium Density Housing No. 5	<ul style="list-style-type: none"> • Approximately <ul style="list-style-type: none"> ○ 50% rented ○ 50% owner occupied
Medium Density Housing No. 6	All owner occupied.

Table 14.3-8 - Tenure – Specific Auckland Medium Density Housing Development

Tenure	Medium Density Housing Percentage	TA Percentage
Rental	53%	42%
Owner-occupied	47%	58%

The above tables identify that:

- Within most medium density housing case studies the proportion of renters is either equal to or higher than the proportion of owner-occupiers.

Table 14.3-9 - Income Comparison– Specific Auckland Medium Density Housing Development

Income	Medium Density Housing Percentage	TA Percentage
\$1 - \$10,000	37%	13%
\$10,001 - \$20,000	8%	16%
\$20,001 - \$30,000	12%	13%
\$30,001 - \$40,000	20%	13%
\$40,001 - \$60,000	19%	19%
\$60,001+	4%	17%

The above table identifies that (within the Auckland specific case study):

- The percentage of people on an income less than \$10,000 is nearly three times the TA average. It should be noted that this is likely to be influenced by high student numbers.
- The percentage of people on an income of \$60,001 or greater is four times higher for the TA average than within the medium density housing development.
- Discounting the influence of students within the case studies and excluding the \$60,000+ bracket, medium density housing residents tend to have higher average incomes.

Table 14.3-10 - Length of Residence– Specific Auckland Medium Density Housing Development

Length of Residence	Percentage
Less than one year	53%
Between one and two years	21.5%
Between two and three years	21.5%
More than three years	4%

The above table identifies that (within the Auckland specific case study):

- More than half of all residents have lived in the medium density housing for less than a year.
- 43% of residents have lived in the medium density housing for two or three years.
- Only 4% of residents have lived in the medium density housing for more than three years.

14.3.2 Key Findings of Demographic and Socio-Economic Analysis of Medium Density Housing Development

- The majority of medium density housing developments have a higher proportion of households without children (i.e. singles and couples) than with children. 58% of households in the Auckland specific case study do not house children.
- Across all case studies, the most common ethnicities of residents of medium density housing are European and Asian.
- Across all case studies, the majority of residents are employed. There are also smaller numbers of retirees and students.
- Excluding medium density housing No. 6, within all medium density housing case studies the proportion of renters is either equal to or higher than the proportion of owner-occupiers.

14.4 Comparison of Hastings Census Data with Medium Density Housing Demographic and Socio-Economic Research

Taking into account the limitations of the above medium density housing demographic and socio-economic research and statistics, the following table provides a comparison with Hastings census data:

Table 14.4-1 - Host Neighbourhood Census Unit Area Data and Medium Density Housing Case Study Comparison Table

Census Topic	Census Unit Area Data	Medium Density Housing Case Study Data
Age	<ul style="list-style-type: none"> • The greatest proportion of residents in all host neighbourhoods are aged between 15 and 64. • All host neighbourhoods (excluding Raureka) have a higher proportion of residents 65+ than the district average. • Population projections suggest that the future population of Hastings will be characterised by a greater proportion of people 65+. 	<ul style="list-style-type: none"> • Within the Auckland specific case study, 60% of people are aged 20 – 49 year olds. • A number of other case studies also have a high proportion of 30 – 40 year olds. • Two case studies have a high proportion of 50+ year olds. • Some case studies had relatively high proportions of retirees.
Family Structure	<ul style="list-style-type: none"> • The greatest proportion of households within the host neighbourhoods constitute families with or without children. • The average household size is lower than the district average in 3 out of 5 host neighbourhoods. 	<ul style="list-style-type: none"> • Most case studies are predominately couples and small families. • 54% of households in the Auckland specific case study contain couples (with or without children). • 58% of households in the Auckland specific case study do not house children.
One person households	<ul style="list-style-type: none"> • All host neighbourhoods have a greater proportion of one person households than the district average. 	<ul style="list-style-type: none"> • A number of the case studies contained relatively high proportions of single person households. • 10% of households in the Auckland specific case study are single person households.
Average Household Size	<ul style="list-style-type: none"> • Four out of 5 host neighbourhoods have an average household size equal to or less than the district average (2.7). One host 	<ul style="list-style-type: none"> • The majority of case studies are predominantly singles and couples with some representation of small families. • The average household size within the

Census Topic	Census Unit Area Data	Medium Density Housing Case Study Data
	neighbourhood is slightly higher (2.8).	Auckland specific medium density housing development is higher (2.9) than the TA average (2.7).
Ethnicity	<ul style="list-style-type: none"> The majority ethnic group in all host neighbourhoods is European. Maori representation is lower than the district average in 3 out of 5 host neighbourhoods. Pacific people representation is lower than the district average in 3 out of 5 host neighbourhoods. Asian representation is significantly higher than the district average in 4 out of 5 host neighbourhoods. 	<ul style="list-style-type: none"> Across all case studies, the most common ethnicities of residents of medium density housing are European and Asian . 57% of people in the Auckland specific case study belong to the Asian specific case study. People of Maori and Pacific Island ethnicity are generally under-represented in the medium density housing case studies.
Unemployment	<ul style="list-style-type: none"> The unemployment rate in Hastings District is 4.6% 	<ul style="list-style-type: none"> Across all case studies, the majority of residents are either employed, retired or students.
Home Ownership	<ul style="list-style-type: none"> Owner occupation is the majority tenure type in all host neighbourhoods. However the proportion is only greater than 60% in one host neighbourhood. 	<ul style="list-style-type: none"> Within most medium density housing case studies the proportion of renters is either equal to or higher than the proportion of owner-occupiers.
Income	<ul style="list-style-type: none"> The median income in all but one host neighbourhood is less than the district average (\$22,600). The percentage of people who earn less than the \$20,000 is less than the district average in all but one host neighbourhood. The proportion of people who earn \$50,000 or more is significantly less than the district average (18%) in all but one of the host neighbourhoods. 	<ul style="list-style-type: none"> Within the Auckland specific case study 45% of people earn less than \$20,001. 4% of people within the Auckland specific medium density housing case study are on an income of \$60,001 or greater.

14.4.1 Conclusions

Taking the above into account it is considered that there are areas of significant consistency in terms of demographics and socio-economics between the host neighbourhoods and the medium density housing case studies. For example:

- All the host neighbourhoods and medium density housing case studies have a majority of residents or a median age between 30 and 40. However it is considered likely that this has been influenced by high proportions of students in some case studies.
- All the host neighbourhoods have a high proportion of the 65+ age group. This is also a characteristic of some of the case studies. It is assumed that these case study examples were specifically marketed at such markets and that (given population projections for Hastings) this approach should be considered by Hastings District Council.
- The majority of households in all host neighbourhoods comprise couples with or without children and the average household size in the host neighbourhoods is lower than the district average

which suggests smaller families. This is also a common characteristic of the medium density housing case studies.

- The majority ethnic group in all host neighbourhoods is European and there is generally an under representation (compared to district averages) of Maori and Pacific peoples and a high representation of Asian residents. Again, this is a trend common to the medium density housing case studies.
- All but one (Havelock North) of the host neighbourhoods are relatively low income areas (i.e. income below the district average). This is also a common characteristic of the medium density housing case studies. However, it is noted that the income statistics of the case studies are probably influenced by higher numbers of full time student residents.

In conclusion, the host neighbourhoods and medium density housing case studies, whilst quite different in terms of geography and intensification drivers share significant common factors in terms of demographics and socio-economics. In particular:

- A high proportion of 30 – 40 year olds;
- High proportions of older people (with Hastings population projected to get older);
- Mainly European with high representation of Asian residents and low representation of Maori and Pacific peoples;
- Generally smaller household sizes;
- Lower income households (with some notable exceptions).

In Hastings the likely smaller scale of developments and the absence of commercial investors underpinned by an Asian/student market, suggests the proportion of renters (and lower incomes) in new medium density housing developments could be much closer to the host neighbourhoods, if not much lower. For example in the Christchurch and Tauranga case studies the ownership rate is 100% and 60% respectively

In this regard, it is considered that the host neighbourhoods are likely to be able to assimilate medium density housing within them without any significant impact on their socio-demographic profiles providing that the form of medium density housing takes into account local differences. For example, it would be considered inappropriate for medium density housing in Havelock North to be marketed at low income families and unlikely that it will be.

14.5 Facilities Likely to be Required to Support Medium Density Housing

As noted elsewhere in this strategy, for medium density housing to be successful, it is important to ensure it is supported by the right types of services and facilities, taking into account the likely socio-economic makeup of residents. Following on from the discussion above, this section of the report considers the types and existing levels of service of facilities that support the host neighbourhoods.

14.5.1 Facilities Likely to be Required Nearby to Support Healthy Physical and Social Wellbeing

Housing New Zealand note in their higher density guidelines that, higher-density housing needs to provide easy access to local amenities such as shops, public transport, parks, schools, and community facilities. Access to public transport and parks is covered elsewhere in this strategy, in this regard and for the purpose of this section of the strategy, community facilities are considered to constitute:

- Shops (i.e. supermarkets, dairies and other commercial activities necessary to service a households daily needs);
- Schools; and
- Community facilities (excluding recreation centres etc. which are assessed as reserves).

It is recommended that, when considering the future provision of facilities within and within the proximity of the host neighbourhoods, consideration should be given to the likely demographic structure of those communities. With regards to commercial facilities (e.g. shops, medical surgeries etc.) it is considered

likely that the private sector will drive this provision. For example, if a facility is currently servicing a community that is not well suited for the community it is not likely to succeed and will generally be replaced by a facility that has a greater level of demand within that community.

With regards to the likely future demand, (and informed by previous sections of this Chapter) it is noted that residents of medium density housing within Hastings are likely to be:

- Of European descent;
- Smaller households (e.g. older couples and small families).

In addition, it is also noted that the population of Hastings is projected to get older.

14.5.2 Facilities Servicing the Host Neighbourhoods

Taking the above definition into account, the following provides an assessment of the current provision of facilities within the defined host neighbourhoods. For the purpose of this assessment, a commercial facility within a 5 minute walk (500m) and a school within a 10 minute walk (1,000m) are deemed to be servicing a host neighbourhood. It is noted that, with regards to acceptable distances to schools, many people are prepared to travel further than 1,000m (generally by bus or by car), however, for the purpose of this assessment it is assumed that an appropriate level of service is quantified by walkability and thus a 1,000m catchment is adopted.

Information has been sourced from the stage 1 report, results of site visits undertaken in 2012, HDC land use survey data and Google™ Earth Pro.

14.5.2.1 Mahora

As identified within the Stage 1 report, there are a number of facilities within and within proximity of the Mahora host neighbourhood area. The following provides a discussion of those identified:

- At the corner of Karamu Road and Frederick Street there are a number of commercial properties (approximately 7) that comprise a shopping centre (zoned suburban commercial). These properties currently include a fish and chips shop, a butcher, a beauty salon, a bar, and a bakery. All of the commercial properties appear to be currently tenanted. This commercial area is located approximately 600m to the south of the Mahora intensification area and is thus beyond the 5 minute walk limit.
- At the crossroads of Frederick Street and Tomoana Road there are numerous (approximately 15) commercial properties that are zoned suburban commercial. At present these properties comprise a number of commercial facilities including a small supermarket (4 Square), hairdressers, pharmacy, bakery, a doctors surgery, a number of fast food outlets, a haberdashery and a bar. Not all of the commercial properties appear to be tenanted with some vacant buildings and some sites converted to residential (e.g. 521 Frederick Street West). This commercial area is within a 5 minute walk of the majority of the Mahora intensification area. However, it is likely to be more than a 5 minute walk to those areas to the west and south west of the Mahora intensification area (approximately 1,000m – 1,500m away).
- At the Duke Street and Ngaio intersection there are a number (4) of commercial properties that are zoned suburban commercial. These properties currently include a fish and chips shop, a hobby store a charity shop and a dairy. All properties are tenanted. These commercial properties are located to the north of the Mahora intensification area and are thus likely to be beyond a 5 minute walk to the southern parts of the intensification area.
- There is a single suburban commercially zoned property at the corner of Grays Road and Lane Street however it appears to be currently in residential use. This property is located to the north of the Mahora intensification area and would likely be beyond a 5 minute walk to the southern parts of the intensification area.
- There is a single suburban commercially zoned property at the intersection of Fitzroy Avenue and Tomoana Road that is currently occupied by a dairy. This property is located within the western side of the intensification area and is thus considered likely to be within a 5 minute walk of a large proportion of the intensification area.
- A retail centre (including a large supermarket) is located at Charles Street which is approximately a 10 minute walk from the western side of the intensification area. Whilst not within the 5 minute walking limit of the intensification area, it is considered that this retail centre

should be considered to be capable of servicing the intensification area (particularly if public transport options are available) given the size of the retail centres.

With regards to commercial/retail facilities, it is considered that the current provision of facilities for the Mahora intensification area is likely to be sufficient for the majority of the area. Most of the host neighbourhood has good access to numerous options. However, it is considered likely that there could potentially be an undersupply of facilities for some southern and western parts of the intensification area. Whilst these areas are likely serviced by reasonably sized retail areas, it is considered that they are not within easy (5 minute walk) access. To alleviate this potential undersupply, HDC should consider investigating the feasibility of rezoning currently residential land to suburban commercial to encourage facilities to the south and west of the intensification area.

With regards to educational facilities:

- Mahora School (years 1 – 6) is a public co-educational school within a 10 minute walk of the majority of the intensification area (within a 20 minute walk of the rest of the areas).
- There is a private school and a co-educational kindergarden located on Nelson Street North which is considered to be within a 10 minute walk of the majority of the intensification area;
- St Johns College (private boys school) is within a 10 minute walk of the majority of the southern portion of the intensification area.
- St Mary's Catholic School is a private (co-educational) school located at 901 Frederick Street (years 1 – 8) which is likely to be within a 10 minute walk of a large proportion of the northern side of the intensification area.

Taking the above into account, it is considered that Mahora is reasonably well serviced for educational facilities. There are both public and private options available for both girls and boys servicing up to year 8.

It is recommended that HDC consult with the Ministry of Education and the private schools listed above to discuss the implications (in terms of school capacities) of proposed intensification.

14.5.2.2 Heretaunga Street East

As identified within the Stage 1 report, there are a number of facilities within and within proximity of the Heretaunga Street East host neighbourhood area. The following provides a discussion of those identified:

- There is a single suburban commercially zoned property at the intersection of Massey Street and Hastings Street South that is currently occupied by a dairy. This property is located at the north western side of the intensification area and is thus considered likely to be within a 5 minute walk of a large proportion of the intensification area.
- There are 2 suburban commercial zoned properties on Clive Street which are presently vacant. These properties are to the south western side of the intensification area and are considered to be within a 5 minute walk of a proportion of the western side of the intensification area.
- A small supermarket (4 Square) zoned suburban commercial is located at the junction of Windsor Avenue and Heretaunga Street East. This property is located within the southern area of the intensification area and is thus considered likely to be within a 5 minute walk of the majority of the southern portion of the intensification area (approximately from the intersection of Heretaunga Street East and Windsor Avenue to the junction of Heretaunga Street East and Riverslea Road North).
- There are 4 suburban commercial zoned properties at the junction of Heretaunga Street East and Lumsden Road. Three out of four of these properties are currently tenanted (café, Italian restaurant and a fish and chips shop). These properties are located at the southern end of the intensification area and are thus considered to be within a 5 minute walk of the majority of the southern portion of the intensification area.
- Between the junction of Heretaunga Street East and Park Road North and the junction of Heretaunga Street East and Miller Street, there are a number (approximately 20) of suburban commercial zoned and otherwise community facility related properties. These properties include petrol stations, a flower shop, a laundry, motels, churches, a hair dressers and a dermatologist

(amongst others). These properties are scattered through the centre of the intensification area and are considered (collectively) to service the whole intensification area.

- In addition the above, it is noted that the southern boundary of the Hastings city centre begins at the junction of Heretaunga Street East and Hastings Street North which accommodates a full service supermarket. This is noted as being within a 5 minute walk of the northern extent of the intensification area (from Riverslea Road North).

With regards to the provision of commercial/retail facilities it is considered that the Heretaunga Street East intensification area is well serviced.

With regards to educational facilities:

- Parkvale School (public) is located to the southeast of the intensification area. This school (years 1 – 6) is considered to be within a 10 minute walk of the majority of southern portion of the intensification area.
- Hastings intermediate school (co-educational, years 7 – 8) is located to the west of the northern portion of the intensification area.

Taking the above into account, it is considered that there are gaps in the provision of schools for the Heretaunga Street East host neighbourhood, particularly so for the northern portion of the intensification area. In this regard, it is recommended that HDC consult with the Ministry of Education regarding the provision of public school facilities within proximity of the Heretaunga Street East intensification area in the context of providing for the needs of anticipated future intensification.

14.5.2.3 Raureka

As identified within the Stage 1 report, there are a number of facilities within and within proximity of the Raureka host neighbourhood area. The following provides a discussion of those identified:

- Just south of the junction of Oliphant Road with Campbell Street, there are four suburban commercial zoned properties that are currently tenanted by a dairy and a fish supply shop (which may be vacant). The other two properties are currently vacant. These properties are located to the south west of the intensification area but are considered to be within a 5 minute walk of the majority of the intensification area.
- Between the junctions of Gordon Road with Florence Street and Kennedy Road, there are 16 properties that provide community facilities including a car repair shop, a church, a community centre, 2 hair salons, a takeaway, a pharmacy, a dairy, a butchers, a superette and a school. In addition 5 properties are currently vacant. This area constitutes the centre of the intensification area.
- There are no private schools within a 10 minute walk of the intensification area, however Raureka School (public, co-educational, years 1 – 6) is located within the intensification area and is considered to be within a 10 minute walk of the whole intensification area. In addition, Ebbet Park School (public, co-educational, years 1 – 6) is located to the south of the intensification area but is also considered to be within a 10 minute walk of the whole intensification area.

Overall, it is considered that the Raureka host neighbourhood is well serviced for all relevant facilities.

14.5.2.4 Parkvale

As identified within the Stage 1 report, there are a number of facilities within and within proximity of the Parkvale host neighbourhood area. The following provides a discussion of those identified:

- Near the junction of Park Road North and Saint Aubyn Street there is a single unit currently zoned suburban commercial that is currently tenanted by a flower shop. This unit is within a 5 minute walk of the western side of the intensification area, but is beyond a 5 minute walk to the majority of the intensification area.
- At the junction of Windsor Avenue and Louie Street there is a single unit currently zoned suburban commercial which is currently tenanted by a dairy. This unit is considered to be within a 5 minute walk of the southern and western sides of the intensification area.
- At the junction of St Aubyns Street East and Riverslea Road North there are 5 units currently zoned suburban commercial as well as a church hall. The suburban commercial properties are

currently tenanted by a miscellaneous retail unit, a dairy, a hairdressers, a grocers, a pharmacy and a butchers. These units are within a 5 minute walk of the north western section of the intensification area, but are beyond a 5 minute walk for the majority of the intensification area.

- At the junction of Jellicoe Street and Beatty Street there are 4 properties currently zoned suburban commercial. Two of these properties are currently tenanted (a dairy and a hairdressers) and two appear to be currently vacant. These units are considered to be within a 5 minute walk of the eastern side of the intensification area and a significant proportion of the northern side of the intensification area.
- At the junction of Grove Road and Willowpark Road North there is a single suburban commercial zoned property which is currently tenanted by a Dairy. This unit is just within a 5 minute walk of the northern edge of the intensification area.
- At the junction of Jervois Street and Willowpark Road North, there is a single suburban commercial zoned property which is currently tenanted by a Dairy. This unit is just within a 5 minute walk of the northern edge of the intensification area.

With regards to commercial and retail facilities, it is considered that the whole Parkvale intensification area has access to at least one facility within a 5 minute walk with most areas having a number of options. A small area of the northern portion and the southern portion have access to only a single unit (both of which are noted as being dairy's). However, it is noted that there is no Drs Surgery on the eastside of Hastings, this could be improved and Council could initiate discussions with the Pharmacy and the relevant District Health Board.

With regards to educational facilities:

- St Johns College (Private Boys school, years 9 – 13) is located to the north of the intensification area and is considered to be within a 10 minute walk of the majority (particularly the northern portion) of the intensification area.
- Parkvale School (Public, co-educational, years 1 - 6) is located to the south west of the intensification area and is considered to be within a 10 minute walk of the majority (excluding some northern sections) of the intensification area.
- Mayfair School (Public, co-educational, years 1 - 6) is located to the north of the intensification area and is considered to be within a 10 minute walk of the northern half of the intensification area.
- Karamu High School (Public, co-educational, years 9 – 13) is located to the south east of the intensification area and is considered to be within a 10 minute walk of the whole intensification area.
- Taking the above into account, it is considered that the intensification area is well serviced for educational facilities. However, it is recommended that HDC consult with the Ministry of Education regarding the provision of public school facilities within proximity of the Parkvale intensification area in the context of providing for the needs of anticipated future intensification of this area.

14.5.2.5 Havelock North

Within the Havelock North host neighbourhood there are a number of facilities within and within proximity of the intensification area. This was noted during the site visit. With regards to educational facilities, the intensification area is serviced by four public schools and a private school which are all considered to be within a 5 minute walk of the intensification area. In addition, it is noted that the intensification area is focussed around the Havelock North village centre which provides numerous facilities to the host neighbourhood (e.g. banks, restaurants, dairies, supermarkets etc.). Overall it is considered that Havelock North is well serviced for facilities.

14.5.3 Conclusions

It is considered that Havelock North, Heretaunga Street East and Raureka are reasonably well serviced by commercial facilities. Areas within both the Mahora and Parkvale intensification areas are less well served and consideration should be given to improving the situation.

With regards to educational facilities, it is recommended that HDC consult with MoE and relevant private school providers regarding the potential implications of intensifying the host neighbourhoods. In

addition, it is recommended that HDC consult with MoE regarding the provision of schools for the Heretaunga Street East host neighbourhood, particularly so for the northern portion of the intensification area.

14.6 Socially Balanced Development

14.6.1 General

The achievement of a socially balanced community is considered to be a desirable outcome of urban planning and is often entrenched within planning strategies and planning policy.

Within the UK planning policy framework, the achievement of socially balanced communities is a key aspect of the Sustainable Communities Plan. The sustainable communities plan is a programme of action to tackle pressing social problems including the issue of housing affordability whilst also ensuring socially balanced communities.

Relevant features of a socially balanced community (as defined the Sustainable Communities Plan) include:

- *A flourishing local economy to provide jobs and wealth;*
- *Strong leadership to respond positively to change;*
- *Effective engagement and participation by local people, groups and businesses, especially in the planning, design and long-term stewardship of their community, and an active voluntary and community sector;*
- *A safe and healthy local environment with well-designed public and green space;*
- *Sufficient size, scale and density, and the right layout to support basic amenities in the neighbourhood and minimisation of the use of resources (including land);*
- *Good public transport and other transport infrastructure both within the community and linking it to urban, rural and regional centres;*
- *Buildings – both individually and collectively – that can meet different needs over time, and that minimize the use of resources;*
- *A well-integrated mix of decent homes of different types and tenures to support a range of household sizes, ages and incomes;*
- *Good quality local public services, including education and training opportunities, health care and community facilities, especially for leisure; A diverse, vibrant and creative local culture, encouraging pride in the community and cohesion within it;*
- *A “sense of place”;*
- *The right links with the wider regional, national and international community.*

Taking the above into account, and in the context of this Strategy, it is considered that to achieve a socially balanced community requires:

- A safe and healthy local environment with well-designed public and green space;
- Sufficient size, scale, affordability and density of the built form to support basic amenities whilst minimising the use of land
- A well-integrated mix of decent homes of different types and tenures to support a range of household sizes, ages and incomes;
- Dwellings that can adapt to changing household needs.

To achieve socially balanced communities requires the provision of housing choice and opportunities for all aspects of a community. This means ensuring affordable housing options for a range of socio-economic groups.

14.6.2 Housing Affordability

This section of the Strategy discusses the issues associated with housing affordability. Within New Zealand (and certainly elsewhere throughout the world) the issue of a lack of housing affordability and large portions of communities unable to access housing that is affordable is increasing. As noted by the 2012 Productivity Commission Chair (Murray Sherwin): *It is fundamental to the success of communities that comfortable, affordable housing is available, particularly at the lower end of the property ladder. Younger people and those on lower incomes currently have much less chance of ever purchasing their own home.*

For the purpose of this report, housing affordability means:

- Affordability for renters;
- Affordability for would-be home owners; and
- Affordability for existing homeowners.

It is important to note that there are fundamental differences between the affordability of rental accommodation and of purchasing a house. Someone who is renting doesn't consider the actual value of the house as much as someone looking at purchasing a house. regardless of this whether renting or owning, housing usually absorbs a large proportion of household income.

Housing affordability as a concept is hard to define, generally speaking, if something is considered to be "affordable" it can be paid for without financial difficulty. When we refer to the affordability of an item, we are usually talking about the amount of financial stress that the purchase would place us under. There are two ways to consider this financial stress:

- How much of our income is going on this purchase; and
- How much income do we have left over for other goods?

Affordability can generally be thought of as a continuum, which is itself a relationship between income and relative prices. At one end is easily affordable, at the other definitely not affordable. The difficulty, in terms of defining housing affordability and thus being able to identify what constitutes affordable housing is being able to identify at which point does something that was affordable; become unaffordable.

Buying a house is often the single biggest purchase of a household and the cost of owning or renting a home takes a large share of household income. If housing is more expensive than it needs to be, then the cost to individuals and families, and the New Zealand economy overall is significant. Volatility in house prices also has wide ranging impacts. House buyers typically have to service their mortgages on top of additional housing costs, such as rates and maintenance. The high cost of housing leaves less money for other items essential to good health including a nutritious diet, access to primary health care services, winter heating, education and transport. This means the poorest people are most likely to be forced into substandard housing. For renters, affordability reflects their capacity to meet housing costs without going short on other essentials such as food and transport. Declining affordability is a particularly serious concern for low income earners, who may have difficulty meeting basic housing needs. Expensive rents may also make it difficult for renters to save for a deposit to enter the housing market (assuming this is a desire).

There are several factors that contribute to the affordability of housing (DTZ New Zealand 2004):

- Income (current and expected lifetime): directly impacts on a household's ability to purchase or rent and make housing/rental payments.
- House prices and rents: represents the level of payment that is required to secure housing.
- Interest rates, nominal and real: determines the cost of borrowing for home owners.
- Labour market conditions: affects a household's ability to participate in the labour market and earn an income, and thus be able to maintain housing costs over a period of time.

- Mortgage and rent payments: directly impacts on a household's ability to save and increase their housing consumption in the future. This is especially relevant for households in the rental market who are looking to purchase a house.
- Supply constraints: may limit the ability of the market to respond to excess demand for housing.

These factors are clearly interrelated. Labour market conditions directly affect people's incomes, specifically their certainty of future income streams. Mortgage and rent payments are determined by interest rates, house prices, rents, and wealth. Supply side constraints affect house prices. Interest rates can also affect house prices as a result of changes in demand for purchasing a house.

Access to affordable housing in New Zealand has emerged as a significant political issue as evidenced by the recent work of the Productivity Commission in the release of the findings of their inquiry into Housing Affordability (March 2012). As both house prices and rents increase, those seeking to own their own homes are faced with the prospect of significantly increased interest rates on home mortgages. According to the Productivity Commission, within New Zealand:

- House price increases have significantly reduced housing affordability over the past decade but, in recent years, this has been at least partially offset by lower mortgage interest rates.
- Housing affordability differs across New Zealand, with dwellings in Auckland typically the least affordable.
- Most indicators suggest that housing affordability has improved in recent years relative to the peak of the 2000s house price boom. However, house price-to-income ratios remain elevated and would require sharp falls in house prices to return to long-term averages. Affordability measures that include financing costs are currently around their longer term averages.
- Housing affordability is lowest among those who are younger, single, have lower income and wealth, live in Auckland, or belong to an ethnic group other than New Zealand European. Notably, during the last house price boom housing affordability became a constraint for some middle income groups, whereas it had previously mainly been an issue for those on lower incomes.
- Over the last decade, rents have increased far less rapidly than house prices and the share of income that households spend on rent has fallen in most years since 1996. This apparently benign aggregate situation, however, disguises a more difficult situation for those on lower incomes who often spend over a third of their income on rent payments.
- The most recent data suggest that upward pressures on rents are beginning to emerge.
- Areas of extreme unaffordability suggest that there may be structural issues with some aspects of the housing market.

Research undertaken in the UK on behalf of Shelter identified that (within the UK):

- 21% of 18- to 44-year-olds without children admit they are delaying starting a family because of a lack of affordable housing.
- Nearly a quarter of people have continued to live with a partner, or know someone who has, because they couldn't afford to live apart.
- 22% of 18- to 34-year-olds live with their parents. Of this group, 58% report that developing and maintaining relationships is harder because of their living situation.
- Over a quarter of people have reduced the amount they spend on food to help pay their housing costs.
- 12% report that high housing costs have affected their ability to move for work.
- 13% (have resorted to sometimes borrowing on a credit card to help pay for housing costs.
- (38% believe that their children or future children will not be able to afford a decent home.
- 18% of people who plan to become a homeowner in the future believe they will need 10 years or more to save for a deposit.

- 50% of renters do not believe that they will ever be able to afford to buy a home in their local area.
- Nearly half of the population 44% believe that in relation to housing, the next Government should prioritise the supply of affordable homes.

Limited availability of affordable housing affects not simply those who have traditionally been assisted through social housing. Within New Zealand, housing affordability is becoming increasingly uncertain even among middle income groups who have traditionally not confronted persistent or widespread barriers to affordable housing.

As can be seen by the above, the effects of a lack of housing affordability are significant both for those immediately affected and at community and national levels. In addition, the range of those within the community who are struggling to afford housing is increasing. In this regard, consideration should be given to understanding what causes housing affordability issues and subsequently, what options are available to counter a lack of housing affordability

Public concern about housing affordability is growing. The Nelson, Marlborough, Tasman housing affordability study showed that even those who had satisfactory housing themselves identified housing as the critical public issue for their regions. Similar views are also expressed among the public in the Eastern Bay of Plenty (Kawerau District and Opotiki District) and Cannons Creek, Porirua. In all those areas, the public typically considered the response of their council to issues of affordable housing as inadequate.

In this regard, there is a growing concern among New Zealand councils (both local and regional) about how they might best respond to housing issues. How councils should handle those roles and whether they should actively facilitate access to affordable and/or social housing.

Hastings District Councils position on local government's role in the provision of affordable and/or social housing was made clear in its submission to the Affordable Housing: Enabling Territorial Authorities Bill which stated that *Hastings District Council acknowledges that there is a housing affordability issues facing New Zealand...it does not agree that the responsibility for provision of affordable housing is a territorial authority matter.* Hastings District Council recognise a housing affordability issue in New Zealand but do not believe that the solution to the issue is for territorial authorities to take on the responsibility for the provision of affordable and/or social housing.

14.6.3 The Role of Medium Density Housing in Providing Affordable Housing

Following on from the above discussion, medium density housing has a potential role in addressing the housing affordability issue within Hastings District. Medium density housing can be an affordable housing option. More dwellings per hectare mean lower land costs per dwelling and smaller dwellings are generally cheaper to build than larger dwellings (assuming similar building standards). However, it is important to recognise that this does not mean that all medium density housing is affordable to all income groups.

In addition, medium density housing constitutes another housing choice in the market. Where medium density housing is seen as a housing preference to current home owners, they may choose to move out of their current dwelling to medium density housing thus placing older (and potentially more affordable) housing into the housing market whilst also providing a broader range of housing choices. This makes the existing home more affordable to larger lower income families. Council may have role in facilitating this process.

Research undertaken by Herriot Watt University in the UK looked at the viability and affordability of new housing. It developed an econometric model to understand how the price of a house is influenced by the mix of housing (i.e. flat, detached, semi-detached, terraced) and the density of housing (i.e. the number of homes per hectare). The study also examined how the mix and density of the homes built on a site affects how affordable they are. Key findings of this research identified that:

- There were marked differences in the affordability of market housing products developed on new build sites between market areas.

- Within market areas there were also differences between neighbourhood locations. Location mattered.
- Homes in low density schemes were almost always less affordable than medium or high density schemes on the same sites.
- Based on the sites studied, medium density schemes seemed to offer the most affordable homes. These tended not to be the most profitable option for developers - with the result that there were likely to be protracted negotiations between the planning authority and the developer.

The Herriot Watt research urged caution against 'one size fits all' planning policies, stating that this would not serve to meet the preferences of a wide range of housing consumers or promote affordability. The authors stated that policy guidance should recognise the need for local variation of size and type of housing, whilst encouraging the monitoring of viability and affordability.

Taking the above into account, it is clear that medium density housing has a positive role in providing for housing affordability and as such, the role of medium density housing should be considered as part of any housing affordability strategy.

14.6.4 Approaches to Avoiding Public/Social Housing Clusters

Excessive clustering of public/social housing can adversely affect a neighbourhood, particularly from a social well-being perspective. This section of the report looks at methods of avoiding excessive clustering of such housing. While HNZ's approach in Hastings is not to building large new housing estates this may change in the future.

14.6.4.1 Pepper Potting

A common approach to avoiding public/social housing clustering is the adoption of 'pepper potting' policies. In simple terms, pepper potting means the dispersal of public/social housing within traditional residential developments as a method of promoting mixed, sustainable communities that minimise social exclusion.

Pepper potting housing densities and tenures within areas of traditional housing, rather than segregating such housing within a development is a generally accepted method of promoting social inclusion and avoiding housing clusters. It can also help to establish communities which are easier to manage and maintain.

To understand how pepper potting should be undertaken (e.g. scale and location) generally requires a thorough analysis of local housing need in order to understand what constitutes an appropriate balance of housing types and tenures within the local context. From this point, a strategy or policy on pepper potting can be developed. In other words, to be able to determine the appropriate mix of traditional market and affordable housing (e.g. the proportion of affordable houses within a defined geographic area/development) requires a thorough understanding of the local housing market and social demographic structure. As noted below, within the UK (in the early 2000's) many London local authorities adopted a requirement of at least 25% of all developments be affordable housing. In this context, the definition of affordable housing becomes very important (i.e. what is considered affordable in one area may be significantly different to another).

The following is an example of pepper potting policy from a UK local authority (Harlow District (population just under 80,000 people) supplementary planning guidance (SPG) on affordable housing (defined as: *housing which is accessible to people whose income does not enable them to afford to buy or rent for their needs on the free housing market The monthly cost of housing should not exceed thirty percent of the household's net monthly income*) and pepper potting:

- *Affordable housing should not be different in external appearance to open market housing on the same site.*
- *The affordable dwellings must be pepper-potted and not concentrated wherever the requirement for any phase is for nine or more units of affordable housing.*

- *The provision of affordable housing must reflect proportionately the overall type of dwelling (for example house or flat), design and density of all dwellings that are built across the whole of the site.*
- *Plans must make clear the pepper-potting of affordable housing for both forms of affordable tenure, to the satisfaction of the Council's Planning and Strategic Housing Services.*
- *The density of all residential development in Harlow is set by Adopted Replacement Harlow Local Plan Policy H1 and shall be taken to apply to affordable homes.*
- *Affordable housing should ideally be located close to local facilities and public transport. Sites that are close to town or local centres and have good access to public transport are well suited to certain types of affordable housing, particularly where the provision is for the elderly. The proximity to services, facilities and access to public transport will be taken into account in deciding upon the level and type of affordable housing.*

14.6.4.2 Requiring Proportions of Developments to be Affordable Housing Through District Plan Requirements

Similar to the pepper potting approach, many Councils in the UK require a portion of all residential developments (over a certain threshold) to provide a proportion (e.g. 25% of all developed units) of a development as affordable (e.g. as defined by affordable housing policy).

This approach has been followed in Queenstown where provisions put forward through Plan Change 24 require the provision of affordable housing by requiring a proportion of a development to be 'affordable housing' (as defined in the district plan¹⁵) through district plan provisions.

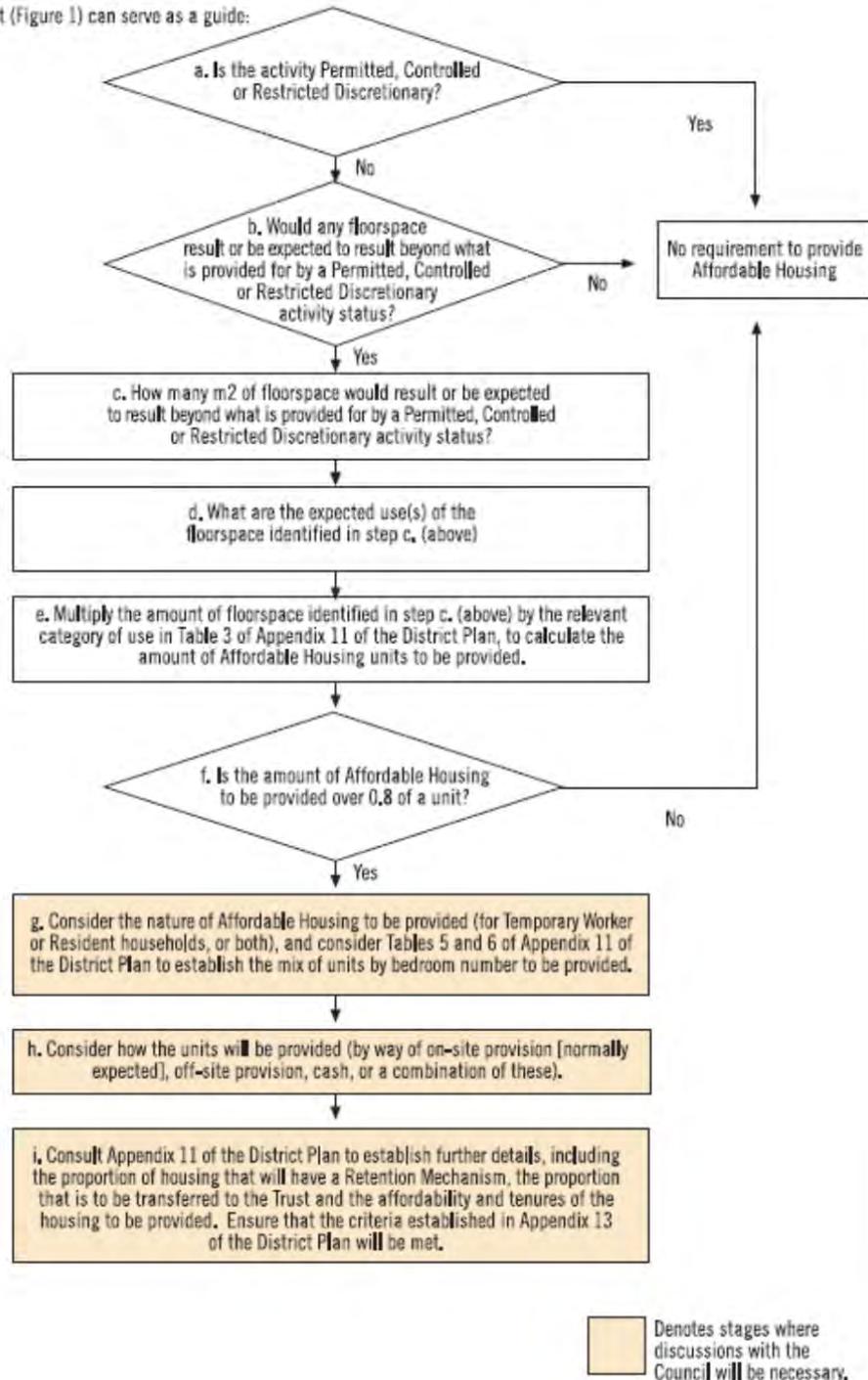
A key implementation method proposed is the preparation of an Affordable Housing Impact and Mitigation Statement (AHIMS) for new developments that are either Discretionary or Non-Complying activities. The AHIMS determines the extent of affordable housing demands generated by the development or subdivision beyond what is already anticipated under the Queenstown Lakes District Plan, and the range of actions to be taken to mitigate the identified demand, therefore requiring discretionary and non-complying residential activities. See table below for details.

Queenstown's housing pressures are quite different to Hastings' and the approach is rare in New Zealand. It is unlikely that at least initially medium density developments will of a size or financially viability to sustain such an approach for at least ten years and the approach should be re-considered at the next review of the District Plan (ten years).

¹⁵ Affordable Housing (Queenstown Lakes District Plan definition) Means a Residential Activity whose cost to rent or own generally does not exceed 30% of the income of low to moderate income households and which reflects the design criteria established in Appendix 11. It includes Community Housing.

What is the process I use to know if my development will have to contribute towards the provision of Affordable Housing?

The following flowchart (Figure 1) can serve as a guide:



14.6.4.3 Encumbrances on Titles

With the development of a private sector medium density housing project, it is possible that a social housing provider (e.g. Housing New Zealand) purchases those properties for rent to low income households. Where this occurs on a relatively (relative in terms of socio-economic balance of the area) large scale it can lead to adverse effects in terms of the socio-economic profile of the local community e.g. unbalanced communities. To manage this risk, a technique often used is to place an encumbrance on the title of medium density housing prohibiting the sale or rental of the property to a social housing provider.

As way of example, Landco (developer) has placed an encumbrance on titles within the Auckland Stonefields development. There are numerous controls on this encumbrance including: *The encumbrancer must not:*

- a) *Sell, trade, swap, lease, licence or otherwise deal with; or*
- b) *Offer to sell, trade swap, lease, license or otherwise deal with;*

any Lot to Housing New Zealand or any client of Housing New Zealand nor consent to any sublease or assignment of any lease or other arrangement under which possession of any Lot passes to Housing New Zealand or any client of Housing New Zealand.

Whilst clearly a method available to developers, it is questionable whether a Council could enforce such a method through conditions, however it would certainly be within the Councils powers to encourage developers to adopt such a method where the prospect of creating unbalanced communities may be a concern.

14.6.5 Conclusion

Taking the above into account, it is recommended that the Council develop an affordable housing strategy that determines whether a greater level of Council intervention (e.g. affordable housing policy) is required in the housing market to ensure housing affordability. This strategy should recognise the role of medium density housing in affordable housing and consider at the next District Plan Review the costs and benefits of the approaches to avoiding social housing clusters as described above, or sooner if Government's social housing policies change dramatically in the Hastings context.

Recommendations

Hastings District Council should:

- 1) *Identify sites within a 5 minute walk of the northern portion of the Parkvale host neighbourhood that could be rezoned to suburban commercial to better provide for the future needs of the intensification area.*
- 2) *Identify sites within a 5 minute walk of the southern portion of the Mahora host neighbourhood that could be rezoned to suburban commercial to better provide for the future needs of the intensification area.*
- 3) *Consult with the Ministry of Education and relevant private school providers regarding the potential implications of intensifying the host neighbourhoods. In addition, it is recommended that HDC consult with MoE regarding the provision of schools for the Heretaunga Street East host neighbourhood, particularly so for the northern portion of the intensification area.*
- 4) *Promote housing supply that reflects the demographic and socio-economic profiles of likely future residents within the Hastings context*
- 5) *Develop an affordable housing strategy that determines whether greater level of Council intervention (e.g. affordable housing policy) is required in the housing market to ensure housing affordability. This strategy should recognise the role of medium density housing in affordable housing and consider the costs and benefits of the approaches to avoiding social housing clusters.*
- 6) *Investigate options for freeing up under-utilised housing stock. For example, the development of further retirement villages may encourage elderly, smaller households occupying traditional large sites to relocate thus freeing inefficiently used resources for more efficient uses.*

Appendix A Medium Density Ready Services - Transportation



MWH.

BUILDING A BETTER WORLD

DRAFT

Medium Density Housing Strategy - Transport Assessment

Prepared for Hastings District Council

7 April 2013

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Medium Density Housing Strategy - Transport Assessment

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APPENDICES

APPENDIX A – HASTINGS NETWORK PLANS

APPENDIX B – MDHS NETWORK PLANS

APPENDIX C – DEFICIENCY REGISTER

1 Introduction

MWH have been commissioned to undertake an Integrated Transport Assessment for the proposed Medium Density Housing Strategy development sites. This assessment aims to assess the impact of the proposed intensification on the road network and identify accessibility to each site by all transport modes. Predominantly the ease of connectivity of the development sites has been assessed to ensure all developments are sustainable in the long term. In addition, access by private motor vehicles has been considered in terms of determining any operational impacts.

The accessibility of the sites by each transport mode is discussed further within this section and includes consideration of the following:

- Connectivity to walking and cycling networks
- Proximity to Public Transport infrastructure and services
- Accessibility to recreational areas and spaces
- Operational implications on road network
- Road safety deficiencies on road network
- Barriers to sustainable transport use in this area

1.1 Walking

The Chartered Institute of Highways and Transportation (UK) published Guidelines for Providing Journeys on Foot in 2000. The main objective of this document is to detail best practice for pedestrian infrastructure design. The document is also useful in assessing the suitability of development sites to ensure they are adequately accessible by pedestrians. In addition, Planning Policy Guidance Note 13 (PPG13 – UK) details appropriate walking and cycling distances to and from new developments which can be used to assess the accessibility of the proposed development sites. This specifies a maximum 2km walking distance from residential dwellings to key destinations and is accepted as a suitable measure within New Zealand. Each site has been assessed to determine whether site accessibility is achieved within a 2km walking network.

In addition to the general connectivity of the sites, this report also considers barriers to pedestrian movements in and around the area. These barriers can include lack of appropriate crossing opportunities, insufficient footway provision and pedestrian safety issues. For each site, specific deficiencies have been identified for future action.

In addition to network deficiencies specific to each site, some consideration of street lighting is required given the strategic impact this can have on providing a suitable and safe walking network. It is recommended therefore that HDC adopt a strategic plan to assess and upgrade existing street light infrastructure across the urban network over the next 20 years.

1.2 Cycling

An acceptable cycle distance for commuting purposes is generally accepted as 5km (as supported by CIHT - UK), although some cyclists are willing to cycle significantly further than this to their respective destinations. Each site has been assessed to determine the available destinations within a 5km boundary.

Significant work has been completed in recent years with the urban areas of Hastings District through the i-Way programme (NZTA Model Communities) to increase and promote walking and cycling. This has resulted in significant lengths of on and off-road cycle facilities being implemented, covering wide areas of the district which can be utilised by the development sites. The cycle network completed to date is detailed in Figure 1-1 below and provided in full in Appendix A.



Figure 1-1 : i-Way Cycle Network

Although this network is extensive, some deficiencies exist in the network resulting in a lack of suitable access to some areas of the Hastings and Havelock North. Each site has been assessed to determine whether any cycle deficiencies exist and these are identified for each respective location for future action.

Further to the cycle network, the proposed intensification units have the opportunity to promote cycling by ensuring suitable facilities are provided within each unit. This could include dedicated cycle storage for each dwelling or communal cycle parking.

1.3 Public Transport

An extensive public transport network serves the majority of Hastings and Havelock North presently. This network is detailed in Figure 1-2 below and Appendix A and is assessed specific to each site later in this report. In general, it is apparent that the existing network is located in close proximity to all of the development sites. However, the site specific assessments include consideration of bus stop locations and scheduling also to determine suitability of public transport facilities.



Figure 1-2 : Hastings Public Transport Network

In addition to the existing bus services, a number of future bus service routes are proposed across the district as detailed in Figure 1-2. These services will expand the existing network significantly and will also improve bus travel time between the main centres (through dedicated bus lanes). However, no scheduling information is presently available for these proposed routes and as such it is difficult to make too many conclusions in terms of whether these changes will close the existing gaps in the bus service.

Although bus service provision, specific to each development site has been assessed later in this report, some general issues are apparent network wide. These are summarised below including suitable mitigation measures which should be considered to ensure suitable public transport access at each of the development sites.

Bus services should be increased to accommodate evening commuter and leisure travel.

- Existing services, in general, are limited to daily operating. Bus services should be increased to facilitate more evening services.
- Existing services, in general, are limited to weekday operating. Bus services should be increased to facilitate more weekend services.
- Outside of the main centres, bus stop facilities consist mainly of a post and sign. Provision of more substantial bus stop infrastructure should be considered at locations that have potential to entice high usage (Heretaunga Street, Tomoana Road etc).
- Real time information should be investigated as bus routes expand.

1.4 Vehicular Access

All development sites are located directly on, or very close to, collector and arterial roads. As such, vehicular access is well catered for. Nonetheless, access requirements and potential operational implications have been considered specific to each location later in this report. In considering the potential operational issues, a number of local strategic studies have been assessed and considered. In addition, known local operational issues have been identified. No modelling, specific to these development sites, has been completed. The following have been considered in assessing the operational impacts associated to each site.

- Known local issues - On site observations or issues known to the author have been considered when assessing each site. These issues have not been quantified due to the absence of specific modelling within this assessment but the likely impact has been specified.
- Heretaunga Plains Transport Study (HPTS) – This study provided a traffic model for the urban area which includes some consideration of land intensification. The deficiency report from this study has been utilised to identify the locations which will experience operational issues following completion of any intensification.
- Havelock Plan Change Transport Assessment – This document provides a good overview of the current and future operation of the Havelock road network. These findings have been utilised to determine likely impacts associated to the proposed intensifications.
- Havelock Road Corridor Management Plan (HRCMP) – This document provides a strategic direction for the future management of the Havelock Road and Heretaunga Street East road corridor. Given the strategic nature of this route and its proximity to the development sites, the actions contained within it will go some way to minimising the likely impact associated to the proposed developments.

Although the HPTS provides a good overview of the network operation, the model did not account for full development potential of the MDHS sites. Figure 1-5 below highlights the difference between the modelled flows and the potential intensification associated to each location.

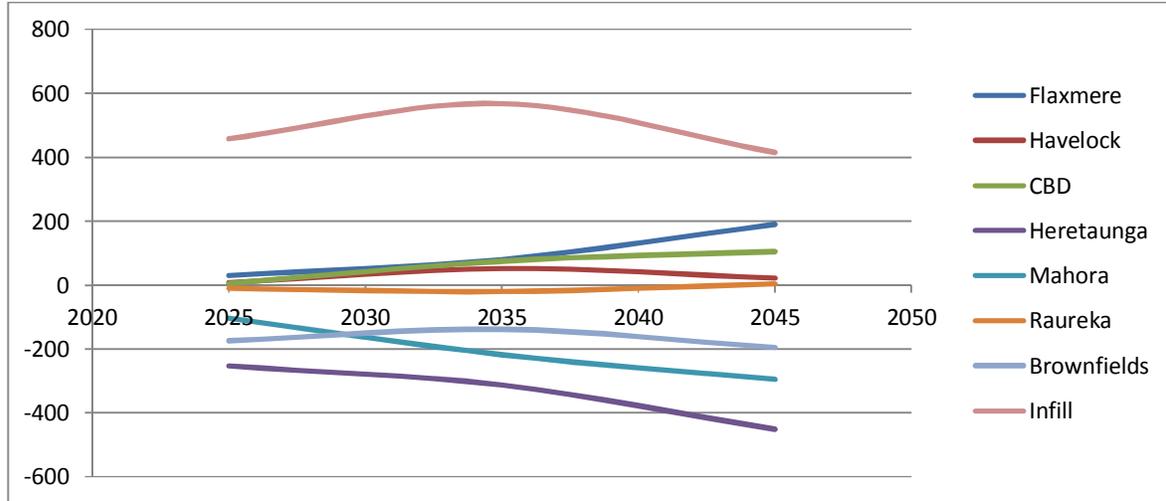


Figure 1-5 : HPTS to MDHS intensification

The shortfall in the modelled volumes is significant for some locations such as Heretaunga Street East. As such, this report has tried to estimate any additional impacts not already accounted for within the HPTS although the deficiency report has been used to aid this.

1.4.1 Freight Traffic

An overview of the strategic freight routes throughout Hastings is provided in Figure 1-5 below and Appendix A. It is apparent from this information that a number of the routes run adjacent to the development sites. Although this has some implications in terms of conflict with walking and cycling, it is not expected to result in significant issues but is more of a consideration with respect to adopting suitable road design cross sections. The assessment is therefore with regards to freight traffic and relates solely to the proposed road cross sections.

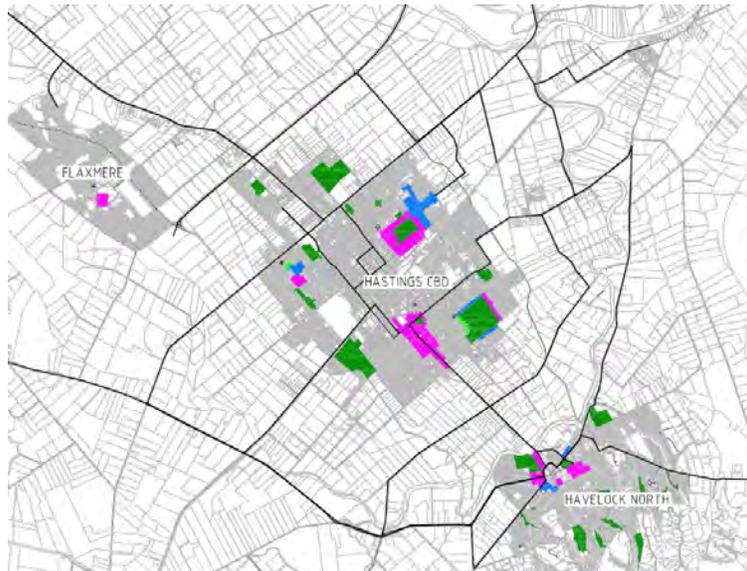


Figure 1-5 : Hastings Freight Routes

1.4.2 Road Cross-Sections

Given the change in nature associated to each of the roads running adjacent to the proposed developments, it is necessary to assess the current road layout to ensure it is appropriate to accommodate the demands expected of medium density housing. The simplest way to address this is to consider each area individually.

All roads that directly front the proposed developments have been considered to ensure the existing layout is sufficient to accommodate the proposed changes. Where the existing layout does not meet the required standard, a suitable cross-section has been identified.

1.5 Mitigation Measures

The assessment of each transport mode has identified a number of issues specific to each development site. This report details these issues and identifies suitable mitigation measures to reduce or remove these deficiencies. In addition, suitable mechanisms are identified which could be utilised to implement these mitigation measures at reduced cost by merging with existing works. The mechanisms considered are as follows:

- Forward Works Programme
- Corridor Management Plans
- Strategic Programmes (i-Way etc)
- Stand-alone project
- Development Contributions

In addition to identifying the required works and determining suitable implementation mechanisms, a very rough order cost has been provided for each work item. The work items have been collated as an entire programme with suitable implementation dates identified. In addition, the costs which should lie directly against the developments (i.e. development contributions) have been provided as a total costs specific to each development area.

2 Havelock North

The anticipated intensification within Havelock North, including the predicted development period, is depicted in Figure 2-1 below. This intensification is located on the periphery of the main centre which falls under a separate development strategy. The sites are located in walking distance to the main centre and predominantly lie on arterial roads.



Figure 2-1 : Havelock North Medium Density Development Sites

2.1 Accessibility

2.1.1 Walking

Figure 2-2 shows the area within a 2km distance of the development site. This distance is regarded as a maximum acceptable walking distance from an origin (home) to a destination (work, school etc).

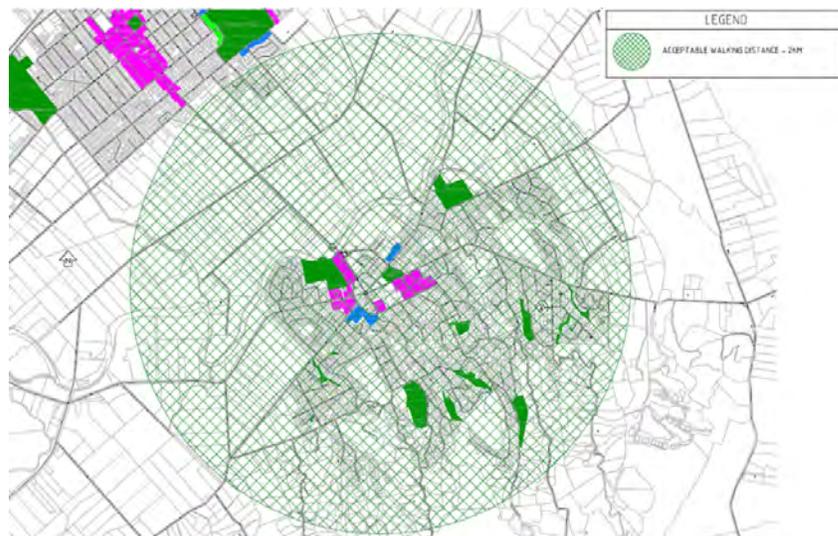


Figure 2-2 : Havelock North – Acceptable Walking Distance

From Figure 2-2 it is apparent that the proposed development sites are located well within acceptable walking distance to the majority of Havelock North. The development sites are within 2km walking distance of many schools, recreational areas and employment opportunities (within the village). However, the site is more than 2km from the main CBD area of Hastings. As such, it is unlikely that residents of the development sites will choose to walk to and from Hastings. Although the 2km guideline is not true for all pedestrians (with some pedestrians willing to walk up to 3 times this distance) it is expected, that given the distance between Hastings and Havelock North, the majority of residents will choose an alternative transport mode when travelling between the two centres.

In addition to the general connectivity of the sites, this report also considers barriers to pedestrian movements in and around the area. These barriers can include lack of appropriate crossing opportunities, insufficient footway provision and pedestrian safety issues.

In general, walking accessibility and connectivity to all of the development sites within Havelock North is excellent. Direct pedestrian links are provided to the majority of sites and crossing provisions already exist on most of the intersecting roads. In addition, access to recreational areas is generally well catered for. However, a number of minor issues are evident from site assessments. These are detailed in Table 2-1 below.

Table 2-1: Walking Deficiencies

Location	Deficiency
Te Mata Road/Karanema Drive	Footpaths exist on all quadrants but the link from Duart Road to the crossing at the intersection is disjointed and could be improved by extending a footpath around the outside of the parking area.
Te Mata Road	There is no pedestrian crossing provision in the vicinity of the development sites across Te Mata Road. A crossing provision near Chambers Street would offer a defined connection to local bus routes and would also enhance accessibility between the development and local services such as schools and medical centres.
Campbell Street	Presently there are no footpaths provided along the northern side of Campbell

	Street adjacent the proposed development. Direct access for pedestrians to these properties is a necessity for medium density housing.
Middle Road	There is currently no footpath on the north-western side of Middle Road. Direct pedestrian access is a necessity for medium density housing.
Middle Road/Porter Drive	There is currently no footpath on the north-western side of Middle Road. Direct pedestrian access is a necessity for medium density housing.
Te Aute Road	The width of Te Aute Road and the provision of parking (both angled and parallel) make crossing this road very difficult at present. A pedestrian refuge island exists at the Porter Drive intersection presently but there is no other crossing facility on Te Aute Road in the vicinity of this development site. A mid-block crossing would provide access to and from the recreational areas and will provide links to educational facilities on Elliot Crescent and Mangarau Crescent.
Havelock Road	There is currently a zebra crossing facility close to the intersection with Porter Drive. However, for pedestrians travelling away from the main centre and wishing to cross Havelock Road near Karanema Drive there is no provision presently. There is a demand for some provision here to link with local dining facilities, swimming pools and educational facilities.
Karanema Drive	No footpath exists on the southern side of the road between Havelock Road and Donelly Street. This results in a disjointed network and reduces accessibility to local retail areas, recreational areas and medical centres.

2.1.2 Cycling

A 5km cycling boundary is detailed in Figure 2-4 and shows that pretty much all of Havelock is accessible within the 5km limit and that the majority of Hastings CBD is similarly located within the 5km boundary. This provides excellent opportunity for residents of the development sites to commute by cycle.

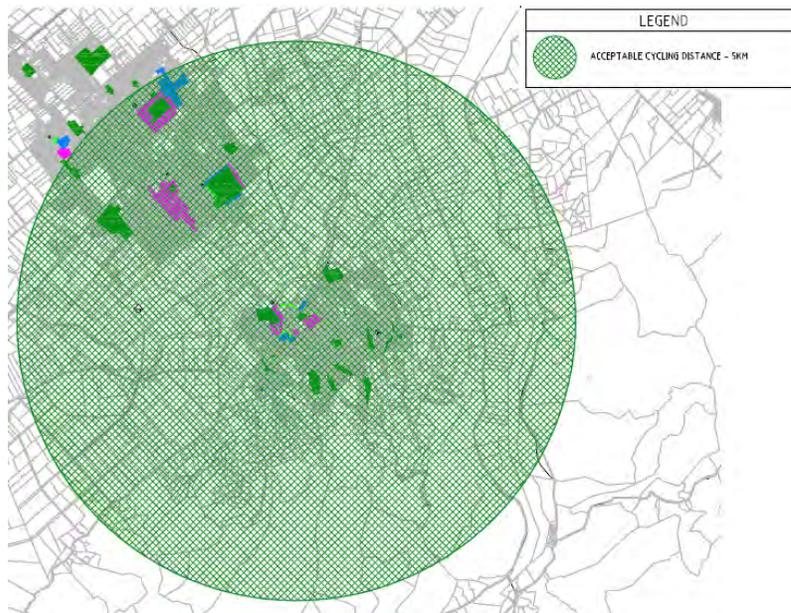


Figure 2-3 : Havelock North – Acceptable Cycling Distance

The cycle network completed to date was detailed earlier in Figure 1-1 and is provided again below, specific to Havelock North.



Figure 2-4 : Havelock North – Existing Cycle Route Provision

The existing cycle network serves the development sites on Napier Road and Te Mata Road well and links these locations to Hastings and beyond. This is also true for part of the development site on Havelock Road. However, some deficiencies exist in the network which does not currently serve the residential areas to the southwest of the main centre, including the proposed development sites on Te Aute Road, Porter Drive and Middle Road. All of these routes previously formed part of the i-Way cycle network but have not been implemented on site due to insufficient road widths or conflicts with parking demands. The following issues exist with respect to cycle access to and from the development sites.

Table 2-2: Cycling Deficiencies

Location	Deficiency
Havelock Road (rural section)	At present a shared walking/cycling facility exists on the northern side of the road with an on-road cycle provision on the southern side. This provides adequate connectivity between Hastings and Havelock North. It is understood that a shared facility is also proposed on the southern side which will further enhance this connections for all users.
Havelock Road (urban section)	The existing route along Havelock Road terminates at Karanema Drive and does not extend in to the CBD or towards the south west of Havelock. This is a defined gap in the cycle network serving Havelock North and should be addressed.
Porter Drive	Cycle provision along this route currently consists of ‘Share The Road’ signage. This route forms an integral part of the network serving the south west of Havelock North and given the proposed intensification of development, and the traffic volumes present here a more appropriate facility should be implemented along this route.
Te Aute Road	This route is part of the original i-Way network although no measures have yet been implemented on site. Again, this road provides direct access from residential areas, including the proposed development sites, to the main Havelock Centre and on to Hastings. A cycle route should be implemented along this route.
Middle Road	Again, this route is part of the original i-Way network although no measures have yet been implemented on site. Middle Road provides direct access from residential areas, including the proposed development sites, to the main Havelock Centre and on to Hastings. A cycle route should be implemented along this route.

2.1.3 Public Transport

Detailed public transport links throughout Hastings and Havelock North have been provided in Figure 1-2 previously and are provided again below specific to the Havelock area.

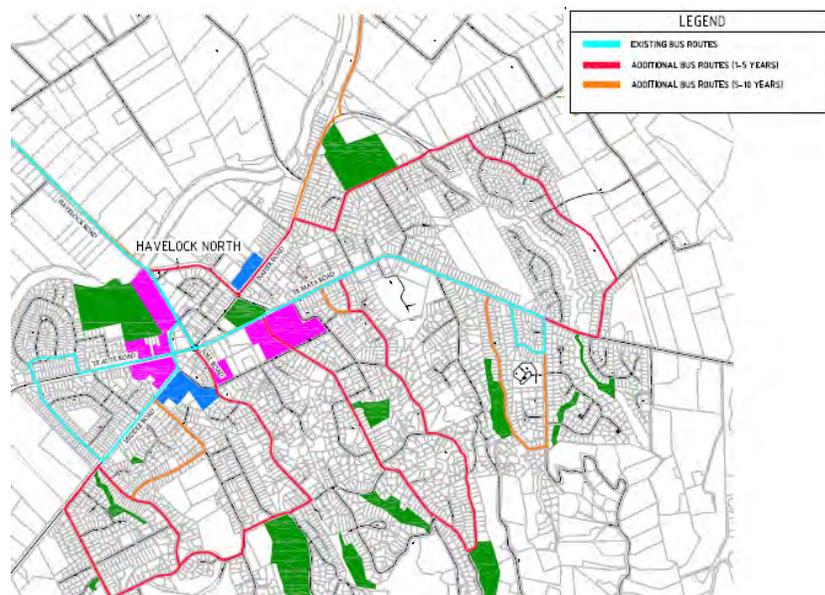


Figure 2-5 : Havelock North – Bus Routes and Bus Stop facilities

The existing network (shaded blue) fronts all of the development sites with the exception of Napier Road. However, bus stops are located within 300m of this development on Te Mata Road which is within the 400m threshold generally accepted as a maximum distance between bus stops and residential properties. All of the development sites fall well within this 400m threshold. Furthermore, the pedestrian links to and from these stops is well catered for with the exception of those issues raised in Section 2.1.1 previously. The buses serving Havelock provide links to Hastings CBD and Napier (via Clive). Additional destinations can be reached by changing services at Hastings CBD or Napier. Tables 2-3 and 2-4 provide an overview of the bus timetables serving Havelock North.

Table 2-3: Route 11 Express - Timetable (No Weekend Service)

Monday to Friday	Am	am	pm	pm	Monday to Friday	am	am	pm	pm
Depart Havelock North	7:15	7:40	4:35	5:10	Depart Napier Library	7:10	7:50	4:40	5:20
Heretaunga Street	7:20	7:45	4:40	5:15	Te Awa Ave	7:13	7:53	4:43	5:23
Hastings Library	7:25	7:50	4:45	5:20	BP Clive	7:20	8:00	4:50	5:30
Karamu Road	7:28	7:53	4:48	5:23	Karamu Rd	7:27	8:07	4:57	5:37
BP Clive	7:35	8:00	4:55	5:30	Hastings Library	7:30	8:10	5:00	5:40
Te Awa Ave	7:42	8:07	5:02	5:37	Heretaunga St	7:35	8:15	5:05	5:45
Arrive Napier Library	7:45	8:10	5:05	5:40	Arrive Havelock North	7:40	8:20	5:10	5:50

Table 2-4: Route 21 – Timetable (No Sunday Service)

Monday to Friday	am	am	am	am	am	am	am
Hastings Library				8:05	9:05	10:05	11:05
Russell K-Mart				8:10	9:10	10:10	11:10
The Park (Mitre 10)				8:12	9:12	10:12	11:12
Sefton Street		7:00	7:30		9:25	10:25	11:25

Monday to Friday	am	am	am	am	am	am	am	
Durham Drive		7:10	7:40	8:35	9:35	10:35	11:35	
Havelock North Village	6:50	7:15	7:45	8:40	9:40	10:40	11:40	
Sefton Street				8:45				
Hastings Library	7:00	7:25	7:55	8:55	9:50	10:50	11:50	
Monday to Friday	pm	pm	pm	pm	pm	pm	pm	pm
Hastings Library	12:05	1:05	2:05	3:05	4:05	4:35	5:10	5:30
Russell K-Mart	12:10	1:10	2:10	3:10	4:10	4:40	5:15	5:35
The Park (Mitre 10)	12:12	1:12	2:12	3:12	4:12	4:42	5:17	5:37
Sefton Street	12:25	1:25	2:25	3:25	4:25	4:45	Set Down	Set Down
Durham Drive	12:35	1:35	2:35	3:35	4:35	5:05	Set Down	Set Down
Havelock North Village	12:40	1:40	2:40	3:40	4:40	5:10	Set Down	Set Down
Hastings Library	12:50	1:50	2:50	3:50	4:50	5:20		
Saturday	am	am	pm	pm				
Hastings Library	9:00	10:45	2:00	3:45				
Russell K-Mart	9:01	10:46	2:01	3:46				
The Park (Mitre 10)	9:04	10:49	2:04	3:49				
Sefton Street	9:15	11:00	2:15	4:00				
Durham Drive	9:25	11:10	2:25	4:10				
Havelock North Village	9:30	11:15	2:30	4:15				
Hastings Library	9:40	11:25	2:40	4:25				

From the above information it is apparent that the Havelock North sites are well served for weekday bus travel presently. This is particularly true for commuter provision given the high number of buses running during the am and pm peak periods. However, the absence of evening bus services and the limited weekend provision (4 buses on Saturday only), mean that changing from private car ownership to public transport from this location is unlikely to be a suitable life choice at present.

The bus service route provided in Figure 1-2 earlier indicates the future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus. These services will expand the existing network significantly and will also improve bus travel time between Hastings and Havelock North (through dedicated bus lanes). No scheduling information is presently available for these proposed routes. In short, the existing and proposed routes are appropriate to serve the development sites but the following should be considered, in addition to the general public transport improvements suggested in Section 1.3:

Table 2-5: Havelock North Public Transport Observations

Location	Deficiency
Te Mata Road	Consider provision of bus shelters in vicinity of Karanema Drive.
Havelock Road	Consider provision of bus shelters on Havelock Road, urban section.

2.1.4 Vehicular Access

All sites within Havelock are located on predominately arterial roads and as such vehicular access is well catered for.

2.1.4.1 Private Car

The anticipated level of development could potentially result in the provision of 98 medium density dwellings. This could potentially result in approximately 784 additional vehicular trips per day (8 trips per dwelling) on the adjacent road network. As indicated previously, some of this impact has already been considered through the HPTS and subsequent strategies have been developed to account for these changes (such as HRCMP). However, the impact of this increase in vehicular traffic on the network in the immediate vicinity of the development needs to be considered further. The deficiency analysis contained within the HPTS is shown below for the worst case scenario (PM peak in 2046)

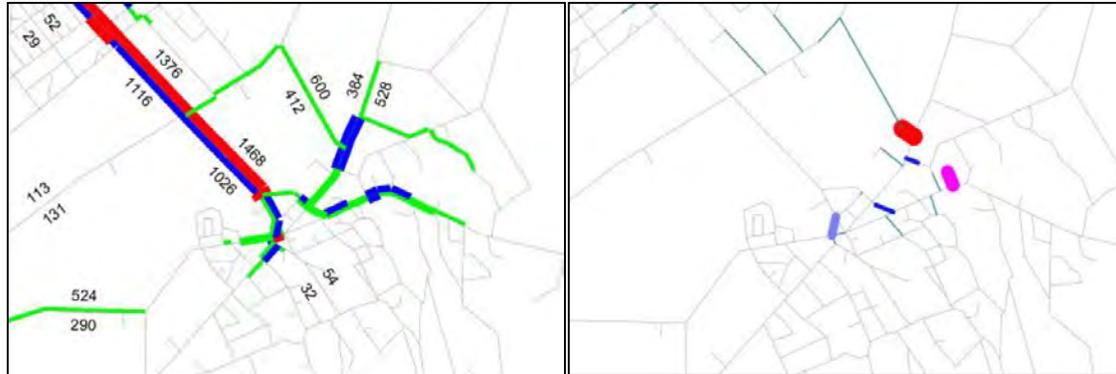


Figure 2-6 : Havelock North – Route and Intersection Deficiency Analysis 2046 PM Peak

The increase in traffic could be significant in terms of peak hour trips and given the road network layout in Havelock North these trips are likely to be largely accommodated on only a small number of routes. The biggest impact is expected on Te Mata Road, Porter Drive and Havelock Road given that a large proportion of the development is accessed from these routes. From the deficiency analysis above it is shown that both Porter Drive and Havelock Road will experience congestion and delays during this period which may be exacerbated by the developments. In addition, the Transport Assessment associated to the Havelock Plan change shows operational issues at the Te Mata Road/Napier Road roundabout intersection also. Table 2-6 below details the operational issues associated to the Havelock development sites.

Table 2-6: Operational Observations

Location	Impact
Te Aute Road/Porter Drive	Existing roundabout experiences some delays during peak periods, particularly pm peak. The deficiency analysis contained within the HPTS confirms this intersection will experience increased delays in future years. In addition, the TA for the Havelock North plan change details significant increases in delays at this intersection following the proposed development works. As such, improvements may be required to mitigate this impact. Given the strategic nature of this route for pedestrian access through the area, any enhancements will need to consider these demands.
Havelock Road (urban)	There is a significant amount of roadside attractions along this part of Havelock Road which results in numerous turning manoeuvres from and onto the network. Roadside parking creates additional conflicts and limits opportunities for substantial cycling facilities. Limiting roadside parking, creating cycle lanes and restricting the number of access points to the proposed development sites will assist in maintaining appropriate operation along this road.
Te Mata Road/Napier Road	The deficiency analysis confirms that this intersection will experience increased delays in future years. This is supported by the Havelock Plan Change TA which confirms operational issues at this intersection in future

	years. Improvements to the intersection may be required to ensure adequate operation is maintained.
Havelock Road (rural)	This road is expected to accommodate the majority of traffic associated to the development sites travelling from Havelock North to Hastings. This road accommodates significant traffic volumes currently and operates satisfactorily along its length. Although the increase in traffic associated to the developments is relatively minor, operational issues on Havelock Road could be a reality in future years. This has already been considered in the HRCMP and the mitigation measures identified within this document are being implemented by HDC in stages. This will ensure satisfactory operation of this road for the foreseeable future. The deficiency analysis shows that the volume of traffic along this road in future years will approach saturation levels (on links). This will have some impact on traffic speeds and travel times but intersection operation is shown to remain relatively unchanged.

2.1.4.2 Freight

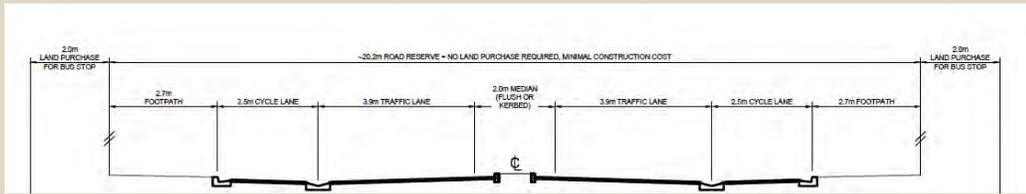
An overview of the strategic freight routes throughout Hastings was provided in Figure 1-3 previously. It is apparent from this information that a number of the routes run adjacent to the development sites in Havelock North. These routes consist of Te Aute Road, Middle Road, Havelock Road, Porter Drive, Napier Road and Te Mata Road. Although this has no significant impact on the suitability of these sites for medium density housing, it is important to determine appropriate cross-section treatments for these roads to ensure all demands are accommodated.

2.1.4.3 Road Cross-Sections

Table 2-7: Havelock North Cross Section Observations

Location	Requirements
Middle Road	Existing layout is appropriate for this road classification provided a footpath and on road cycle lanes are implemented as identified previously.
Porter Drive (between Havelock Road and Te Aute Road)	Existing layout is sufficient other than the absence of suitable cycle facilities. Provide dedicated cycle facilities on this link.
Napier Road	Existing layout is appropriate for proposed use.
Te Mata Road	Existing layout is appropriate for proposed use.
Porter Drive (between Te Aute Road and Joll Road)	Existing layout is sufficient other than the absence of suitable cycle facilities. Provide dedicated cycle facilities on this link.
Campbell Street (south of Duart Road)	Existing layout is appropriate for proposed developments.
Duart Road	Existing layout is appropriate for proposed developments.
Havelock Road (urban section)	Reduce roadside parking, provide cycle provision and reduce number of right turning conflicts. HRCMP includes provision to address this through removal of parking, provision of cycle lanes and public transport facilities in addition to widened pedestrian footpaths detailed below.

Location	Requirements
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Te Aute Road	Requirements
	Provision of on road cycle lanes and reduction in angled parking should be progressed to ensure unsuitable conflicts are avoided. Appropriate solutions already identified within HDC Best Practice Design Guide.



Campbell Street (north of Duart Road)	Requirements
	Amendments to cross section required to facilitate roadside parking. Appropriate solutions have already been identified in HDC Best Practice Design Guide as detailed below.



2.2 Conclusion

It is shown that the Havelock North medium density sites are ideally located for direct access to sustainable transport options. Bus services and bus stop facilities serve all of the development sites adequately and provide access to Hastings CBD and Napier CBD with connections available to the wider area. Walking and Cycling provision at the development sites is generally excellent and provides key links to local attractions including parks, retail areas, schools and medical facilities. In addition, continuous walking and cycling infrastructure is provided for commuters between Havelock North and Hastings.

The impact of the developments on traffic operation is estimated to be relatively minor in this area. Although there will be some impacts on certain roads, the road network will be able to accommodate this and adequate operation will be maintained.

The assessments have identified a number of deficiencies on the local network which may reduce accessibility to and from the development sites. Ideally, these should be addressed prior to development completion to ensure accessibility by all transport modes is accommodated and maximised where possible. A complete register of all deficiencies associated to each site is provided in Appendix A and discussed further in Section 7 of this report.

3 Heretaunga Street East

The anticipated intensification within Heretaunga Street East, including the predicted development period, is depicted in Figure 3-1 below. This intensification is located on the periphery of Hastings CBD. The sites are located within walking distance to the main centre and lay on predominantly arterial and collector roads.



Figure 3-1 : Heretaunga Street East Medium Density Development Sites

3.1 Accessibility

3.1.1 Walking

Figure 3-2 shows the area within a 2km distance of the development site. This distance is regarded as a maximum acceptable walking distance from an origin (home) to a destination (work, school etc).

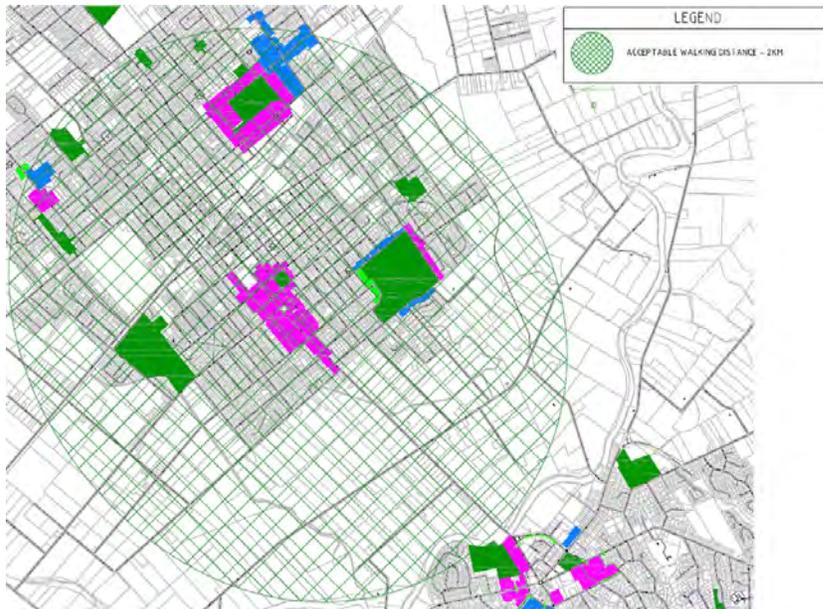


Figure 3-2 : Heretaunga Street East – Acceptable Walking Distance

From Figure 3-2 it is apparent that the proposed development sites are located within acceptable walking distance to Hastings CBD. The development sites are within 2km walking distance of many schools, recreational areas and employment opportunities (within the CBD). The site is also within acceptable walking distance to retail and commercial premises on St Aubyn Street. As such, it is feasible to assume that a large proportion of residents within this area will have the opportunity to walk to and from their place of work.

In general, walking accessibility and connectivity to all of the development sites within Heretaunga Street East is excellent. The predominant movement is expected to be along and across Heretaunga Street East. Heretaunga Street East links directly on to the recently completed Havelock Road path which provides direct access to Havelock for people willing to walk this distance. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in Table 3-1 below.

Table 3-1: Walking Deficiencies

Location	Deficiency
Heretaunga Street East / Norton Road	Presently no footway or crossing provision exists east of Norton Road. Pedestrians and cyclists travelling from the Norton Road area towards Havelock Road currently have to cross unaided at this intersection or travel back west to use the existing zebra facility. An additional facility east of the intersection linking to the future Havelock Road Stage 2 scheme would remove this barrier and provide an excellent link for cyclists and pedestrians travelling between Havelock and the Norton Road area.
Heretaunga Street East / Sylvan Road	Pedestrian crossing facilities across this roundabout are currently disjointed and, in one instance, require pedestrians to cross through a parking lay-by with little protection afforded from passing traffic. Given the links to leisure facilities Sylvan Road offers, improvements to this provision should be progressed.
Heretaunga Street East between Sylvan	No crossing facilities exist along this section at present. Given the cross links present here and the potential linkages to Queen Square afforded to residents of the proposed development, additional facilities should be

Location	Deficiency
Road and Willowpark Road	provided along this section of road. At present, given the traffic volumes using this road, the lack of suitable crossing facilities is a real barrier to pedestrian movements through this area.
Heretaunga Street East / Willowpark Road	The volume and speed of traffic using this intersection creates real difficulties for pedestrians crossing here. Significant improvements to pedestrian provision here, perhaps linked to mid-block facilities from the previous item, should be progressed to ensure appropriate pedestrian connectivity is provided safely. These facilities are also appropriate on Willowpark Road.
Riverslea Road South	A pedestrian refuge is provided at the intersection of Riverslea Road/Heretaunga Street currently. However, this is narrow and does not offer safe refuge for users. In addition, the width of the remaining traffic lanes makes this intersection a barrier to pedestrian connectivity. Improved crossing facilities at this intersection should be considered.

3.1.2 Cycling

A 5km cycling boundary is detailed in Figure 3-4 and shows that the majority of Hastings is accessible within the 5km limit, as is Havelock CBD. This provides excellent opportunity for residents of the development sites to commute by cycle to these areas.

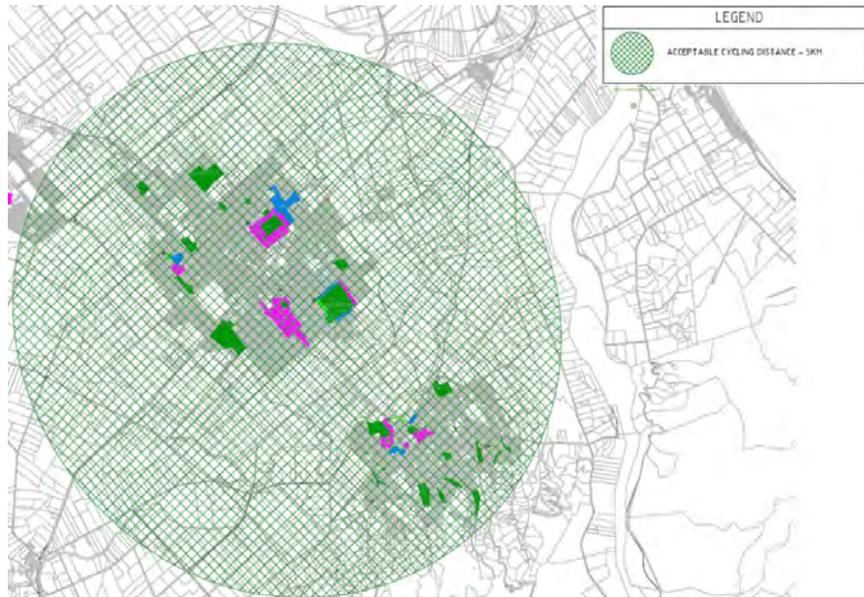


Figure 3-3 : Heretaunga Street East – Acceptable Cycling Distance

The cycle network completed to date was detailed earlier in Figure 1-1 and is provided again below, specific to Heretaunga Street East.

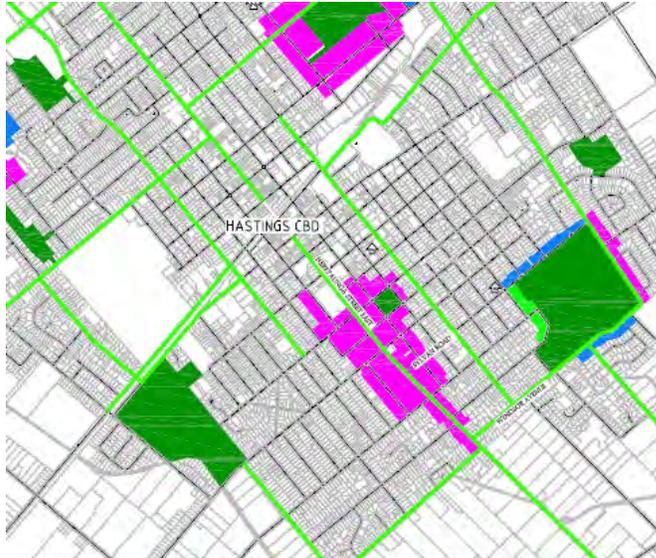


Figure 3-4 : Heretaunga Street East – Existing Cycle Route Provision

The existing cycle network runs directly adjacent to the development sites along Heretaunga Street and Norton Road. These cycle routes link to the wider Hastings and Havelock North area via routes along Windsor Avenue, Karamu Road and Havelock Road. In short, the Heretaunga Street East development sites have excellent cycling connections with a defined cycle network present in the immediate vicinity of the sites. Given the relatively low traffic volumes on the remaining road frontages of the development, specific cycle provisions on these routes is not required. However, there is a gap in the network to the south of the sites through Akina. This results in no direct link with recreational facilities in this area such as Akina Park. In addition, just one link between Heretaunga Street and St Aubyn Street exists presently meaning at Windsor Avenue reducing cycle connectivity through this area. This deficiency is summarised below.

Table 3-2: Cycling Deficiencies

Location	Deficiency
Riverslea Road South	Although identified on the i-Way cycle network, no route has yet been provided along this road due to road width constraints. This results in a gap in the network serving the south-west of Hastings. This link should be implemented to provide links from the development to schools and recreational facilities in this area. This should also be linked to crossing provisions on Heretaunga Street identified previously.
Riverslea Road North	Although identified on the i-Way cycle network, no route has yet been provided along this road due to road width constraints. This results in a gap in the network for residents of this area who wish to travel to St Aubyn Street or beyond. This link should be implemented to ensure residents of the new development have suitable cycle connectivity to the wider Hastings area. This should also be combined with crossing facilities identified previously.

3.1.3 Public Transport

Detailed public transport links throughout Hastings and Havelock North have been provided in Figure 1-2 previously. However, a more detailed overview of the bus network specific to Heretaunga Street East is provided in Figure 3-6.

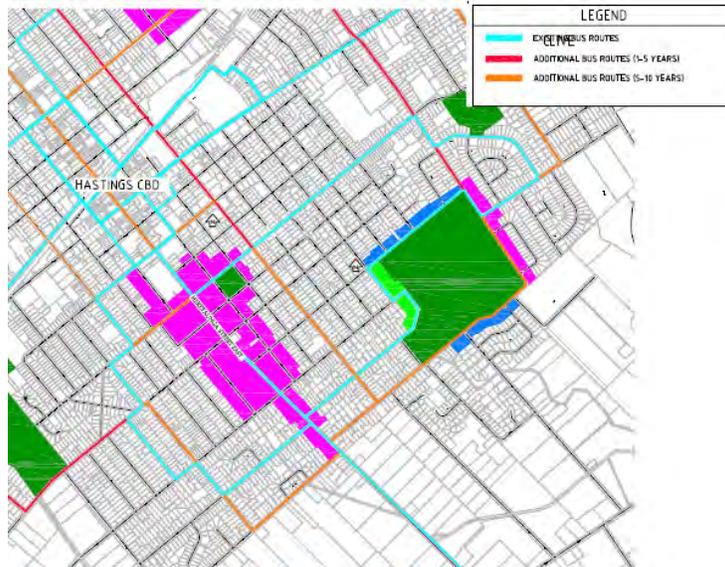


Figure 3-5 : Heretaunga Street East – Bus Routes and Bus Stop facilities

The existing network (shaded blue) fronts the majority of the development sites. In addition, bus stops are located within 400m of these developments which is within the threshold generally accepted as a maximum distance between bus stops and residential properties. Furthermore, the pedestrian links to and from these stops is well catered for with the exception of those issues raised in Section 3.1.1 previously. The buses serving this area provide direct links to Hastings CBD, Havelock and Napier. Additional destinations such as Flaxmere can be reached by changing services at Hastings CBD. Alternatively, these services can be reached directly should residents walk to Hastings Library (approximately 1-2km). Tables 3-3, 3-4 and 3-5 provide an overview of the bus timetables serving Heretaunga Street East.

Table 3-3: Route 11 Express - Timetable (No Weekend Service)

Monday to Friday	am	Am	Pm	Pm	Monday to Friday	am	am	pm	pm
Depart Havelock North	7:15	7:40	4:35	5:10	Depart Napier Library	7:10	7:50	4:40	5:20
Heretaunga Street	7:20	7:45	4:40	5:15	Te Awa Ave	7:13	7:53	4:43	5:23
Hastings Library	7:25	7:50	4:45	5:20	BP Clive	7:20	8:00	4:50	5:30
Karamu Road	7:28	7:53	4:48	5:23	Karamu Rd	7:27	8:07	4:57	5:37
BP Clive	7:35	8:00	4:55	5:30	Hastings Library	7:30	8:10	5:00	5:40
Te Awa Ave	7:42	8:07	5:02	5:37	Heretaunga St	7:35	8:15	5:05	5:45
Arrive Napier Library	7:45	8:10	5:05	5:40	Arrive Havelock North	7:40	8:20	5:10	5:50

Table 3-4: Route 21 – Timetable (No Sunday Service)

Monday to Friday	am	Am	am	Am	am	am	am
Hastings Library				8:05	9:05	10:05	11:05
Russell K-Mart				8:10	9:10	10:10	11:10
The Park (Mitre 10)				8:12	9:12	10:12	11:12
Sefton Street		7:00	7:30		9:25	10:25	11:25
Durham Drive		7:10	7:40	8:35	9:35	10:35	11:35
Havelock North Village	6:50	7:15	7:45	8:40	9:40	10:40	11:40
Sefton Street				8:45			
Hastings Library	7:00	7:25	7:55	8:55	9:50	10:50	11:50

Monday to Friday	pm	pm	pm	Pm	pm	pm	pm	pm
Hastings Library	12:05	1:05	2:05	3:05	4:05	4:35	5:10	5:30
Russell K-Mart	12:10	1:10	2:10	3:10	4:10	4:40	5:15	5:35
The Park (Mitre 10)	12:12	1:12	2:12	3:12	4:12	4:42	5:17	5:37
Sefton Street	12:25	1:25	2:25	3:25	4:25	4:45	Set Down	Set Down
Durham Drive	12:35	1:35	2:35	3:35	4:35	5:05	Set Down	Set Down
Havelock North Village	12:40	1:40	2:40	3:40	4:40	5:10	Set Down	Set Down
Sefton Street								
Hastings Library	12:50	1:50	2:50	3:50	4:50	5:20		
Saturday	am	am	pm	Pm				
Hastings Library	9:00	10:45	2:00	3:45				
Russell K-Mart	9:01	10:46	2:01	3:46				
The Park (Mitre 10)	9:04	10:49	2:04	3:49				
Sefton Street	9:15	11:00	2:15	4:00				
Durham Drive	9:25	11:10	2:25	4:10				
Havelock North Village	9:30	11:15	2:30	4:15				
Hastings Library	9:40	11:25	2:40	4:25				

Table 3-5: Route 17 - Timetable (No Weekend Service)

Monday to Friday	am	am	Pm	pm
Depart Hastings Library	9.00	12.15	2.00	4.15
Russell Street K-Mart	9.01	12.16	2.01	4.16
The Park (Mitre 10)	9.04	12.19	2.04	4.19
Parkvale	9.10	12.25	2.10	- set down -
Summerset Village	9.13	12.28	2.13	- set down -
Akina	9.18	12.33	2.18	- set down -
Russell Street K-Mart	9.23	12.38	2.23	.....
The Park (Mitre 10)	9.25	12.40	2.25	.....
Arrive Hastings Library	9.30	12.45	2.30	.....

From the above information it is apparent that the Heretaunga Street East sites are well served for weekday bus travel presently. This is particularly true for commuter provision given the high number of buses running during the am and pm peak periods. However, the absence of evening bus services and the limited weekend provision (4 buses on Saturday only), mean that changing from private car ownership to public transport from this location is unlikely to be a suitable life choice at present. Nonetheless, the reliance on the private car for commuting is reduced significantly due to this public transport provision.

The bus service route provided in Figure 1-2 earlier indicates the future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus. These services will expand the existing network significantly and will also improve bus travel time between Hastings and Havelock North (through dedicated bus lanes). No scheduling information is presently available for these proposed routes. In short, the existing and proposed routes are appropriate to serve the development sites but

the following should be considered, in addition to the general public transport improvements suggested in Section 1.3:

Table 3-6: Heretaunga Street East Public Transport Observations

Location	Deficiency
Heretaunga Street East	Provide bus shelter for the westbound bus service in vicinity of Park Road.

3.1.4 Vehicular Access

The sites are located predominantly fronting Heretaunga Street East, a main Arterial route to and from Hastings CBD. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present. However, future operational issues must also be considered with respect to the increased traffic associated to both the development sites and the wider network in general.

3.1.4.1 Private Car

The anticipated level of development could potentially result in the provision of 516 medium density dwellings. This has the potential to result in approximately 4,128 additional vehicular trips per day (8 per dwelling) on the adjacent road network. Clearly the peak hour impact will be far less than this but could still be potentially significant. As indicated previously this impact has not been fully considered through the HPTS. To some extent, other strategies have considered impacts on a more local scale such as the Havelock Road Corridor Management Plan which proposes a number of strategies to reduce this impact and facilitate transport mode change along this route. Nonetheless, the potential increase in vehicular traffic should be considered here and the deficiency analysis from the HPTS provides a good oversight of potential issues as detailed in Figure 3-7 below.

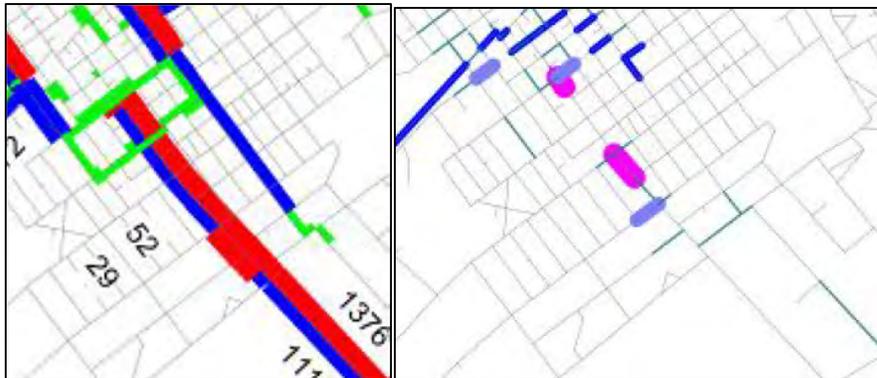


Figure 3-6 : Heretaunga Street East – Route and Intersection Deficiency Analysis 2046 PM Peak

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification on Parkvale. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact. This is particularly true for Heretaunga Street East and adjoining intersections. The HPTS deficiency report has been assessed to determine likely operational issues in the vicinity of this route. In addition, known local issues have been identified. Table 3-7 below summarises the potential operational issues associated to the development site at Heretaunga Street East.

Table 3-7: Operational Observations

Location	Impact
Heretaunga Street East	The route deficiency analysis confirms that this route will approach saturation in future years. Significant work has been undertaken by HDC already to address this through the completion of the HRCMP. This plan aims to reduce private car usage on this route by implementing numerous strategies including Travel Demand Management options, walking and cycling enhancements and public transport infrastructure. All of these measures will minimise the impact of the proposed intensification. To further aid this, private access points will need to be minimised on to Heretaunga Street.
Heretaunga Street / Windsor Avenue	No right turns are currently permitted at this intersection. As a result, vehicles from the development sites on Windsor Avenue and Grove Road are expected to follow a cumbersome route to access areas to the southeast of Hastings CBD. This results in increased journey length
Heretaunga Street / Sylvan Road	This intersection is expected to accommodate the majority of traffic travelling from the development towards the CBD due to the provision of a roundabout intersection. This intersection can experience some delays at present which are anticipated to increase in future years. Changes to road space allocation on the approach to the roundabout may assist in improving traffic operation here.
Heretaunga Street / Riverslea Road	Access from Riverslea Road is currently difficult during peak periods, particularly for right turning vehicles. In addition, the deficiency analysis confirms that the section of road between Riverslea Road and Sylvan Road will experience increased delays in future years. Measures are required to improve both issues to ensure access to the proposed developments is not hindered.

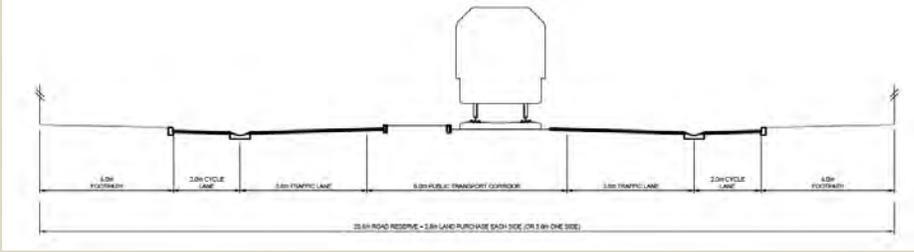
Further to these operational issues, the individual access requirements at each site must be considered. The long term plan for Heretaunga Street proposes to significantly alter traffic operation along this frontage including limited access to and from the corridor (particularly for right turning traffic). As such, all new developments should be designed to minimise the amount of access taken directly from Heretaunga Street East.

3.1.4.2 Freight

An overview of the strategic freight routes throughout Hastings was provided in Figure 1-5 previously. Heretaunga Street and Willowpark Road form part of the freight network. This does not raise significant concerns in terms of impacting upon the adjacent premises but is a consideration when determining suitable measures for improving walking and cycling connectivity along the route.

3.1.4.3 Road Cross-Sections

Table 3-8: Heretaunga Street East Cross Section Observations

Location	Requirements
Heretaunga Street East	Reduce roadside parking, provide cycle provision and reduce number of right turning conflicts. HRCMP includes provision to address this through removal of parking, provision of cycle lanes and public transport facilities in addition to widened pedestrian footpaths detailed below.
	
Eastbourne Street	Existing layout is appropriate for proposed use.
Willowpark Road	Existing layout is appropriate for proposed use.
Riverslea Road	Existing layout is appropriate for proposed use other than absence of cycle lanes.
Queen Street	Existing layout is appropriate for proposed use.
Avenue Road	Existing layout is appropriate for proposed use.
Princes Street	Existing layout is appropriate for proposed use.
Sylvan Road	Existing layout is appropriate for proposed use.

3.2 Conclusion

It is shown that the Heretaunga Street East medium density sites are ideally located for direct access to sustainable transport options. Bus services and bus stop facilities serve all of the development sites adequately and provide access to Hastings CBD. Connections are available from here to Havelock North and Napier CBD. Walking and Cycling provision at the development sites is generally excellent and provides key links to local attractions including parks, retail areas, schools and medical facilities. In addition, continuous walking and cycling infrastructure is provided for commuters to Hastings CBD and also Havelock North.

The anticipated impact of the developments on traffic operation is expected to result in some operational issues across the network. As these impacts have not been fully modelled at present, it is difficult to quantify these issues. Nonetheless, there is opportunity to address these issues through the adoption of measures already being considered by HDC through various local strategies such as HRCMP.

The assessments have identified a number of deficiencies on the local network which may reduce accessibility to and from the development sites. Ideally, these should be addressed prior to development completion to ensure accessibility by all transport modes is accommodated and maximised where possible. A complete register of all deficiencies associated to each site is provided in Appendix A and discussed further in Section 7 of this report.

4 Parkvale

The anticipated intensification within Parkvale, including the predicted development period, is depicted in Figure 4-1 below. This intensification is located approximately 1.5km from Hastings CBD. The sites are located in walking distance to the main centre and lie on a mix between local and collector roads.



Figure 4-1 : Parkvale Medium Density Development Sites

4.1 Accessibility

4.1.1 Walking

Figure 4-2 shows the area within a 2km distance of the development site. This distance is regarded as a maximum acceptable walking distance from an origin (home) to a destination (work, school etc).

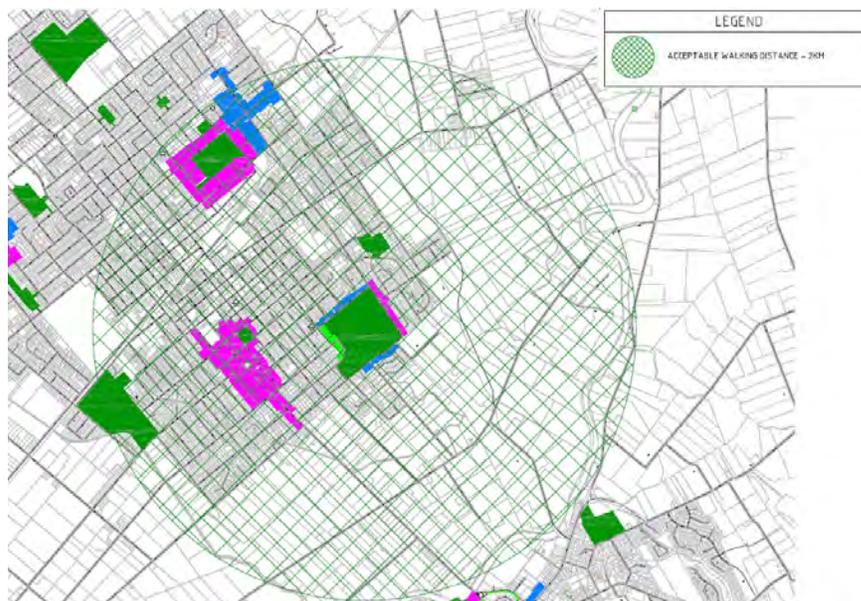


Figure 4-2 : Parkvale – Acceptable Walking Distance

From Figure 4-2 it is apparent that the proposed development sites are located within acceptable walking distance to the eastern end of Hastings CBD. The development sites are within 2km walking distance of many schools, recreational areas and employment opportunities (within the CBD). The site is also within acceptable walking distance to retail and commercial premises on Karamu Road. As such,

it is feasible to assume that a large proportion of residents within this area will have the opportunity to walk to and from their place of work.

In general, walking accessibility and connectivity to all of the development sites within Parkvale is excellent. Excellent provision exists along Windsor Avenue and around Windsor Park and also along Park Road following completion of the recent improvement schemes here. In addition, Windsor Avenue links with the recently completed Havelock Road path which provides direct access to Havelock for people willing to walk this distance. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in Table 4-1 below.

Table 4-1: Walking Deficiencies

Location	Deficiency
Grove Road	Presently no crossing provision exists between Sylvan Road and Windsor Avenue. This results in access to and from Windsor Park and the adjoining Splash Planet being disjointed for pedestrians. Pedestrian crossing facilities near Splash Planet access and also Sussex Street should be considered.
Sylvan Road	There are no formalised pedestrian crossing facilities between Windsor Avenue and Albert Street. This significantly reduces pedestrian accessibility from the development site on Sylvan Road to and from Windsor Park and the sports courts located here. Options exist to provide pedestrian facilities along the route including utilising the existing traffic calming blister island.
Windsor Avenue	A gap exists in pedestrian crossing provision near Haig Street. A pedestrian linkage here would facilitate access to and from the dairy located on the corner of Louie Street and would also provide a suitable route to schools located on Windsor Avenue and Howard Street.

4.1.2 Cycling

A 5km cycling boundary is detailed in Figure 4-4 and shows that the majority of Hastings is accessible within the 5km limit, as is Havelock CBD. This provides excellent opportunity for residents of the development sites to commute by cycle to these areas.

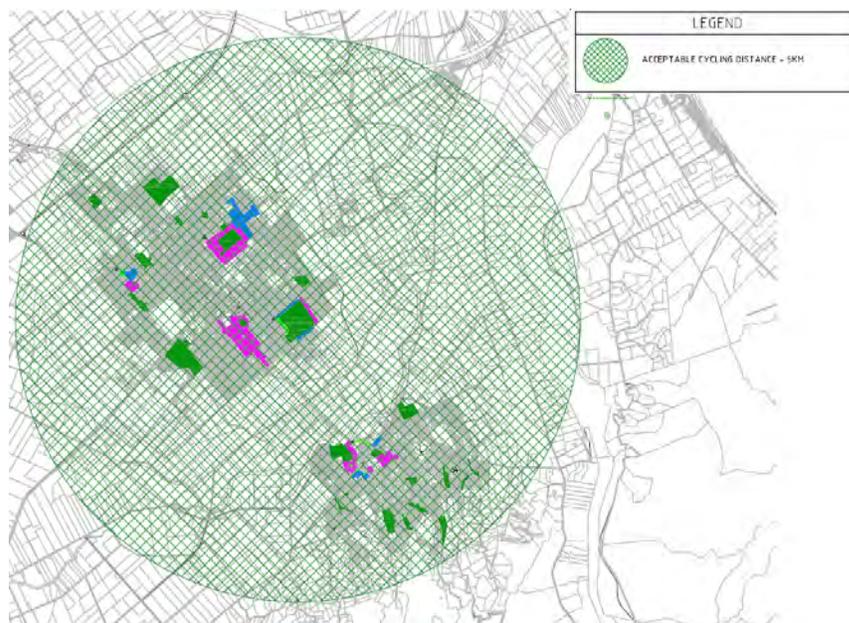


Figure 4-3 : Parkvale – Acceptable Cycling Distance

Significant work has been completed in recent years with the urban areas of Hastings District through the i-Way programme (NZTA Model Communities) to increase and promote walking and cycling. This has resulted in significant lengths of on and off-road cycle facilities being implemented, covering wide areas of the district. The cycle network completed to date was detailed earlier in Figure 1-1 and is provided again below, specific to Parkvale.



Figure 4-4 : Parkvale – Existing Cycle Route Provision

The existing cycle network runs directly adjacent to the development sites on Windsor Avenue and Grove Road. In addition, a shared footway/cycleway has recently been completed along Park Road which links Windsor Park to the St Aubyn Street cycle route. A shared footway/cycleway is also provided in the grass berm along the frontage of Windsor Park on both Grove Road and Windsor Avenue. These cycle routes link to the wider Hastings and Havelock North area via routes along St Aubyn Street, Karamu Road, Heretaunga Street, Havelock Road and Ada Street. In short, the Parkvale development sites have excellent cycling connections with a defined cycle network present in the immediate vicinity of the sites. Although no dedicated provision is provided along Sylvan Road, this road carries lower traffic volumes than Windsor Avenue and Grove Road and as such cycle users can more easily share the available road space. The absence of specific facilities on this road does not raise significant concerns given the close proximity to the wider cycle network. There are no identified cycle deficiencies associated to the Parkvale development sites.

4.1.3 Public Transport

Detailed public transport links throughout Hastings and Havelock North have been provided in Figure 1-2 previously. However, a more detailed overview of the bus network specific to Parkvale is provided in Figure 4-5.

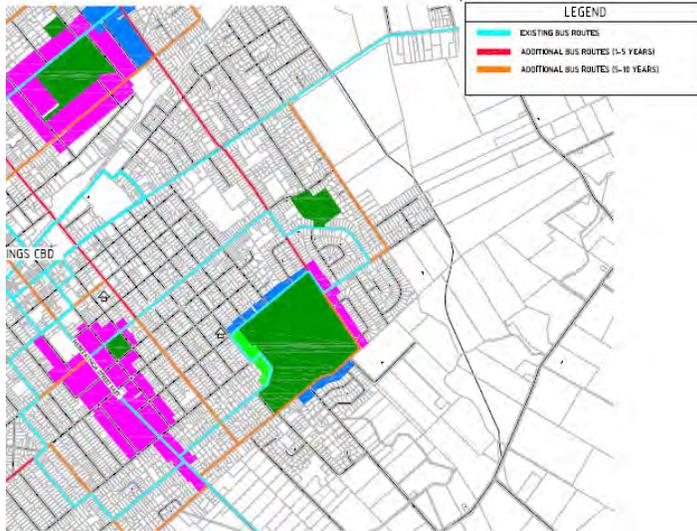


Figure 4-5 : Parkvale – Bus Routes and Bus Stop facilities

The existing network (shaded blue) fronts the majority of the development sites with the exception of parts of Grove Road and Windsor Avenue. However, bus stops are located within 400m of these developments on Grove Road and the proposed future route is expected to be operational prior to completion of the Windsor Avenue development. Furthermore, the pedestrian links to and from these stops is well catered for with the exception of those issues raised in Section 4.1.1 previously. The buses serving this area provide direct links to Hastings CBD and retail areas such as Nelson Park. Additional destinations such as Havelock North and Napier can be reached by changing services at Hastings CBD. Alternatively, these services can be reached directly should residents walk to Heretaunga Street or Karamu Road (approximately 1km). Table 4-2 provides an overview of the bus timetables serving Parkvale.

Table 4-2: Route 17 - Timetable (No Weekend Service)

Monday to Friday	am	am	pm	Pm
Depart Hastings Library	9.00	12.15	2.00	4.15
Russell Street K-Mart	9.01	12.16	2.01	4.16
The Park (Mitre 10)	9.04	12.19	2.04	4.19
Parkvale	9.10	12.25	2.10	- set down -
Summerset Village	9.13	12.28	2.13	- set down -
Akina	9.18	12.33	2.18	- set down -
Russell Street K-Mart	9.23	12.38	2.23	.....
The Park (Mitre 10)	9.25	12.40	2.25	.....
Arrive Hastings Library	9.30	12.45	2.30	.....

From the above information it is apparent that, although a bus service is provided in close proximity to these developments, this service is limited in terms of operational hours and destinations. The service does not accommodate commuter travel due to the route timing and no service is provided during the evenings or weekends. The limited service currently provided offers little scope for working families in this area to use public transport as their predominant transport mode choice.

The routes detailed in Figure 1-2 previously indicate the future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus. These services will expand the existing network significantly in the vicinity of the site. It is encouraging to note that a number of these proposed services will directly front the development sites and fill the existing gaps along Grove Road and Windsor Avenue but at

present no scheduling information is available for these routes. In short, the existing and proposed routes are suitable to accommodate the demands of the development.

4.1.4 Vehicular Access

The sites are located on predominantly residential roads which range from local status to arterial. Current connectivity for vehicular traffic is excellent to all of the development sites. However, future operational issues must also be considered with respect to the increased traffic associated to both the development sites and the wider network in general.

4.1.4.1 Private Car

The anticipated level of development could potentially result in the provision of 145 medium density dwellings. This has the potential to create approximately 1,160 additional vehicular trips per day (8 per dwelling) on the adjacent road network. However, the peak hour impact is expected to be far less. As indicated previously this impact has not been fully considered through the HPTS. Nonetheless, the deficiency analysis from this report does provide some insight in to likely operational issues associated to the development.



Figure 4-6 : Parkvale – Intersection and Route Deficiency Analysis 2046 PM Peak

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification on Heretaunga Street East. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact. The HPTS deficiency report has been assessed to determine likely operational issues in the vicinity of this route. From this analysis it is apparent that the intersections in the vicinity of the development will continue to operate to a satisfactory level in future years. Any delays identified are relatively minor and relate mainly to the Grove Road/Karamu Road intersection. As this is intersection will obviously serve the site it is quite possible that traffic associated to this development will impact upon this operation further. The route deficiency analysis highlights the high traffic volumes expected on Heretaunga Street East and Karamu Road. These routes are expected to experience some route congestion and a reduced Level of Service Table 4-3 below summarises the potential operational issues associated to the development site at Parkvale from both the deficiency analysis and the known local issues.

Table 4-3: Operational Observations

Location	Impact
Windsor Avenue / Heretaunga Street East	No right turns are currently permitted at this intersection. As a result, vehicles from the development sites on Windsor Avenue and Grove Road are expected to follow a cumbersome route to access areas to the southeast of Hastings CBD. This results in increased journey length.
Windsor Avenue/St Aubyn Street	The predominant flow at this intersection is right from St Aubyn Street on to Windsor Avenue to Havelock North and vice versa. This can result in queuing on occasions and can impact negatively upon pedestrian movements across the intersection. The road layout does not align with the predominant traffic routing here and could be better arranged to address these issues.
Sylvan Road/Heretaunga Street East	This intersection is expected to accommodate the majority of traffic travelling from the development towards the CBD due to the provision of a roundabout intersection. This intersection can experience some delays at present which are anticipated to increase in future years. Changes to road space allocation on the approach to the roundabout may assist in improving traffic operation here.
Grove Road/Karamu Road	Some minor delays are anticipated at this intersection in future years. Minor amendments to the operation of the signal phasing or changes to the lane designations may assist in improving this situation.

4.1.4.2 Freight

An overview of the strategic freight routes throughout Hastings was provided in Figure 1-3 previously. None of the identified freight routes run adjacent to these development sites. Nonetheless, freight access is provided along these routes for servicing and deliveries as required. It is also known that freight trucks serving local orchards currently utilise Windsor Avenue and Grove Road to access Karamu Road and SH2 from the Ada Street area. This does not raise significant concerns in relation to the proposed development sites given the relatively low usage of these routes.

4.1.4.3 Road Cross-Sections

Table 4-4: Parkvale Cross Section Observations

Location	Requirements
Sylvan Road	Existing layout is appropriate to accommodate demands of development.
Grove Road	Existing layout is appropriate to accommodate demands of development.
Windsor Avenue	Existing layout is appropriate to accommodate demands of development.
Albert Street	Existing layout is appropriate to accommodate demands of development.
Terrace Road	Suitable layout has already been developed through HDC BPDG but existing layout is sufficient to accommodate development demands.



4.2 Conclusion

It is shown that the Parkvale medium density sites are ideally located for direct access to sustainable transport options. Bus services and bus stop facilities serve all of the development sites adequately and provide access to Hastings CBD. Connections are available from here to Havelock North and Napier CBD. Walking and Cycling provision at the development sites is generally excellent and provides key links to local attractions including parks, retail areas, schools and medical facilities. In addition, continuous walking and cycling infrastructure is provided for commuters between Parkvale and Hastings CBD and also Havelock North.

The impact of the developments on traffic operation is estimated to be relatively minor in this area. Although there will be some impacts on certain roads, for the most part the road network will be able to accommodate this and adequate operation will be maintained.

The assessments have identified a number of deficiencies on the local network which may reduce accessibility to and from the development sites. Ideally, these should be addressed prior to development completion to ensure accessibility by all transport modes is accommodated and maximised where possible. A complete register of all deficiencies associated to each site is provided in Appendix A and discussed further in Section 7 of this report.

5 Mahora

The anticipated intensification within Mahora, including the predicted development period, is depicted in Figure 5-1 below. This intensification is located approximately 1-3km north of Hastings CBD. The sites are located within walking distance to the main centre and front predominantly arterial and collector roads.

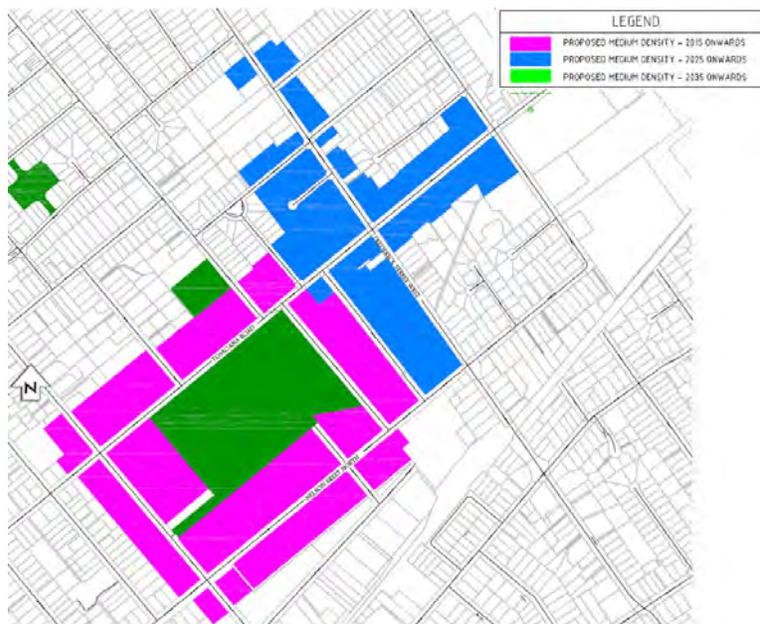


Figure 5-1 : Mahora Medium Density Development Sites

5.1 Accessibility

5.1.1 Walking

Figure 5-2 shows the area within a 2km distance of the development site. This distance is regarded as a maximum acceptable walking distance from an origin (home) to a destination (work, school etc).

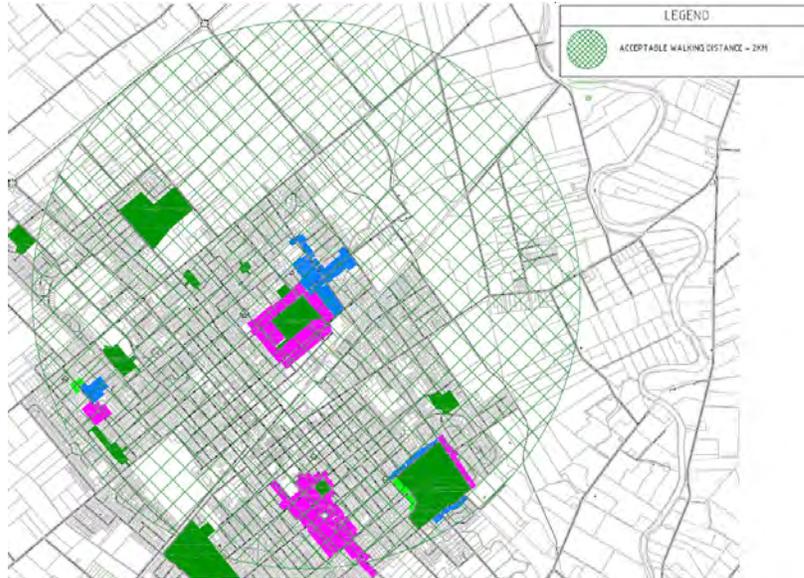


Figure 5-2 : Mahora – Acceptable Walking Distance

From Figure 5-2 it is apparent that the proposed development sites are located within acceptable walking distance to Hastings CBD. The development sites are within 2km walking distance of many schools, recreational areas and employment opportunities (within the CBD). The site is also within acceptable walking distance to retail and commercial premises on Tomoana Road, Frederick Street and Karamu Road. As such, it is feasible to assume that a large proportion of residents within this area will have the opportunity to walk to and from their place of work.

In general, walking accessibility and connectivity to all of the development sites within Mahora is excellent. The predominant movement is expected to be along Tomoana Road, Frederick Street and Nelson Street. Facilities are well provided on these routes. However, there are some barriers to walking for the development sites including insufficient crossing provisions on some of the surrounding roads and connecting routes which may restrict access to workplaces, recreational areas and schools etc. A number of issues have been identified from site assessments and are detailed in Table 5-1 below.

Table 5-1: Walking Deficiencies

Location	Deficiency
Tomoana Road	Just one formal crossing provision exists presently between Frederick Street and St Aubyn Street. An additional crossing located between Duke Street and Cornwall Road should be implemented also. This will provide direct links to and from Cornwall Park but will also provide a link between Cornwall Road and Duke Street for pedestrians accessing local schools etc.

5.1.2 Cycling

A 5km cycling boundary is detailed in Figure 5-4 and shows that the majority of Hastings is accessible within the 5km limit. This provides excellent opportunity for residents of the development sites to commute by cycle to these areas.

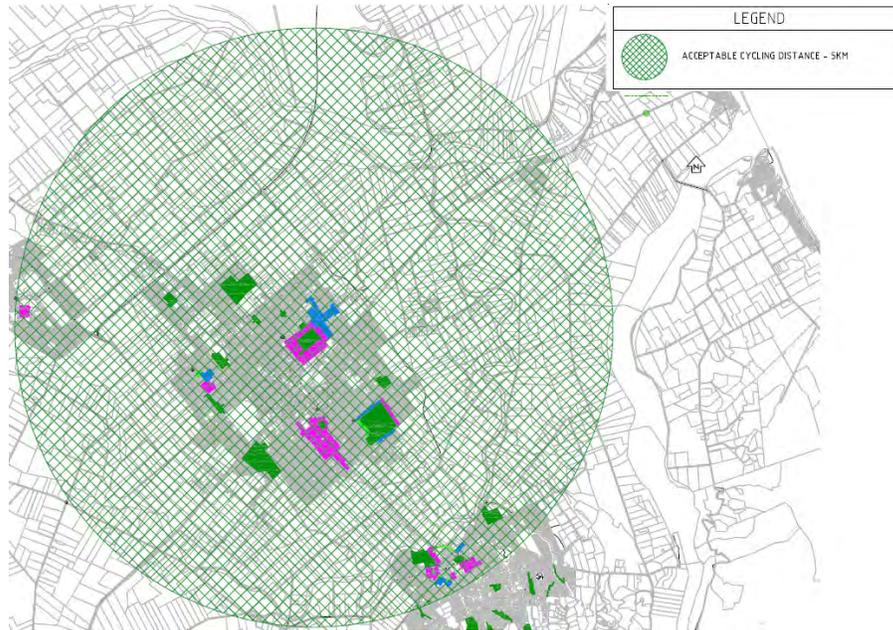


Figure 5-3 : Mahora – Acceptable Cycling Distance

Significant work has been completed in recent years within the urban areas of Hastings District through the i-Way programme (NZTA Model Communities) to increase and promote walking and cycling. This has resulted in significant lengths of on and off-road cycle facilities being implemented, covering wide areas of the district. The cycle network completed to date was detailed previously in Figure 1-1 and is provided again below, specific to Mahora.

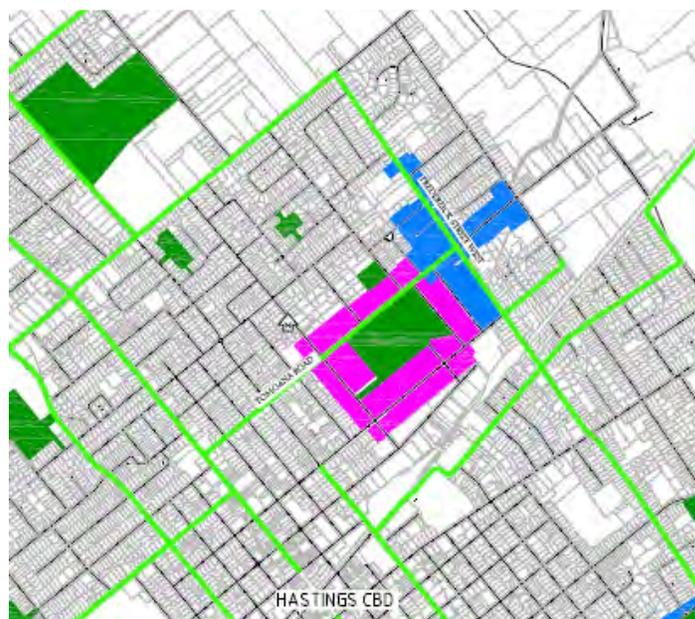


Figure 5-4 : Mahora – Existing Cycle Route Provision

The existing cycle network runs directly adjacent to the development sites along Tomoana Road and Frederick Street. These cycle routes link to the wider Hastings area via routes along Pakowhai Road, St Aubyn Street and Karamu Road. In short, the Mahora development sites have excellent cycling connections with a defined cycle network present in the immediate vicinity of the sites. Given the relatively low traffic volumes on the remaining road frontages of the development, specific cycle provisions on these routes is not required. The only deficiency associated to the cycle network in this area relates to the absence of cycle detectors at the signalised intersections.

Table 5-2: Cycling Deficiencies

Location	Deficiency
Frederick Street / Tomoana Road	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light.
Tomoana Road / St Aubyn Street	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light.
Frederick Street / Karamu Road	No cycle detection is provided at the intersection presently. As a result, cyclists are not detected unless vehicles are present also. This can result in cyclists waiting at the signals for long periods or choosing to ignore the red light. In addition, it is not possible to provide cycle markings right to the stop line at this intersection presently due to the location of the central refuge island. This results in cyclists either joining the footway or trying to squeeze past waiting vehicles.

5.1.3 Public Transport

Detailed public transport links throughout Hastings and Havelock North have been provided in Figure 1-2 previously. However, a more detailed overview of the bus network specific to Mahora is provided in Figure 5-6.

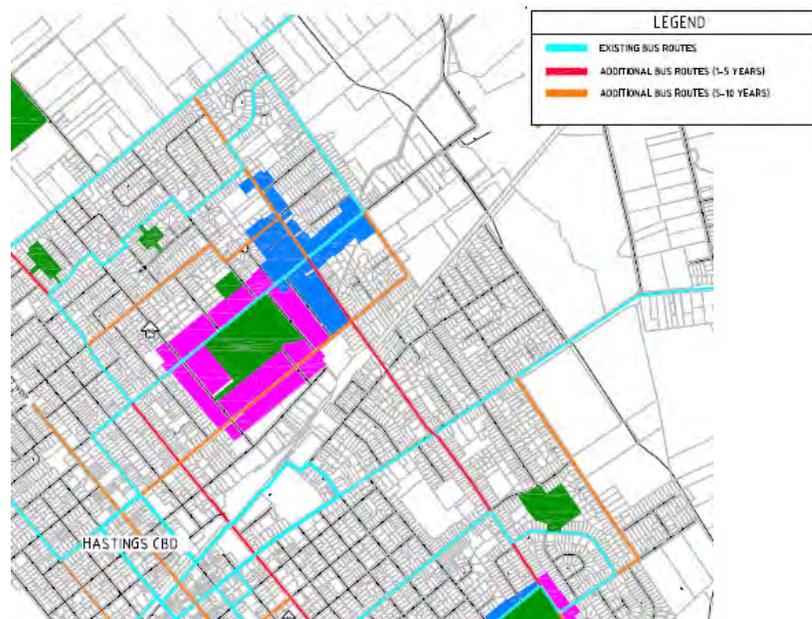


Figure 5-5 : Mahora – Bus Routes and Bus Stop facilities

The existing network (shaded blue) fronts the development sites along Tomoana Road and Williams Street. In addition, bus stops are located within 400m of all development sites which is within the threshold generally accepted as a maximum distance between bus stops and residential properties. Furthermore, the pedestrian links to and from these stops is well catered for with the exception of those issues raised in Section 5.1.1 previously. The buses serving this area provide direct links to Hastings CBD and additional destinations such as to Napier or Flaxmere can be reached by changing services here. Alternatively, these services can be reached directly should residents walk to Karamu Road (approximately 1-2km). Table 5-3 provides an overview of the bus timetables serving Mahora.

Table 5-3: Route 16B – Timetable (No Weekend Service)

Monday to Friday	am	Am	am	pm	pm	pm	pm
Hastings Library	8.00	10.00	11.00	1.00	3.00	4.00	5.10
Russell Street K-Mart	.....	10.01	11.01	1.01	3.01	4.01	5.11
The Park (Mitre 10)	.....	10.04	11.04	1.04	3.04	4.04	5.14
Mahora Shops	8.10	10.15	11.15	1.15	3.15	4.15	Set Down
Russell Street K-Mart	8.15	10.20	11.20	1.20	3.20	4.20	Set Down
The Park (Mitre 10)	8.17	10.22	11.22	1.22	3.22	4.22	Set Down
Hastings Library	8.20	10.25	11.25	1.25	3.25	4.25	Set Down

From the above information it is apparent that the Mahora sites are well served for weekday bus travel presently to and from Hastings CBD. This is particularly true for commuter provision given the timing of the first and last services of the day. However, there are significant gaps in this service. The schedule is limited throughout the day and does not run of an evening or weekend. Furthermore, the latest available bus only facilitates workers who finish at or before 5pm.

The bus service route provided in Figure 1-2 earlier indicates the future bus service routes to be provided within 1-5 years, 5-10 years and 10 years plus. These services will expand the existing network significantly and will provide additional services around and adjacent the development sites. However, no scheduling information is presently available for these proposed routes. In short, the existing and proposed routes are appropriate to serve the development sites but the following should be considered, in addition to the issues identified in Section 1.3 previously:

Table 5-4: Mahora Public Transport Observations

Location	Deficiency
Tomoana Road	Provide bus shelters at 2no. stops (one in either direction) on Tomoana Road.

5.1.4 Vehicular Access

The sites are located predominantly fronting arterial and collector roads although a number of developments are located on local roads. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present.

5.1.4.1 Private Car

The anticipated level of development could potentially result in the provision of 370 medium density dwellings. This has the potential to result in approximately 2,960 additional vehicular trips per day (8 per dwelling) on the adjacent road network. Clearly the peak hour impact will be far less than this but could still be potentially significant. As indicated previously this impact has not been fully considered

through the HPTS. Nonetheless, the deficiency analysis associated to this study does provide some insight in to the likely impacts associated to the proposed intensifications.



Figure 5-6 : Mahora – Route and Intersection Deficiency Analysis 2046 PM Peak

The increase in traffic could be significant in terms of peak hour trips, particularly when combined with the impact of the intensification in other areas such as Parkvale. The grid pattern nature of the road network throughout Hastings will at least enable this impact to be dispersed across a number of streets thus reducing the potential operational issues. However, the collector and arterial routes serving the site will still be the most used route options and will experience the biggest impact. This is particularly true for Tomoana Road, Nelson Street and Frederick Street. The HPTS deficiency report has been assessed to determine likely operational issues in the vicinity of this route whilst the Pakowhai Road Corridor Management Plan has also been assessed to ensure any issues are suitably mitigated. In addition, known local issues have been identified. Table 5-5 below summarises the potential operational issues associated to the development site at Mahora.

Table 5-5: Operational Observations

Location	Impact
Frederick Street / Karamu Road	This intersection is shown to experience increased delays in future years. This is predominantly a result of the high traffic volumes present on Karamu Road. The development site is expected to contribute to any deterioration here further.
Tomoana Road / Frederick Street	Minimal delays are experienced at this intersection presently and the deficiency analysis confirms that this intersection will continue to operate satisfactorily. However, the majority of traffic associated to the development will utilise this intersection and as such some deterioration in operation may be observed here.
Tomoana Road / St Aubyn Street	Some delays are experienced at this intersection presently and the deficiency analysis shows this intersection will experience increased delays in future years. Although these delays are not expected to be significant, given the level of development traffic which will utilise this intersection it is possible that operation of the intersection may deteriorate further.

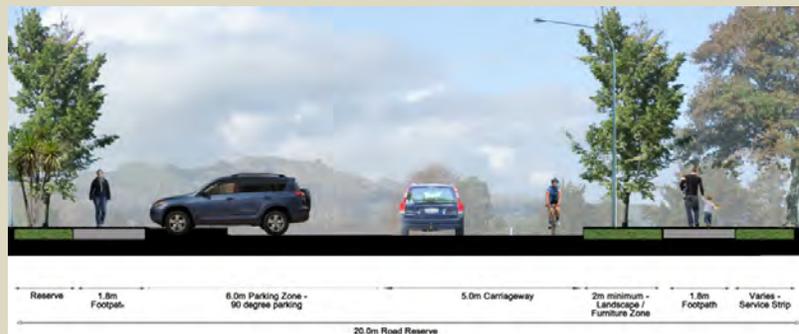
5.1.4.2 Freight

An overview of the strategic freight routes throughout Hastings was provided in Figure 1-3 previously. None of the roads fronting the development form part of this network. Nonetheless, large vehicle access is maintained along these roads for deliveries and servicing and as such this does not raise any specific concerns.

5.1.4.3 Road Cross-Section

Table 5-6: Mahora Road Cross Sections

Location	Requirements
Frederick Street	Existing layout is appropriate to accommodate demands of development.
Tomoana Road	Existing layout is appropriate to accommodate demands of development.
Nelson Street North	Existing layout is appropriate to accommodate demands of development.
Duke Street	Existing layout is appropriate to accommodation demands of development.
York Street	Existing layout is appropriate to accommodate demands of development.
Roberts Street	Suitable layout has already been developed through HDC BPDG but existing layout is suitable to accommodate development demands.
Cornwall Road	Suitable layout has already been developed through HDC BPDG but existing layout is suitable to accommodate development demands.
Kitchener Street	Suitable layout has already been developed through HDC BPDG but existing layout is suitable to accommodate development demands.


Fitzroy Avenue

Suitable Layout already developed through HDC BPDG but existing layout suitable to accommodate development demands.

Norrie Street

Suitable Layout already developed through HDC BPDG and should be implemented given insufficient layout presently (obstructed footways, narrow road, lack of landscaping).

Rangiora Street

Suitable Layout already developed through HDC BPDG

Mairangi Street

Suitable Layout already developed through HDC BPDG



5.2 Conclusion

It is shown that the Mahora density sites are ideally located for direct access to sustainable transport options. Bus services and bus stop facilities serve all of the development sites adequately and provide access to Hastings CBD. Connections are available from here to Havelock North and Napier CBD. Walking and Cycling provision at the development sites is generally excellent and provides key links to local attractions including parks, retail areas, schools and medical facilities. In addition, walking and cycling to and from Hastings CBD is a clear option for this development given the proximity of the sites to the CBD and the continuous walking and cycling infrastructure provided.

The anticipated impact of the developments on traffic operation is expected to result in some operational issues across the network. As these impacts have not been fully modelled at present, it is difficult to quantify these issues. Nonetheless, there is opportunity to address these issues through the adoption of measures already being considered by HDC through various local strategies and works programmes.

The assessments have identified a number of deficiencies on the local network which may reduce accessibility to and from the development sites. A complete register of all deficiencies associated to each site is provided in Appendix A and discussed further in Section 7 of this report.

6 Raureka

The anticipated intensification within Raureka, including the predicted development period, is depicted in Figure 6-1 below. This intensification is located approximately 2km southwest of Hastings CBD. The sites are located within walking distance to the main centre and front a collector road.



Figure 6-1 : Raureka Medium Density Development Sites

6.1 Accessibility

6.1.1 Walking

Figure 6-2 shows the area within a 2km distance of the development site. This distance is regarded as a maximum acceptable walking distance from an origin (home) to a destination (work, school etc).

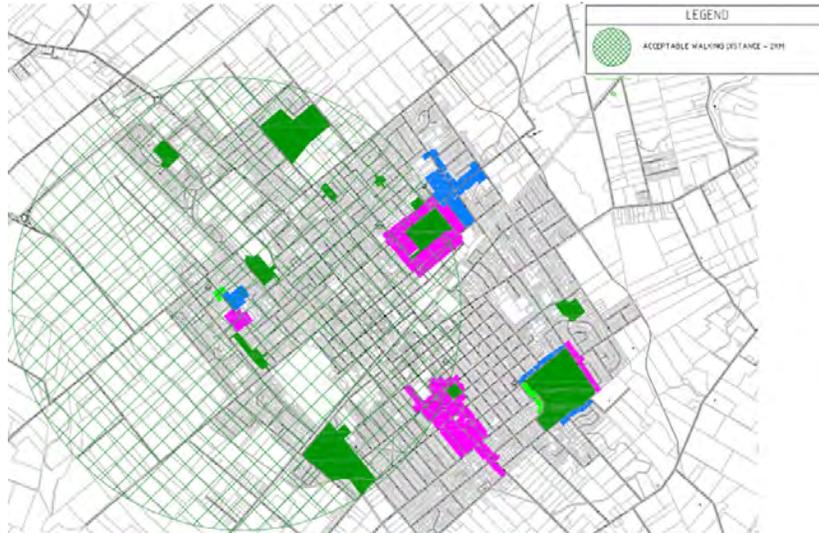


Figure 6-2 : Raureka – Acceptable Walking Distance

From Figure 6-2 it is apparent that the proposed development sites are located within acceptable walking distance to Hastings CBD. The development sites are within 2km walking distance of many schools, recreational areas and employment opportunities. The site is also within acceptable walking distance to retail and commercial premises on Heretaunga Street and Maraekakaho Road. As such, it is feasible to assume that a large proportion of residents within this area will have the opportunity to walk to and from their place of work.

In general, walking accessibility and connectivity to all of the development sites within Raureka is excellent. The predominant movement is expected to be along Gordon Road and facilities are well provided on this road. Given the low traffic volumes present along the surrounding roads and the existing pedestrian facilities present here, no specific deficiencies have been identified. Specific crossing provisions are currently afforded east and west of the development sites on Gordon Road.

6.1.2 Cycling

A 5km cycling boundary is detailed in Figure 6-3 and shows that the majority of Hastings is accessible within the 5km limit. This provides excellent opportunity for residents of the development sites to commute by cycle to these areas.



Figure 6-3 : Raureka – Acceptable Cycling Distance

Significant work has been completed in recent years within the urban areas of Hastings District through the i-Way programme (NZTA Model Communities) to increase and promote walking and cycling. This has resulted in significant lengths of on and off-road cycle facilities being implemented, covering wide areas of the district. The cycle network completed to date was detailed earlier in Figure 1-1 and is provided again below, specific to Raureka.



Figure 6-4 : Raureka – Existing Cycle Route Provision

The existing cycle network circles the development sites and runs along Maraekakaho Road, Southampton Street, Southland Road and Wall Road. These cycle routes form part of the i-Way network and link to the wider Hastings cycle network. In short, the Mahora development sites have excellent cycling connections with a defined cycle network present in the immediate vicinity of the sites. Given the relatively low traffic volumes on the remaining road frontages, including Gordon Road, specific cycle provisions on these routes are not required. No cycle deficiencies have been identified associated to this development site.

6.1.3 Public Transport

Detailed public transport links throughout Hastings and Havelock North have been provided in Figure 1-2 previously. However, a more detailed overview of the bus network specific to Raureka is provided in Figure 6-5.

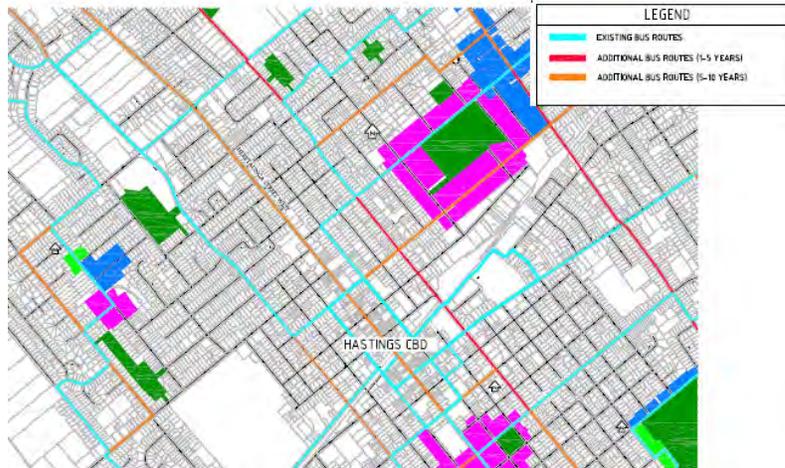


Figure 6-5 : Raureka – Bus Routes and Bus Stop facilities

The existing network (shaded blue) fronts the development sites along Gordon Road and all sites are within 400m of bus stop facilities. This is the threshold generally accepted as a maximum distance between bus stops and residential properties. Furthermore, the pedestrian links to and from these stops is well catered for. The buses serving this area provide direct links to Hastings CBD and Hawkes Bay Hospital and additional destinations such as Napier can be reached by changing services here. Alternatively, these services can be reached directly should residents walk to Heretaunga Street (approximately 1km). Table 6-1 provides an overview of the bus timetables serving Raureka.

Table 6-1: Route 16A – Timetable (No Weekend Service)

Monday to Friday	Am	Am	am	am	pm	pm	pm	pm	pm	pm
Hastings Library	7.30	8.30	9.30	10.30	11.30	1.30	2.30	3.30	4.30	5.10
Russell Street K-Mart	.....	.....	9.31	10.31	11.31	1.31	2.31	3.31	4.31	5.11
The Park (Mitre 10)	.....	.....	9.34	10.34	11.34	1.34	2.34	3.34	4.34	5.14
Camberley Shops	7.40	8.40	9.50	10.50	11.50	1.50	2.50	3.50	4.50	Set Down
Russell Street K-Mart	7.50	8.50	10.00	11.00	12.00	2.00	3.00	4.00	5.00	Set Down
The Park (Mitre 10)	7.53	8.53	10.03	11.03	12.03	2.03	3.03	4.03	5.02	Set Down
Hastings Library	7.55	8.55	10.05	11.05	12.05	2.05	3.05	4.05	5.05	Set Down

From the above information it is apparent that the Raureka sites are well served for weekday bus travel presently to and from Hastings CBD. This is particularly true for commuter provision given the timing of the first and last services of the day. However, there are significant gaps in this service. The schedule does not run of an evening or weekend. Furthermore, the latest available bus only facilitates workers who finish at or before 5pm.

Future bus service routes were identified in Figure 1-2 previously and include additional routes within 1-5 years, 5-10 years and 10 years plus. These services will expand the existing network significantly and will provide an additional service directly fronting the development along Gordon Road. However, no scheduling information is presently available for these proposed routes. In short, the existing and proposed routes are appropriate to serve the development sites but the following should be considered, in addition to the issues identified in Section 1.3 previously.

Table 6-2: Raureka Public Transport Observations

Location	Deficiency
Gordon Road	Provide bus shelter at the bus stop on Gordon Road

6.1.4 Vehicular Access

The sites are located predominantly fronting a collector road. Current connectivity for vehicular traffic to this area is generally excellent with few operational issues present. However, future operational issues must also be considered with respect to the increased traffic associated to both the development sites and the wider network in general.

6.1.4.1 Private Car

The anticipated level of development could potentially result in the provision of 66 medium density dwellings. This has the potential to result in approximately 528 additional vehicular trips per day (8 per dwelling) on the adjacent road network. Clearly the peak hour impact will be far less than and, given the scale of development, is not expected to be significant. Nonetheless, the potential increase in vehicular traffic has been considered. The deficiency analysis from the HPTS has also been assessed to identify potential implications.

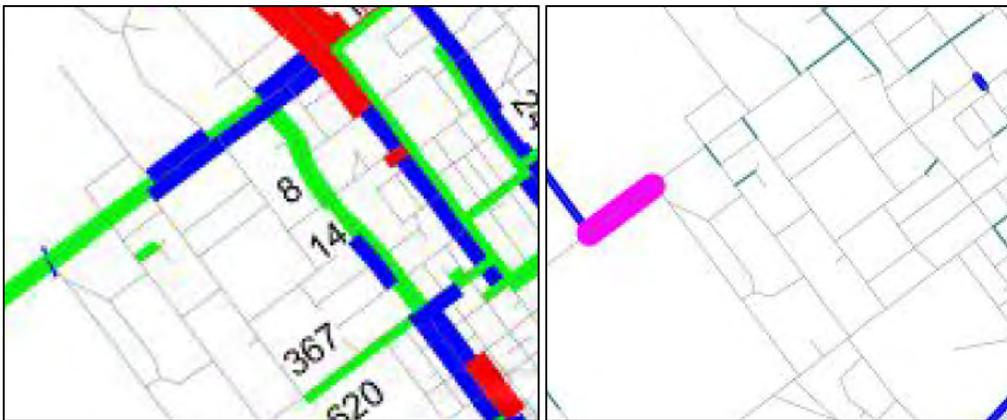


Figure 6-6 : Raureka – Intersection Deficiency Analysis 2046 PM Peak

The increase in traffic is expected to be minimal in terms of peak hour trips. However, the majority of this traffic will use the intersections of Gordon Road with Maraekakaho Road or Southland Road. From the deficiency analysis completed, these intersections are shown to operate satisfactorily in future years with minimal delays experienced. As such, there are no operational concerns associated to this development site.

6.1.4.2 Freight

An overview of the strategic freight routes throughout Hastings was provided in Figure 1-3 previously. None of the roads fronting the development form part of this network. Nonetheless, large vehicle access is maintained along these roads for deliveries and servicing and as such this does not raise any specific concerns.

6.1.4.3 Road Cross-Section

Existing road frontages are appropriate to accommodate proposed developments.

6.2 Conclusion

It is shown that the Raureka medium density sites are ideally located for direct access to sustainable transport options. Bus services and bus stop facilities serve all of the development sites adequately and provide access to Hastings CBD. Connections are available from here to Havelock North and Napier CBD. Walking and Cycling provision at the development sites is generally excellent and provides key links to local attractions including parks, retail areas, schools and medical facilities. In addition, walking

and cycling to and from Hastings CBD is a clear option for this development given the proximity of the sites to the CBD and the continuous walking and cycling infrastructure provided.

The anticipated impact of the developments on traffic operation is expected to result in minimal operational issues across the network. The assessments have identified no Transport deficiencies specific to this site other than the opportunities for expanding bus stop facilities and services.

7 Findings

7.1 Transport

In general, the assessments have shown that the proposed MDHS sites are positioned in very sustainable locations and are served well by all transport modes. The vast walking, cycling and public transport network already proficient around Hastings means that the development sites have direct access to all transport modes. The proximity of the sites to local centres and sustainable transport links will ensure all residents of the new developments will have opportunity to use adopt sustainable travel choices.

Although the assessments have confirmed the accessible nature of the sites, a number of deficiencies have been identified which should be addressed prior to completion of the developments to ensure accessibility and connectivity is maximised. Failure to do this may result in some of the sustainable transport objectives not being fully realised.

A comprehensive list of these requirements is provided in Appendix A. These have been colour coded to identify what deficiency they relate to as follows:

Walking
Cycling
Operational
Public Transport

The deficiency analysis has identified a programme of suitable works with a value of approximately \$6.0M. However, not all of this is attributable to the proposed intensification. Although the medium density development will certainly contribute towards the requirement for some of these works, the majority will provide benefit to the larger population and would most likely be required regardless of the proposed intensification. As such, the contribution required from the proposed developments has been determined by attributing a percentage requirement to each cost. The result is a development contribution requirement of \$778,750 which can be split for each area as follows:

Havelock North - \$144,000

Heretaunga Street East - \$288,250

Parkvale - \$40,500

Mahora - \$305,000

Raureka - \$1,000

In addition, a number of general observations have been identified specific to public transport which should be considered further by HDC as follows:

- Existing services, in general, are limited to daily operating. Bus services should be increased to facilitate more evening services.
- Existing services, in general, are limited to weekday operating. Bus services should be increased to facilitate more weekend services.

- Outside of the main centres, bus stop facilities consist mainly of a post and sign. Provision of more substantial bus stop infrastructure should be considered at locations that have potential to entice high usage.
- Real time information should be investigated as bus routes expand.

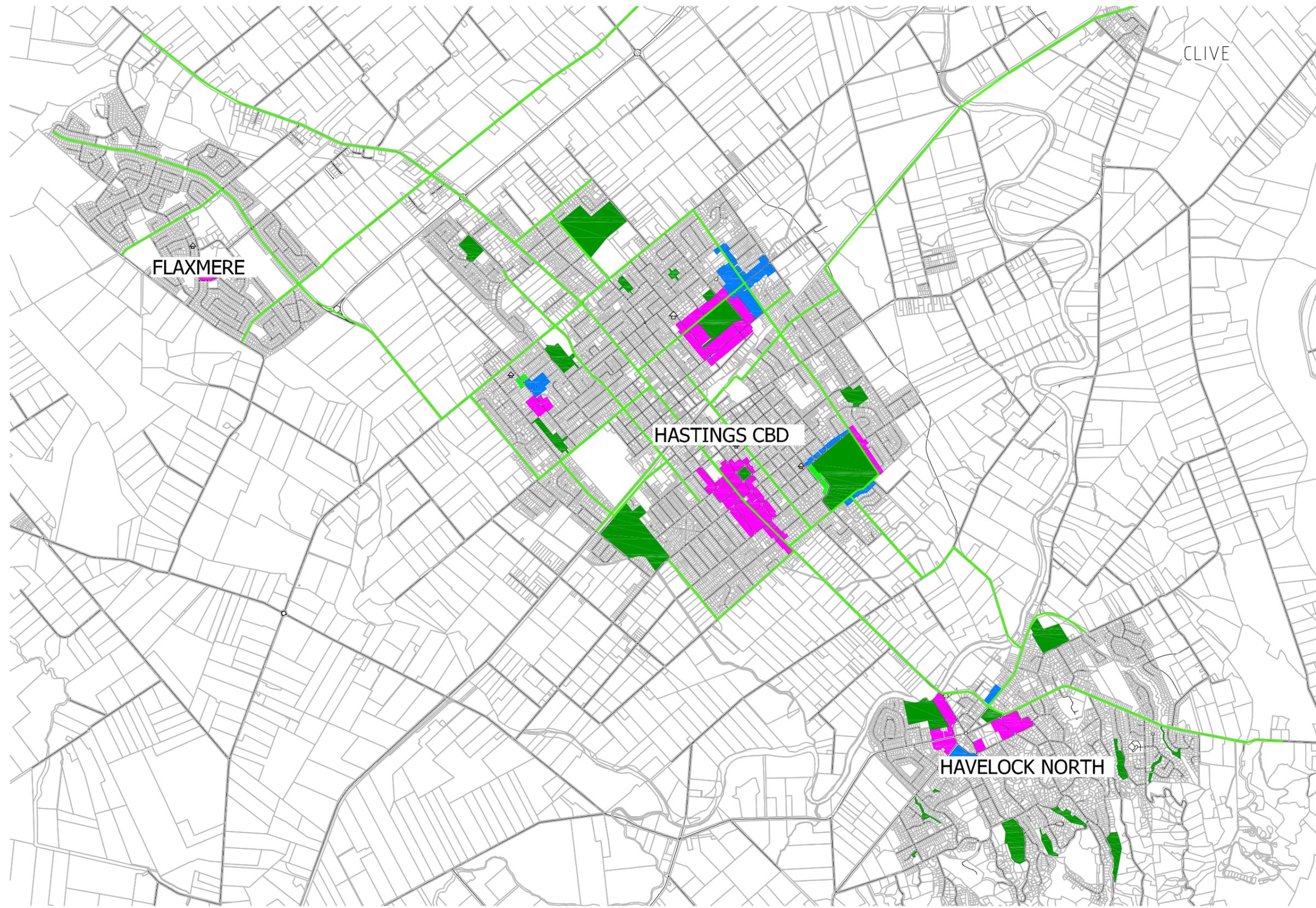
7.2 Development

Although not included within the scope of this assessment, a number of recommendations have been identified specific to development design which should be considered by HDC. These actions will ensure the development is designed appropriately in order to promote sustainable transport, enhance integration with the local community and reduce vehicular impacts. The recommendations are as follows:

- The number of access points from main arterial roads (Heretaunga Street and Havelock Road) should be minimised to remove conflict with the traffic flows present on these routes. Ideally, numerous properties should share one access point from this road or alternatively should take access from side streets.
- All properties should directly front surrounding roads to ensure passive surveillance is achieved.
- Direct pedestrian and cyclist access from adjacent roads should be provided to all development units.
- Servicing of units, should ideally be from minor side streets.
- Parking provision at developments should be managed through design (limited parking, clearly identified parking provision etc).
- All units should have access to cycle parking. This can be individually provided for each dwelling or provided as a communal provision.

APPENDIX A – HASTINGS NETWORK PLANS

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DRAWING CHECK	JP	03/2013
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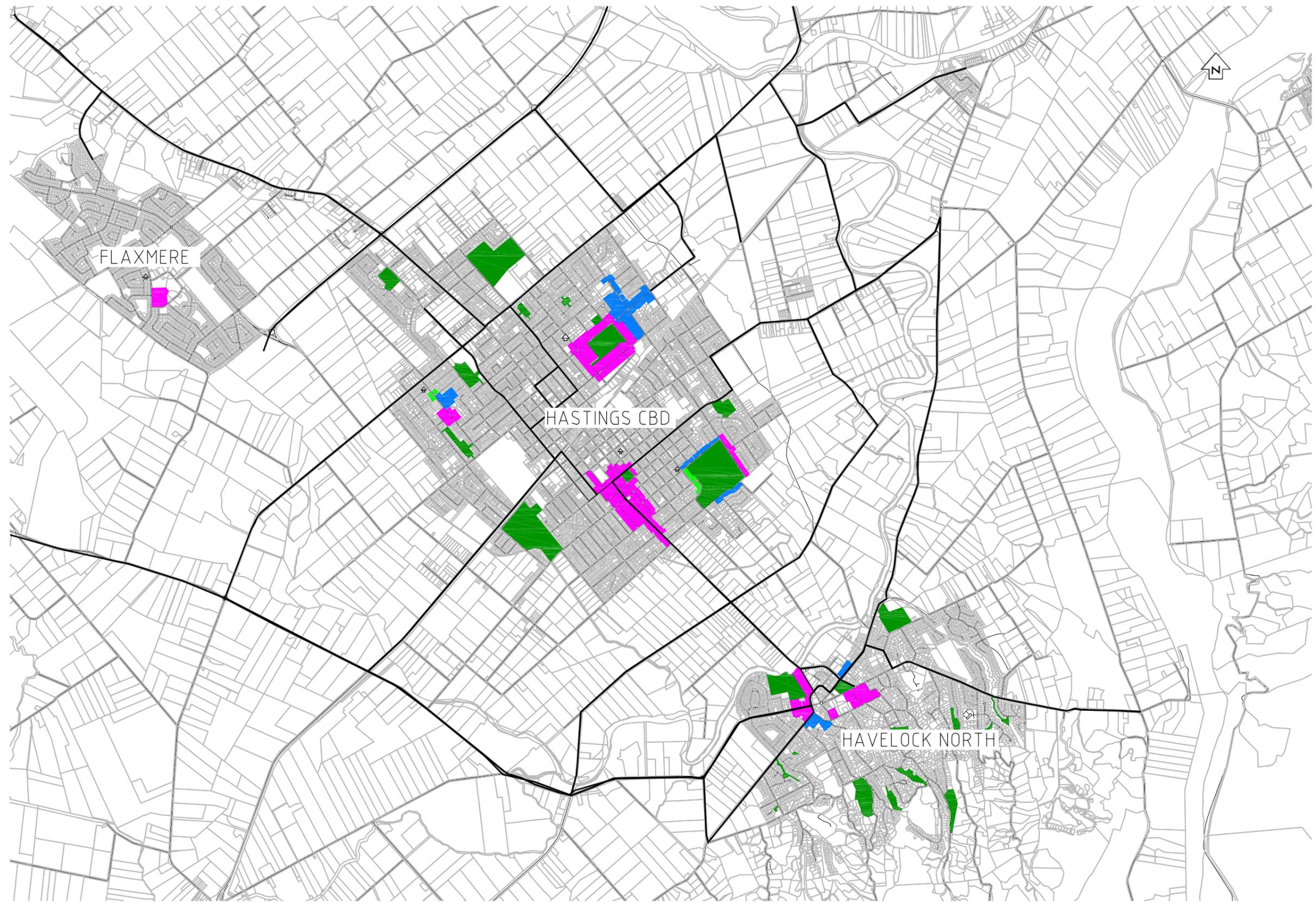
HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY - TRANSPORT ASSESSMENT

EXISTING CYCLE ROUTES

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HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
FREIGHT ROUTES

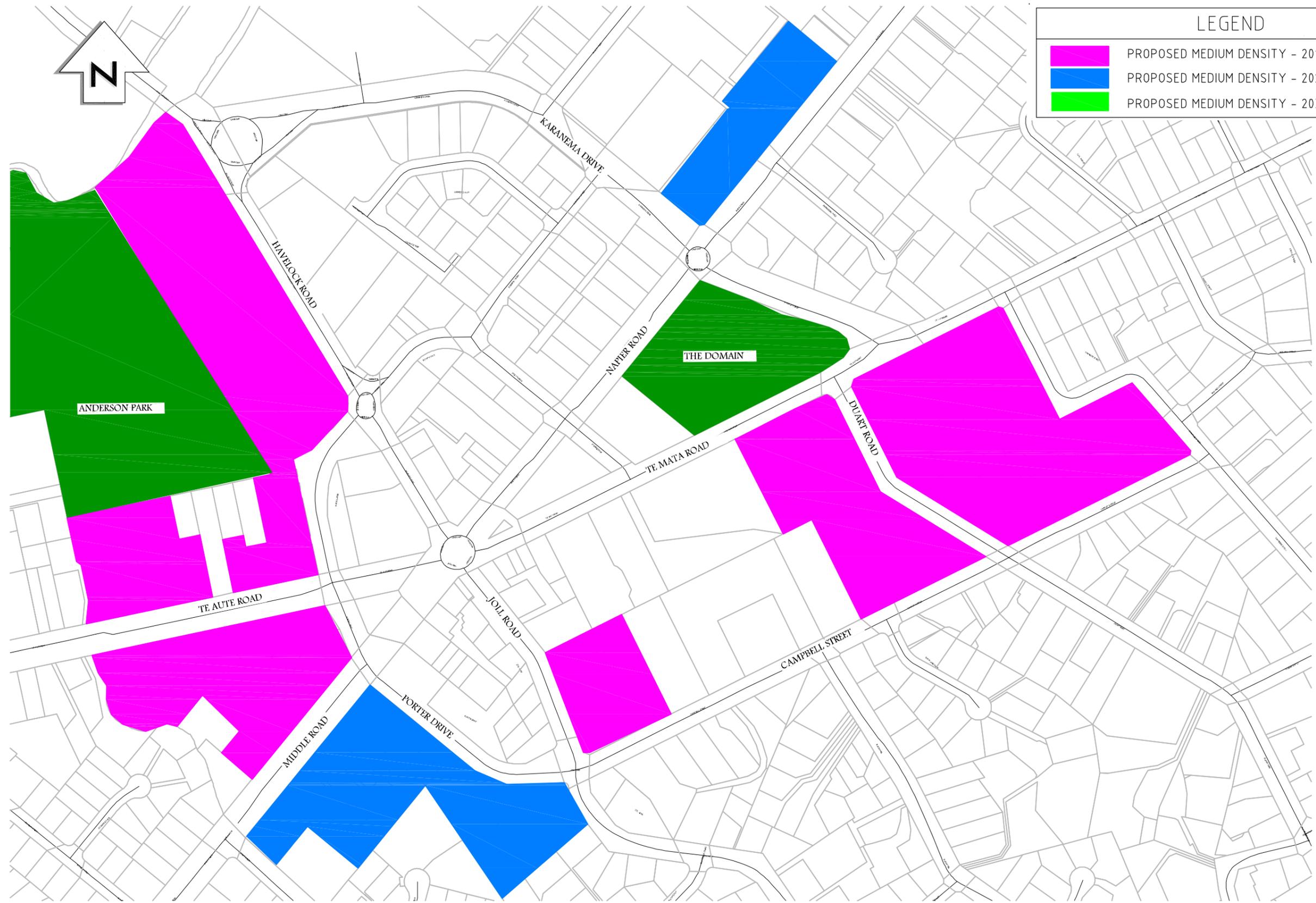
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APPENDIX B – DEVELOPMENT LOCATION NETWORK PLANS



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	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
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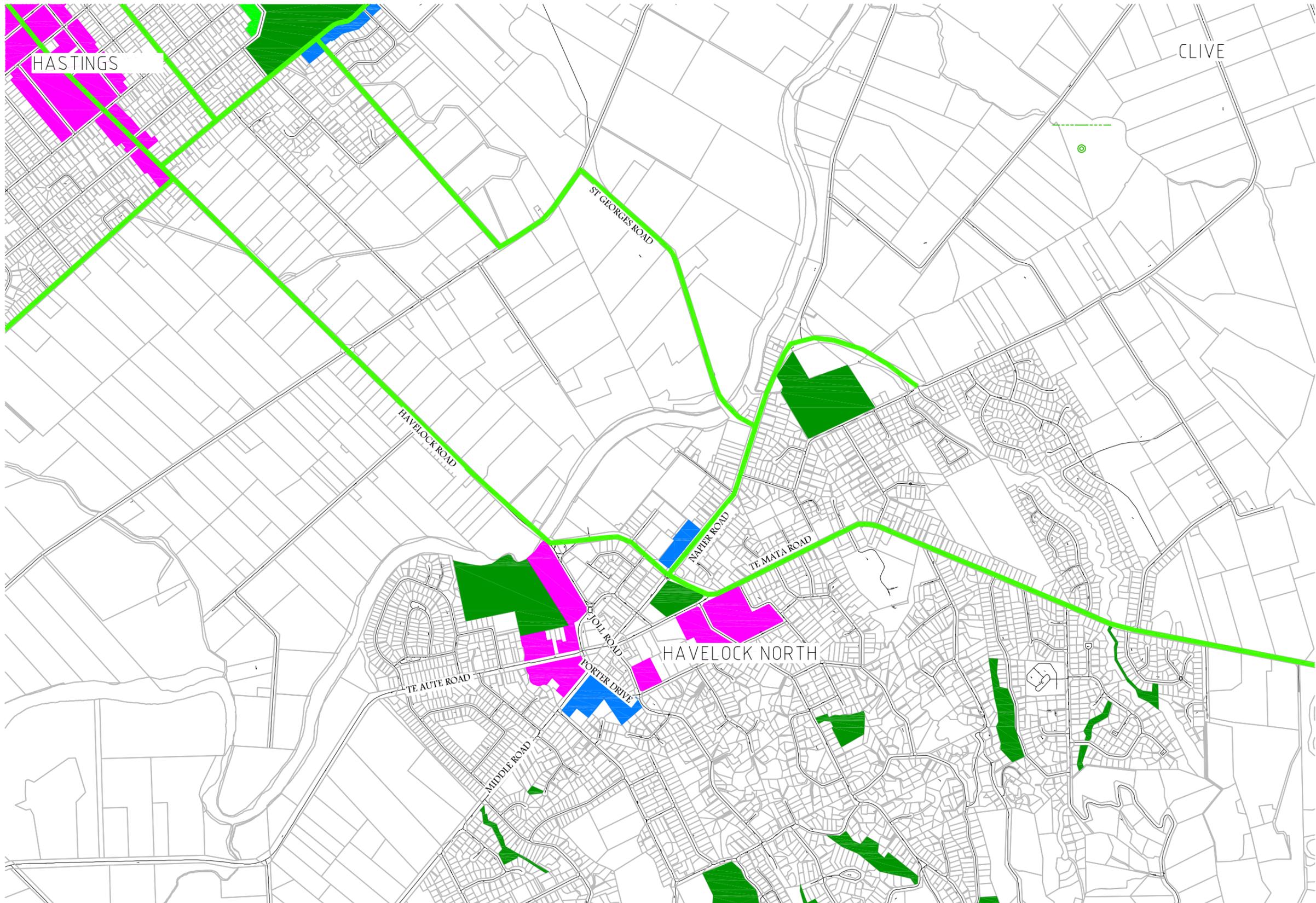
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APPROVED	WF	03/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
 DEVELOPMENT SITE
 HAVELOCK NORTH

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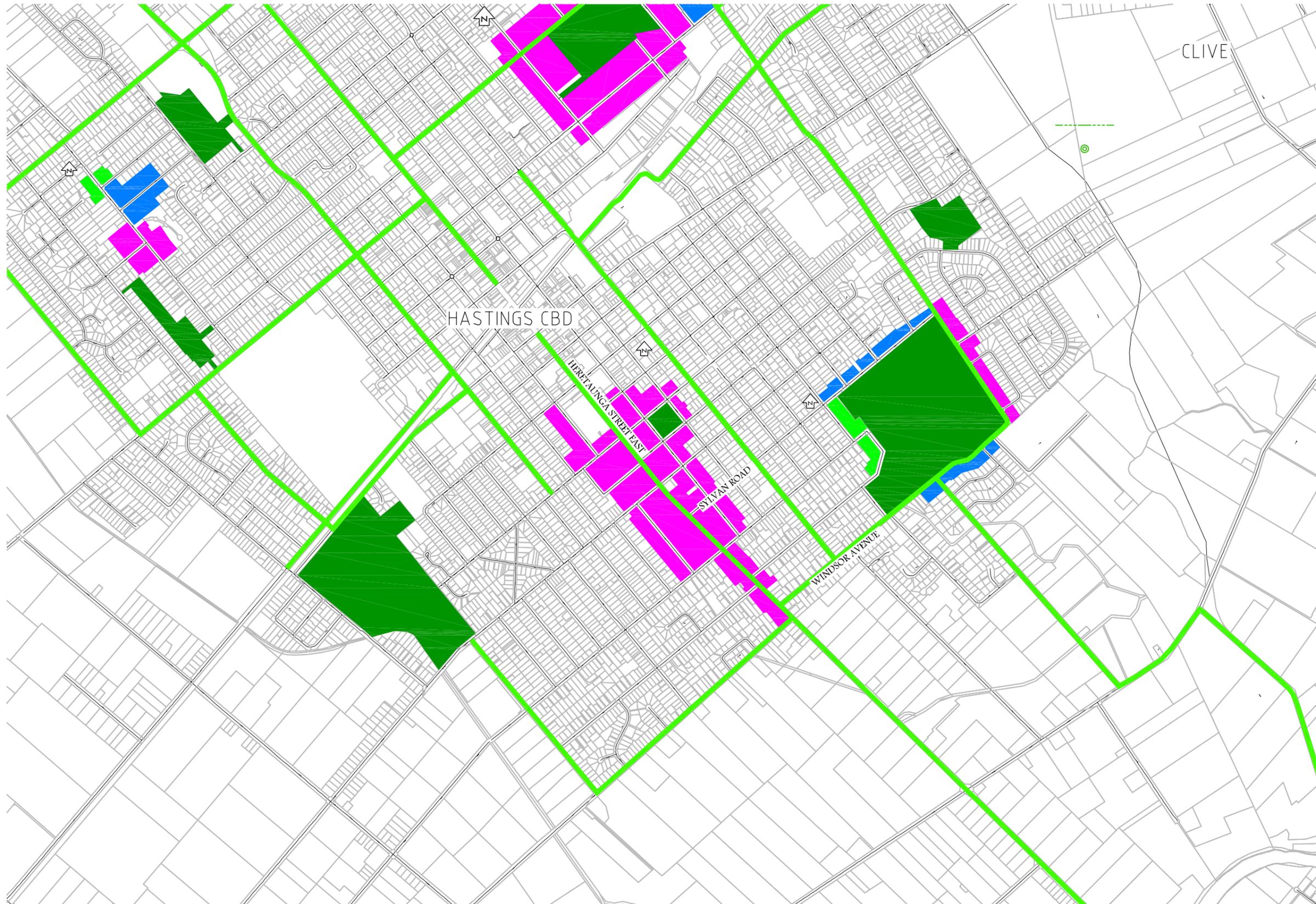


HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY - TRANSPORT ASSESSMENT

EXISTING CYCLE ROUTES
HAVELOCK NORTH

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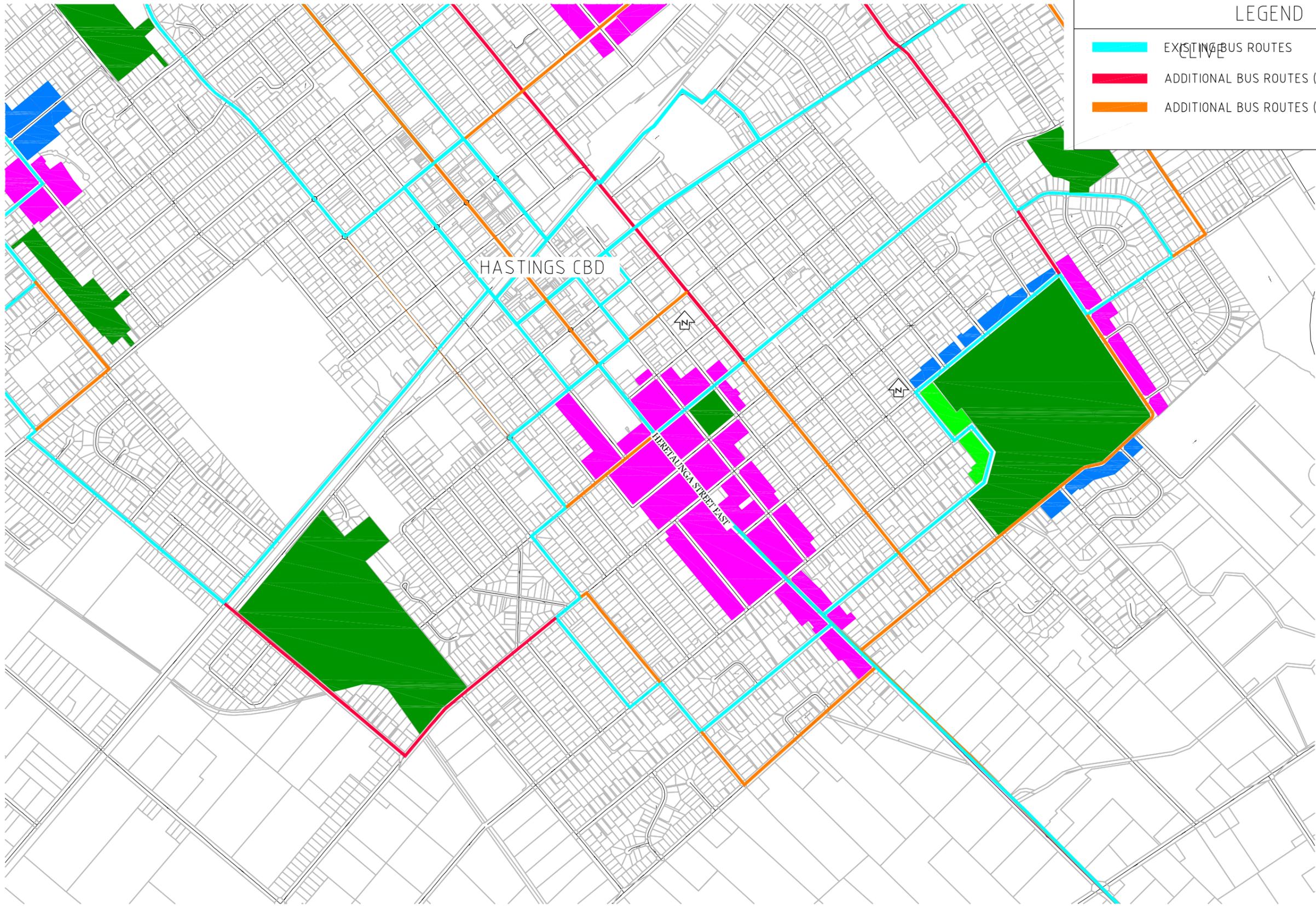


HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT

EXISTING CYCLE ROUTES
 HERETAUNGA STREET EAST

FOR INFORMATION		
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	ADDITIONAL BUS ROUTES (1-5 YEARS)
	ADDITIONAL BUS ROUTES (5-10 YEARS)

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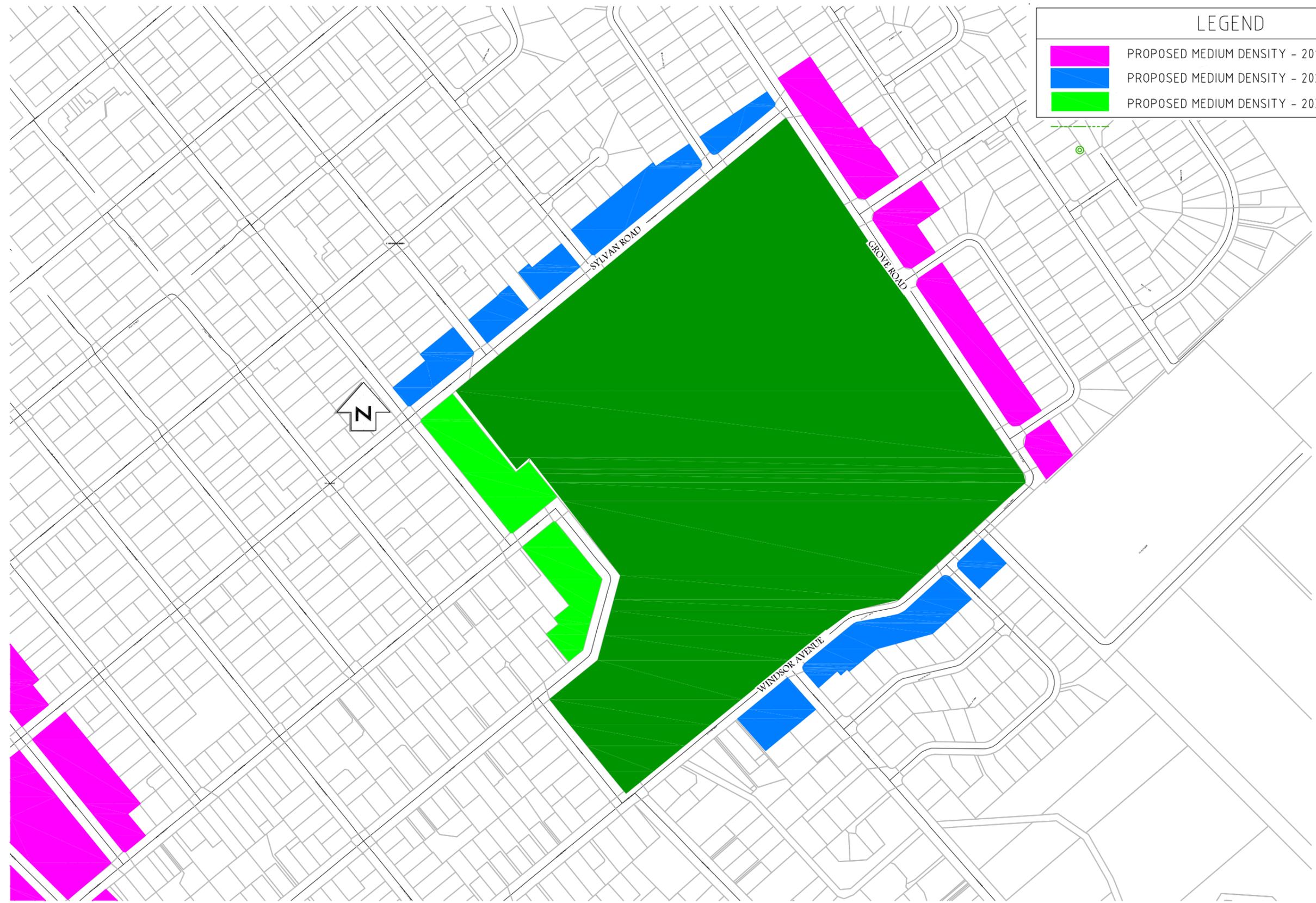


HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT

BUS ROUTES AND STOPS
 HERETAUNGA STREET EAST

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LEGEND	
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	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
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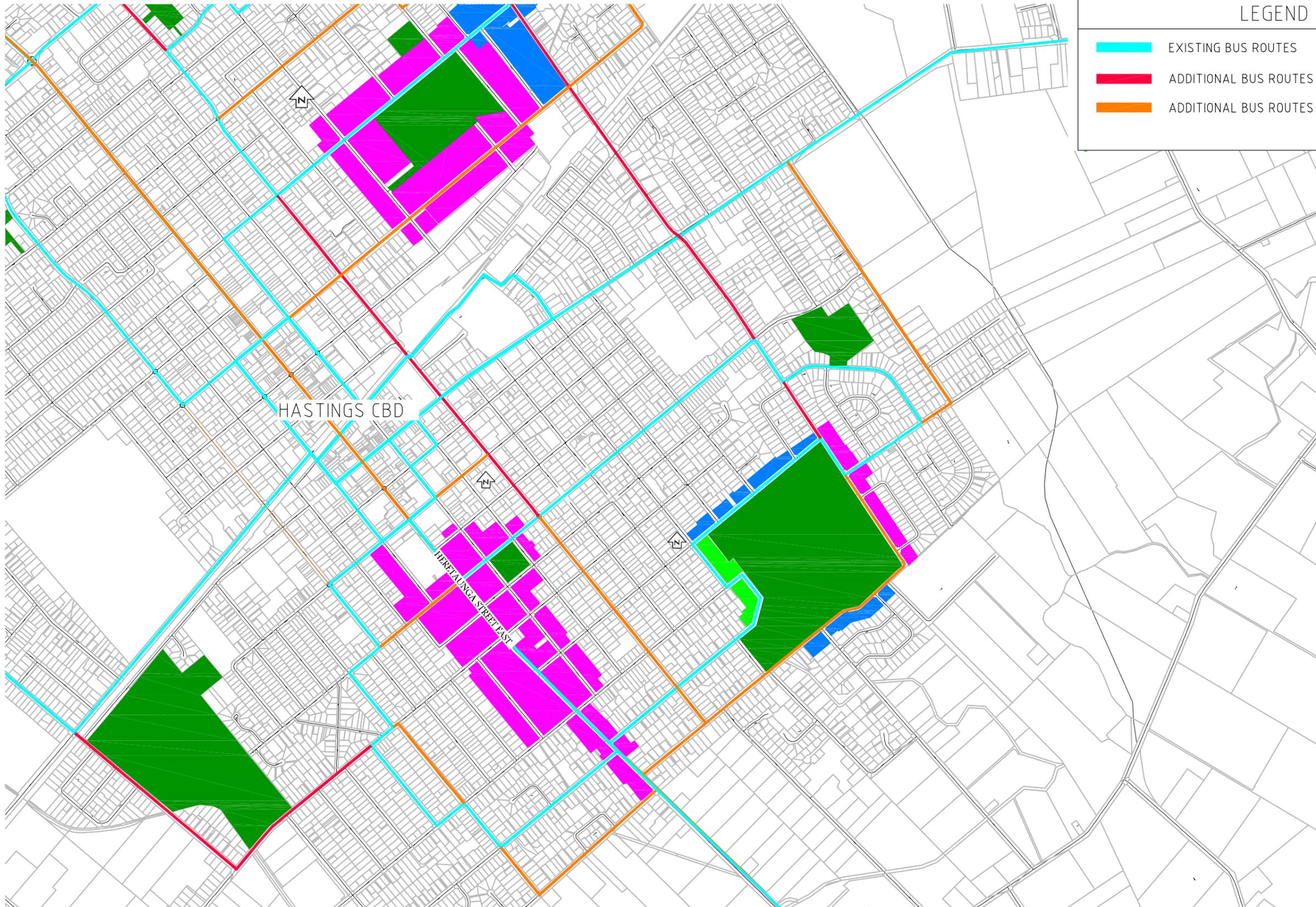
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DRAWING CHECK WF	03/2013
APPROVED WF	03/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
 DEVELOPMENT SITE
 PARKVALE

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LEGEND	
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	ADDITIONAL BUS ROUTES (1-5 YEARS)
	ADDITIONAL BUS ROUTES (5-10 YEARS)

NOT FOR CONSTRUCTION

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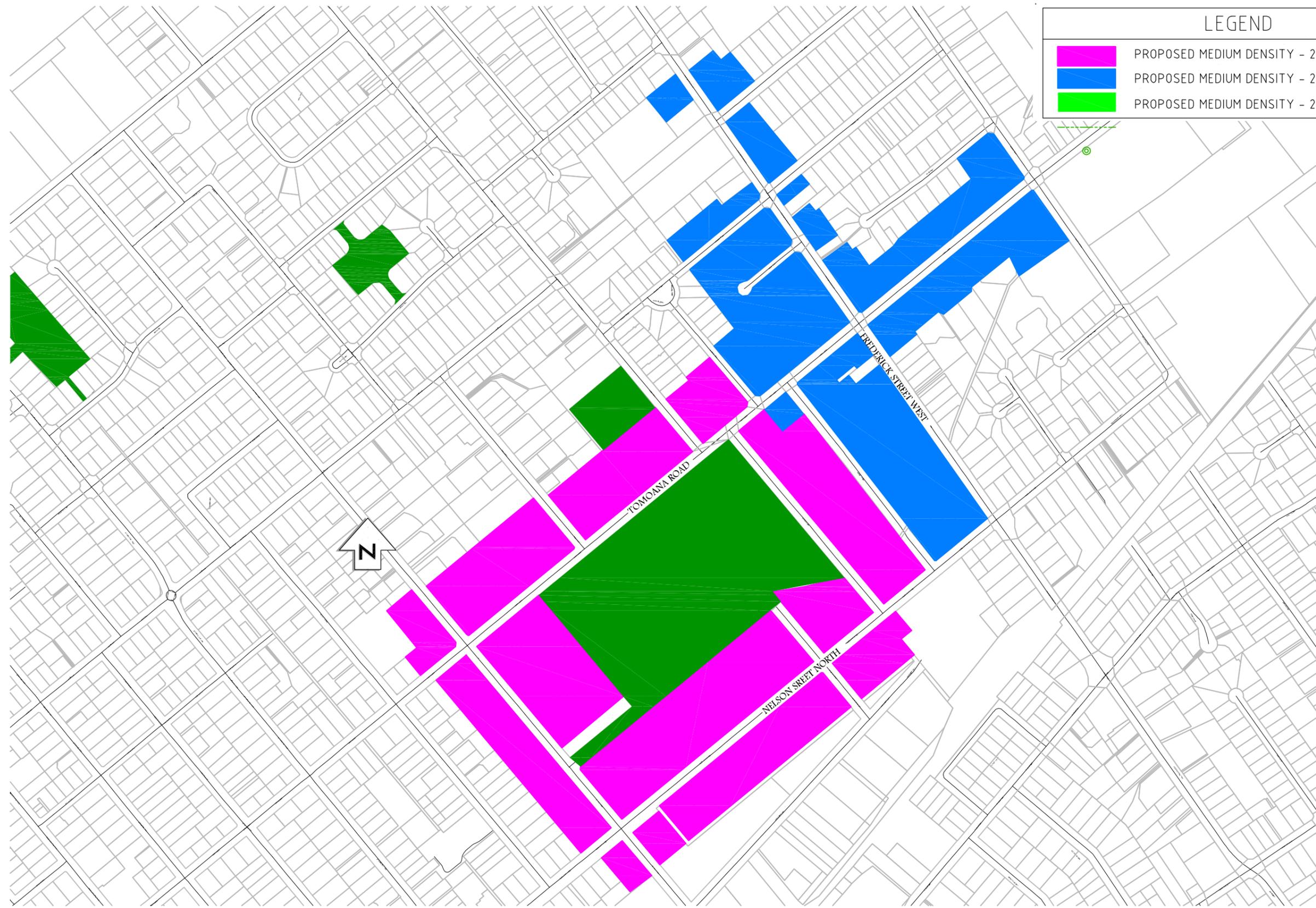
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HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
BUS ROUTES AND STOPS
PARKVALE

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LEGEND	
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	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2015 ONWARDS

REV	FOR INFORMATION	GOC	JP	WF	03/2013
		DRAWN	CHECKED	APPROVED	DATE

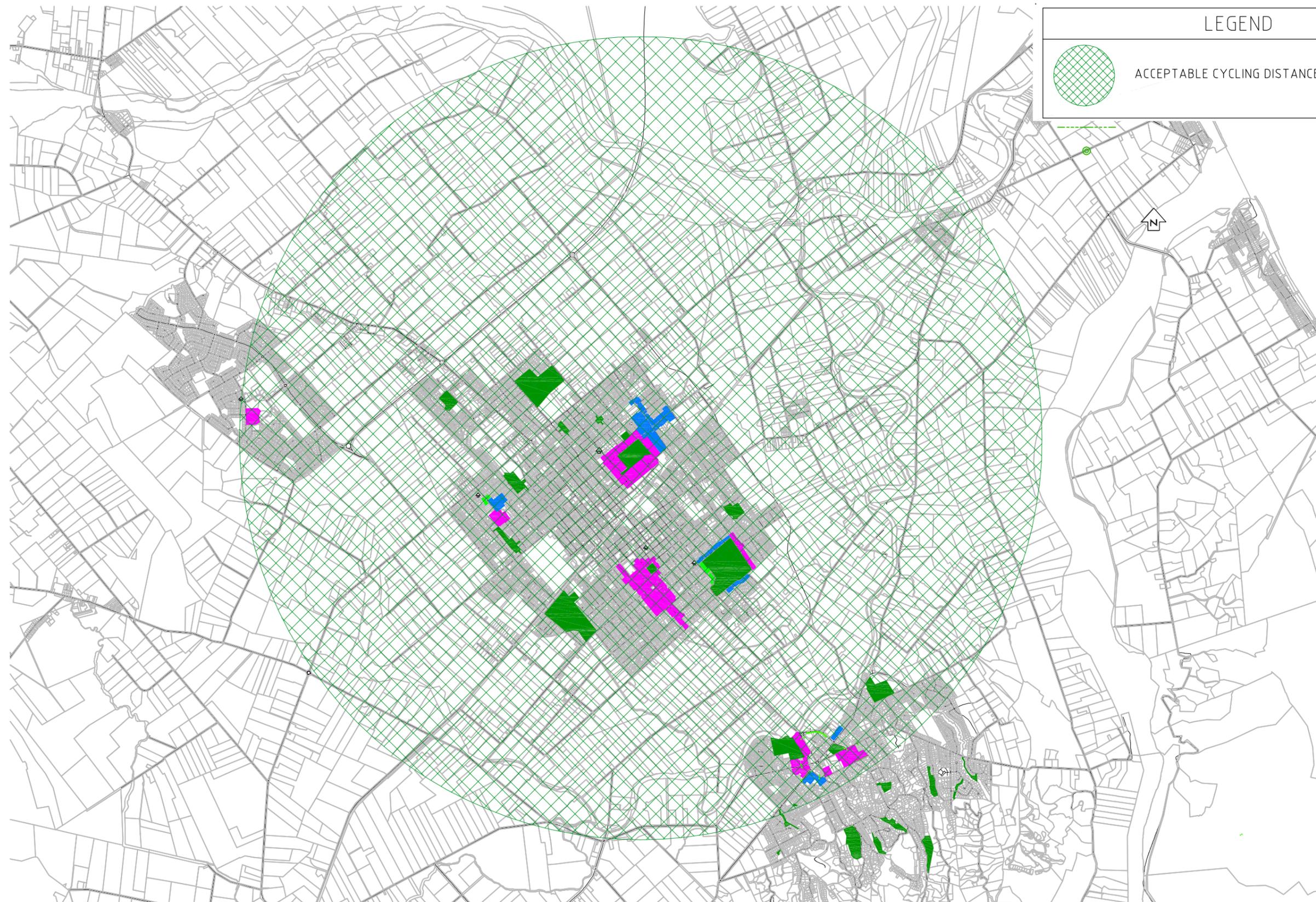
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DESIGN CHECK	JP	03/2013
DRAWN	GOC	03/2013
DRAWING CHECK	JP	03/2013
APPROVED	WF	03/2013

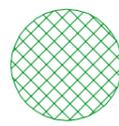


HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
 DEVELOPMENT SITE
 MAHORA

NOT FOR CONSTRUCTION		
FOR INFORMATION		
Date Stamp 11/03/2013		
SCALES (A1) NOT TO SCALE		
Drawing No. 80500556	Sheet No. C500	Rev. A

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DO NOT SCALE - IF IN DOUBT, ASK



LEGEND	
	ACCEPTABLE CYCLING DISTANCE - 5KM

REV	FOR INFORMATION	REVISIONS	GOC	JP	WF	03/2013	DATE

	Name	Date
SURVEYED	NA	
DESIGNED		
DESIGN CHECK	JP	03/2013
DRAWN	GOC	03/2013
DRAWING CHECK	JP	03/2013
APPROVED	WF	03/2013



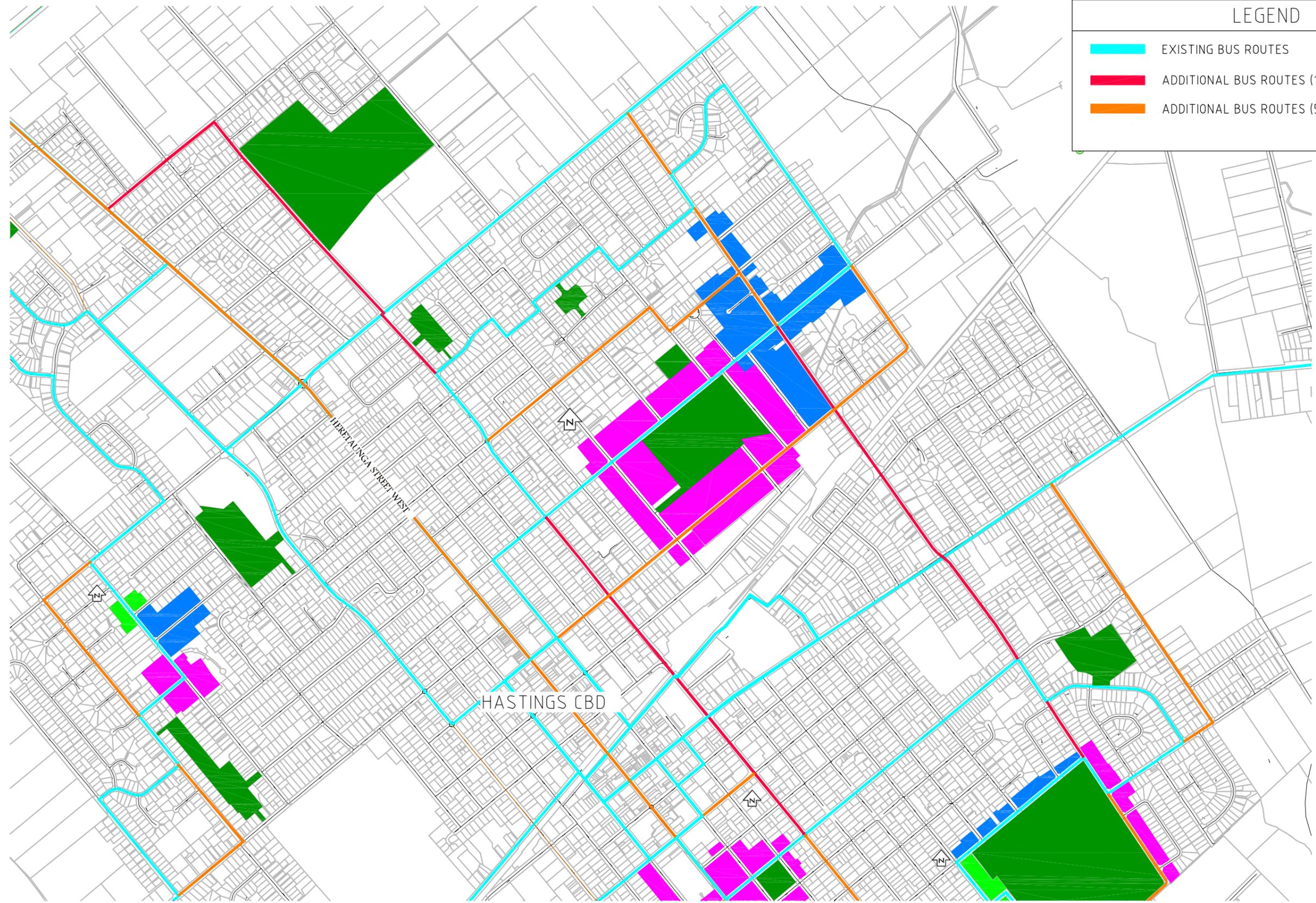
HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY - TRANSPORT ASSESSMENT

ACCEPTABLE CYCLING DISTANCE
MAHORA

NOT FOR CONSTRUCTION

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Drawing No.	Sheet No.	Rev.	
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ORIGINAL SIZE A1
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 DO NOT SCALE - IF IN DOUBT, ASK



LEGEND	
	EXISTING BUS ROUTES
	ADDITIONAL BUS ROUTES (1-5 YEARS)
	ADDITIONAL BUS ROUTES (5-10 YEARS)

REV	FOR INFORMATION	REVISIONS	GOC	JP	WF	03/2013	DRAWN	CHECKED	APPROVED	DATE

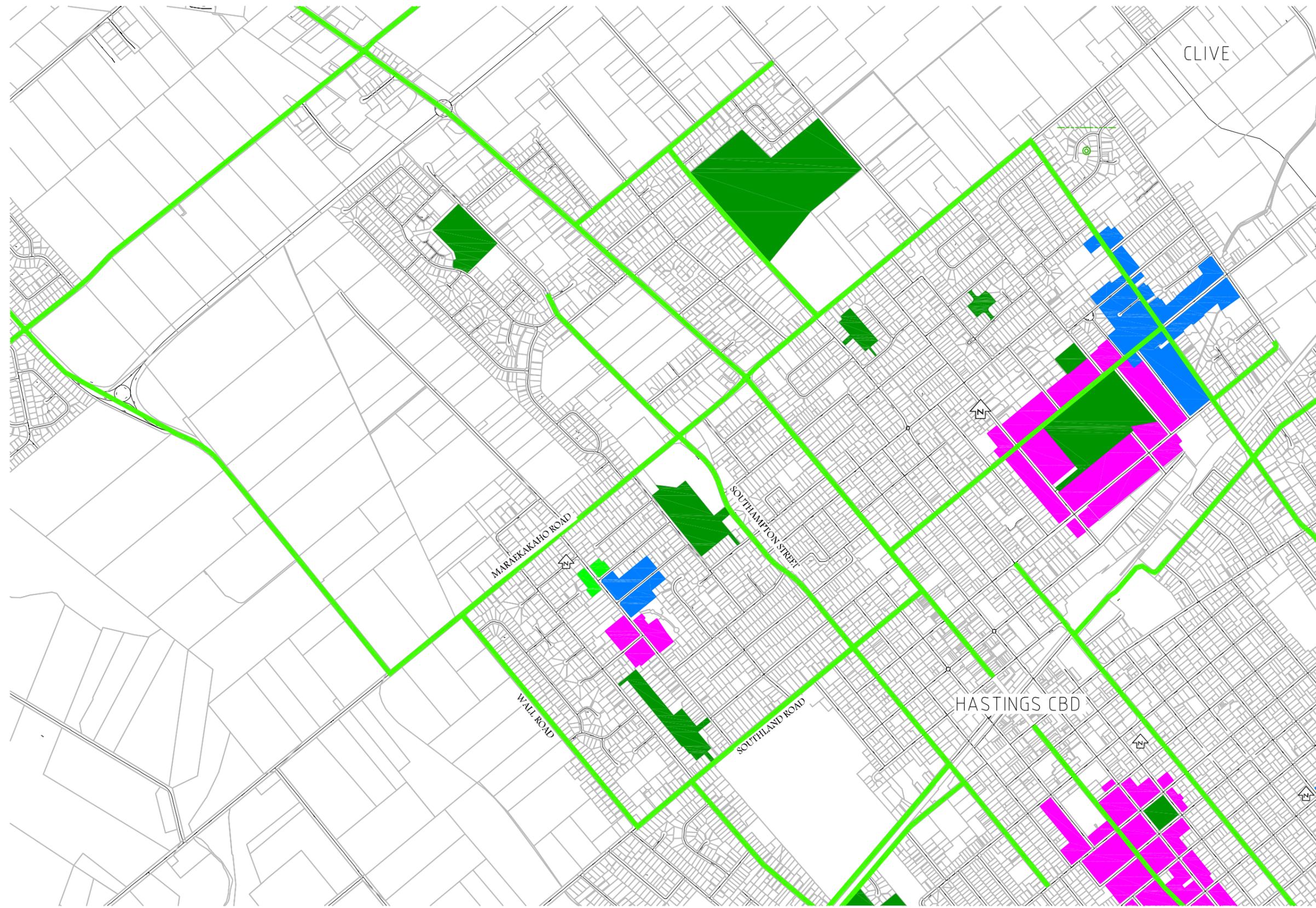
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DESIGNED		
DESIGN CHECK	JP	03/2013
DRAWN	GOC	03/2013
DRAWING CHECK	JP	03/2013
APPROVED	WF	03/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
BUS ROUTES AND STOPS
MAHORA

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FOR INFORMATION		
Date Stamp: 11/03/2013		
SCALES (A1) NOT TO SCALE		
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NOT FOR CONSTRUCTION

REV	FOR INFORMATION	GOC	JP	WF	03/2013
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	Name	Date
SURVEYED	NA	
DESIGNED		
DESIGN CHECK	JP	03/2013
DRAWN	GOC	03/2013
DRAWING CHECK	JP	03/2013
APPROVED	WF	03/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY - TRANSPORT ASSESSMENT
EXISTING CYCLE ROUTES
RAUREKA

Status Stamp	FOR INFORMATION	
Date Stamp	11/03/2013	
SCALES	(A1) NOT TO SCALE	
Drawing No.	Sheet No.	Rev.
80500556	C604	A

APPENDIX C – DEFICIENCY REGISTER

Development Site	Location	Deficiency	Cost to remedy	FWP	Strategy Measures	Implementation Opportunity	Earliest expected requirement Date	MDHS Contribution (% & \$)
Havelock North	Te Mata Road/Karanema Drive	Footpath link from Duart Road to Karanema Drive is disjointed.	\$10,000	14-15 TAC	N/A	No opportunity to include in FWP. Needs to be progressed as stand-alone project.	2020	10% - \$1,000
	Te Mata Road (nr Chambers Street)	Absence of pedestrian crossing opportunity on Te Mata Road.	\$20,000	15-16 TAC	N/A	No opportunity to include in FWP. Needs to be progressed as stand-alone project.	2015	10% - \$2,000
	Te Mata Road / Napier Road	Potential operational issues at this road in future years.	\$100,000	14-15 TAC	Issue identified within Havelock North Plan Change assessments. The MDHS development is expected to contribute to this issue only marginally but nonetheless, operational enhancements may be required to accommodate the development.	Stand along project required to widen roundabout and facilitate numerous approach lanes. Further monitoring and assessment is required prior to implementing any scheme here.	2025	5% \$5,000
	Campbell Street	No footpaths provided along the northern side of Campbell Street and limited parking opportunity.	\$25,000	18-19 Rehab	N/A	Opportunity to include in Rehab works.	2018	100% - \$25,000
	Middle Road	No footpath on the north-western side of Middle Road.	\$15,000	18-19 Rehab	N/A	Given current demands due to surgery on Middle Road, this should be progressed prior to rehab works.	2013	0%
		No cycle provision on this collector route.	\$30,000	18-19 Rehab	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Should be progressed as stand-alone project prior to rehab works.	2013	0%
	Middle Road/Porter Drive	No crossing provision on Middle Road at intersection.	\$10,000	18-19 rehab	N/A	Opportunity to include in rehab works.	2018	50% - \$5,000
	Te Aute Road	Absence of crossing opportunities to and from recreational land.	\$20,000	15/16 Reseal	N/A	Opportunity to include in reseal works but some costs will still be incurred for build-out or island provision.	2015	80% - \$16,000
		No cycle provision on this collector route.	\$30,000	15/16 Reseal	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Price can be reduced if implemented through reseal due to absence of removal costs.	2015	0%
	Te Aute Road / Porter Drive	Potential operational issues at intersection in future years	\$300,000	15/16 Reseal	Issue identified within Havelock North Plan Change assessments and as such any development contributions could be combined for both developments to aid implementation of required works.	Given proximity of site to village centre, widening of existing roundabout would not be suitable given the level of pedestrian and cyclist activity here. As such, traffic signals or significant changes to traffic operation here (road closures, one way system etc) may be more appropriate solutions. Future monitoring and assessment is required prior to implementing any works here.	2020	10% - \$30,000
	Havelock Road (urban)	No crossing opportunity at Karanema Drive intersection	\$10,000	18/19 Rehab	N/A	Opportunity to include in rehab works to minimise costs.	2018	80% - \$8,000
		Provide bus shelters.	\$20,000	N/A	N/A	N/A	2020	50% - \$10,000
		Absence of cycle network severs links to southwest area of Havelock North.	\$15,000 through Rehab	18/19 Rehab	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Opportunity to include in rehab works which could facilitate road widening if required and reduce removal costs.	2018	0%

Development Site	Location	Deficiency	Cost to remedy	FWP	Strategy Measures	Implementation Opportunity	Earliest expected requirement Date	MDHS Contribution (% & \$)
		Road width, private access and parking results in increased conflict on this road section. Minimising these impacts through parking removal, limited access and road widening would assist in accommodating a cycling link whilst improving overall operation.	Significant as stand-alone, minimal through Rehab works.	18-19 Rehab		Opportunity to address through rehab works and or CMP.	2018	5% - \$30,000
	Karanema Drive	No footpath exists on the southern side of the road between Havelock Road and Donnelly Street	\$120,000	14-15 TAC	N/A	No opportunity to include in FWP. Needs to progress as stand-alone project. Anticipated to be expensive due to existing trees requiring removal or kerb/channel relocation.	2025	10% - \$12,000
	Porter Drive	Absence of cycle network severs links to southwest area of Havelock North.	\$35,000	16-17 TAC	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Opportunity to include road markings in FWP with some additional works to facilitate off-road access at roundabouts etc.	2016	0%
Heretaunga Street East	Heretaunga Street East	Limit private vehicular access to ensure minimal impact on traffic operation along Heretaunga Street East.		None	Measures proposed within CMP should address this issue but specific requirements should be included within MDHS to ensure property access is minimised.	CMP to partly address issue whilst appropriate development layouts will ensure minimal access provision also.	2015	
		Provide bus shelter for westbound traffic.	\$10,000	N/A	N/A	N/A	2020	50% - \$5,000
	Heretaunga Street East / Norton Road	Lack of pedestrian footpath and crossing facility.	\$50,000	None	CMP will provide suitable footpath provision. Crossing locations are not shown on CMP scheme options and should be included in detail design.	Include requirements in detail design works for stage 2 and 3 of CMP.	2015	15% - \$7,500
	Heretaunga Street East / Windsor Avenue	Traffic movement restrictions will reduce accessibility of development sites and result in additional travel time on the network for some movements.	\$300,000	None	CMP will address this through provision of kidney shaped roundabout.	TO be addressed through CMP.	2030	30% - \$90,000
	Heretaunga Street East / Sylvan Road	Operational issues expected in future years.	\$250,000	None	CMP proposes minor changes.	Future monitoring is required and measures adopted through CMP may need to be amended to ensure suitable operation is maintained.	2030	30% - \$75,000
		Insufficient pedestrian crossing facilities.	\$20,000	None	No details contained within CMP relating to pedestrian connections.	Ensure adequate pedestrian linkages are provided within CMP designs.	2015	50% - \$10,000
	Heretaunga Street East between Sylvan Road and Willowpark Road	No pedestrian crossing provision.	\$40,000	None	No details contained within CMP relating to pedestrian connections.	Ensure adequate pedestrian linkages are provided within CMP designs.	2015	50% - \$20,000
	Heretaunga Street East / Willowpark Road	Unsuitable pedestrian facilities.	\$20,000	None	No details contained within CMP relating to pedestrian connections.	Ensure adequate pedestrian linkages are provided within CMP designs.	2015	25% - \$5,000

Development Site	Location	Deficiency	Cost to remedy	FWP	Strategy Measures	Implementation Opportunity	Earliest expected requirement Date	MDHS Contribution (% & \$)
	Heretaunga Street / Riverslea Road	Operational issues are expected in future years.	\$250,000	N/A	CMP proposes to remove right turn facilities at intersection	Future monitoring is required to ensure CMP designs address operational issues. In addition, the design will need to consider how cycle connectivity can be maintained north-south with the removal of the cross roads link.	2030	30% - \$75,000
	Riverslea Road South	Insufficient pedestrian crossing facilities.	\$5,000	Reseal 15-16	No details contained within CMP relating to pedestrian connections.	Ensure adequate pedestrian linkages are provided within CMP designs.	2015	15% - \$750
		No cycle provision on this collector route.	\$30,000	Reseal 15-16	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Opportunity to include road markings in FWP with some additional works to facilitate off-road access at roundabouts etc.	2013	0%
	Riverslea Road North	No cycle provision on this collector route.	\$10,000	None	i-Way programme could address this requirement should sufficient funds exist to address the issues identified.	Opportunity to include road markings in FWP with some additional works to facilitate off-road access at roundabouts etc.	2013	0%
Parkvale	Grove Road	Lack of pedestrian crossing opportunities.	\$40,000	None	N/A		2015	10% - \$4,000
	Sylvan Road	Lack of pedestrian crossing opportunities.	\$20,000	Reseal 2013-2014	N/A		2025	10% - \$2,000
	Windsor Avenue	Lack of pedestrian crossing opportunities near Haig Street.	\$20,000	None	N/A		2035	10% - \$2,000
	Terrace Road	Although sufficient for development, the layout could be improved significantly to integrate better with Windsor Park.	\$400,000	16-17 AWPT	N/A	Opportunity to address through AWPT.	2016	0%
	Windsor Avenue/St Aubyn Street	Potential operational issues at intersection in future years.	\$250,000	N/A	St Aubyn Street Corridor Management Plan will consider operation of this intersection and confirm suitable improvements.	Works will be identified through CMP and will be implemented accordingly.	2030	10% - \$25,000
	Grove Road/Karamu Road	Some operational issues expected in future years.	\$150,000	AWPT 17-18	Karamu Road Corridor Management Plan will consider operation of this intersection and confirm suitable improvements.	Works will be identified through CMP and will be implemented accordingly.	2030	5% - \$7,500
Mahora	Frederick Street / Tomoana Road	Lack of cycle detection at intersection.	\$15,000	Reseal 14-15	N/A	Opportunity to address within future maintenance programmes for traffic signals and reseal works.	2014	0%
		Operational issues possible in future years.	\$150,000	Reseal 14-15	N/A	Future monitoring is required to determine if phasing amendments or redesign is required.	2030	20% - \$30,000
	Tomoana Road / St Aubyn Street	Lack of cycle detection at intersection.	\$15,000	None	N/A	Opportunity to address within future maintenance programmes for traffic signals and/or St Aubyn CMP.	2020	0%

Development Site	Location	Deficiency	Cost to remedy	FWP	Strategy Measures	Implementation Opportunity	Earliest expected requirement Date	MDHS Contribution (% & \$)
		Operational issues possible in future years.	\$150,000	None	St Aubyn Street Corridor Management Plan will consider operation of this intersection and confirm suitable improvements.	Opportunity to address through St Aubyn CMP.	2030	10% - \$15,000
	Frederick Street / Karamu Road	Lack of cycle detection at intersection.	\$15,000	Reseal 14-15	N/A	Opportunity to address within future maintenance programmes for traffic signals, reseal works and/or Karamu CMP.	2014	0%
	Tomoana Road	Provide 2no. bus shelters in vicinity of Mahora Shops.	\$20,000	N/A	N/A	N/A	2020	50% - \$10,000
	Norrie Street	Pedestrian paths obstructed and road width restricts available parking options.	\$250,000	Reseal 2013	N/A	Likely to be stand-alone project as road requires full redesign of cross section. May be an opportunity to combine with reseal works to minimise costs.	2025	100% - \$250,000
	Rangiora Street	Road width restricts traffic movements and power poles currently obstruct pedestrian footpaths.	\$400,000	Rehab 17-18	N/A	Combine with rehab works to minimise costs.	2017	0%
	Mairangi Street	Road cross section does not conform with best practice design guide and lacks visual amenity aspects.	\$300,000	Rehab 17-18	N/A	Combine with rehab works to minimise costs.	2017	0%
	Roberts Street	Road cross section does not conform to best practice design guide and footpaths obstructed along length.	\$500,000	Reseal 14-15	N/A	Stand-alone project if progressed.	N/A	0%
	Kirchener Street	Road cross section does not conform to best practice design guide and footpaths obstructed along length.	\$250,000	Reseal 14-15	N/A	Stand-alone project if progressed.	N/A	0%
	Fitzroy Avenue	Road cross section does not conform to best practice design guide but is sufficient to accommodate development demands.	\$500,000	None	N/A	Stand-alone project if progressed.	N/A	0%
	Cornwall Road	Road cross section does not conform to best practice design guide and footpaths obstructed along length.	\$400,000	None	N/A	Stand-alone project if progressed.	N/A	0%
Raureka	Gordon Road	Provide bus shelter in vicinity of shops on Gordon Road.	\$10,000	N/A	N/A	N/A	N/A	10% - \$1,000

Appendix B Medium Density Ready Services – Water Services



MWH®

BUILDING A BETTER WORLD

REPORT

Medium Density Ready Services

Prepared for Hastings District Council
14/03/2012

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REVISION SCHEDULE

Rev No	Date	Description	Signature or Typed Name (documentation on file).			
			Prepared by	Checked by	Reviewed by	Approved by
1	28/02/13	Initial Draft for Comment	APH	WAH	DP	
2	14/03/13	Final	APH	WAH	DP	WAH

Hastings District Council

Medium Density Ready Services

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1 Introduction

Hastings District Council (HDC) engaged MWH to undertake a high level assessment of the existing sewer and stormwater infrastructure currently servicing those areas that have been identified for Medium Density development.

This report will form one of the work streams that will feed into the Medium Density Intensification Toolkit (MDIT) report currently being developed by MWH.

The assessment included identifying any existing network constraints and identifying any issues or constraints that will occur as a result of medium density development in the area.

An assessment of the water infrastructure was carried out separately by Jeff Booth Consulting, with findings included in Appendix E.

The medium density areas included in this assessment are listed below:

- Heretaunga Street East
- Havelock North
- Raureka
- Mahora
- Parkvale
- Flaxmere

2 Sewer Infrastructure

2.1 Methodology

The proposed medium density areas have been identified and divided into appropriate sub catchments based on the existing sewer infrastructure. The existing sewer infrastructure downstream of the medium density areas to the first trunk sewer or pump station servicing each catchment has then been identified using HDC HANSEN data.

Both existing catchment and proposed medium density catchment design flows are then compared against the existing pipe capacity. From this comparison any constraints have been identified.

2.1.1 Pipe Capacity

A sample of invert levels were taken from HANSEN for various pipelines within the catchments and from this information average grades were calculated for pipe diameters from 100mm to 300mm. The maximum flow each gravity pipeline is able to convey was then calculated using the Manning's Equation.

Table 2-1: Assumed Maximum Flows - Sewer

Pipe Diameter (mm)	Assumed Grade	Q max (l/s)
100	1:200	4
125	1:200	4
150	1:250	10
180	1:250	10
225	1:350	24
250	1:350	32
300	1:600	39

Note: 125mm PE slip lines and 180mm slip lines were assumed to be 100mm and 150mm sewer respectively.

Ancillary structures including pump stations and rising mains have been identified however, as there are limitations in ascertaining the capacity of these structures no further assessment has been carried out at this stage.

2.1.2 Existing and Predicted Catchment Flows

Existing catchment peak wet weather flows (PWWF) have been based on 0.4l/s per hectare.

Proposed medium density average dry weather flows (ADWF) has been based on 250 litres per day per person. Peak dry weather flows (PDWF) and PWWF are assumed to be 2.5 and 4 times ADWF respectively.

The predicted medium density population has been developed using the following information:

- 30-40 dwellings per hectare (from the Intensification Toolkit Report)
- An average of 2.6 people per dwelling (from 2006 CENSUS data)

This equates to a medium density catchment PWWF of between 0.9 and 1.2 l/s per hectare.

2.1.3 Maintenance Work History

The history of maintenance work of the sewers identified below has been compiled in Appendix D. This summary indicates that the existing 100mm internal diameter slip lined sections of sewer pipe not only have less capacity but experience a high number of blockages requiring maintenance.

2.1.4 Medium Density vs. Existing Capacity Constraints

A number of the constraints identified are already known issues within the sewer network based on the current population. In these instances the impacts of medium density development have been identified.

2.2 Findings

Drawings have been produced for each medium density area (See Appendix A). Each drawing shows:

- The proposed medium density areas
- Sewer catchment splits
- Any constraints or areas that require upgrading.

The following sections provide area specific constraints, issues and initial assessment of upgrading requirements. Any upgrading work would be subject to a more detailed assessment and design before confirmation, but is presented for consideration only at this stage.

2.2.1 Heretaunga Street East

The Heretaunga Street East area is split between four distinct sewer catchments. One of these catchments discharges to the head of the brick arch trunk sewer and the other three to the Park Road Rising main via various pump stations. The Park Road rising main is currently operating at its limit during wet weather events. The true impact of medium density development on the rising main and its associated pump stations is unknown. It is recommended that HDC investigate the capacity of the rising main and pump stations further before medium density proceeds to ascertain the actual impact.

A number of existing small diameter slip lined pipe sections have been identified within the Heretaunga Street East areas. These slip lined pipes are a known issue within the sewer network and will require renewal prior to medium density development.

2.2.2 Mahora

The Mahora area is divided into four sewer catchments. A large proportion of the area discharges via sewer rider mains directly to the western interceptor trunk sewer and brick arch trunk sewer. It is assumed that there is sufficient capacity within these trunk sewers to cater for the increase in flow from medium density development.

Two smaller areas of medium density development discharge into the Waipuna Street and Frederick Street pump stations. It is not anticipated that the small increase in flow to these pump stations will cause any issues.

The largest area of medium density development will enter the brick arch trunk sewer via a very deep sewer on Frederick Street. There are historical issues with the very deep pipe in Frederick Street. HDC are currently investigating a complete change in conveyance in the future moving to a shallow pumped system. Allowance for the medium density development can be made as part of that investigation.

2.2.3 Havelock North

A wider issue currently exists with the Havelock North sewer system. The single trunk outlet currently experiences surcharging in wet weather events. HDC are currently investigating options to upgrade or duplicate the trunk outlet. The physical works are programmed to be completed by 2015/2016 and are therefore unlikely to affect medium density development.

Two areas in Joll Road and Duart Road are slip lined pipes and have been identified as requiring renewal prior to medium density development.

A 100m length 150mm diameter concrete pipe from Duart Road to Karanema Drive has been identified as requiring upgrading due to medium density development upstream.

2.2.4 Parkvale

The Parkvale area is divided into three sewer catchments. One discharges to the Hood Street pump station, the other two areas both discharge to the Park Road rising main as discussed in section 2.2.1 above. Two sections of slip line pipe have been identified as requiring renewal before medium density development proceeds.

2.2.5 Raureka

The Raureka area discharges to the Oliphant Road pump station and then into the head of the western interceptor trunk sewer. A single length of slip line pipe has been identified as requiring renewal prior to medium density development proceeding.

2.2.6 Flaxmere

The Flaxmere area ultimately discharges to the Flaxmere pump station. Further consideration of the Flaxmere pump station and rising main is required. Although the estimated increase in flow produced by medium density development in minor there are wider issues and risks around the pump station and rising main. This includes no storage and no ability to isolate the pump station and rising main in the event of failure. There are no issues or constraints within the gravity system identified for this area.

2.3 Summary of Findings

The table below summarises all upgrades identified and differentiates those that are existing issues within the HDC network and those that will result from medium density development. The date where items are due for renewal is from the HDC asset database (Hansen); these items are not necessarily currently programmed for renewal.

Table 2-2: Existing Upgrades vs. Medium Density Upgrades Required - Sewer

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
Heretaunga Street East	132m of 125mm HDPE slip lined pipe on Heretaunga Street needs renewing with a 150mm pipe.	2031	Nil	2015
	280m of 186mm HDPE slip lined pipe on Lumsden Road needs renewing with a 200mm pipe.	2030-2032	Nil	2015
	114m of 186mm slip lined pipe on Heretaunga Street needs renewing with a 200mm pipe	2046	Nil	2015
	330m of 125mm slip lined pipe on Queen Street East needs renewing with a 150mm pipe	2038-2044	Nil	2015
	245m of 125mm HDPE slip lined pipe on Avenue Road West needs renewing with a 150mm pipe	2031-2050	Nil	2015
	350m of 186mm HDPE slip lined on Princes Street needs renewing with a 200mm pipe	2031-2049	Nil	2015
Mahora	112m of 125mm HDPE slip lined pipe on York Street needs renewing with 150mm pipe	2043	Nil	2015
	A wider issue currently exists with the existing gravity sewer on Frederick Street. HDC are currently investigating options to resolve. This may result in a change in conveyance and may move to a shallow pumped system or redirected gravity system	2015	Nil	2015/2025
Havelock North	242m of 125mm slip lined pipe in Duart Road needs renewing with a 150mm pipe.	2043	Nil	2015
	Nil	2024	100m of 150mm concrete pipe needs renewing with 200mm pipe and upstream manhole re-haunched	2015
	225m of 125mm slip lined pipe in Joll Road needs renewing with a 150mm pipe.	2044	Nil	2015

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
Parkvale	174m of 125mm slip lined pipe in Grove Road needs renewing with a 150mm pipe.	2041	Nil	2015
	150m of 125mm slip lined pipe in Sylvan Road needs renewing with a 150mm pipe.	2031-2034	Nil	2025
Raureka	72m of 125mm slip lined pipe needs renewing with 150mm pipe	2125	Nil	2015
Flaxmere	Nil	-	Nil	-

3 Stormwater Infrastructure

3.1 Methodology

Proposed medium density areas have been identified and divided into appropriate sub catchments based on the existing stormwater infrastructure in the area and LIDAR data has been used to confirm overland flow paths. The existing stormwater infrastructure downstream of the medium density areas has been considered through to the discharge into the receiving open drain. Capacity of the open drainage system has not been considered.

Both existing catchment and proposed medium density catchment design flows are then compared against the existing pipe capacity. From this comparison any constraints have been identified.

3.1.1 Pipe Capacity

A sample of invert levels were taken from HANSEN for various pipelines within the catchments and from this information average grades were calculated for pipe diameters from 300mm to 1350mm diameter. The maximum flow each gravity pipeline is able to convey was then calculated using the Manning's Equation.

Table 3-1: Assumed Maximum Flows – Stormwater

Pipe Diameter (mm)	Assumed Grade	Q max (l/s)
300	200	70
375	250	110
450	300	165
525	300	250
600	350	330
675	400	420
750	500	500
900	600	730
1050	800	965
1200	800	1375
1350	800	1890

3.1.2 Existing and Predicted Run Off

Existing and proposed stormwater runoff has been calculated using the rational method using the following information:

- Catchments areas (ha)
- Intensity from HIRDS rainfall data for a one hour, 5 year return period storm event

The run off coefficient was altered to identify differences in runoff between existing areas and proposed medium density areas.

- 1) A coefficient of 0.5 was used for existing areas (HDC Engineering Code of Practice)
- 2) Proposed medium density area coefficients were identified using typology information from the MDIT report and composite value range of 0.63 to 0.71 was identified using 0.9 for impervious areas and 0.3 for previous areas (HDC Engineering Code of Practice).

It is recognised that the stormwater infrastructure at the top of the medium density catchments would have a shorter time of concentration than the 1 hour storm used. However, it has been assumed that the onsite stormwater attenuation required by HDC for all infill development will accommodate the shorter duration events making an hour storm event appropriate for this high level assessment. Note also that any existing capacity issues in the top part of the catchment will generally not be identified by this method.

3.1.3 GIS Ponding Maps

Ponding maps from HDCs GIS system for each of the medium density areas are included in Appendix B.

These maps have been taken into consideration in conjunction with the catchment calculations and capacity of existing stormwater infrastructure. In some instances the maps confirm the initial findings however in other instances no ponding areas have been indicated where there is an obvious deficiency in the stormwater pipelines capacity. These areas have been identified as areas with steeper grades which allow the surplus flow to be conveyed down the road without causing ponding issues in the immediate area.

3.1.4 Site Investigations

Site investigations still need to be undertaken in the areas where deficiencies within the pipe network have been identified.

This investigation will identify any low properties, the ability for the road to convey/detain flow and any issues or nuisance conveyance via the road may cause.

3.1.5 Road Hierarchy

Road hierarchy has been taken into consideration where the existing pipe network is insufficient for medium density development. It is recommended that the stormwater systems are upgraded or duplicated on any arterial or collector roads with insufficient pipe capacity. This upgrade may not be necessary for local roads and lanes as a greater level of ponding within the road is acceptable. Refer to table 3.2 below extracted from the HDC Engineering Code of Practice.

Table 3-2: Required Road Corridor Level of Service for Stormwater Management

Hierarchy Classification	Stormwater Return Period (yrs.)			
	5	10	20	50
Arterial Road	All designed movement lanes	All designed movement lanes	2x full traffic lanes	2x full traffic lanes
Collector Road	All designed movement lanes	2x full traffic lanes	2x full traffic lanes	1x full traffic lane
Local Road	1x full traffic lane	1x full traffic lane	0mm depth on carriageway centre lane	100mm depth on carriageway centre lane
Lane	1x full traffic lane	0mm depth on carriageway centre lane	100mm depth on carriageway centre lane	200mm depth on carriageway centre lane

3.1.6 On Site Stormwater Detention

All medium density development will be required to have on site detention to limit the volume of stormwater being discharged to HDCs stormwater system during short duration rain events.

This on site detention will be calculated using the principals of the On Site Detention Calculator – Version 06 developed by HDC for individual dwellings. It consists of a stormwater tank connected to the roof area or portion of, with a small outlet pipe that limits discharge.

3.2 Findings

Plans have been produced for each medium density area (See Appendix C). Each plan shows:

- the proposed medium density areas

- stormwater catchment splits
- constraints or areas requiring upgrading or further assessment.

The following sections provide area specific constraints, issues and initial assessment of upgrading requirements. Any upgrading work, including recommended pipe sizes, would be subject to more detailed assessment and design before confirmation, but is presented for consideration only at this stage.

3.2.1 Heretaunga Street East

The Heretaunga Street East area is split between two stormwater catchments, the top end to the Lower Southland drain and the remaining catchment discharges to the Riverslea drain.

Lower Southland Drain Catchment

A single length of existing 450mm diameter stormwater pipe on Willowpark Road has been identified as deficient requiring upgrading to 525mm diameter to cater for the existing catchment and 600mm diameter to cater for medium density development. This section of Willowpark Road is an arterial road; therefore it should be a priority to upgrade.

A length of 375mm diameter pipe on Eastbourne Street has been identified as marginal if the highest range of impervious areas identified is developed. As St Joseph's School, which includes an area of grass fields, makes up half of the contributing catchment it likely that the existing pipe line will be sufficient.

Riverslea Drain Catchment

A 172m of 450mm diameter and 300m section of 525mm diameter stormwater pipe on Heretaunga Street from Maddison Street to Park Road is sufficient for the current catchment however, would require upgrading or duplication to cater for medium density development. This section of Heretaunga Street is an arterial road; therefore it should be a priority to upgrade as part of medium density development.

Although the remaining stormwater piped infrastructure is expected to be suitable for medium density development, historic issues exist within the Riverslea drain that have previously impacted the upstream catchment and caused ponding issues in the Norton Road area.

3.2.2 Mahora

The Mahora area is split into two separate stormwater catchments, one into the Tomoana drain and the other into the Waikoko Drain.

Tomoana Drain Catchment

A 108m length of 375mm diameter and 132m length of 450mm diameter stormwater pipe on Frederick Street West from Waipuna Street to Tomoana Road is insufficient for the current catchment and requires upgrading or duplication. This upgrade or duplication would need to be further increased to cater for the medium density development. This section of Frederick Street is a collector road; therefore, it should be a priority to upgrade as part of medium density development.

Burnett Street currently has very little stormwater infrastructure however a 1350mm trunk main cuts across the road with sufficient capacity for the proposed medium density development. Burnett Street is a local road so may be suitable for conveyance to the 1350mm trunk main. The inlet capacity at the trunk main will need to be upgraded as part of medium density development and the road carrying capacity confirmed to ascertain whether new piped infrastructure needs to be extended up Burnett Street.

Waikoko Drain Catchment

The 1350mm diameter stormwater trunk outlet pipe is currently undersized based on this desktop study however there are no significant ponding issues in the surrounding area to confirm this. The trunk main may have greater capacity than assumed or may operate sufficiently under surcharged conditions. It is recommended HDC investigate this further before medium density development occurs in the area.

3.2.3 Havelock North

The Havelock North area has multiple discharges to both the Mangarau and Karamu Stream.

Mangarau and Upper Karamu Catchment

This catchment consists of the western side of the Havelock North area and includes multiple connections to the Mangarau stream from 225mm to 525mm in diameter.

It is recommended that medium density development on Middle and Te Aute Roads include internal stormwater networks that discharge directly to the Mangarau Stream as the road is higher than most properties and the existing pipe network is suitable only for road run off.

A 300m length of the existing 300mm diameter pipe on Havelock Road is currently undersized. However, the existing 600mm diameter pipe that passes through Anderson Park, just behind Havelock Road, has surplus capacity. This pipeline provides alternative options to upgrading the existing 300mm diameter by providing an interconnection and all proposed medium density development connecting to the 600mm diameter pipeline.

Lower Karamu Catchment

This catchment services the eastern side of the Havelock North area and a substantial area above Campbell Street.

The existing 600mm and 450mm diameter pipeline from Campbell Street through to Te Mata Road is insufficient for both the existing and proposed medium density catchments. The pipe network upstream of this also appears to be undersized and disconnected. Further detailed investigation into this catchment is required to understand how it is currently operating and if improvements are required.

A 63m length of existing 225mm diameter pipe on Te Mata Road is insufficient to service medium density development and will require upgrading to 300mm diameter. GIS indicates that an existing 150mm diameter pipe within private property which will also need to be upgraded as part of development.

A 295m length of 525mm diameter stormwater pipe on Chambers Street between Campbell Street and Te Mata Road is currently undersized and may require upgrading. Chambers Street, however, is a local road and is reasonably graded. As there is no record of historic ponding issues, the road may be capable of conveying surplus run off with minimal nuisance. Investigation of the existing inlet capacity at the Te Mata/Chambers intersection is required. The stormwater system upstream of Campbell Street is limited to small diameter pipe lines of 225mm or less. It is recommended this area is investigated in the future separate from medium density development.

An 88m length of existing 525mm diameter on Karanema Drive from Napier Road to Donnelly Street is significantly undersized. It is recommended it is duplicated with a 750mm diameter pipe.

3.2.4 Parkvale

The Parkvale area consists of two distinct stormwater catchments, half the area discharges to the Collinge drain and the other half into the Windsor drain.

Collinge Drain Catchment

The existing stormwater system on Windsor Ave is sufficient for the existing catchment. Medium density development would require the possible upgrade or duplication of 68m of existing 375mm diameter pipe. As Windsor Ave is a collector road it is unlikely road conveyance of the surplus run off would be acceptable.

Grove Road currently does not have an existing stormwater system but is captured at Jellicoe Street and Windsor Ave. Grove Road is a collector road, it is unlikely it will be acceptable for the additional run off from medium density development to be conveyed along the road. Pipe lines would need to be extended from Jellicoe Street and Windsor Ave to capture run off at a suitable location.

The existing 300mm diameter pipe lines at Jellicoe Street and the Grove/Windsor Ave intersection will require upgrading or duplication to service the proposed medium density development.

GIS ponding maps indicate there are historic ponding issues in each of the areas discussed above. Further investigation into this pipe network and any possible outlet constraints is recommended.

Windsor Drain Catchment

A 73m length of 450mm diameter next to Sylvan Road will require upgrading as part of medium density development. A possible alternative to this upgrade would be to provide an overland flow path through the park.

3.2.5 Raureka

There are two distinct stormwater catchments in the Raureka area both of which ultimately discharge to the Upper Southland drain at Maraekakaho Road. The stormwater system that passes through Cobham and Bledisloe Streets is appropriately sized for both the existing catchment and medium density development. The areas of ponding indicated within GIS are prior to the construction of the stormwater system and it is assumed that these areas of ponding are now resolved.

The existing 450mm and 525mm diameter stormwater system on Maraekakaho Road from Gordon Road to the Upper Southland drain is insufficient for the existing catchment; the GIS ponding maps support this finding. Maraekakaho Road is an arterial road in which all designed movement lanes should be free from stormwater ponding. Based on this it is recommended that further investigations and upgrade of the stormwater system is undertaken to cater for both the existing catchment and medium density development.

3.2.6 Flaxmere

There are no existing or expected stormwater issues due to medium density development in the Flaxmere area.

3.3 Summary of Findings

The table below summaries all upgrades identified and differentiates those that are existing issues within the HDC network and those that will result from medium density development. The date where items are due for renewal is from the HDC asset database (Hansen) where applicable, these items are not necessarily currently programmed for renewal.

Table 3-3: Existing Upgrades vs. Medium Density Upgrades Required - Stormwater

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
Heretaunga Street East	116m of 450mm pipe needs upgrading to 525mm pipe or equivalent duplication on Willowpark Road	-	Requires pipe upsize to 600mm of equivalent duplication	2015
	Nil	-	172m of 450mm pipe requires upsize or duplication on Heretaunga Street West	2015
	Nil	-	300mm of 525mm pipe requires upsize or equivalent duplication on Heretaunga Street West	2015
Mahora	108m of 375mm pipe needs upgrading to 450mm pipe or equivalent duplication on Frederick Street West		Requires pipe upsize to 525mm or equivalent duplication	2025
	132m of 450mm pipe needs upgrading to 525mm pipe or equivalent duplication on Frederick Street West		Requires pipe upsize to 600mm or equivalent duplication	2025
	Nil		Further investigate need to install stormwater infrastructure in Burnett Street if overland conveyance is unacceptable.	2015/2025
	Recommended further investigation into the Waikoko drain trunk stormwater pipe		Nil	2015/2025
Havelock North	Nil	-	Medium density developments adjacent to the Mangarau Stream will require internal stormwater reticulation with discharge directly to the stream	2015/2025
	300m of 300mm pipe needs upgrading duplication on Havelock Road	-	If medium density development discharges to the existing 600mm pipe no further upgrade will be required. If this is not possible, duplication will be required.	2015
	247m of 600mm pipe needs upsizing or duplication between Campbell Street and Te Mata Road. Further investigation into	-	Possible increase in size of upgraded pipe required once further investigation undertaken.	2015

Area	Existing Council Issue/Upgrade Required	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed
	this catchment is required to confirm details.			
	Nil	-	63m of 225mm pipe requires upgrading to 300mm or duplication on Te Mata Road	2015
	295m of 525mm pipe needs upsizing or duplication on Chambers Street. Further investigation into this catchment is required to confirm details.	-	Possible increase in size of upgraded pipe required once further investigation undertaken.	2015
	88m of 525mm pipe to be duplicated with a 750mm pipe on Karanema Drive	-	Nil	2015
Parkvale	Nil	-	67m of 375mm pipe requires upgrading to 450mm or equivalent duplication on Windsor Ave	2025
	67m of 300mm pipe requires upgrading to 450mm or equivalent duplication Grove Road	-	Need to extend stormwater infrastructure in Grove Road from Sussex Ave	2015
	95m of 300mm pipe requires upgrading to 450mm or equivalent duplication in Jellicoe Street to Grove Road	-	Need to extend stormwater infrastructure in Grove Road from Jellicoe Street	2015
	Nil	-	73m of 450mm pipe requires upgrading to 450mm or equivalent duplication on Sylvan Road	2025
Raureka	500m of 450mm and 525mm pipe on Maraekakaho Road requires upgrading or equivalent duplication	-	Nil	2025/2035
Flaxmere	Nil	-	Nil	-

4 Water Infrastructure

HDC have developed a water network model with Jeff Booth Consulting and this model has been used to assess the impact of the medium density areas. The methodology and results are included in Appendix E.

Overall medium density development will cause a small pressure drop (between 2m and 7m) during peak demand periods. The Raureka medium density area is the only area to fall below HDCs minimum level of service of 30m.

HDC have committed works to install a new bore at Frimley and construct a 300mm diameter link from Stock Road to Wall Road via Irongate Road and Maraekakaho Road. When these works are completed the pressure in the Raureka medium density zone will increase to approximately 40m which is deemed sufficient.

There is currently no pressure reduction in the Raureka area. If Council wish to proceed with pressure reduction in the Raureka area in the future further upgrades may be required. These upgrades would include renewing the existing Cast Iron and AC 100mm diameter water mains to 150mm diameter water mains.

5 Next Steps

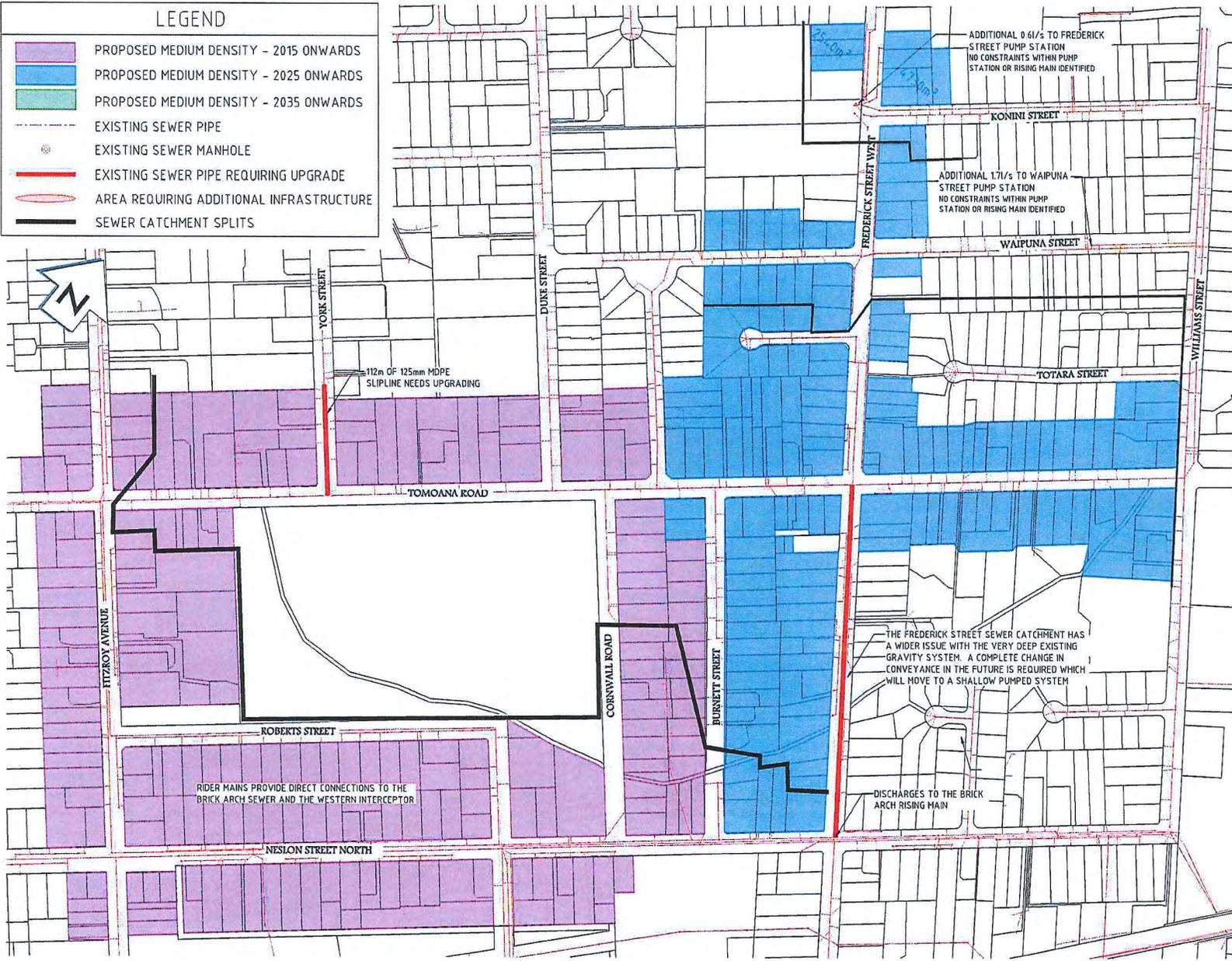
The following additional investigations or assessments are recommended:

- a) Further investigations into the wider stormwater catchment identified for:
 - Waikoko Drain
 - Burnett Street
 - Campbell Street/Te Mata Road
 - Chambers Street
- b) Carry out detailed investigation of the Park Road rising main and associated pump stations and the ability to accommodate additional flows from medium density development
- c) Carry out detailed investigation of the Flaxmere rising main and pump station to identify existing risks and how these risks could be minimised or eliminated.
- d) Co-ordination with other programmed upgrades to other services or roading.
- e) Rough Estimate of Costs for upgrades showing split between existing HDC issues vs. medium density impacts.

Appendix A - Sewer Plans

LEGEND

- PROPOSED MEDIUM DENSITY - 2015 ONWARDS
- PROPOSED MEDIUM DENSITY - 2025 ONWARDS
- PROPOSED MEDIUM DENSITY - 2035 ONWARDS
- EXISTING SEWER PIPE
- EXISTING SEWER MANHOLE
- EXISTING SEWER PIPE REQUIRING UPGRADE
- AREA REQUIRING ADDITIONAL INFRASTRUCTURE
- SEWER CATCHMENT SPLITS



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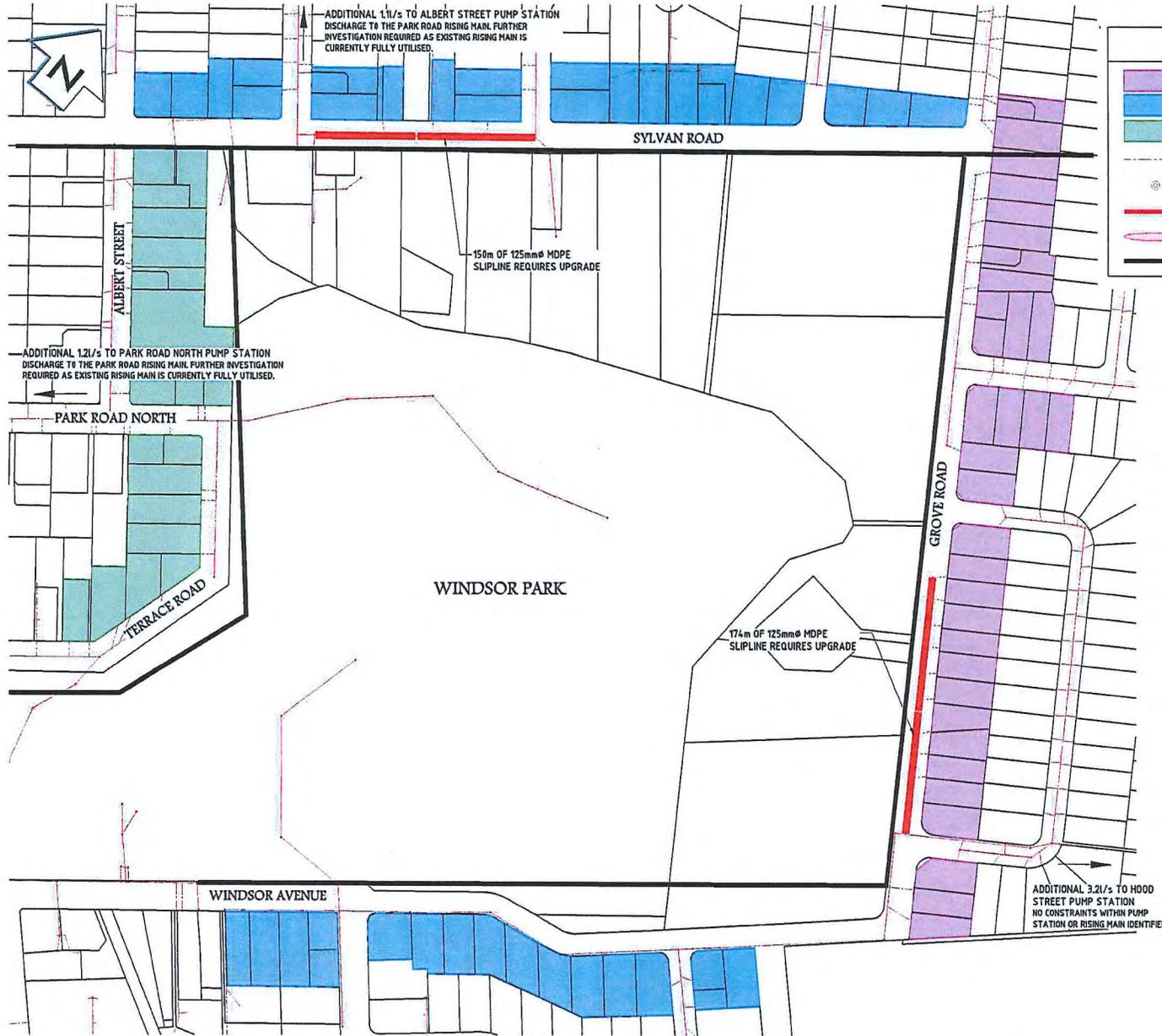


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 MEDIUM DENSITY READY SERVICES ASSESSMENT
 SEWER INFRASTRUCTURE
 MAHORA

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	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING SEWER PIPE
⊗	EXISTING SEWER MANHOLE
	EXISTING SEWER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	SEWER CATCHMENT SPLITS

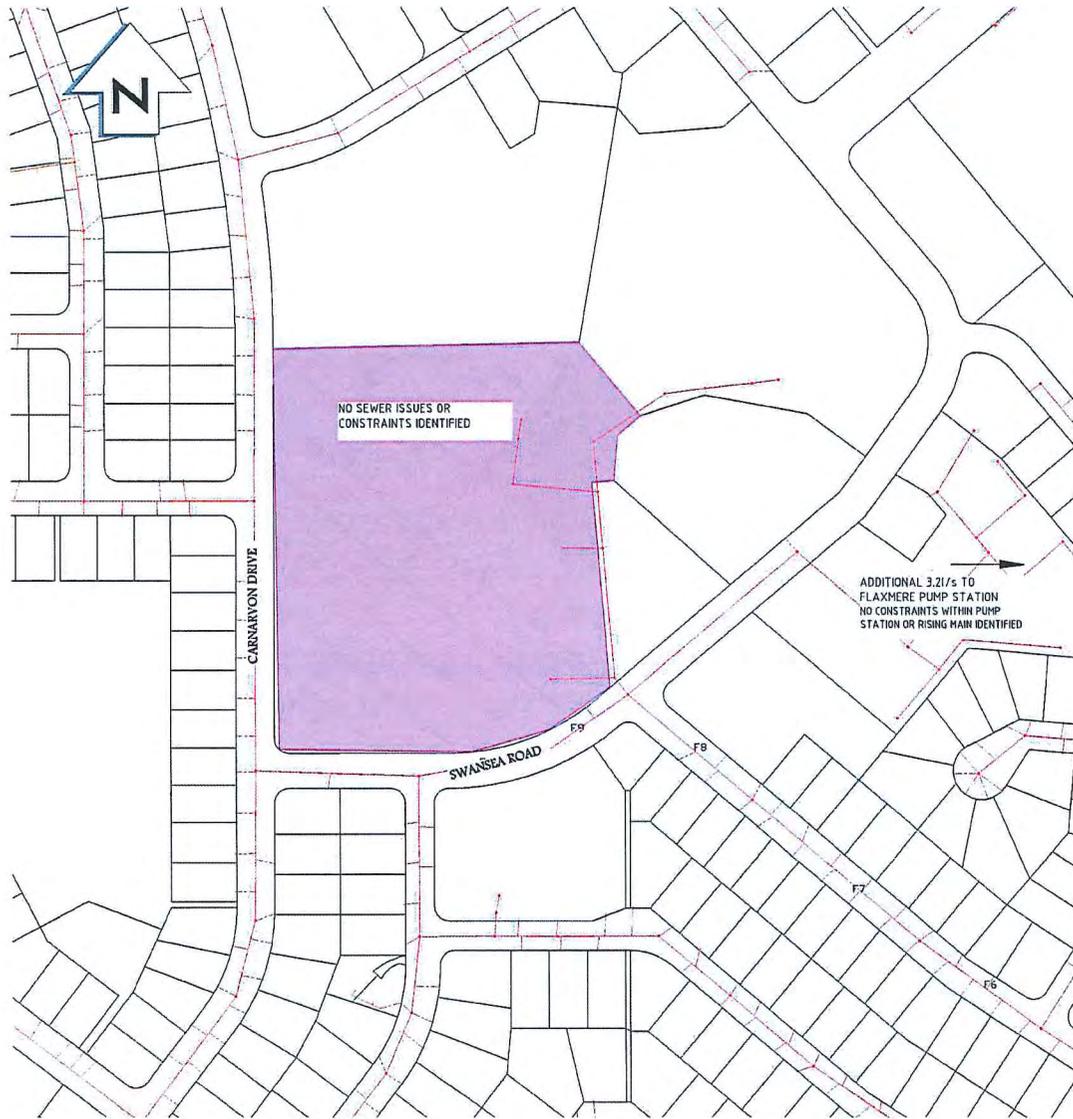
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 PARKVALE

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	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING SEWER PIPE
	EXISTING SEWER MANHOLE
	EXISTING SEWER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	SEWER CATCHMENT SPLITS

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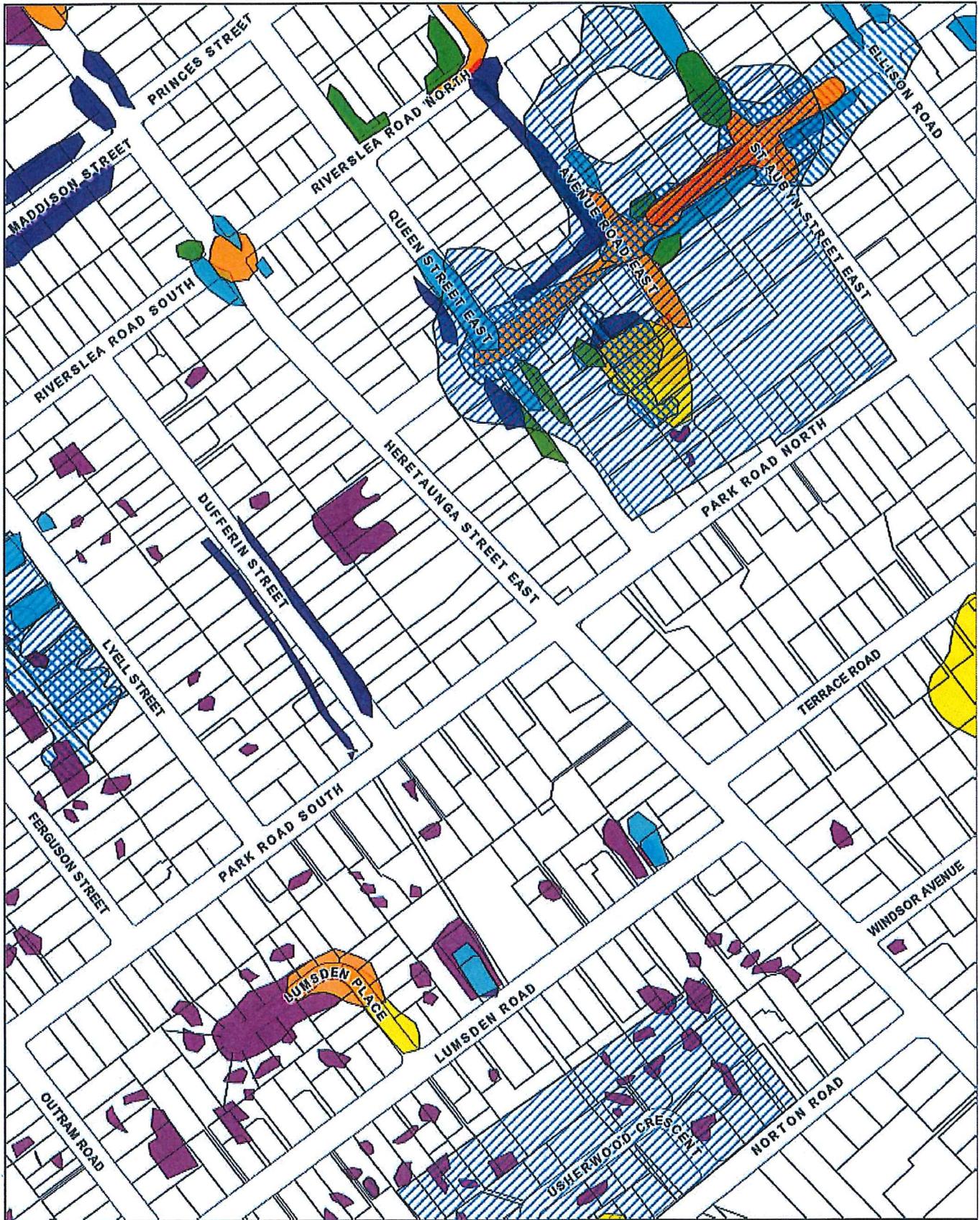
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Appendix B – GIS Stormwater Ponding Plans

Legend

-  Private Roads
-  Internal Roads
-  Default Class
-  NT
-  23-08-1990
-  6 July 2006
-  NT
-  8-04-1985
-  9-03-1988
-  10-1995
-  10-1998
-  13-03-1986
-  1986
-  1988
-  1992
-  1993
-  1994
-  1995
-  1996
-  1996/2006
-  1997
-  22-07-1992
-  22-06-1979
-  24/25-08-1991
-  26-07-1985
-  30-07-1990
-  4-07-1996
-  flood
-  hist
-  pond
-  prob



Heretaunga Ponding Areas -1

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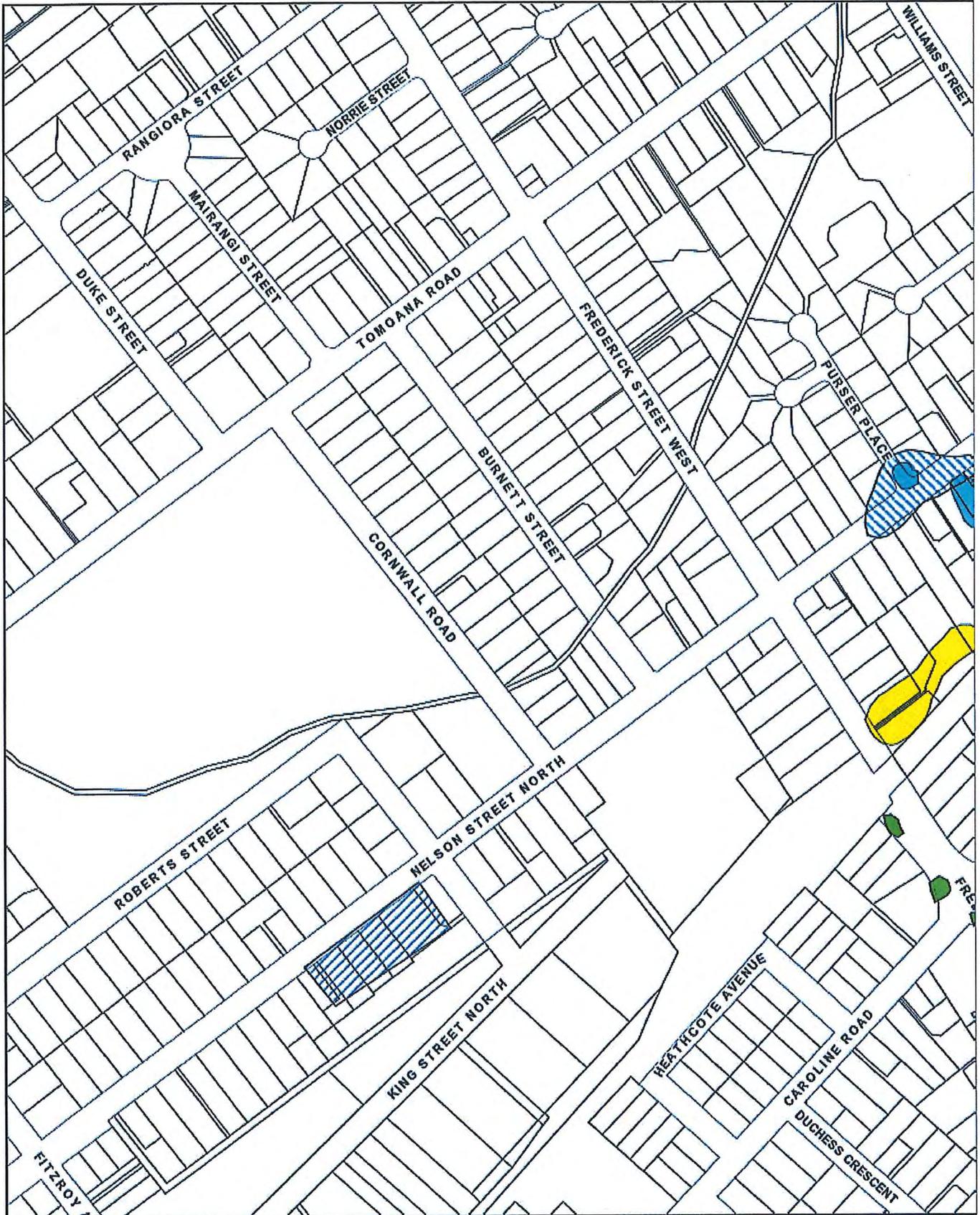


Heretaunga Ponding Areas -2

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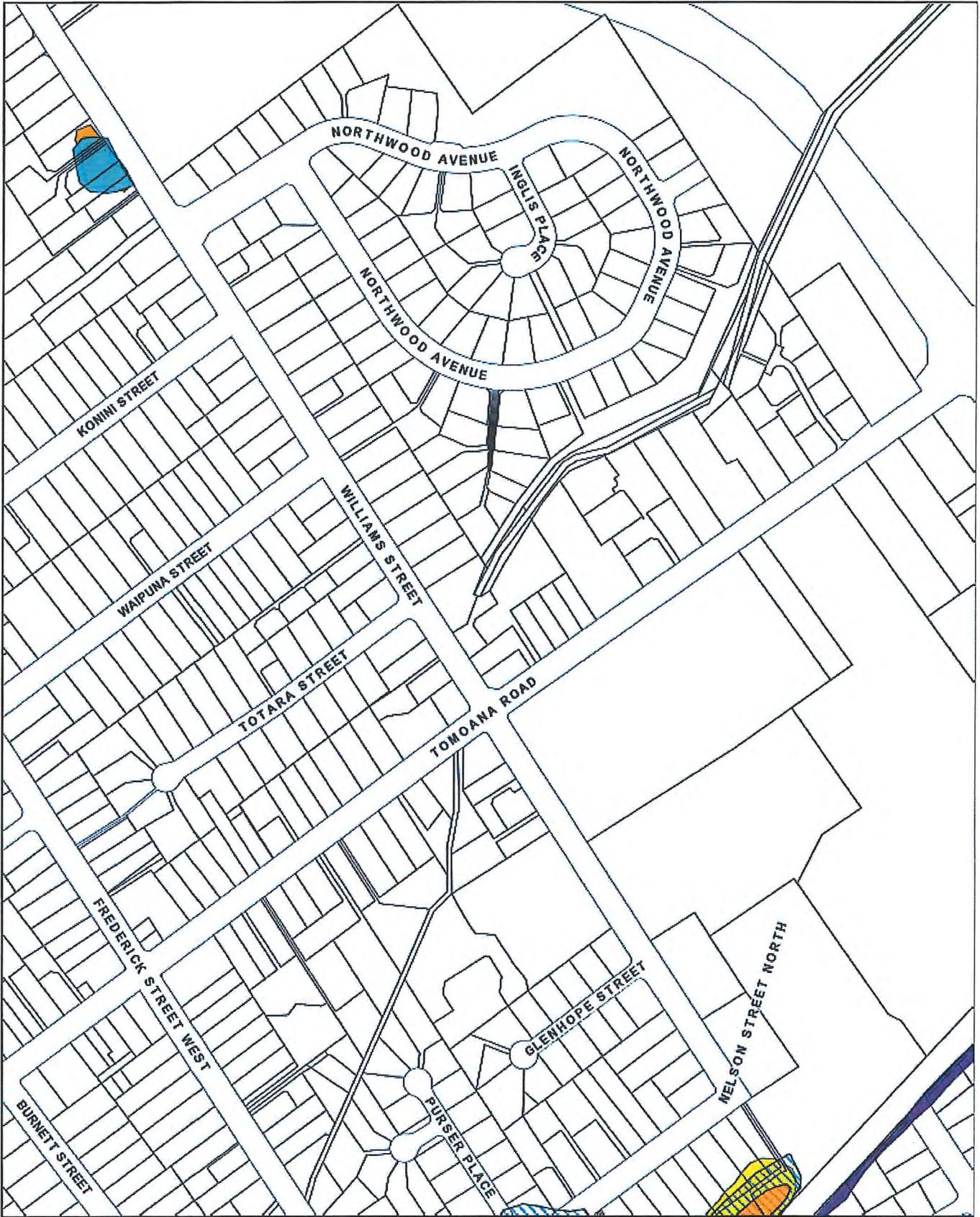


Mahora Ponding Areas -1

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Mahora Ponding Areas -2

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Havelock North Ponding Areas

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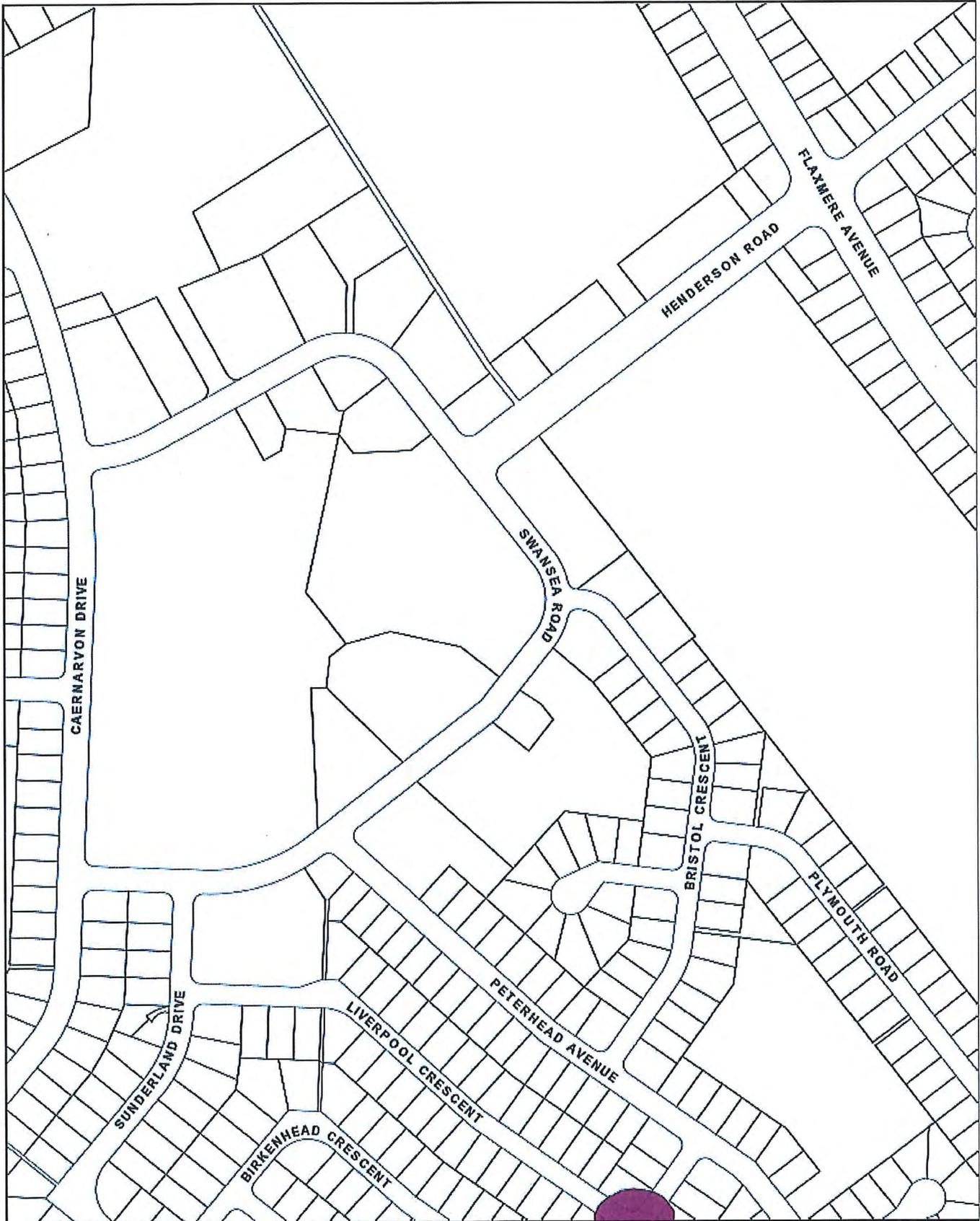
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Windsor Ponding Areas

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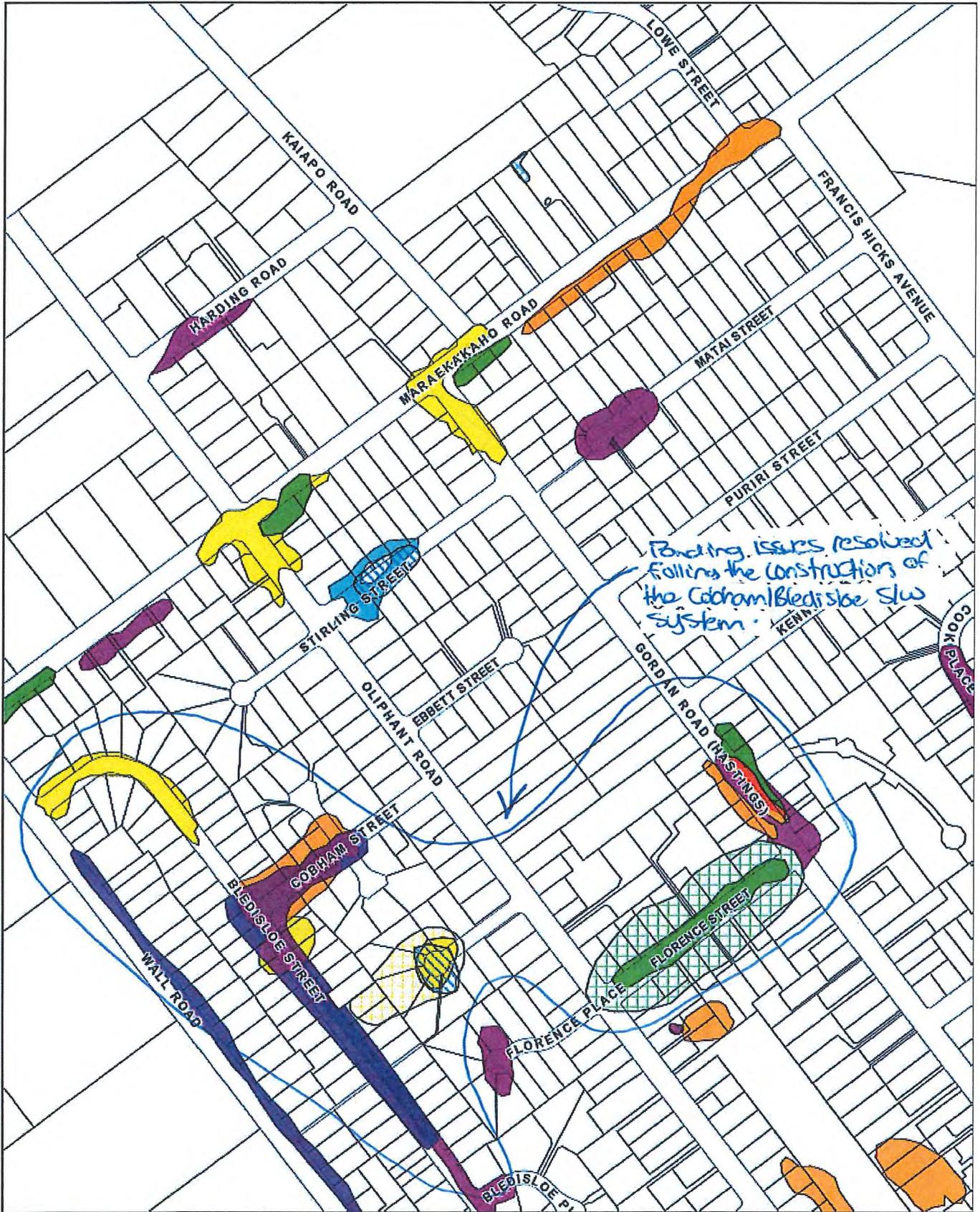


Flaxmere Ponding Areas

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Ponding issues resolved following the construction of the Cobham/Bledisloe SW system.



Raureka Ponding Areas

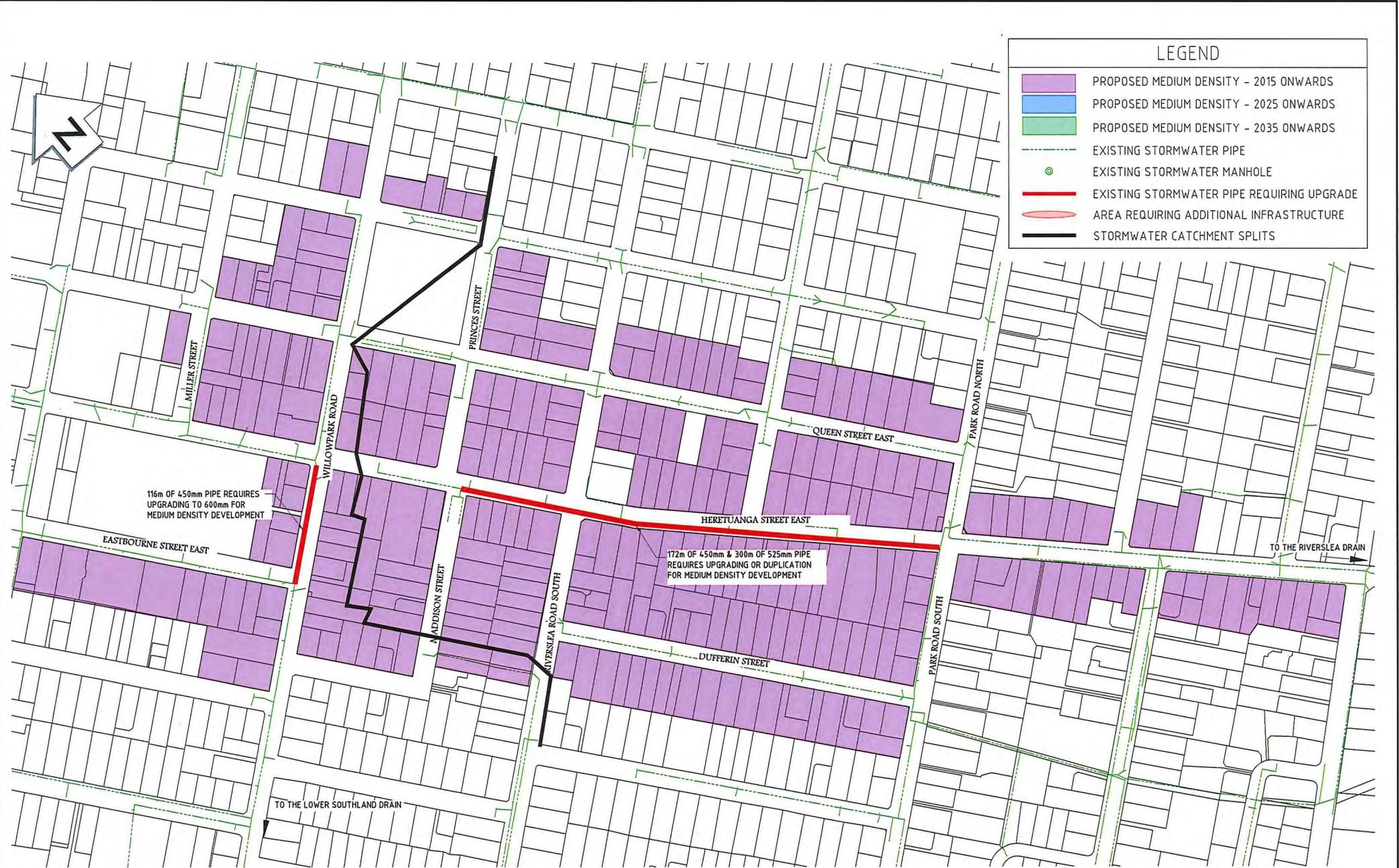
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Appendix C - Stormwater Plans

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LEGEND

- PROPOSED MEDIUM DENSITY - 2015 ONWARDS
- PROPOSED MEDIUM DENSITY - 2025 ONWARDS
- PROPOSED MEDIUM DENSITY - 2035 ONWARDS
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER MANHOLE
- EXISTING STORMWATER PIPE REQUIRING UPGRADE
- AREA REQUIRING ADDITIONAL INFRASTRUCTURE
- STORMWATER CATCHMENT SPLITS

116m OF 450mm PIPE REQUIRES UPGRADING TO 600mm FOR MEDIUM DENSITY DEVELOPMENT

172m OF 450mm & 300m OF 525mm PIPE REQUIRES UPGRADING OR DUPLICATION FOR MEDIUM DENSITY DEVELOPMENT

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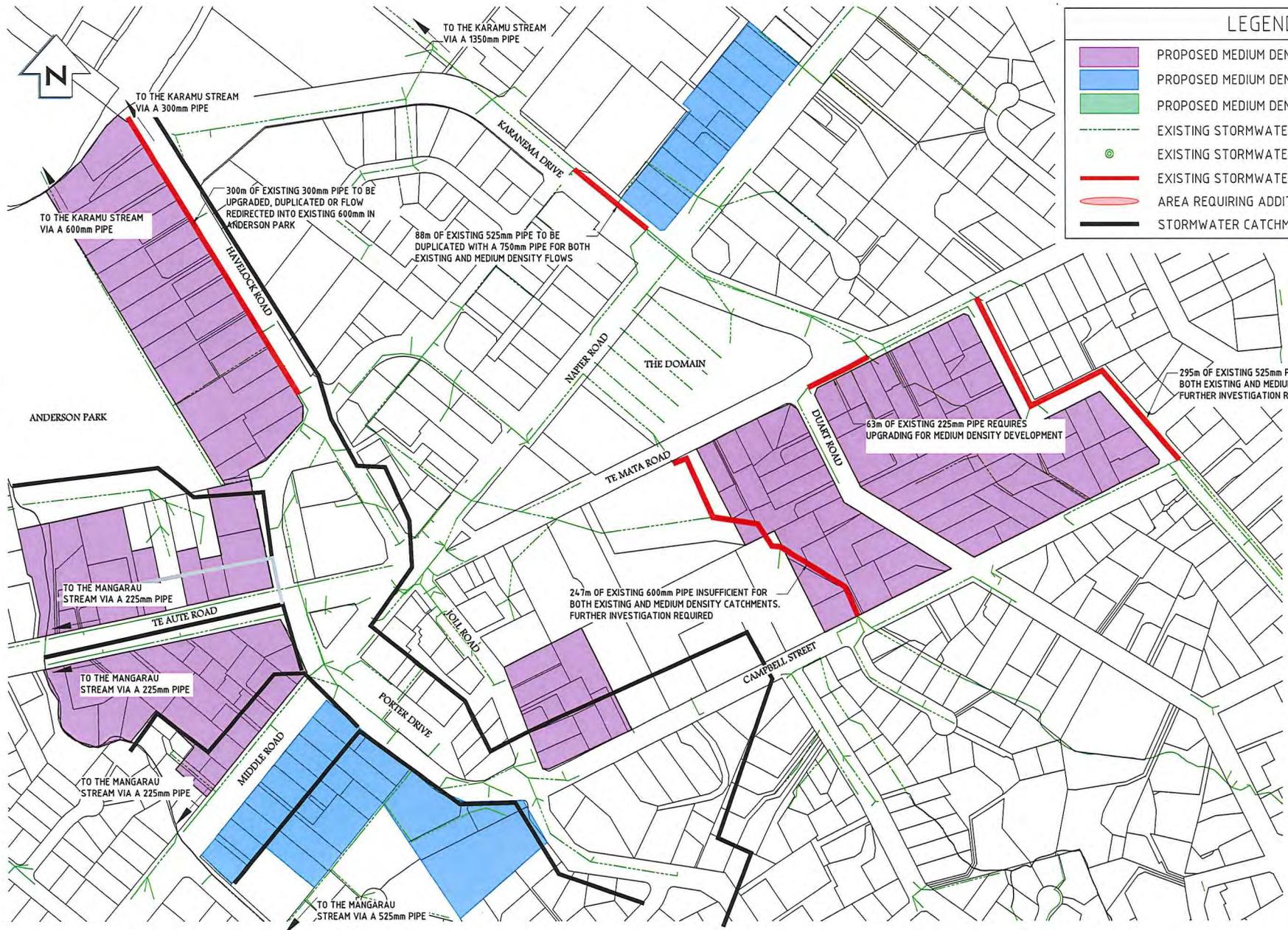


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 MEDIUM DENSITY READY SERVICES ASSESSMENT

**STORM WATER INFRASTRUCTURE
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- PROPOSED MEDIUM DENSITY - 2025 ONWARDS
- PROPOSED MEDIUM DENSITY - 2035 ONWARDS
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER MANHOLE
- EXISTING STORMWATER PIPE REQUIRING UPGRADE
- AREA REQUIRING ADDITIONAL INFRASTRUCTURE
- STORMWATER CATCHMENT SPLITS

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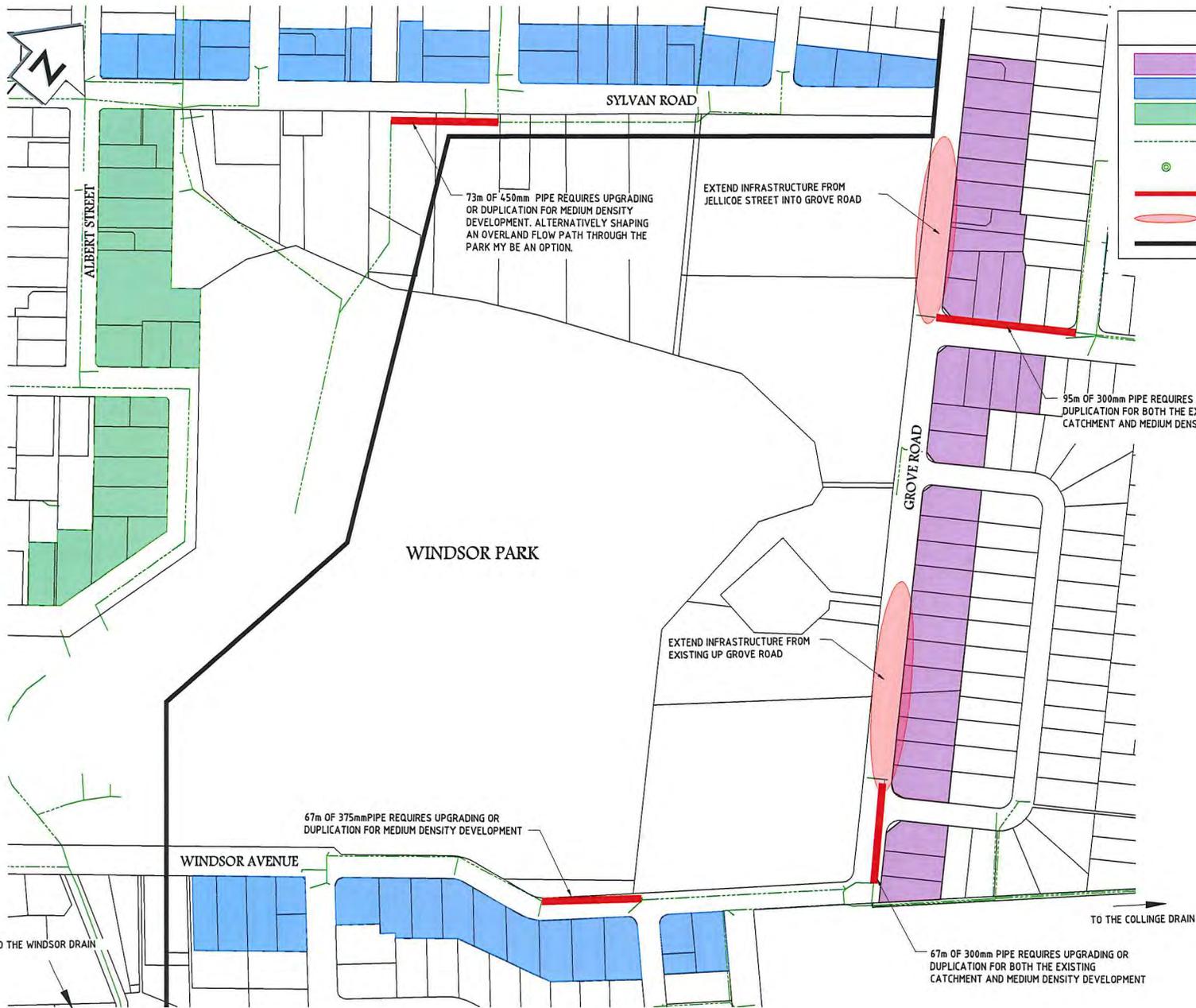
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HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY READY SERVICES ASSESSMENT
STORM WATER INFRASTRUCTURE
HAVELOCK NORTH

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210mm DO NOT SCALE - IF IN DOUBT, ASK



LEGEND	
	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING STORMWATER PIPE
	EXISTING STORMWATER MANHOLE
	EXISTING STORMWATER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	STORMWATER CATCHMENT SPLITS

WINDSOR PARK

WINDSOR AVENUE

SYLVAN ROAD

GROVE ROAD

73m OF 450mm PIPE REQUIRES UPGRADING OR DUPLICATION FOR MEDIUM DENSITY DEVELOPMENT. ALTERNATIVELY SHAPING AN OVERLAND FLOW PATH THROUGH THE PARK MAY BE AN OPTION.

EXTEND INFRASTRUCTURE FROM JELICOE STREET INTO GROVE ROAD

95m OF 300mm PIPE REQUIRES UPGRADING OR DUPLICATION FOR BOTH THE EXISTING CATCHMENT AND MEDIUM DENSITY DEVELOPMENT

EXTEND INFRASTRUCTURE FROM EXISTING UP GROVE ROAD

67m OF 375mm PIPE REQUIRES UPGRADING OR DUPLICATION FOR MEDIUM DENSITY DEVELOPMENT

67m OF 300mm PIPE REQUIRES UPGRADING OR DUPLICATION FOR BOTH THE EXISTING CATCHMENT AND MEDIUM DENSITY DEVELOPMENT

TO THE WINDSOR DRAIN

TO THE COLLINGE DRAIN

NOT FOR CONSTRUCTION

REV	FOR INFORMATION	REVISIONS	APH	WAH	WAN	02/2013	DATE

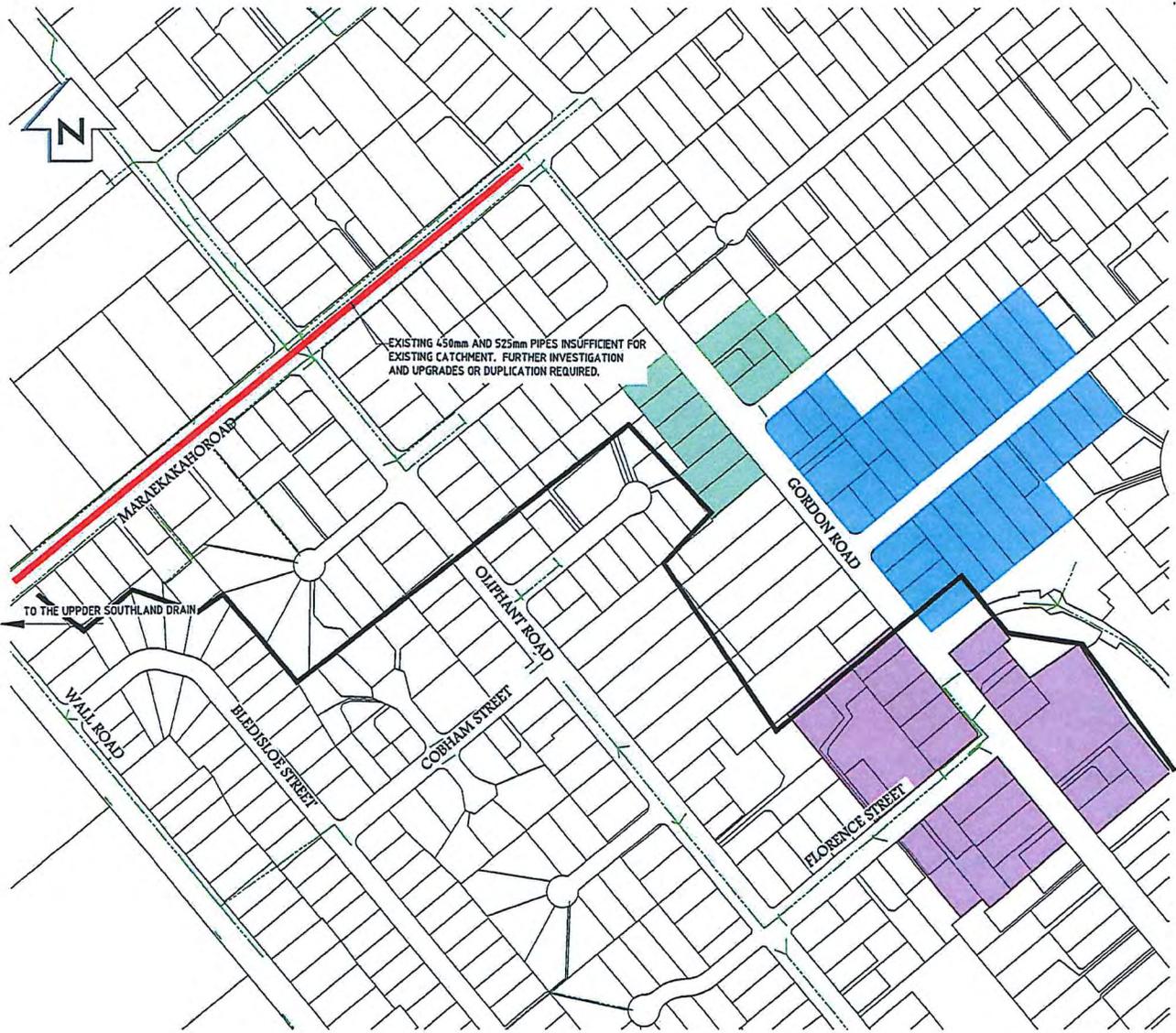
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DESIGNED	APH	02/2013
DESIGN CHECK	WAH	02/2013
DRAWN	APH	02/2013
DRAWING CHECK	PAC	02/2013
APPROVED	WAH	02/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY READY SERVICES ASSESSMENT
**STORM WATER INFRASTRUCTURE
 PARKVALE**

State Stamp	FOR INFORMATION	
Date Stamp	15/02/2013	
SCALES (A1)	NOT TO SCALE	
Drawing No.	Sheet No.	Rev.
80501083 0110	C204	A

ORIGINAL SIZE A1 DO NOT SCALE - IF PRINTED, ASK



LEGEND	
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	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING STORMWATER PIPE
	EXISTING STORMWATER MANHOLE
	EXISTING STORMWATER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	STORMWATER CATCHMENT SPLITS

NOT FOR CONSTRUCTION

FOR INFORMATION

REV	DESCRIPTION	DATE	BY	CHECKED	APPROVED

	Name	Date
SURVEYED	NA	
DESIGNED	APH	02/2013
DESIGN CHECK	WAH	02/2013
DRAWN	APH	02/2013
DRAWING CHECK	PAC	02/2013
APPROVED	WAH	02/2013



HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY READY SERVICES ASSESSMENT
 STORM WATER INFRASTRUCTURE
 RAUREKA

Scale	15/02/2013	
Date	15/02/2013	
Drawn by	80501083 0110	
Checked by	C205	A
Scale	(A1) NOT TO SCALE	

Appendix D – Summary of Maintenance Items

WO History on COMPKEY select



7/03/2013	<u>COMPKEY</u>	<u>UNITID</u>	<u>UNITID2</u>	<u>ASBLT</u>			
	8306	1016138	1016192	50005278	SEWER	Sewer Main	HERETAUNGA ST-E | HASTINGS
	11702	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		16/01/2008	12:00:00a.m.	
	3799	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		1/02/2006	12:00:00a.m.	
	8604	1015819	1016973	50005907	SEWER	Sewer Main	PRINCES ST | HASTINGS
	7879	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH		2/03/2007	5:00:00p.m.	
	8891	1016483	1016877	50005845	SEWER	Sewer Main	PRINCES ST | HASTINGS
	49738	SPRPR1	3071 PIPE DIG UP REPAIR <1.5M		11/09/2010	10:03:00a.m.	
	8896	1016483	1016973	50005905	SEWER	Sewer Main	PRINCES ST | HASTINGS
	53736	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		30/01/2012	12:28:26p.m.	
	8947	1016973	1016401	50005906	SEWER	Sewer Main	AVENUE RD-E | HASTINGS
	52435	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		23/08/2011	10:30:00a.m.	
	52438	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		22/08/2011	10:30:00a.m.	
	55459	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		3/09/2012	3:53:12p.m.	
	55387	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH		24/09/2012	4:31:18p.m.	
	53192	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		8/12/2011	1:46:59p.m.	
	10056	1037527	1037523	51136431	SEWER	Sewer Main	DUART RD | HAVELOCK NORTH
	4892	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH		3/06/2006	12:00:00a.m.	
	53506	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		4/01/2012	11:27:17a.m.	
	10303	1037523	1037522	51136427	SEWER	Sewer Main	KARANEMA DR | HAVELOCK NORTH
	50620	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		8/12/2010	11:00:00a.m.	
	10533	1012288	1012291	50001798	SEWER	Sewer Main	YORK ST | HASTINGS

7/03/2013	<u>COMPKEY</u>		<u>UNITID</u>	<u>UNITID2</u>	<u>ASBLT</u>			
	47687	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		22/03/2010	12:01:00p.m.	
10608			1012518	1012522	50001989	SEWER	Sewer Main	FREDERICK ST-W | HASTINGS
	55426	SCINS1	3011	INSPECT CONN - NH AREA 1		27/08/2012	8:40:32p.m.	
	52923	SPFLU	3225	FLUSH PIPE		27/10/2011	11:21:04a.m.	
10695			1012522	1012524	50001990	SEWER	Sewer Main	FREDERICK ST-W | HASTINGS
	12034	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		11/02/2008	12:00:00a.m.	
10961			1016751	1016739	50005756	SEWER	Sewer Main	LUMSDEN RD | HASTINGS
	54942	SCINS1	3011	INSPECT CONN - NH AREA 1		24/07/2012	9:48:38a.m.	
11004			1016748	1016751	50005755	SEWER	Sewer Main	LUMSDEN RD | HASTINGS
	10005	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		4/09/2007	12:00:00a.m.	
11726			1016192	1016193	50005280	SEWER	Sewer Main	HERETAUNGA ST-E | HASTINGS
	50299	SMCTVZ		SEWER MAIN CCTV INSPECTION NEZ		24/11/2010	5:27:00p.m.	
11870			1014215	1014805	50004477	SEWER	Sewer Main	SYLVAN RD | HASTINGS
	52236	SCINS1	3011	INSPECT CONN - NH AREA 1		28/07/2011	1:30:00p.m.	
11971			1016193	1016748	50005754	SEWER	Sewer Main	LUMSDEN RD | HASTINGS
	9321	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		2/07/2007	12:00:00a.m.	
	50300	SMCTVZ		SEWER MAIN CCTV INSPECTION NEZ		24/11/2010	5:27:00p.m.	
	16944	RCLOC1	3021	LOCATE CONNECTION		24/04/2009	10:00:00a.m.	
	51835	SPCLR2	3051	CLEAR PIPE BLOCKAGE - AH		29/05/2011	11:30:00a.m.	
12446			1036160	1036155	51135073	SEWER	Sewer Main	JOLL RD | HAVELOCK NORTH
	12073	SOVFLO	3052	SEWER OVERFLOW		14/02/2008	12:28:00p.m.	
	1956	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		13/09/2005	12:00:00a.m.	
	14126	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		21/08/2008	12:00:00a.m.	
12488			1036154	1036291	51135196	SEWER	Sewer Main	JOLL RD | HAVELOCK NORTH

7/03/2013	<u>COMPKEY</u>		<u>UNITID</u>	<u>UNITID2</u>	<u>ASBLT</u>			
	2029	SPCLR2	3051	CLEAR PIPE BLOCKAGE - AH		19/09/2005	12:00:00a.m.	
	51384	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		28/03/2011	12:00:00p.m.	
	10591	SPCLR2	3051	CLEAR PIPE BLOCKAGE - AH		20/10/2007	12:00:00a.m.	
	39086		1022436	1016973	51150420	SEWER	Sewer Main	AVENUE RD-E | HASTINGS
	11412	SPCLR1	3050	CLEAR PIPE BLOCKAGE - NH		18/12/2007	12:00:00a.m.	
	120547		1722844	1012518	50001983	SEWER	Sewer Main	FREDERICK ST-W | HASTINGS
	14675	SPCLR2	3051	CLEAR PIPE BLOCKAGE - AH		12/10/2008	12:00:00a.m.	

Appendix E – Water Infrastructure Report by Jeff Booth Consulting

Medium Density Housing Analysis

22 February 2013

Introduction

The Hastings District Council is currently investigating the possibility of allocating certain parts of Hastings and Havelock North to be medium density housing. This would entail allowing a property density three times what is currently planned for in these areas.

The areas that are proposed as medium density are shown in red on Figure 1.

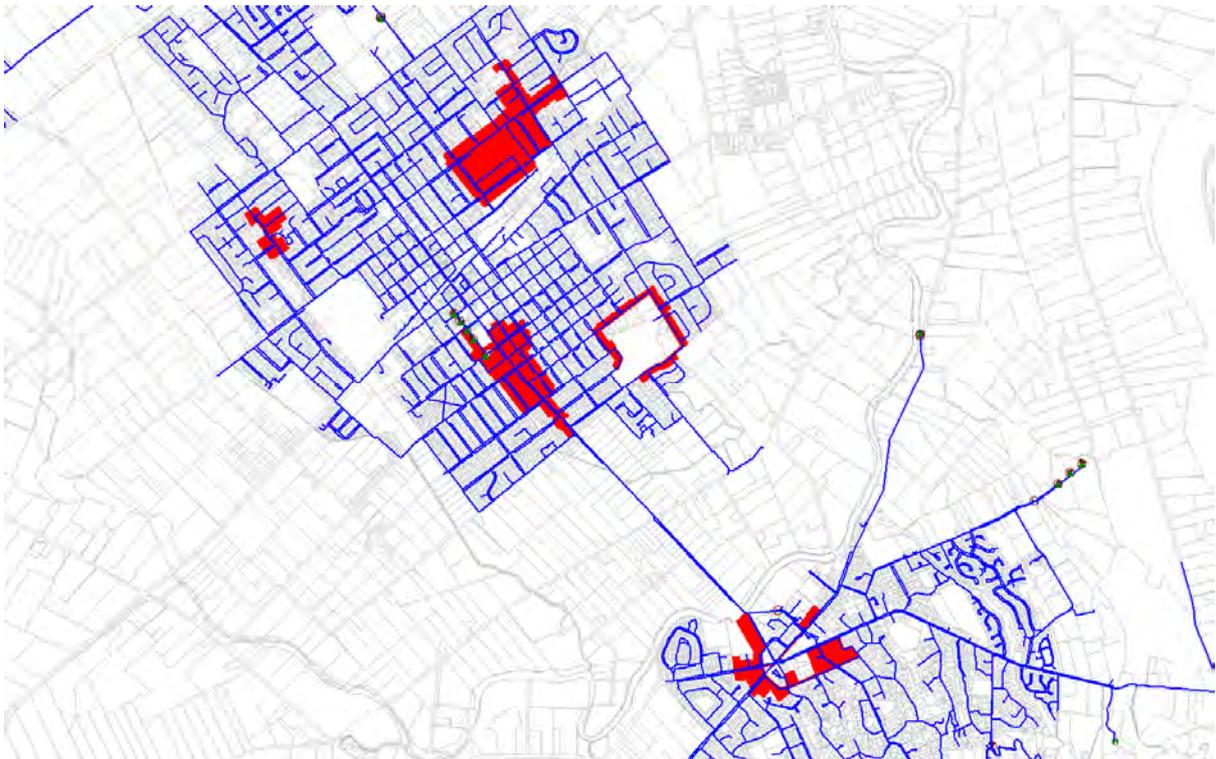


Figure 1: Proposed Medium Density Areas

The following report outlines the analysis of the additional demand that would be required with the medium density areas.

Existing Model

The Hastings water supply model was updated in July 2011 to include all new pipework and valves that have been added to the GIS.

Telemetry and datalogger data was collected in April 2009 to determine the demand in the system. The data was collected at this time as the Havelock North and Hastings/Flaxmere water supplies were operating independently from each other. This allowed a better estimation of demand in each town.

The model currently has a demand of approximately 35,000 m³/day spread over the three areas of Flaxmere, Hastings and Havelock North. In order to determine the effect of the additional demand on the model a higher summer demand will be required. The peak summer demand for 2012/2013 was approximately 55,000 m³/day, so for the purposes of this exercise the demand was scaled up to approximately 55,000 m³/day.

It should be noted that the current Hastings water supply model has never been fully calibrated and the results will only give an indication of what might happen.

Hastings Medium Density Areas

There are four proposed medium density areas in Hastings. These are Raureka, Mahora, Parkvale and Heretaunga Street East.

Raureka and Mahora are currently in the main Hastings zone and are not pressure reduced. Parkvale is in the Parkvale pressure reduced zone and Heretaunga Street East actually lies in three different zones – Parkvale pressure reduced, Akina pressure reduced and the main Hastings zone.

Figure 2 shows the minimum pressures currently predicted by the model on a 55,000m³ demand day.

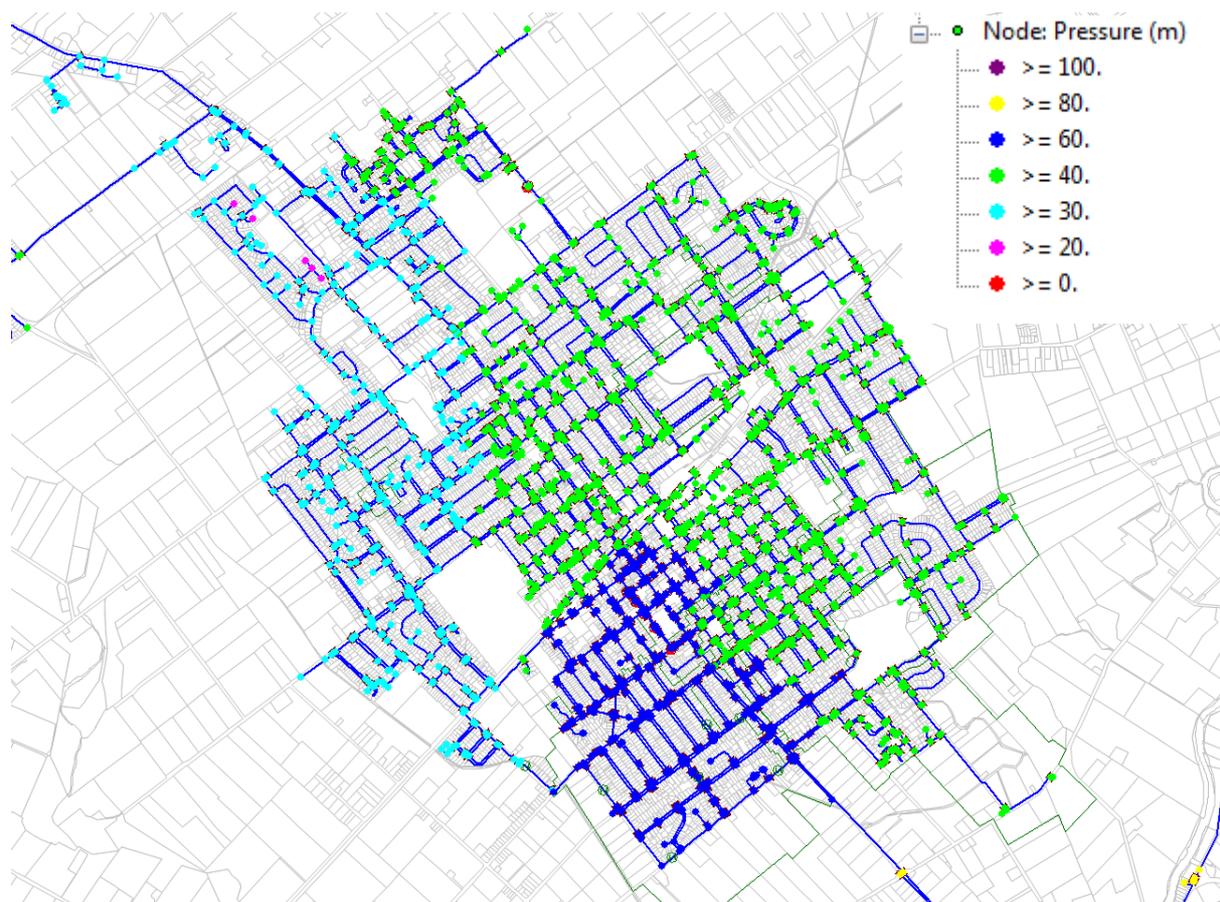


Figure 2: Current minimum pressures in Hastings – 55,000 m³/day

In this initial analysis the customer points in the medium density areas were adjusted to have three times the number of properties. No other changes were made to the model. Properties in medium density housing areas could potentially use less water as section sizes are smaller and more

apartment style buildings will be constructed. Adjustments to the amount of demand per property could be carried out if further analysis is required.

With the additional demand the minimum pressures in Hastings are as shown on Figure 3.

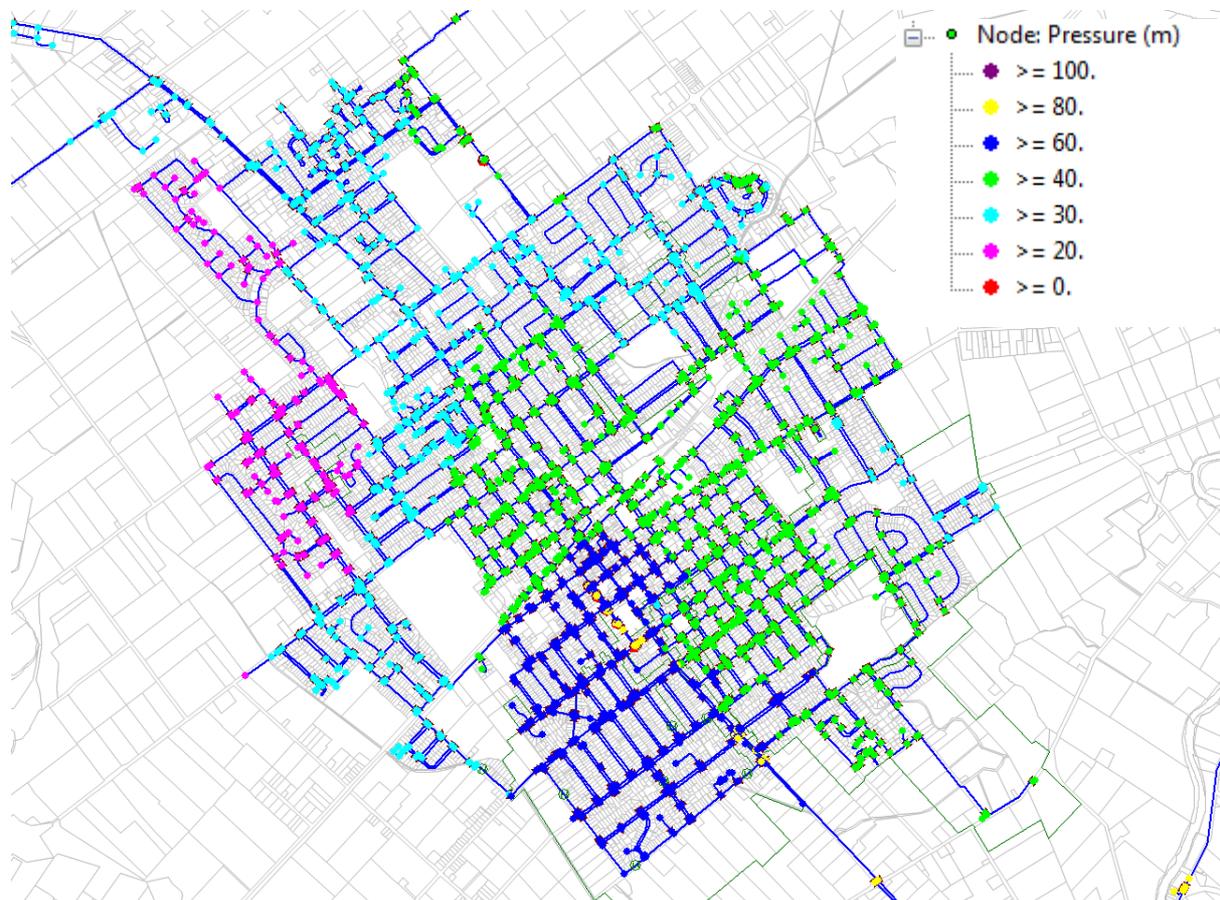


Figure 3: Minimum pressures in Hastings with medium density demand

This shows some reduction in pressure with the medium density demand, especially in the Raureka area. In the following sections the results for each of the proposed medium density zones will be shown in more detail. A number of locations within the proposed zones have been chosen to compare pressures.

Raureka

This proposed medium density area is currently in the main Hastings pressure zone but it does have the potential to be included in a reduced pressure zone in the future.

Currently the minimum pressure at node 1019997 (913 Gordon Road) is approximately 32m. With the additional demand applied the minimum pressure drops to approximately 27m. This is a pressure drop of 5m. This can be seen on Figure 4. The blue line is the currently modelled pressure and the green line is the pressure with the additional demand from the medium density housing areas.

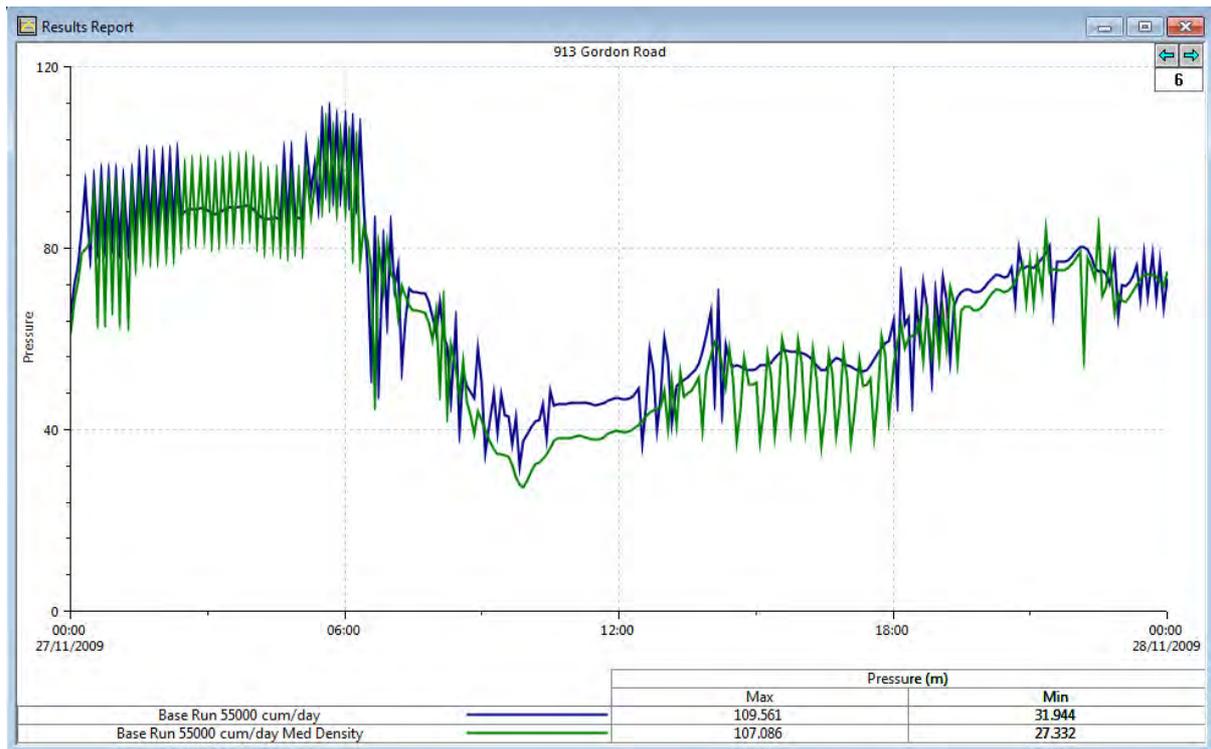


Figure 4: Pressure at 913 Gordon Road, Raureka

These pressures are below the Hastings District Council level of service.

The Frimley pump station may be upgraded in the future to supply more water into the Hastings reticulation and this may improve pressures in the Raureka area.

Mahora

The proposed Mahora area is quite large but it does include two parks. Again this area is currently in the main Hastings zone that does not undergo pressure reduction but it may become part of a pressure reduced zone in the future.

As this area is larger two locations within it were compared. These were node 1012316 (Intersection of Tomoana Road and Fitzroy Avenue) and 1020740 (1028 Tomoana Road). The results at these nodes are shown in Figure 5. The blue lines are showing the current model prediction and the green lines are what is calculated with the additional medium density housing demand.

At both of these locations a reduction in minimum pressure of approximately 5m is calculated. However, the minimum pressure remains above 40m at all times.

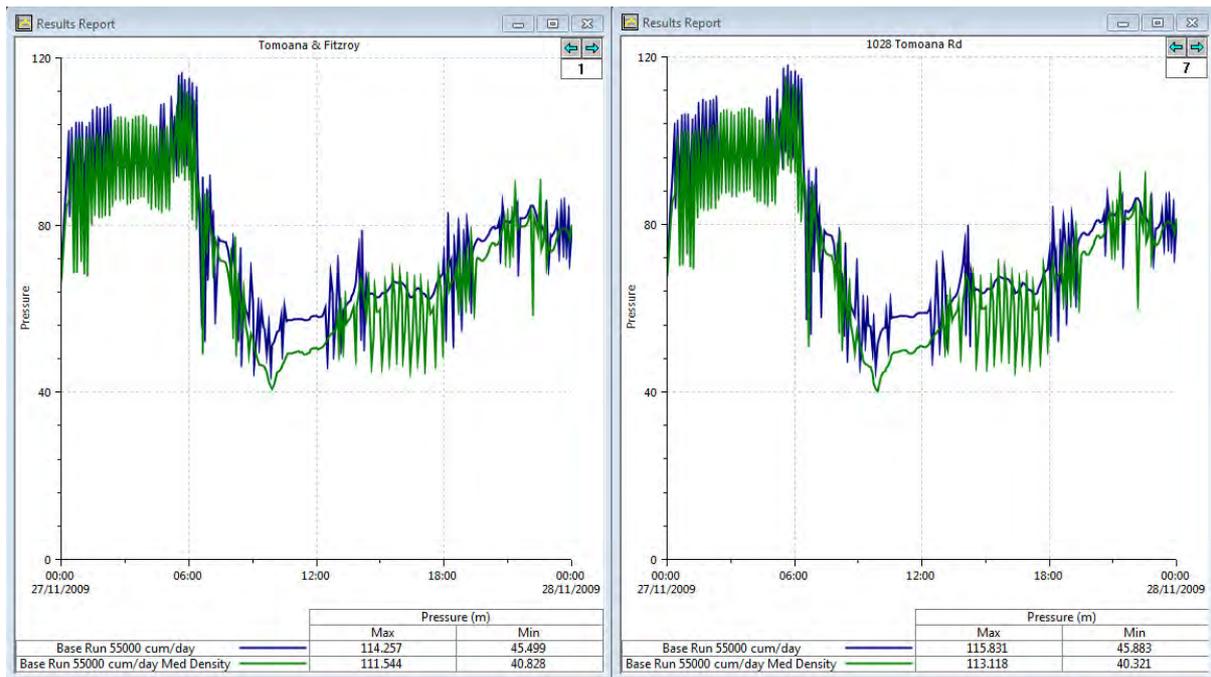


Figure 5: Pressures in Mahora zone

Parkvale

The proposed Parkvale medium density area wraps around Splash Planet. This is inside the Parkvale Pressure Managed Area (PMA), which already has quite a significant pressure reduction predicted by the model during peak demand periods.

Two locations were chosen to compare in this zone – on opposite sides of Splash Planet. The first location is node 1142052 (910-912 Albert Street) and the second location is 1013607 (Intersection of Sussex Street and Grove Road).

Figure 6 shows the pressures at these locations. The blue lines are the model calculations with the current demand and the green lines include the demand from the medium density housing areas.

The minimum pressure at both locations is approximately 6m lower with the additional demand from the medium density housing area included. It does however remain above 45m at all times. This proposed medium density housing area is located on a 150mm dia ring main that is supplied by the main feeds into the PMA. There are some nodes on the smaller diameter pipework at the extremities of the Parkvale PMA that have pressures less than 40m with the extra demand.

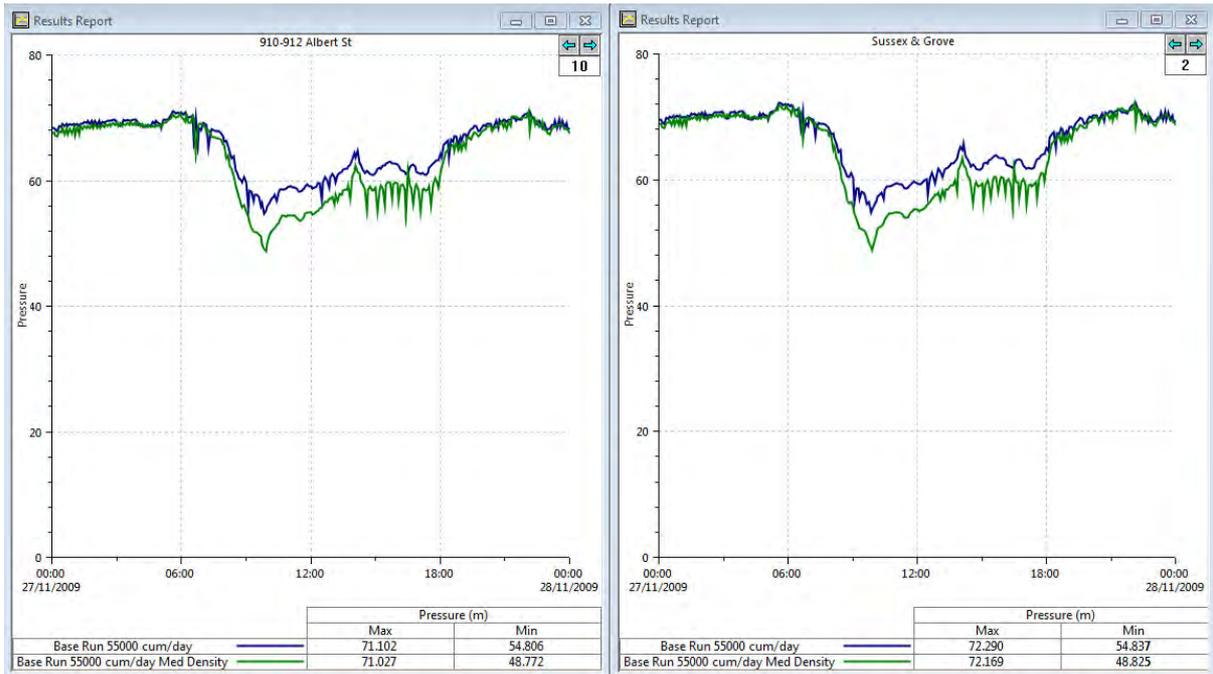


Figure 6: Pressures in Parkvale area

Heretaunga Street East

The Heretaunga Street East proposed medium density area currently covers three different pressure zones. Parts of it are in the Parkvale PMA, the Akina PMA, the main Hastings zone and also on the trunk main supplying the reservoirs in Havelock North.

A location in each of the PMA's was chosen to compare. Node 1016661 (Intersection of Riverslea Road South and Dufferin Street) in the Akina Zone and node 1024385 (Intersection of Princes Street and Avenue Road) in the Parkvale Zone were used.

Figure 7 shows the pressure at the locations in the PMA's. Again, the blue line is the current situation and the green line has the medium density housing demand added. The left side is the Akina PMA, which shows very little change due to the additional demand. On the right is the node within the Parkvale PMA. The minimum pressure is approximately 6m lower with the additional medium density housing demand.

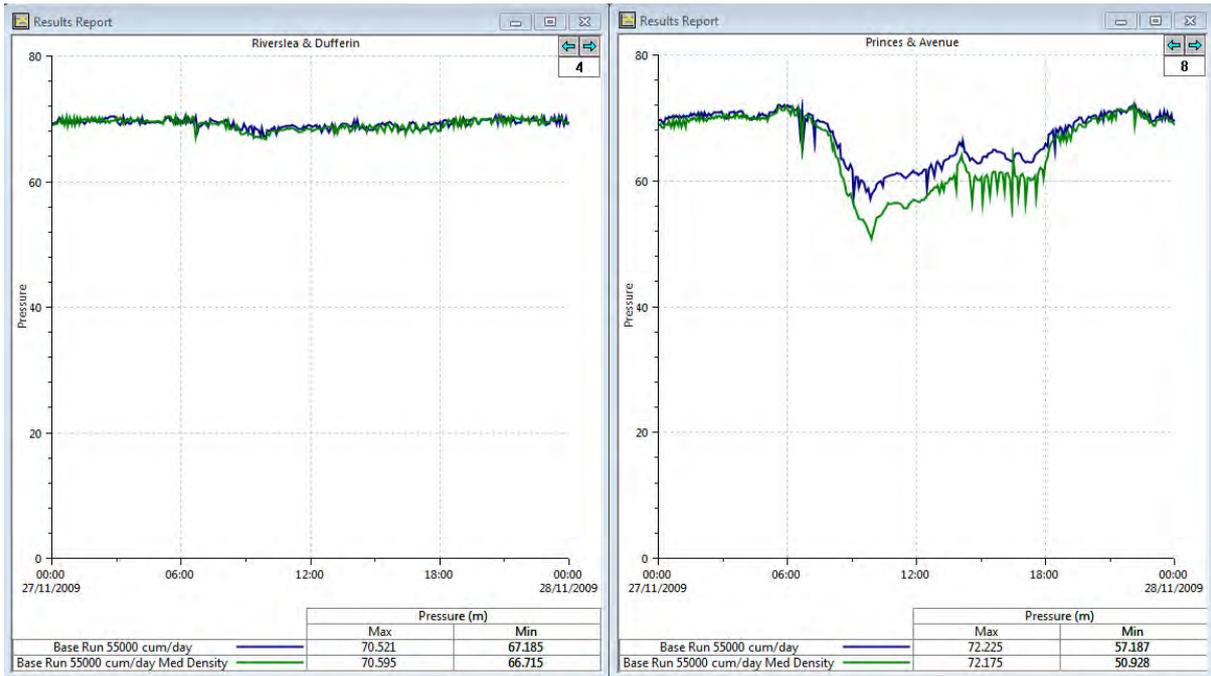


Figure 7: Pressures in Heretaunga Street East area

Additional locations outside of the PMA were also chosen to compare. Node 1016971 (Intersection of Queen Street East and Hastings Street) and node 1016198 (Intersection of Heretaunga Street East and Lumsden Road) were used. These locations will probably never be in a significantly pressure reduced zone as the first is in the CBD and the second is on the pumping main to the reservoirs.

The results at these locations are shown on Figure 8. The blue line is current and the green line includes the additional demand.

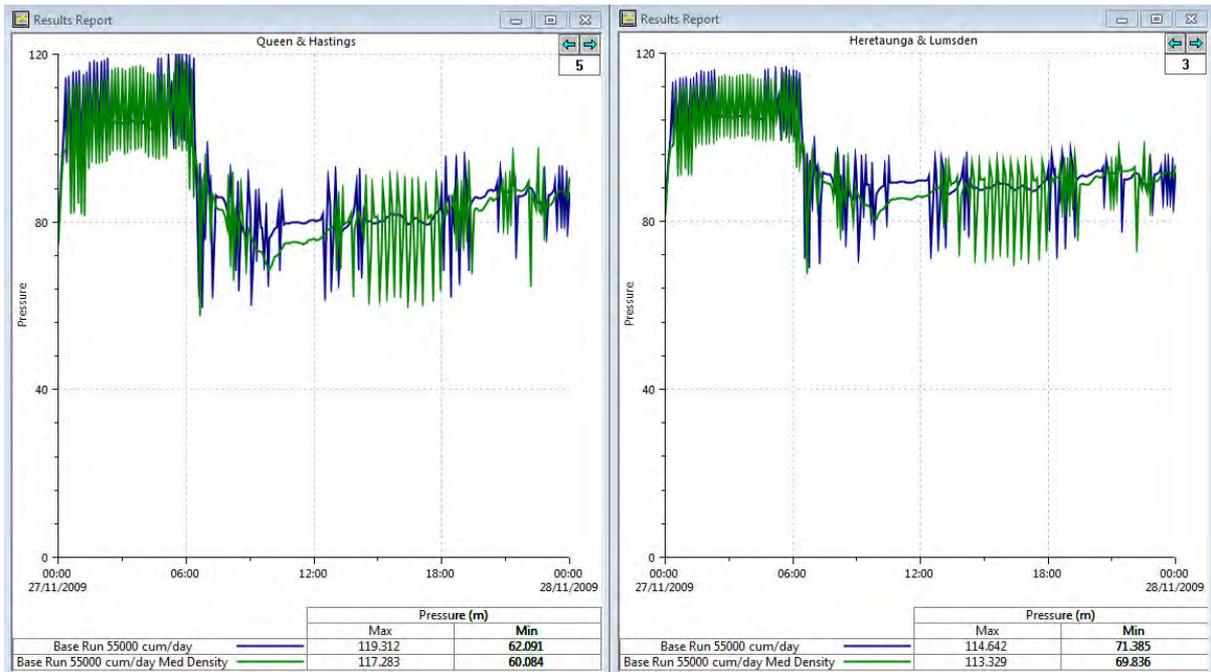


Figure 8: Pressures in Heretaunga Street East area

At both of these locations the minimum pressure is approximately 2m lower.

Havelock North Medium Density Area

There is one proposed medium density area in Havelock North. This is in the centre of the village. Figure 9 shows the minimum pressures in the middle of Havelock North under the 55,000 m³/day demand conditions.

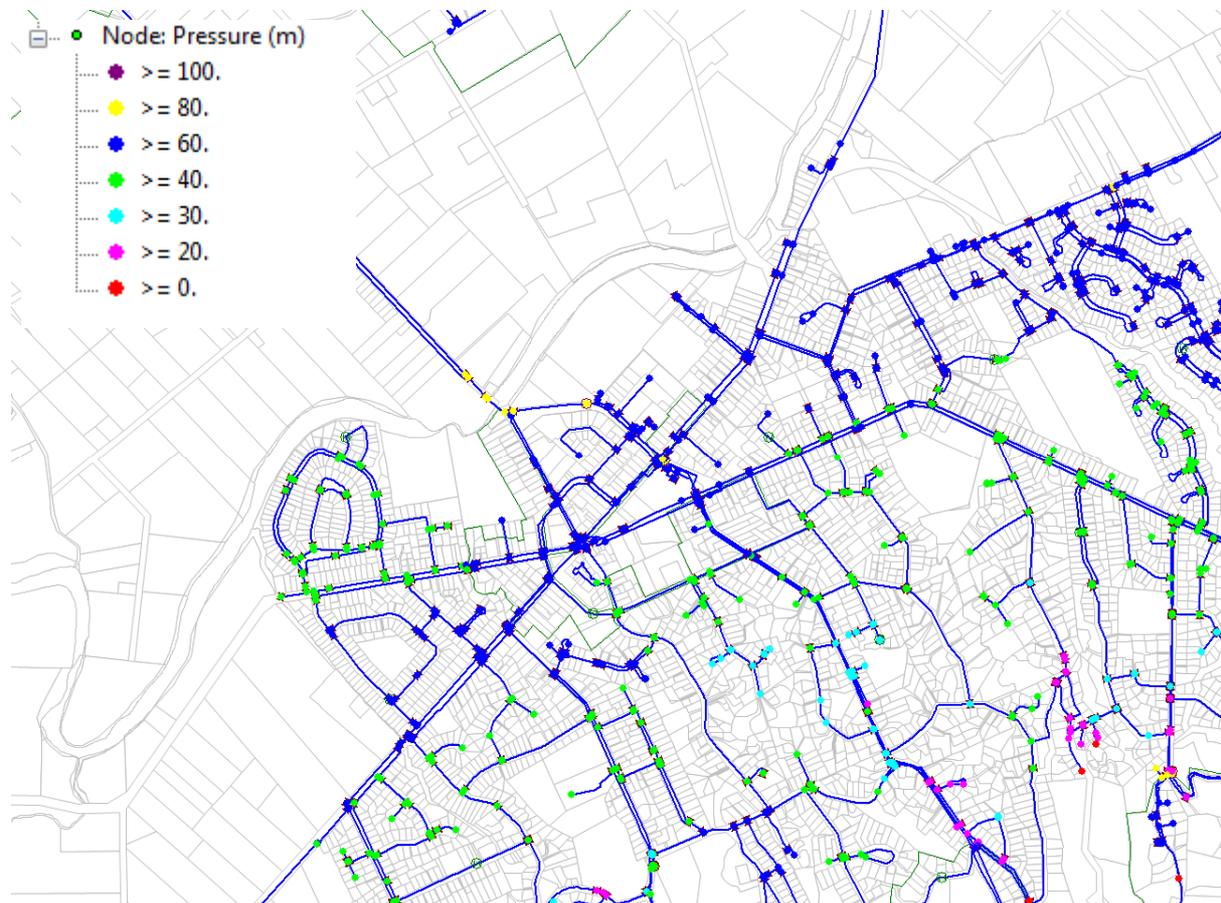


Figure 9: Current minimum pressures in Havelock North – 55,000 m³/day

In the areas where the proposed medium density housing will occur, the pressures are all greater than 40m.

Figure 10 shows the pressures with the medium density housing demand added. The minimum pressures are lower but still above 40m in the village.

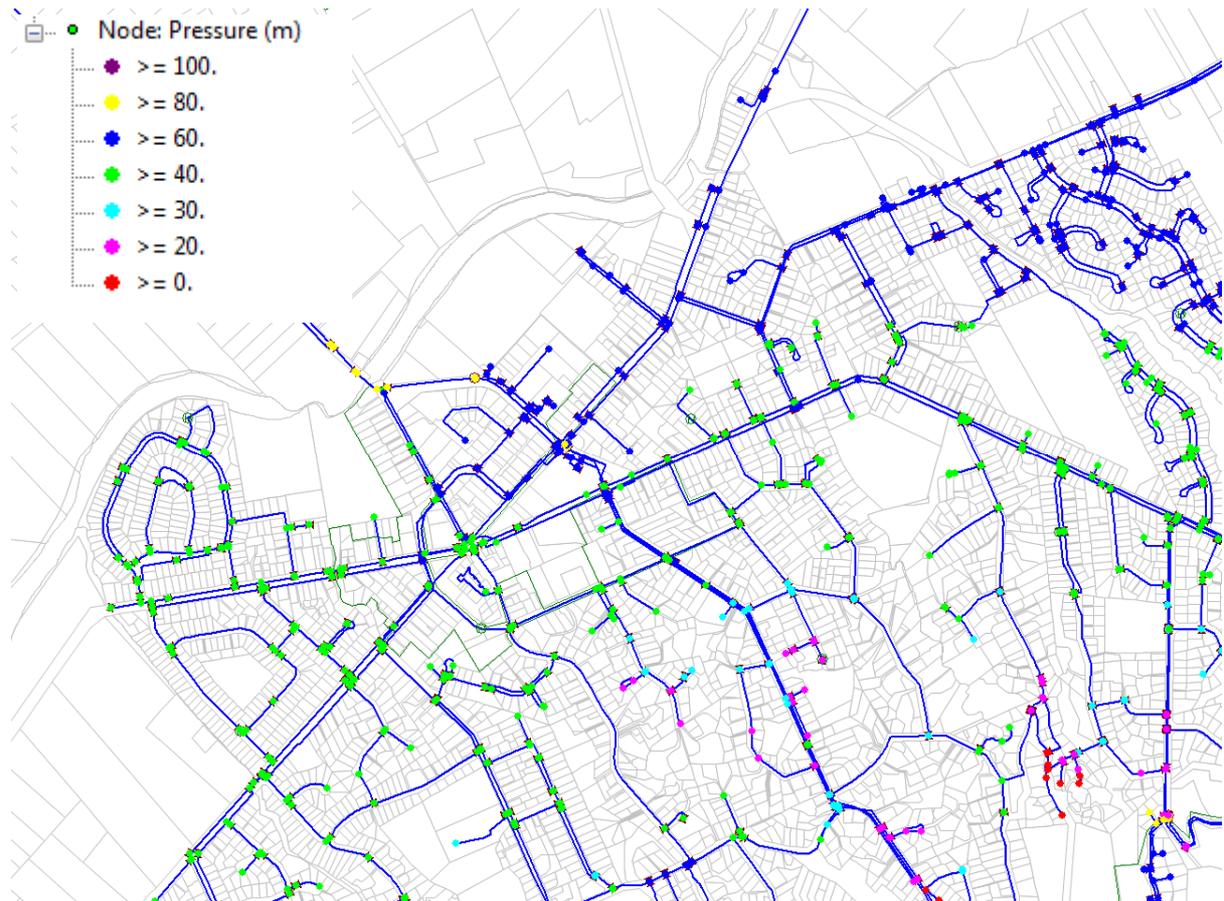


Figure 10: Minimum pressures in Havelock North with medium density demand

Two locations in the proposed medium density housing area were chosen for comparison purposes. These were node 1035866 (24 Te Aute Road) and node 1700946 (Intersection of Chambers Street and McHardy Street). Figure 11 shows the pressure at these locations. The blue line shows the pressure under the current demand conditions and the green line has the additional medium density housing demand included.

The minimum pressure at 24 Te Aute Road is 10m lower and at the intersection of Chambers Street and McHardy Street it is 6m lower.

Again this area may be subject to some pressure reduction in the future, however there is quite a bit of 100mm dia pipe throughout the proposed medium density housing area.

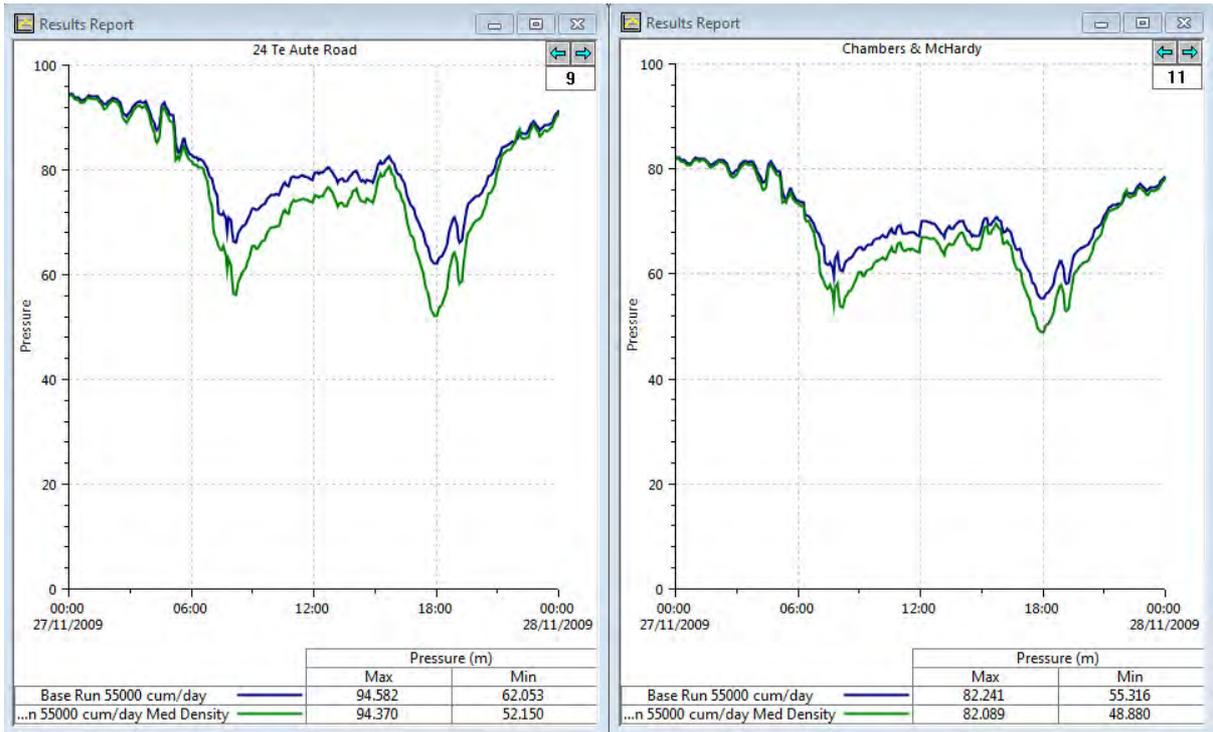


Figure 11: Pressures in Havelock North area

Conclusions

Throughout all of the areas investigated there is a slight pressure drop (2m to 7m) during peak demand periods. The pressure in the Raureka area does drop below the Hastings District Council service level of 30m. Localised reticulation upgrading may resolve this issue.

Overall, medium density housing in the areas identified should not cause noticeable pressure reduction to customers.

It should be noted that the analysis was carried out using a model that has not been fully calibrated. However, it does calculate quite good comparative pressure at the few locations where live data has been collected.

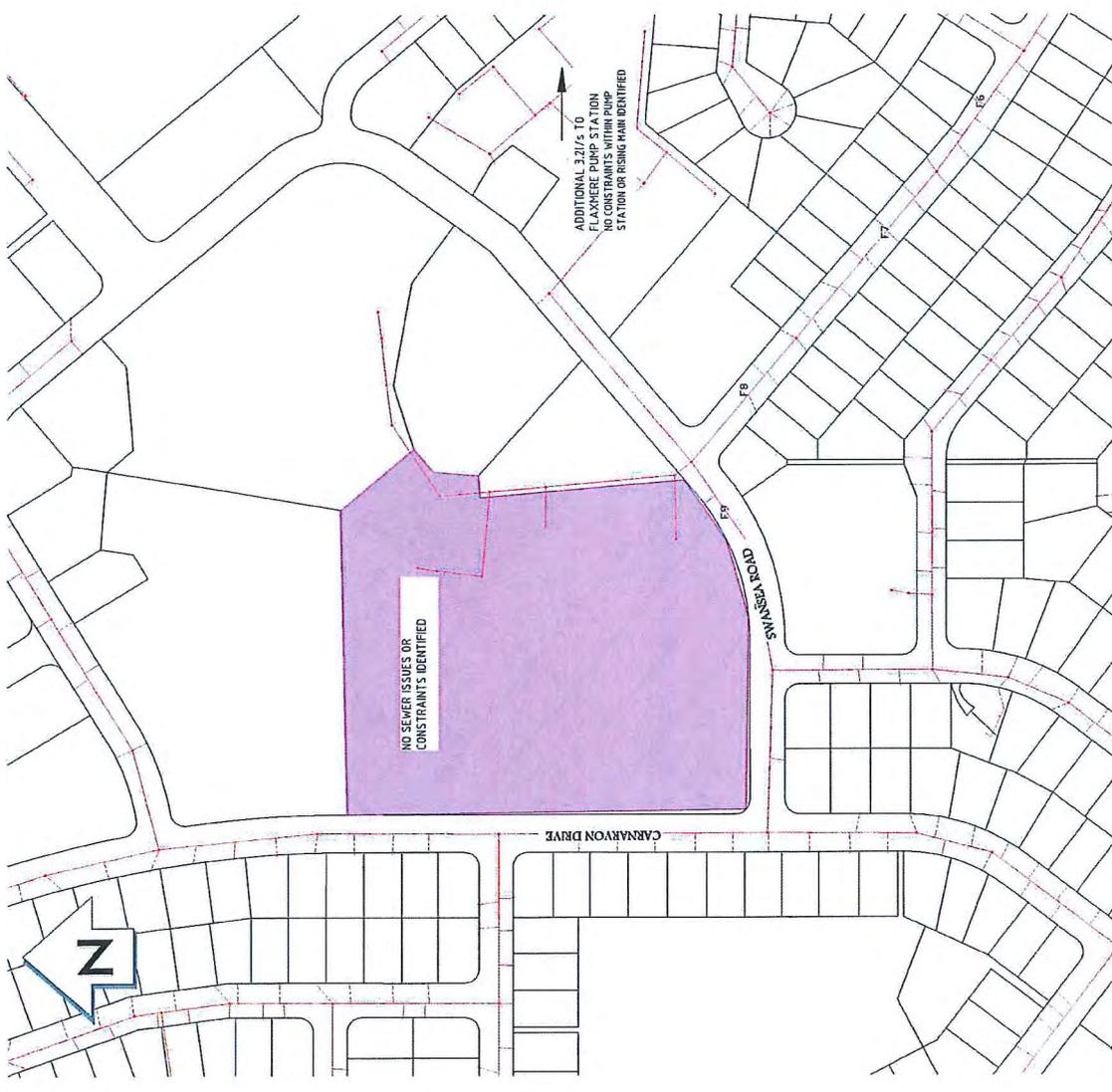
ADDENDUM

Further to the report Hastings District Council staff queried whether there was a straight forward upgrading option for the Raureka area, as this area had the lowest pressures in the analysis. The HDC provided information regarding some committed works in the western part of Hastings. These were:

1. One new bore at Frimley delivering 80 l/s
2. A 300mm dia link from Stock Road to Wall Road via Irongate and Maraekakaho.

These upgrades were included in the Hastings model and the pressures in the Raureka area, with the medium density housing included, improved significantly. Without the upgrades the minimum pressure modelled was approximately 27m. This increased to approximately 40m with the upgrades.

This additional analysis doesn't include potential future pressure reduction in the Raureka area and it may be prudent to upgrade the existing CI and AC 100mm dia mains to 150mm dia in this area to allow for that.



LEGEND

	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING SEWER PIPE
	EXISTING SEWER MANHOLE
	EXISTING SEWER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	SEWER CATCHMENT SPLITS

ORIGINAL SIZE A1
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 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12

NOT FOR CONSTRUCTION

HASTINGS DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY READY SERVICES ASSESSMENT
SEWER INFRASTRUCTURE
FLAXMERE

HASTINGS DISTRICT COUNCIL

MWH

Task	Name	Date
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DESIGNED	AMH	02/2013
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DRAWN	AMH	02/2013
DRAWING CHECK	PAC	02/2013
APPROVED	AMH	02/2013

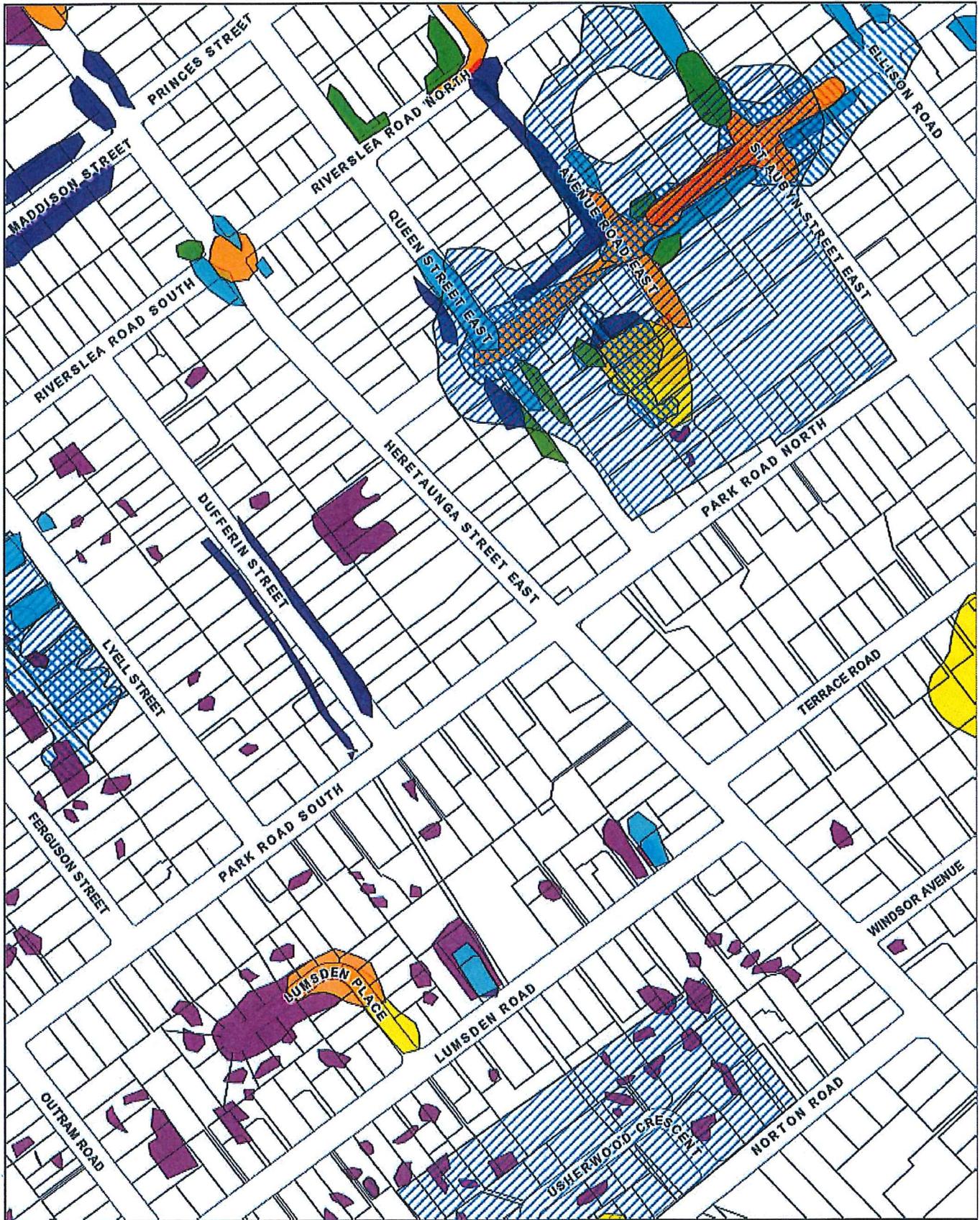
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 Project No. 80501083 010
 Sheet No. C 106
 Rev. A

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Appendix B – GIS Stormwater Ponding Plans

Legend

-  Private Roads
-  Internal Roads
-  Default Class
-  NT
-  23-08-1990
-  6 July 2006
-  NT
-  8-04-1985
-  9-03-1988
-  10-1995
-  10-1998
-  13-03-1986
-  1986
-  1988
-  1992
-  1993
-  1994
-  1995
-  1996
-  1996/2006
-  1997
-  22-07-1992
-  22-06-1979
-  24/25-08-1991
-  26-07-1985
-  30-07-1990
-  4-07-1996
-  flood
-  hist
-  pond
-  prob



Heretaunga Ponding Areas -1

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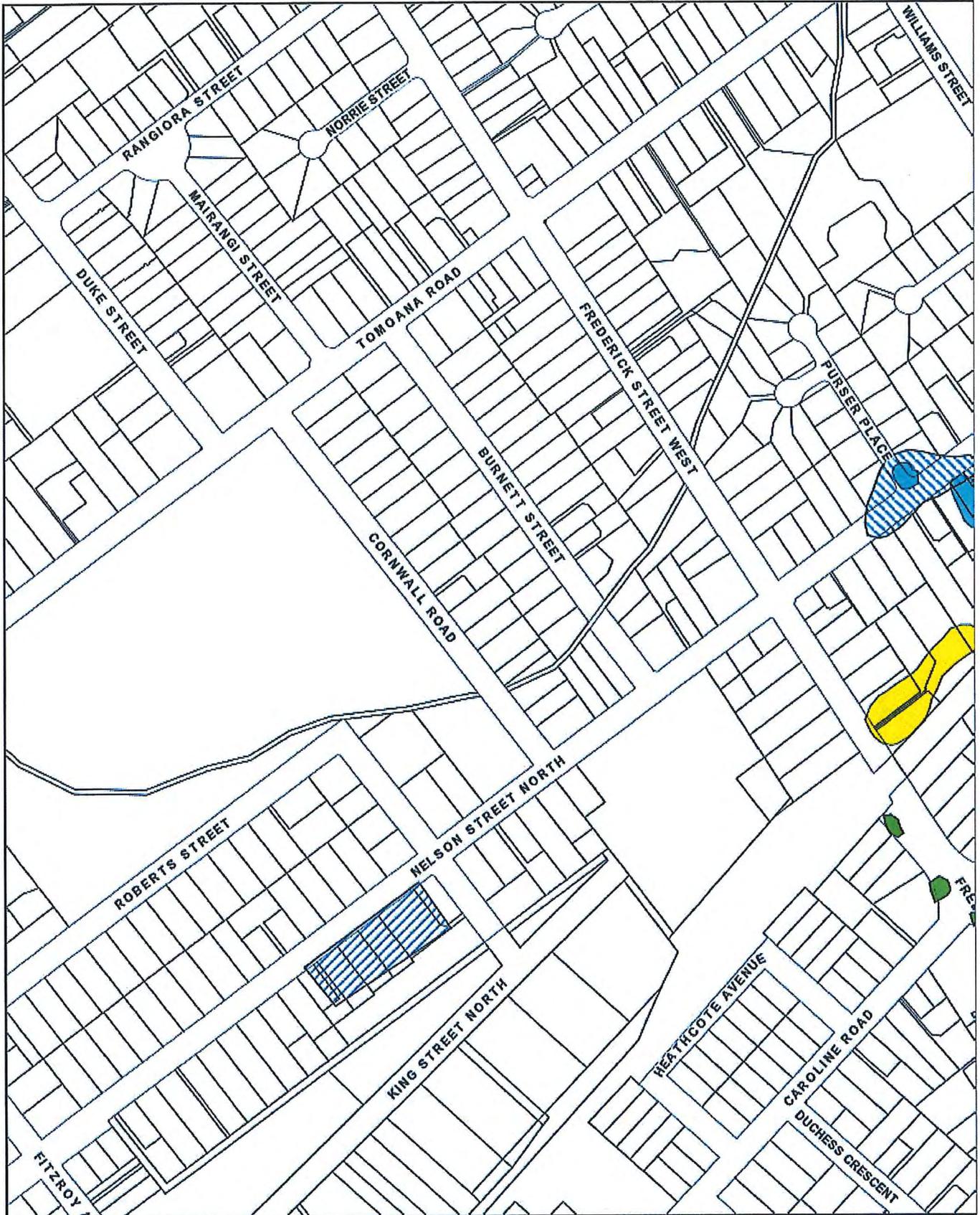


Heretaunga Ponding Areas -2

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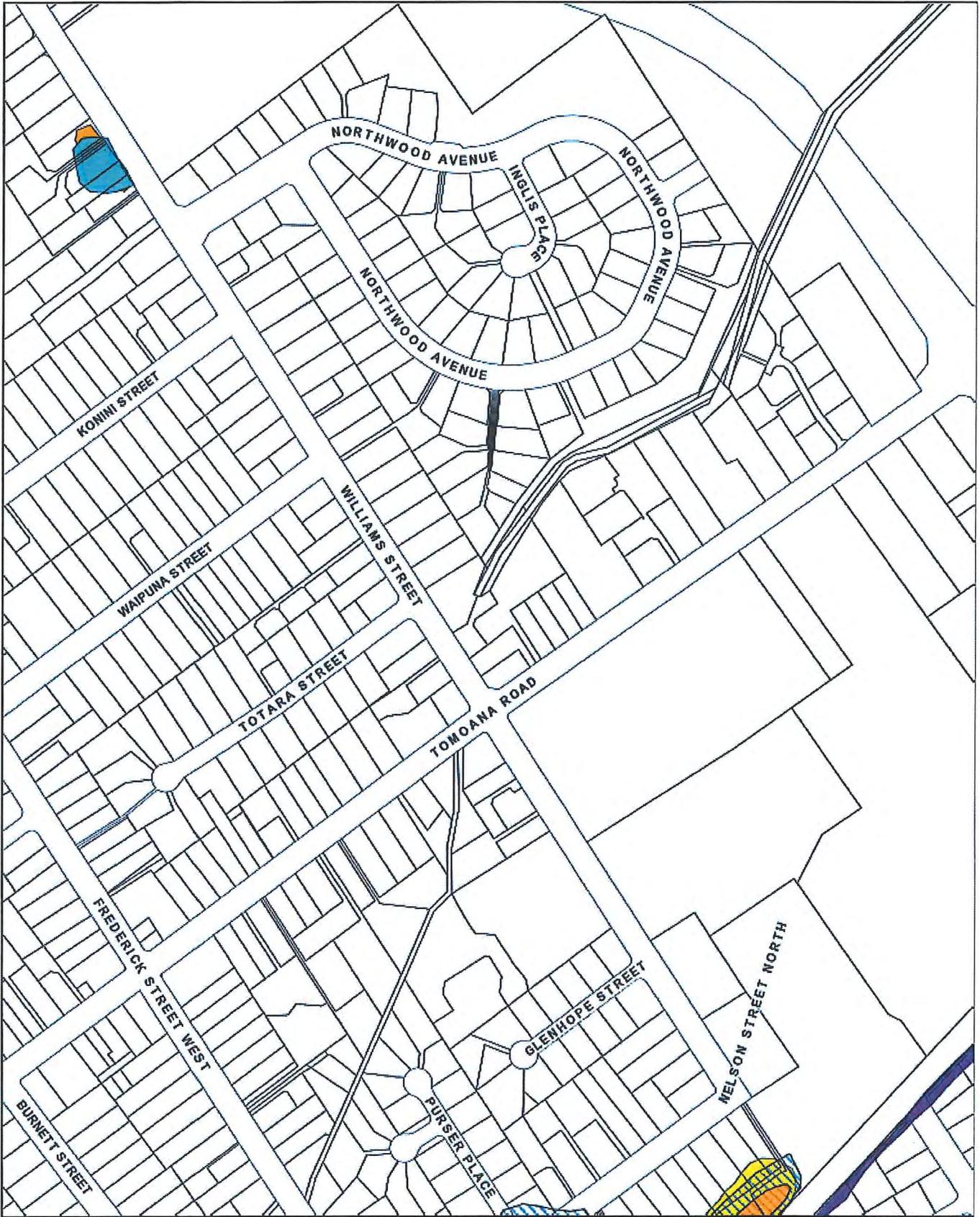


Mahora Ponding Areas -1

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Mahora Ponding Areas -2

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Havelock North Ponding Areas

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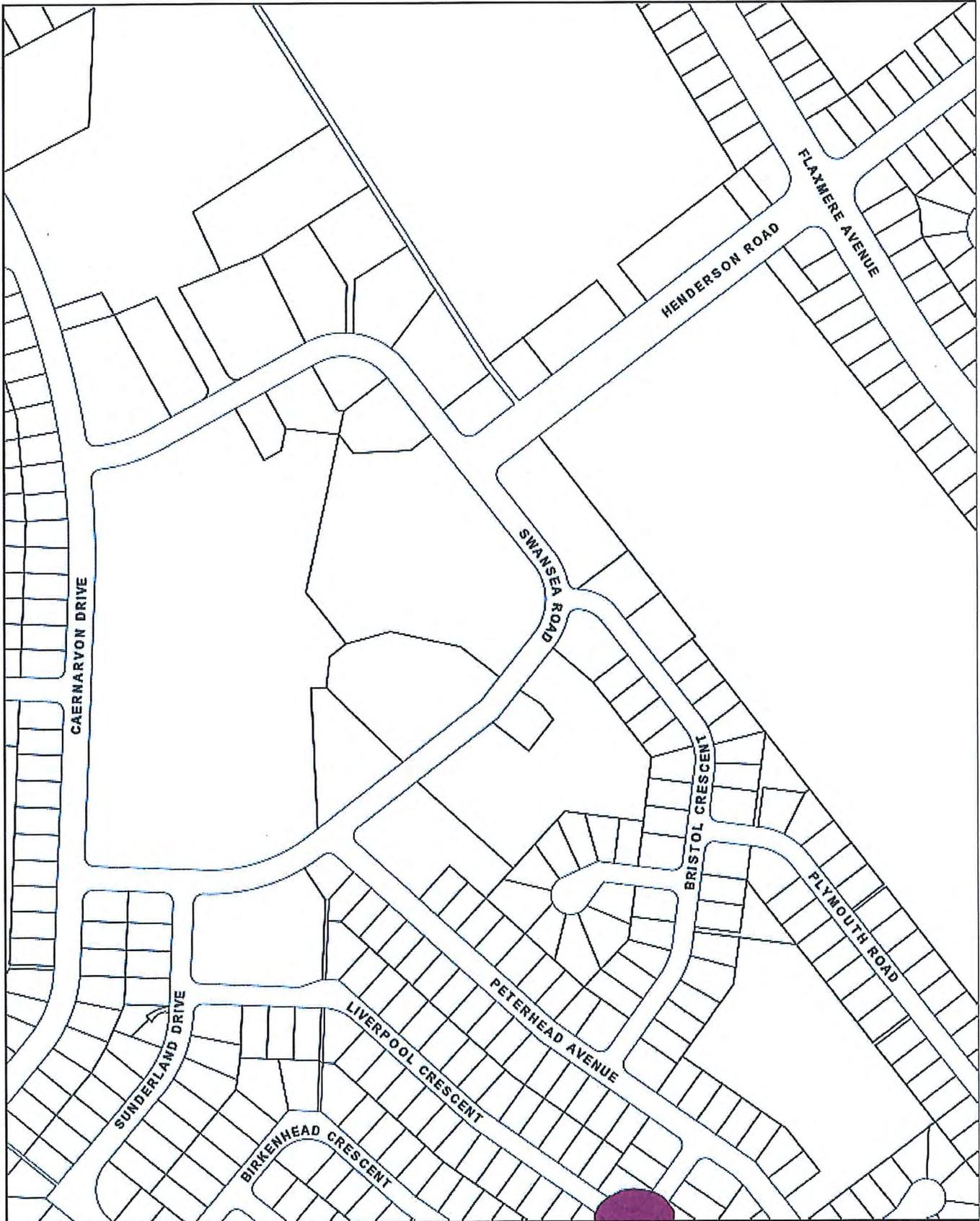


Windsor Ponding Areas

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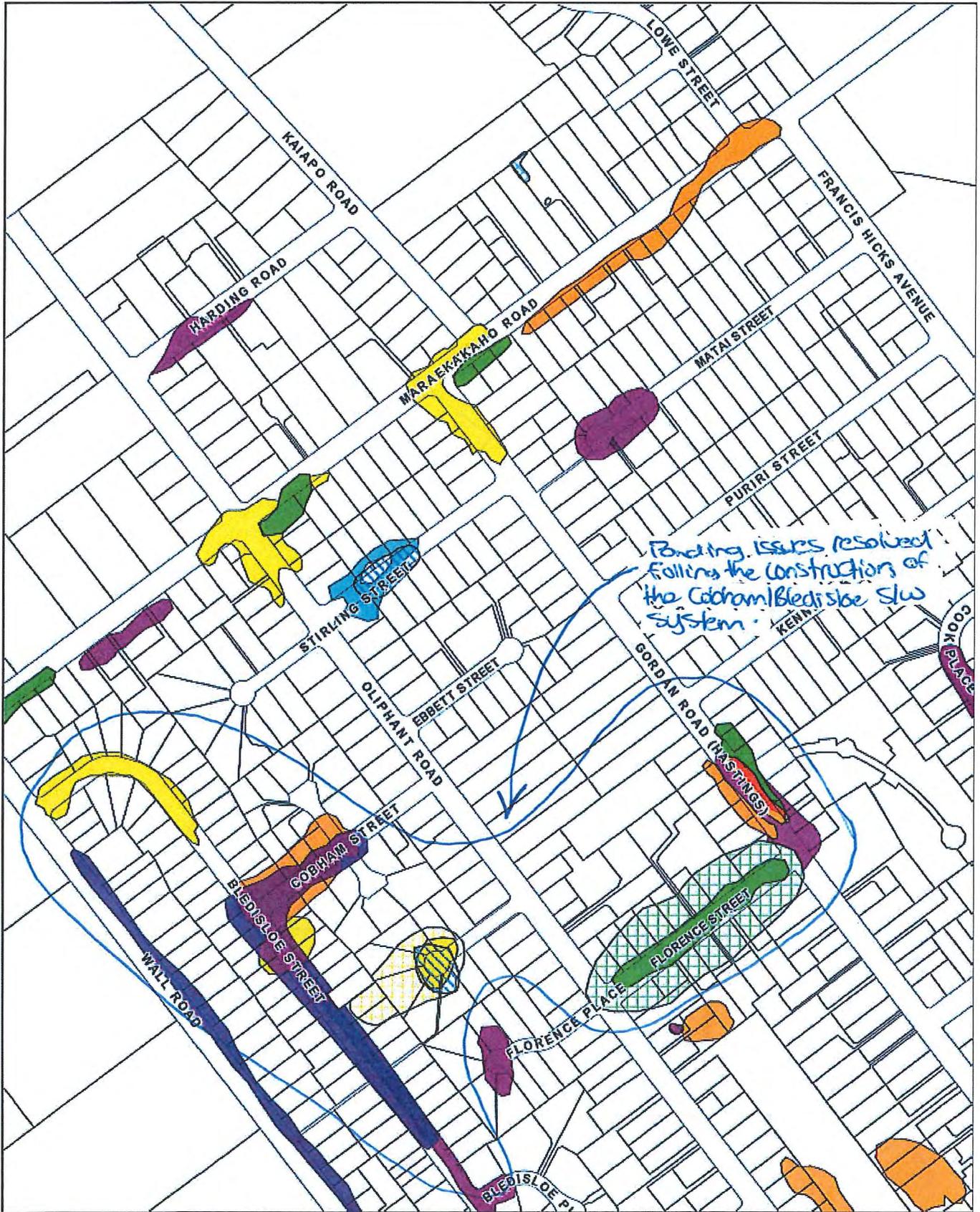


Flaxmere Ponding Areas

DATA SOURCE: Cadastral information derived from the Land Information New Zealand Core Record System (CRS) CROWN COPYRIGHT RESERVED

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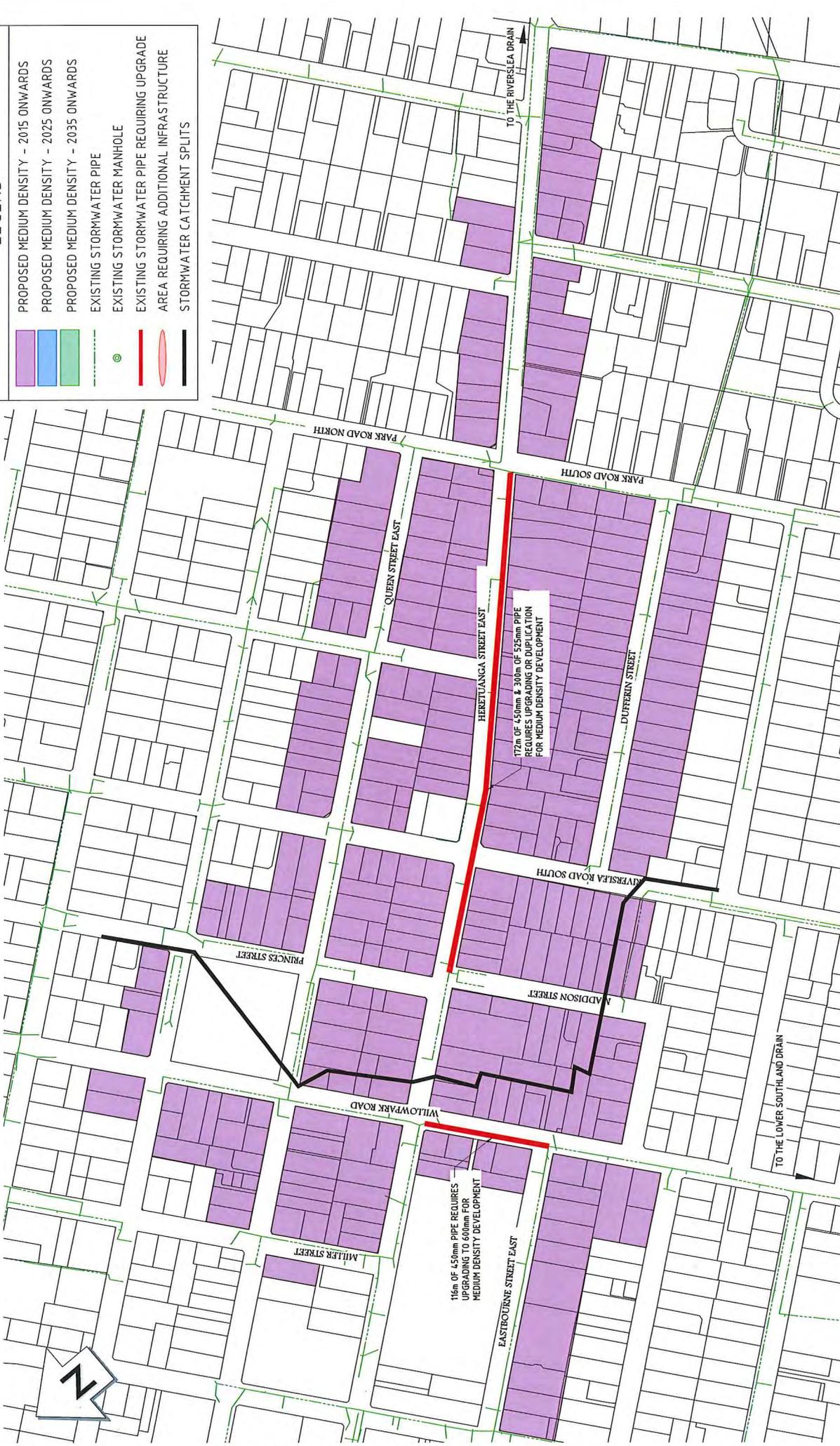
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Appendix C - Stormwater Plans

LEGEND

	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
	EXISTING STORMWATER PIPE
	EXISTING STORMWATER MANHOLE
	EXISTING STORMWATER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	STORMWATER CATCHMENT SPLITS



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DATE: 15/02/2013

SCALE: (A1) NOT TO SCALE

PROJECT NO: 80501083 0110

DRAWING NO: C 201

REV: A

FOR INFORMATION

HASTING DISTRICT COUNCIL AND MWH ALLIANCE

MEDIUM DENSITY READY SERVICES ASSESSMENT

STORM WATER INFRASTRUCTURE

HERETUNGA STREET EAST

REV	FOR INFORMATION	REVISIONS	DATE	BY	CHECKED	APPROVED	DATE

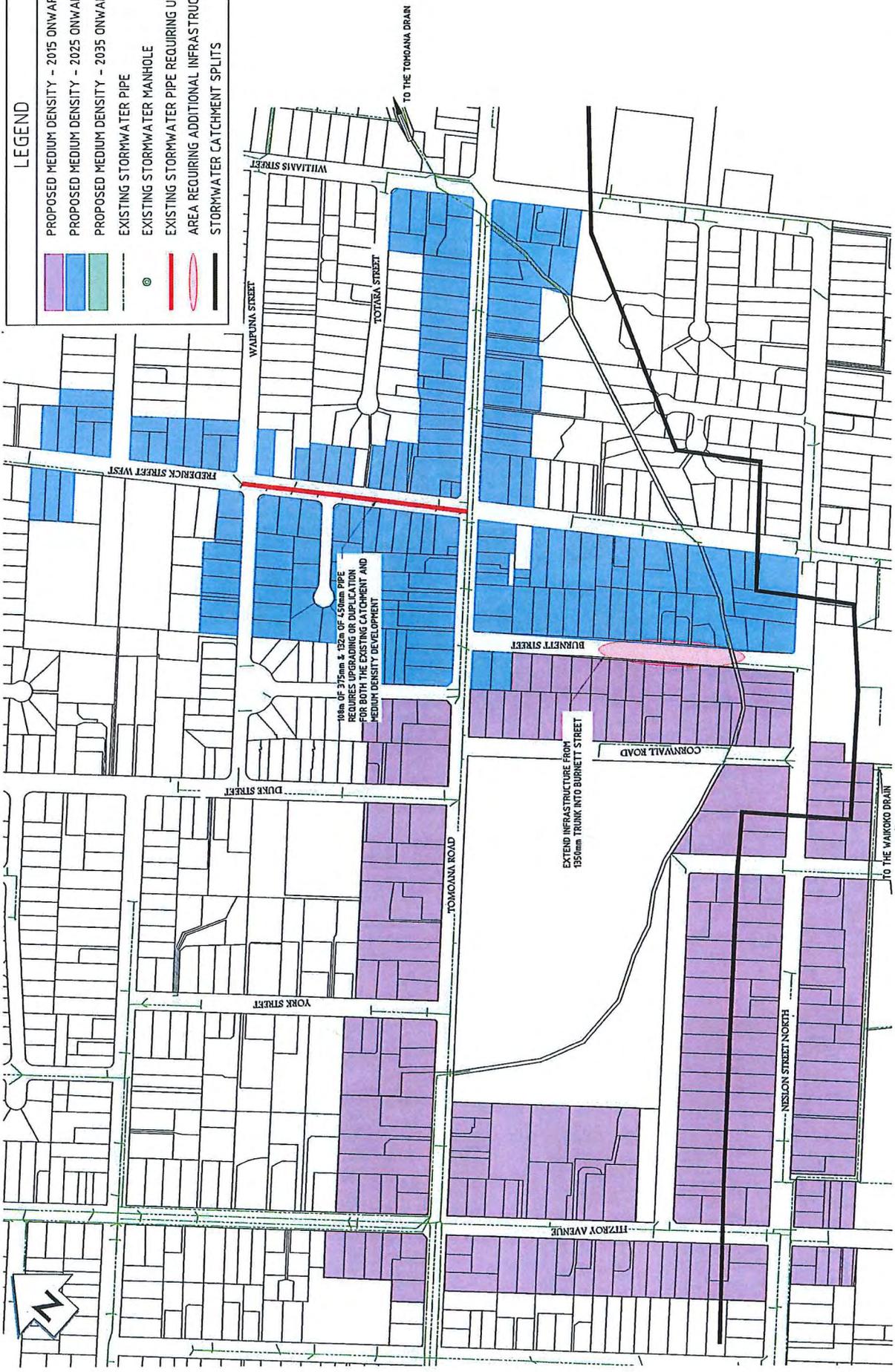
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IA	02/2013
AW	02/2013
AW	02/2013
PAC	02/2013
AW	02/2013

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XREFS - HD Pipe network: HB2000

LEGEND

	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
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	EXISTING STORMWATER MANHOLE
	EXISTING STORMWATER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	STORMWATER CATCHMENT SPLITS



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FOR INFORMATION

Date: 15/02/2013

Scale: (A1) NOT TO SCALE

Project No: 80501083 010

Sheet No: C 202

Rev: A

HASTING DISTRICT COUNCIL AND MWH ALLIANCE
 MEDIUM DENSITY READY SERVICES ASSESSMENT
 STORM WATER INFRASTRUCTURE
 MAHORA

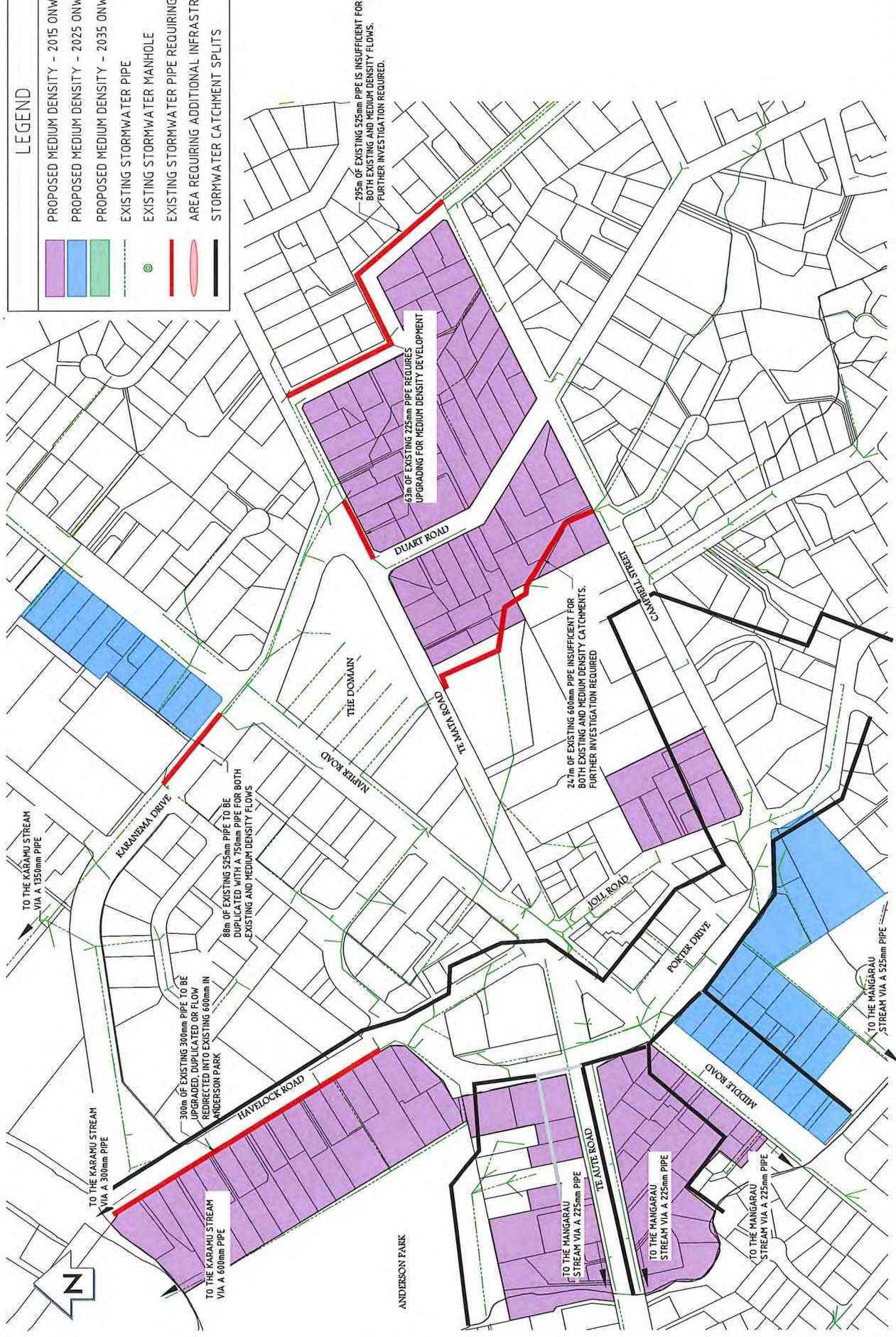


Name	Date
SURVEYED	02/2010
DESIGNED	02/2010
DESIGN CHECK	02/2010
DRAWN	02/2010
DRAWING CHECK	02/2010
APPROVED	02/2010

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- PROPOSED MEDIUM DENSITY - 2015 ONWARDS
- PROPOSED MEDIUM DENSITY - 2025 ONWARDS
- PROPOSED MEDIUM DENSITY - 2035 ONWARDS
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- EXISTING STORMWATER MANHOLE
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- AREA REQUIRING ADDITIONAL INFRASTRUCTURE
- STORMWATER CATCHMENT SPLITS



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DATE: 15/02/2013

SCALE: (A1) NOT TO SCALE

PROJECT NO: 80501083 0110

REV: C 203

FOR INFORMATION

DATE: 15/02/2013

SCALE: (A1) NOT TO SCALE

PROJECT NO: 80501083 0110

REV: C 203

HASTING DISTRICT COUNCIL AND MWH ALLIANCE

MEDIUM DENSITY READY SERVICES ASSESSMENT

STORM WATER INFRASTRUCTURE

HAVELOCK NORTH

NO.	DESCRIPTION	DATE	BY	CHECKED	DATE
1	DESIGNED	02/2013	AWH		
2	DESIGN CHECK	02/2013	AWH		
3	DRAWING CHECK	02/2013	PAC		
4	APPROVED	02/2013	MWH		

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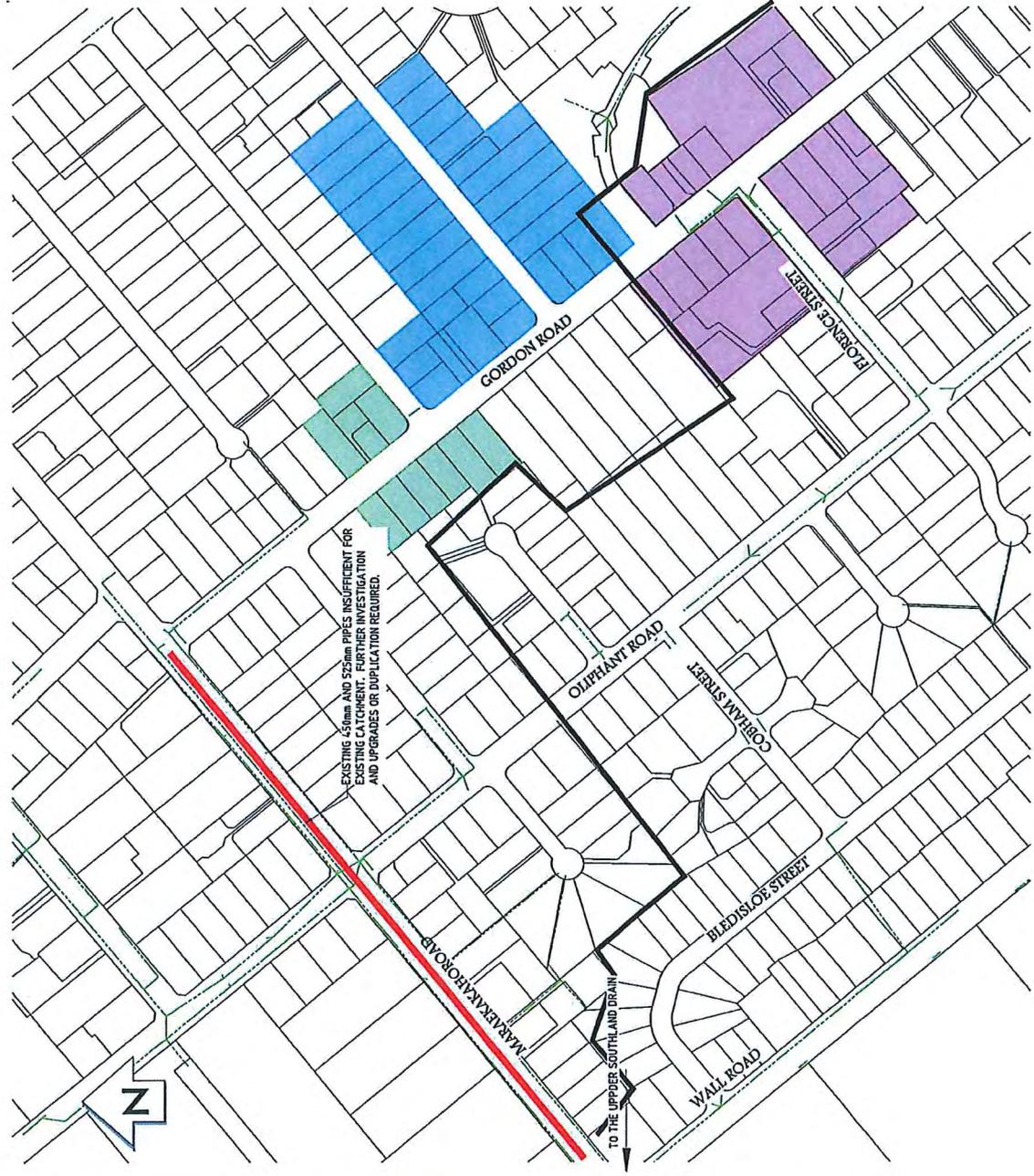
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- PROPOSED MEDIUM DENSITY - 2035 ONWARDS
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER MANHOLE
- EXISTING STORMWATER PIPE REQUIRING UPGRADE
- AREA REQUIRING ADDITIONAL INFRASTRUCTURE
- STORMWATER CATCHMENT SPLITS

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HASTING DISTRICT COUNCIL AND MWH ALLIANCE MEDIUM DENSITY READY SERVICES ASSESSMENT		HASTINGS DISTRICT COUNCIL	
STORM WATER INFRASTRUCTURE PARKVALE		MWH	
REV	DESCRIPTION	DATE	APPROVED
1	ISSUE FOR INFORMATION	02/2013	MAH
2	DESIGN CHECK	02/2013	MWH
3	DRAWING CHECK	02/2013	APM
4	DRAINING CHECK	02/2013	PAC
5	APPROVED	02/2013	MWH

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LEGEND

	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
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	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
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	AREA REQUIRING ADDITIONAL INFRASTRUCTURE
	STORMWATER CATCHMENT SPLITS



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15/02/2013

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HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY READY SERVICES ASSESSMENT
STORM WATER INFRASTRUCTURE
RAUREKA

HASTINGS DISTRICT COUNCIL

MWH

Activity	Name	Date
SURVEYED	NA	02/2013
DESIGNED	AMH	02/2013
DESIGN CHECK	WAH	02/2013
DRAWN	AMH	02/2013
DRAWING CHECK	PAC	02/2013
APPROVED	WAH	02/2013

REV: 001
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REV: 100

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LEGEND

	PROPOSED MEDIUM DENSITY - 2015 ONWARDS
	PROPOSED MEDIUM DENSITY - 2025 ONWARDS
	PROPOSED MEDIUM DENSITY - 2035 ONWARDS
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	EXISTING STORMWATER MANHOLE
	EXISTING STORMWATER PIPE REQUIRING UPGRADE
	AREA REQUIRING ADDITIONAL INFRAS TRUCTURE
	STORMWATER CATCHMENT SPLITS



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PROJECT NO: 80501083 0110

ISSUE NO: C206

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HASTING DISTRICT COUNCIL AND MWH ALLIANCE
MEDIUM DENSITY READY SERVICES ASSESSMENT
STORM WATER INFRASTRUCTURE
FLAXMERE



REV	DESCRIPTION	DATE	BY	CHECKED	APPROVED	DATE
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Task	Name	Date
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DESIGNED	MWH	02/2010
DESIGN CHECK	MWH	02/2010
DRAWING CHECK	PVC	02/2010
APPROVED	MWH	02/2010

REFS: HD Pipe network 18/2004

WO History on COMPKEY select



7/03/2013	COMPKEY	UNITID	UNITID2	ASBLT	SEWER	Sewer Main	HERETAUNGA ST-E HASTINGS
8306	1016138	3050 CLEAR PIPE BLOCKAGE - NH	1016192	50005278	SEWER	Sewer Main	
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3799	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH			1/02/2006	12:00:00a.m.	
8604	1015819	3051 CLEAR PIPE BLOCKAGE - AH	1016973	50005907	SEWER	Sewer Main	PRINCES ST HASTINGS
7879	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH			2/03/2007	5:00:00p.m.	
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52438	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH			22/08/2011	10:30:00a.m.	
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10056	1037527	3051 CLEAR PIPE BLOCKAGE - AH	1037523	51136431	SEWER	Sewer Main	DUART RD HAVELOCK NORTH
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50620	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH			8/12/2010	11:00:00a.m.	
10533	1012288	50001798	1012291	50001798	SEWER	Sewer Main	YORK ST HASTINGS

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10608	1012518	1012522	50001989	SEWER	Sewer Main		FREDERICK ST-W HASTINGS
55426	3011 INSPECT CONN - NH AREA 1			SCINS1	3011 INSPECT CONN - NH AREA 1		27/08/2012 8:40:32p.m.
52923	3225 FLUSH PIPE			SPFLU	3225 FLUSH PIPE		27/10/2011 11:21:04a.m.
10695	1012522	1012524	50001990	SEWER	Sewer Main		FREDERICK ST-W HASTINGS
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10961	1016751	1016739	50005756	SEWER	Sewer Main		LUMSDEN RD HASTINGS
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11726	1016192	1016193	50005280	SEWER	Sewer Main		HERETAUNGA ST-E HASTINGS
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11870	1014215	1014805	50004477	SEWER	Sewer Main		SYLVAN RD HASTINGS
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51835	3051 CLEAR PIPE BLOCKAGE - AH			SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH		29/05/2011 11:30:00a.m.
12446	1036160	1036155	51135073	SEWER	Sewer Main		JOLL RD HAVELOCK NORTH
12073	3052 SEWER OVERFLOW			SOVFO	3052 SEWER OVERFLOW		14/02/2008 12:28:00p.m.
1956	3050 CLEAR PIPE BLOCKAGE - NH			SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		13/09/2005 12:00:00a.m.
14126	3050 CLEAR PIPE BLOCKAGE - NH			SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH		21/08/2008 12:00:00a.m.
12488	1036154	1036291	51135196	SEWER	Sewer Main		JOLL RD HAVELOCK NORTH

<u>7/03/2013</u>	<u>COMPKEY</u>	<u>SPCLR</u>	<u>UNITID</u>	<u>UNITID2</u>	<u>ASBLI</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
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	10591	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH			20/10/2007	12:00:00a.m.	
	39086		1022436	1016973	51150420	SEWER	Sewer Main	AVENUE RD-E HASTINGS
	11412	SPCLR1	3050 CLEAR PIPE BLOCKAGE - NH			18/12/2007	12:00:00a.m.	
	120547		1722844	1012518	50001983	SEWER	Sewer Main	FREDERICK ST-W | HASTINGS
	14675	SPCLR2	3051 CLEAR PIPE BLOCKAGE - AH			12/10/2008	12:00:00a.m.	

Appendix D – Summary of Maintenance Items

Medium Density Housing Analysis

22 February 2013

Introduction

The Hastings District Council is currently investigating the possibility of allocating certain parts of Hastings and Havelock North to be medium density housing. This would entail allowing a property density three times what is currently planned for in these areas.

The areas that are proposed as medium density are shown in red on Figure 1.

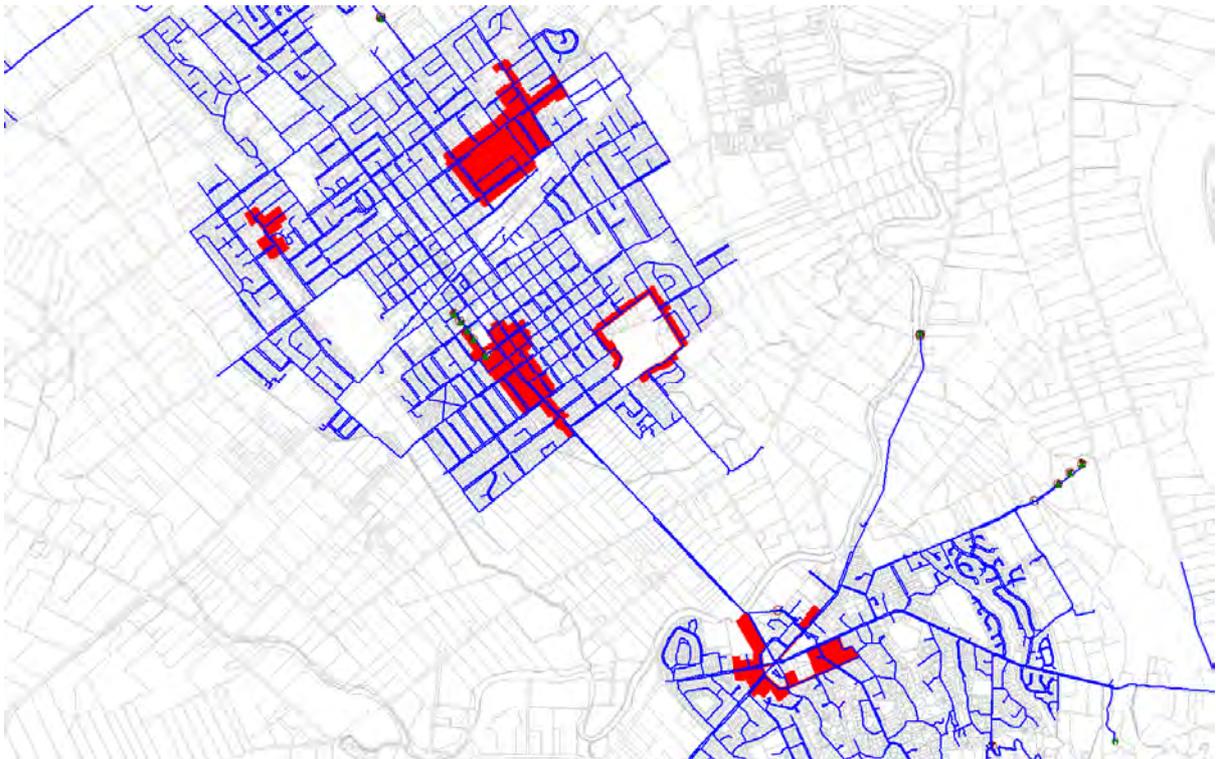


Figure 1: Proposed Medium Density Areas

The following report outlines the analysis of the additional demand that would be required with the medium density areas.

Existing Model

The Hastings water supply model was updated in July 2011 to include all new pipework and valves that have been added to the GIS.

Telemetry and datalogger data was collected in April 2009 to determine the demand in the system. The data was collected at this time as the Havelock North and Hastings/Flaxmere water supplies were operating independently from each other. This allowed a better estimation of demand in each town.

The model currently has a demand of approximately 35,000 m³/day spread over the three areas of Flaxmere, Hastings and Havelock North. In order to determine the effect of the additional demand on the model a higher summer demand will be required. The peak summer demand for 2012/2013 was approximately 55,000 m³/day, so for the purposes of this exercise the demand was scaled up to approximately 55,000 m³/day.

It should be noted that the current Hastings water supply model has never been fully calibrated and the results will only give an indication of what might happen.

Hastings Medium Density Areas

There are four proposed medium density areas in Hastings. These are Raureka, Mahora, Parkvale and Heretaunga Street East.

Raureka and Mahora are currently in the main Hastings zone and are not pressure reduced. Parkvale is in the Parkvale pressure reduced zone and Heretaunga Street East actually lies in three different zones – Parkvale pressure reduced, Akina pressure reduced and the main Hastings zone.

Figure 2 shows the minimum pressures currently predicted by the model on a 55,000m³ demand day.

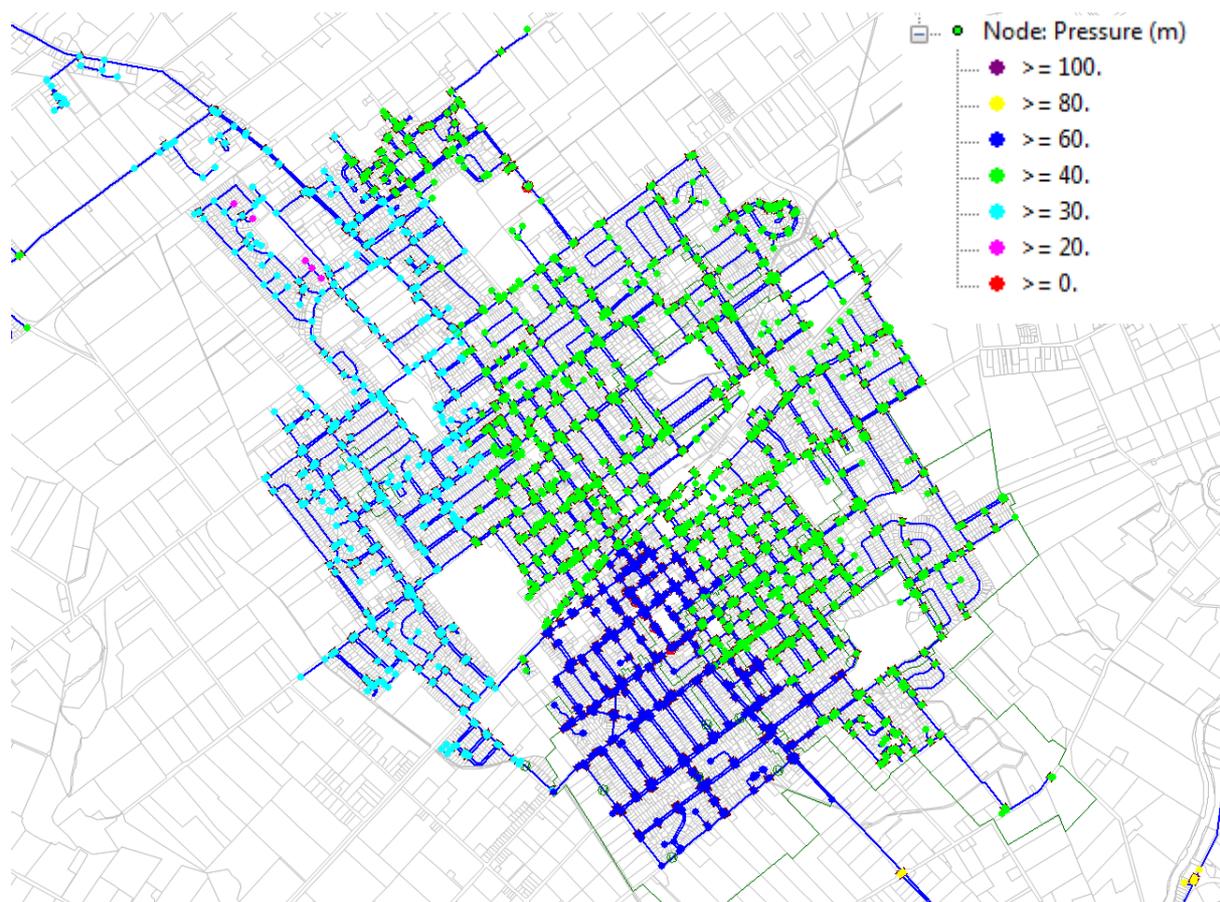


Figure 2: Current minimum pressures in Hastings – 55,000 m³/day

In this initial analysis the customer points in the medium density areas were adjusted to have three times the number of properties. No other changes were made to the model. Properties in medium density housing areas could potentially use less water as section sizes are smaller and more

apartment style buildings will be constructed. Adjustments to the amount of demand per property could be carried out if further analysis is required.

With the additional demand the minimum pressures in Hastings are as shown on Figure 3.

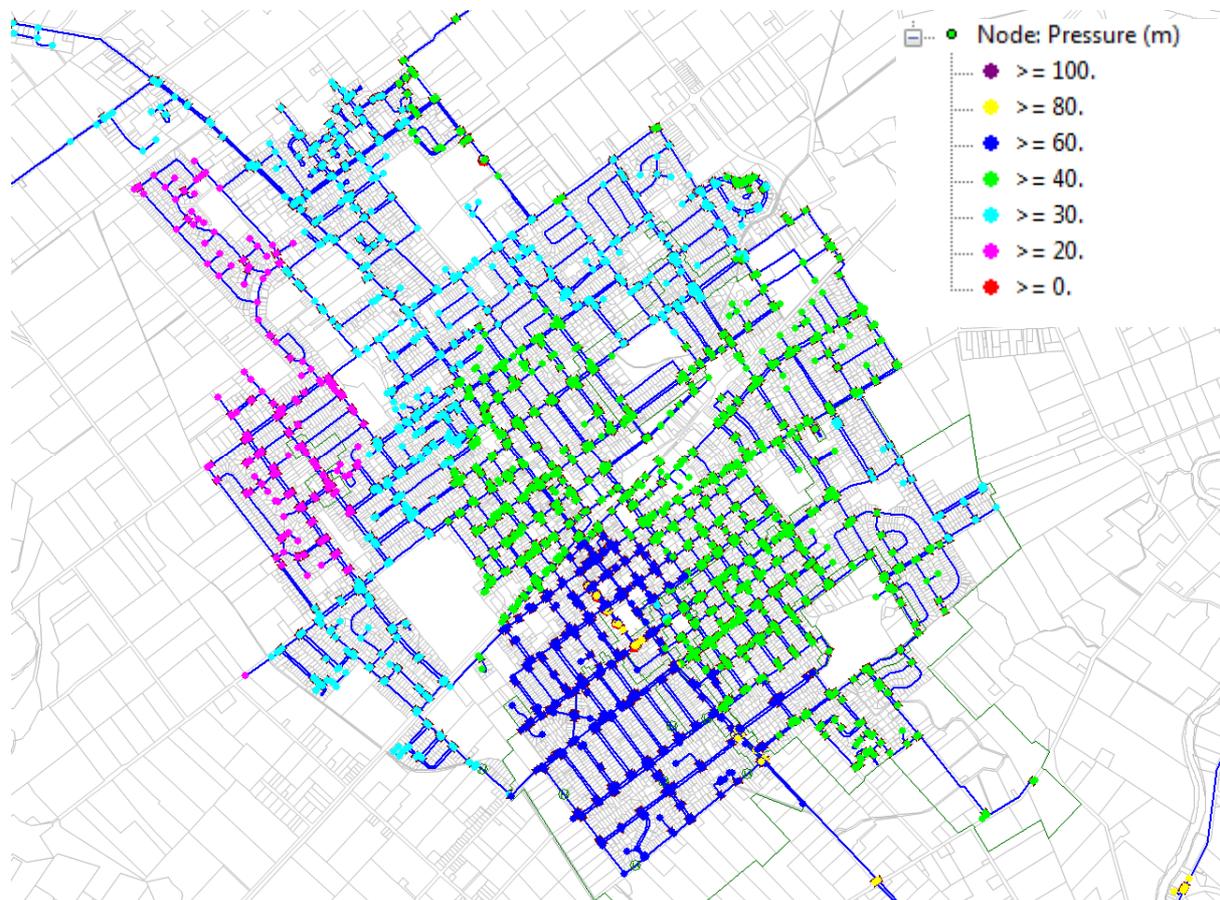


Figure 3: Minimum pressures in Hastings with medium density demand

This shows some reduction in pressure with the medium density demand, especially in the Raureka area. In the following sections the results for each of the proposed medium density zones will be shown in more detail. A number of locations within the proposed zones have been chosen to compare pressures.

Raureka

This proposed medium density area is currently in the main Hastings pressure zone but it does have the potential to be included in a reduced pressure zone in the future.

Currently the minimum pressure at node 1019997 (913 Gordon Road) is approximately 32m. With the additional demand applied the minimum pressure drops to approximately 27m. This is a pressure drop of 5m. This can be seen on Figure 4. The blue line is the currently modelled pressure and the green line is the pressure with the additional demand from the medium density housing areas.

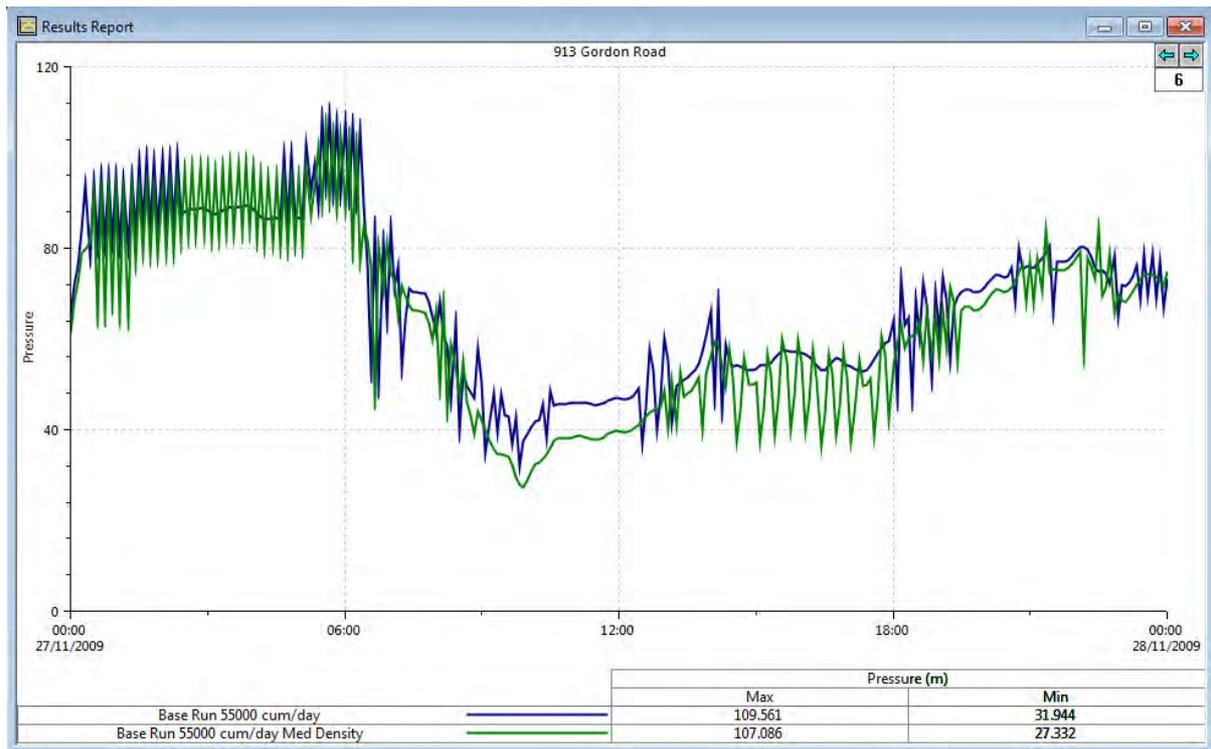


Figure 4: Pressure at 913 Gordon Road, Raureka

These pressures are below the Hastings District Council level of service.

The Frimley pump station may be upgraded in the future to supply more water into the Hastings reticulation and this may improve pressures in the Raureka area.

Mahora

The proposed Mahora area is quite large but it does include two parks. Again this area is currently in the main Hastings zone that does not undergo pressure reduction but it may become part of a pressure reduced zone in the future.

As this area is larger two locations within it were compared. These were node 1012316 (Intersection of Tomoana Road and Fitzroy Avenue) and 1020740 (1028 Tomoana Road). The results at these nodes are shown in Figure 5. The blue lines are showing the current model prediction and the green lines are what is calculated with the additional medium density housing demand.

At both of these locations a reduction in minimum pressure of approximately 5m is calculated. However, the minimum pressure remains above 40m at all times.

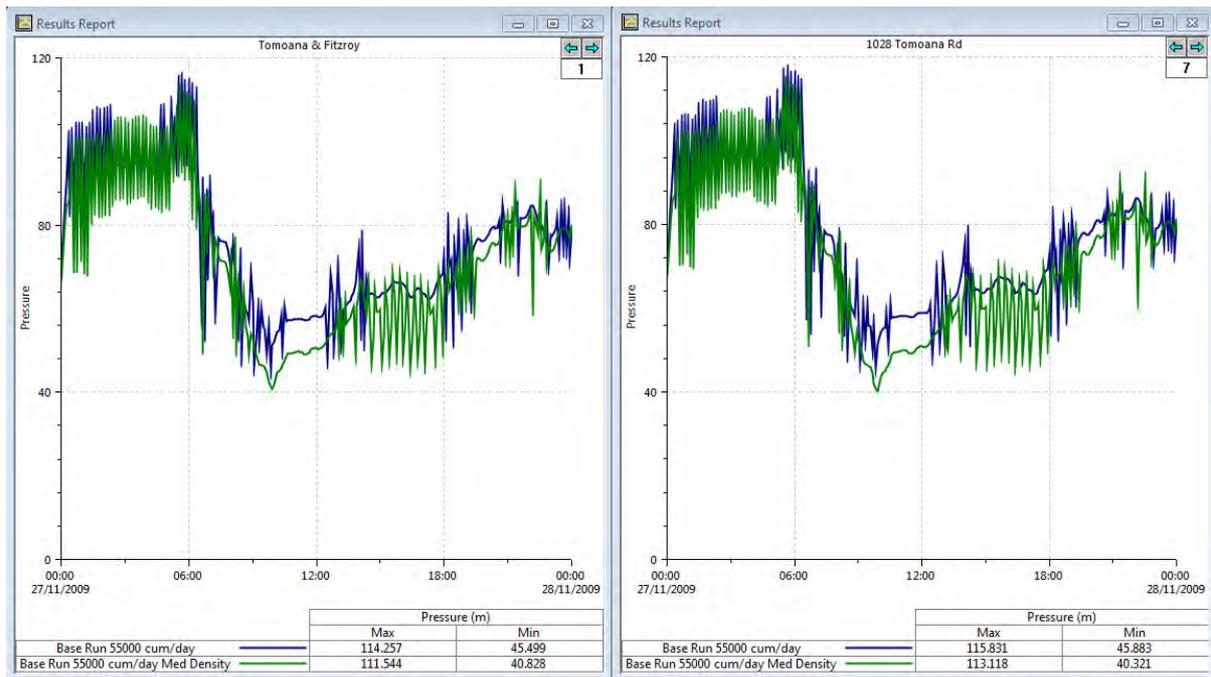


Figure 5: Pressures in Mahora zone

Parkvale

The proposed Parkvale medium density area wraps around Splash Planet. This is inside the Parkvale Pressure Managed Area (PMA), which already has quite a significant pressure reduction predicted by the model during peak demand periods.

Two locations were chosen to compare in this zone – on opposite sides of Splash Planet. The first location is node 1142052 (910-912 Albert Street) and the second location is 1013607 (Intersection of Sussex Street and Grove Road).

Figure 6 shows the pressures at these locations. The blue lines are the model calculations with the current demand and the green lines include the demand from the medium density housing areas.

The minimum pressure at both locations is approximately 6m lower with the additional demand from the medium density housing area included. It does however remain above 45m at all times. This proposed medium density housing area is located on a 150mm dia ring main that is supplied by the main feeds into the PMA. There are some nodes on the smaller diameter pipework at the extremities of the Parkvale PMA that have pressures less than 40m with the extra demand.

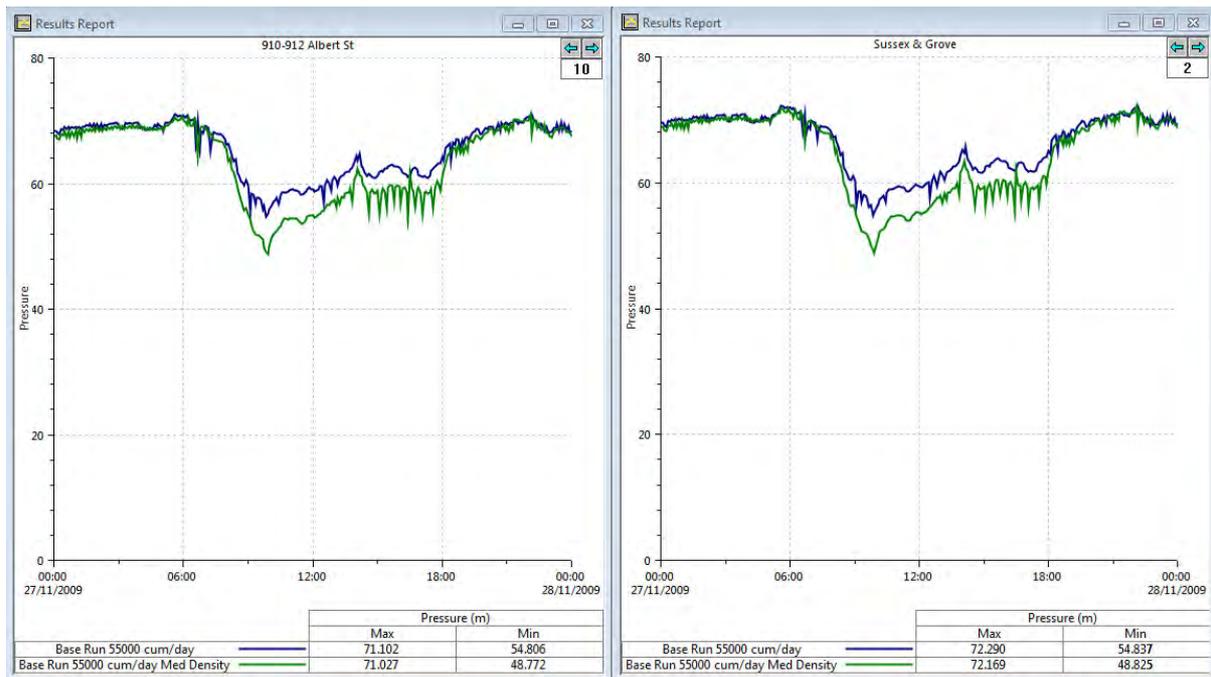


Figure 6: Pressures in Parkvale area

Heretaunga Street East

The Heretaunga Street East proposed medium density area currently covers three different pressure zones. Parts of it are in the Parkvale PMA, the Akina PMA, the main Hastings zone and also on the trunk main supplying the reservoirs in Havelock North.

A location in each of the PMA's was chosen to compare. Node 1016661 (Intersection of Riverslea Road South and Dufferin Street) in the Akina Zone and node 1024385 (Intersection of Princes Street and Avenue Road) in the Parkvale Zone were used.

Figure 7 shows the pressure at the locations in the PMA's. Again, the blue line is the current situation and the green line has the medium density housing demand added. The left side is the Akina PMA, which shows very little change due to the additional demand. On the right is the node within the Parkvale PMA. The minimum pressure is approximately 6m lower with the additional medium density housing demand.

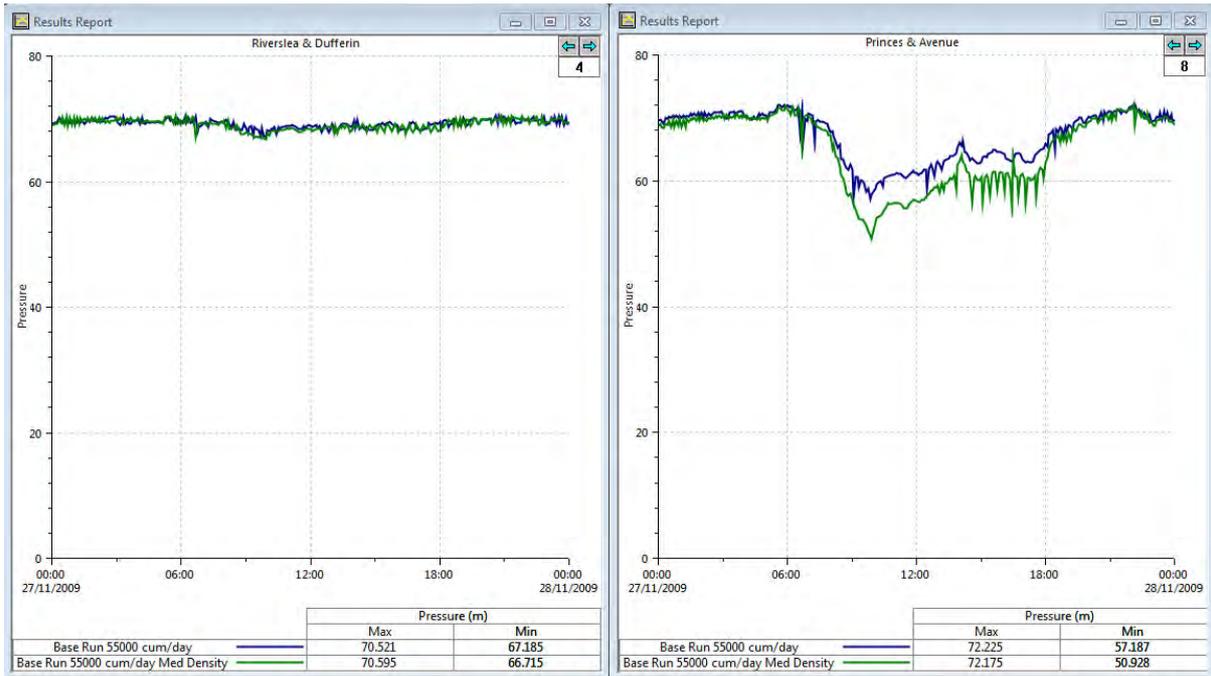


Figure 7: Pressures in Heretaunga Street East area

Additional locations outside of the PMA were also chosen to compare. Node 1016971 (Intersection of Queen Street East and Hastings Street) and node 1016198 (Intersection of Heretaunga Street East and Lumsden Road) were used. These locations will probably never be in a significantly pressure reduced zone as the first is in the CBD and the second is on the pumping main to the reservoirs.

The results at these locations are shown on Figure 8. The blue line is current and the green line includes the additional demand.

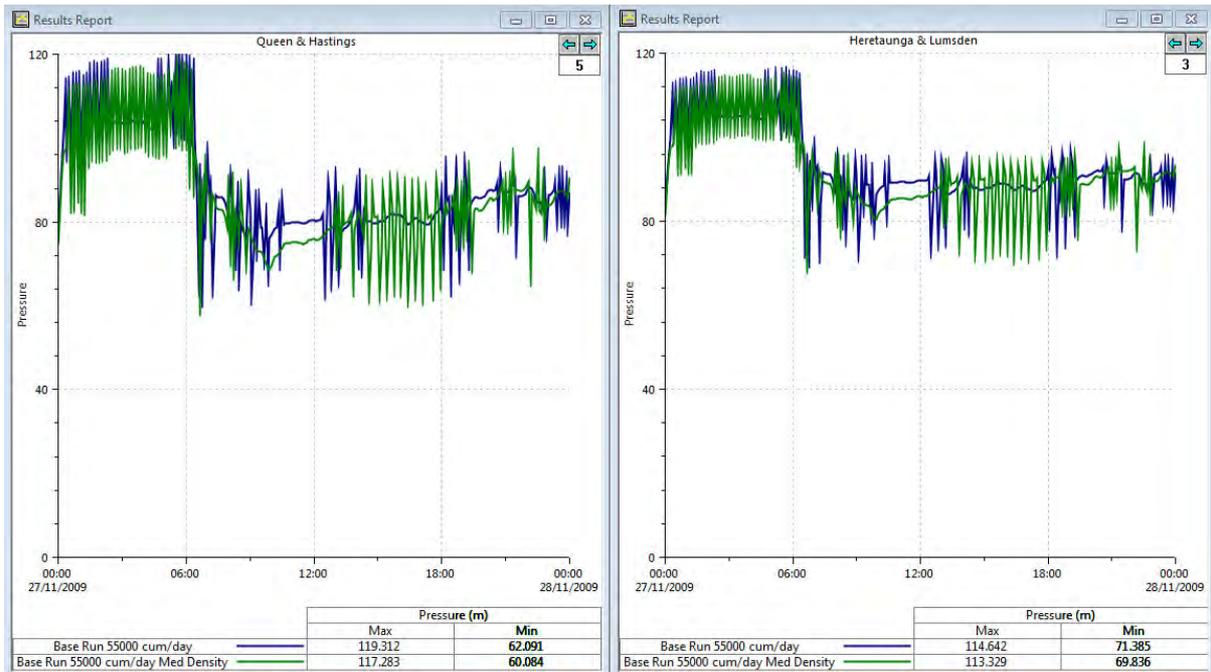


Figure 8: Pressures in Heretaunga Street East area

At both of these locations the minimum pressure is approximately 2m lower.

Havelock North Medium Density Area

There is one proposed medium density area in Havelock North. This is in the centre of the village. Figure 9 shows the minimum pressures in the middle of Havelock North under the 55,000 m³/day demand conditions.

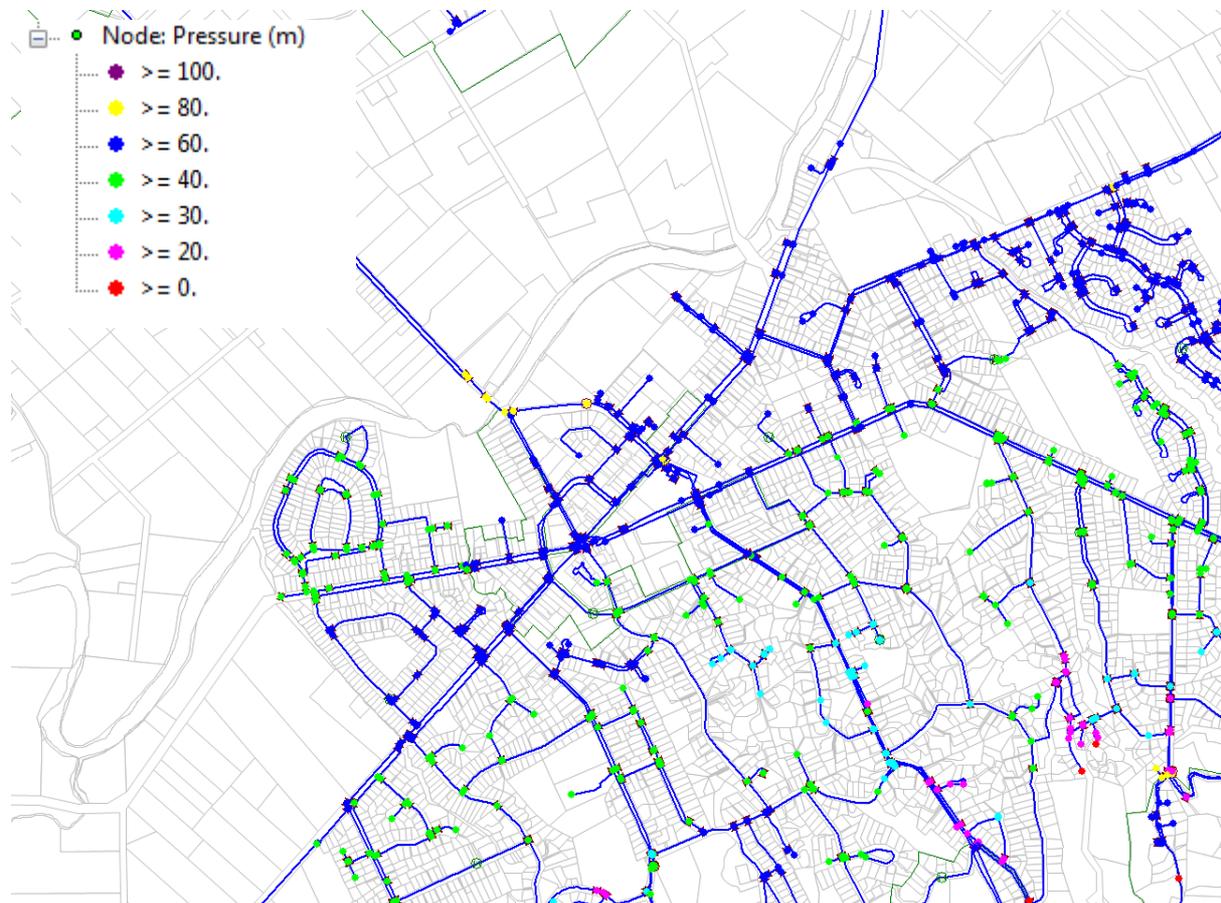


Figure 9: Current minimum pressures in Havelock North – 55,000 m³/day

In the areas where the proposed medium density housing will occur, the pressures are all greater than 40m.

Figure 10 shows the pressures with the medium density housing demand added. The minimum pressures are lower but still above 40m in the village.

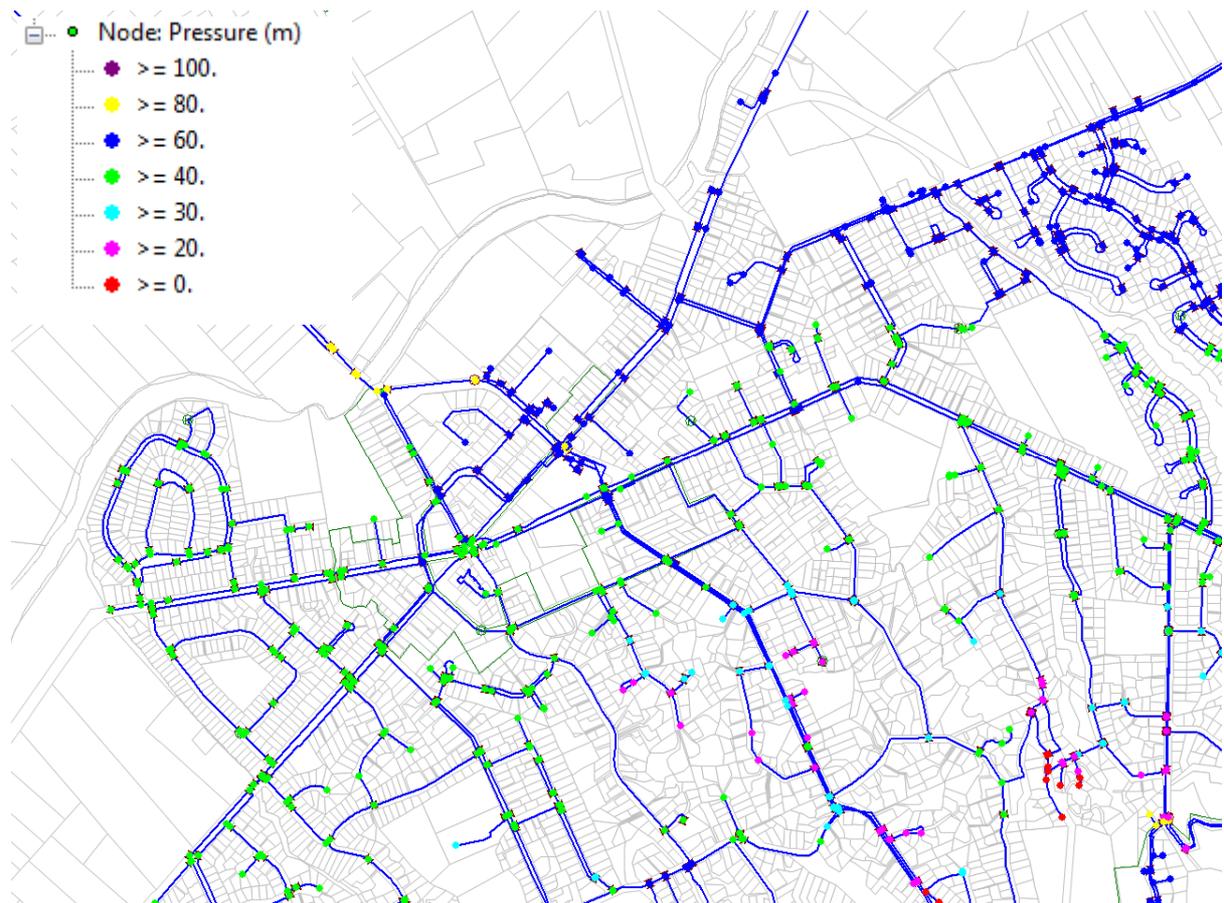


Figure 10: Minimum pressures in Havelock North with medium density demand

Two locations in the proposed medium density housing area were chosen for comparison purposes. These were node 1035866 (24 Te Aute Road) and node 1700946 (Intersection of Chambers Street and McHardy Street). Figure 11 shows the pressure at these locations. The blue line shows the pressure under the current demand conditions and the green line has the additional medium density housing demand included.

The minimum pressure at 24 Te Aute Road is 10m lower and at the intersection of Chambers Street and McHardy Street it is 6m lower.

Again this area may be subject to some pressure reduction in the future, however there is quite a bit of 100mm dia pipe throughout the proposed medium density housing area.

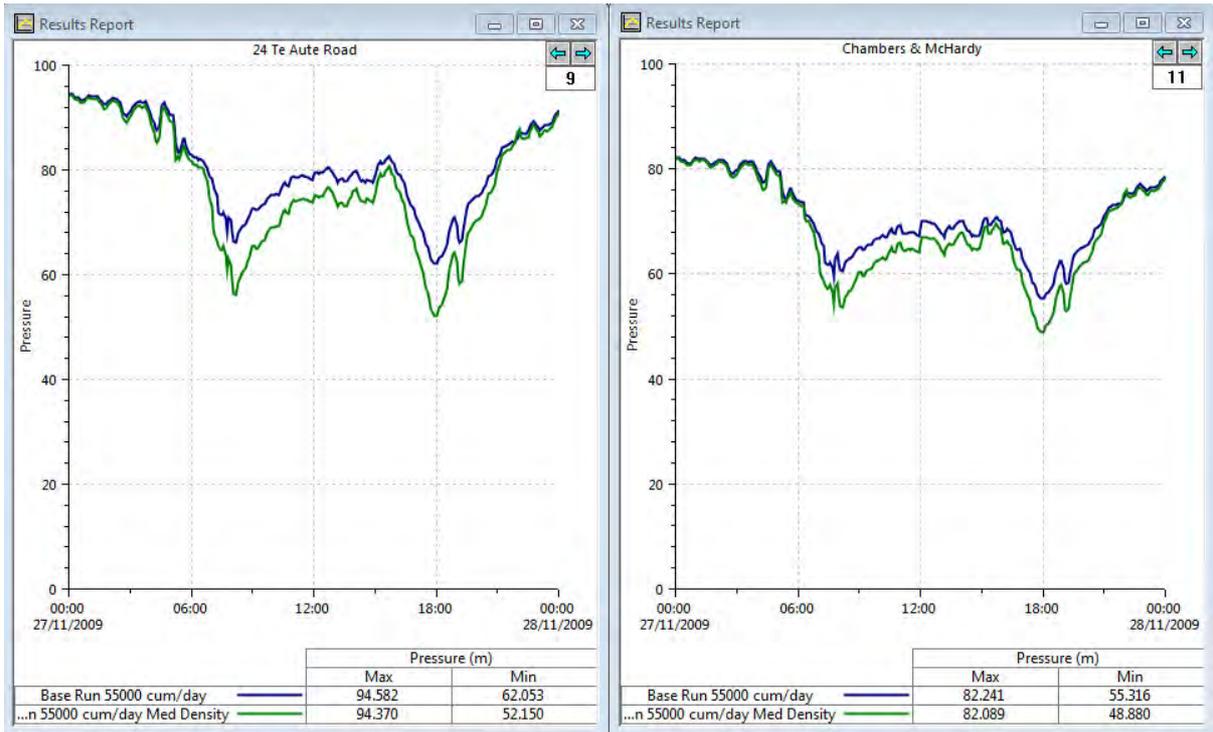


Figure 11: Pressures in Havelock North area

Conclusions

Throughout all of the areas investigated there is a slight pressure drop (2m to 7m) during peak demand periods. The pressure in the Raureka area does drop below the Hastings District Council service level of 30m. Localised reticulation upgrading may resolve this issue.

Overall, medium density housing in the areas identified should not cause noticeable pressure reduction to customers.

It should be noted that the analysis was carried out using a model that has not been fully calibrated. However, it does calculate quite good comparative pressure at the few locations where live data has been collected.

ADDENDUM

Further to the report Hastings District Council staff queried whether there was a straight forward upgrading option for the Raureka area, as this area had the lowest pressures in the analysis. The HDC provided information regarding some committed works in the western part of Hastings. These were:

1. One new bore at Frimley delivering 80 l/s
2. A 300mm dia link from Stock Road to Wall Road via Irongate and Maraekakaho.

These upgrades were included in the Hastings model and the pressures in the Raureka area, with the medium density housing included, improved significantly. Without the upgrades the minimum pressure modelled was approximately 27m. This increased to approximately 40m with the upgrades.

This additional analysis doesn't include potential future pressure reduction in the Raureka area and it may be prudent to upgrade the existing CI and AC 100mm dia mains to 150mm dia in this area to allow for that.

Appendix E – Water Infrastructure Report by Jeff Booth Consulting

Medium Density Ready Services - Addendum

This report has been prepared for the benefit of Hastings District Council. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

Rev. No.	Date	Description	Prepared By	Reviewed By	Approved By
1	9/04/2013	Final	A.Patterson	W. Hodson	W. Hodson

1 Introduction

Hastings District Council (HDC) engaged MWH to undertake a high level assessment of the existing water services infrastructure currently servicing areas that have been identified for Medium Density development.

The MWH report "Medium Density Ready Services, 14 March 2013" was issued to HDC. Following the issue of this document HDC requested further information on the following:

- Assumptions made around demand
- Timing of upgrades required due to medium density development
- Assessment of cost for typical on site stormwater detention tanks
- Marginal costs for upgrades required due to medium density development.

2 Demand Assumptions - Sewer

The assumptions made around the level of demand on the existing sewer infrastructure have been based on a worst case scenario. The upper end of houses per hectare of 30-40 dwelling per hectare as identified in the Intensification Toolkit Report. The areas used to determine the medium density areas have excluded existing road corridors and are therefore a net figure. Population per dwelling have been derived from the 2006 CENSUS data, although populations trends indicate a small decline in population per dwelling and is expected to be approximately 2.1 people per dwelling in medium density areas.

The difference in pipe capacity from one change in diameter i.e. 150mmØ to 225mmØ is significant. Therefore small differences in the demand assumptions (population and dwelling density) do not have a significant impact on the assessed infrastructure upgrade requirements.

As there is no change to the single upgrade required, due solely to medium density development, this will not be adjusted at this point. The reduction in population per dwelling should be taken into consideration during further investigations into the pump stations and rising mains (as indicated in the Medium Density Ready Services report 01/03/2013) as this may have an impact on the extents of any upgrade works required.

3 Timing of Upgrades

The tables appended indicate those pipelines that need upgrade due to medium density development and the likely timeframe that upgrade will be required. These timeframes have been based on a linear rate of development over a 10 year period starting from the year that parcel of land will be made available for development. This assumes that those areas that are earmarked for development from 2015 will have full uptake by 2025 when the next area of development is made available.

It has been assumed in the tables below that those pipelines that have been identified as not meeting the current level of service will be upgraded to cater for the current catchment and medium density development by the onset of medium density. This is a conservative approach and Council, for stormwater, may decide to accept the existing compromised level of service based on road type and/or historically limited ponding issues that do not cause unacceptable nuisance.

4 Cost Estimates

4.1 On Site Stormwater Detention

A cost estimate has been developed on a per dwelling basis. It has been assumed that a typical dwelling in medium density development will consist of the following

- 300m² section
- 150m² roof area
- 50m² driveway or other paved areas

These attributes have been entered into HDCs stormwater detention calculator which has calculated that the average medium density dwelling will require a 1000 litre storage tank.

Suppliers have indicated that a typical 1000 litre tank will cost approximately \$500 to purchase and another \$500 for a basic installation with minimal pipe work.

The total typical costs expected for private stormwater detention per dwelling is approximately \$1,000 (excluding GST).

4.2 Sewer, Stormwater and Water Infrastructure

Cost estimates have been developed based on pipe diameter, length, likely manhole and sumps required. These cost estimates are rough order and include all materials, 10% for preliminary and general, 20% for contingency and 20% for consultancy fees. These costs estimates are based on present rates and do not allow for any inflation.

Stormwater costs are based on duplication of the existing asset on the basis that existing stormwater asset has a medium to long-term remaining life. In some instances the worst case scenario has been assumed for upgrades to service medium density development. Further investigations and assessment will be required to confirm the appropriate works, if any, to be implemented.

5 Required Upgrades

The tables below summaries the upgrades required that are directly related to medium density development.

The content of each section and what it relates to is described below:

1. Area - the medium density area the upgrade is required for.
2. Year Due - the year the asset is due for renewal based on age within HDC's HANSEN database (sewer only).
3. Any issues that already exist with current development are briefly described.
4. Any issues due to medium density development are briefly described.
5. Medium Density Programmed is the planned year that the medium density areas will be available for development.
6. Estimated Year Required – the year the upgrade relating to medium density development will be required by.
7. Total Cost Estimate is the total estimated cost for the upgrades described.
8. Marginal Cost Estimate is the additional cost for the upsizing of renewal due directly to servicing medium density development.

Table 3-1: Medium Density Upgrades Required – Sewer Infrastructure

Area	Year Due	Issue Resulting from Medium Density Development	Medium Density Programmed	Estimated Year Required	Total Cost Estimate	Marginal Cost Estimate
Havelock North	2024	100m of 150mm concrete pipe needs to be upsized with 200mm diameter pipe and upstream manhole re-haunched.	2015	2018	\$80,000	\$22,000

Note: The total and marginal cost estimates in the above table do not allow for the cost to write off the remaining asset value to renew the asset prior to the end of its useful life.

Table 3-2: Medium Density Upgrades Required – Stormwater Infrastructure

Area	Existing Council Issue/Upgrade Required	Issue Resulting from Medium Density Development	Medium Density Programmed	Estimated Year Required	Total Cost Estimate	Marginal Cost Estimate
Here taunga Street East	116m of 450mm pipe needs upgrading to 525mm pipe or equivalent duplication on Willowpark Road	Requires pipe upsize to 600mm or duplication with 450mm	2015	2015	\$105,000	\$25,000
	Nil	172m of 450mm pipe requires upsize to 525mm or duplication with 300mm on Heretaunga Street West	2015	2019	\$115,000	\$115,000
	Nil	300m of 525mm pipe requires upsize to 600mm or duplication with 375mm on Heretaunga Street West	2015	2016	\$225,000	\$225,000
Mahora	108m of 375mm pipe needs upgrading to 450mm pipe or equivalent duplication on Frederick Street West	Requires pipe upsize to 525mm or duplication with 300mm	2025	2025	\$80,000	\$25,000

Area	Existing Council Issue/Upgrade Required	Issue Resulting from Medium Density Development	Medium Density Programmed	Estimated Year Required	Total Cost Estimate	Marginal Cost Estimate
Mahora	132m of 450mm pipe needs upgrading to 525mm pipe or equivalent duplication on Frederick Street West	Requires pipe upsize to 600mm or duplication with 375mm	2025	2025	\$118,000	\$32,000
	Nil	Further investigate need to install stormwater infrastructure in Burnett Street if overland conveyance is unacceptable. Cost estimate based on extension of 300mm pipe and sumps.	2015/2025	2025	\$90,000	\$90,000
Havelock North	300m of 300mm pipe needs upgrading or duplication with 300mm pipe on Havelock Road	If medium density development discharges to the existing 600mm pipe no further upgrade will be required. If this is not possible, duplication with a 375mm will be required.	2015	2015	\$225,000	\$52,000
	247m of 600mm pipe needs upsizing or duplication between Campbell Street and Te Mata Road. Further investigation into this catchment is required to confirm details.	Possible increase in size of upgraded pipe required once further investigation undertaken. Worst case and marginal cost estimate based on installation of 300mm pipe to service just the medium density area.	2015	2015	Unknown	\$162,000
	Nil	63m of 225mm pipe requires upgrading to 300mm on Te Mata Road	2015	2015	\$46,000	\$46,000
	295m of 525mm pipe needs upsizing or duplication on Chambers Street. Further investigation into this catchment is required to confirm details.	Possible increase in size of upgraded pipe required once further investigation undertaken. Cost estimate based on installation of 300mm to service just medium density area.	2015	2015	Unknown	\$176,000

Area	Existing Council Issue/Upgrade Required	Issue Resulting from Medium Density Development	Medium Density Programmed	Estimated Year Required	Total Cost Estimate	Marginal Cost Estimate
Parkvale	Nil	67m of 375mm pipe requires upgrading to 450mm on Windsor Ave	2025	2028	\$61,000	\$61,000
	67m of 300mm pipe requires upgrading to 450mm or duplication with 300mm.	Need to extend stormwater infrastructure in Grove Road from Sussex Ave. Cost estimate based on 300mm pipe and sumps.	2015	2020	\$114,000	\$66,000
	95m of 300mm pipe requires upgrading to 450mm in Jellicoe Street to Grove Road	Need to extend stormwater infrastructure in Grove Road from Jellicoe Street. Cost estimate based on 300mm pipe and sumps.	2015	2020	\$144,000	\$79,000
	Nil	73m of 450mm pipe requires upgrading on Sylvan Road or provide an overland flow path with appropriate inlet and outlets within the park. Cost estimate based on duplication with 300mm diameter.	2025	2026	\$43,000	\$43,000

Table 3-3: Medium Density Upgrades Required – Water Infrastructure

No upgrades to the existing water infrastructure network are required due to medium density development.

Appendix C Testing of Comprehensive Residential Development Rule Structure

APPENDIX : TESTING OF THE PROPOSED COMPREHENSIVE RESIDENTIAL DEVELOPMENT RULES: MADDISON STREET SITE – FRANK BUSCH DESIGN LIMITED – 4 MARCH 2013

HDC: Comprehensive Residential Development: Maddison Street: OVERALL DESCRIPTION and DESIGN COMMENTS

	Development Description	Design Theory	Overall Design Comments
Option A	6 detached single storey 3 bedroom units with 1 bathroom and single garage.	Economical development option, cheap to build, minimise the costs and maximise returns for the developer. Try and jamb in (rubber stamp) as many standard simple plan single storey units. “Simple House” ¹ low risk type construction with duplicating where possible and the use of economical materials.	3 bedroom units having smallish bedrooms, one bathroom and a single garage would have limited appeal. I imagine would result in lower economic housing, possibly rentals type situations; one would consider them architecturally as “box standard”. Low risk construction wise, generally the type of units found on infill housing done by small spec builders.
	1 detached unit and 1 semi-detach unit, single storey with 2 bedrooms, 1 bathroom and single garage. (3 units total)	Setout: was to take a popular standard 3brm floor plan, allowing 3m front yard and 1.5m side and rear yards. NB: 1.5m yard allows a 600mm eave with no need to fire rate, plus able to achieve 5.0m ² utility yard. The ‘T’ shape of the unit along with the 3m front yard allowed to achieve the 30m ² open space with 4m diameter circle. For the rear sites; opted for a standard rectangle plan that was narrow enough to achieve open space with a northern aspect that did not clash with on site turning	In context with what the rules are trying to achieve, this design I would have not promoted, or presented to a client / developer (in saying that a developer wanting these specs would have not probably come to me). Though there would be others that would be happy to promote this design / layout thinking that it is perfectly OK. Negative aspects: 1 bathroom, single garage, very box like development. Marketability: Sadly in today economical market and the demand for affordable homes, this scenario would be very marketable.
Option B	4 duplexes, two-storey with 3 bedroom, 2 bathrooms and single garage.	A higher quality and amenity option that has more appeal. Two-storey, in an effort to reduce the building foot print while increasing floor	Conservative conventional design with the ability to add architecture features to enhance the appeal (dormers, exposed eave rafters, etc). 3 good size bedrooms, 2 bathrooms, living downstairs

¹ Simple House Acceptable Solution as defined by MoBIE / Dept of Building & Housing refer: <http://www.dbh.govt.nz/bc-update-article-105>

	(8 units in total).	<p>area.</p> <p>Setout: 4 units at the front with direct access to the street and 4 units at the rear feeding of a central driveway / ROW. It was logical to locate ROW in centre of site so the rear units both have equal distance to travel down the ROW, plus achieved further separation between the front units. At the head of ROW have allowed space for wheelie bins, letter boxes, recycling collection.</p>	<p>with good indoor-outdoor flow. Ability to create private sunny dual courtyards with NW aspect. Due to the courtyards size / shape they have more scope to individually landscape the space available. Having 2nd storey in the roof space reduces the bulk of the house. The double units resulted in larger side yards.</p> <p>Negative aspects: single car garaging, main bedroom upstairs a disadvantage if have mobility issues</p> <p>Marketability: In today economical climate, will be harder to sell while achieving profit. Once building economy has picked up, this scenario has good potential. But will need the right location, Maddison street is probably not the right street to pull this one off.</p>
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	Development Description	Design Theory	Overall Design Comments
<p>Option C</p>	<p>2 duplexes, two-storey with, 3 bedroom, 2 bathrooms, and single garage (4 units total)</p>	<p>Another higher quality and amenity option. This time exploring what effects having the main living upstairs, plus trying to increase density ratio.</p>	<p>Front Units: Refer to Options B comments.</p> <p>Rear Units: 3 double bedrooms, 2 bathrooms, double garaging with main living and master bedroom upstairs. The 18m² balcony provides the outdoor living space. At 189m² it is the largest unit of the 4 options.</p>
	<p>5 detached two storey 3 bedroom units with 2 bathrooms and double garage.</p>	<p>Setout: Front units: used the same duplex units as option C with direct access to the street.</p> <p>Rear units: 5 units with access via a central driveway / ROW. The garage is set back 5m from ROW, main living over the garage and 1st floor balcony (outdoor open space) over driveway. 1.5m wide side boundaries and 2.7m rear boundary (to obtain compliance with the parent site building envelope). A steeper roof pitch and lower roof / wall heights were used to obtain compliance with building envelope</p>	<p>On these smaller sites that generally are narrow, having the living up stairs enable to achieve a good size double garage. The added room in the garage with own door is ideal for cycle storage without clashing with parked cars.</p> <p>Advantage to a developer; achieving 5 units on 1205m² land, higher density, more profit. The challenge with this design was achieving compliance with building envelope. Initially there was a requirement to comply with recession planes on internal boundaries; I do feel with no control the likely scenario of having 2-3 storey full height walls in close proximity of each will dramatically reduce amount of light / sun to sides of the neighbouring building, creating a undesirable shady canyon.</p> <p>Negative aspects: main living upstairs a disadvantage if have mobility issues. All bedrooms located on south face. Bedroom 2 & 3 receive no sun in winter. Though bedroom 1 has the ability of adding roof windows to achieve sunlight. It could be argued that the garage door can be a bit dominating to front elevation.</p>

			<p>Marketability: same comment as for option C, except, you would have to gauge the market response to five detached two storey units in close proximity to each others. Whether the advantage of gaining a double garage, larger floor area out weighs the disadvantage of close living.</p>
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	Development Description	Design Theory	Overall Design Comments
<p>Option D</p>	<p>2 Terrace blocks consisting of 3 units each. Two-storey, 3 bedroom with 2 bathrooms and single garage. (6 units total),</p>	<p>Another higher quality and amenity option. This time exploring what effect terrace housing has on the development.</p>	<p>Front Units: 187.5m² two-storey terraced units. 3 bedrooms with 2.5 bathrooms, single garaging at the rear, front pedestrian entry directly off the street. North-western orientated outdoor courtyard. Generous room sizes with individual lift access to first floor bedrooms. Two NW facing bedrooms have balcony access.</p>
	<p>3 detached single storey units, 3 bedroom with 2 bathrooms and double garage.</p>	<p>Setout: Terrace units: opted for ground floor main living / outdoor living (open space) to face the street (NW orientation). This I felt provided more privacy and less street noise compared to 1st floor living. Garaging at the rear with access of central ROW. All bedrooms on first floor. Opted for 7.0m wide unit which gives generous room sizes. Front of the units needed to be set back minimum of 4.2m to achieve 4m diameter circle for the 30m² open space. This resulted in quite deep sections that in turn by the time provided space for garaging, ROW and a suitable sized sections behind, meant that the distance between the garage door and ROW ended up being 2.4m (5m is required) The sections at the rear needed to be of generous size to offset the higher density of the terraced units.</p>	<p>Ignoring the non-compliance aspects (landscaping, garage setback), this development with a single garage and no carparking area I would not promoted, or presented this to a client / developer. Elevation wise having 3 units in a line forming quite a large wall mass it is something that I would not call sympathetic and an attractive high quality development. Negative aspects: only single garaging, plus no ability to park 2nd vehicle on site (2.4m between garage door and ROW / driveway). Internal bathrooms (with skylights) and ground floor toilet. Middle unit are compromised with the amount of landscaping and outdoor courtyard available. Elevation wise not a sympathetic and an attractive high quality development. Rear Units: 141.5m² detached 3 bedroom units with 2 bathrooms, double garage, and orientated well for sun. Single storey an advantage if have mobility</p>

		<p>The only development with single driveway / ROW serving 9 units.</p>	<p>issues (no stairs). There is scope to modify plan to incorporate accessible bathroom (but will need to be one large bathroom with dual access plus 2nd toilet).</p> <p>Negative aspects: laundry in the garage.</p> <p>Marketability: the terrace units I do not think are marketable. For the cost I think you can do better. Single garaging and the lack of parking is a huge disadvantage.</p> <p>The rear units on their own would be very marketable, but not so much with the terrace units in the front as I feel there will be constant clash of vehicles and parking.</p>
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HDC: Comprehensive Residential Development: Maddison Street: SUMMARY OF FLOOR AND SITE AREAS

	Development Description	Total No. of units	Unit Floor Areas:	Building site Coverage (includes roof – birds eye view)	Landscaping	Total Development Building Floor Area	ROW Area:	Section Sizes Range	Average Density	Site Coverage (The Total Parent Site Impermeable Areas)		
Option A	6 x single storey detached 3 bedroom units, 1 bathroom, and single garage.	9	119m ² (H:94m ² , G:25m ²)	154m ² (59%)	84m ² (32.2%)	1033.5m ²	303.02 m ² (10.74%)	260.7m ² to 320.1m ²	1 unit per 279.66 m ²	2007m ² (71.71%)		
	1 detached unit and 1 double unit, single storey, 2 bedroom, 1 bathroom and single garage. (3 units total)		106.5m ² (H:81.5m ² , G:25m ²)								Lot 3: 131.48m ² (41%)	145.3m ² (45.39%)
											Lot 6: 128.5m ² (46.78%)	99.3m ² (36.2%)
											Lot 7: 128.5m ² (46.0%)	104m ² (37.3%)
Option B	4 x double two-storey 3 bedroom, 2 bathrooms, single garage (8 units total).	8	Front units:172m ² (H142m ² , G:30m ²)	167m ² (54.8% and 53.95%)	Lot 1: 69.84m ² (22.9%)	1380m ²	385.8m ² (13.68%)	301.36 m ² to 309.75 m ²	1 unit per 304.3m ²	2204m ² (78.1%)		
					Lot 2: 73.61m ² (23.76%)							
			Rear units:173m ² (H143m ² , G:30m ²)	166m ² (55%)	80.23m ² (26.53%)							
Option C	2 x double two-storey (4 units total), 3 bedroom, 2 bathrooms,	9	Front units:172m ² (H142m ² , G:30m ²)	167m ² (54.8% and 53.95%)	Lot 1: 69.84m ² (22.9%)	1633m ²	385.8m ² (13.68%)	240m ² to 309.75 m ²	1 unit per 270.44 m ²	2231m ² (79%)		
					Lot 2: 73.61m ²							

	single garage				(23.76%)					
	5 x two storey detached 3 bedroom units, 2 bathrooms, double garage.		Rear units:189m ² (H146m ² , G:43m ²)	140m ² (158%)	70m ² (29%)					
Option D	2 Terrace units consisting of 3 x two storey 3 bedroom units (6 units total), 2 bathrooms, single garage.	9	Front units: 187.2m ² (H166.2m ² , G:21m ²)	Lot 1: 127.5m ² (50.47%)	60.82m ² (24%)	1547.7m ²	447.1m ² (15.85%)	176.9m ² to 341.6m ²	1 unit per 263.65 m ²	2329.52m ² (82.6%)
				Lot 2: 120.0m ² (67.8%)	11.6m ² (6.55%)					
				Lot 3: 127.5m ² (51.76%)	55m ² (22.33%)					
				Total: 375.0m ² (55.54%)	Total: 127.42m ² (18.85%)					
	3 x single storey detached 3 bedroom units (2 bathrooms, double garage).		Rear units:173m ² (H143m ² , G:30m ²)	185m ² (54.19%)	101m ² (29.6%)					

Proposed Rules:		Designers Commentary / Analysis
DENSITY	<p>Hastings Medium Density Residential Zone</p> <p>A minimum density of one residential dwelling per 350m² net site area.</p> <p>A maximum average density of one residential dwelling per 250m² net site area.</p> <p>Any increase in residential density that is not as a result of a comprehensive residential development is a non complying activity.</p>	<p><u>Outcomes</u></p> <p><i>To ensure the land resource of this zone is used for compact residential developments.</i></p> <p><i>To ensure that development is compatible with the Hastings context and does not over time become high density.</i></p> <p><i>The land resource within the Medium Density Residential Zone is not further fragmented, helping to facilitate sites large enough for comprehensive residential development.</i></p>
BUILDING SCALE	<p>Hastings Medium Density Residential Zone</p> <p>(1) A maximum Building height of 10m provided that where a new building or structure is located within 5m of an external boundary of the parent site which adjoins a Hastings character residential or general residential zone, the maximum height of that building or structure shall be 8m.</p>	<p><u>Outcomes</u></p> <p>1) <i>The height limit restrictions will ensure a transition between existing residential development and new buildings to ensure new development will complement and not unduly affect the residential amenity levels of existing residential properties.</i></p>

Options A, B, C and D comply. Once I got out of the General Residential mode of thinking it was easily achieved. On sites less than 300m² I constantly needed to keep checking that I complied with building envelope, landscaping, open space requirements as I pushed and pulled the design. The wording highlighted reads awkward; it took me a couple reads to make sure I fully understood it and even then I'm still slightly confused. (I must point out English is not my strong point, like most designers and draughting personal) Explaining the clause to others I re worded it "maximum section size not to exceed 350m² and the overall net section sizes of the parent size shall not be less than 1 unit per 250m²"

Maximum Height: Options A, B, C and D comply. With the two-storey designs presented, the 10m maximum height restriction was never challenged. All units comply with the 8m maximum height. A 3 storey design would need to be developed complying with the density ratio to see what the likely effect will be on sun / shade would be on the individual units within the parent site sun. On wide sites shading will be less, but a narrow site like rear units on option C I feel it will have a greater effect and affect the quality of living.

I do question whether having no controls on internal

	<p><i>All Residential Zones</i></p> <p>(2) <i>Where the external boundaries of a parent site adjoin the general residential or a character residential zone boundary, all buildings shall be contained within a building envelope constructed by recession planes from points 2.75m above these site boundaries. The angle of such recession planes shall be determined for each site by use of the recession plane indicator in Appendix X.</i></p> <p>(3) <i>On any side or rear boundary of the parent site buildings shall be contained within a building envelope constructed by recession planes from points 3m above the boundary. The angle of such recession planes shall be 45° for all boundaries facing the southern half of a compass and 55° for all boundaries facing the northern half of the compass.</i></p> <p><u><i>Except that:</i></u> <i>Where two or more residential buildings on adjoining sites are connected along a common boundary the requirement for a recession plane will be dispensed with along that boundary.</i></p>	<p><i>2) Access to sunlight and daylight for residential properties in the neighbouring general residential zone will be maintained by requiring compliance with the existing general residential zone recession plane rules where the medium density zone boundary abuts the general residential zone boundary.</i></p> <p><i>3) On the external boundaries of parents sites within the medium density zone, access to sunlight and daylight will be maintained for adjoining properties by preventing tall obtrusive structures or buildings being located on boundaries.</i></p> <p><i>The exception is where buildings share a common wall, recession planes can be dispensed with. This</i></p>	<p>boundaries could result in poor designs where sunlight is blocked to neighbouring unit.</p> <p>In Option A the gable roof of a garage on the boundary of northern neighbouring property will result in lost of sun light to master bedroom window during winter months.</p> <p>The rear units of option C: The likely scenario of having 2-3 storey full height walls in close proximity of each other creating a shady canon.</p> <p>The question is will this restrict a development that has “zero lot line housing development” where the detached dwelling is located on side boundary (with a blank wall facing neighbour) and larger side yard on the other boundary</p> <p>Then again is this something that where good designs will shine through at the end of the day.</p>
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	<p><i>The height in relation to boundary recession planes are not applicable from the front road boundary of a site or where a site boundary adjoins a public open space zone.</i></p> <p><i>Where a site boundary adjoins a driveway, access lot or private road, recession planes can be constructed from the side of the driveway, access lot or private road furthest from the site boundary.</i></p>	<p><i>encourages an efficient use of land with benefits of allowing greater flexibility and the ability to create open space to compensate the increase in building bulk, in other parts of the site.</i></p>					
<p>BUILDING BULK</p>	<p>Comprehensive residential developments shall not include more than 3 residential units in a terraced or row configuration (any number of units may be attached if connected by a single level garage).</p>	<p><i>To ensure that building bulk is compatible with the existing and proposed new compact character of the Hastings Residential Environments.</i></p>	<p>Option D was only layout where I tried for a 3 unit terraced unit. It has numerous faults and more thought is needed to get the negative aspects resolved (single car garaging, lack of parking, middle units landscaping,). Possibly living on first floor, with bedrooms and gargaie on ground floor. Open space provided by 1st floor balcony Also having 3 units in a line in one block has resulted in quite a large building bulk. Needs more thought, possibly having the units set back to break up the big wall effect.</p>				
<p>STORM-WATER</p>	<p>The peak stormwater runoff from the parent site of the Comprehensive Residential Development shall not exceed the following standards</p> <table border="1"> <tr> <td>5 year ARI</td> <td>0.5</td> </tr> <tr> <td>50 year A</td> <td>0.6</td> </tr> </table> <p>The peak stormwater runoff shall be</p>	5 year ARI	0.5	50 year A	0.6	<p><i>The potential negative environmental effects associated with the increase in stormwater runoff created by the comprehensive residential development activity will be avoided, remedied or mitigated.</i></p>	<p>The requirements were not tested, was not part of the brief. Though I would be interesting to see what the requirement will be needed for a development that has 71.71% to 82.6% impermeable site coverage.</p>
5 year ARI	0.5						
50 year A	0.6						

	<p>calculated in accordance with the rational method.</p> <p>Note: See HDC website link to assist with calculations</p>		
<p>OUTDOOR LIVING SPACE</p>	<p>At least 30m² of outdoor living space shall be provided for each unit. This can be provided through a mix of private and communal areas, at ground level or in balconies, provided that:</p> <p>a. Each unit shall have a minimum of 20m² of ground-level private outdoor living space that is directly accessible from a principal living area of that unit,</p> <p>b. Private outdoor living space shall have a minimum dimension of 2.5m and shall be able to accommodate a 4m diameter circle, when provided at ground level and a minimum dimension of 2m when provided by a balcony.</p> <p>c. Private outdoor living space shall be north facing, that is north of east or west.</p> <p>Except that:</p> <p>d. Where the principal living area of a unit is located above ground</p>	<p><u>Outcome</u></p> <p><i>To ensure residents have adequate outdoor living space for their recreation and amenity and that this space is private, sunny and has direct access from internal living areas.</i></p>	<p>This was generally easily achieved resulting in ideal spaces.</p> <p>I agree outdoor living shall be north facing (located north of west or east)</p> <p>Whether this part is construed as obstructed by building</p> <p>A small query: is a covered terrace area (roof over which is supported by post and beam) can this be counted as part of the 30m² open spaces. Generally I have excluded this. But on the terrace middle unit (Option D), where it was a challenge to get compliance, I included part of the covered terrace that has 1st floor balcony over. Could this be construed as obstructed by building? If I included covered terraces (including structural post and beams) I could of have reduced amount of outdoor living space.</p> <p>Clause (b) and (d) the minimum dimensions stated contradict. Or the intent of (b) is not quite clear (for when you have a secondary outdoor space provided by a balcony)</p> <p>Minimum balcony dimensions: 15m² with a 3m minimum dimension will provide a generous balcony, but feel that might be too restrictive dictating uniform shapes (rectangles) and possibly structurally have restrictions (balcony floor structure, combined with floor levels clearances and). A suggestion of 15m² with 2.5m circle and a minimum dimension of 1.2m might provide more flexibility and scope for non uniform shapes.</p>

	<p>level, a minimum of 15m² of outdoor living space shall be provided by a balcony directly accessible from such an area. The balcony shall have a minimum dimension of 3m and shall face north of east or west.</p> <p>e. Any communal outdoor living space provided shall be accessible for use by all units and shall have a minimum dimension of 4m and be capable of containing a circle with a diameter of 8m. This space can be provided either outdoors or indoors (in the form of a communal hall for example) provided that its use is explicitly for a recreation activity for the exclusive use of residents and guests of the units on the site.</p>		
<p>LANDSCAPING</p>	<p>A minimum of 20% of each individual unit site shall be landscaped with vegetation cover which can be in the form of grassed lawn, garden beds, trees and shrubs or a combination of the above.</p>	<p><u>Outcome</u></p> <p><i>To ensure that the ratio of open permeable space to covered (paved/built) space is balanced with the ability of the site to provide vegetation that improves outlook, privacy and softens building forms and to provide a minimum area for stormwater soakage to reduce runoff.</i></p>	<p>20% landscaping was generally easily achieved on all scenarios except for the middle terrace unit (11.6m² 6.55%). The two end units I managed to comply with the open space and landscape requirements.</p>
	<p>(1) Where the parent site adjoins a Local Road, a front yard setback</p>	<p><u>Outcomes</u></p>	<p>Being a Local Road, the 3m setback was easily achieved on all scenarios. Plus the road being located</p>

RELATIONSHIP OF BUILDING TO STREET

of 3m shall apply to all buildings. Where the road boundary of a parent site adjoins a collector or arterial road the front yard setback for all buildings shall be 5m.

However, an entrance feature (portico, veranda/porch or covered pergola) or bay window may extend up to 1.5m into the front yard setback for a maximum (combined) width of 3.0m to emphasise an entrance or building frontage.

Each residential unit shall have a visible front door entrance and a principal living area window that faces the public street, private road or main pedestrian access or driveway of the unit.

- (2) The maximum height of any fence between each residential unit and the front road boundary of the parent site or any fence that faces a private road or main pedestrian access or driveway shall be 1.2m (if solid) or 1.8m if designed in an open style. Solid fences or walls are permitted to provide privacy. They shall be level with or behind the wall of

To ensure that the front public space between the dwelling and the street is defined and there is adequate space to ensure the amenity of the residential area is maintained.

A clear visual connection between each unit and the street or main entrance to the development is provided. This adds visual interest to the streetscape and improves pedestrian and residential amenity. Clear visual connections enable passive surveillance which improves the safety of people and property.

To maintain the visual connection between the dwelling frontage and the street to ensure passive surveillance can occur. The amenity of the streetscape is enhanced by low and/or permeable fencing.

on the NW boundary, it naturally formed part of the open space area, which requires a minimum dimension of 2.5m.

A 5m setback for collector or arterial road no doubt result in a lesser density development, but will be in context with neighbouring properties.

Visible front door: Option C Rear Units: Though garage door dominates the ground floor front elevation. The front door located on northern side yard can be enhanced by a pergola to entice visitors down the side of the house. This is likely to happen on well thought out architecturally designed house, but probably likely to be left off on the “run of the mill spec house”.

The fencing aspects have not been conveyed on test examples, but would need to be shown to demonstrate compliance. I feel this is an important feature that can break or make a development. A well thought out landscaped / fencing all designed in context with the development just enhances the development. A lot of times this is left to owner and sub contractors to decide at end of the build, resulting in unsympathetic rows of colorsteel fencing.

Garage setback: Option C Rear units: Though at ground level the garage door is in front, it could be argued that the balcony over that extends 3m in front is considered the front of the house.

Option D terrace units:

	<p>the house fronting the road, private road or main pedestrian access.</p> <p>(3) Garages or carports shall be setback at least 1m from the front facade of the residential unit and 5m from the road boundary of the site or internal private road.</p>	<p><i>Where garages or carports are not accessed via rear lanes or courtyards, they shall be setback from the street and front dwelling facade so that they do not dominate the street.</i></p>	<p>Due the configuration of the units (living downstairs with out door open space to NW street side, garaging was provided at the rear. This resulted in 2.4m from garage door to ROW / driveway (private road)</p>
<p>SERVICE / UTILITY AREA / DELIVERIES</p>	<p>(1) Each residential unit shall be provided with an outdoor service, rubbish and recycling storage space of 5m² with a minimum dimension of 1.5m.</p> <p>(2) Outdoor service and storage spaces shall not be located between the residential unit and the road boundary and shall be screened from the unit's outdoor living space, any adjoining unit or adjoining public open space or residential zone.</p>	<p><i>To ensure that an adequate service area that is separate and screened from outdoor recreation space is provided for clotheslines, rubbish and recycling storage.</i></p> <p><i>Locating and screening storage and service areas away from the public street and private recreation areas will ensure that the residential amenity of the area will be maintained.</i></p>	<p>5.0m² was easily achieved on all scenarios. I have allowed for more.</p> <p>At 5.0m² I considered it is the minimum you want to have, as a foldout clothesline at 2.2m x 1.2m can just be accommodated in 2.5 x 2.0m space (5m²). There are probably other clotheslines on the market that can be accommodated in smaller spaces, but when you think of how much space sheets and towels take, I would opt for bigger clothesline.</p> <p>On some of the scenarios the utility space ended up on a southern face, which is unlikely to be a great place for clothesline.</p> <p>Agree with the screening from public street and private recreation areas, though personally would screen from ROW and adjacent neighbour so they did not look directly at utilities area.</p> <p>Possibly a rule / provision needs to be made at the head of the ROW for wheelie / recycling / mailboxes such that they do not clutter footpath or the ROW / driveway in a cluster and become a nuisance</p>

Proposed Assessment Criteria

I feel the aspects covered in the criterion are thorough and covers a wide range design issues that I feel will help to achieve the desired developments. Though personally I did find myself reverting back to the earlier version (received 5 Nov 12) that had wordier description / explanation to give guidance on what is required. That could be due to unfamiliar to this type of development and rules. On a development of this nature I would personally advise the client / developer to engage a town planner to prepare application, such that it is prepared in correct format and manner.

Also I would recommend a pre planning meeting with HDC early in the design stage with key town planning and other key personnel from utilities, roading to get feedback, likely design issues. This might involve several meetings as the design develops.

Controlled Activity Verses Restricted Discretionary Activity

If the goal is to create a higher quality residential environment I do feel there needs to have the ability to control or restrict certain developments. As demonstrated **Option A** consisting of nine "box standard" residential units complies with the rules as laid out, and as a Controlled activity cannot be declined. Which I believe is not in context with what the Comprehensive Residential Development rules is all about. I feel that more control is required to ensure high quality residential developments are achieved.

Conclusion:

Once I got myself familiar with the rules and intent of Comprehensive Residential Development (Assessment Criteria) plus got out of the General Residential mode of thinking the rules were easily enough to circumvent and apply. Though on sites less than 300m² I constantly needed to keep checking that I complied with building envelope, landscaping, open space requirements as I pushed and pulled the design. I imagine after first you will be aware of the aspects to watch out for. Though I do believe every site will be different and have their own unique design issues to be resolved.

At the end of the day I do think that it is really going to come down to developer and designer to what level of specification they are prepared to go to and what the market is prepared to pay.

Suggestions:

Change balcony to 15m² with 2.5m circle and a minimum dimension of 1.2m, to provide more flexibility

Working on comprehensive residential development is a lot more challenging than General Residential you do need to be aware of space created, shading effects and what sort of space it is going to create and whether it is going to be higher quality residential environment that provide good quality of living.

Frank Busch
Director / Architectural Designer
NZCD Architectural
LBP Design 2

Appendix 2 – Draft Performance Standards for Comprehensive Residential Development

The following outlines the draft proposed standards for Comprehensive Residential Development (CRD) in the City Living Zone and the specific areas identified as suitable for CRD in the General Residential Zone and Character Residential Zone.

7A.6.5 COMPREHENSIVE RESIDENTIAL DEVELOPMENT

Note in the following provisions the term 'parent site' is used. This term means the site on which the comprehensive residential development is to take place. In some situations the parent site could be made up of multiple smaller sites which are combined to provide the area for the comprehensive residential development. Where a comprehensive residential development is intended allow the individual residential units to be sold separately the parent site will be subdivided to allow for this.

1) DENSITY

(a) Hastings General Residential Zone

The following standard applies on land identified in Appendix x

- i) A maximum net site area of 350m² per residential dwelling.
- ii) A minimum net site area of 250m² per residential dwelling.

To allow an increase in density on land specifically identified as being suitable for comprehensive residential development while ensuring that their intensity does not detract from the character of surrounding residential properties

iii) Comprehensive Residential Development outside of the areas identified in Appendix X shall comply with rule 7A.5.1 .

Enabling comprehensive residential development within the wider general residential zone at an appropriate density.

(b) Hastings Character Residential Zone

The following standard applies to land identified in Appendix x.

- i) A minimum net site area of 350m² per residential dwelling.

To allow an increase in density on land specifically identified as being suitable for comprehensive residential development while ensuring that the unique characteristics of these areas are not undermined.

(c) Hastings City Living Zone

i) A maximum net site area of 350m² per residential dwelling.

To ensure the land resource of this zone is used for compact residential developments.

ii) A minimum average net site area of 250m² per residential dwelling

To ensure that development is compatible with the Hastings context and does not over time become high density.

Note:

Any increase in residential density in the Hastings City Living Zone that is not as a result of a comprehensive residential development is a non-complying activity.

The land resource within the City Living Zone is not further fragmented, helping to facilitate sites large enough for comprehensive residential development.

2) BUILDING SCALE

Height

Outcomes

(4) A maximum Building height of 10m provided that where a new building or structure is located within 5m of an external boundary of the parent site, the maximum height of that building or structure shall be 8m.

1) The height limit restrictions will ensure a transition between existing residential development and new buildings to ensure new development will complement and not unduly affect the residential amenity levels of existing residential properties.

Height in relation to Boundary Control

(5) On any side or rear boundary of the parent site (including all proposed internal boundaries) buildings shall be contained within a building envelope constructed by recession planes from points 3m above the boundary. The angle of such recession planes shall be 45⁰ for all boundaries facing the southern half of a compass and 55⁰ for all boundaries facing the northern half of the compass.

2) On the external and proposed internal boundaries of parent sites within the City Living Zone, access to sunlight and daylight will be maintained for adjoining properties by preventing tall obtrusive structures or buildings being located on boundaries.

Except that: Where two or more residential buildings are connected (or attached) along a common boundary the requirement for a recession plane will be dispensed with along that boundary.

The exception is where buildings share a common wall, recession planes can be dispensed with. This

- (6) Where the external boundaries of a parent site adjoin a General Residential or a Character Residential zone boundary, all buildings shall be contained within a building envelope constructed by recession planes from points 2.75m above these site boundaries. The angle of such recession planes shall be determined for each site by use of the recession plane indicator in Appendix X.
- d) The height in relation to boundary recession planes are not applicable from the front road boundary of a site or where a site boundary adjoins a public open space zone.
- e) Where a site boundary adjoins a driveway, access lot or private road, recession planes can be constructed from the side of the driveway, access lot or private road furthest from the site boundary.

3) BUILDING BULK

- a) Comprehensive residential developments shall not include more than 3 residential units in a terraced or row configuration (any number of units may be attached if connected by a single level garage).

encourages an efficient use of land with benefits of allowing greater flexibility and the ability to create open space to compensate the increase in building bulk, in other parts of the site.

3) Access to sunlight and daylight for residential properties in the neighbouring general residential and character residential zones will be maintained by requiring compliance with the existing general residential zone recession plane rules where the City Living Zone boundary abuts the general residential zone boundary.

Outcome

To ensure that building bulk is compatible with the existing and proposed new compact character of the Hastings Residential Environments

4) OUTDOOR LIVING SPACE

At least 30m² of outdoor living space shall be provided for each unit. This can be provided through a mix of private and communal areas, at ground level or in balconies, provided that:

- f. Each unit shall have a minimum of 20m² of ground-level private outdoor living space that is directly accessible from a principal living area of that unit.

Outcome

To ensure residents have adequate outdoor living space for their recreation and amenity and that this space is private, sunny and has direct access from internal living areas.

- g. Private outdoor living space shall have a minimum dimension of 2.5m and shall be able to accommodate a 4m diameter circle, when provided at ground level and a minimum dimension of 2m when provided by a balcony except when it is wholly provided above ground level (see d).
- h. Private outdoor living space shall be north facing, that is north of east or west.

Except that:

- i. Where the principal living area of a unit is located above ground level, a minimum of 15m² of outdoor living space shall be provided by a balcony directly accessible from such an area. The balcony shall be able to accommodate a 2.5m diameter circle, have a minimum dimension of 1.2m and shall face north of east or west.
- j. Any communal outdoor living space provided shall be accessible for use by all units and shall have a minimum dimension of 4m and be capable of containing a circle with a diameter of 8m. This space can be provided either outdoors or indoors (in the form of a communal hall for example) provided that its use is explicitly for a recreation activity for the exclusive use of residents and guests of the units on the site.

5) LANDSCAPING

A minimum of 20% of each individual unit site shall be landscaped with vegetation cover and must include the planting of 1 specimen tree of minimum height of 2m at planting (size PB95) for every 10m of road frontage of the parent site. In general, landscaping can be in the form of grassed lawn, garden beds, trees and shrubs or a combination of the above.

Outcome

To ensure that the ratio of open permeable space to covered (paved/built) space is balanced with the ability of the site to provide vegetation that improves outlook, privacy and softens building forms and to provide a minimum area for stormwater soakage to reduce runoff. The planting of specimen trees along the public road frontage of the site will improve streetscape amenity.

6) RELATIONSHIP OF BUILDING TO STREET

- (4) Where the parent site adjoins a Local Road, a front yard setback of 3m shall apply to all buildings. Where the road boundary of a parent site adjoins a collector or arterial road the front yard setback for all buildings shall be 5m.

However, an entrance feature (portico, veranda/porch or covered pergola) or bay window may extend up to 1.5m into the front yard setback for a maximum (combined) width of 3.0m to emphasise an entrance or building frontage.

Each residential unit shall have a visible front door entrance and a principal living area window that faces the public street, private road or main pedestrian access or driveway of the unit.

Outcomes

To ensure that the front public space between the dwelling and the street is defined and there is adequate space to ensure the amenity of the residential area is maintained.

A clear visual connection between each unit and the street or main entrance to the development is provided. This adds visual interest to the streetscape and improves pedestrian and residential amenity. Clear visual connections enable passive surveillance which improves the safety of people and property.

- (5) The maximum height of any fence between each residential unit and the front road boundary of the parent site or any fence that faces a private road or main pedestrian access or driveway shall be 1.2m (if solid) or 1.8m if designed in an open style. Solid fences or walls are permitted to provide privacy. They shall be level with or behind the wall of the house fronting the road, private road or main pedestrian access.

To maintain the visual connection between the dwelling frontage and the street to ensure passive surveillance can occur. The amenity of the streetscape is enhanced by low and/or permeable fencing.

- (6) Garages or carports shall be setback at least 1m from the front facade of the residential unit and 5m from the road boundary of the site or internal private road.

Where garages or carports are not accessed via rear lanes or courtyards, they shall be setback from the street and front dwelling facade so that they do not dominate the street.

7) SERVICE / UTILITY AREA / DELIVERIES

- (3) Each residential unit shall be provided with an outdoor service, rubbish and recycling storage space of 5m² with a minimum dimension of 1.5m.

To ensure that an adequate service area that is separate and screened from outdoor recreation space is provided for

clotheslines, rubbish and recycling storage.

- (4) Outdoor service and storage spaces shall not be located between the residential unit and the road boundary and shall be screened from the unit's outdoor living space, any adjoining unit or adjoining public open space or residential zone.

Locating and screening storage and service areas away from the public street and private recreation areas will ensure that the residential amenity of the area will be maintained.



APPENDIX 3 – DRAFT ASSESSMENT CRITERIA FOR COMPREHENSIVE RESIDENTIAL DEVELOPMENT

7A.7.9 Comprehensive Residential Developments

Important Note: Refer to the *Intensive Comprehensive Residential Development Guidelines* for details on how to achieve these assessment criteria. Web link to add.

- a) Neighbourhood Context*** Whether the development is in the appropriate location to meet resident’s needs. Specific regard will be given to the following design attributes:
- (*this criteria is applicable to developments outside the City Living Zone)*
- Proximity to Community Facilities
 - Proximity to Places of Employment
 - Proximity to Commercial facilities
 - Proximity to Recreational facilities
 - Proximity to Public Transport
- b) Site Context** Whether the development is well integrated into the existing local context. Specific regard will be given to the following design attributes:
- Sunlight
 - Wind
 - Views
 - Landform
 - Vegetation
 - Heritage Buildings
 - Materials
- c) Streetscape** Whether the development makes a positive contribution to the public streetscape. Specific regard will be given to the following design attributes:
- Street boundary treatment
 - Public safety
 - Attractiveness to encourage walking
 - Legibility (how easy it is to find your way)
- d) Site Layout** Whether the development is fitting with the size and proportions of the site. Specific regard will be given to the following design attributes:
- Bulk and Location
 - Public versus private outdoor space
 - Private outdoor space
 - On-site landscaping



- Stormwater management
 - Car Parking and access
 - Service areas and utilities
- e) **Building Form and Appearance** Whether the development is an appropriate architectural quality and is aesthetically pleasing. Specific regard will be given to the following design attributes:
- Mass and proportions
 - Diversity and repetition
 - Roofs
 - Windows and doors
 - Façade detailing and materials
- f) **Internal configuration** Whether the internal arrangements of spaces and functions in the dwellings of the development is useable, efficient and pleasant. Specific regard will be given to the following design attributes:
- Internal / external relationship
 - Size of rooms
 - Visual and aural privacy both within the dwelling and between neighbouring dwellings
 - Orientation /passive solar energy
 - Natural ventilation
 - Views

7A.7.11 All Activities within the Hastings Character Residential Zone (including Comprehensive Residential Development)

- a) **Compatibility with Context** The extent to which the building, addition or alteration is compatible with the existing building and those in the surrounding character area.
- b) **Effect on character of the zone**
- 1) The extent to which the proposed work adversely affects the existing character of the area in which it is located and what measures have been taken to avoid, remedy or mitigate any potential adverse effects. Specific regard will be given to the following:
 - a) Location and form of new construction relative to the existing

Explanation

Character areas are a vital part of the District's historic and architectural heritage and provide high quality residential environments. As recognised in the objectives and policies, the character or appearance of a character area should be preserved or enhanced. This does not mean that old styles must be copied, but the emphasis must be on compatibility with the existing character or appearance of an area and ensuring that additions or alterations to buildings maintain the intrinsic qualities of the building.

building and nearby buildings in terms of scale, balance and proportion.

- b) Architectural style and quality of new construction.
- c) Construction materials and detailing including the proposed colour scheme.
- d) Whether the proposed work is sympathetic to the historical subdivision and building setback patterns of the area.
- e) Whether any significant existing building features would be removed, obscured or otherwise compromised.
- f) Design elements such as parapets, roofs, walls, columns, windows and decorative elements.
Location and design of services, such as heat pump external units, gas bottles, utility access points.

2) **Landscaping** - A landscaping plan is submitted with the application, showing how the character and amenity of the neighbourhood will continue to be maintained. The landscaping plan shall consider the following matters:

- a) The extent to which existing vegetation is retained.
- b) The extent to which new tree plantings are proposed, and whether this adequately softens the affect of built form. This may include an assessment of the species selection and whether replacement plantings adequately replace the loss of existing trees.
- c) The configuration of the site and whether enforcement of the standard would place an unreasonable burden on neighbouring properties due to shading or leaf drop.

Appendix D Economic Overview



OCTOBER 2013

HASTINGS MDH RESIDENTIAL ASSESSMENT
ECONOMIC OVERVIEW STAGE 2

HASTINGS DISTRICT COUNCIL



Code	Date	Information / Comments	Project Leader
50852.4	October 2013	Report	Phil Osborne / Tim Heath

DISCLAIMER

Property Economics has taken every care to ensure the correctness of all the information contained in this report. All information has been obtained by what are considered to be reliable sources, and Property Economics has no reason to doubt its accuracy. It is however the responsibility of all parties acting on information contained in this report to make their own enquiries to verify correctness. This document has been prepared for the use of Hastings District Council only. Copyright © 2013 by Property Economics Ltd.



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1. INTRODUCTION

Property Economics has been engaged by MWH, on behalf of Hastings District Council (“HDC”), to provide an economic assessment and perspective on the proposed Medium Density Housing (“MDH”) direction for HDC. This assessment includes the economic viability of MDH in Hastings both in terms of the demand and supply side of the market.

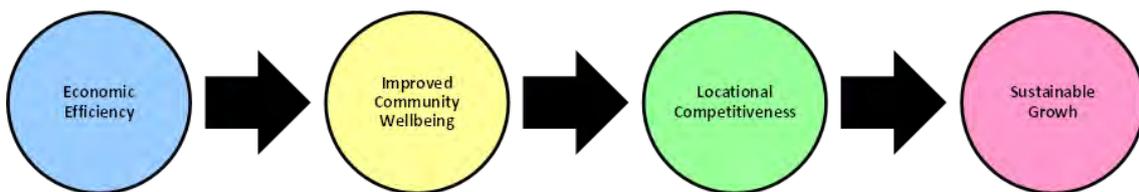
The market for residential development will be assessed in terms of the level of competition for development when comparing the market reaction to both ‘infill’ and greenfield residential activities. It will primarily be assessed in relation to the objectives set out in Heretaunga Plains Urban Development Strategy (“HPUDS”) and the likelihood of attaining MDH goals under the current planning framework, and incentives or policies necessary to achieve these.

2. APPROACH

The following report relates to the residential housing market in Hasting District and the need and ability for the market to provide a more efficient and economically enabling residential development direction for the future.

While this assessment addresses economic efficiency (key in the RMA assessment of policies and plans), it is important to understand that this position does not run contrary to the objectives of Council, but is simply the pursuit of these goals in the long term.

The pursuit of economic efficiency in residential development has potential short-run costs associated with market changes and relative competitiveness (very much like the imposing of stricter regulations on industrial pollution with a community disbenefit than competing districts). In the long-run however the sustainable utilization of these resources is a much more competitive position.



The assessment includes:

- Economic justification for intervention
- The position currently transpiring in Hastings District and the likely future effects
- International and national positions on residential development locations, specifically greenfield
- Potential approaches to market intervention
- Recommended approach to rebalance including likely market response and alignment with Council objectives
- Further issues and monitoring

3. MEDIUM DENSITY HOUSING MARKET

3.1. GREENFIELD VS BROWNFIELD (MDH INFILL) HOUSING DEVELOPMENT AND ECONOMIC JUSTIFICATION FOR INTERVENTION

The facilitation and encouragement of Medium Density Housing is not about reducing residential housing options but about providing these options at appropriate levels. This includes clear recognition that some residential options generate much greater costs that are often borne by the community as a whole. The argument relating to the development of infill (including brownfield) residential development over greenfield development is one of efficiency.

Economic efficiency is pivotal when providing for sustainable resource use, this efficient use is key in regard to economic well-being. As stated, this efficiency should not be a rationalisation for the protection of individual developments, however, what is essential is the identification of any distributional effects. These distributional effects are costs or benefits that are not considered by the market and yet are critical to enhancing the community's economic and social well-being.

The market is a powerful mechanism for the efficient allocation of resources and all too often unnecessary intervention causes markets to operate inefficiently with potential benefits lost to the community in order to protect private concerns. However, it is essential that the market 'prices' these resources appropriately otherwise it fails to consider total community well-being.

Justification for intervention in the location and type of residential development is based around the cost of allowing dispersed activity which are significant and are not considered by the market, such as increased infrastructure costs, reduced transport efficiencies, inefficient land use, as well as reduced community amenity. These are factors that an individual participant in the market does not always consider, not just the impact of these costs on themselves but the cost of their decision on others. The opposing costs of not allowing residential to spread are potentially increased residential prices and reduced development. These are costs that, as explained in Appendix 1, are likely to be far outweighed by the benefits of intensive land utilisation. The continued expansion of residential would not only incur increasing social costs but has the potential to stifle innovation and produce a dispersed community.

Planning is about informed value judgments and restricting individual choice for the benefit of the entire community's well-being. The values that are associated with intensive housing options often require a critical mass to be realized and as such few in a completely liberal

market would choose this option without some form of certainty that this mass will be achieved.

There is a clear distinction between what are pecuniary and true externalities. Pecuniary externalities equate simply to market effects which are not, and should not be, considered under the RMA. True externalities have a real impact on the efficiency level of a market thereby affecting community well-being. The impact of externalities, their need for inclusion and market efficiencies are explained further in Appendix 1. Externalities occur when one person's actions affect another person's well-being and the relevant costs and benefits are not reflected in the market prices.

It is important when considering the economic impact of greenfield residential development on community well-being to assess the total costs and benefits rather than the marginal or additional costs and benefits. This is an important point especially with regards to the community value of increased residential intensity. For example, the loss of residents in a centralised area will have a marginal impact on vitality and the sense of community. This change is extremely difficult to assess comparatively however, for example residents would need to be asked what impact on the community value a 10% decrease in residents in a given area would have on the value they place on that area.

Therefore, when making a decision on the likely impacts consideration must be had for the total value (cost and benefits) and the likely proportional (incremental) impact on the variables affecting these (e.g. the number of residents living in a geographic area). Often however a value judgment must be made by public decision makers as to the comparative values of these costs and benefits.

Economic literature relating to greenfield development sometimes deem existing infrastructure as 'sunk costs', costs that should not be considered when assessing the efficiency of policy and plan options due to the fact that they have been paid for. This seems contrary to the premise that decisions should be made in terms of the most efficient use of resource in order to enhance community well-being. In fact what are seen, in this regard, as sunk costs are in fact community investments that must be considered in terms of their initial costs (and hence on-going opportunity cost) to society. Even if the investment is irrecoverable (hence not property etc.) there is still a need to have regard for this investment, especially if not considering this leads to a duplication of facilities.

The 'free market approach' to housing in Hastings will inevitably result in a degree of externalities and loss of efficiencies. If the market is left to determine the level of greenfield development to brownfill (or Medium Density Housing) it will only consider the private costs and benefits associated with this market and will not consider the greater social costs associated with greenfield development. Given the levels of residential development in Hastings and the markets propensity towards greenfield development, it is unlikely that there will be a significant impact on competition brought about by the active

support of MDH, relative to the potential losses to the community from decentralised residential activity.

Due to the fact that the potential losses to the community of allowing continued decentralisation are so great, in this environment, and the likely risks to the economy and community of MDH are so limited, it is entirely prudent to assume a precautionary stance on this issue. There is an important balance to be maintained between protecting community benefits and potentially stifling positive growth. Given the current residential environment however it is more likely that the former will occur in Hastings. It is not the role of the Council to restrict competition or protect commercial interests, it is however its role to protect and enhance the community's social and economic well-being.

Given the current environment in Hastings greenfield residential development is effectively being subsidised through either the existing rates base or any level of infill housing undertaken.

3.2. THE RESIDENTIAL MARKET IN HASTINGS

The key consideration here is whether there exists an issue with the current form of residential development in the Hastings District and what economic position the community is likely to find itself in the future given these market trends.

Figure 1 illustrates the geospatial locations of residential building consents over the past 15 years. These show a clear penchant within the residential market for decentralised greenfield development sites.

The 2005 HUDS interim review identified the continuing trend for greenfield residential development that sat above the HUDS parameters, 'Greenfield development has accounted for around 45% of all residential development over the review period'. The areas identified in this report continue to show the majority of Hastings residential building growth for the entire 15-year period. In fact over the past 6 years since this review greenfield development has continued to grow and as such are not and are unlikely to meet HPUDS targets.

Figure 1 clearly shows that there has been little infill development in Hastings over the entire period. The 2005 review noted that infill accounted for as little as 8% of all residential growth since 1999, this proportion has not seen any significant change over the last 6 years.

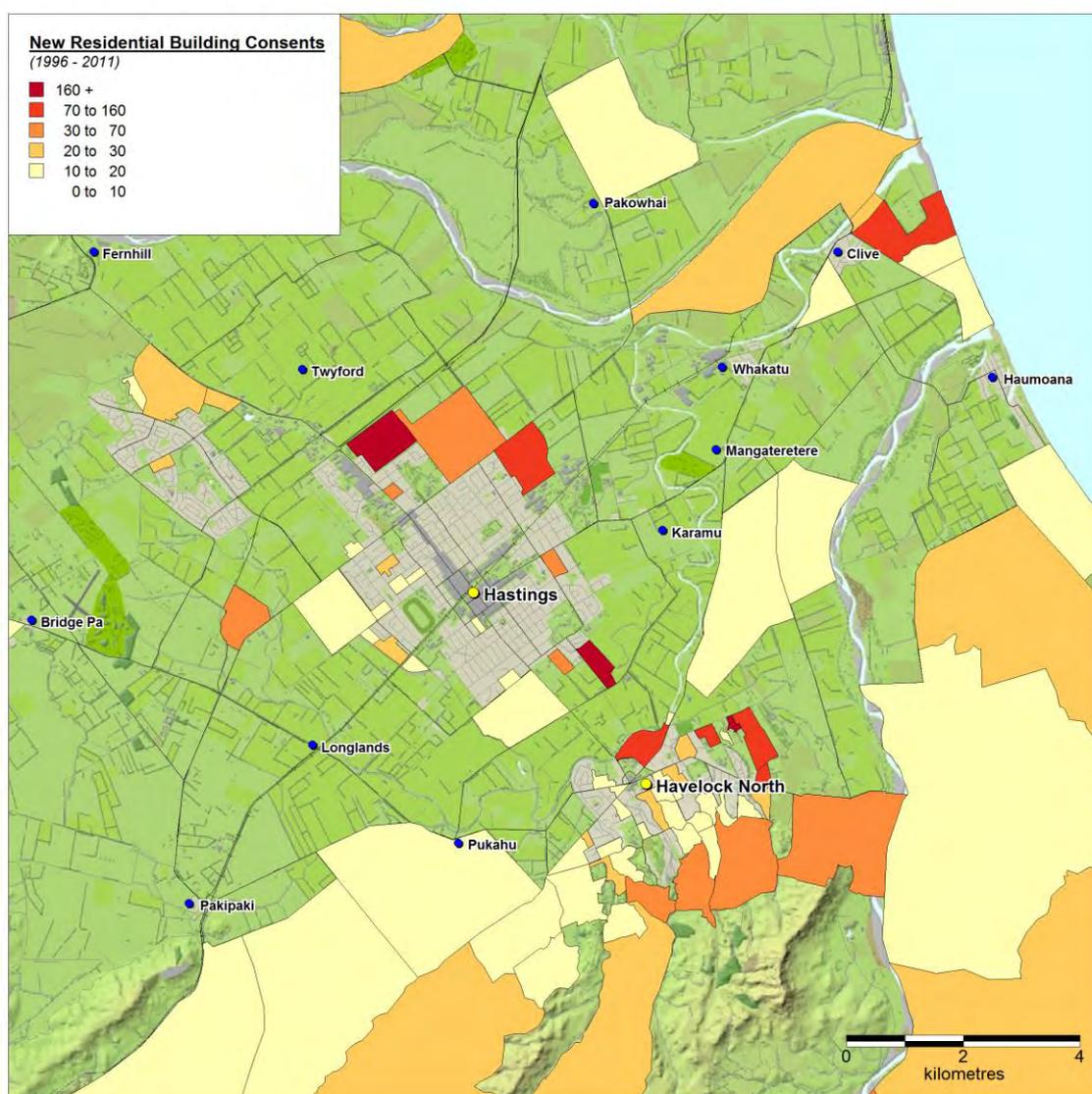
The issues, identified in the review, for this lack of growth in infill included:

- Capacity in more popular areas
- Greenfield sites coming on stream

- Lack of incentives for infill
- Lack of amenity renewal and generation in infill areas
- Costs of compliance

Revised parameters set an infill target of 15% due to existing capacity. Stage 1 of this MDH report illustrated that there exists more than enough capacity (potentially viable supply) and also potential market demand to fulfill this and longer term targets set out in that report.

FIGURE 1: RESIDENTIAL BUILDING CONSENTS DISTRIBUTION (1996 – 2011)



Source: Property Economics

The inherent difficulties in reaching these targets in Hastings are on both the supply and demand side. Given the current Hastings District Plan potential development of infill housing represents greater levels of risk that are not recognized in any alleviating way within the Plan itself. For all intents and purposes (in terms of the market) greenfield development is treated in a similar manner with significantly less market risk, costs and therefore larger profit margins. As has been previous outlined the development of greenfield sites do not current internalised the total cost to the community of this development and therefore enjoy an inequitable competitive advantage over infill development. In terms of demand infill areas do not currently exhibit levels of residential intensity that create amenities and other factors that would encourage residents to locate here.

Without clear signals to the market the targets of HPUDS are unlikely to occur within the timeframes. It is clear that the objective to is create efficiency while providing a choice in housing options and maintain a level of affordability. Providing seemingly cheap greenfield land does not necessary reach these goals are it represents a potentially significant real cost to the community's economic and social future growth aspirations.

Given the relative lack of congestion (of traffic and resources) in Hastings many of the accessibility arguments seem insignificant, however the future competitiveness of both the lifestyle and business growth (especially rural) rely on an efficient land use.

3.3. INTERNATIONAL AND NATIONAL POSITIONS ON GREENFIELD RESIDENTIAL DEVELOPMENT

Many of the documented positions on the subject and efficiencies around residential development options deal with larger areas and greater populations that note significant congestion and land uptakes. However the premise behind these positions remain the same and are often national documents designed to be implemented at a local level.

Such a document is the UK's National Planning Policy Framework ("NPPF"). This policy sets out for local governments where residential development should take place. In its approach to greenfield development it replaces the PPS3 which set a target of 60% of housing on brownfield land and sets out a 'brownfield sites first' priority.

This new policy recognises the additional cost (or foregone benefit) of continuing to develop greenfield sites at a level that the market would dictate and puts in place a hierarchy in which greenfield developments must show that they represent a net value to the community or that there does not exist a brownfield alternative.

It is of interest to note that the original policy setting brownfield rates at 60% were successful at achieving this target. However the wider impact was a decrease in overall housing stock as brownfield increased at a slightly higher rate but greenfield fell

significantly. Ultimately the impact of the PPS3 would have been to increase residential prices beyond the influencing market factors.

Other such approaches to greenfield residential development in Toronto Canada and Portland United States showed significant increases in infrastructure costs. Research undertaken in the US showed on a typical (45 acre site) that infrastructure costs for greenfield developments (even with access to existing infrastructure) were \$11,000 household higher than the equivalent brownfield site, while the public benefits for brownfield sites (household) were \$US870 greater per annum.

Both Toronto and Portland Plans had in place financial incentives to encourage infill development, these were often in the form of subsidized development insurance (a considerable cost in North America). The EPA has also instituted a Smart Growth Brownfield grant program.

Key restrictions found in the US assessment on infill housing were

- The need for leadership to proactively plan and zone areas for redevelopment and to make strategic investments in infrastructure and public services.
- Current zoning is typically not appropriate for the type or intensity of development to make development feasible.
- Land assemblage and acquisition and the current development pattern.
- Lack of financial incentives to encourage infill development.
- Obtaining financing for mixed-use projects and brownfield redevelopment projects is difficult.
- Neighborhood opposition to higher density and infill development.
- Approval and permitting processes are inconsistent, inefficient, and lengthy.

This assessment found the same market for brownfield as exists for the MDH Strategy in Hastings:

'Brownfield sites come with stigmas. For many developers, the unknowns and the difficulties of developing a brownfield site are too great. It is perceived that suburban greenfield sites are easier to develop and less constrained than urban brownfields. This perception is also shared by site selectors, who are under contract for users to find them a location for a new investment. Issues of liability, cost and risk are all part of this challenge. This dilemma can make it difficult for brownfield sites to get full exposure in the market and make it difficult for sites to be considered for redevelopment.'

The result of this is that most difficult brownfield sites require experienced developers who have extensive knowledge with redeveloping these sites. Traditional developers tend to shy away from these sites. It is therefore necessary for outside parties, such as public agencies with a desire to have brownfield sites redeveloped, to create relationships with experienced brownfield developers.

The old saying of “location, location, location” in real estate is as valid in brownfields as it is in greenfields. As this study shows, different brownfield sites have different cost profiles. However, brownfield sites located in areas of high market demand are better able to remain viable real estate investment opportunities if there is likely to be a high residual land value. The public sector should focus available assistance dollars to those sites that have the highest costs and that are located in an area that has market demand.’

In 2005 Greater Christchurch undertook the Urban Development Strategy (“UDS”). This strategy was designed to look at growth patterns in the catchment and identify the most efficient and the one that enhance community well-being. It found many issues but foremost was the dispersal of growth leading to increased travel, decrease land efficiencies, and loss of connectivity between work and home. Several options were assessed with an infill ‘consolidation’ approach resulting (interestingly the Canterbury District Health Board 2006 determined that urban design had a strong influence on health outcomes and found in favour of the approach).

The result for the Greater Christchurch area was similar to the priority approach under the NPPF following a ‘sequencing approach to greenfield development will lead to more efficient provision of infrastructure rather than the situation where infrastructure is underutilised because development proceeds slowly in several dispersed locations. Of interest is the 63% of residents that preferred this option over the more dispersed ones.

3.4. SITE SPECIFIC DEVELOPMENT OPTIONS REVISITED

The following four development feasibilities illustrate the proportional changes to the developer's commercial return as a result of a potential change in development contributions as outlined by HDC's greenfield development cost differential. The proportional increase in the level of commercial returns range from 8%-12%. This pushes the following specific viabilities above the 25% return threshold, making them in our view viable for medium density redevelopment.

Hastings Feasibility Grove Road (purchase, develop and sell medium residential dwellings)				
	1 October 2013		\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,170,000	
Land			\$570,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$1,753,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$3,674	6	\$22,045	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$4,920	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$31,965
Other development costs				
Marketing		1.50%	\$26,303	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	6	\$7,200	
Reserve contribution (value of 15m2 of land + GST)		6	\$40,498	
Development contribution		6	\$60,746	
Valuation (negotiate fixed contract)		6	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$58,109	
Subtotal			\$199,355	
Interest on holding costs	\$263,025	8.00%	\$21,042	
Interest on construction costs	\$1,052,100	9.60%	\$101,002	
Loan application fee		1%	\$2,500	
Total other development costs				\$323,899
Total Costs				\$2,109,364
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$387,391	6	\$2,324,348	
Salvage Value			\$70,300	
Total				\$2,394,648
Profit Margin			27%	\$285,284

Hastings Feasibility Grove Road (purchase, develop and sell medium residential dwellings)				
	1 October 2013		\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,170,000	
Land			\$570,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$1,753,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$3,674	6	\$22,045	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$4,920	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$31,965
Other development costs				
Marketing		1.50%	\$26,303	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	6	\$7,200	
Reserve contribution (value of 15m2 of land + GST)		6	\$30,000	
Development contribution		6	\$45,000	
Valuation (negotiate fixed contract)		6	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$58,109	
Subtotal			\$173,111	
Interest on holding costs	\$263,025	8.00%	\$21,042	
Interest on construction costs	\$1,052,100	9.60%	\$101,002	
Loan application fee		1%	\$2,500	
Total other development costs				\$297,655
Total Costs				\$2,083,120
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$387,391	6	\$2,324,348	
Salvage Value			\$70,300	
Total				\$2,394,648
Profit Margin			30%	\$311,528

Hastings Feasibility Grove Road (purchase, develop and sell medium residential dwellings)				
	1 October 2013		\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,170,000	
Land			\$570,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$1,753,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$3,674	6	\$22,045	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$4,920	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$31,965
Other development costs				
Marketing		1.50%	\$26,303	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	6	\$7,200	
Reserve contribution (value of 15m2 of land + GST)		6	\$30,000	
Development contribution		6	\$45,000	
Valuation (negotiate fixed contract)		6	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$45,078	
Subtotal			\$160,081	
Interest on holding costs	\$263,025	8.00%	\$18,938	
Interest on construction costs	\$1,052,100	9.60%	\$90,901	
Loan application fee		1%	\$2,500	
Total other development costs				\$272,420
Total Costs				\$2,057,885
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$375,652	6	\$2,253,913	
Salvage Value			\$70,300	
Total				\$2,324,213
Profit Margin			27%	\$266,328

Hastings Feasibility Queen Street (purchase, develop and sell medium residential dwellings)				
	1 October 2013		\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,560,000	
Land			\$710,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$2,283,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$4,243	8	\$33,941.13	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$6,560	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$45,501
Other development costs				
Marketing		1.50%	\$34,253	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	8	\$9,600	
Reserve contribution (value of 15m2 of land + GST)		8	\$53,997	
Development contribution		8	\$80,995	
Valuation (negotiate fixed contract)		8	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$78,261	
Subtotal			\$263,605	
Interest on holding costs	\$342,525	8.00%	\$27,402	
Interest on construction costs	\$1,370,100	9.60%	\$131,530	
Loan application fee		1%	\$2,500	
Total other development costs				\$425,037
Total Costs				\$2,754,038
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$391,304	8	\$3,130,435	
Salvage Value			\$142,500	
Total				\$3,272,935
Profit Margin			35%	\$518,897

Hastings Feasibility Queen Street (purchase, develop and sell medium residential dwellings)		1 October 2013	\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,560,000	
Land			\$710,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$2,283,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$4,243	8	\$33,941.13	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$6,560	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$45,501
Other development costs				
Marketing		1.50%	\$34,253	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	8	\$9,600	
Reserve contribution (value of 15m2 of land + GST)		8	\$39,014	
Development contribution		8	\$58,522	
Valuation (negotiate fixed contract)		8	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$78,261	
Subtotal			\$226,149	
Interest on holding costs	\$342,525	8.00%	\$27,402	
Interest on construction costs	\$1,370,100	9.60%	\$131,530	
Loan application fee		1%	\$2,500	
Total other development costs				\$387,581
Total Costs				\$2,716,582
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$391,304	8	\$3,130,435	
Salvage Value			\$142,500	
Total				\$3,272,935
Profit Margin			41%	\$556,353

Hastings Feasibility Queen Street (purchase, develop and sell medium residential dwellings)		1 October 2013	\$	\$
Dwelling & Land cost				
Buildings	1,500	130	\$1,560,000	
Land			\$710,000	
GST on purchase	15.00%			
Land holding costs:				
Rates			\$10,000	
Stamp duty			n/a	
Surveying			\$3,500	
Total land costs				\$2,283,500
Construction & design costs				
Carparking / driveway				
Land development costs	\$4,243	8	\$33,941.13	
Fill to raise land level				
Retail/Office building costs				
Fill removal				
Demolition and excavation				
Landscaping				
Utilities				
Development levies				
Consent fees			\$6,560	
Contingency on construction	5%		\$0	
Design fees			\$5,000	
Singage				
Total design and other construction costs				\$45,501
Other development costs				
Marketing		1.50%	\$34,253	
Legal Costs on purchases and sales (\$1,200/site)	\$1,200	8	\$9,600	
Reserve contribution (value of 15m2 of land + GST)		8	\$39,014	
Development contribution		8	\$58,522	
Valuation (negotiate fixed contract)		8	\$1,500	
Consultants (planning, engineer, etc)			\$5,000	
Design Fee			\$0	
Project Management Costs			\$0	
Real Estate Fee		2.5%	\$75,561	
Subtotal			\$223,449	
Interest on holding costs	\$342,525	8.00%	\$24,662	
Interest on construction costs	\$1,370,100	9.60%	\$118,377	
Loan application fee		1%	\$2,500	
Total other development costs				\$368,988
Total Costs				\$2,697,989
Estimated Gross Realisation (15% below full site)				
6 x residential sites (exclusive of GST)	\$377,804	8	\$3,022,435	
Salvage Value			\$142,500	
Total				\$3,164,935
Profit Margin			35%	\$466,946

3.5. POTENTIAL APPROACHES TO MARKET INTERVENTION

Because the market is less likely to develop or redevelop infill housing (or MDH) there is a role for the Council to support this form of residential development. This role is crucial to the economic well-being of the Hasting District community due to the significant costs or unrealized benefits of allowing the market to provide greenfield development locations.

As has been outlined above there are various approaches to this and within those various tools. The approach adopted by Hastings should address its unique issue and environment.

The two high level approaches include:

- 1 The restriction of greenfield residential development at specific levels (such as the PPS3) or the prioritization of the brownfill, MDH residential product (NPPF).
- 2 The incentivising of MDH in brownfield locations.

It is necessary with each of these approaches to educate and inform both the potential developers and the market of the direction sought and the position Council will take. This provides a degree of certainty for the developer that the Council will not allow inequitable competition and the buyers that a critical mass is likely to be created so as to enjoy the associated community benefits. This education often needs to be provided to potential lenders also with people experienced in financing these types of larger developments. As part of this process it may be necessary for the Council to provide site characterisation assistance and guidance on amenity investments to be made by Council.

A key consideration in deciding which approach and tools to utilise is the likely response of the Hastings market and the level of competitiveness (for both population and businesses) retained throughout the process.

Although a commonly utilized approach the simple exclusion or restriction of greenfield sites for residential development is fraught with issues. An objective of the Hastings Council is to provide a variety of choice for residential development. Providing a set level of greenfield sites is difficult as the proposed timeframe is often crucial. In the UK the NPPF sets out that Councils are to provide the necessary level of greenfield development areas for only 6 years (5-year timeframe with a 20% buffer) this short period of time is to ensure that developers do not simply 'cherry pick' all the greenfield sites within the first period (if the planning period is longer) leaving only the potentially more difficult brownfill sites and a reevaluation of demand at that stage.

Although it is considered appropriate for Council to identify potential greenfield sites for development restriction of greenfield is not necessary considered the best approach. The restriction of supply is likely to have an adverse impact upon the general housing stock increasing prices and reducing affordability.

As previously stated the key issue with the two forms of development is that there is an imbalance of costs associated with each. Greenfield is considered easy, low risk and profitable in relation to brownfield. In many cases the real costs have not been effectively apportioned. It is important for the Hastings residential strategy to be effective to redress some of this imbalance. As such approach 2 is considered most appropriate at this stage. Some potential tools include:

- Creating community development funds
- Local government in partnership with private sector developers
- Institute high priority investment in amenity
- Greater accessibility to public areas
- Targeted incentives for specific areas where higher density development is desired and can be accommodated easily
- Local government facilitating access to public funds for larger developments

It is important to send a clear and certain signal to the market regarding the direction Council wishes to go, in order to achieve this (apart from the information outlined above) a redress of Council costs for development should be considered.

Reserve and development contributions do not currently reflect the real cost differential to the community of greenfield versus brownfield development. This differential (at a level deemed appropriate) would operate as a catalyst to the market to improve the financial conditions and risk / return ratio for infill residential development in Hastings.

A differential change in reserve contributions will operate in the same way as the supply shifts in Appendix 1 it will reduce the amount of greenfield development at a given price level while increasing the supply of infill. As previously mentioned while this may increase prices initially the impact is likely to be relatively small and short lived for, although the price of land per square metre may rise, the price per site has the potential to fall given the cost reallocation.

3.6. POTENTIAL IMPACTS OF MDH OPTIONS

The previous report (MDH Stage 1 report) undertaken by Hastings District Council illustrated clear capacity in the market for the development of MDH. This assessment outlined that in excess of 2,500 medium density sites were potentially economically viable within the identified catchments. This section seeks to understand the methods available to HDC for encouraging their development by the market rather than direct intervention. However

intervention into the market itself does require some understanding for the potential impacts and also justification for the intervention.

The need for exogenous intervention into a market is necessitated by the fundamental intent of seeking to maximise community wellbeing either through improvements in equity or an improvement in economic efficiency. HDC's proposed intervention seeks to improve economic efficiency within the district's residential environment consequently enhancing community wellbeing. In simple terms the fact that the market will not seek to maximise community wellbeing but pursue individual party interests is key in understanding whether the market requires a balancing mechanism in order to redress the potential imbalance between community interests and individual interests.

It is important to note that this is not simply an academic exercise, the result of an individual party or parties gaining a benefit (i.e. Greenfield residential development) (or simply a decrease in costs) could result in the loss of a tangible resource or ongoing cost to the community hundreds of times more valuable.

The market is indeed a powerful mechanism for the efficient allocation of resources and all too often unnecessary intervention causes markets to operate inefficiently with potential benefits lost to the community in order to protect private concerns. However, the essential proviso here is providing that society's resources are priced according to their real value to society as a whole rather than individuals. This is the basis for Council's economic argument that left to its own devices the residential market will not operate efficiently given the fact that the market fails to consider total community well-being and costs. In order to justify intervention it is fundamental to show that the market outcome will produce a less than optimal, or less efficient, result for the community.

The development of Greenfield residential sites in Hastings has continued to grow and makes up a vast proportion of the District's new housing growth. This growth comes at a cost to the District in terms of infrastructure (as well as lost economic efficiency through agglomeration benefits) that is currently not meant by the activity that generates the costs. Essentially other activities (e.g. infill housing) are bearing an unfair weight in relation to these costs. This sends the wrong pricing signals to the market and results in the over production of Greenfield residential development and the under production of other 'burdened' activities.

The '*internalisation*' of these costs requires, in effect, a differentiated cost structure for infrastructure requirements.

While the existence of this cost differential is not unexpected its quantum is often not measured. There is a degree of difficulty with the marginal impacts of development on infrastructure. Having said this however HDC has undertaken an assessment that has

broken down the relative and respective costs of residential development occurring in both infill locations and Greenfield. These costs have taken into account:

- Capacity
- Base infrastructure Costs
- Existing investment
- Interest Costs
- Capacity timing

Property Economics have reviewed this work undertaken by the HDC and have found that it is both appropriate in its approach and valid in its findings. Some potential limitations include:

- The 'marginality' of the differentials. This is the fact that the less Greenfield development there is in total (given HPUDS direction) the higher the marginal cost of its development essentially increasing the differential.
- Currently different areas and not distinguished therefore priority costing areas can not be established.

The assessment supported the intrinsic view that Greenfield development, while providing increased housing choice, did indeed place higher costs for infrastructure on the community. In an undifferentiated market this costs would be unfairly bourn by other forms of residential development thus skewing demand and supply. The resulting assessment undertook two development scenarios with and without 'base costs'. The differential was found to be approximately \$14,000 and \$20,000 per site respectively.

The key aspect to the Property Economics review is to facilitate an understanding of how such a differential is likely to influence the housing market in Hastings. Figure 2 outlines the potential impacts on the residential housing market in Hastings of a proposed differential in development contributions of that found in the Council assessment.

FIGURE 2: DEVELOPMENT CONTRIBUTION DIFFERENTIALS

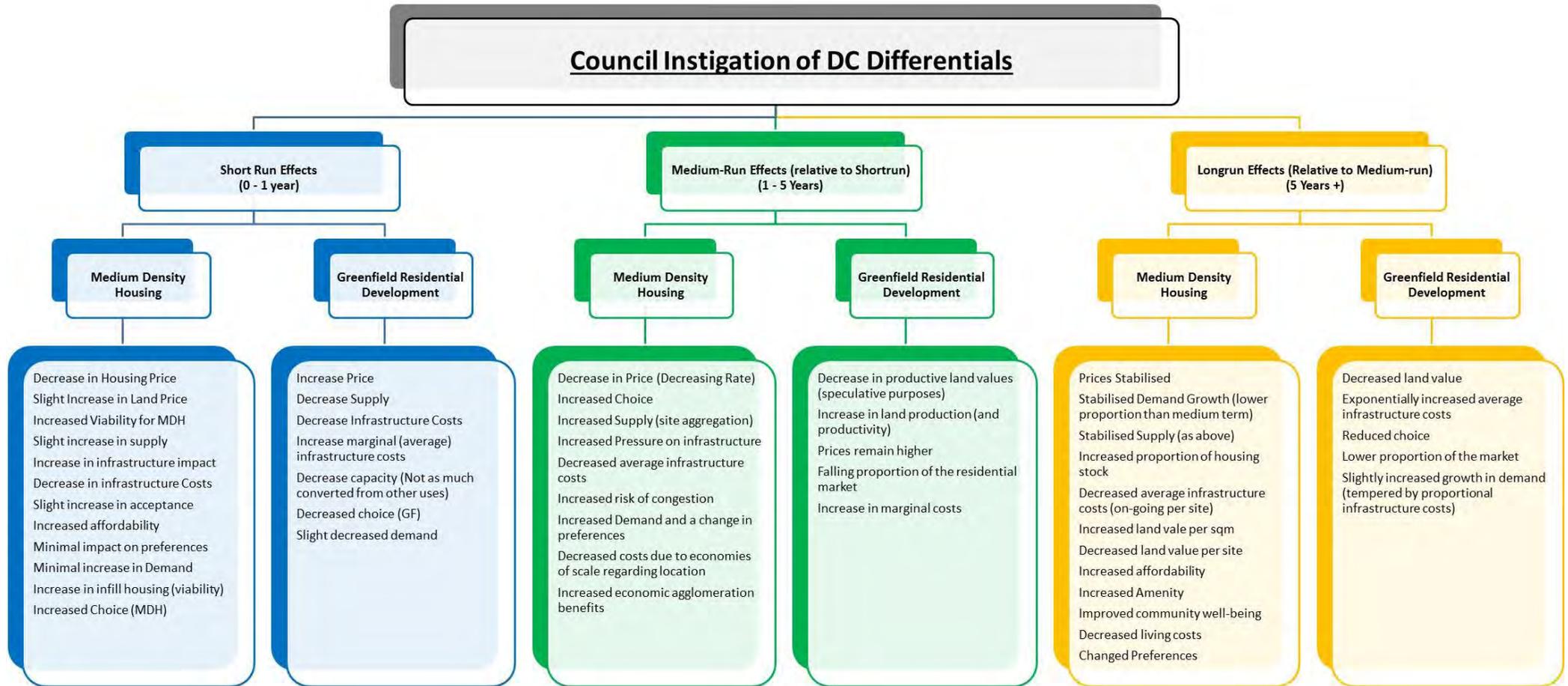


Figure 2 illustrates the following market reactions.

- The relative change in price for MDH and Greenfield development is likely to have an immediate impact on prices and viability for both forms of development.
- This change will have a small short-term impact as the market adjusts the existing development stock and undertakes an evaluation of the markets potential (i.e. it empirically weighs up the risk in the two markets).
- It is in the medium term that the real change occurs. The market for Greenfield development has not yet had sufficient time to 'crowd out' the price differential and so demand and supply for MDH are driven by price. This in turn will have an increasing effect on preferences.
- Longer term the price differential is likely to be 'crowded out' as Greenfield sites become cheaper prior to development contributions to offset the increase. However the level of environmental change is likely to be sufficient after 10 years to have shifted preferences proportionately towards MDH. This occurs as the benefits of MDH become more evident to the market given the increased market size.
- Ultimately there is a greater level of efficiency and equity as infrastructure costs are appropriately distributed and are essentially borne through Greenfield profit reductions.

In terms of the quantum of affect, Property Economics has assessed the likely impact on prices for MDH options on a District average site level. Currently the average cost for a site less than 400sqm is \$120,000. The overall impact on price of a \$20,000 differential is likely to be in the order of 6% while raising the price of alternatives. Given the current price bands and demand levels that exist in Hastings the price differential alone is likely to shift up to 4% of the market towards MDH. Coupled with the existing market propensity for this product type, this change alone, has the potential to move over 1,400 households into MDH by 2045. This coupled with the sustainable change in environment through this critical mass generation should be sufficient to meet targets of over 2,000 households.

	Couple-without-children			Other		Total
	Two-parent	One-parent	multi-person	One-person		
2020	800	-300	0	0	800	1,300
2025	500	-200	0	0	800	1100
2030	300	-200	100	0	800	1000
2035	650	-250	0	0	800	1200
2040	530	-230	30	0	800	1,130
2045	475	-225	50	0	800	1,100
Total	3,255	-1,405	180	0	4,800	6,830

APPENDIX : 1 APPENDIX 1 EXTERNALITIES AND MARKET EQUILIBRIUM

The key factors in the argument for residential intervention by the Hastings District Council are the externalities produced by this market. Externalities are community (social) costs or benefits that are not received or paid for by those involved in the market transaction, the decision makers. Typically markets with negative externalities (costs) over produce as illustrated by Figure 1 while markets with positive externalities (benefits) are under produce, Figure 2.

Figure 1: Market with associated negative externalities (e.g. Greenfield Residential Development)

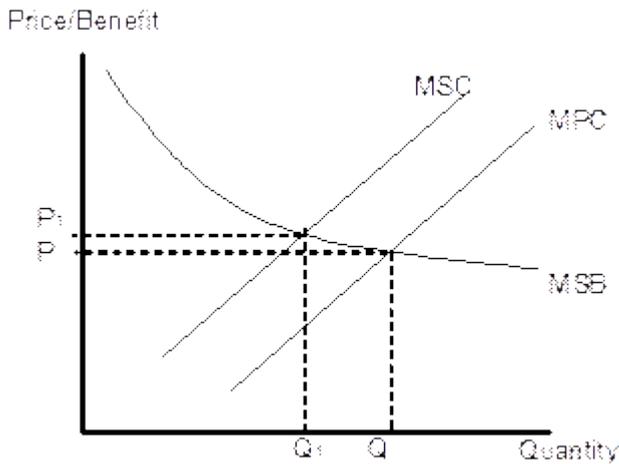
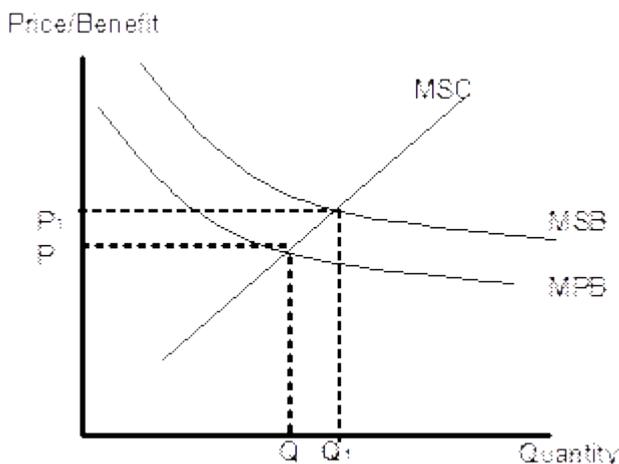


Figure 2: Market with associated positive externalities (e.g. Medium Density Brownfill Development)

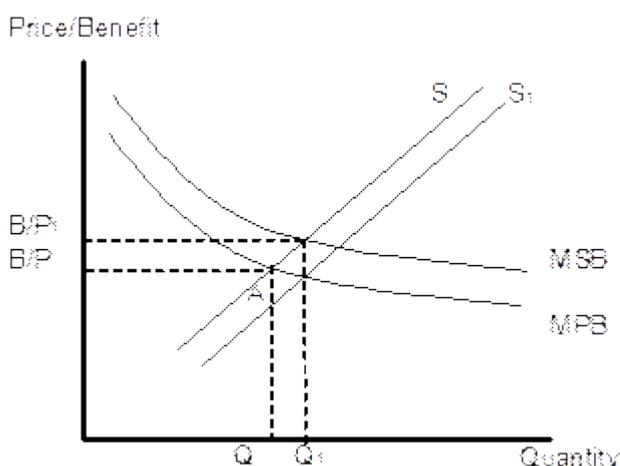


There are two types of externalities to distinguish between, true externalities and pecuniary externalities. True externalities are external costs and benefits that are not mediated through markets. It is necessary for Council to consider these as equating social and private costs and benefits could potentially increase the well-being of the entire community.

With regards to residential development the decisions of some parties significantly impact on the well-being of others, this requires consideration of the total benefits to the community of residential location and agglomeration in order to maximize these benefits or minimize the costs.

An example of a positive externality in terms of residential density and location is the additional community benefit achieved through creating a vibrant, attractive community focal point that provides a sense of community. Under normal market conditions the critical mass needed to create this may not be maintained due to the fact that people are considering their own costs and benefits and not the impacts they have on others. Given this scenario the demand for MDH may be lower ($D=MPB$) than is efficient. Figure 3 outlines this scenario. Point A represents an liberal market.

Figure 3: Supply side intervention in a market with positive externalities



Point A shows the market where the positive externalities of MDH are not considered. The market will produce Q_1 of MDH units. Given that there are benefits that the market does not fully consider the demand curve should be represented by MSB, this would produce more MDH activity at Q_2 . However, given the nature of this market the intervention is not on the demand side but on the supply side. With Council intervention, increasing the amount of MDH will move the supply curve from S to S1. This creates a market, in this example, that is in a social equilibrium where community well-being is maximized. Simply put; MDH has

community benefits not recognized by the market. When included this produces a greater benefit to the community than the market if left to its own devices.

An argument, for a potential cost of this intervention, is that by protecting MDH development, costs (primarily land values) remain higher, limiting the increase in land supply. However, in a competitive market while this may increase the price of land per square metre it is unlikely to result in an increase (in fact this may decrease) the per unit cost of land. Conversely, the development of greenfield activity not only reduces these benefits but also has direct costs associated with it. The potential provision of additional infrastructure, increase travel etc. must be attributed to this residential by location and intensity.

This under representation of costs is illustrated by Figure 1. If these costs were included the supply curve would decrease increasing the price, that now includes these external costs, and decreasing the amount of greenfield residential development the market would permit.

It is important to note that both the supply and demand for MDH must be affected so as to increase its level of utilization and maintain a sustainable price level.



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