PART 3 - Theme Based Networks

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3.0 THEME BASED NETWORKS

In order to consider the big picture strategically, Hamilton City’s identified growth cells have been analysed in accordance with a theme-based network assessment. The networks helped inform the development of the growth strategy and as demonstrated in the following pages, show there is significant overlap, each resulting in wider cumulative effects. In general the integration of these networks provides a clear development preference for the time periods subject to this strategy. This approach will ensure that long term planning and development will have the greatest likelihood of delivering sustainable prosperity to the community in accordance with those factors and conditions likely to influence development patterns into the future.

3.1 Growth Principles

The development of the growth strategy was initially based on gaining a comprehensive understanding of the following key spatial principles that have the ability to influence growth patterns and quality. A number of these principles relate to place-making, whereas others focus more closely on the underlying influences that affect growth provision.

- Infrastructure - Water supply, Gas, Sewerage, Electricity, Telecommunications, Broadband;
- Environment - Landform, Natural Resources, Biodiversity, Land Capability; Natural Hazards, Waterways, Air and Noise, Contaminated land, Waste;
- Population - Existing and Forecasts;
- Social - Housing Preferences, Social Infrastructure;
- Cultural - Tangata Whenua considerations; (waahi tapu, consultation)
- Economic - Economic Development, Activity Centres, Employment, Industrial Development, Commercial Retail and Tourism;
- Land Use and Built Form - District Plan provisions, Heritage, Densities, Existing Capacity;

These principles are discussed in more detail in the following pages as they relate to the various ‘networks’ used to consider growth issues for Hamilton.

ABOVE FIG. 3.1: The ‘networks’ identified above helped inform the development of the growth strategy identifying a clear development preference for the time periods subject to this strategy.
3.2 Blue Networks

The blue network relates to water management, typically integrating stormwater, and the consideration of water quality and quantity issues. It also includes infrastructure requirements, a strong determinant of future growth areas. A successful blue network provides visual amenity value in addition to ecological servicing and additional safety to buildings through reduced flood risk. The blue network has a unique significance to the project scope area given the presence of the Waikato River, the country’s largest in terms of length which runs through Hamilton and some of the city’s potential future growth cells.

ISSUES

A number of critical issues exist that relate to the Infrastructure - Water theme and have potential to be influenced by the growth strategy. These issues include:

- Effectively incorporating waterways with urban form and stormwater management to maximise local treatment trains and avoid infrastructure ‘dead zones’ caused by uses backing onto them;
- Integrating infrastructure into development so that it reinforces local amenity and identity;
- Managing the three urban waters (and in particular storm water) associated with development in a sensitive manner that respects the water quality and quantity in particular sensitive areas.

GOALS

The Infrastructure - Water framework assessed various growth options. Favourable assessments were given to the growth options and cells that were considered to:

- Integrate the green and movement networks into the blue network can maximises amenity and efficiency opportunities.

ABOVE FIG. 3.2: An example of a “conventional” response to blue network issues at the local level. These often poorly relate with their settings and create risks of flash flooding and result in the lowering of property values and safety levels.

ABOVE FIG. 3.3: Examples of blue network responses that focus on improving local settings. These often result in increased levels of amenity and property value, greater surveillance and hence greater safety levels. Approaches that focus on slowing the movement of water also help reduce the risks of flash flooding and erosion.
GROWTH AND WATER SUPPLIES

The way in which growth occurs will have an impact on the water system. Intensification will inevitably require upgrades of existing infrastructural systems that reach and exceed capacity. New growth will require new systems and an overall extension of the network.

It is generally accepted that longer networks inherently have less integrity through unavoidable leaks, ruptures, and damage multiplied across the length of even the best system. Compact, intense urban forms can therefore be more reliable at conserving scarce resources. Current piping efficiencies are based on water used ‘at destination’, meaning that as distance from the source increases, so too does the difference between gross water supplied and net water received. The value of this difference is in effect a subsidy that the remainder of a settlement pays to support the most distant users (in the establishment and maintenance of total required water supply). A further loss is that piped systems under pressure (allowing the water to instantaneously flow when a tap is opened) will leak all of the time, irrespective of whether people are using the supply.

The conventional channelisation and piping of natural waters associated with subdivision and urbanisation creates non-natural detention and discharge that retards natural water cycles and systems. It tends to increase sedimentation pollution and discharge.

*Overall, this makes a strong case for the requirement of low impact, efficient infrastructure networks to accompany growth.*
3.3 Open Space Networks

The EbD workshop reviewed the open network, stormwater, cycleway and biodiversity opportunities within the nine growth areas of the city. Each area was rated in its importance to the entire open space network and its ability to deliver the maximum open space and ecological gains based on existing physical environmental and urban conditions. Fig 3.5 describes these outcomes.

Rotokauri

Recreation

- Good network of natural features such as lakes, waterways and ridgelines;
- The area has a ‘green’ identity as a place to live due to lakes and cycleway corridors;
- Natural water corridors create links northward;
- Topography good for delivering quality sport and recreation facilities due to being relatively flat land with limited peat soils.
Ecology

→ Waiwhakareke Natural Heritage Park (Horseshoe Lake) link to Rotokauri strengthen local ecological network;
→ Existing Kahikatea stand to be protected and enhanced;
→ Overall ecologically friendly image for the area.

Integrated Stormwater Open Space

→ This site is consider to have very high compatibility to open space ecology and stormwater integration.

**HT2 Te Rapa Stream area**

Recreation

→ Improvements to Te Rapa Stream and drainage corridors could deliver high recreational and ecological value and connect Hamilton to Horotiu and the east river bank via Horotiu bridge;
→ West river edge is part of an important Maori historical link from Cape to Buff.

Ecology

→ Te Rapa stream opportunity to ecological development;
→ Western edge of Waikato River could be developed as an ecological corridor in conjunction with Cape to Buffer trail;
→ Integrated stormwater open space;
→ This site is consider to have potentially high compatibility to open space ecology and stormwater integration.

**HT 1**

Recreation

→ Good rolling topography creates a strong sense of place and good for recreation;
→ Existing gully systems create strong opportunities for ecological and cycleway corridors connecting the river to existing communities south of the HT1 site;
→ Existing surrounding communities have reach critical mass to support sports park developments (maybe two).

Ecology

→ Eastern edge of Waikato River could be developed as an ecological corridor in conjunction with cycle ways;
→ The QEII covenant strengthens the local ecology;
→ High gully restoration opportunity to strength cycle and walkway and local ecology linking to the river.

Integrated Stormwater Open Space

→ This site is consider to have potentially high compatibility to open space ecology and stormwater integration.

**Rototuna**

Recreation

→ Existing surrounding communities have reach critical mass to support the open space networks;
→ The focus would be on completion of existing open space networks such as cycleways and ecological corridors.

Ecology

→ Te Awa O Katapaki;
→ Riverside site good for ecological development;
→ Completion of ecological restoration of gully systems.

Integrated Stormwater Open Space

→ This site is consider to have high compatibility to open space ecology and stormwater integration.

**R2**

Recreation

→ Due to this locations isolation and lack of conductivity to Hamilton city is it not consider that it would deliver the best recreation values.

Ecology

→ No ecological values discussed or recognised within work shop process.

Integrated Stormwater Open Space
This site is considered to have **neutral** compatibility to open space ecology and stormwater integration.

**R2N**

**Recreation**
- Existing surrounding communities have reached critical mass to support the open space networks;
- The focus of future development would focus on Raymond Park.

**Ecology**
- No ecological values discussed or recognised within work shop process.

**Integrated Stormwater Open Space**
- This site is considered to have **neutral** compatibility to open space ecology and stormwater integration.

**R2S**

**Recreation**
- Consider a good location as a recreational hub for the greater community;
- Location area for the completion of the southern gully network.

**Ecology**
- Links to Mangaonua.

**Integrated Stormwater Open Space**
- This site is considered to have **neutral** compatibility to open space ecology and stormwater integration.

**Peacocke**

**Recreation**
- Existing surrounding communities have reached critical mass to support the existing reserves;
- The gully system provides an excellent opportunity for the development of ecological and walkway corridors;
- Close proximity to Hamilton gardens and the west bank of the Waikato River as a local community resource;
- The Hamilton gardens area forms the backdrop for this area;
- The development of Whatukoruru pa site opportunity for recreation;
- Good topography for sports parks with the critical community mass to support it;
- Strong opportunities to link this area’s cycleway network to the CBD;
- Good rolling topography creates a strong sense of place and good for recreation.

**Ecology**
- Riverside site good for ecological development;
- Completion of ecological restoration of gully systems.

**Integrated Stormwater Open Space**
- This site is considered to have **high** compatibility to open space ecology and stormwater integration.

**Templeview**

**Recreation**
- Issues with isolation from Hamilton City as a recreation resource for the greater community;
- Lacks adjacent urban edges;
- Lack of community population to support services.

**Ecology**
- Strengthening existing biodiversity in local reserves and along the western edge of the temple view edge would strengthen the ecological value of the State Highway 23 ecological corridor to Old Mountain Road bush.

**Integrated Stormwater Open Space**
- This site is considered to have **high** compatibility to open space, ecology and stormwater integration.
**BIODIVERSITY**

*Making Regional ecological links to Hamilton City.*

Hamilton is strategically sited at an important ecological location within the wider Waikato regional context. Hamilton’s location on the valley at the midway point between Hakarimata, Karamu (including Pirongia Forest Park) ranges on the west, Te Miro ranges in the east and on the edge of the Waikato river ecological corridor creates the opportunity to develop the city as an ecological node strengthening the valley’s floors conductivity between the ranges with the bonus of bringing diverse fauna and flora into Hamilton city. The closest connection to strengthen to Hamilton is the connection to the Hakarimata Ranges which is 14km to Old Mountain Road along the linear landscape of State Highway 23 and 10km to the Hakarimata Ranges along the Waikato River edge, another linear landscape. These linear landscapes have an unbroken corridor type value with significant ownership in local government hands to strengthen with biodiversity planting making the obvious public landscape to focus.

*Existing opportunities to strengthen the network.*

**State Highway 23** connects south west Hamilton to Old Mountain Road along a 14km corridor. If biodiversity planting were developed at no more than 2.5km nodes along this State Highway corridor it would help to ecologically link the Hakarimata Ranges to the south western area of Hamilton, which has significant ecological values due to the close proximity to the Hamilton Gardens, gully systems, Lake Rotoroa and Waikato River. There is already some significantly planting along this corridor that if strengthened would quickly and efficiently add eco-value to this corridor such as the golf course on Whatawhata Road and Taitua Arboretum.

**Gully systems** are an ideal corridor in which to develop ecological linkages from the greater landscape through the City to the Waikato River ecological corridor. This work is currently beginning done at a range of levels from local community and residential initiatives to local government initiatives. The issue that makes developing the gully systems more complex is that a large portion of the land is not in public ownership, hence there is complex implementation and management strategies issues that have to be overcome. The ideal situation is to develop up the city wide gully systems as ecological corridors and over time that may happen but the in the meantime, a short term strategy needs to be developed focusing on which of the gully systems, if developed give the highest ecological return in ecological conductivity. During the EbD workshop it was decided that the gully systems in the Fitzroy area made significant value in linking to the Hamilton Gardens ecological node. Future study and appraisals are required on all the gully systems to identify an ecological development staging process.

**Waikato River.** The present river edge landscape focuses on strong recreation and movement links. This is typically made up of steep slopes down to the river flat covered in exotic trees and weed species offering some ecological benefits. The narrow flat of land between the river cut slope and the river is typically mown with exotic feature trees with some recent native replanting. There are some areas along the river that has remained in native groves, as well as some individual trees, but overall the current focus of the river edge landscape has been English linear park like with minimal focus on strengthening the Waikato River as an ecological corridor. A focus on plant diversity within the river corridor would strengthen the ecological value but has to be balanced with the current recreational, movement and visual value that the river offers the community. A study of planting strategies would be recommended, which may focus on balancing the resources the river offers and recommend strategies that may focus on staged native planting of eroding banks, river edges and diversification of tree plantings on the river flats.
Eco-reserves, lake reserves and smaller river corridors form an important network across Hamilton and are presently being developed to link together where possible. Rotokauri and Rototuna, in conjunction with the proposed stormwater developments in the north-western part of the city form both important ecological and cycleway links between the two lake reserves. This ecological corridor could be continued to be developed north with the development of biodiversity and cycleway links on the Te Rapa Stream toward Ngaruawahia. The Te Rapa ecological and cycleway development would close an important ecological link to the Waikato River corridor as well as link the cycle network across the Horotiu and Ngaruawahia / Great South Road bridges to the east bank of the river. The southern portion of Hamilton has both the Hamilton Lake Reserve and the Hamilton Gardens as an ecological asset to develop and link through the gully, open space systems, future subdivision developments and transportation developments.

Integrating ecology into both the stormwater and the State Highway network is Hamilton’s best opportunity within current development budgets to develop linkages and strengthen the entire ecological network between existing ecological pockets. A general cycleway and planting strategy could be adapted by the HCC, so that as each transportation or stormwater development comes on line it is understood how it fits into the greater green network and what general landscape design approach would be appropriate so the required budget is allocated early in the process.

HAMILTON EXISTING ECOLOGICAL NETWORK

Hamilton’s past open space strategy, like many preceding New Zealand strategies focused on the recreational and visual amenity of landscape and open space networks. Biodiversity and ecological connectivity has been a distance secondary focus, creating ecologically disconnected centres in relation to the greater environment. Fig 3.6 shows Hamilton’s reserves network with areas of ecological value with a 1km circle of ecological influence to illustrate where the ecological holes are in the city are presently. The 1km eco-circle is based on research work done (by Manaaki Whenua - Landcare Research, Colin Merk) and represents a distance that is still a stretch of what would be preferable, but was considered a starting point to illustrate the disconnected ecological network issue.
HAMILTON’S PROPOSED ECOLOGICAL NETWORK

As part of the EbD workshop, a concept strategy for strengthening the ecological network connections to both the regional environment and the city wide network were developed. The strategy needs to be tested, refined and an implementation strategy developed that addresses the increase in biodiversity with negative impacts on the recreational, amenity or the safe use of the city’s open space environments.

Legend

- Study Area
- Hamilton’s existing reserves with significant ecological amenity
- Hamilton’s existing reserve network
- Proposed reserves of ecological value that are already in development process
- Proposed reserves of ecological value that came from the EbD workshop process
- Existing reserves that if developed in line with biodiversity principles would strengthen Hamilton’s citywide and regional ecological networks
- Areas that are ecologically disconnected
- Existing reserves of ecological value 1km range
- Existing reserves with proposed increase in biodiversity 1km range
- Proposed reserves of ecological value 1km range

ABOVE Fig. 3.7: Hamilton’s proposed ecological network.
3.4 Social Networks

Social network refers to the provision of social infrastructure such as educational, healthcare and community facilities. It also refers to the qualitative aspects of fostering a sense of place and identity. A successful social network provides residents with a sense of community, good accessibility to facilities and networks and the opportunity to participate in the community. This leads to improvements in the level of health and well being in addition to providing leisure and recreational opportunities.

Social networks are at least 50% non-physical, relating to particular communities of interest and the way in which they function. Therefore in respect of social networks the growth strategy will need to be carefully aligned with numerous other strategies (such as Hamilton City's 'Social Well-Being Strategy') to foster social development. Access to employment and opportunities to develop in that employment are also determinants of the level of social well-being.

ISSUES

The concentric nature of historical development means that much existing social infrastructure is concentrated around the city centre. This does not necessarily correlate well to the location of future housing and the outward expansion of Hamilton. Housing growth needs to be matched by social infrastructure.

Often social infrastructure is managed by an array of central and local governmental and other non-governmental organisations, and as such social infrastructure decisions are often in the hands of individual and groups from outside the region.

GOALS

The social network framework assessed various growth options. Favourable assessments were given to the growth options and cells that were considered to:

- Supportively allow strong communities to emerge on their own;
- Help address existing inequalities rather than exacerbating them;
- Provide residents living within the growth strategy area (both now and in the future) to have reliable access to the services they need to live, work, and play including housing, suitable employment opportunities, education, health, mental health, recreational and others;
- Assist areas to maintain a strong sense of local identity, ownership, participation, and pride.

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HOW COULD THE CITY SUPPORT ACTIVE, HEALTHY COMMUNITIES?

The continued expansion and intensification of Hamilton is expected to create the need for significant additional social services and facilities.

A network of service hubs.
Hamilton City will need to provide, a hierarchy of social services and facilities. The city should be developed whereby some services are provided at a local level and citywide facilities such as libraries, spaces, major pools and indoor sports venues etc. are located at key geographic hubs. Major regional-focussed services are located in and around the CBD to reinforce its role as the social and cultural heart of the community.

The CBD area as a regional service heart.
Reinforcing the above, major events such as the new V8 Supercars event, specialist facilities, and premier civic, public, and community spaces are deemed to offer significant benefits, assuming they continue to receive on-going support. In addition government services could cluster in the CBD.

Major city focussed hubs.
Major service hubs around the city at Rototuna, Peacocke, Rotokauri (all future population driven), and towards the University (addressing an existing shortfall) provide greater convenience to local communities and users from outside of Hamilton for all but the highest-order services, events, and facilities. Within these service hubs, up to three large ‘district’ medical centres could be required by the growing population. Related to this, any major hospital etc. based on possible sub-regional growth could locate here. Recreatinally, more pools and indoor sports facilities could be required, especially to supplement the local ‘wet’ services - many of which are at schools and are closed over winter months.

Local health service needs.
Up to 25 single-practitioner medical practices (doctors, dentists etc.), and up to 10 local medical centres (small accident and emergency clinics etc.) will be required. These will remain community-based, locally accessible where needed.

Schools and education.
Future growth could result in demand for up to 10 or more primary schools and four or more secondary schools. Tertiary institutions would also grow considerably, approaching up to a doubling of student numbers. Growth occurs around those existing schools that have capacity to accommodate greater rolls. This helps ensure school-related travel is as efficient as possible, and avoids unnecessary cross-city trips. New schools are provided as required within new growth areas.
HOW COULD THE CITY ENABLE SOCIAL WELLBEING?

A place-based framework to recognise the unique qualities of Hamilton’s many
neighbourhoods.
→ Each community node or focal point (including schools and town centres)
planned on the basis of its advantages rather than generic ‘role-out’ models of
service delivery;
→ Some areas have potential to exert a city-wide or even regional level of social
wellbeing significance;
→ Some areas are very local in their focus but are just as vital to the communities
that depend on them;
→ The analysis infers a hierarchy of social infrastructure nodes that may be
appropriate for other types of planning (events, facilities, retail and so on);
→ Peacocke and Rotokauri are identified as future centres.

Social provision in future residential areas.
→ Most new residential areas are expected to accommodate their own social
services and activities, however, residents will still require access to regional
facilities.

HOW CAN SOCIAL WELLBEING BE MEASURED?

The place does this
The place has
potential to do this in
the future

ABOVE: FIG. 3.10: Reference to the key to the left clearly
demonstrates the long term social infrastructure required for
each of the local centres throughout Hamilton City.
Social deprivation is a proxy measure of relative social well-being. The social deprivation index is an area based on:

- **Income**: aged 18–64 years receiving a means-tested benefit;
- **Income**: living in households with equivalised (a) income below an income threshold;
- **Owned home**: not living in own home;
- **Support**: aged under 65 years living in a single-parent family;
- **Employment**: aged 18–64 years and unemployed;
- **Qualifications**: aged 18–64 years and without any qualifications;
- **Living space**: living in households below an equivalised (b) bedroom occupancy threshold;
- **Communication**: with no access to a telephone;
- **Transport**: with no access to a car.

(a) The upper age boundary of 65 years was increased from the earlier value of 60 years, where relevant, to better reflect societal norms in 2006 (and after extensive evaluation of the minor differences this change caused). b Equivalisation is a method to control for household composition. In this way, for example, the standard of living of a single person with an income of $40,000 can be compared with the standard of living of a household consisting of two adults and three children on an income of $40,000. The census income groups vary between censuses, therefore the income thresholds for each index also vary.

For additional information on the **Social Deprivation Index** refer to the Ministry of Health website: [www.moh.govt.nz/moh.nsf](http://www.moh.govt.nz/moh.nsf)

This social deprivation index has a number of limitations including that access to a car is essential to life in the rural districts, hence immediately a bias would apply in those areas that could mask deprivation. Another limitation is that the index measures all areas of land including barely or non-inhabited business and industrial zones (that tend to come up with a highly deprived score). While there are still important social issues associated with those homogenous land use areas they can confuse the overall value of the deprivation mapping). Another issue relates to timeframes and the reasons why a location scores highly on the index. It could be possible that a given location measures lowly due to a concentration of recent migrants that, given a decade to properly establish and integrate may ‘self-correct’. Another location may alternatively have more permanent deep-seated social issues that lead to the deprivation score.
3.5 Employment Networks

The growth strategy area is the economic focal point of the Waikato region. While the economy has agricultural origins that are still very important today, it is successfully adapting to ‘new economy’ employment uses. New economy employment uses include:

- Printing and Services to Printing;
- Publishing;
- Telecommunication Services;
- Financial Asset Investors;
- Scientific Research;
- Property Operators and Developers.

New economy employment is partially responsible for the recent push towards a value-adding skill-based ‘knowledge’ economy where the quality of original outcomes rather than the quantity of generic outputs is the primary focus of market interest. This model can, however, only be successful on a socially equitable basis if the education and skills demanded of more and more jobs can be provided to all social groups.

Employment is also accepted as a critical pre-requisite for a number of social issues. A common administrative perception can be that dealing with employment is an economic issue; but dealing with unemployment is a social issue. Employment and unemployment are fully and legitimately both economic and social issues. Employment is also critical to the ability to implement civic and urban design improvements, strategies to support minority or disadvantaged groups, and so on.

Maintaining a healthy economy through having ample viable employment opportunities for all sectors of the population is therefore one of the most important issues facing the growth strategy area. Two key ‘sectors’ relate to industrial and ‘new economy’ business services / commercial uses. The recently adopted Economic Development Strategy for Hamilton helps clarify this direction.

**EMPLOYMENT NETWORK ISSUES**

It is proposed to achieve the above employment aims by:

- Ensuring stable, adequate and affordable land supply is provided;
- Maintaining a coherent urban form that considers the operational requirements of different employment uses in high amenity environments. In particular the needs of larger, ‘dirtier’ industries present a challenge if placed almost anywhere other than the isolated periphery (which may not always be an appropriate setting for other reasons);
- Managing the transition of larger employment uses and brownfield redevelopment opportunities as intensification increases pressure and values on inner-city land;
- Understanding structural changes to the economy over time that may limit the applicability of predictions made based on existing trends;
- Providing employment opportunities that can be engaged by all communities, including lower-income or lower-skilled workers who may still require training;
- Understanding the tensions between efficient supply of land and maintaining realistic locational choice for employers;
- Balancing the need for flexibility with employment locations – for example allowing some live / work housing typologies in close proximity to existing local town centres which can assist in encouraging wider housing affordability and town centre vitality.

**EMPLOYMENT NETWORK AIMS**

The employment aims within Hamilton are very much centred on ensuring the sustainable provision of employment land is made and that as the population grows sufficient employment opportunities are created and maintained. Specifically these relate to:

- Providing adequate employment land to effectively meet needs through to 2044, including the provision of suitable land during the 2009-2019 LTCCP period;
- Attracting and supporting high value, high quality, high employment, value adding new economy businesses;
- Providing superior business settings to attract small business;
- Providing burgess settings for growth in the city’s core sectors – and emerging sectors;
- Providing desirable strategic locations for transport, distribution and industry activities;
- Using employment to contribute to an efficiently functioning urban form based on the movement and trip patterns needed by people to access living, working, resting, learning, and playing environments;
- Work towards a higher-value economy and employment that raises income levels across all sectors;
- Ensuring that there is a good balance between the types of employment available and the ability and skills of the community to take up those opportunities.
ISSUES

A number of critical issues exist that relate to the employment network theme and have potential to be influenced by the growth strategy. These include:

- Providing for emerging commercial areas and managing the transition of larger employment use and brownfield redevelopment opportunities as intensification increases pressure on inner-city land;
- Providing and maintaining employment opportunities, which can be engaged by all communities, within centres as well as providing for more residential growth;
- Ensuring stable, adequate and affordable land supply while considering the tensions between efficient land supply and realistic location choice for employers;
- Providing for intensification in a manner that will enhance the dominance, competitive advantage and self-sufficiency of activity centres while retaining character and identity;
- Ensuring that a quality public realm is the focus of all development and not simply the provision of services and activities;
- Providing a new tier of 'micro' local centres associated with more walkable catchments within greenfield areas, and enabling new ones within existing residential areas once intensified;
- Supporting complimentary residential development in activity centres;
- Maintaining a coherent urban form that considers the operational requirements of different employment uses in high amenity environments. In particular the needs of larger, ‘dirtier’ industries present a challenge if placed almost anywhere other than the isolated periphery (which may not always be an appropriate setting for other reasons);
- Understanding structural changes to the economy over time that may limit the applicability of predictions made based on existing trends.

GOALS

The employment network framework assessed various growth options. Favourable assessments were given to the growth options and cells that were considered to achieve the following outcomes:

- Revitalising the City Heart as the pre-eminent activity centre of the region, providing a major commercial and retail function. Effort needs to be directed towards attracting activity back into the CBD to increase its competitive position which has recently declined. This is being undertaken in a series of recommendations outlined in HCC’s City Heart Revitalisation Project;
- Integrating movement, employment and social networks, and expanding the residential and employment base within the activity centre to maximise amenity, accessibility and economic opportunity and contribute to 24/7 activity (particularly in the CBD);
- Providing settings for growth in the city that attract and support high quality and value new economy businesses that will raise income levels across all sectors;
- Providing superior business settings to attract small business;
- Providing desirable strategic locations for transport, distribution and industry activities;
- Using employment to contribute to an efficiently functioning urban form based on the movement and trip patterns needed by people to access living, working, resting, learning, and playing environments;
- Ensuring that there is a good balance between the types of employment available and the ability and skills of the community to take up those opportunities.
PROSPEROUS ECONOMIES

The growth strategy’s employment approach is underpinned by a conceptualisation of urban employment ecologies. Excluding primary agricultural / horticultural production, these range from the ‘dirtiest’ forms of industrial and manufacturing based employment through to the cleanest, most integrated ‘smart’ and knowledge based settings that help to focus a community into a connected, high-quality environment. These tend to be high-value uses, needing smaller sites and most notably employing fewer people per firm. Research of western economies by Prosperous Places Ltd suggests that in general between 60-80% of new jobs are in firms of 20 people or fewer; 60-80% of these involve six people or less, with most being residential compatible.

This has directly affected the growth strategy as the realisation Hamilton will need variable business settings in the future, neither favouring one particular typology. Creating business and employment variation within the City results in more sustainable communities from a social perspective.

‘New economy’ encourages where possible integrated business settings. To be successful it must be driven by a desire for high value-adding intellectually-based ventures that can be exported to other areas and generate further income. A poor outcome would be a focus on more basic consumer services that are lower paying and require much lower skill levels.

While some of this need will be met by existing tertiary markets, in other locations emphasis on more traditional apprenticeship programs has played an important role in the provision of future employment growth in designated growth strategy areas. Issues relating to community accessibility - the ease with which people who seek a particular type of employment are able to access it physically as well as in terms of their skill levels, are of particular relevance to a prosperous economy.

The employment pyramid. This conceptualises the range of uses from larger-scaled, less-skilled, lower-paying industrial manufacturing through to smaller scaled, higher-skilled, higher paying integrated business settings. Prosperous Places, 2006.
FUTURE EMPLOYMENT NEEDS AND IMPLICATIONS?

Land Use Locations.
Spatial preferences for certain land use locations in the long term require, as discussed previously 'locational' advantages. Not every area can accommodate 'new economy' employment uses. Subsequently, the long term projections for Hamilton focus around creating settings with business synergies. These are located in close proximity to residential population catchments to affect more sustainable living. Currently around 12% of existing land within Hamilton City is zoned for employment purposes. Based on growth projections and future employment numbers, increasing the provision of (not necessarily the percentage of) employment land needs to be undertaken in a manner that supports the intended function of particular employment precincts.

Table 10 below determines both the quality and location of future office space within the city and also prescribes future industrial land needs for a 35 year period. This analysis has the potential to influence building design (to meet the specific needs of the above activities) and locations, particularly where spatial benefits (including reduced transportation costs) can be identified.

<table>
<thead>
<tr>
<th>Office Space</th>
<th>35 Years</th>
<th>Industrial</th>
<th>35 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Retail Frontage” Offices</td>
<td>14,800m² (5%)</td>
<td>‘General Industries’ and ‘Basic Materials Processing’</td>
<td>140ha (23%)</td>
</tr>
<tr>
<td>Other Office Locations</td>
<td>268,800m² (95%)</td>
<td>‘Food’ and Other ‘Clean Production’</td>
<td>80ha (13%)</td>
</tr>
<tr>
<td>Total ‘Office’ Space</td>
<td>283,600m²</td>
<td>‘Wholesaling, Transport, Storage’ and Logistics</td>
<td>277ha (45%)</td>
</tr>
<tr>
<td>‘Highest’ Quality</td>
<td>36,100m² (13%)</td>
<td>‘Building and Construction** and ‘Utilities’</td>
<td>87ha (14%)</td>
</tr>
<tr>
<td>‘Medium’ Quality</td>
<td>29,700m² (10%)</td>
<td>‘Vehicle Sales’ and ‘Vehicle Services’</td>
<td>28ha (5%)</td>
</tr>
<tr>
<td>‘Good’ Affordable</td>
<td>217,800m² (77%)</td>
<td>Total ‘Industrial Land’ Demand</td>
<td>611ha</td>
</tr>
</tbody>
</table>

How can land uses remain flexible to support changing economic conditions?
Generally areas without a key anchor use should remain the most flexible, as areas such as Rotokauri, which have attracted Wintec will be able to lever of such a use. When no anchor is present, clustering developments and like activities becomes increasingly important as this allows business synergies to be established and maximised. Residential activities should not take precedence over business activities, with even live / work typologies only being considered appropriate where low residential densities are located in areas where future business activity will occur.
NORTH / SOUTH RECENT EMPLOYMENT GROWTH PATTERNS

The recent trend in employment growth has seen an increase in opportunities to the north of the city. This is somewhat expected given the development of large-scale retail and commercial activities in locations such as the base in Te Rapa and a comparative lack of new employment areas to the south. Employment growth patterns are supported by the recent residential developments to the north of the city, placing more residents in close proximity to these growing employment locations.

While the figures indicate noticeable employment growth in both the south and the north of the city, there is a shift in employment percentages across the city. More employment to the north (particularly retail) has the potential to undermine the CBD, and therefore there is a wider discussion in terms of how a continuation of this employment shift will affect the residential priority decision in the 2009-19 LTCCP period. Residentially Rotokauri and Peacocke offer different benefits, with simplistically, Rotokauri delivering employment benefits to the growing residential locations in the north, whilst Peacocke, if developed, creates better locational benefits to the future Ruakura (and the potential Airport) employment growth areas. The general industrial / commercial benefits also include development to the east of the river and the development of an alternative growth area to Rotokauri, which can create market efficiencies due to development on ‘multiple fronts.’

Tables 12 and 13 provide a comparative assessment in terms of a transport perspective in regard to this. Further work undertaken as part of FutureProof will assist in confirming a growth direction in this regard, and the timing for any potential land transfer.

### TABLE 11 - NORTH / SOUTH EMPLOYMENT LOCATIONS

<table>
<thead>
<tr>
<th>Year</th>
<th>NORTH</th>
<th>SOUTH</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job Number</td>
<td>%</td>
<td>Job Number</td>
</tr>
<tr>
<td>2000</td>
<td>15,695</td>
<td>27.96</td>
<td>40,445</td>
</tr>
<tr>
<td>2001</td>
<td>16,290</td>
<td>27.38</td>
<td>43,200</td>
</tr>
<tr>
<td>2002</td>
<td>17,490</td>
<td>28.41</td>
<td>44,065</td>
</tr>
<tr>
<td>2003</td>
<td>17,985</td>
<td>27.82</td>
<td>46,655</td>
</tr>
<tr>
<td>2004</td>
<td>19,620</td>
<td>28.86</td>
<td>48,370</td>
</tr>
<tr>
<td>2005</td>
<td>21,160</td>
<td>29.75</td>
<td>49,960</td>
</tr>
<tr>
<td>2006</td>
<td>22,890</td>
<td>30.85</td>
<td>51,305</td>
</tr>
<tr>
<td>2007</td>
<td>23,995</td>
<td>31.06</td>
<td>53,270</td>
</tr>
</tbody>
</table>
### 3.6 Movement Networks

The future needs for transportation provision are primarily dictated by the overall future urban form and the location of land use growth.

**ISSUES**

- Better integrating land use and transport connections to help the city to grow economically, improve our environment, and enhance our quality of life;
- Our ability and need to respond to a changing environment e.g. increased number of vehicles, increasing petrol prices;
- Improving journey choice and meeting the travel demands of our vibrant city;
- Managing our parking stock carefully to balance the economic viability of the city and in particular the city heart with the promotion and use of passenger transport, walking and cycling;
- Working with key transport partner agencies on a common approach to the city and achieving national objectives and targets;
- As a city we need to work towards reducing our dependency on cars and providing people with a range of sustainable travel choices. But it's a balancing act - this balance is necessary. It is simply not practical to keep building more or wider roads.

**GOALS**

The transportation (passenger transport and transport network) frameworks assessed various growth options. Favourable assessments were given to the growth options and cells that were considered to contribute most strongly to:

- **Safety** - Good street design should be applied to ensure reduced traffic accidents occur for all road users - with vulnerable groups as a priority. This should preferably be done in conjunction with strategies that reduce traffic speeds thereby still allowing for good integration between pedestrians, cyclists, and cars;
- The network should be designed to encourage local traffic (at the right speeds) throughout the area in order to provide surveillance of the street from motorists to assist with personal safety;
- **Efficiency** - The movement network should be connected to maximise the choice of routes and reduce travel distances;
- **Walkability** - Urban blocks should be kept relatively small to facilitate and encourage walking. Suitable provision should be made to allow attractive and safe-feeling footpaths. Principles of universal access (including in particular the needs of the disabled) should underpin design;
- **Legibility** - To ensure the layout is easily understood by users, routes should be relatively direct. Vistas and key junctions should be marked by landmark elements such as parks, key buildings or special landscape features. Wayfinding is a critical component of this issue, relating to both local (often more pedestrian based) ‘features’ and regional (often more vehicle or cycle based) route destinations;
- **Choice** - A range of interconnected networks should be provided to maximise the viability and attractiveness of as many transport modes as possible in addition to private motor vehicles.
WHAT ARE THE TRANSPORT IMPLICATIONS OF GROWTH

General Traffic Considerations.

General traffic implications to the north are likely to be influenced by future land uses. Specific comment has been made regarding the HT1 and HT2 growth cells. If both are residential they may generate transport and social problems (if social service provision does not match population growth) given their current poor connectivity and isolation (relative to other locations). HT2, if used for business purposes could result in counter peak traffic flows, which would not contribute to congestion levels, and this in turn would result in movement efficiencies. Additionally employment land in HT2 could contribute to providing jobs locally to the growing residential catchment. As explained previously, post EbD analysis has determined HT1 is most suitable for residential.

The Peacocke growth cell, when developed (assuming in line with the existing Structure Plan for residential purposes) could add as many as 25,000 additional vehicle trips per day to the existing road network. Concern would be if this predominantly was ‘funnelling’ towards the CBD. Therefore improved southern connections may be required, particularly with the southern half of Hamilton City and to the east towards the airport. This also results in an entire strengthening of the city centre network.

Considerations assessed during the EbD workshop included the possibility of creating an ‘enterprise corridor’ (from the Hospital north towards the CBD) and with the volumes of traffic expected this could be possible assuming the correct business settings are provided. For a detailed breakdown of indicative costs associated with development of the various growth cells refer to Tables 12 and 13.
Public Transport.

The general rule of thumb in the provision of public transport (PT) is that generally a population of **10,000 people** will support one PT (bus) service. While this is a relatively crude method and not to be relied upon solely as the mechanism for determining future PT routes, it has helped inform where future PT hubs should be located. For the purposes of this growth strategy, in time PT is expected to extend from the Hamilton CBD to Rotoluna, Rotokauri and Peacocke. Future-proofing the ability for PT to be provided to and within these growth cells takes on greater importance.

In addition to the above, PT should seek to be supported by employment densities around **40-60 jobs** per hectare and around **17 dwellings** per hectare. These figures are generally accepted as being levels of development that support good levels of local bus services, but it can’t be assumed they would be non-subsidised. The majority of the best performing bus services in New Zealand have some level of subsidy (Christchurch around 50 percent). As such these development densities are at a level that are deemed to potentially best support a self-supporting PT network (i.e. give it the best chance to succeed).

These figures become increasingly relevant given the high percentage of greenfield growth cells likely to be developed by 2044. Should current development trends (densities, housing typologies etc.) continue, the ability to provide a sustainable PT service in the future decreases, resulting in communities becoming reliant on private vehicles for movement at significant cost to Council which it is unlikely to recoup.

**Current densities are failing to support PT, especially in areas of conventional residential housing.**

Key PT issues include:

- Mixed use areas have different PT requirements to separate residential and employment areas;
- Schools movements have a significant implication on the PT network and need to be located along or serviced by PT routes;
- It is generally accepted the urban form affects the efficiency of PT services, an efficient urban form results in more efficient PT services.

PT services to Hamilton City from surrounding settlements vary considerably in terms of quality and quantity. Between Huntly and Ngaruawahia good services are provided (at around 15 trips per day) indicating residential growth in these centres can be supported by the PT network. There is also the potential to re-route this service between Huntly and Hamilton via Te Kowhai to the west or Gordonton to the east as demand and growth increases in these locations. Services to other smaller towns are considerably less, with as few as two trips per day to some outlying towns. This level of provision is unlikely to result in PT uptake.
**WHAT ARE THE INDICATIVE COSTS ASSOCIATED WITH GROWTH?**

Having determined the growth cells primary use, the allocation of employment opportunities across the city have been established to determine the relationship these have with residential areas. This allows indicative transport costs associated with future movement patterns to be established. These assumptions are based on the following:

- Travel costs based on 5% PT overall, 95% driver rate, three daily trips per day affected by work location and higher order retail, recreation, entertainment, medical services access, etc;
- Higher order facilities assumed to be distributed per jobs;
- Peacocke residential leads to $38m per year travel costs at $0.75km for car travel and no cost for PT;
- Rotokauri residential leads to $44m.
- Difference capitalised at 8% is worth $80m.

### Table 12 - Distribution of Jobs Across the Growth Cells

<table>
<thead>
<tr>
<th></th>
<th>Jobs 2006</th>
<th>Percentage of Jobs</th>
<th>New Jobs Over LTCCP Period</th>
<th>New Jobs Over Next 35 Yrs</th>
<th>Total Jobs at 2041</th>
</tr>
</thead>
<tbody>
<tr>
<td>HT1 Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rototuna Residential</td>
<td>665</td>
<td>1%</td>
<td>800</td>
<td>2,000</td>
<td>2,665</td>
</tr>
<tr>
<td>HT2 Industry</td>
<td>500</td>
<td>500</td>
<td>800</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>Rotokauri Industry</td>
<td>14,930</td>
<td>24%</td>
<td>6,700</td>
<td>9,500</td>
<td>24,430</td>
</tr>
<tr>
<td>Rotokauri Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Precinct Business</td>
<td>39,520</td>
<td>63%</td>
<td>5,250</td>
<td>17,500</td>
<td>57,020</td>
</tr>
<tr>
<td>Knowledge Precinct</td>
<td>2,900</td>
<td>5%</td>
<td>3,500</td>
<td>11,000</td>
<td>13,900</td>
</tr>
<tr>
<td>R1N &amp; R2 Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peacocke Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Side Business</td>
<td>2,970</td>
<td>5%</td>
<td>800</td>
<td>1,600</td>
<td>4,570</td>
</tr>
<tr>
<td>Airport Business</td>
<td>870</td>
<td>1%</td>
<td>1,500</td>
<td>5,000</td>
<td>5,870</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62,355</strong></td>
<td><strong>19050</strong></td>
<td><strong>47,400</strong></td>
<td><strong>109,755</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Table 13 - Travel Distances Between Residential and Employment Growth Cells (KM)

<table>
<thead>
<tr>
<th></th>
<th>HT2 Industry</th>
<th>Rotokauri Industry</th>
<th>Central Precinct Business</th>
<th>Knowledge Precinct</th>
<th>R1N &amp; R2 Commercial</th>
<th>East Side Business</th>
<th>Airport Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>HT1 Residential</td>
<td>6</td>
<td>7</td>
<td>13</td>
<td>15</td>
<td>8</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Rototuna Residential</td>
<td>4</td>
<td>5</td>
<td>11</td>
<td>13</td>
<td>6</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Rotokauri Residential</td>
<td>5</td>
<td>2</td>
<td>9</td>
<td>13</td>
<td>9</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Peacocke Residential</td>
<td>16</td>
<td>13</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
3.7 Activity Centres

An activity centre refers to focal points of social and economic exchange. Traditionally these refer to local town centres as well as the larger (and generally retail ‘big-box’ dominant) sub-regional centres and the CBD. However, purely or overwhelmingly retail-driven shopping centres and intensively developed lengths of major arterial roads can occasionally also act as a de-facto centre although generally with a much lower level of vitality or robustness. In Hamilton most of the retail activity is focussed in the CBD, Chartwell and The Base. Overall activity centres act as nodes for retail, commercial and residential land uses and serve as important destination points for social services, commercial activities, transport networks and people.

Activity centres can operate at many of a number of spatial levels from local through to regional and thus meet different needs of the population. A successful activity centre has a high quality and active public realm. Key considerations for the growth strategy relate to the future growth cells and their potential to meet residential intensification, retail and employment targets.

ISSUES

The growth strategy, in seeking to develop strong and prosperous activity centres will need to focus on providing the following key priorities. In addition over-coming any potential issues that may influence their provision will also need to be addressed. These relate specifically to:

→ Providing for emerging commercial areas and new centres associated with new growth in greenfield settings;
→ Maintaining a rich variety of employment opportunities - particularly non-service and non-retail ones - within centres as well as providing for more residential growth;
→ Providing for intensification in a manner that will enhance the dominance, competitive advantage and self-sufficiency of activity centres;
→ Ensuring that a quality public realm is the focus of all development and not simply the provision of services and activities;
→ Retaining character and identity of established activity centres in the face of potentially significant intensification and change to the built environment;
→ Providing a new tier of ‘micro’ local centres associated with more walkable catchments within greenfield areas, and enabling new ones within existing residential areas once intensified;
→ Supporting complimentary residential development in activity centres.

GOALS

The key aim for the development of the growth strategy and its associated future centres should be to encourage economic prosperity, a mix of uses, an active public realm and greater land use intensities. Other aims include:

→ Revitalising the City Heart as the pre-eminent activity centre of the region, providing a major commercial and retail function. Effort needs to be directed towards attracting activity back into the CBD to increase its competitive position which has recently declined. This is being undertaken in a series of recommendations outlined in HCC’s City Heart Revitalisation Project;
→ Improving the quality of the public realm by shop fronts facing outwards, enhancing streetscape amenity, encouraging increased retail and commercial presence in a street based retail setting opposed to further large format retailing and shopping malls;
→ Expanding the residential and employment base within the activity centre catchments to contribute to 24/7 activity (particularly in the CBD);
→ Making better use of areas to the rear of shops in alleys between shops (e.g. Casabelia Lane) to create public spaces such as pocket parks;
→ Integrating movement, employment and social networks into the activity centre network to maximises amenity, accessibility and economic opportunities.
ACTIVITY CENTRES AND THE PUBLIC REALM

Successful activity centres are based on energising the public realm. Principally they function best with a pedestrian friendly street-based environment that encourages people through them. Providing a mixture of fine grain, smaller niche shops with active edges and key ‘anchor’ uses (supermarkets etc.) helps to create this setting. This maximises the opportunities for ‘surplus’ activities and interaction to occur; for example a couple deciding on impulse to stop at a passing café for breakfast on their way to get a loaf of bread. It also provides a rich, varied, and visually interesting environment based on multiple activities and expressions of style and individuality.

A viable public realm is a necessary pre-requisite to achieving goals such as less vehicle dependence and greater pedestrian or cycle modes. This is because an active public realm can stimulate greater interest as a ‘place’ in its own right rather than as just a route, and through passive safety improve perceptions of safety (and actual safety where the degree of ‘eyes on the street’ actively deters crime. Several well established principles of CPTED (Crime Prevention Through Environmental Design), which are consistent with best practice urban design exist to guide the detail design process further. The public realm will only achieve high-amenity where it:

- Stimulates interest and curiosity;
- Provides safety;
- Is based around logical movement routes and destinations;
- Maintains strong economic viability;
- Is of high visual variation;
- Has a clear delineation between the public and private realms including the placement of civic uses and open spaces at highly prominent, legible locations;
- Accommodates a balanced distribution of modes;
- Is based on forms and proportions that relate to a human scale;
- Provides a range of experiences, textures, colours, sounds, smells, and sensations (including covered, open, paved, and ‘green’ open spaces).

ABOVE: FIG 3.19: Illustration of ‘frontage’ in a town centre, including how buildings can orient to have privacy and servicing at the internalised read, with entrances, glazing, and activity facing outwards to the street and other open spaces.

ABOVE: FIG 3.20: Illustration of a fine-grained active street frontage. This provides people with the ability to see ‘inside and out’, as well as respond to a variety of different stimuli.
WHERE ARE FUTURE RETAIL CENTRES LIKELY TO LOCATE?

Hamilton has significant future retail areas ready to be developed. We believe there are existing plans for approximately 100,000m² of additional retail floor space to be provided at existing retail centres in the future, in the CBD, Chartwell and north Te Rapa.

This will significantly impact on the CBD and result in the rise of numerous local centres. Key local centres may evolve into strategic suburban centres over time, serving a wider function and purpose. Significant future population densities, such as in Rototuna will increase the viability of and support additional local centres.

**A clear network of centres.**
A clear hierarchy is developed whereby local services are provided at local centres. Numerous local centres are likely to eventuate being within those areas where high population densities are located.

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**The CBD is envisaged to serve the southern half of Hamilton City, while Te Rapa and The Base are envisaged to serve the northern half of the City. Chartwell will continue to draw from both.**

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**Ensuring the full economic potential is captured.**
It is essential to capture the full economic potential of each centre. The following issues need to be considered:

- Ensuring a high degree of access from the residential catchment to local retail and businesses, in order to maximise their support;
- Optimising economic potential by locating those uses, which will gain most from the exposure and access on the busier streets.

**Encouraging employment opportunities locally.**
Aim to promote and encourage employment in the following ways:

- Investigate opportunities for lower cost workspaces, which can house starter or seed businesses. In the future, these buildings may be replaced by more intensive development as property prices rise;
- Investigate rules and other methods that allow working from home, promote house types that accommodate this and provide generous public parking.

**Where is the customer base travelling from?**

- 50% from within Hamilton City;
- 50% being from outside Hamilton City, consisting of:
  - 20% from Waipa / Waikato Districts;
  - 10% wider Waikato Region;
  - 20% miscellaneous - reflecting passing ‘events’ traffic. This is partially made up of 9% of traffic from Auckland, 5% from the Bay of Plenty and 6% from other locations.

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ABOVE: FIG. 3.21: Future growth areas, particularly those to the south are likely to remain reliant on the CBD for the majority of their retail needs.
3.9 Residential Growth

The growth strategy over time will be dependent on the successful transition from greenfield-dominated residential growth to a pattern led by intensification.

The most obvious distinction will be the move from single detached dwellings to multi-unit dwellings. This presents a range of market, funding, and implementation challenges that will be different to the mainstream experience of most participants (including Councils and many professional consultant experts) in the housing markets, not only in Hamilton, but also in the wider New Zealand context.

The current rate of greenfield growth in Hamilton, if unconstrained and undertaken in an uncoordinated manner, has the potential to create significant costs to both Council and the community through rate increases to fund infrastructure provision. Additionally it also can create a lost opportunity in terms of urban form, growth and the promotion of sustainability ideals. Conventional housing, which dominates greenfield developments, are typically very limited in terms of their ability to change over time. In most cases, buildings have an expected lifespan of approximately 50 years and losing the ability to dictate the urban form early by ensuring the long term density recommendations are met can significantly undermine sustainable growth aspirations.

GOALS

The key residential goal for the growth strategy is to maximise accessible housing choice and opportunity. Similarly relevant aims are to:

- Ensure that opportunities for intensification in town centres / nodes help to energise them rather than reduce their diversity through the creation of reverse sensitivity issues. This will require a careful selection of appropriate land use activities;
- Ensure that opportunities for intensification do not disengage disadvantaged socio-economic and cultural groups from their communities;
- Ensure that new greenfield residential growth is able to achieve a much higher level of local self-sufficiency than in conventional residential developments;
- Assist the CBD to become an important living environment, home to several thousand residents made up of a diverse mix of household types.

LEFT FIG. 3.22: To achieve high quality living environments dwellings must offer the following qualities:

- Privacy;
- Solar access;
- Safety;
- Indoor / outdoor flows;
- Environmental Sustainability;
- Insulation;
- Visual character.

Ideally private open spaces should obtain maximum sunlight and be directly accessible from living areas.

RESIDENTIAL ISSUES

The following residential issues are recognised as being relevant for future residential growth. These issues are considered to be core issues that underpin the residential growth recommendations. They are to:

- Obtain community and market buy-in for multi-unit housing as a viable living choice and attractive alternative to the conventional detached house;
- Factor the transition from greenfield growth to more in favour of urban intensification within the strategy, including lead in and preparation time (relating to the development and release of Structure Plans, Plan Changes etc.);
- Recognise that greenfield growth in the rural districts, where opportunities for intensification are much lower, is largely inevitable and will support and contribute to the enrichment of existing rural centres.

HIGH QUALITY LIVING ENVIRONMENTS

The qualities identified in Fig. 3.20 are most effectively achieved when a clear definition between public and private space is established. This is usually best achieved with conventional perimeter development where dwellings, and buildings housing other uses, front the street. Private open space is then located to the side or rear.
It is also crucial that to maximise residential amenity, residential development is provided for in the best locations having regard to outlook, visual amenity and views, and environmental sensitivity.

**OFFER A WIDE CHOICE OF HOUSING OPTIONS**

A range of housing choices should be made available which should cater for a wide range of family types - families, couples, empty nesters (where children have grown up and left home) and single households.

Techniques exist that can ensure market targets are met through careful design of layout, form, and orientation. A key challenge can be in how to place the highest and lowest valued unit / section in a development as close to each other as possible without undermining either.

**Fig 3.23** shows the an ideal spatial location of particular residential building densities, identifying how the highest density development is associated with the urban centre, whilst the three remaining residential examples increase in density in response to amenity provision. This is often in the form of open spaces such as reserves or local pocket parks. Fronting higher density residential housing onto such an asset improves passive surveillance and creates a higher population base which is more likely to use the area for recreational purposes.

**PROVIDE A RANGE OF DENSITIES**

- A variety of housing densities should be provided for. These should include large and small lots with detached houses as well as medium density developments consisting of semi-detached and terraced houses, as well as apartments where appropriate. The use of ‘intensity’ as a means of managing housing provision at the detailed site development or subdivision stage rather than ‘density’ (more appropriate at the strategic level) may be a more appropriate measure;
- Development intensity should increase in direct relation to the proximity of services / amenities to each unit / site;
- As a guide, to help make local economies and public transport more viable and to efficiently use the land resource, the following minimum, gross densities are recommended:
  - Greenfield growth: 16du/ha (Rototuna and future residential growth cells);
  - Town centre intensification: 30du/ha;
  - CBD: 50du/ha.

**ABOVE FIG. 3.23:** Good design can often accommodate a range of living densities and house types.
RESIDENTIAL DENSITY EXAMPLES

The development densities prescribed at 16du/ha and 30du/ha respectively are deemed to be relevant to the 2009-2019 growth period. Realistically intensive inner city living in Hamilton City is approximately 20 years away from becoming mainstream and widely accepted, therefore developments above 50du/ha are likely to become more prominent in the long term.

The following comments relate to the minimum density standards prescribed on the previous page, being:

- Greenfield growth: 16du/ha (Rototuna and future residential growth cells);
- Town centre intensification: 30du/ha;
- CBD: 50du/ha.

**Greenfield Growth** - The development of new residential areas with a minimum prescribed density of 16du/ha achieves several key sustainably and wider positive development benefits. Primarily, it allows the establishment of detached dwellings on an individual site that, if designed appropriately, can deliver all the amenities and qualities associated with larger less intensive traditional subdivision forms without the consummation of excessive greenfield areas.

On the basis of the above density, this will result in net lot sizes of approximately 430m², (assuming 30% of development is required for roads, reserves etc.). Given Hamilton City’s existing 40% coverage rule in residential areas, this allows for a building footprint to be established somewhere in the vicinity of 170m², large enough to maintain both residential amenity and construct a liveable family dwelling.

Of note it must be added that the minimum density levels prescribed defer the need for additional growth cells to be released during the next LTCCP period. This was not, however, the main driver for prescribing this density standard.

**Town Centre** - Before any significant developments of this nature eventuate, it is likely the economic viability of these densities will need to be thoroughly established and tested. Whereas experience elsewhere has found these minimum densities to contribute to numerous improvements to town centre and CBD conditions (from efficiency, vitality and activity-level perspectives), the development economics will into the future be the most likely threat to these being achieved. Developments will need to be economically viable from a Council, private sector and resident perspective, as without financial gain for developers, affordability for future residents and sustainable cost allocation for Council (infrastructure, PT provision etc.) these developments will not eventuate.

Viability is a critical component of intensification, spread across many levels. More intensive residential developments (more than two storeys) often require basement parking, which causes constructions costs to rise considerably. Therefore the scale and form of buildings will be directly affected by density levels, and often an increase in development density does not correlate to an increase in profit for developers. The relationship between building typology and construction costs is skewed to a point where a significant increase in unit yield is required before the development becomes viable. Simplistically this creates a gap in density levels, whereby less intensive developments are being favoured because they don’t require the same...
construction costs as those associated with lower density housing forms. In addition to the above the following issues need to be considered in terms of meeting the prescribed densities:

- High development contributions per unit;
- A relatively untested apartment market within local centres;
- Increasing land values;
- High construction costs;
- Uncertainty in the existing housing market.

It is essential that a long term vision be maintained, ensuring that if the appropriate development densities cannot be achieved in the appropriate location in the time periods broadly outlined, then the areas should not be developed until the market has corrected itself and the development economics of such proposals becomes viable once more. Inner city medium density developments, on sites that potentially could house a greater density in the future, and thus achieve greater sustainability, objectives, essentially results in a lost opportunity and a poor development outcome. Given the life expectancy of buildings (at least 50 years) this can significantly detract from the ability of Hamilton to meet expected residential growth needs in the future.

CBD - 50du/ha is the minimum development density for residential apartment living in the CBD and surrounding CBD fringe area. The figure is low, and much higher densities can be achieved depending on the efficiency of the land used in question. For example, in the CBD, a 1ha site can potentially provide a 5000m² developable area once access, possible living spaces and courtyards, at grade parking etc. have been provided. Applying an 80% coverage rate to this figure results in a potential building footprint of 4,000 m². On the assumption that the apartments have a 150m² floor area each, this equates to 26 units per level. Therefore in order to achieve the minimum density prescribed of 50du/ha, two levels of residential housing would be required to meet this target.

As can be seen from above and assuming the ground floor is of a retail nature in the CBD and office / showroom in the peripheral areas, this potentially equates to a three storey building, which is low, and has significant further development potential. More than likely the development economics of this simplistic analysis are not viable, however, it does demonstrate the relative ease in which 50du/ha can be achieved. Double the number of residential levels and the target reaches the 100du/ha. The conservative nature of the figures is further exemplified by the relative inefficient use of land in this instance - 40%. Increasing this further increases unit yield on a per/ha basis.

Further understanding of the economic viability of such developments will be required before the development economics of higher density CBD apartment becomes viable and therefore attractive to developers.