Boffa Miskell

Ruakura - Tuumata

Urban Design Report
Prepared for Tainui Group Holdings Limited
FINAL
11 April 2023

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1.0 Introduction and Background

This urban design report has been prepared as part of the documentation for a Private Plan Change (PPC) application by Tainui Group Holdings Limited in relation to the Ruakura-Tuumata Structure Plan Area (The Site) formally known as the Tramway Block. The site is located at the eastern edge of Hamilton City on the block bounded by Wairere Drive to the west, Fifth Avenue Extension to the north, the Eastern Transport Corridor (formerly identified as the Spine Road) to the east. site is surrounded by a diverse mix of land use and activities with the surrounding context consisting of – in equal measure -- a mix of industrial, residential, and agricultural character.

Ruakura has been identified as a priority development area in the central metro corridor within the Hamilton-Auckland Corridor Plan and Implementation Programme, and the Hamilton-Waikato Metropolitan Spatial Plan. In particular, the strategic direction within these documents seeks to progress the rezoning of the site to provide for higher density residential development.

The purpose of this report is to provide an outline of the information/documents, design rationale and principles used through the masterplan development process (refer appendix 3) as well as the development of the structure plan drawings prepared by Boffa Miskell Limited, which form part of the Plan Change and are as attached to the Plan Change Report prepared by Peter Hall planning Limited. The report outlines key considerations as they relate to the wider existing and proposed context surrounding the site.

The development of the masterplan and subsequent structure plan drawings have been done in reference to the core principles of the;

- New Zealand Urban Design Protocol: The 7C's,
- The Metro Spatial Plan, Future Proof (2021),
- Hamilton City Councils design guide Vista,
- Hamilton Urban Growth Strategy (both current and draft – Oct 2022),
- Access Hamilton - Ara Kootuitui Kirikiriroa
- UN Sustainable Development Goals
- Medium Density Residential Standards (MDRS).
- Te Ture Whaimana o Te Awa o Waikato - Vision and Strategy for the Waikato River
- Our Climate Future: Te Pae Tawhiti O Kirikiriroa (Hamilton City Council, 2022)

2.0 Structure Plan Area

The Ruakura-Tuumata Structure Plan Area sits approximately 2.4km to the east of Hamilton City Centre and is bounded by Wairere Drive to the west, Fifth Avenue Extension to the north, the Eastern Transport Corridor (formerly identified as the Spine Road) to the east.

Growth in Hamilton has traditionally favoured areas to the north of the city centre, creating an imbalance in the distribution of residential development around the city centre. This imbalance has created a unique condition whereby the city is inherently narrow (approximately 6km) in an east west direction. As a result, the site – while close to the city centre -- is located on what is currently the periphery of the city's eastern most urban boundary, located to the east of the residential suburb Enderley.

The site is approximately 68ha in size, currently operating as a working farm and is characterised by a mosaic of low-lying grazing and cropping paddocks, interspersed with hedgerows, mature exotic trees and farm buildings typical of the rural Hamilton landscape. To the south of the site, the buildings of the AgResearch Centre and Hamilton City Councils Water Reservoir – that sits on the tallest landform -- represent the most significant local landmarks.

This area of the city is experiencing rapid change with the construction of the Hamilton Expressway, the Ruakura Inland Port and Logistics Centre and the Eastern Transport Corridor (ETC not yet under construction) all happening directly to the east of the site. These developments - once complete -- are expected to support approximately 11,000 jobs. The introduction of housing and a new neighbourhood centre within the site will provide a significant volume of new, modern, medium density housing. This allows a greater number of people to live closer to significant employment opportunities (Inland Port, University, City Centre and Schools) providing a greater density of people living and working on the city's east flank.

Figure *1* - Ruakura-Tuumata Structure Plan Area

3.0 Context and Character

"Ruakura is named after a pit in the area that was used to burn iron oxide. Traditionally, large pieces of iron oxide found in swamps were heated, by burning in a fire, to produce a powdery red pigment. This was mixed with water to produce the sacred red Kokowai (ochre) which was used for painted tapu ceremonial objects, koiwi and carvings. Burning the red oxide stained the pit red thereby giving rise to the name Rua (hole or pit) kura (red)" (NaMTOK Consultancy, 2011)

3.1 History – Pre-European

Historically the Tramway area (including the Ruakura-Tuumata Structure Plan Area) of Ruakura would have consisted of a mix of low-lying peat wetlands and higher rolling landforms. "There were areas of peat wetlands and swamp, interspersed with mixed forests of native trees such as Kahikatea, Tawa, Hinau, Totara and Miro which grew on the dry areas. Manuka, Toetoe, flax, Raupo, Wiwi (native sledge), ferns, Maire and Manawa grew in the swamps themselves, with stands of Nikau around the margins. Kanuka and ferns grew in the gully system. Pigeons, Komako (Bell bird), Kaka (native parrot), and Kiwi were abundant in the Kahikatea forests, with Pukeko and abundant duck life tuna (eels} in the swamps. Parohe (native trout} and Kokopu (the large silver bellied eel} swam in the streams in the gullies. There was no extensive settlement of the wetland and swamp areas, but they provided abundant and essential food sources for the Maori people who lived in the surrounding areas" (NaMTOK Consultancy, 2011)

"The Ruakura land port site and surrounding hinterland has always been a centre of occupation for Ngati Wairere. It has been fought over and occupied by a number of different hapu claiming descent from Wairere over past centuries. Consequently, it is claimed as part of the traditional lands of several hapu of the Waikato Tainui Iwi, including Ngati Wairere and their related and associated subtribes such as Ngati Parekirangi, Ngati Waikai, Ngati Waihongi, Ngati Pakari, Ngati Iranui and Ngati Ngamurikaitaua." (NaMTOK Consultancy, 2011)

Te Karearea - "Te Karearea was another important landmark in pre-European times renowned as a source for gathering berries, native pigeons and flaxes. Te Karearea once extended across what is now the Ruakura Research Centre and southwards, along the swampy plains below Waikato University. Small caches of ancient Māori artefacts (stone adzes and grinding stone for sharpening stone adzes) were found in 1978 in one of the paddocks of the Ruakura Research Centre towards the Tramway area. These were found, and retained, by Mr Eric Warner, a former employee of the Ruakura Research Centre." (NaMTOK Consultancy, 2011)

Te Papanui – "Te Papanui was another famed large kahikatea/tawa forest that once covered what is now the modern suburb of Claude lands and Fairfield spreading across what is now Tramway Road and onto the Ruakura campus. Te Papanui like many other famed forest stands was hunted for native pigeons by the hapu who had manawhenua over these resources. The only remnant of Te Papanui is a 5-hectare Park reserve known as Jubilee Park located on the corner of Boundary Road and Brooklyn Roads near 5 Rross Roads and the small stands of Kahikatea found on the school grounds of Deanwell School" (School" (NaMTOK Consultancy, 2011)

Design Implications - These historical references capture aspects of the character, historic vegetation mix and cultural importance of the site. Future stages shall engage with mana whenua to ensure these important aspects inform and shape the future character and identity of the site. This can be achieved by selecting the appropriate native plant species mix, the use of integrated stormwater treatment, swales and wetlands, and integrating place naming, interpretation signage and cultural design elements the site (streets and open spaces). Collectively this will help the development to respond to local context, cultural values and to enhance sense of place.

3.2 History – Early-European

The Tramway block gets its name from the nearby Tramway Road. Tramway Road runs parallel to Wairere Drive immediately to west of the site boundary. Tramway Road “was shown as a proposed tramway on an 1865 map. It seems to have been of double width to accommodate a tramway to Cambridge and to have first been discussed by Kirikiriroa Road Board in 1872, though clearing and gravelling didn't start until 1891.” (Wikipedia contributors , 2022)

Early settlers soon cleared the native vegetation, drained the wetlands to make way for farming and agriculture. Native vegetation was replaced by large exotic tree species, planted as hedge rows, and for shelter. Many of these features remain today.

3.3 Current Contextual Environment

Today the site remains as a working farm with an overall character consistent with the rural, agricultural land surrounding Hamilton. The Tuumata site is bounded by established low density neighbourhoods, Fairview Downs to the north and Enderley to the west. Immediately to the south the site is bounded by the AgResearch Centre. The conditions to the east of are changing rapidly with a number of significant developments planned or under construction. These are outlined further in section 3.4.

The site is close to a number of activity centres

- Five Crossroads – approximately 0.9km
- University of Waikato – approximately 1.2km
- Countdown Claudelands, Mitre 10 mega – approximately 1.2km
- Claudelands Event Centre and Grey Street Shops 1.8-2km
- Hamilton City Centre – approximately 2.5 – 3km

The site is close to a number of Schools. however, many of these do not fall within what is considered a reasonable walking distance in relation to ages they cater for.

- Te Kura Kaupapa Māori o Te Ara Rima – approximately 0.6km
- Insoll Avenue School – approximately 1.0km
- Southwell School (Private) – approximately 1.3km
- Hamilton Boys High – approximately 2.0km
- Peach grove Intermediate – approximately 2.0km

Design Implications – The site has been designed so that several of the ‘super blocks’ are capable of accommodating a 4ha school site. While not currently proposed by the MoE, the design does not preclude the inclusion of a school

The mix and proximity of existing activity areas provides useful context for the development of the Tuumata Neighbourhood Centre as well as informing the proposed walking and cycling network that may help connect people to these external locations.

3.4 Context - Changing Environment

To the east and north of the site there are four significant developments planned or currently under construction, these include.

1. **Ruakura Inland Port and Logistics Hub (under Construction) -** The Ruakura Inland Port (30ha) and Logistics Hub (89ha) is underway. The wider precinct will include a logistics hub, significant industrial development, extension of the existing Innovation Park, as well as areas for residential and retail activities. This wider precinct is projected to accommodate up to 11,000 employees when fully complete.
2. **Waikato Expressway – Hamilton Section (under construction) – Opened July 2022 -** The Waikato expressway is a new section of State Highway 1 and runs to the east of the Ruakura Inland Port and forms the eastern boundary of the current Ruakura Structure Plan area "The Hamilton section commences at the Lake Road junction with the Ngāruawāhia section in the north. It then runs south, to the east of Hamilton, connecting to the existing Tamahere interchange deviation just south of Hillcrest. When complete the Waikato Expressway will be the key strategic transport corridor for the Waikato region" (Waka Kotahi , 2022). The Ruakura Interchange sits approximately 2.5km to the southeast of the Tuumata site and includes a proposed service centre.
3. **Eastern Transport Corridor (ETC) – Formally the pine Road (In planning and design stage) -** The ETC is made of three sections formally known as the Spine Road North, Central and South). The section to the east of the site (Spine Road South) "will initially be two-lane with provision for a four-lane major arterial road from Fifth Avenue south to Ruakura Road West. This extends… to the Ruakura Industrial Park area. This section includes a road bridge over the East Coast Main Trunk Railway. It provides for public transport, shared footpath and cycleway and a swale area for stormwater management. Strategic wastewater and water infrastructure will co-locate within the road corridor." (Hamilton City Council , 2022)
4. **Fifth Ave Extension (early planning and design stage)** – Sitting within the site, the fifth Ave extension runs along – the northern boundary connecting from Wairere Drive to the ETC. When complete the Fifth Ave Extension is likely to include four traffic lanes, this new arterial will provide for public transport, a shared walking and cycle path and a swale area for stormwater management. The Fifth Ave extension provides the main east west link between Ruakura, the site and Hamilton City Centre.

Design Implications – The significant amount of new transport infrastructure means that the site is to be well connected through a mix of public and private transport options (including active modes) providing choice to future residents and visitors. The internal road layout of the site and position of key interactions have been designed as to not inhibit the performance of future transport infrastructure, maintain the effectiveness of the wider transport network. The layout prioritises walking and cycling movement and encourages multi model movement to and from the site.

3.5 Transport Context

Wairere Drive – 'Ring Road' – The site is bounded on the western side by Wairere Drive a major - 4 lane -- arterial (HamitIton City Council , 2022) and significant transport corridor, running in a north south direction. The ring road will eventually connect through the Peacocke development to the south of the river and connect to SH1 in the north of the city near The Base. Wairere Drive caters to walking and cycling through a 3m shared walking and cycling path.

At 4 lanes wide, Wairere Drive acts as a severance corridor, with limited crossing opportunities for pedestrians and cyclists. There are two existing underpasses crossing Wairere Drive.

- One to the north-west corner of the site, to the south of the Wairere-Fifth Ave Intersection
- The second underpass is located at East Street and Bisley Road approximately 250m from the south-east corner of the site.

The Proposed Walking and Cycling network (movement corridors) proposed for the site have been designed to connect into the existing Wairere shared path and will connect people to the two underpasses on Wairere Drive connecting into the wider Hamilton City Walking and Cycling Network.

The current Ruakura Structure Plan – This sets the context for current and future planned urban development, including transport and active mode network. Supporting this is a number of Hamilton City Transport Programs or Plans. In developing the masterplan for the site, the following documents have been referenced.

- Cycling and Micro-Mobility Programme Business Case (AT Planning & Investment, 2022)
- Access Hamilton (Hamilton City Council, 2022)
- Eastern Pathways – City Centre to University Link Single Stage Business Case (BECA Ltd, 2021)
- Eastern Pathways – School Link Single Stage Business Case (Beca Ltd, 2021)

4.0 The Proposal/Proposed Development

The proposed Ruakura-Tuumata Structure Plan Area contains two primary uses, residential and neighbourhood centre - Business 6. The proposed General Residential Zone with the Tuumata Residential Precinct overlay would provide for approximately 1100-1300 homes on lots ranging from 110-400m2. The residential block dimensions have been designed to provide flexibility in density and housing typologies, the blocks cater to a range of housing possibilities and combinations from more traditional standalone housing to medium density, multi-level housing.

To support the daily needs of the proposed Tuumata neighbourhood the Tuumata Neighbourhood Centre (Business 6) is proposed. The scale, mix of activities and timing for the proposed Tuumata Neighbourhood Centre has been developed in collaboration with HCC and through guidance received from Formative and takes into account the wider centres hierarchy ensuring that the Neighbourhood Centre does not detract away from existing centres or compete with the city centre.

It is important to note that that the Fairview Downs, Enderley and southern parts of Chartwell are poorly serviced by retail, supermarkets and top up food shopping. The proposed neighbourhood centre is helping to support the daily needs of a catchment that extends beyond the site.

4.1 Site Layout and design

The site has been designed around 6 key drivers. These have been developed through the review and consolidation of themes contained in the UN Sustainable Development Goals (SDG's), New Zealand Urban Design Protocol, Hamilton-Waikato Metropolitan Spatial Plan, Hamilton Future Proof (2021) and Hamilton City Councils design guide VISTA.

These design drivers have been applied at the masterplanning/site layout scale. These have been developed to ensure that wellbeing remains as the foundational concept informing site layout. More detail outlining key design principles has been included in section 6.

1. **Development flexibility, variation, and choice** - Allowing for a range or lot sizes and housing typologies and tenure (including potential Kaumatua dwellings) create the conditions that support the creation of a diverse community. The design also takes a long-term view and considers future 'second generation' development and allows for future expansion of the city by using a logical and coherent street and block structure (urban form).
2. **Orientation and liveabilit**y - Street network and block layout designed to promote fair access to sunlight within dwellings and outdoor spaces.
3. **A permeable and connected neighbourhood** – The 'grain' of the residential blocks is designed to maximise permeability and support the creation of safer and more sociable neighbourhoods. 'Green' pedestrian links ensure that people have movement options that are convenient and direct. Movement of pedestrian and cyclists should be safe and avoid conflict with vehicles. The layout seeks to encourage healthy, active lifestyles and promote social cohesion and greater social interaction and engagement through vibrant and activated streets. The design maximises opportunities to connect into existing and future neighbourhoods and surround activity areas.
4. **Support a more compact and carbon positive development** – The design endeavours to promote the use of active modes (promote mode shift) and reduce the reliance on private vehicles (Reducing Light Vehicle Kilometres Travelled). The Eastern Transport Corridor and Fifth Ave Extension is to include a frequent bus service. The design endeavours to maximise access to this service optimising existing and proposed public transport infrastructure, providing the conditions to support multimodal transport approach, and providing for a neighbourhood centre to meet the day to day needs of residents, thereby reducing reliance on motor vehicle trips further afield.
5. **Environmental performance of Infrastructure** - Ensure environmentally integrated and water sensitive planning and design principles are considered at all scales. Seek responsive solutions that lead to positive environmental outcomes within the catchment. This includes how to give effect to Te Ture Whaimana o Te Awa o Waikato – Vision and Strategy for the Waikato River.
6. **Green and Accessible** – The site is designed to provide access to a variety of green open spaces, community infrastructure and recreation opportunities, utilising planted, high amenity movement corridors that cater to a variety of community needs.

Design Implications – A network of 'green/movement corridors' (Road with parallel stormwater swales) function as organising elements providing structure and hierarchy to the site. The combination of swale, road and rear access housing allow these corridors to prioritise walking and cycling movement by limiting the number of road and side roads crossings. Theses corridors provide structure and hierarchy to the development, contribute to a more legible environment, and ensure that the neighbourhood centre remains internally connected and within a walkable catchment.

5.0 Planning and Policy Context

5.1 Influence of the UN Sustainable Development Goals

"In September 2015, the United Nations signed up to 17 Sustainable Development Goals (SDGs) and 169 Targets

The 17 goals and 169 targets set out a universal agenda to achieve sustainable development globally, known as Agenda 2030. They bring together the three dimensions of sustainable development: economic, social, and environmental. They apply to all countries" (New Zealand Foreign Affaird & Trade, 2022).

While the SDGs are not legally binding and there are growing calls for these to be refreshed, New Zealand has made a commitment to coordinate on related policy issues. This commitment provides useful context to the range of national initiatives under the New Zealand Wellbeing Economy and Budget, as well as providing context to recent changes to key policy issues such as National Policy Statement - Urban Development, Aotearoa New Zealand Emissions Reduction Plan, and the development of the Climate Emergency Response Fund (CERF), New Zealand Infrastructure Strategy and Road to Zero Program among others.

The Government Policy Statement on Housing and Urban Development seeks to "support development that creates vibrant, thriving and connected places where everyone can live affordably and access opportunity" (Te Tūāpapa Kura Kāinga (HUD), 25)

The SDGs provide a 'shared blueprint' for how collectively we start to measure success and make key decisions on how to achieve a better and more sustainable future. Understanding these provides depth and context to a large number of guiding principles and directives contained within regionally significant documents such as Future Proof and the Hamilton-Waikato Metropolitan Spatial Plan.

Of the 17 Goals and the subsequent targets the following are of particular relevance.

- Target 3.6 - By 2020, halve the number of global deaths and injuries from road traffic accidents
- Target 3.9 - By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- Target 6.6 - By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes
- Target 11.2 - By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport,

with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

- Target 11.3 - By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries
- Target 11.6 - By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- Target 11.7 - By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- Target 11.b - By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all level.

There is strong alignment between the UD SDG goals and more recent national, regional and city policy and guides. In reference to the UN SDGs the masterplan seeks to:

- Enhance inclusive and sustainable urbanization
- Provide universal access to safe, inclusive and accessible, green and public spaces
- Provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety.
- Protect and restore water-related ecosystems – This has clear relevance to the subject site.

  Developing plans and policies towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters.

5.2 National Medium Density Residential Design Guide (MDRDG)

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act was enacted in December 2021. This introduced the Medium Density Residential Standards (MDRS), which are aimed at increasing housing supply and choice across our largest urban areas by enabling the development of three homes of up to three levels/12m in height, on each site. The concept of a well-functioning urban environment is a key concept within the MDRS. To encourage well-functioning and high-quality housing, the Ministry for the Environment (MfE) commissioned a National Medium Density Design Guide (MDRDG).

The MDRDG is based at the site scale rather than greenfields, and while focused toward anyone interested in medium density housing it is “particularly small-scale property owners or those with limited experience in more complex residential developments” (Ministry for the Envronement MfE, 2022)

The MDRDG has 4 overarching design principles:

- Fit within the wider natural, cultural, and urban landscape
- Develop housing and access solutions that provide for the needs of its residents

- Contribute to healthy and safe communities and homes
- Encourage sustainable design that minimises impacts on the natural environment

The design principles are broken down further on page 5 of the MDRDG. In reference to these, the Tuumata masterplan seeks to;

- Understand the interwoven relationships of a place by responding to the wider social, cultural, and environmental context.
- Acknowledge the city/town/neighbourhood scale and street setting, contributing to the enhanced quality of the future environment and supporting tools and plans for tangata whenua and the wider community.
- Understand and respond to the wider housing needs of the community
- Design developments with whānau in mind, by considering residents' accessibility to public transport, or their convenience to local education, employment, recreational and community services, to help inform the transport options provided.
- Design houses that provide for day-to-day living of all residents, which incorporates the needs of an aging population, young children and disabled people (ie, universal design).
- Contribute to housing solutions that cater for diversity, accessibility, and for small and large family and non-family households.
- Support day-to-day social interaction with those using streets and parks, while allowing residents and neighbours to seek privacy when desired.
- Recognise the importance and vitality of whānau (family) and mauri (life force) to cater for overall health, wellbeing, and identity
- Acknowledge wider climate and other environmental qualities that can support sustainable design, respond to the challenges of climate change, and is resilient to natural hazards.
- Reduction in greenhouse gas emissions, apply water sensitive design, and support sustainable transport modes like walking, cycling and public transport.

Where items have not been listed, they sit beyond the scope of the structure planning process and should be incorporated into future stages.

Design Implications – In developing urban form and structure for the masterplan the key principles of the MDRDG have been taken into account. The design seeks to create a modern development that meets the expectations set by recent national policy, guides and strategy. The detail of this is outlined further in section 6.0

Density has been modelled based on what is achievable on average on a greenfields site using the MDRS. This has been outlined further in section 6.8

5.3 Hamilton-Waikato Metropolitan Spatial Plan.

“The Hamilton Waikato Metropolitan Spatial Plan (MSP) is a vision and framework for how Hamilton City and the neighbouring communities within Waipā and Waikato districts will grow” (Future Proof Implementation Committee, 2020)

Of particular relevance to Ruakura-Tuumata Structure Plan Area are the MSP objectives:

- Build upon and strengthen local characteristics to create a sense of place.
- Meet the diverse needs of residents of the metro area through a range of housing types and safe and inclusive urban design.
- Improve choices for the location and type of housing.
- Providing opportunities for housing and lifestyle choice, including papakaainga, within defined locations, with greater emphasis on good urban design.
- Promote an urban form that can be more easily accessed by a variety of modes of transport including walking, cycling and frequent and rapid public transport options.
- Planning for a future where all new developments are focussed around walking and cycling and access to frequent and rapid public transport providing choice and access to jobs, services and amenities.
- Encourage people away from private vehicle use, supporting the diversity and vibrancy of activities within centres.
- Locate communities and jobs around existing and new centres, supported by rapid and frequent public and active transport connections.
- Plan and design neighbourhoods to make public transport use, walking and cycling easy and attractive.
- Promote healthy communities in corridor and network planning and management, supporting active travel in blue-green corridors and maintaining and enhancing public access to regional and local open space assets.

5.4 Hamilton City Council Plans and Strategies.

“Given our wide range of responsibilities, Council has a large number of concepts, plans, policies and strategies” (Hamitlon City council, 2022). The Access Hamilton Strategy provides a good overview of the Councils planning and policy framework. This sets a clear agenda ‘joining the dots’ outlining councils Council’s purpose of improving the wellbeing of Hamiltonians. Key outcome areas of influence to the masterplan are:

- Climate change
- A safe transport system with genuine travel choice
- Enjoyable, inclusive and liveable city
- Environmental responsibility
- Supports quality growth and urban development

6.0 Urban Design Principles of the Structure Plan

The following section provides an outline of the urban design rationale and key principles used in the development of the Tuumata masterplan - and subsequent structure plan drawings -- with regard to urban design desired qualities. Given the site context and locale, the following matters have been considered in assessing the proposal.

6.1 Right activity in the right place

The way Hamilton City has developed sits at odds with traditional development patterns common to many cities. Instead of growing around the city centre and developing public transport in something similar to a 'spoke and wheel' approach. Hamilton City has spread linearly to the north, using arterial roads to link residential areas with the city centre. This results in busy arterial roads that dissect through residential neighbourhoods, delivering congestion and severance issues common place to cities with much larger populations.

More recent residential developments to the north of the city (Rotokauri and Rototuna) are supported by commercial and employment nodes like Te Awa/The Base. The combination of modern low-density housing, dendritic streets and strip malls/big box shopping centres has delivered a carbon intensive, car dependent urban form that also negatively impacts on the life and vibrancy of the city centre.

Hamilton's residential suburbs spread approximately 16km in a north – south direction and only 6km east – west. The Tuumata site is currently zoned for industrial development, the appropriateness of this can be challenged on several fronts.

- Tuumata site sits just 2.4km from the city centre (to the east). By positioning industrial activity in this location, you are further limiting the opportunity for people to live close to the city centre
- Industrial activity in this area would provide a 'wedge' between existing residential neighbourhoods positioned to the east of Wairere Drive. The opportunity currently still exists to better join and integrate Fairview Downs with suburbs of Hamilton East to the south of Ruakura Road using a new local street network. This would result in a better more cohesive neighbourhood structure to the east of Hamilton. Promoting residential landuse in the area helps encourage the creation of more pedestrian and cycle friendly local streets, allowing existing and planned communities to connect without relying on busy arterial roads to do so.
- Industrial zone traffic can have a very negative impact on inner city roads and local streets. A key consideration as Hamilton City looks to prioritise public transport, walking and cycling, working towards a compact and clean city.
- Increased air pollution, noise are key other concerns raised in the past from the existing residential neighbourhood surrounding the site, albeit addressed through the Board of Inquiry rezoning of the site to industrial.

The masterplan seeks to develop a compact, connected, modern, inner-city suburb close to the city centre. The proposed landuse change from industrial to residential provides a positive step toward rebalancing the distribution of residential land in Hamilton, and prioritising growth around the city centre.

This change to residential on the Tuumata site supports the aspirations of the Draft Hamilton Growth Strategy – Oct 2022. As well as aligning with other relevant national and regional policy documents by;

- Supporting the creation, a more compact and connected city
- Supporting a low-carbon future in line with our emissions reduction targets
- Enabling growth of homes and jobs in areas that can easily access public and/or active transport mode
- Supporting mode-shift and reducing light vehicle kilometres travelled

6.2 Development Flexibility and Choice

Each 'superblock' (see figure 2) has been designed with approximately 50m wide residential blocks. This approach – as illustrated in figure 2 -- provides development flexibility by allowing for greater choice in future subdivision design and consent processes, future design stages have the flexibility to adjust block dimensions to ensure good urban outcomes, ensuring there is good continuity between the house typology, density, lot depth and approach to on and off-street parking.

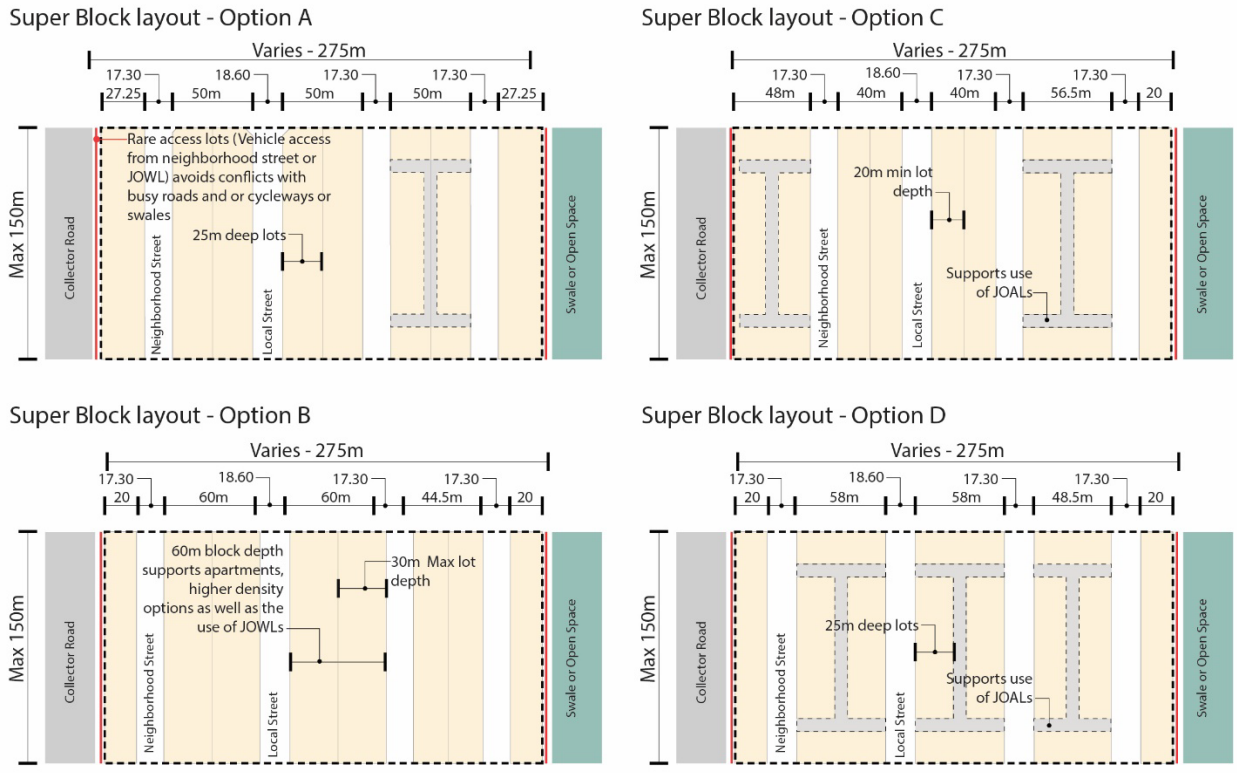

Figure 2 - Superblock layout examples

Given the level of design resolution - with regard to housing typology and individual lot layout -- at the Structure Plan stage, a baseline block depth of 50m was selected in developing the masterplan. This distance provides efficient lot depths that can accommodate a large number of housing typologies suited to the proposed General Residential Zone (with the Tuumata Residential Precinct Overlay)and the intended density. The grid layout of the street network facilitates good public realm outcomes in relation to permeability, connectivity as well as helping ensure dwellings have frontage to the street, providing passive surveillance opportunities, and

privacy where backs can adjoin backs for private open spaces to be located away from the public realm.

In developing the Tuumata masterplan a maximum 60m and minimum 40m block depth were adopted to test layout and development feasibility - illustrated in figure 2:

- 60m block provides for larger outdoor living spaces or can support an apartment typology, or use of Jointly Owned Access Lots (JOALs).
- 40m is better suited for terraced housing, where parking is on street only.

The masterplan and indicative street and block layout have also been designed to accommodate a potential 4ha school site should this option be preferred in later stages – Refer to drawing PCD-001 Appendix 3. A nominal location has been identified for the school of 4ha, adjacent proposed bus routes and the neighbourhood park and relatively central in the Tuumata residential zone.

6.3 Orientation and liveability

Sun access plays a very important role in the wellbeing of people, therefore the orientation of roads and lots is a key component when considering the liveability of individual lots and the development as a whole. For the masterplan, the block orientation is predominantly north south, setting up east west facing rear yards that will enjoy either morning or afternoon solar access. When the block orientation is in a north south direction and houses front the street, all rear yard's experience full mid-day sun. This orientation provides the most equitable layout for sun access.

Several leading residential architects were spoken to in developing and validating the block layout. It was clear from these conversations that designing medium density and terraced houses so that the main/front or rear façade face north is problematic. Excess solar gain and high internal heat can be difficult to control when the main façades (with higher levels of glazing) face north. Protecting and designing to control heat being one of the more difficult architectural elements to control. As much as practicable lots that encourage north facing facades have been avoided.

Similarly, every effort has been made to avoid lots with garaging on the northern side maximising the number of lots with private open space that enjoy good solar access.

The grid/orthogonal layout of the street network facilitates good public realm outcomes where dwellings have frontage to the street providing passive surveillance opportunities. As much as practicable rear yards adjoin rear yards to encourage private open spaces to be located away from the public realm.

Where private lots adjoin public open spaces or swales, shared paths have been proposed adjacent to the rear boundary. This has been done in an attempt to encourage rear pedestrian access, this helps activate these edges and further encourages the feeling of 'eyes' overlooking the public space.

6.4 A permeable and connected neighbourhood

A key objective for the site is the delivery of a neighbourhood that is accessible and easy to move around, with a clear structure and hierarchy of connected streets. Key to achieving this is a coherent pattern of development, avoiding streets that twist and turn unnaturally in an effort to control vehicle speed but make walking and cycling routes longer than they need to be.

In developing the masterplan, the aspiration was to move beyond traditional suburban greenfield development to create a 'modern' highly walkable and safe neighbourhood, connected to open space, recreation opportunities, neighbourhood centre and public transport.

Local roads are proposed in an orthogonal grid arrangement creating regular block shapes of consistent depths, lengths not exceeding 150m and axial road connections that are legible to navigate.

The layout of the road and circulation network has been designed to provide logical, frequent, and convenient connections through and around the site. Given the proximity to the city centre, the masterplan *"takes a long-term View"* (Ministry for the Environment, 2022). The road and block layout has considered how the site may evolve over time. The design considers future 'second generation' development and supports the future expansion of the city by using a logical and coherent street and block structure (urban form).

Pedestrian and cycle movement is catered for through 4 primary north-south movement corridors and 4 primary east-west movement corridors as illustrated in drawing PDC-005 - Appendix 3. These movement corridors are situated adjacent to stormwater swales and on the collector road and include either a shared path or separated cycle facility, and in some cases (Central Swales, Collector Road and Firth Ave extension) they include both.

The movement corridors seek to provide regular opportunity (every 100-200m) for pedestrians and cyclist to access safe, protected routes with limited vehicle crossings, limited or no side friction, minimising potential vehicle conflict points. These routes link to public open spaces and into the wider Hamilton City Council walking and cycling network, helping to encourage healthy, active lifestyles and promote social cohesion and greater social interaction and engagement through vibrant and activated streets.

In developing the masterplan street network, a key consideration for the positioning of the collector road was ensuring that streets and routes can be extended in the future. The design maximises opportunities to connect into existing and future neighbourhoods as well as existing and proposed activity areas. Internal movement corridors are designed to link to key existing walking and cycling facilities adjacent to the site, connecting to the existing Wairere Drive shared path and future facilities proposed on the Spine Road/Eastern Transport Corridor and Fifth Ave Extension.

Wairere Drive remains as a severance corridor with two main walking and cycling connections between the site and Hamilton City. These cross Wairere Drive through two existing underpasses, one on the north-western corner of the site (Fifth Ave-Wairere Intersection) with the other close to the south-western corner (Bisley Road-Wairere Intersection) some 200m further to the south along Wairere Drive. The movement corridors are designed to provide convenient access to these points, while also encouraging people to move around and through the Tuumata Neighbourhood Centre.

There is a Transport Corridor (frequent bus) proposed within a walkable catchment to the north and west of the site along the Spine Road/Eastern Transport Corridor and Fifth Ave Extension. This endeavours to support mode shift and reduce the dependence of private vehicles. The Masterplan (and movement corridors) have been designed to support to the future public transport network adjacencies.

6.5 Green and Accessible

The site is designed to provide access to a network of high amenity streets, vegetated/planted swales, green links, and public open space creating a highly accessible, attractive, safe and green neighbourhood.

The masterplan has adopted a block pattern that allows for ease of movement for pedestrians and cyclists by reducing block lengths and creating opportunities for mid-block connections 'green links'.

- Responds to pedestrian and cyclist desire lines
- Connected street patterns. These work best when they include straight or nearly straight streets to makes pedestrian routes as direct as possible.
- Protected cycle ways along busy streets.
- Prioritising pedestrian and cycle crossings at key intersections.

6.6 Natural Environment / Site Conditions

It is important that the masterplan sets the foundation for an attractive and distinctive neighbourhood, one where the natural environment is enhanced and optimised. The current site will be highly modified (as outlined in further detail below) by construction activity. With this in mind the masterplan seeks to connect to existing and or new habitats, through a combination of new vegetated swales, and open spaces that connect to other similar facilities (within the wider Ruakura Structure plan area) beyond the site boundary. These help to create new movement corridors for both nature and people.

Due to civil engineering constraints relating to site levels, stormwater drainage and soil quality for establishing good ground suitable for founding houses, existing site features (undulations in the ground surface, farm drains, shelter belts and existing mature trees) are likely and assumed to be lost in the early earthworks and site establishment phases.

The approach to stormwater respects the aspirations and objectives of Te Ture Whaimana o Te Awa o Waikato - Vision and Strategy for the Waikato River particularly the:

- *The protection of the health and wellbeing of the Waikato River*
- *The recognition and avoidance of adverse cumulative effects, and potential cumulative effects, of activities undertaken both on the Waikato River and within its catchments on the health and wellbeing of the Waikato River*
- *The recognition that the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic wellbeing is subject to the restoration and protection of the health and wellbeing of the Waikato River*
- *The restoration of water quality within the Waikato River so that it is safe for people to swim in and take food from over its entire length.* (Waikato River Authority , 2022)

To achieve this the proposed masterplan includes approximately 3.5ha of new stormwater treatments ponds, an additional 8ha of new stormwater swales, neighbourhood reserves, green links/pocket parks, plus planted local and neighbourhood streets. This network of high amenity stormwater, recreation and public open spaces will play a strong role in helping to protect water quality, build resilience into the stormwater network, using a nature-based approach, provide ecosystem services and inform and shape the future character and identity of the Ruakura - Tuumata Structure Plan Area.

Through carefully considered landscape and urban design, founded on strong engagement with mana whenua, the site (streets and open spaces and blue green infrastructure) should be developed to respond to local context, cultural, ecological values and to enhance sense of place.

Design Implications – Future design stages shall *"recognise and respect mana whenua values in masterplanning and urban design, upholding and fostering kaitiakitanga and custodianship of urban ecosystems"* (Future Proof Implementation Committee, 2020)

6.7 Neighbourhood Centre

Key to delivering a walkable, compact, connected, and clean neighbourhood is the idea that *"everyone is able to meet most, if not all, of their needs within a short walk or bike ride from their home"* (C40, 2022).

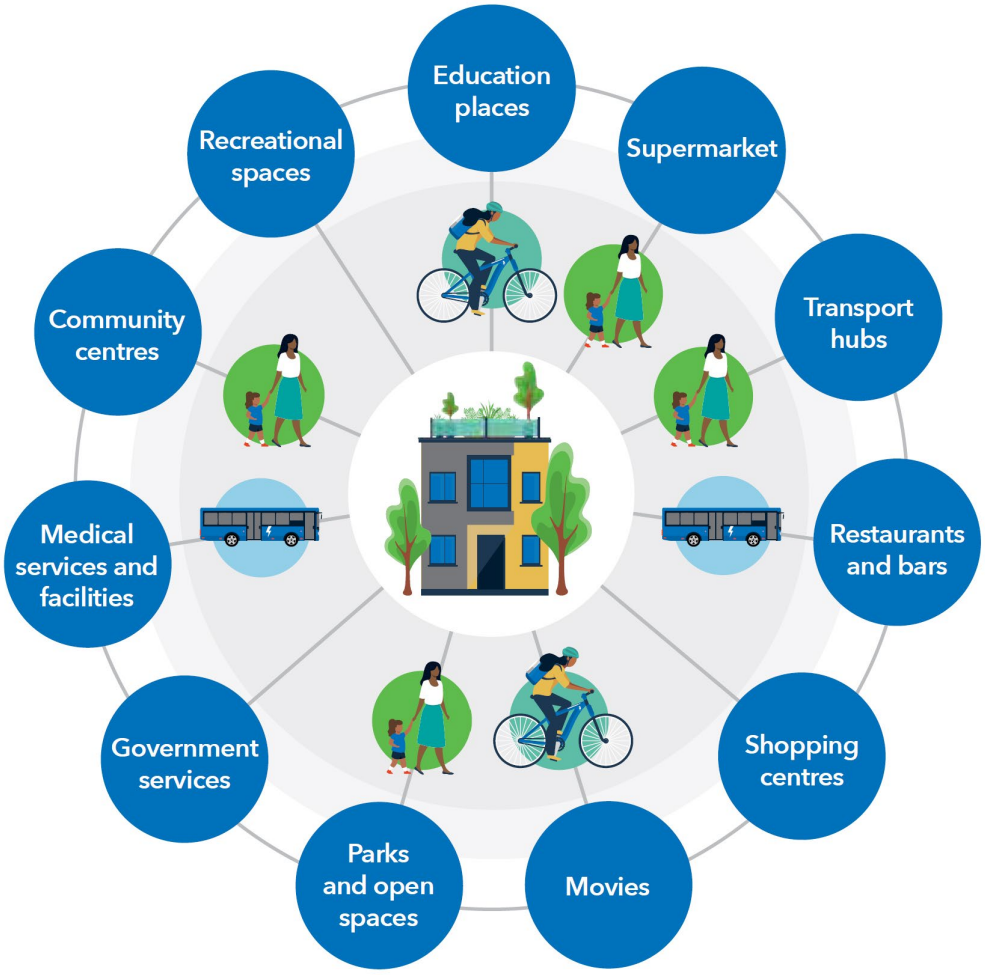

Figure 3 - Hamilton City Council 20min city (Hamitlon City council, 2022)

The Neighbourhood centre has been positioned in the north-western corner of the site for the following reasons:

- Defining the 'middle' should not be confined to the boundaries of the site. The existing suburbs of Fairview Downs and the eastern parts of Enderley are currently poorly serviced by retail, supermarkets and top up food shopping. Positioning the Tuumata Neighbourhood Centre in its proposed location provides for better integration with existing residential neighbourhoods.
- While set back from Wairere Drive, the location provides enough visibility of the Neighbourhood Centre to support commercial viability and ensure a reasonable presence when viewed from Wairere and Fifth Ave Extension.
- Relationship with Public Transport – The long-term objective is for the Fifth Avenue extension to function as a frequent public service route. The neighbourhood centre is positioned adjacent to this key public transport corridor and frequent service route and

adjacent to proposed bus stops. The potential exists for these bus stops to be defined/developed as a 'Mobility Hub' supporting mode shift and a range of sustainable and active transport modes.

- The main access to and from the site and city centre is via the Fifth Avenue Extension and Wairere Drive Intersection. The neighbourhood centre acts as a gateway into the new neighbourhood. This threshold will be particularly discernible to people walking, cycling or catching public transport.
- Its position helps limit the number of vehicles (external, visiting traffic) traveling through the local street network, compared to a location more central in the Tuumata block.

The neighbourhood centre allows for a gym, medical/health care facilities, community centre, childcare and retail/food and beverage/offices and supermarket. These activities play a key role in providing good anchor 'destinations' within the neighbourhood centre. These should be carefully positioned to ensure the centre feels safe and vibrant.

In developing the masterplan and the layout of the neighbourhood centre, the scale and proportion of buildings and spaces will need to consider the surrounding development and recognise the 'grain' of the neighbourhood. to the provisions (design assessment criteria) have been designed to ensure the following outcomes:

- Avoid a carpark dominated centre, where carparking fills the middle and buildings are spread in a ring around the outside.
- Avoided the 'strip mall' approach a central block of buildings with a ring of carparking around the outside.
- Creates a people focused development, using a mix of pedestrian only and slow vehicle streets.
- Create a strong connection between buildings and public open space.
- *"Buildings and spaces should be appropriate to their purpose and setting, contributing to a coherent city form."* (Hamilton City Council, 2022)
- Provide places for people to spend time and enjoy public life, consider orientation and environmental comfort when developing open space. *"Public open space should be thoughtfully designed for the climate and appropriate to the anticipated use."* (Hamilton City Council, 2022)
- People living close to the neighbourhood centre bringing additional life and activity to public spaces.

Design Implications – *Future designs should consider, "enhance and celebrate Hamilton's character and reflect the special qualities of the site. Development should seek to celebrate Hamilton's unique sense of place and special features. Development should reflect and celebrate Hamilton's cultural diversity."* (Hamilton City Council, 2022)

6.8 Density

Selecting the overall 'assumed net density' for Tuumata has been achieved through much deliberation and inquiry. Key to this is ensuring that the spatial/urban and built form meets the aspirations of the development, aligns with key national and regional policy directives, considers the local context and responds to trends in the local market. Figure 5 from the greater London report – housing for a compact city illustrates how *"three very different forms of architecture…can be built at the same density…* (Greater London Authority, 2003) each example has its own set of social impacts, levels of privacy and public space they provide. They help illustrate that relatively high densities can be achieved without needing to build high.

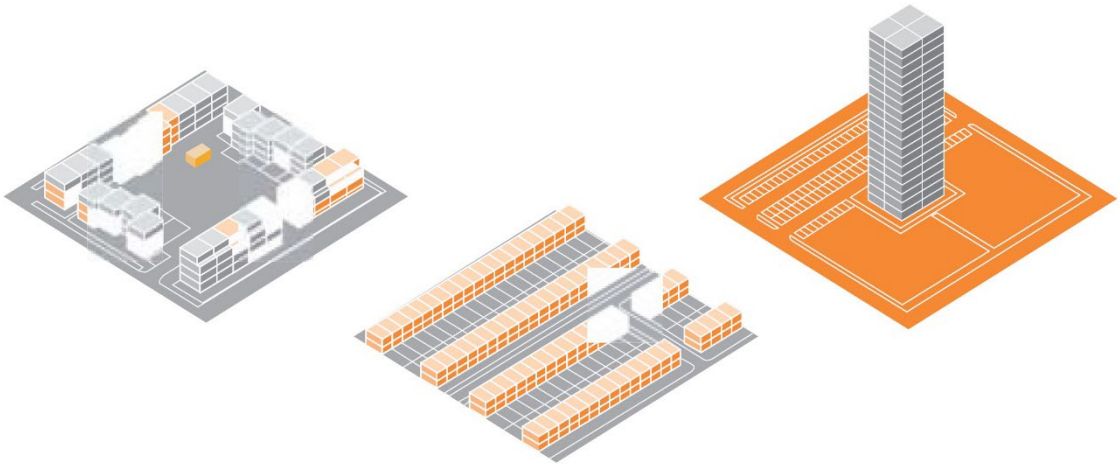

Figure 4 - Housing for a compact city diagram (Greater London Authority, 2003)

Also guiding decisions on density are:

- Intensification targets for Ruakura from page 95 of the latest Future Proof Strategy (Future Proof, 2022)
- Waikato Regional Policy Statement - UFD-P12 – Density targets for Future Proof area (Waikato Regional Council , 2022)
- Transport considerations and the impact on intersection design – Refer to Stantec report
- Infrastructure capacity – Refer to BBO report.
- NPS-UD: (Ministry for the Environment, 2022) and the MDRS

The appropriateness of higher densities and taller buildings is dependent on a number of factors, key in this instance, is the performance/sophistication and vibrancy of the inner city and its ability to support a wide variety of experiences, cultural, and social activities while also being supported quality public transport, active mode network and public services. In New Zealand we have developed a culture whereby social life largely takes place in and around the private home. This is changing in bigger centres but is very much still the case in smaller towns and centres where the 'centre' still functions as a service centre largely operating 9-5pm.

Hamilton City centre has some way to go before it has a sophisticated offering whereby the social, cultural and transport experience is dynamic enough to offset the loss of privacy and reduced private open space expected of higher density living.

The proposed Tuumata neighbourhood centre plays a key role in supporting density. But this relies very heavily on creating a people/community focused centre with high amenity public space and carefully curating the mix of activities on overall offering.

Applying the MDRS to Greenfield Development

The MDRS is very clear when it comes to the intensification and infilling of existing low-density neighbourhoods. Applying the MDRS while giving effect to the NPS-UD remains challenging and convoluted.

Ensuring good urban outcomes requires the careful use of a range of planning provisions all the while making sure that these are not more restrictive than the baseline MDRS. Areas of particular concern are poor quality subdivision, rear lots and cul de sac development. Each has the potential to result in perverse built outcomes and lead to poorly functioning urban environments, impacting wellbeing, liveability, privacy, legibility, accessibility, and solar access.

Case studies

Case studies provide a useful tool for matching urban form, architectural form and density. In assessing and agreeing the proposed overall/average net density, a range of existing developments were used as case studies. These case studies help to set the vision for the development and its desired outcomes.

Figure 5 - Example of density case studies used

In developing the masterplan an overall/average net density of 50 dwellings per hectare has been assumed. As noted above this has been done in reference to key regional and city policy and plans alongside technical advice from consultants (Stantec and BBO) regarding transport and infrastructure constraints.

It is not intended for the development to be a monoculture of one architectural form and density. An average net density of 50 dwellings per hectare assumes a mix of higher and lower densities. Refer to 6.9 for more detail on housing typologies.

Guiding Good Outcomes

An overarching objective for the site is to deliver a modern, high amenity, compact, connected, and liveable neighbourhood. The proposed provisions and rule framework aligns closely with MDRS. This sets the framework for bulk and location, site coverage, permeability, and the size of outdoor living spaces.

As previously mentioned, the Plan Change provisions have been influenced by the requirement of not being more restrictive than the MDRS. The proposed provisions seek to control and guide as much as practicable (and permitted) good urban outcomes in relation to (among other things);

- Urban trees - refer to plan provisions rule 4.15.3.b.
- Building orientation and relationship to the street for terraces and apartments, refer to plan provisions rule 4.15.8.b
- Access. refer to plan provisions rules 4.15.8. c, d, e

The proposed Ruakura Tuumata Structure Plan – Transport Corridor Cross Sections Figure 2-14 – appendix 4 seek to ensure the delivery of a high amenity, highly walkable and cyclable street network. This objective is supported by plan provisions in chapter 23.2.8.

As outlined in 6.4 above. A key objective for the site is the delivery of a neighbourhood that is accessible and easy to move around. Overall block depth, width and perimeter are key factors in achieving a permeability and accessible neighbourhood. The plan provisions in chapter 23.7.9.b have been developed to ensure good urban outcomes in this regard.

As density and building height increases it becomes increasingly important to manage outcomes and provide the appropriate level of amenity. For restricted discretionary (RD) applications which apply to terrace housing and apartments and also where compliance with the standards is not otherwise met, a more prescriptive assessment criteria have been adopted to ensure that Council, and Urban Design Panel have opportunity to judge and guide good outcomes.

In managing orientation and relationship to the street design assessment criterion N17 c Configures buildings on the site so that each dwelling has a front elevation including a front door and habitable room windows positioned to face (and in the case of the front door to be accessible from) the transport corridor or private access way that is to act as the public front.

And in relation to privacy N17 a iii. configures windows to habitable rooms within buildings to maximise the privacy of neighbouring outdoor living spaces and habitable rooms, including by positioning the principal windows of habitable rooms to face streets and public open spaces where possible.

Subdivision

The intended outcome for subdivision within the Ruakura -Tuumata Structure Plan is that it contributes to a well-functioning urban environment. Of particular concern in this matter is the relationship of future dwellings with the street, block permeability and the walkability of the development

Private driveways providing access to multiple dwellings should be avoided. JOAL's should be used for rear access garaging only. JOAL's should allow for through movement and should not have a single entry/exit point.

Existing Hamilton City Council processes and legal instruments should be utilised to avoid poor outcomes borne out of future subdivision. The assessment criteria included with the Plan Change which apply to subdivision will ensure such outcomes and avoided.

Design Implication – It is intended through the masterplan - indicative local road layout and block structure -- that dwellings/houses front the street, establishing public frontages and private backyards. Subdivision should not lead to 'sausage flats' rear access lots, cul de sacs or low amenity streets where private cars and garaging dominate.

The development of design guides and maintaining discretion and good judgment over design and layout will help ensure quality outcomes that meet the development objectives.

6.9 Housing typology

The indicative 50m wide block (25m deep lots), and provisions for building height of three levels (12m), provides development flexibility and enables a variety of housing typologies to be delivered. The masterplan and indicative local street layout supports single storey dwellings,

duplex dwellings, terrace dwellings and apartments to deliver on the intended average net density. This is illustrated in figure 7.

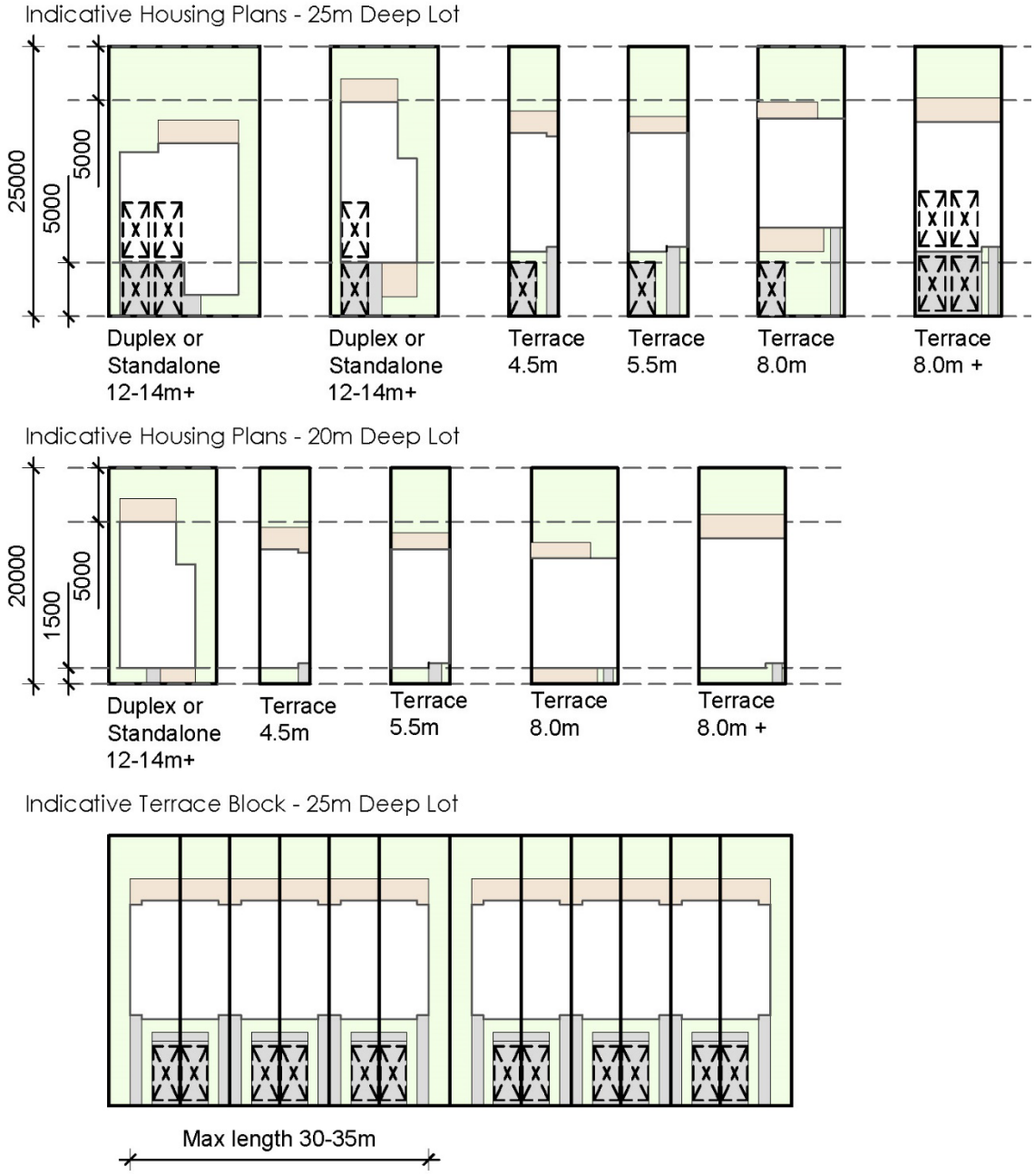

Figure 6 - Indicative Housing Plans

6.10 Public Open Space

Neighbourhood Park

The masterplan proposes a centrally located neighbourhood park 0.5ha in size. The neighbourhood park is well connected through separated walking and cycling facilities as well as sitting adjacent to a proposed 'indicative' local bus route. The neighbourhood park is to

function as a community destination offering people a space for socialising, leisure and recreational opportunities a short walk or cycle from their homes.

The neighbourhood park is designed to be adjacent to/fronted by roads on two sides. The intent of this is to keep the park open, safe and inclusive. The location invites people to pass and walk through while passing people (active modes and in vehicles) also provide passive surveillance.

The neighbourhood park is to cater to a variety of activities and people of all ages and abilities.

These aspirations are supported by the plan provisions in chapter 23.7.9.d

Passive and Active Recreation Opportunities

A large network of stormwater treatment ponds and swales, supported by shared paths and separated cycleways provide significant passive and active recreation opportunities, helping to encourage healthy, active lifestyles as well as improve connectivity and promote a more social and cohesive neighbourhood.

Indicative Cycle & Pedestrian Access

The masterplan and subsequent structure plan drawings show a series of indicative cycle and pedestrian access points, as well as indicative off road cycle facilities and pedestrian connections. These connections support the concept of 'filtered permeability' and function as green links/pocket parks, helping to ensure overall block permeability for walking and cycling is achieved while creating a pleasant low traffic environment around people's homes.

These spaces will primarily function to provide pedestrian and cycling connections, however they will also function as small informal recreation and socialising spaces which cater to nearby residents. They will also help to support the overall character and amenity of the development.

6.11 Road and Street Design

A key objective for the site was to create a permeable and connected neighbourhood that prioritises active modes and supports healthy active lifestyles. To achieve this the proposed masterplan uses a combination of approaches.

Filtered permeability, the avoidance of four-way intersections, narrower (5.7m) local streets and a road hierarchy and logic that limits vehicle through movements, helps to reduce rat running, improves safety and helps create enclaves of quiet neighbourhood focused streets.

The road and street design seeks to ensure that:

- Key streets and routes can be extended in the future to connect to new and existing neighbourhoods, activity areas and developments.
- Narrower (5.7m wide carriageway) 'quiet or slow speed streets' are supported by a logical and convenient network of wider (7m wide carriageway) local streets.

Refer to appendix 4 for the Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections.

Rear Access Lanes and Jointly Owned Access Lots (JOALs)

Rear access garaging and JOALs play an integral role in achieving high amenity streets and public spaces in medium density neighbourhoods. In some cases, medium density/multi-level

terraced housing can result in individual dwellings as narrow as 4.5-5m. Implemented incorrectly narrow lots can create streets where private carparks, vehicle crossings, and garaging dominate the street. JOAL's and rear lane access/garaging should be used and promoted to assist in:

- Ensuring high amenity and safe streets - Ensuring houses (frontages) maintain a strong relationship with the street and are not dominated by private garaging and carparking. This is a particularly important consideration through subdivision. It is important that housing typology, lot layout and approach to vehicle access and on and off-street parking is considered/developed in unison to insure good urban outcomes.
- JOALS, can provide an alternative approach when on-street carparking is limited as a result of private vehicle crossing and garaging.
- Rear lanes and JOAL's can support the storage and collection of waste, allowing for this activity to occur out of site and away from the public street.
- Rear lanes and JOAL's should not have a single entry and exit point. Ensure JOALs allow through movement with the use of multiple exists.

The masterplan and indicative road layout provide enough flexibility to support the use of JOALs and rear lane garaging where required, this was further illustrated in Figure 2.

7.0 Summary and Conclusion

In conclusion, it is considered that the Plan Change offers an appropriate response for the site. The development enabled by the Plan Change will result in a compact, connected, modern, inner-city suburb close to the city centre. The proposed land use change from industrial to residential provides a positive step toward rebalancing the distribution of residential land in Hamilton, and prioritising growth around the city centre.

Overall, the outcome of this assessment is that the Plan Change represents a high-quality development that is considered to contribute positively to the aspirations of Hamilton City, aligning with key national, regional and city policy and objectives.

8.0 Glossary of Terms

Term	Definition
Active frontage	Street frontages where an active visual engagement occurs between people in the street and those on the ground floors of buildings *(Source: Brunswick Structure Plan, Vol 3, Part 2, Moreland City Council)*.

Term	Definition
Amenity	The qualities and attributes people value about a place that contribute to 'quality of life' in that place, such as schools, services, and community and recreational facilities *(Source: "Building Sustainable Urban Communities" Glossary, Department of Internal Affairs)*.
Building mass (Massing)	The combined effect of the arrangement, volume and shape of a building or group of buildings. *(Source: Auckland Design Manual glossary)*.
Character	Appearance, qualities and combination of attributes of an area, place, street or building that helps to give that place a distinct identity. *(Source: Auckland Design Manual glossary)*.
Controlled activity	Activity requiring a resource consent from a local authority, but which will always be granted. The application for a controlled activity consent is assessed according to specified matters over which the Council will exercise its control. *(Source: RMA Rules: A Summary of Activity Classes)*.
Crime Prevention Through Environmental Design (CPTED)	Philosophy based on good design and effective use of the built environment leading to a reduction both in the fear and incidence of crime, as well as an improvement in the quality of life. The use of CPTED is intended to reduce crime and fear by reducing criminal opportunity and fostering positive social interaction among legitimate users of space. The emphasis is on prevention rather than apprehension and punishment. *(Source: Auckland Design Manual glossary)*.
Density	Density is the concentration of population and activity in an urban area. The most vibrant, diverse and exciting part of a city is often its centre. *(Source: Summary of The Value of Urban Design, The economic, environmental and social benefits of urban design, MFE)*.
Discretionary activity	Activity for which a local authority has retained its discretion to grant resource consent. If the resource consent is granted the local authority may set any conditions that fall within the its powers under Section 108 of the RMA. *(Source: RMA Rules: A Summary of Activity Classes)*.
Façade articulation	Method of styling the joints in the formal elements of architectural design where each part is united with the whole work by means of a joint. The articulation of a building reveals how the parts fit into the whole by emphasizing each part separately *(Source: Wikipedia)*.
Urban grain	Balance of open space to buildings, and the nature and extent of subdividing an area into smaller parcels. For example, a 'fine urban grain' might constitute a network of small or detailed streetscapes. Urban grain includes the hierarchy of street types, physical linkages and movements between locations, and modes of transport. *(Source: Creating Places for People, an urban design protocol for Australian cities)*.
Height in relation to boundary (HIRTB)	Rule that manages the potential impact that a new building or addition might have on the neighbours. It is defined with an invisible envelope that the building must be contained in. The envelope is measured vertically from ground level at the boundary with a set height and recession plane inclined inwards (The height and incline varies between zones). *(Source: Unitary Plan 101, Your Easy guide to understanding the Residential Standards)*.

Term	Definition
Height limit	Rule to limit the height of buildings. Each zone has different height restrictions. 'Height' is measured as the vertical distance between the highest part of the building (or structure) and ground level. 'Ground Level' refers to the existing ground height before any earthworks occur. *(Source: Unitary Plan 101, Your Easy guide to understanding the Residential Standards)*.
Liveability	The degree to which an urban area provides a safe, inclusive and environmentally benign basis for the social and economic life of all its citizens. *(Source: Liveability discussion document, liveability principles, sample letter and liveability key word list, MFE)*.
Masterplan	A detailed plan for a defined area that involves the integration of social, cultural, economic and environmental considerations into one overall design and can include the final expected physical form of the buildings and spaces within. *(Source: Auckland Design Manual glossary)*.
Mix of uses	A mixture of activities such as residential, business, retail, or hospitality that occupy space within the same building or within the same street block or area (i.e. an apartment building with shops, cafes, and offices on the lower floors, or a town centre with these activities) *(Source: Auckland Design Manual glossary)*.
Movement network (street network)	Interconnected system of streets, roads and paths that accommodates pedestrians and cyclists, on-road public transport, emergency and private vehicles, connecting places and activities, allowing people and goods to reach their destinations and access private land. *(Source: "Movement Networks", Healthy by Design)*.
Open space	Green space consisting of any vegetated land or structure, water or geological feature in an urban area and civic space consisting of squares, market places and other paved or hard landscaped areas with a civic function. *(Source: Auckland Design Manual glossary)*.
Outlook	A place from which a view is possible; a vantage point.
Parti pris	The primary concept or organizing idea behind a design. The parti, or main idea, can be illustrated in a parti diagram. These simple drawings show relationships between the different structural elements of the idea. *(Source: Oxford English Dictionary)*.
Passive / active recreation	Activities engaged in for the purpose of relaxation, health and wellbeing or enjoyment with the primary activity requiring physical exertion, and the primary focus on human activity. *(Source: Oxford English Dictionary)*.
Permitted activity	Activity that occurs without the need of a resource consent, provided it complies with conditions stated in relevant rules. It is useful to authorise uses that would otherwise require consent under the RMA, but have minor effect on the resource used or the environment affected. *(Source: RMA Rules: A Summary of Activity Classes)*.
Public realm	An area that is only accessible to those that have a right of entry as decided by the site or building owner. *(Source: Auckland Design Manual glossary)*.

Term	Definition
Public space	Spaces that are publicly owned and which are intended for use by the public, and spaces that are privately owned and which are intended for use by the public. *(Source: Auckland Design Manual glossary)*.
Significant landscape features (Landform)	Features of a site's surface influencing a development. To contribute to the character of a place developments should acknowledge and retain these features as much as possible rather than remove them.
Te Aranga principles	Set of outcome-based principles founded on intrinsic Māori cultural values and designed to provide practical guidance for enhancing outcomes for the design environment. The principles have arisen from a widely held desire to enhance mana whenua presence, visibility and participation in the design of the physical realm. *(Source: Auckland Design manual)*.
Universal design	Design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. *(Source: Centre for Excellence in Universal Design)*.
Urban grain	The size of buildings and sites, patterns of arrangement, and the degree to which an area's street blocks and street junctions are small and frequent, or large and infrequent. *(Source: Auckland Design manual)*.
Visual (building) massing	Three-dimensional bulk of a building: height, width, and depth. *(Source: Illustrated Book of Development Definitions)*.

Appendix 1: Information Reviewed

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Appendix 2: Structure Plan Drawings

Figure 2-14A: Ruakura Tuumata Structure Plan

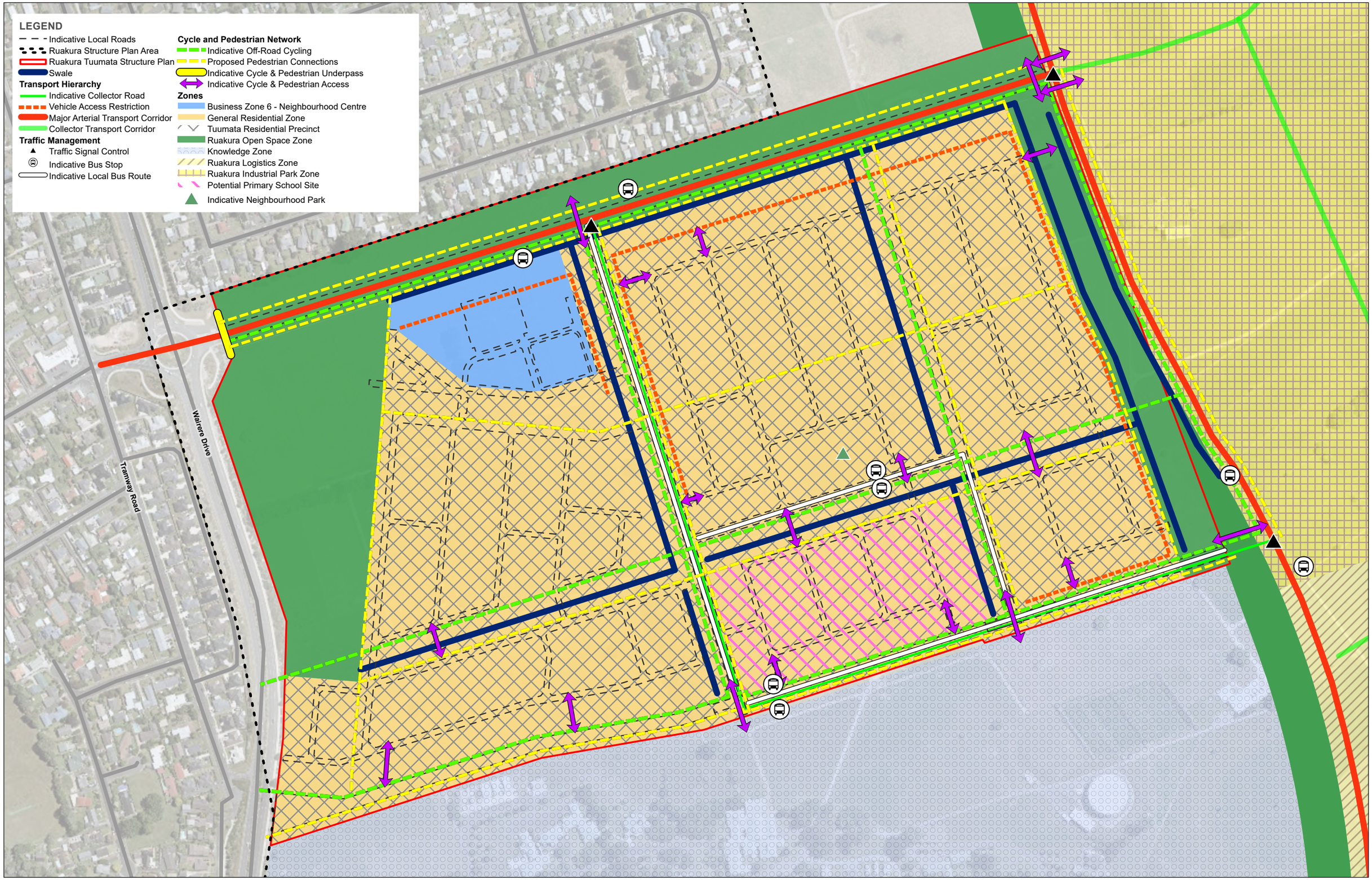
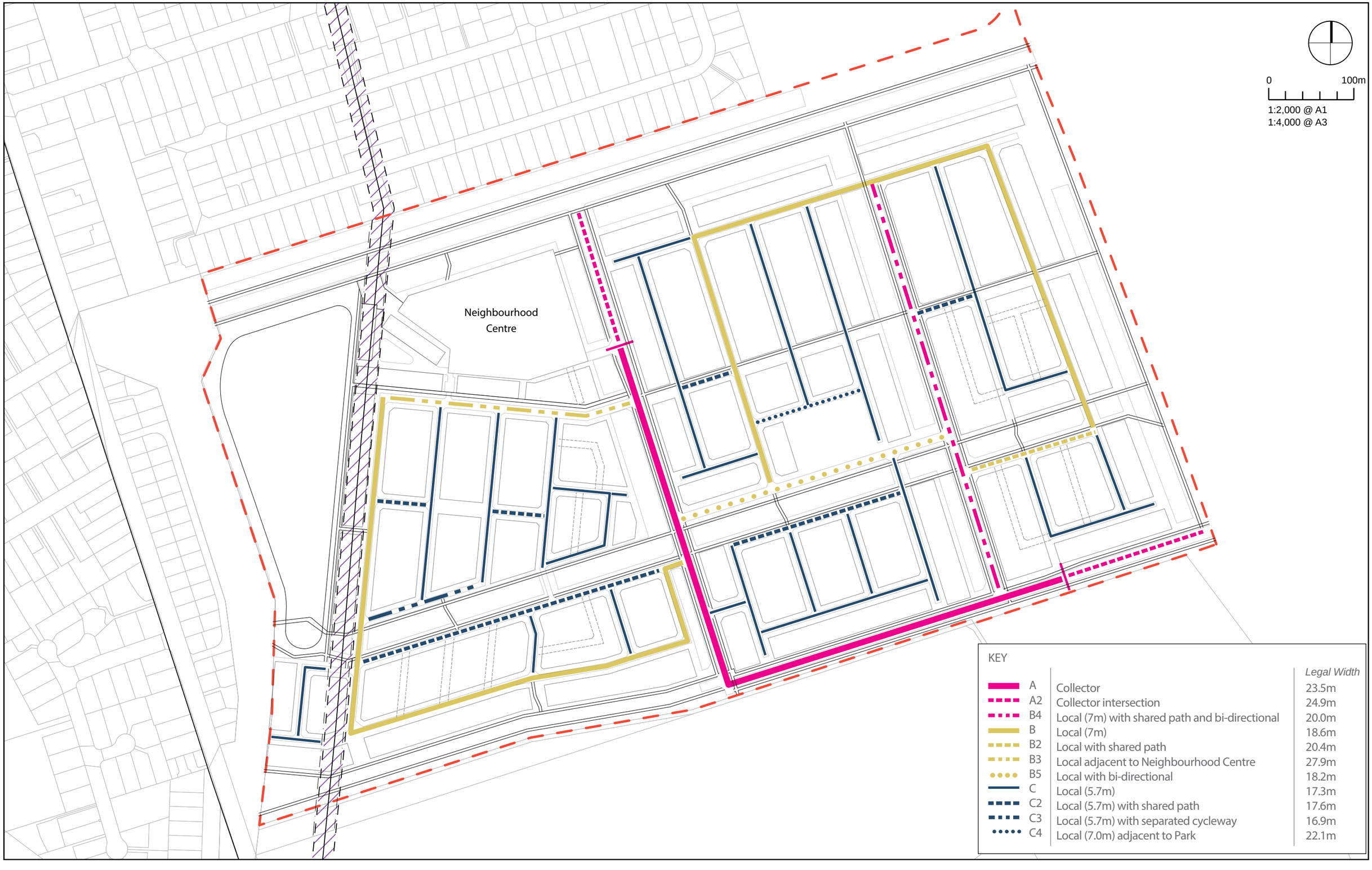


Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections



Appendix 3: Preliminary Development Concept Plans

Boffa Miskell

Ruakura - Tuumata

Urban Design Report
Prepared for Tainui Group Holdings Limited
FINAL
14 December 2022

Boffa Miskell is proudly a
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Appendices

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1.0 Introduction and Background

This urban design report has been prepared as part of the documentation for a Private Plan Change (PPC) application by Tainui Group Holdings Limited in relation to the Ruakura-Tuumata Structure Plan Area (The Site) formally known as the Tramway Block. The site is located at the eastern edge of Hamilton City on the block bounded by Wairere Drive to the west, Fifth Avenue Extension to the north, the Eastern Transport Corridor (formerly identified as the Spine Road) to the east. site is surrounded by a diverse mix of land use and activities with the surrounding context consisting of – in equal measure -- a mix of industrial, residential, and agricultural character.

Ruakura has been identified as a priority development area in the central metro corridor within the Hamilton-Auckland Corridor Plan and Implementation Programme, and the Hamilton-Waikato Metropolitan Spatial Plan. In particular, the strategic direction within these documents seeks to progress the rezoning of the site to provide for higher density residential development.

The purpose of this report is to provide an outline of the information/documents, design rationale and principles used through the masterplan development process (refer appendix 3) as well as the development of the structure plan drawings prepared by Boffa Miskell Limited, which form part of the Plan Change and are as attached to the Plan Change Report prepared by Peter Hall planning Limited . The report outlines key considerations as they relate to the wider existing and proposed context surrounding the site.

The development of the masterplan and subsequent structure plan drawings have been done in reference to the core principles of the;

- New Zealand Urban Design Protocol: The 7C's,
- The Metro Spatial Plan, Future Proof (2021),
- Hamilton City Councils design guide Vista,
- Hamilton Urban Growth Strategy (both current and draft – Oct 2022),
- Access Hamilton - Ara Kootuitui Kirikiriroa
- UN Sustainable Development Goals
- Medium Density Residential Standards (MDRS).
- Te Ture Whaimana o Te Awa o Waikato - Vision and Strategy for the Waikato River
- Our Climate Future: Te Pae Tawhiti O Kirikiriroa (Hamilton City Council, 2022)

2.0 Structure Plan Area

The Ruakura-Tuumata Structure Plan Area sits approximately 2.4km to the east of Hamilton City Centre and is bounded by Wairere Drive to the west, Fifth Avenue Extension to the north, the Eastern Transport Corridor (formerly identified as the Spine Road) to the east.

Growth in Hamilton has traditionally favoured areas to the north of the city centre, creating an imbalance in the distribution of residential development around the city centre. This imbalance has created a unique condition whereby the city is inherently narrow (approximately 6km) in an east west direction. As a result, the site – while close to the city centre -- is located on what is currently the periphery of the city's eastern most urban boundary, located to the east of the residential suburb Enderley.

The site is approximately 68ha in size, currently operating as a working farm and is characterised by a mosaic of low-lying grazing and cropping paddocks, interspersed with hedgerows, mature exotic trees and farm buildings typical of the rural Hamilton landscape. To the south of the site, the buildings of the AgResearch Centre and Hamilton City Councils Water Reservoir – that sits on the tallest landform -- represent the most significant local landmarks.

This area of the city is experiencing rapid change with the construction of the Hamilton Expressway, the Ruakura Inland Port and Logistics Centre and the Eastern Transport Corridor (ETC not yet under construction) all happening directly to the east of the site. These developments - once complete -- are expected to support approximately 11,000 jobs. The introduction of housing and a new neighbourhood centre within the site will provide a significant volume of new, modern, medium density housing. This allows a greater number of people to live closer to significant employment opportunities (Inland Port, University, City Centre and Schools) providing a greater density of people living and working on the city's east flank.

Figure *1* - Ruakura-Tuumata Structure Plan Area

3.0 Context and Character

"Ruakura is named after a pit in the area that was used to burn iron oxide. Traditionally, large pieces of iron oxide found in swamps were heated, by burning in a fire, to produce a powdery red pigment. This was mixed with water to produce the sacred red Kokowai (ochre) which was used for painted tapu ceremonial objects, koiwi and carvings. Burning the red oxide stained the pit red thereby giving rise to the name Rua (hole or pit) kura (red)" (NaMTOK Consultancy, 2011)

3.1 History – Pre-European

Historically the Tramway area (including the Ruakura-Tuumata Structure Plan Area) of Ruakura would have consisted of a mix of low-lying peat wetlands and higher rolling landforms. "There were areas of peat wetlands and swamp, interspersed with mixed forests of native trees such as Kahikatea, Tawa, Hinau, Totara and Miro which grew on the dry areas. Manuka, Toetoe, flax, Raupo, Wiwi (native sledge), ferns, Maire and Manawa grew in the swamps themselves, with stands of Nikau around the margins. Kanuka and ferns grew in the gully system. Pigeons, Komako (Bell bird), Kaka (native parrot), and Kiwi were abundant in the Kahikatea forests, with Pukeko and abundant duck life tuna (eels} in the swamps. Parohe (native trout} and Kokopu (the large silver bellied eel} swam in the streams in the gullies. There was no extensive settlement of the wetland and swamp areas, but they provided abundant and essential food sources for the Maori people who lived in the surrounding areas" (NaMTOK Consultancy, 2011)

“The Ruakura land port site and surrounding hinterland has always been a centre of occupation for Ngati Wairere. It has been fought over and occupied by a number of different hapu claiming descent from Wairere over past centuries. Consequently, it is claimed as part of the traditional lands of several hapu of the Waikato Tainui Iwi, including Ngati Wairere and their related and associated subtribes such as Ngati Parekirangi, Ngati Waikai, Ngati Waihongi, Ngati Pakari, Ngati Iranui and Ngati Ngamurikaitaua.” (NaMTOK Consultancy, 2011)

Te Karearea - “Te Karearea was another important landmark in pre-European times renowned as a source for gathering berries, native pigeons and flaxes. Te Karearea once extended across what is now the Ruakura Research Centre and southwards, along the swampy plains below Waikato University. Small caches of ancient Māori artefacts (stone adzes and grinding stone for sharpening stone adzes) were found in 1978 in one of the paddocks of the Ruakura Research Centre towards the Tramway area. These were found, and retained, by Mr Eric Warner, a former employee of the Ruakura Research Centre.” (NaMTOK Consultancy, 2011)

Te Papanui – “Te Papanui was another famed large kahikatea/tawa forest that once covered what is now the modern suburb of Claude lands and Fairfield spreading across what is now Tramway Road and onto the Ruakura campus. Te Papanui like many other famed forest stands was hunted for native pigeons by the hapu who had manawhenua over these resources. The only remnant of Te Papanui is a 5-hectare Park reserve known as Jubilee Park located on the corner of Boundary Road and Brooklyn Roads near 5 Rross Roads and the small stands of Kahikatea found on the school grounds of Deanwell School” (School” (NaMTOK Consultancy, 2011)

Design Implications - These historical references capture aspects of the character, historic vegetation mix and cultural importance of the site. Future stages shall engage with mana whenua to ensure these important aspects inform and shape the future character and identity of the site. This can be achieved by selecting the appropriate native plant species mix, the use of integrated stormwater treatment, swales and wetlands, and integrating place naming, interpretation signage and cultural design elements the site (streets and open spaces). Collectively this will help the development to respond to local context, cultural values and to enhance sense of place.

3.2 History – Early-European

The Tramway block gets its name from the nearby Tramway Road. Tramway Road runs parallel to Wairere Drive immediately to west of the site boundary. Tramway Road “was shown as a proposed tramway on an 1865 map. It seems to have been of double width to accommodate a tramway to Cambridge and to have first been discussed by Kirikiriroa Road Board in 1872, though clearing and gravelling didn't start until 1891.” (Wikipedia contributors , 2022)

Early settlers soon cleared the native vegetation, drained the wetlands to make way for farming and agriculture. Native vegetation was replaced by large exotic tree species, planted as hedge rows, and for shelter. Many of these features remain today.

3.3 Current Contextual Environment

Today the site remains as a working farm with an overall character consistent with the rural, agricultural land surrounding Hamilton. The Tuumata site is bounded by established low density neighbourhoods, Fairview Downs to the north and Enderley to the west. Immediately to the south the site is bounded by the AgResearch Centre. The conditions to the east of are changing rapidly with a number of significant developments planned or under construction. These are outlined further in section 3.4.

The site is close to a number of activity centres

- Five Crossroads – approximately 0.9km
- University of Waikato – approximately 1.2km
- Countdown Claudelands, Mitre 10 mega – approximately 1.2km
- Claudelands Event Centre and Grey Street Shops 1.8-2km
- Hamilton City Centre – approximately 2.5 – 3km

The site is close to a number of Schools. however, many of these do not fall within what is considered a reasonable walking distance in relation to ages they cater for.

- Te Kura Kaupapa Māori o Te Ara Rima – approximately 0.6km
- Insoll Avenue School – approximately 1.0km
- Southwell School (Private) – approximately 1.3km
- Hamilton Boys High – approximately 2.0km
- Peach grove Intermediate – approximately 2.0km

Design Implications – The site has been designed so that several of the 'super blocks' are capable of accommodating a 4ha school site. While not currently proposed by the MoE, the design does not preclude the inclusion of a school

The mix and proximity of existing activity areas provides useful context for the development of the Tuumata Neighbourhood Centre as well as informing the proposed walking and cycling network that may help connect people to these external locations.

3.4 Context - Changing Environment

To the east and north of the site there are four significant developments planned or currently under construction, these include.

1. **Ruakura Inland Port and Logistics Hub (under Construction) -** The Ruakura Inland Port (30ha) and Logistics Hub (89ha) is underway. The wider precinct will include a logistics hub, significant industrial development, extension of the existing Innovation Park, as well as areas for residential and retail activities. This wider precinct is projected to accommodate up to 11,000 employees when fully complete.

2. **Waikato Expressway – Hamilton Section (under construction) – Opened July 2022 -** The Waikato expressway is a new section of State Highway 1 and runs to the east of the Ruakura Inland Port and forms the eastern boundary of the current Ruakura Structure Plan area "The Hamilton section commences at the Lake Road junction with the Ngāruawāhia section in the north. It then runs south, to the east of Hamilton, connecting to the existing Tamahere interchange deviation just south of Hillcrest. When complete the Waikato Expressway will be the key strategic transport corridor for the Waikato region" (Waka Kotahi , 2022). The Ruakura Interchange sits approximately 2.5km to the southeast of the Tuumata site and includes a proposed service centre.

3. **Eastern Transport Corridor (ETC) – Formally the pine Road (In planning and design stage) -** The ETC is made of three sections formally known as the Spine Road North, Central and South). The section to the east of the site (Spine Road South) "will initially be two-lane with provision for a four-lane major arterial road from Fifth Avenue south to Ruakura Road West. This extends… to the Ruakura Industrial Park area. This section includes a road bridge over the East Coast Main Trunk Railway. It provides for public transport, shared footpath and cycleway and a swale area for stormwater management. Strategic wastewater and water infrastructure will co-locate within the road corridor." (Hamilton City Council , 2022)

4. **Fifth Ave Extension (early planning and design stage)** – Sitting within the site, the fifth Ave extension runs along – the northern boundary connecting from Wairere Drive to the ETC. When complete the Fifth Ave Extension is likely to include four traffic lanes, this new arterial will provide for public transport, a shared walking and cycle path and a swale area for stormwater management. The Fifth Ave extension provides the main east west link between Ruakura, the site and Hamilton City Centre.

Design Implications – The significant amount of new transport infrastructure means that the site is to be well connected through a mix of public and private transport options (including active modes) providing choice to future residents and visitors. The internal road layout of the site and position of key interactions have been designed as to not inhibit the performance of future transport infrastructure, maintain the effectiveness of the wider transport network. The layout prioritises walking and cycling movement and encourages multi model movement to and from the site.

3.5 Transport Context

Wairere Drive – 'Ring Road' – The site is bounded on the western side by Wairere Drive a major - 4 lane -- arterial (Hamitlton City Council , 2022) and significant transport corridor, running in a north south direction. The ring road will eventually connect through the Peacocke development to the south of the river and connect to SH1 in the north of the city near The Base. Wairere Drive caters to walking and cycling through a 3m shared walking and cycling path.

At 4 lanes wide, Wairere Drive acts as a severance corridor, with limited crossing opportunities for pedestrians and cyclists. There are two existing underpasses crossing Wairere Drive.

- One to the north-west corner of the site, to the south of the Wairere-Fifth Ave Intersection
- The second underpass is located at East Street and Bisley Road approximately 250m from the south-east corner of the site.

The Proposed Walking and Cycling network (movement corridors) proposed for the site have been designed to connect into the existing Wairere shared path and will connect people to the two underpasses on Wairere Drive connecting into the wider Hamilton City Walking and Cycling Network.

The current Ruakura Structure Plan – This sets the context for current and future planned urban development, including transport and active mode network. Supporting this is a number of Hamilton City Transport Programs or Plans. In developing the masterplan for the site, the following documents have been referenced.

- Cycling and Micro-Mobility Programme Business Case (AT Planning & Investment, 2022)
- Access Hamilton (Hamilton City Council, 2022)
- Eastern Pathways – City Centre to University Link Single Stage Business Case (BECA Ltd, 2021)
- Eastern Pathways – School Link Single Stage Business Case (Beca Ltd, 2021)

4.0 The Proposal/Proposed Development

The proposed Ruakura-Tuumata Structure Plan Area contains two primary uses, residential and neighbourhood centre -Business 6. The proposed Tuumata Residential Zone would provide for approximately 1100-1300 homes on lots ranging from 110-400m2. The residential block dimensions have been designed to provide flexibility in density and housing typologies, the blocks cater to a range of housing possibilities and combinations from more traditional standalone housing to medium density, multi-level housing.

To support the daily needs of the proposed Tuumata neighbourhood the Tuumata Neighbourhood Centre (Business 6) is proposed. The scale, mix of activities and timing for the proposed Tuumata Neighbourhood Centre has been developed in collaboration with HCC and through guidance received from Formative and takes into account the wider centres hierarchy

ensuring that the Neighbourhood Centre does not detract away from existing centres or compete with the city centre.

It is important to note that that the Fairview Downs, Enderley and southern parts of Chartwell are poorly serviced by retail, supermarkets and top up food shopping. The proposed neighbourhood centre is helping to support the daily needs of a catchment that extends beyond the site.

4.1 Site Layout and design

The site has been designed around 6 key drivers. These have been developed through the review and consolidation of themes contained in the UN Sustainable Development Goals (SDG's), New Zealand Urban Design Protocol, Hamilton-Waikato Metropolitan Spatial Plan, Hamilton Future Proof (2021) and Hamilton City Councils design guide VISTA.

These design drivers have been applied at the masterplanning/site layout scale. These have been developed to ensure that wellbeing remains as the foundational concept informing site layout. More detail outlining key design principles has been included in section 6.

1. **Development flexibility, variation and choice** - Allowing for a range or lot sizes and housing typologies and tenure (including potential Kaumatua dwellings) create the conditions that support the creation of a diverse community. The design also takes a long-term view and considers future 'second generation' development and allows for future expansion of the city by using a logical and coherent street and block structure (urban form).
2. **Orientation and liveabilit**y - Street network and block layout designed to promote fair access to sunlight within dwellings and outdoor spaces.
3. **A permeable and connected neighbourhood** – The 'grain' of the residential blocks is designed to maximise permeability and support the creation of safer and more sociable neighbourhoods. 'Green' pedestrian links ensure that people have movement options that are convenient and direct. Movement of pedestrian and cyclists should be safe and avoid conflict with vehicles. The layout seeks to encourage healthy, active lifestyles and promote social cohesion and greater social interaction and engagement through vibrant and activated streets. The design maximises opportunities to connect into existing and future neighbourhoods and surround activity areas.
4. **Support a more compact and carbon positive development** – The design endeavours to promote the use of active modes (promote mode shift) and reduce the reliance on private vehicles (Reducing Light Vehicle Kilometres Travelled). The Eastern Transport Corridor and Fifth Ave Extension is to include a frequent bus service. The design endeavours to maximise access to this service optimising existing and proposed public transport infrastructure, providing the conditions to support multimodal transport approach and providing for a neighbourhood centre to meet the day to day needs of residents, thereby reducing reliance on motor vehicle trips further afield.
5. **Environmental performance of Infrastructure** - Ensure environmentally integrated and water sensitive planning and design principles are considered at all scales. Seek responsive solutions that lead to positive environmental outcomes within the catchment. This includes how to give effect to Te Ture Whaimana o Te Awa o Waikato – Vision and Strategy for the Waikato River.

6. **Green and Accessible** – The site is designed to provide access to a variety of green open spaces, community infrastructure and recreation opportunities, utilising planted, high amenity movement corridors that cater to a variety of community needs.

Design Implications – A network of 'green/movement corridors' (Road with parallel stormwater swales) function as organising elements providing structure and hierarchy to the site. The combination of swale, road and rear access housing allow these corridors to prioritise walking and cycling movement by limiting the number of road and side roads crossings. Theses corridors provide structure and hierarchy to the development, contribute to a more legible environment, and ensure that the neighbourhood centre remains internally connected and within a walkable catchment.

5.0 Planning and Policy Context

5.1 Influence of the UN Sustainable Development Goals

"In September 2015, the United Nations signed up to 17 Sustainable Development Goals (SDGs) and 169 Targets

The 17 goals and 169 targets set out a universal agenda to achieve sustainable development globally, known as Agenda 2030. They bring together the three dimensions of sustainable development: economic, social, and environmental. They apply to all countries" (New Zealand Foreign Affaird & Trade, 2022).

While the SDGs are not legally binding and there are growing calls for these to be refreshed, New Zealand has made a commitment to coordinate on related policy issues. This commitment provides useful context to the range of national initiatives under the New Zealand Wellbeing Economy and Budget, as well as providing context to recent changes to key policy issues such as National Policy Statement - Urban Development, Aotearoa New Zealand Emissions Reduction Plan, and the development of the Climate Emergency Response Fund (CERF), New Zealand Infrastructure Strategy and Road to Zero Program among others.

The Government Policy Statement on Housing and Urban Development seeks to "support development that creates vibrant, thriving and connected places where everyone can live affordably and access opportunity" (Te Tūāpapa Kura Kāinga (HUD), 25)

The SDGs provide a 'shared blueprint' for how collectively we start to measure success and make key decisions on how to achieve a better and more sustainable future. Understanding these provides depth and context to a large number of guiding principles and directives contained within regionally significant documents such as Future Proof and the Hamilton-Waikato Metropolitan Spatial Plan.

Of the 17 Goals and the subsequent targets the following are of particular relevance.

- Target 3.6 - By 2020, halve the number of global deaths and injuries from road traffic accidents
- Target 3.9 - By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

- Target 6.6 - By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes
- Target 11.2 - By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
- Target 11.3 - By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries
- Target 11.6 - By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- Target 11.7 - By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- Target 11.b - By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all level.

There is strong alignment between the UD SDG goals and more recent national, regional and city policy and guides. In reference to the UN SDGs the masterplan seeks to:

- Enhance inclusive and sustainable urbanization
- Provide universal access to safe, inclusive and accessible, green and public spaces
- Provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety.
- Protect and restore water-related ecosystems – This has clear relevance to the subject site.

  Developing plans and policies towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters.

5.2 National Medium Density Residential Design Guide (MDRDG)

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act was enacted in December 2021. This introduced the Medium Density Residential Standards (MDRS), which are aimed at increasing housing supply and choice across our largest urban areas by enabling the development of three homes of up to three levels/12m in height, on each site. The concept of a well-functioning urban environment is a key concept within the MDRS. To encourage well-functioning and high-quality housing, the Ministry for the Environment (MfE) commissioned a National Medium Density Design Guide (MDRDG).

The MDRDG is based at the site scale rather than greenfields, and while focused toward anyone interested in medium density housing it is “particularly small-scale property owners or

those with limited experience in more complex residential developments" (Ministry for the Envronement MfE, 2022)

The MDRDG has 4 overarching design principles:

- Fit within the wider natural, cultural, and urban landscape
- Develop housing and access solutions that provide for the needs of its residents
- Contribute to healthy and safe communities and homes
- Encourage sustainable design that minimises impacts on the natural environment

The design principles are broken down further on page 5 of the MDRDG. In reference to these, the Tuumata masterplan seeks to;

- Understand the interwoven relationships of a place by responding to the wider social, cultural, and environmental context.
- Acknowledge the city/town/neighbourhood scale and street setting, contributing to the enhanced quality of the future environment and supporting tools and plans for tangata whenua and the wider community.
- Understand and respond to the wider housing needs of the community
- Design developments with whānau in mind, by considering residents' accessibility to public transport, or their convenience to local education, employment, recreational and community services, to help inform the transport options provided.
- Design houses that provide for day-to-day living of all residents, which incorporates the needs of an aging population, young children and disabled people (ie, universal design).
- Contribute to housing solutions that cater for diversity, accessibility, and for small and large family and non-family households.
- Support day-to-day social interaction with those using streets and parks, while allowing residents and neighbours to seek privacy when desired.
- Recognise the importance and vitality of whānau (family) and mauri (life force) to cater for overall health, wellbeing, and identity
- Acknowledge wider climate and other environmental qualities that can support sustainable design, respond to the challenges of climate change, and is resilient to natural hazards.
- Reduction in greenhouse gas emissions, apply water sensitive design, and support sustainable transport modes like walking, cycling and public transport.

Where items have not been listed, they sit beyond the scope of the structure planning process and should be incorporated into future stages.

Design Implications – In developing urban form and structure for the masterplan the key principles of the MDRDG have been taken into account. The design seeks to create a modern development that meets the expectations set by recent national policy, guides and strategy. The detail of this is outlined further in section 6.0

Density has been modelled based on what is achievable on average on a greenfields site using the MDRS. This has been outlined further in section 6.8

5.3 Hamilton-Waikato Metropolitan Spatial Plan.

“The Hamilton Waikato Metropolitan Spatial Plan (MSP) is a vision and framework for how Hamilton City and the neighbouring communities within Waipā and Waikato districts will grow” (Future Proof Implementation Committee, 2020)

Of particular relevance to Ruakura-Tuumata Structure Plan Area are the MSP objectives:

- Build upon and strengthen local characteristics to create a sense of place.
- Meet the diverse needs of residents of the metro area through a range of housing types and safe and inclusive urban design.
- Improve choices for the location and type of housing.
- Providing opportunities for housing and lifestyle choice, including papakaainga, within defined locations, with greater emphasis on good urban design.
- Promote an urban form that can be more easily accessed by a variety of modes of transport including walking, cycling and frequent and rapid public transport options.
- Planning for a future where all new developments are focussed around walking and cycling and access to frequent and rapid public transport providing choice and access to jobs, services and amenities.
- Encourage people away from private vehicle use, supporting the diversity and vibrancy of activities within centres.
- Locate communities and jobs around existing and new centres, supported by rapid and frequent public and active transport connections.
- Plan and design neighbourhoods to make public transport use, walking and cycling easy and attractive.
- Promote healthy communities in corridor and network planning and management, supporting active travel in blue-green corridors and maintaining and enhancing public access to regional and local open space assets.

5.4 Hamilton City Council Plans and Strategies.

“Given our wide range of responsibilities, Council has a large number of concepts, plans, policies and strategies” (Hamitlon City council, 2022). The Access Hamilton Strategy provides a good overview of the Councils planning and policy framework. This sets a clear agenda ‘joining the dots’ outlining councils Council’s purpose of improving the wellbeing of Hamiltonians. Key outcome areas of influence to the masterplan are:

- Climate change
- A safe transport system with genuine travel choice
- Enjoyable, inclusive and liveable city
- Environmental responsibility
- Supports quality growth and urban development

6.0 Urban Design Principles of the Structure Plan

The following section provides an outline of the urban design rationale and key principles used in the development of the Tuumata masterplan - and subsequent structure plan drawings -- with regard to urban design desired qualities. Given the site context and locale, the following matters have been considered in assessing the proposal.

6.1 Right activity in the right place

The way Hamilton City has developed sits at odds with traditional development patterns common to many cities. Instead of growing around the city centre and developing public transport in something similar to a 'spoke and wheel' approach. Hamilton City has spread linearly to the north, using arterial roads to link residential areas with the city centre. This results in busy arterial roads that dissect through residential neighbourhoods, delivering congestion and severance issues common place to cities with much larger populations.

More recent residential developments to the north of the city (Rotokauri and Rototuna) are supported by commercial and employment nodes like Te Awa/The Base. The combination of modern low-density housing, dendritic streets and strip malls/big box shopping centres has delivered a carbon intensive, car dependent urban form that also negatively impacts on the life and vibrancy of the city centre.

Hamilton's residential suburbs spread approximately 16km in a north – south direction and only 6km east – west. The Tuumata site is currently zoned for industrial development, the appropriateness of this can be challenged on several fronts.

- Tuumata site sits just 2.4km from the city centre (to the east). By positioning industrial activity in this location, you are further limiting the opportunity for people to live close to the city centre
- Industrial activity in this area would provide a 'wedge' between existing residential neighbourhoods positioned to the east of Wairere Drive. The opportunity currently still exists to better join and integrate Fairview Downs with suburbs of Hamilton East to the south of Ruakura Road using a new local street network. This would result in a better more cohesive neighbourhood structure to the east of Hamilton. Promoting residential landuse in the area helps encourage the creation of more pedestrian and cycle friendly local streets, allowing existing and planned communities to connect without relying on busy arterial roads to do so.
- Industrial zone traffic can have a very negative impact on inner city roads and local streets. A key consideration as Hamilton City looks to prioritise public transport, walking and cycling, working towards a compact and clean city.
- Increased air pollution, noise are key other concerns raised in the past from the existing residential neighbourhood surrounding the site, albeit addressed through the Board of Inquiry rezoning of the site to industrial.

The masterplan seeks to develop a compact, connected, modern, inner-city suburb close to the city centre. The proposed landuse change from industrial to residential provides a positive step

toward rebalancing the distribution of residential land in Hamilton, and prioritising growth around the city centre.

This change to residential on the Tuumata site supports the aspirations of the Draft Hamilton Growth Strategy – Oct 2022. As well as aligning with other relevant national and regional policy documents by;

- Supporting the creation, a more compact and connected city
- Supporting a low-carbon future in line with our emissions reduction targets
- Enabling growth of homes and jobs in areas that can easily access public and/or active transport mode
- Supporting mode-shift and reducing light vehicle kilometres travelled

6.2 Development Flexibility and Choice

Each 'superblock' (see figure 2) has been designed with approximately 50m wide residential blocks. This approach – as illustrated in figure 2 -- provides development flexibility by allowing for greater choice in future subdivision design and consent processes, future design stages have the flexibility to adjust block dimensions to ensure good urban outcomes, ensuring there is good continuity between the house typology, density, lot depth and approach to on and off-street parking.

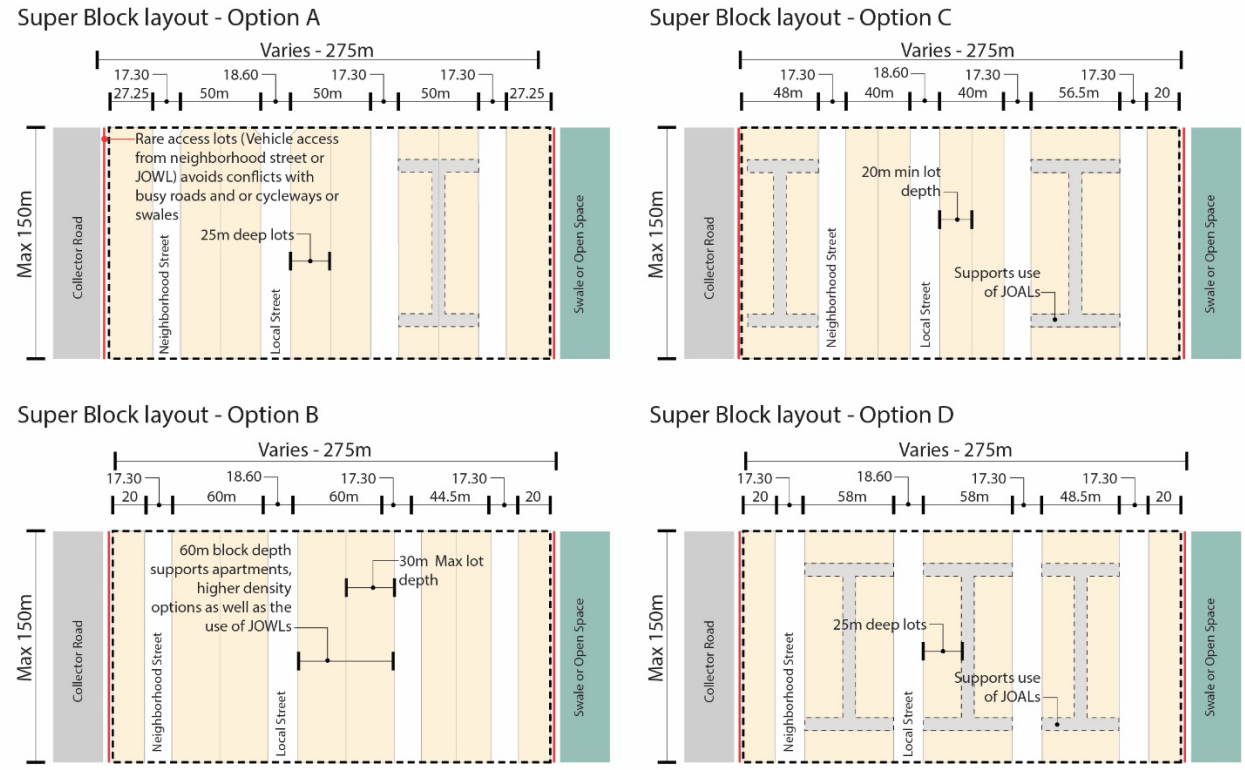

Figure 2 - Superblock layout examples

Given the level of design resolution - with regard to housing typology and individual lot layout -- at the Structure Plan stage, a baseline block depth of 50m was selected in developing the masterplan. This distance provides efficient lot depths that can accommodate a large number of

housing typologies suited to the proposed Tuumata residential zone and the intended density. The grid layout of the street network facilitates good public realm outcomes in relation to permeability, connectivity as well as helping ensure dwellings have frontage to the street, providing passive surveillance opportunities, and privacy where backs can adjoin backs for private open spaces to be located away from the public realm.

In developing the Tuumata masterplan a maximum 60m and minimum 40m block depth were adopted to test layout and development feasibility - illustrated in figure 2:

- 60m block provides for larger outdoor living spaces or can support an apartment typology, or use of Jointly Owned Access Lots (JOALs).
- 40m is better suited for terraced housing, where parking is on street only.

The masterplan and indicative street and block layout have also been designed to accommodate a potential 4ha school site should this option be preferred in later stages – Refer to drawing PCD-001 Appendix 3. A nominal location has been identified for the school of 4ha, adjacent proposed bus routes and the neighbourhood park and relatively central in the Tuumata residential zone.

6.3 Orientation and liveability

Sun access plays a very important role in the wellbeing of people, therefore the orientation of roads and lots is a key component when considering the liveability of individual lots and the development as a whole. For the masterplan, the block orientation is predominantly north south, setting up east west facing rear yards that will enjoy either morning or afternoon solar access. When the block orientation is in a north south direction and houses front the street, all rear yard's experience full mid-day sun. This orientation provides the most equitable layout for sun access.

Several leading residential architects were spoken to in developing and validating the block layout. It was clear from these conversations that designing medium density and terraced houses so that the main/front or rear façade face north is problematic. Excess solar gain and high internal heat can be difficult to control when the main façades (with higher levels of glazing) face north. Protecting and designing to control heat being one of the more difficult architectural elements to control. As much as practicable lots that encourage north facing facades have been avoided.

Similarly, every effort has been made to avoid lots with garaging on the northern side maximising the number of lots with private open space that enjoy good solar access.

The grid/orthogonal layout of the street network facilitates good public realm outcomes where dwellings have frontage to the street providing passive surveillance opportunities. As much as practicable rear yards adjoin rear yards to encourage private open spaces to be located away from the public realm.

Where private lots adjoin public open spaces or swales, shared paths have been proposed adjacent to the rear boundary. This has been done in an attempt to encourage rear pedestrian access, this helps activate these edges and further encourages the feeling of 'eyes' overlooking the public space.

6.4 A permeable and connected neighbourhood

A key objective for the site is the delivery of a neighbourhood that is accessible and easy to move around, with a clear structure and hierarchy of connected streets. Key to achieving this is a coherent pattern of development, avoiding streets that twist and turn unnaturally in an effort to control vehicle speed but make walking and cycling routes longer than they need to be.

In developing the masterplan, the aspiration was to move beyond traditional suburban greenfield development to create a 'modern' highly walkable and safe neighbourhood, connected to open space, recreation opportunities, neighbourhood centre and public transport.

Local roads are proposed in an orthogonal grid arrangement creating regular block shapes of consistent depths, lengths not exceeding 150m and axial road connections that are legible to navigate.

The layout of the road and circulation network has been designed to provide logical, frequent, and convenient connections through and around the site. Given the proximity to the city centre, the masterplan *"takes a long-term View"* (Ministry for the Environment, 2022). The road and block layout has considered how the site may evolve over time. The design considers future 'second generation' development and supports the future expansion of the city by using a logical and coherent street and block structure (urban form).

Pedestrian and cycle movement is catered for through 4 primary north-south movement corridors and 4 primary east-west movement corridors as illustrated in drawing PDC-005 - Appendix 3. These movement corridors are situated adjacent to stormwater swales and on the collector road and include either a shared path or separated cycle facility, and in some cases (Central Swales, Collector Road and Firth Ave extension) they include both.

The movement corridors seek to provide regular opportunity (every 100-200m) for pedestrians and cyclist to access safe, protected routes with limited vehicle crossings, limited or no side friction, minimising potential vehicle conflict points. These routes link to public open spaces and into the wider Hamilton City Council walking and cycling network, helping to encourage healthy, active lifestyles and promote social cohesion and greater social interaction and engagement through vibrant and activated streets.

In developing the masterplan street network, a key consideration for the positioning of the collector road was ensuring that streets and routes can be extended in the future. The design maximises opportunities to connect into existing and future neighbourhoods as well as existing and proposed activity areas. Internal movement corridors are designed to link to key existing walking and cycling facilities adjacent to the site, connecting to the existing Wairere Drive shared path and future facilities proposed on the Spine Road/Eastern Transport Corridor and Fifth Ave Extension.

Wairere Drive remains as a severance corridor with two main walking and cycling connections between the site and Hamilton City. These cross Wairere Drive through two existing underpasses, one on the north-western corner of the site (Fifth Ave-Wairere Intersection) with the other close to the south-western corner (Bisley Road-Wairere Intersection) some 200m further to the south along Wairere Drive. The movement corridors are designed to provide convenient access to these points, while also encouraging people to move around and through the Tuumata Neighbourhood Centre.

There is a Transport Corridor (frequent bus) proposed within a walkable catchment to the north and west of the site along the Spine Road/Eastern Transport Corridor and Fifth Ave Extension. This endeavours to support mode shift and reduce the dependence of private vehicles. The Masterplan (and movement corridors) have been designed to support to the future public transport network adjacencies.

6.5 Green and Accessible

The site is designed to provide access to a network of high amenity streets, vegetated/planted swales, green links, and public open space creating a highly accessible, attractive, safe and green neighbourhood.

The masterplan has adopted a block pattern that allows for ease of movement for pedestrians and cyclists by reducing block lengths and creating opportunities for mid-block connections 'green links'.

- Responds to pedestrian and cyclist desire lines
- Connected street patterns. These work best when they include straight or nearly straight streets to makes pedestrian routes as direct as possible.
- Protected cycle ways along busy streets.
- Prioritising pedestrian and cycle crossings at key intersections.

6.6 Natural Environment / Site Conditions

It is important that the masterplan sets the foundation for an attractive and distinctive neighbourhood, one where the natural environment is enhanced and optimised. The current site will be highly modified (as outlined in further detail below) by construction activity. With this in mind the masterplan seeks to connect to existing and or new habitats, through a combination of new vegetated swales, and open spaces that connect to other similar facilities (within the wider Ruakura Structure plan area) beyond the site boundary. These help to create new movement corridors for both nature and people.

Due to civil engineering constraints relating to site levels, stormwater drainage and soil quality for establishing good ground suitable for founding houses, existing site features (undulations in the ground surface, farm drains, shelter belts and existing mature trees) are likely and assumed to be lost in the early earthworks and site establishment phases.

The approach to stormwater respects the aspirations and objectives of Te Ture Whaimana o Te Awa o Waikato - Vision and Strategy for the Waikato River particularly the:

- *The protection of the health and wellbeing of the Waikato River*
- *The recognition and avoidance of adverse cumulative effects, and potential cumulative effects, of activities undertaken both on the Waikato River and within its catchments on the health and wellbeing of the Waikato River*
- *The recognition that the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic wellbeing is subject to the restoration and protection of the health and wellbeing of the Waikato River*

- *The restoration of water quality within the Waikato River so that it is safe for people to swim in and take food from over its entire length.* (Waikato River Authority , 2022)

To achieve this the proposed masterplan includes approximately 3.5ha of new stormwater treatments ponds, an additional 8ha of new stormwater swales, neighbourhood reserves, green links/pocket parks, plus planted local and neighbourhood streets. This network of high amenity stormwater, recreation and public open spaces will play a strong role in helping to protect water quality, build resilience into the stormwater network, using a nature-based approach, provide ecosystem services and inform and shape the future character and identity of the Ruakura - Tuumata Structure Plan Area.

Through carefully considered landscape and urban design, founded on strong engagement with mana whenua, the site (streets and open spaces and blue green infrastructure) should be developed to respond to local context, cultural, ecological values and to enhance sense of place.

Design Implications – Future design stages shall *"recognise and respect mana whenua values in masterplanning and urban design, upholding and fostering kaitiakitanga and custodianship of urban ecosystems"* (Future Proof Implementation Committee, 2020)

6.7 Neighbourhood Centre

Key to delivering a walkable, compact, connected, and clean neighbourhood is the idea that *"everyone is able to meet most, if not all, of their needs within a short walk or bike ride from their home"* (C40, 2022).

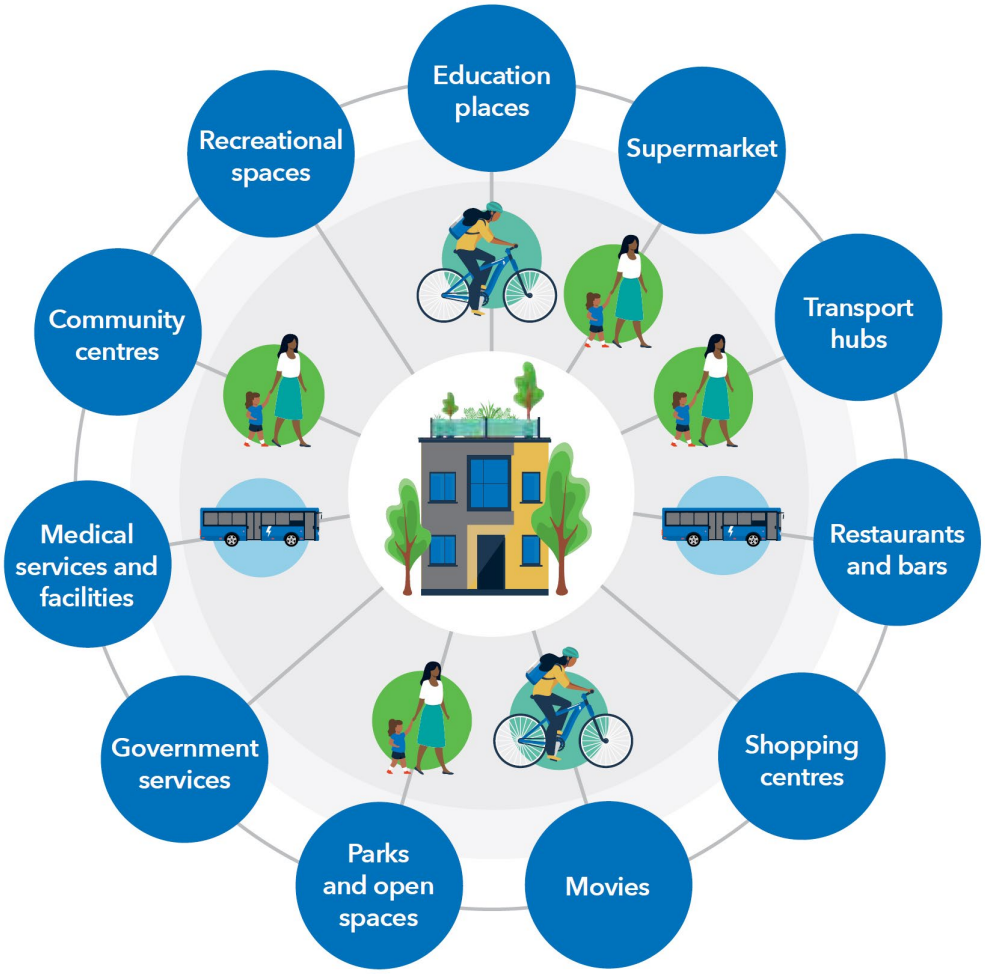

Figure 3 - Hamilton City Council 20min city (Hamitlon City council, 2022)

The Neighbourhood centre has been positioned in the north-western corner of the site for the following reasons:

- Defining the 'middle' should not be confined to the boundaries of the site. The existing suburbs of Fairview Downs and the eastern parts of Enderley are currently poorly serviced by retail, supermarkets and top up food shopping. Positioning the Tuumata Neighbourhood Centre in its proposed location provides for better integration with existing residential neighbourhoods.
- While set back from Wairere Drive, the location provides enough visibility of the Neighbourhood Centre to support commercial viability and ensure a reasonable presence when viewed from Wairere and Fifth Ave Extension.

- Relationship with Public Transport – The long-term objective is for the Fifth aAvenue extension to function as a frequent public service route. The neighbourhood centre is positioned adjacent to this key public transport corridor and frequent service route and adjacent to proposed bus stops. The potential exists for these bus stops to be defined/developed as a 'Mobility Hub' supporting mode shift and a range of sustainable and active transport modes.
- The main access to and from the site and city centre is via the Fifth Avenue Extension and Wairere Drive Intersection. The neighbourhood centre acts as a gateway into the new neighbourhood. This threshold will be particularly discernible to people walking, cycling or catching public transport.
- Its position helps limit the number of vehicles (external, visiting traffic) traveling through the local street network, compared to a location more central in the Tuumata block.

The neighbourhood centre allows for a gym, medical/health care facilities, community centre, childcare and retail/food and beverage/offices and supermarket. These activities play a key role in providing good anchor 'destinations' within the neighbourhood centre. These should be carefully positioned to ensure the centre feels safe and vibrant.

In developing the masterplan and the layout of the neighbourhood centre, the scale and proportion of buildings and spaces will need to consider the surrounding development and recognise the 'grain' of the neighbourhood. to the provisions (design assessment criteria) have been designed to ensure the following outcomes:

- Avoid a carpark dominated centre, where carparking fills the middle and buildings are spread in a ring around the outside.
- Avoided the 'strip mall' approach a central block of buildings with a ring of carparking around the outside.
- Creates a people focused development, using a mix of pedestrian only and slow vehicle streets.
- Create a strong connection between buildings and public open space.
- *"Buildings and spaces should be appropriate to their purpose and setting, contributing to a coherent city form."* (Hamilton City Council, 2022)
- Provide places for people to spend time and enjoy public life, consider orientation and environmental comfort when developing open space. *"Public open space should be thoughtfully designed for the climate and appropriate to the anticipated use."* (Hamilton City Council, 2022)
- People living close to the neighbourhood centre bringing additional life and activity to public spaces.

Design Implications – *Future designs should consider, "enhance and celebrate Hamilton's character and reflect the special qualities of the site. Development should seek to celebrate Hamilton's unique sense of place and special features. Development should reflect and celebrate Hamilton's cultural diversity."* (Hamilton City Council, 2022)

6.8 Density

Selecting the overall 'assumed net density' for Tuumata has been achieved through much deliberation and inquiry. Key to this is ensuring that the spatial/urban and built form meets the aspirations of the development, aligns with key national and regional policy directives, considers the local context and responds to trends in the local market. Figure 5 from the greater London report – housing for a compact city illustrates how *"three very different forms of architecture…can be built at the same density…* (Greater London Authority, 2003) each example has its own set of social impacts, levels of privacy and public space they provide. They help illustrate that relatively high densities can be achieved without needing to build high.

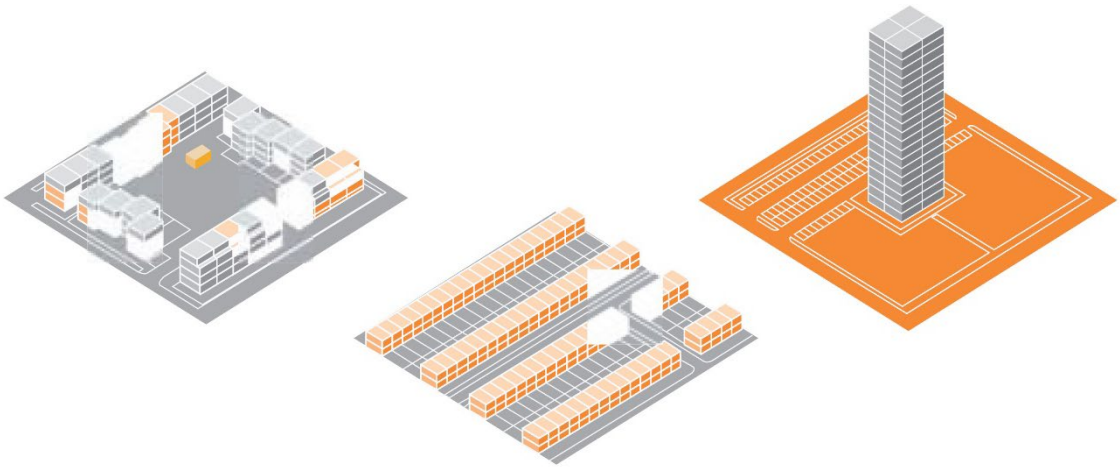

Figure 4 - Housing for a compact city diagram (Greater London Authority, 2003)

Also guiding decisions on density are:

- Intensification targets for Ruakura from page 95 of the latest Future Proof Strategy (Future Proof, 2022)
- Waikato Regional Policy Statement - UFD-P12 – Density targets for Future Proof area (Waikato Regional Council , 2022)
- Transport considerations and the impact on intersection design – Refer to Stantec report
- Infrastructure capacity – Refer to BBO report.
- NPS-UD: (Ministry for the Environment, 2022) and the MDRS

The appropriateness of higher densities and taller buildings is dependent on a number of factors, key in this instance, is the performance/sophistication and vibrancy of the inner city and its ability to support a wide variety of experiences, cultural, and social activities while also being supported quality public transport, active mode network and public services. In New Zealand we have developed a culture whereby social life largely takes place in and around the private home. This is changing in bigger centres but is very much still the case in smaller towns and centres where the 'centre' still functions as a service centre largely operating 9-5pm.

Hamilton City centre has some way to go before it has a sophisticated offering whereby the social, cultural and transport experience is dynamic enough to offset the loss of privacy and reduced private open space expected of higher density living.

The proposed Tuumata neighbourhood centre plays a key role in supporting density. But this relies very heavily on creating a people/community focused centre with high amenity public space and carefully curating the mix of activities on overall offering.

Applying the MDRS to Greenfield Development

The MDRS is very clear when it comes to the intensification and infilling of existing low-density neighbourhoods. Applying the MDRS while giving effect to the NPS-UD remains challenging and convoluted.

Ensuring good urban outcomes requires the careful use of a range of planning provisions all the while making sure that these are not more restrictive than the baseline MDRS. Areas of particular concern are poor quality subdivision, rear lots and cul de sac development. Each has the potential to result in perverse built outcomes and lead to poorly functioning urban environments, impacting wellbeing, liveability, privacy, legibility, accessibility, and solar access.

Case studies

Case studies provide a useful tool for matching urban form, architectural form and density. In assessing and agreeing the proposed overall/average net density, a range of existing developments were used as case studies. These case studies help to set the vision for the development and its desired outcomes.

Figure 5 - Example of density case studies used

In developing the masterplan an overall/average net density of 50 dwellings per hectare has been assumed. As noted above this has been done in reference to key regional and city policy and plans alongside technical advice from consultants (Stantec and BBO) regarding transport and infrastructure constraints.

It is not intended for the development to be a monoculture of one architectural form and density. An average net density of 50 dwellings per hectare assumes a mix of higher and lower densities. Refer to 6.9 for more detail on housing typologies.

Guiding Good Outcomes

An overarching objective for the site is to deliver a modern, high amenity, compact, connected, and liveable neighbourhood. The proposed provisions and rule framework aligns closely with MDRS. This sets the framework for bulk and location, site coverage, permeability, and the size of outdoor living spaces.

As previously mentioned, the Plan Change provisions have been influenced by the requirement of not being more restrictive than the MDRS. The proposed provisions seek to control and guide as much as practicable (and permitted) good urban outcomes in relation to (among other things);

- Urban trees - refer to plan provisions rule 4.15.3.3
- Building orientation and relationship to the street for terraces and apartments, refer to plan provisions rule 4.15.3.8.b
- Access. refer to plan provisions rules 4.15.3.8. c, d, e

The proposed Ruakura Tuumata Structure Plan – Transport Corridor Cross Sections Figure 2-14 – appendix 4 seek to ensure the delivery of a high amenity, highly walkable and cyclable street network. This objective is supported by plan provisions in chapter 23.2.8.

As outlined in 6.4 above. A key objective for the site is the delivery of a neighbourhood that is accessible and easy to move around. Overall block depth, width and perimeter are key factors in achieving a permeability and accessible neighbourhood. The plan provisions in chapter 23.7.9.b have been developed to ensure good urban outcomes in this regard.

As density and building height increases it becomes increasingly important to manage outcomes and provide the appropriate level of amenity. For restricted discretionary (RD) applications which apply to terrace housing and apartments and also where compliance with the standards is not otherwise met, a more prescriptive assessment criteria have been adopted to ensure that Council, and Urban Design Panel have opportunity to judge and guide good outcomes.

In managing orientation and relationship to the street design assessment criterion N17 c Configures buildings on the site so that each dwelling has a front elevation including a front door and habitable room windows positioned to face (and in the case of the front door to be accessible from) the transport corridor or private access way that is to act as the public front.

And in relation to privacy N17 a iii. configures windows to habitable rooms within buildings to maximise the privacy of neighbouring outdoor living spaces and habitable rooms, including by positioning the principal windows of habitable rooms to face streets and public open spaces where possible.

Subdivision

The intended outcome for subdivision within the Ruakura -Tuumata Structure Plan is that it contributes to a well-functioning urban environment. Of particular concern in this matter is the relationship of future dwellings with the street, block permeability and the walkability of the development

Private driveways providing access to multiple dwellings should be avoided. JOAL's should be used for rear access garaging only. JOAL's should allow for through movement and should not have a single entry/exit point.

Existing Hamilton City Council processes and legal instruments should be utilised to avoid poor outcomes borne out of future subdivision. The assessment criteria included with the Plan Change which apply to subdivision will ensure such outcomes and avoided.

Design Implication – It is intended through the masterplan - indicative local road layout and block structure -- that dwellings/houses front the street, establishing public frontages and private backyards. Subdivision should not lead to 'sausage flats' rear access lots, cul de sacs or low amenity streets where private cars and garaging dominate.

The development of design guides and maintaining discretion and good judgment over design and layout will help ensure quality outcomes that meet the development objectives.

6.9 Housing typology

The indicative 50m wide block (25m deep lots), and provisions for building height of three levels (12m), provides development flexibility and enables a variety of housing typologies to be delivered. The masterplan and indicative local street layout supports single storey dwellings, duplex dwellings, terrace dwellings and apartments to deliver on the intended average net density. This is illustrated in figure 7.

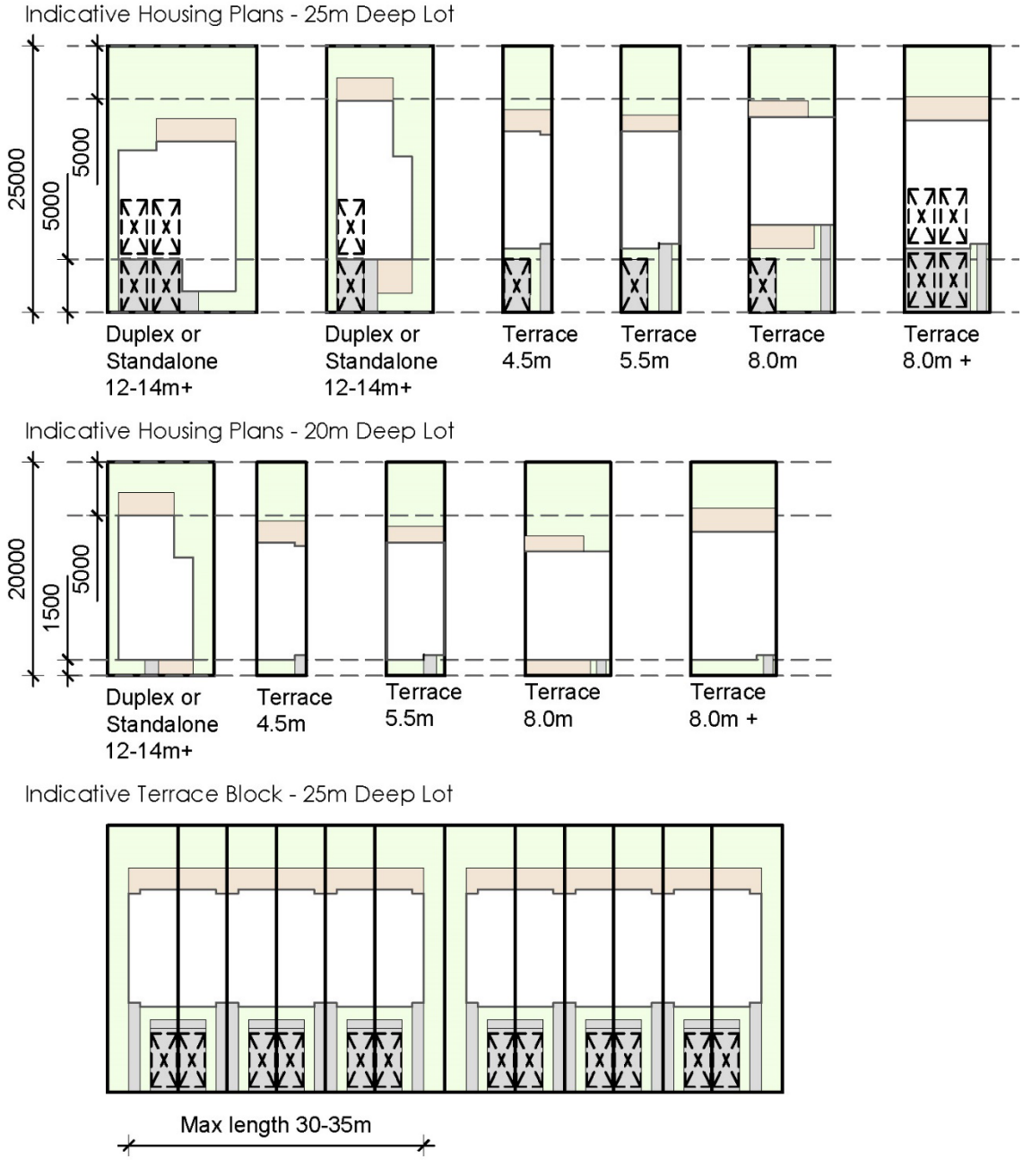

Figure 6 - Indicative Housing Plans

6.10 Public Open Space

Neighbourhood Park

The masterplan proposes a centrally located neighbourhood park 0.5ha in size. The neighbourhood park is well connected through separated walking and cycling facilities as well as sitting adjacent to a proposed 'indicative' local bus route. The neighbourhood park is to function as a community destination offering people a space for socialising, leisure and recreational opportunities a short walk or cycle from their homes.

The neighbourhood park is designed to be adjacent to/fronted by roads on two sides. The intent of this is to keep the park open, safe and inclusive. The location invites people to pass and walk through while passing people (active modes and in vehicles) also provide passive surveillance.

The neighbourhood park is to cater to a variety of activities and people of all ages and abilities.

These aspirations are supported by the plan provisions in chapter 23.7.9.d

Passive and Active Recreation Opportunities

A large network of stormwater treatment ponds and swales, supported by shared paths and separated cycleways provide significant passive and active recreation opportunities, helping to encourage healthy, active lifestyles as well as improve connectivity and promote a more social and cohesive neighbourhood.

Indicative Cycle & Pedestrian Access

The masterplan and subsequent structure plan drawings show a series of indicative cycle and pedestrian access points, as well as indicative off road cycle facilities and pedestrian connections. These connections support the concept of 'filtered permeability' and function as green links/pocket parks, helping to ensure overall block permeability for walking and cycling is achieved while creating a pleasant low traffic environment around people's homes.

These spaces will primarily function to provide pedestrian and cycling connections, however they will also function as small informal recreation and socialising spaces which cater to nearby residents. They will also help to support the overall character and amenity of the development.

6.11 Road and Street Design

A key objective for the site was to create a permeable and connected neighbourhood that prioritises active modes and supports healthy active lifestyles. To achieve this the proposed masterplan uses a combination of approaches.

Filtered permeability, the avoidance of four-way intersections, narrower (5.7m) local streets and a road hierarchy and logic that limits vehicle through movements, helps to reduce rat running, improves safety and helps create enclaves of quiet neighbourhood focused streets.

The road and street design seeks to ensure that:

- Key streets and routes can be extended in the future to connect to new and existing neighbourhoods, activity areas and developments.

- Narrower (5.7m wide carriageway) ‘quiet or slow speed streets’ are supported by a logical and convenient network of wider (7m wide carriageway) local streets.

Refer to appendix 4 for the Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections.

Rear Access Lanes and Jointly Owned Access Lots (JOALs)

Rear access garaging and JOALs play an integral role in achieving high amenity streets and public spaces in medium density neighbourhoods. In some cases, medium density/multi-level terraced housing can result in individual dwellings as narrow as 4.5-5m. Implemented incorrectly narrow lots can create streets where private carparks, vehicle crossings, and garaging dominate the street. JOAL’s and rear lane access/garaging should be used and promoted to assist in:

- Ensuring high amenity and safe streets - Ensuring houses (frontages) maintain a strong relationship with the street and are not dominated by private garaging and carparking. This is a particularly important consideration through subdivision. It is important that housing typology, lot layout and approach to vehicle access and on and off-street parking is considered/developed in unison to insure good urban outcomes.
- JOALS, can provide an alternative approach when on-street carparking is limited as a result of private vehicle crossing and garaging.
- Rear lanes and JOAL’s can support the storage and collection of waste, allowing for this activity to occur out of site and away from the public street.
- Rear lanes and JOAL’s should not have a single entry and exit point. Ensure JOALs allow through movement with the use of multiple exists.

The masterplan and indicative road layout provide enough flexibility to support the use of JOALs and rear lane garaging where required, this was further illustrated in Figure 2.

7.0 Summary and Conclusion

In conclusion, it is considered that the Plan Change offers an appropriate response for the site. The development enabled by the Plan Change will result in a compact, connected, modern, inner-city suburb close to the city centre. The proposed land use change from industrial to residential provides a positive step toward rebalancing the distribution of residential land in Hamilton, and prioritising growth around the city centre.

Overall, the outcome of this assessment is that the Plan Change represents a high-quality development that is considered to contribute positively to the aspirations of Hamilton City, aligning with key national, regional and city policy and objectives.

8.0 Glossary of Terms

Term	Definition
Active frontage	Street frontages where an active visual engagement occurs between people in the street and those on the ground floors of buildings *(Source: Brunswick Structure Plan, Vol 3, Part 2, Moreland City Council)*.
Amenity	The qualities and attributes people value about a place that contribute to 'quality of life' in that place, such as schools, services, and community and recreational facilities *(Source: "Building Sustainable Urban Communities" Glossary, Department of Internal Affairs)*.
Building mass (Massing)	The combined effect of the arrangement, volume and shape of a building or group of buildings. *(Source: Auckland Design Manual glossary)*.
Character	Appearance, qualities and combination of attributes of an area, place, street or building that helps to give that place a distinct identity. *(Source: Auckland Design Manual glossary)*.
Controlled activity	Activity requiring a resource consent from a local authority, but which will always be granted. The application for a controlled activity consent is assessed according to specified matters over which the Council will exercise its control. *(Source: RMA Rules: A Summary of Activity Classes)*.
Crime Prevention Through Environmental Design (CPTED)	Philosophy based on good design and effective use of the built environment leading to a reduction both in the fear and incidence of crime, as well as an improvement in the quality of life. The use of CPTED is intended to reduce crime and fear by reducing criminal opportunity and fostering positive social interaction among legitimate users of space. The emphasis is on prevention rather than apprehension and punishment. *(Source: Auckland Design Manual glossary)*.
Density	Density is the concentration of population and activity in an urban area. The most vibrant, diverse and exciting part of a city is often its centre. *(Source: Summary of The Value of Urban Design, The economic, environmental and social benefits of urban design, MFE)*.
Discretionary activity	Activity for which a local authority has retained its discretion to grant resource consent. If the resource consent is granted the local authority may set any conditions that fall within the its powers under Section 108 of the RMA. *(Source: RMA Rules: A Summary of Activity Classes)*.
Façade articulation	Method of styling the joints in the formal elements of architectural design where each part is united with the whole work by means of a joint. The articulation of a building reveals how the parts fit into the whole by emphasizing each part separately *(Source: Wikipedia)*.

Term	Definition
Urban grain	Balance of open space to buildings, and the nature and extent of subdividing an area into smaller parcels. For example, a 'fine urban grain' might constitute a network of small or detailed streetscapes. Urban grain includes the hierarchy of street types, physical linkages and movements between locations, and modes of transport. *(Source: Creating Places for People, an urban design protocol for Australian cities)*.
Height in relation to boundary (HIRTB)	Rule that manages the potential impact that a new building or addition might have on the neighbours. It is defined with an invisible envelope that the building must be contained in. The envelope is measured vertically from ground level at the boundary with a set height and recession plane inclined inwards (The height and incline varies between zones). *(Source: Unitary Plan 101, Your Easy guide to understanding the Residential Standards)*.
Height limit	Rule to limit the height of buildings. Each zone has different height restrictions. 'Height' is measured as the vertical distance between the highest part of the building (or structure) and ground level. 'Ground Level' refers to the existing ground height before any earthworks occur. *(Source: Unitary Plan 101, Your Easy guide to understanding the Residential Standards)*.
Liveability	The degree to which an urban area provides a safe, inclusive and environmentally benign basis for the social and economic life of all its citizens. *(Source: Liveability discussion document, liveability principles, sample letter and liveability key word list, MFE)*.
Masterplan	A detailed plan for a defined area that involves the integration of social, cultural, economic and environmental considerations into one overall design and can include the final expected physical form of the buildings and spaces within. *(Source: Auckland Design Manual glossary)*.
Mix of uses	A mixture of activities such as residential, business, retail, or hospitality that occupy space within the same building or within the same street block or area (i.e. an apartment building with shops, cafes, and offices on the lower floors, or a town centre with these activities) *(Source: Auckland Design Manual glossary)*.
Movement network (street network)	Interconnected system of streets, roads and paths that accommodates pedestrians and cyclists, on-road public transport, emergency and private vehicles, connecting places and activities, allowing people and goods to reach their destinations and access private land. *(Source: "Movement Networks", Healthy by Design)*.
Open space	Green space consisting of any vegetated land or structure, water or geological feature in an urban area and civic space consisting of squares, market places and other paved or hard landscaped areas with a civic function. *(Source: Auckland Design Manual glossary)*.
Outlook	A place from which a view is possible; a vantage point.

Term	Definition
Parti pris	The primary concept or organizing idea behind a design. The parti, or main idea, can be illustrated in a parti diagram. These simple drawings show relationships between the different structural elements of the idea. *(Source: Oxford English Dictionary)*.
Passive / active recreation	Activities engaged in for the purpose of relaxation, health and wellbeing or enjoyment with the primary activity requiring physical exertion, and the primary focus on human activity. *(Source: Oxford English Dictionary)*.
Permitted activity	Activity that occurs without the need of a resource consent, provided it complies with conditions stated in relevant rules. It is useful to authorise uses that would otherwise require consent under the RMA, but have minor effect on the resource used or the environment affected. *(Source: RMA Rules: A Summary of Activity Classes)*.
Public realm	An area that is only accessible to those that have a right of entry as decided by the site or building owner. *(Source: Auckland Design Manual glossary)*.
Public space	Spaces that are publicly owned and which are intended for use by the public, and spaces that are privately owned and which are intended for use by the public. *(Source: Auckland Design Manual glossary)*.
Significant landscape features (Landform)	Features of a site's surface influencing a development. To contribute to the character of a place developments should acknowledge and retain these features as much as possible rather than remove them.
Te Aranga principles	Set of outcome-based principles founded on intrinsic Māori cultural values and designed to provide practical guidance for enhancing outcomes for the design environment. The principles have arisen from a widely held desire to enhance mana whenua presence, visibility and participation in the design of the physical realm. *(Source: Auckland Design manual)*.
Universal design	Design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. *(Source: Centre for Excellence in Universal Design)*.
Urban grain	The size of buildings and sites, patterns of arrangement, and the degree to which an area's street blocks and street junctions are small and frequent, or large and infrequent. *(Source: Auckland Design manual)*.
Visual (building) massing	Three-dimensional bulk of a building: height, width, and depth. *(Source: Illustrated Book of Development Definitions)*.

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Appendix 2: Structure Plan Drawings

Figure 2-14A: Ruakura Tuumata Structure Plan

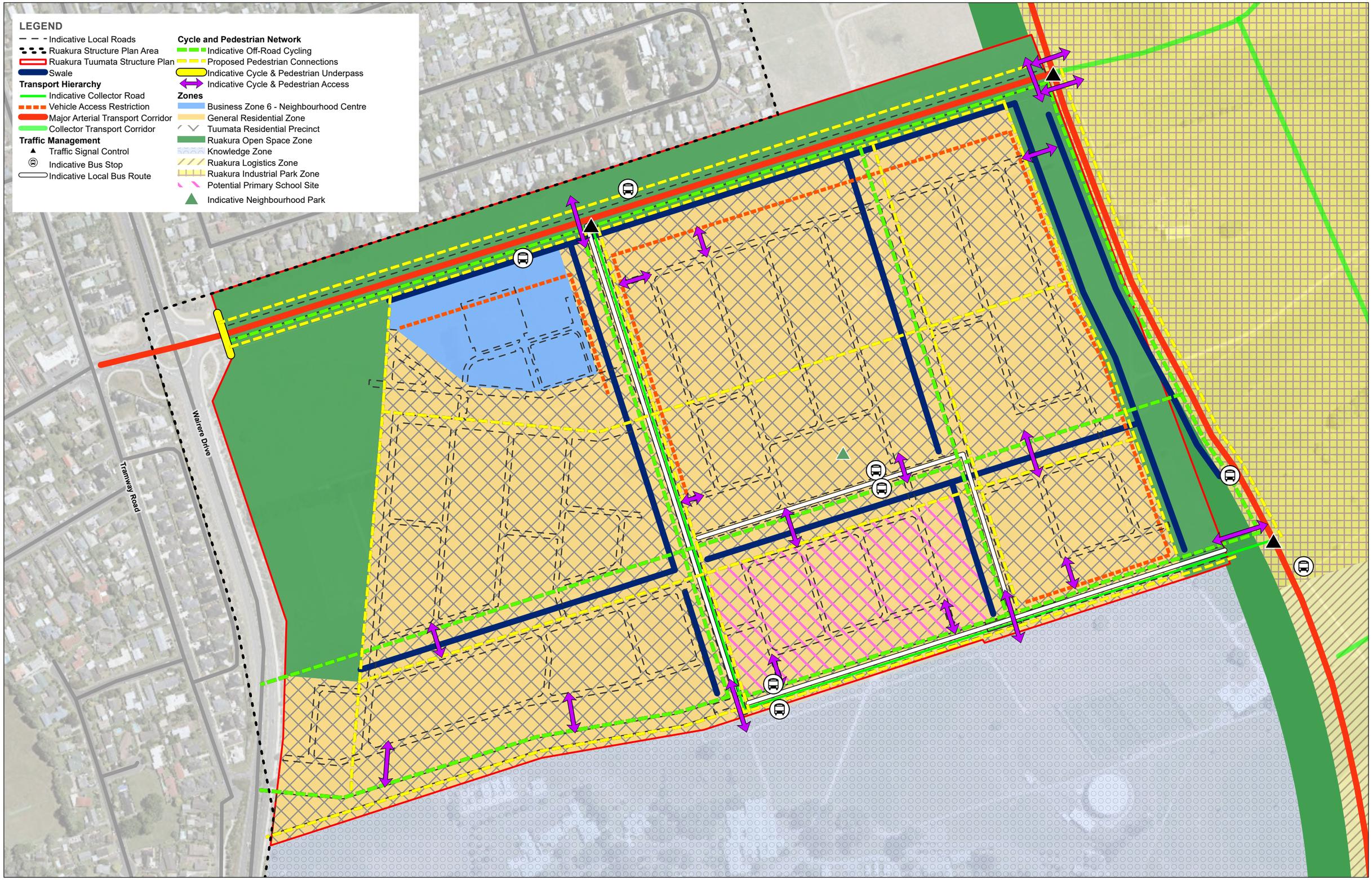
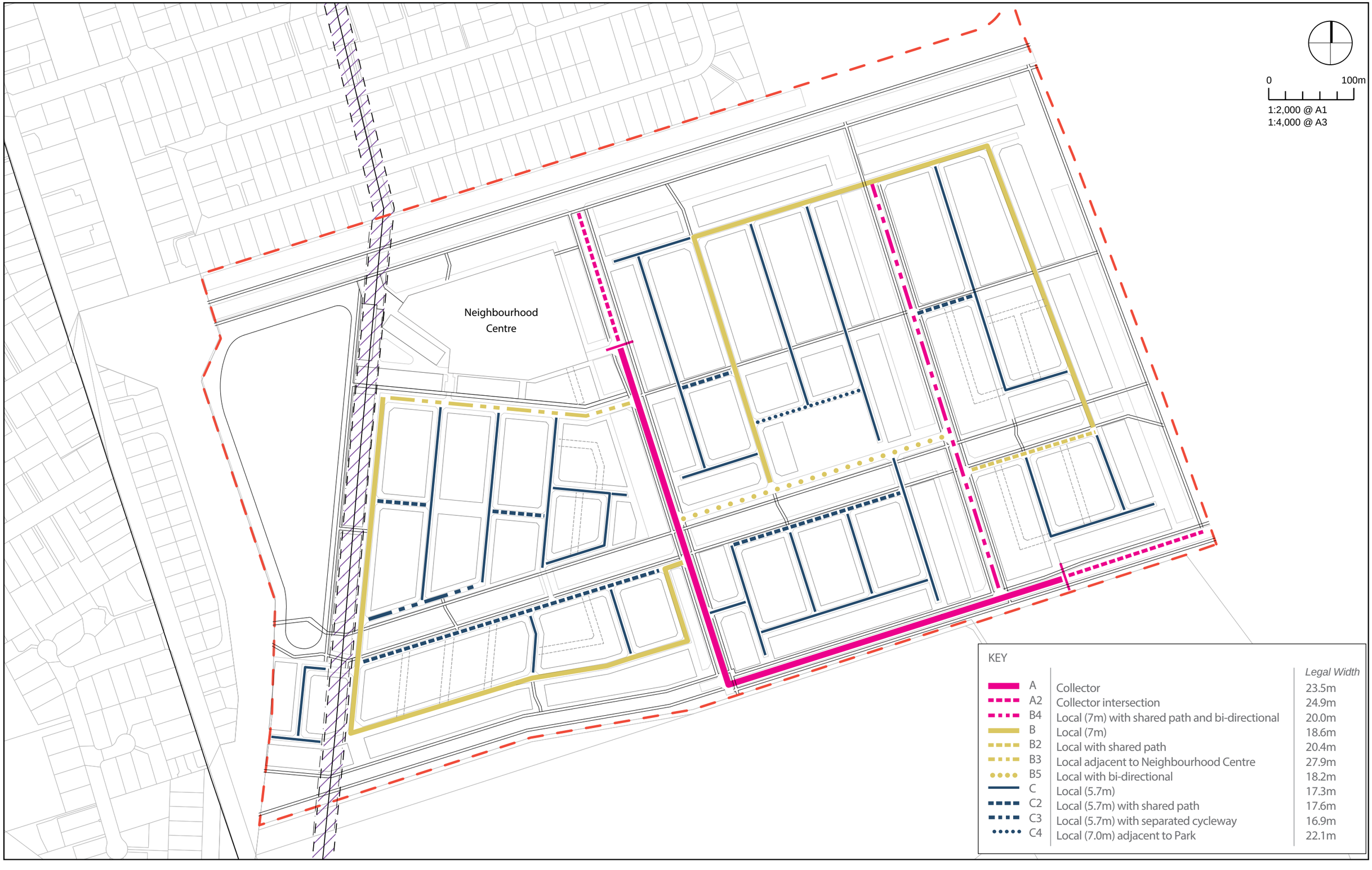


Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections



Appendix 3: Preliminary Development Concept Plans

Boffa Miskell

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PO Box 1094, Hamilton 3240, New Zealand
Tel: +64 7 960 0006
www.boffamiskell.co.nz

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CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION	APPRV'D

CLIENT
Tainui Group Holdings

CONSULTANTS
Peter Hall Planning Limited
BBO

For Information

Tuumata Private Plan Change

Preliminary Development Concept - Masterplan

Design	FBa	Scale	1:2000 @ A1 1:4000 @ A3
Drawn	FBa	Date	07/11/2022
Check			

DRAWING NO. PDC-001

REVISION -

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REV	DATE	DESCRIPTION	APPRV'D

CLIENT
Tainui Group Holdings

CONSULTANTS
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BBO

For Information

Tuumata Private Plan Change

Preliminary Development Concept - Parking

Design	FBa	Scale		Date
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Check		1:4000 @ A3		

DRAWING NO. PDC-004

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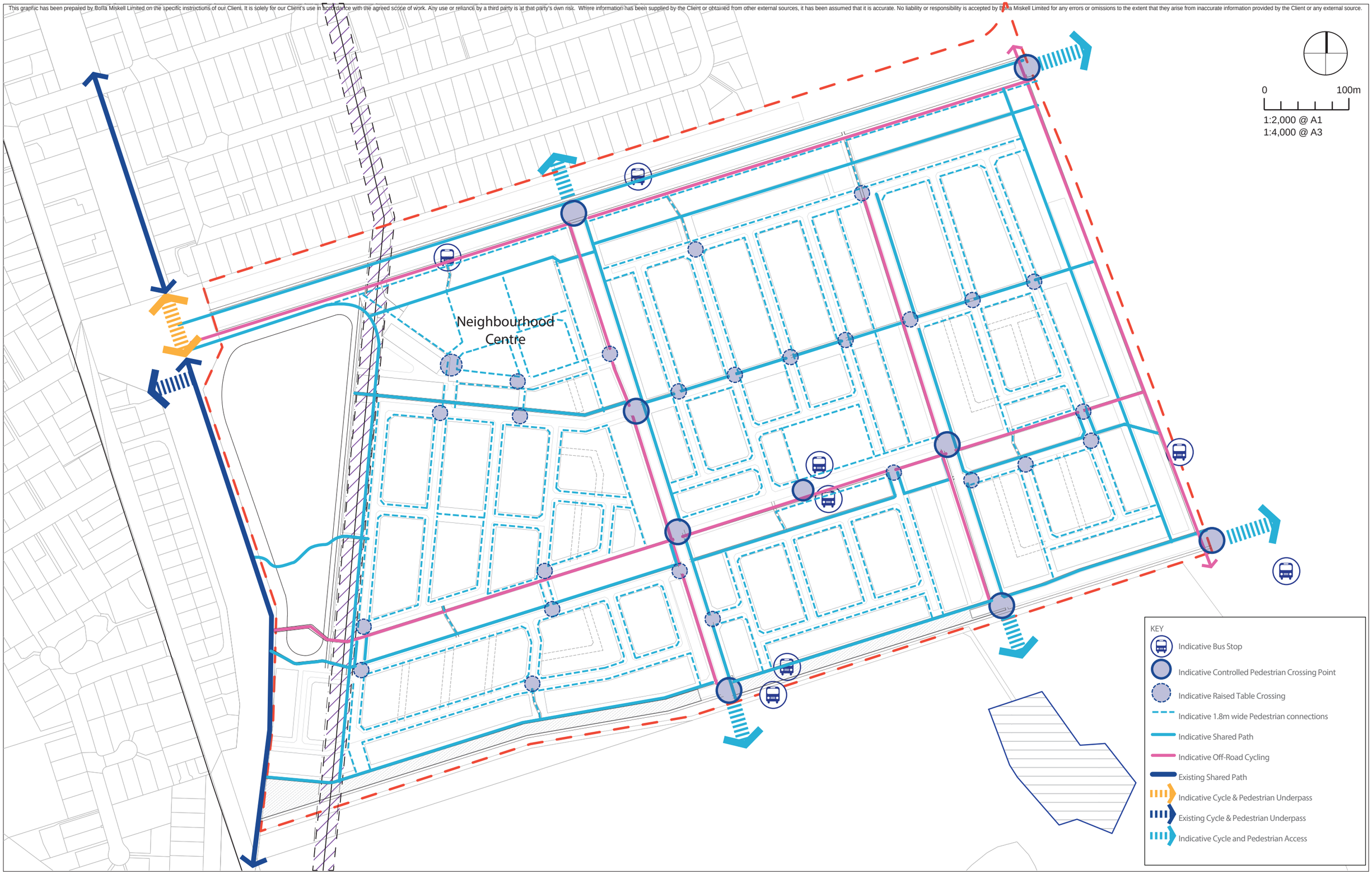

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KEY

REV	DATE	DESCRIPTION	APPRV'D

CLIENT
Tainui Group Holdings

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For Information

Tuumata Private Plan Change

Preliminary Development Concept - Connectivity and Access

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Drawn	FBa		1:4000 @ A3
Check		Date	07/11/2022

DRAWING NO. PDC-005

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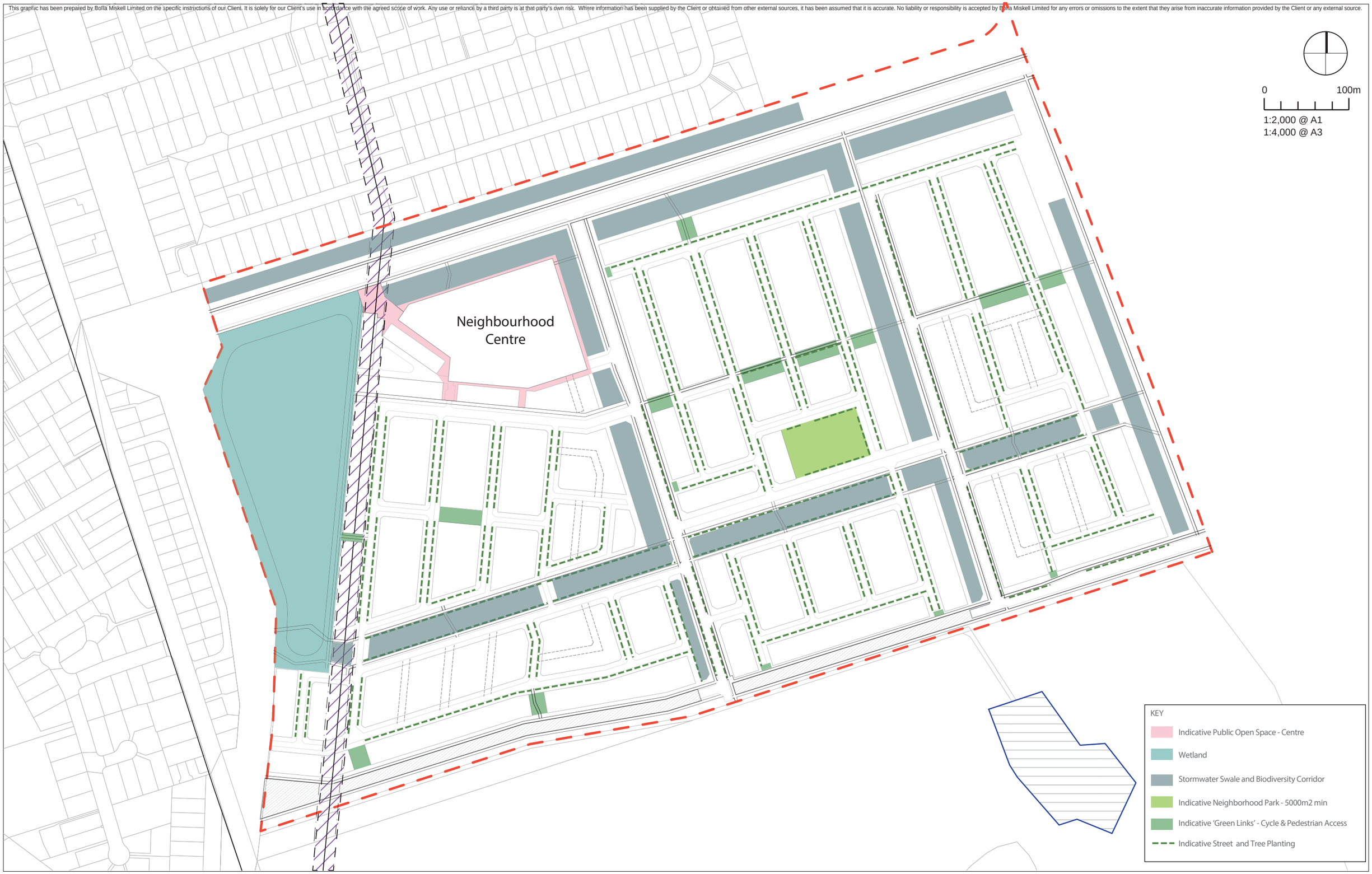

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FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION	APPRV'D

CLIENT
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For Information

Tuumata Private Plan Change

Preliminary Development Concept - Open Space and Landscape

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Check				

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REVISION -

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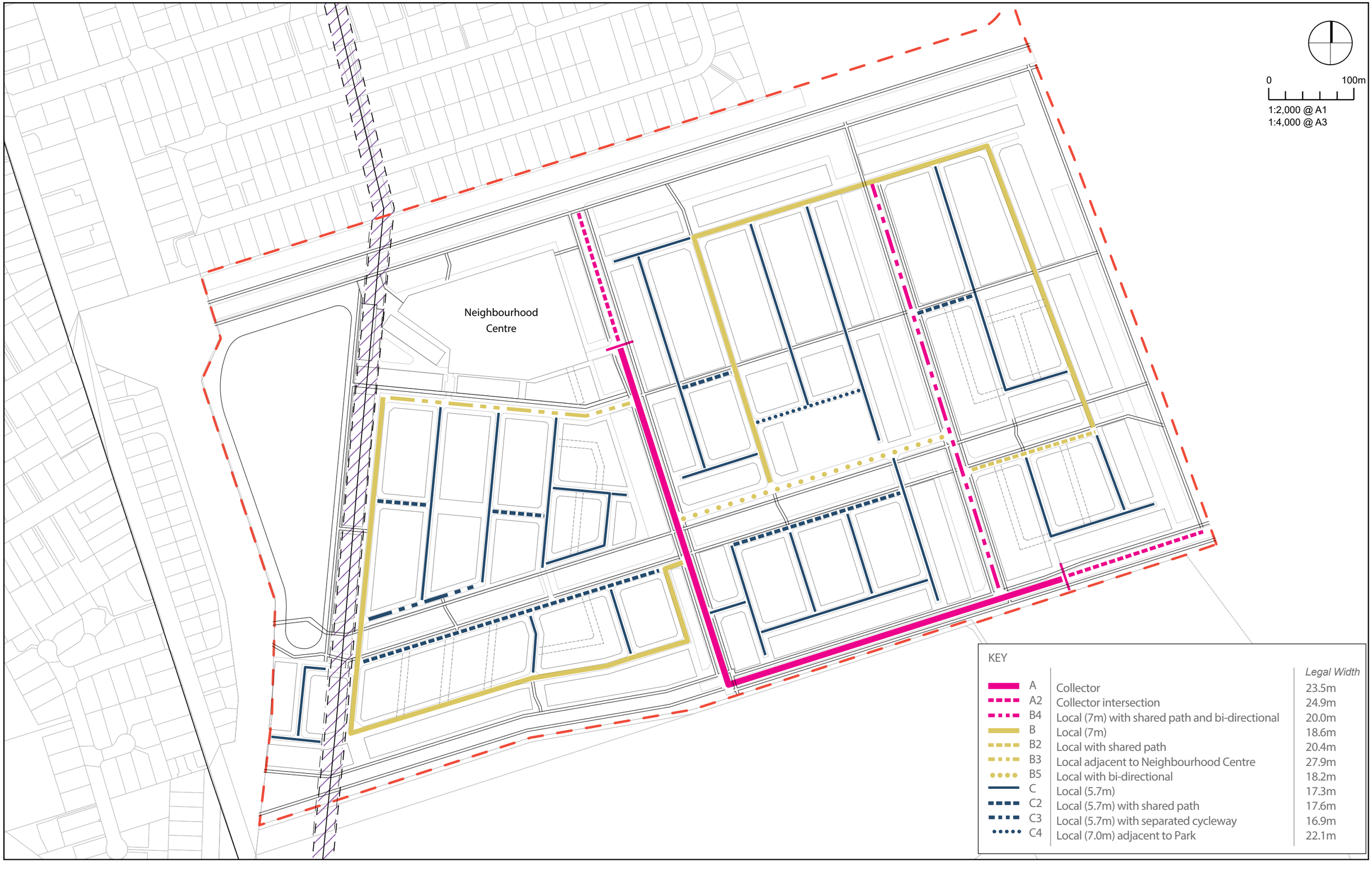
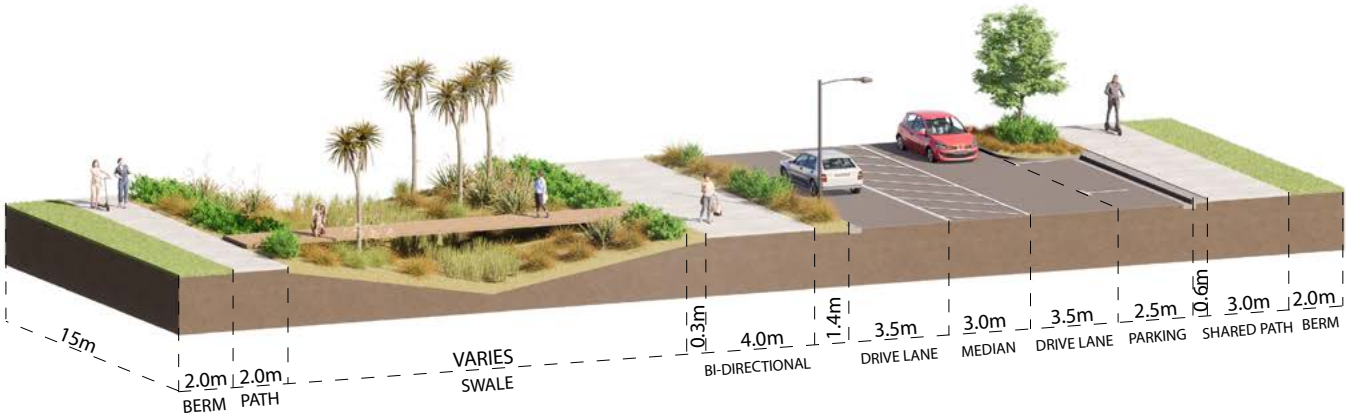
Appendix 4: Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections

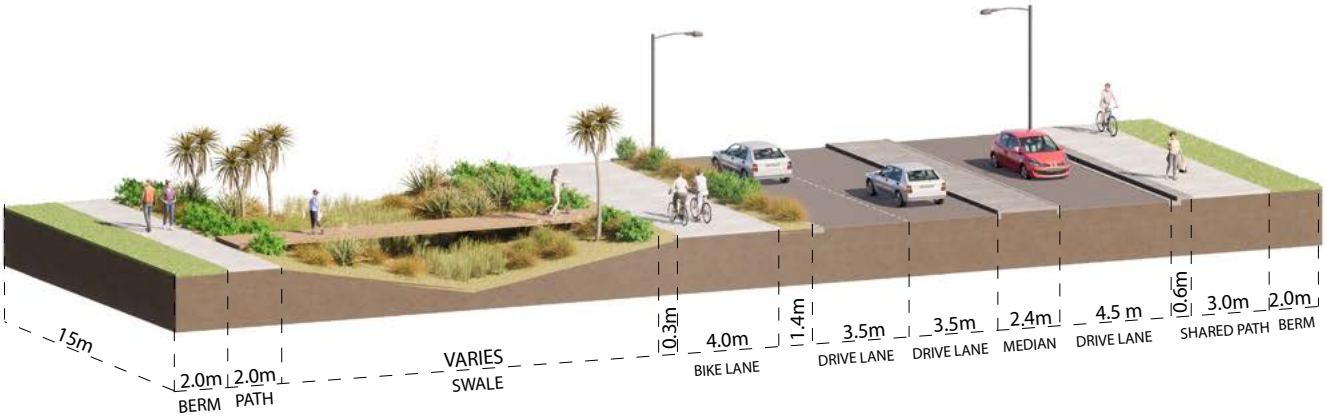
Figure 2-14B Ruakura Tuumata Structure Plan: Transport Corridor Cross Sections





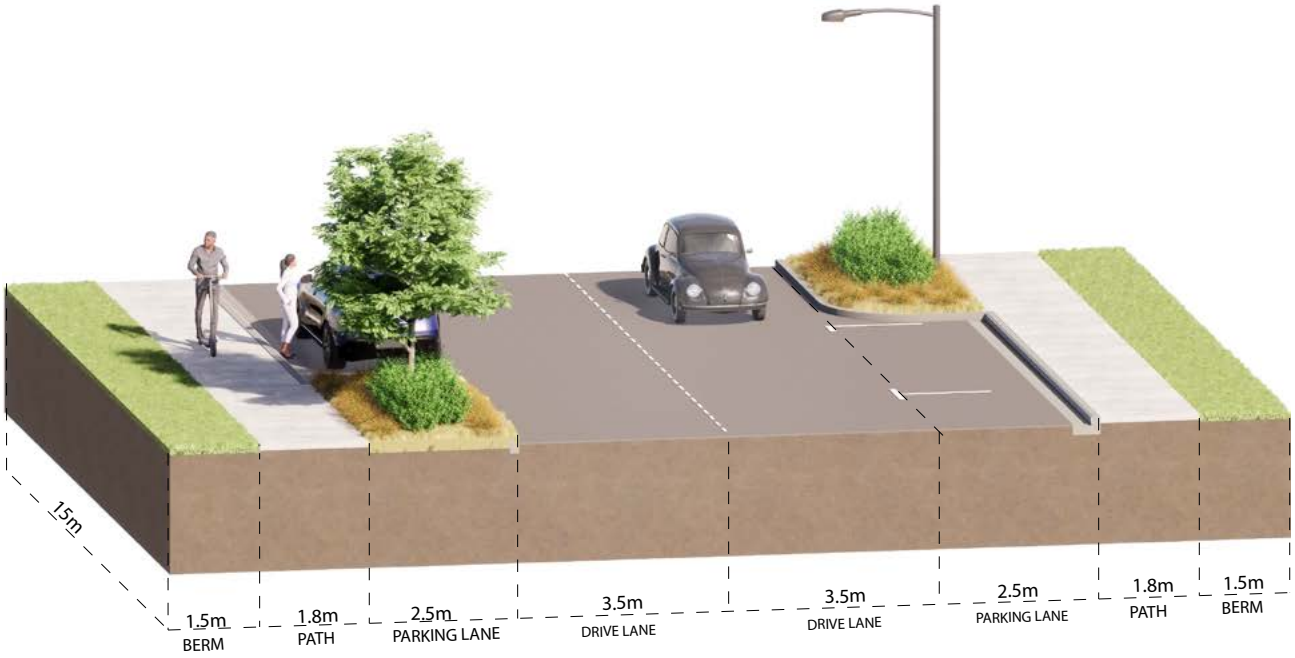
A - COLLECTOR ROAD - 23.5M

Internal dimensions indicative only and subject to detailed design



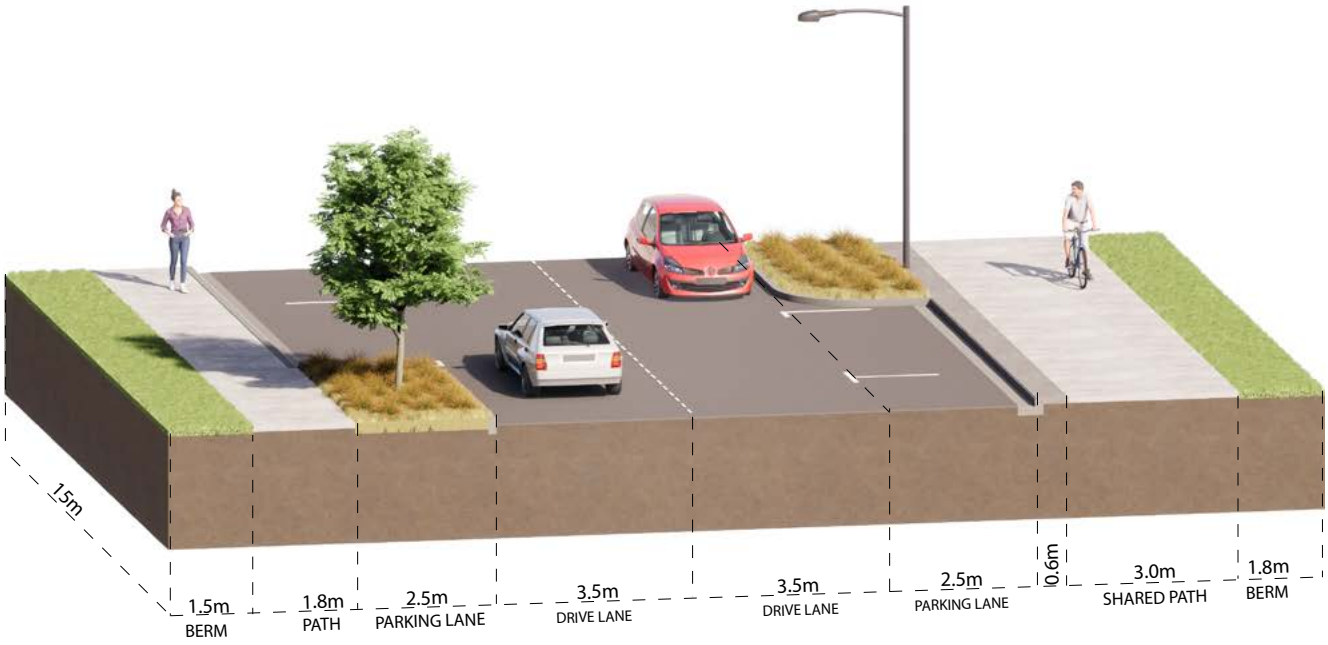
A2 - COLLECTOR ROAD WITH INTERSECTION - 24.9M

Internal dimensions indicative only and subject to detailed design



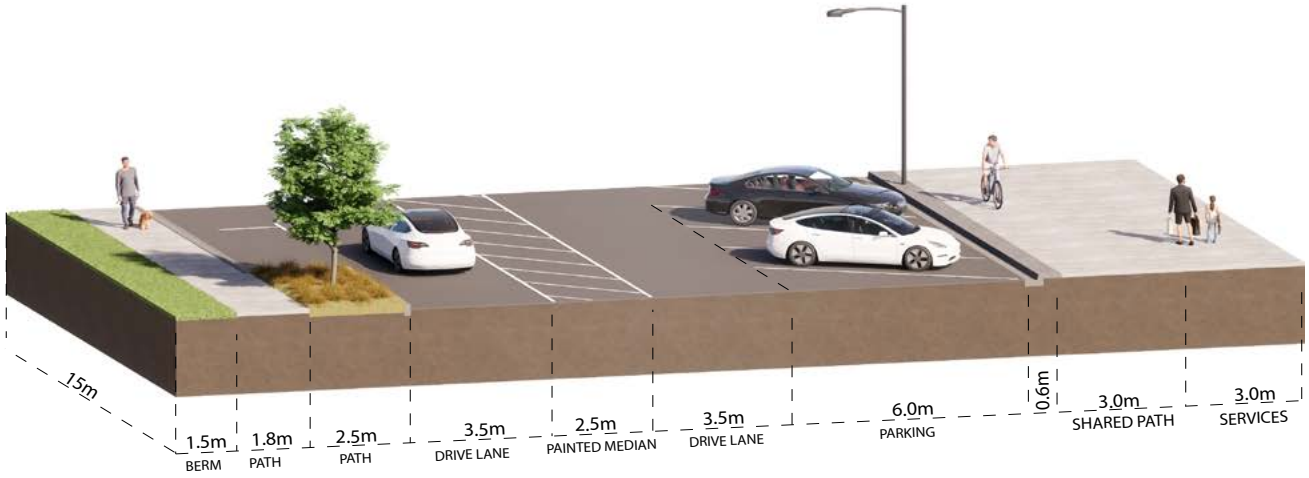
B - LOCAL ROAD - 18.6M

Internal dimensions indicative only and subject to detailed design



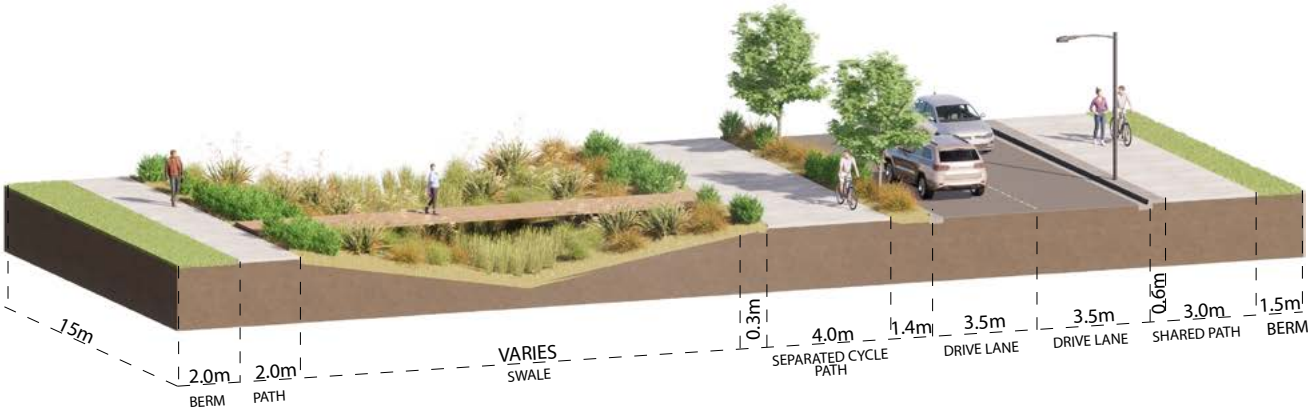
B2 - LOCAL ROAD WITH SHARED PATH - 20.4M

Internal dimensions indicative only and subject to detailed design



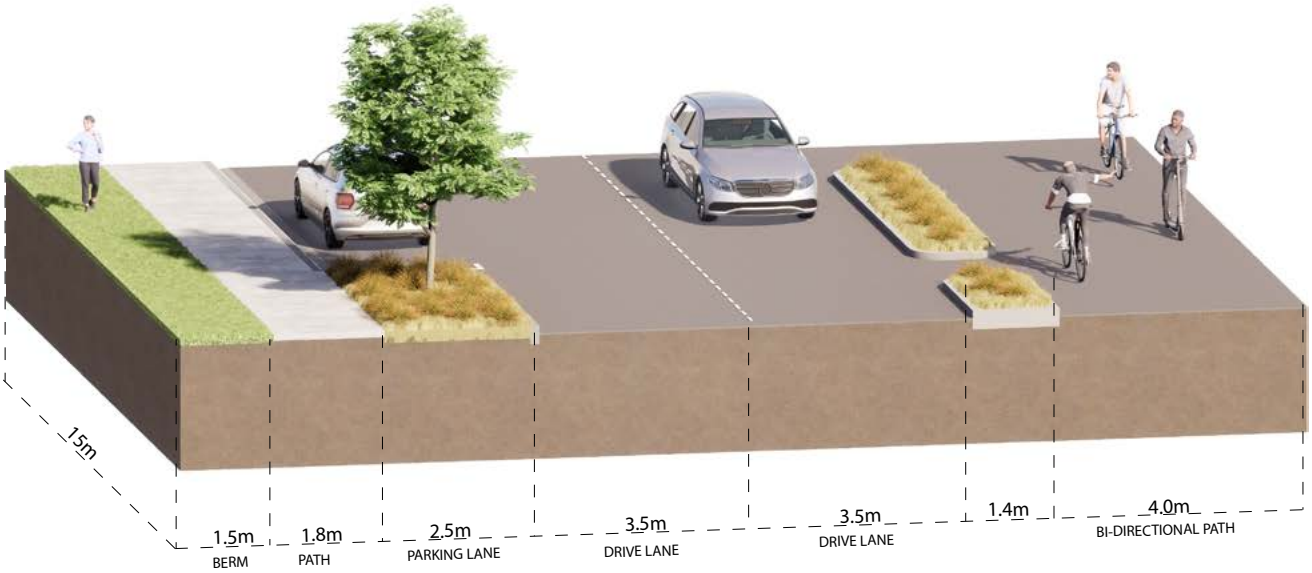
B3 - LOCAL ROAD ADJACENT TO URBAN CENTRE - 27.9M

Internal dimensions indicative only and subject to detailed design



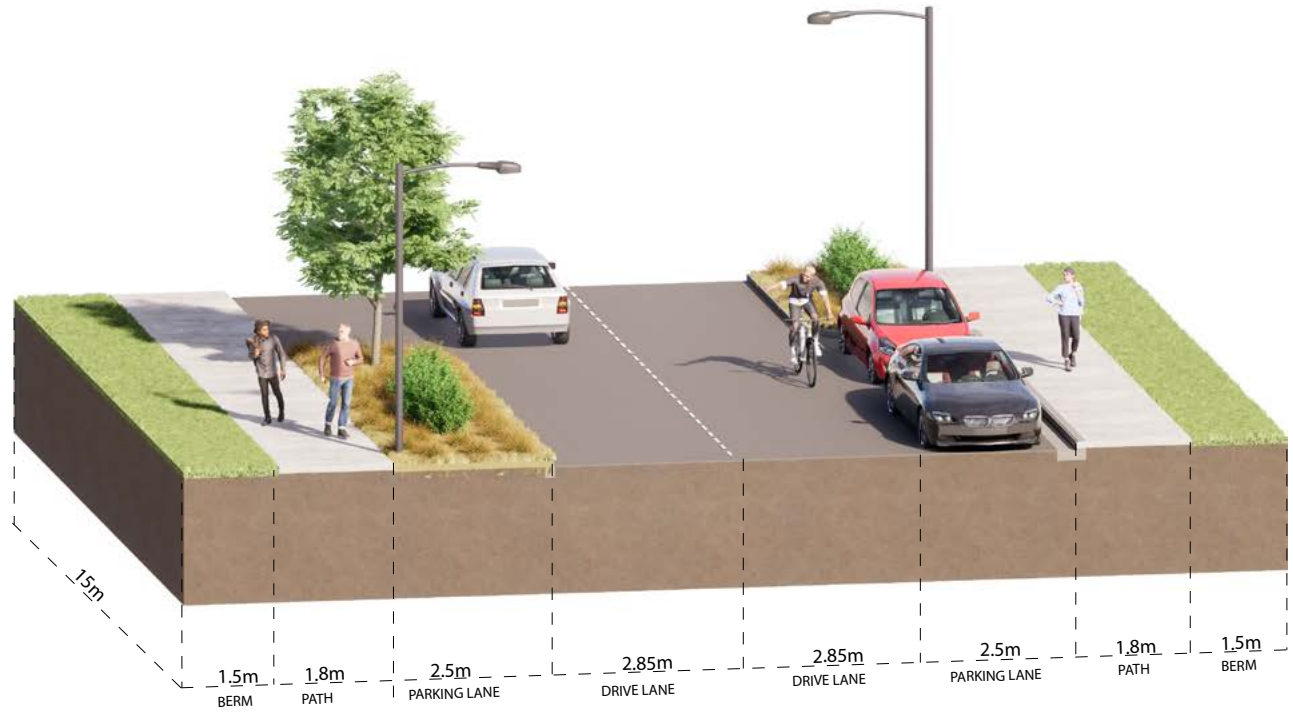
B4 - LOCAL ROAD WITH SHARED PATH AND BIDIRECTIONAL CYCLE PATH - 17.5M

Internal dimensions indicative only and subject to detailed design



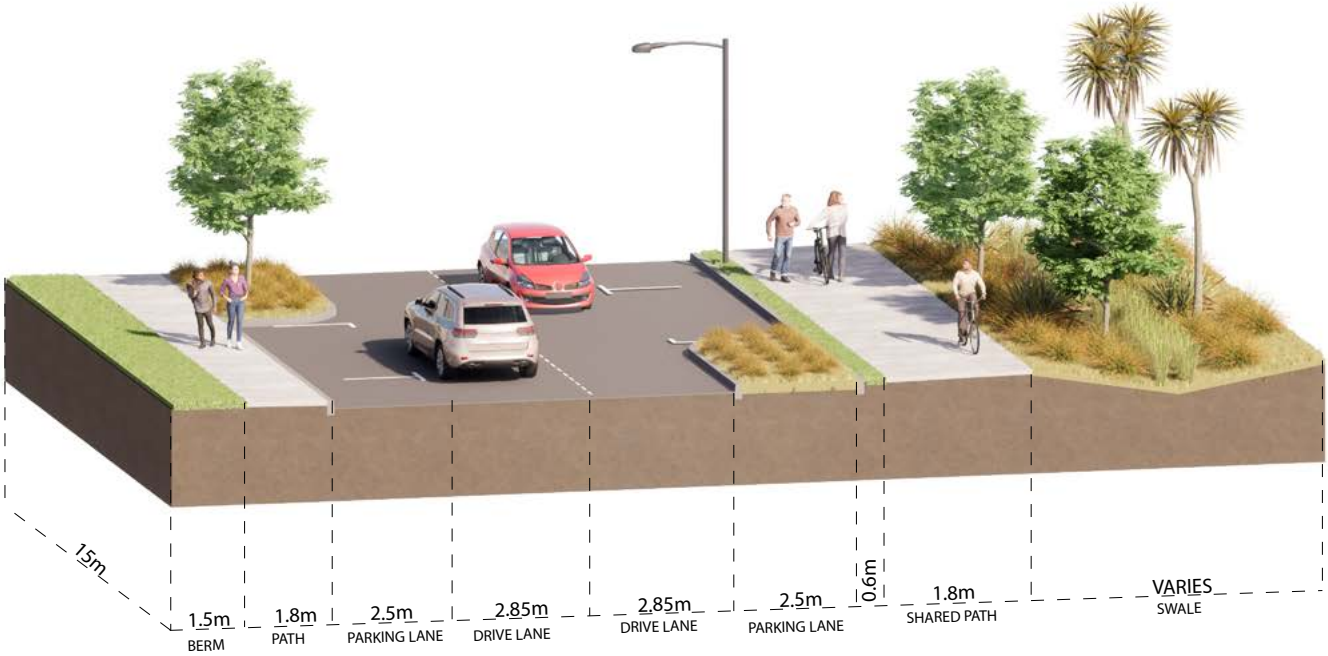
B5 - LOCAL ROAD WITH BIDIRECTIONAL CYCLE PATH - 18.2M

Internal dimensions indicative only and subject to detailed design



C - LOCAL ROAD AND NEIGHBOURHOOD STREET - 17.3M

Internal dimensions indicative only and subject to detailed design



C2 - LOCAL ROAD WITH SHARED PATH - 17.6M

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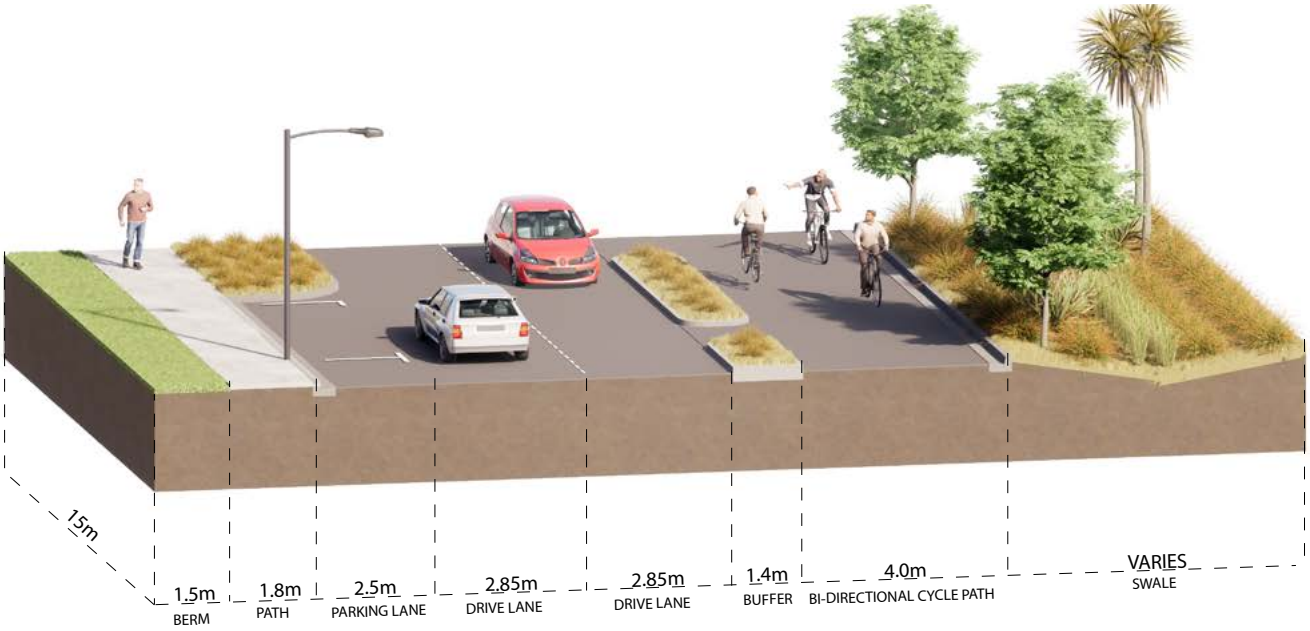

C3 - LOCAL ROAD WITH SEPARATED CYCLEWAY - 16.9M

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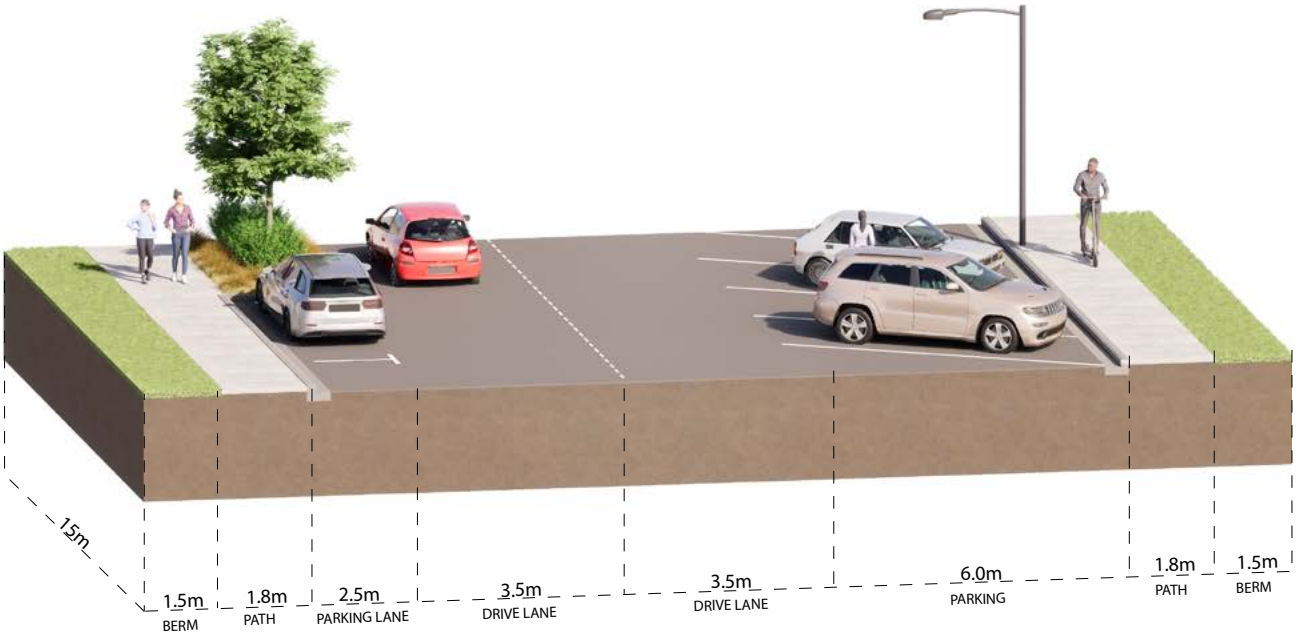

C4 - LOCAL ROAD ADJACENT TO PARK - 22.1M

Internal dimensions indicative only and subject to detailed design

About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Whangarei, Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin, and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.