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APPENDIX C

Urban Design Statement



Te Awamutu T4 Proposed Structure Plan Urban Design Statement

July 2024

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1 Introduction

Chow: Hill was engaged to provide urban design services relative to the owners of land on the south-western side of Te Awamutu, which corresponds with the T4 Growth Cell. The owners of the land have requested the required engineering / planning work be completed to enable the zoning for this land to be changed from “Deferred Residential” to “Medium Density Residential” zone under the Waipa District Council District Plan. The proposed plan change will also insert a new structure plan for the T4 growth cell into the Waipa District Plan. On this basis, the purpose of this document is to provide an overview of the urban design principles underlying the proposed structure plan.

While the structure plan describes proposed land uses at a relatively strategic level, it is underpinned by supporting rationale at a more detailed level of design. These more detailed elements demonstrate one approach to how the site may be configured, but there are certainly possible variations. Of more significance are the principles that have governed the proposed direction for the site and informed the proposed structure plan.

This version of the document addresses commentary raised by Waipa District Council with respect to the preceding version.

1.1 Development Context

Te Awamutu is a rural town surrounded in all directions by open countryside. Cambridge is located approximately 25 kilometres to the north-east and Hamilton is 30 kilometres to the north. State Highway 3 passes through Te Awamutu on a north / south orientation through its central area. In contrast, the North Island Main Trunk railway line is located approximately 1.4 kilometres to the west of the centre of Te Awamutu, although it also follows a north / south orientation.

The urban layout of Te Awamutu has evolved as a relatively radial plan centred on its main commercial heart. Over time, development has expanded outwards in different directions at different rates and the current town boundary forms a ragged inverted triangle, with the greatest expansion to the south, west and north-east of the town.

To accommodate and plan for future growth, the Waipa District Plan has identified a number of future growth cells around the fringe of Te Awamutu. These generally infill some of the undeveloped gaps around the perimeter of the current town boundary. The T4 growth cell is part of this overall strategy and is identified as being development land beyond 2035. Previous long-term planning included the provision of the Te Awamutu Western Arterial Road on the south-western side of the town. While the nature of this road is under review, it is expected to lie along the western edge of the T4 growth cell.

1.2 The Existing Site

The site has largely been utilized for farming purposes until the present time. The site has a rolling terrain with areas of steeper contours and wetland that have not been farmed as intensively as the more level areas. The southern half of the site supports stream courses and there are a number of individual trees scattered across the landscape, particularly where the land is less suitable for crops. Groups of trees are located at boundaries at the centre of the site and at the northern extremity.

1.3 Document Structure

This document presents the current urban design and landscaping thinking relative to the site. A number of concept design iterations have been explored, based on initial engineering thinking for the site. These have evolved on the basis of balancing site influences with ease of development. Section 2 of this report describes the existing site and the characteristics of the proposed development concept. Section 3 provides an overview of the proposed Structure Plan based on the concept design and Section 4 concludes the document. Urban design plans and diagrams are in Appendix 1, commentary on Crime Prevention Through Environmental Design (CPTED) is in Appendix 2 and Appendix 3 illustrates open space provision.

2 Proposed Urban Design Concept

To support the design of the structure plan, a more detailed strategy has been developed for the site, which takes into account considerations relating to civil engineering, ecology, stormwater management and transport planning. These aspects have been reviewed relative to the existing site features and the surrounding context.

The resultant concept design for the site is one way that the site may be realistically developed. However, it is acknowledged that there are a range of alternative possibilities that could be adopted. Consequently, only the key aspects of the design approach will translate to the structure plan, to allow for future flexibility.

2.1 Urban Design Characteristics

To explain the concept, the main features of the scheme are described under a range of universal urban characteristics. These include a mix of relatively physical features, as well as a number of related aspects which relate to how people respond to a place:

- Composition
- Diversity
- Circulation
- Public Realm
- Sustainability
- Character
- Desirability
- Lifestyle
- Stewardship
- Behaviour

2.2 Composition

Composition relates to the physical structure of the built environment, particularly the composition of buildings, spaces, landmarks, vistas and focal points, defines, enriches and gives unique character to a place.

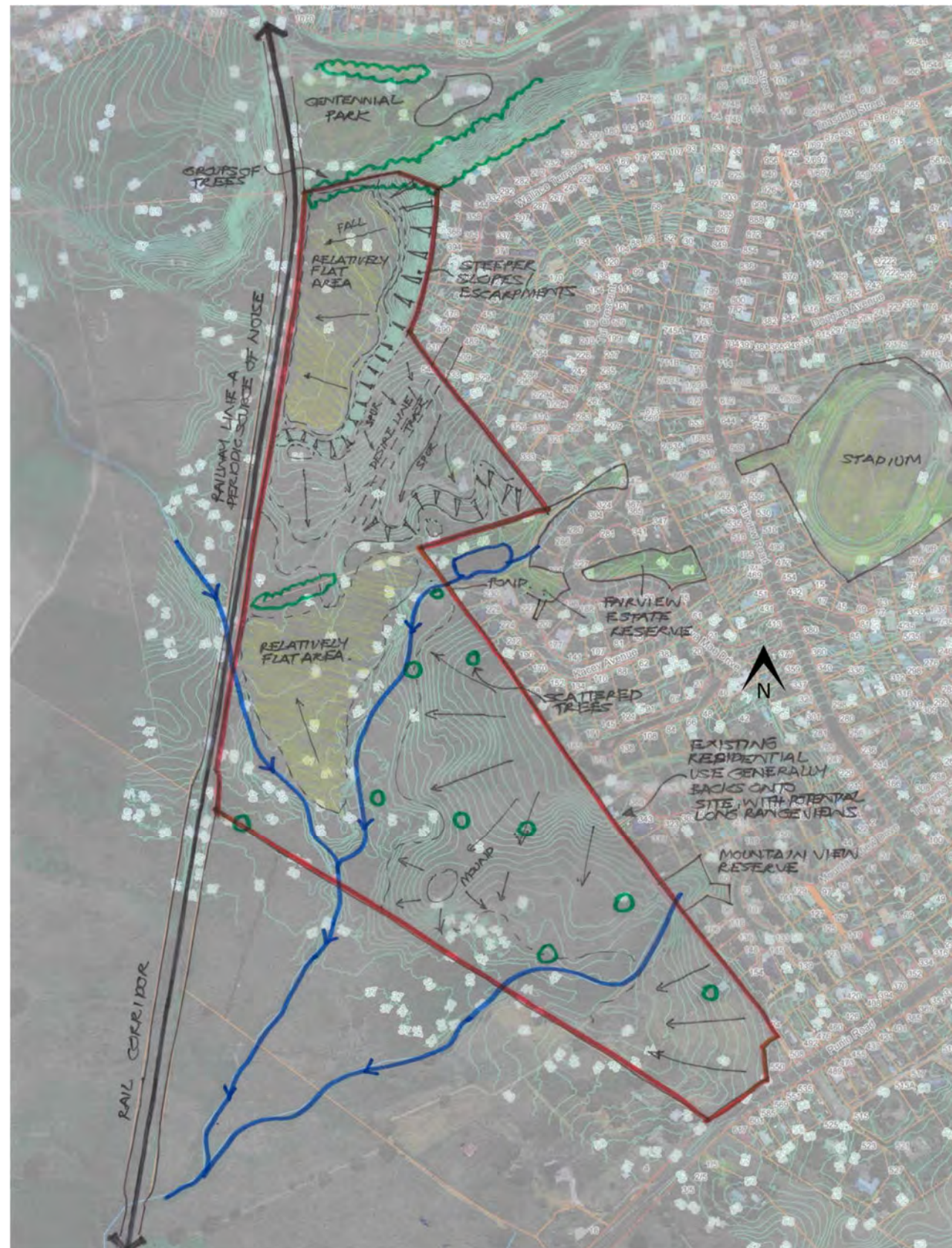
2.2.1 Existing Features

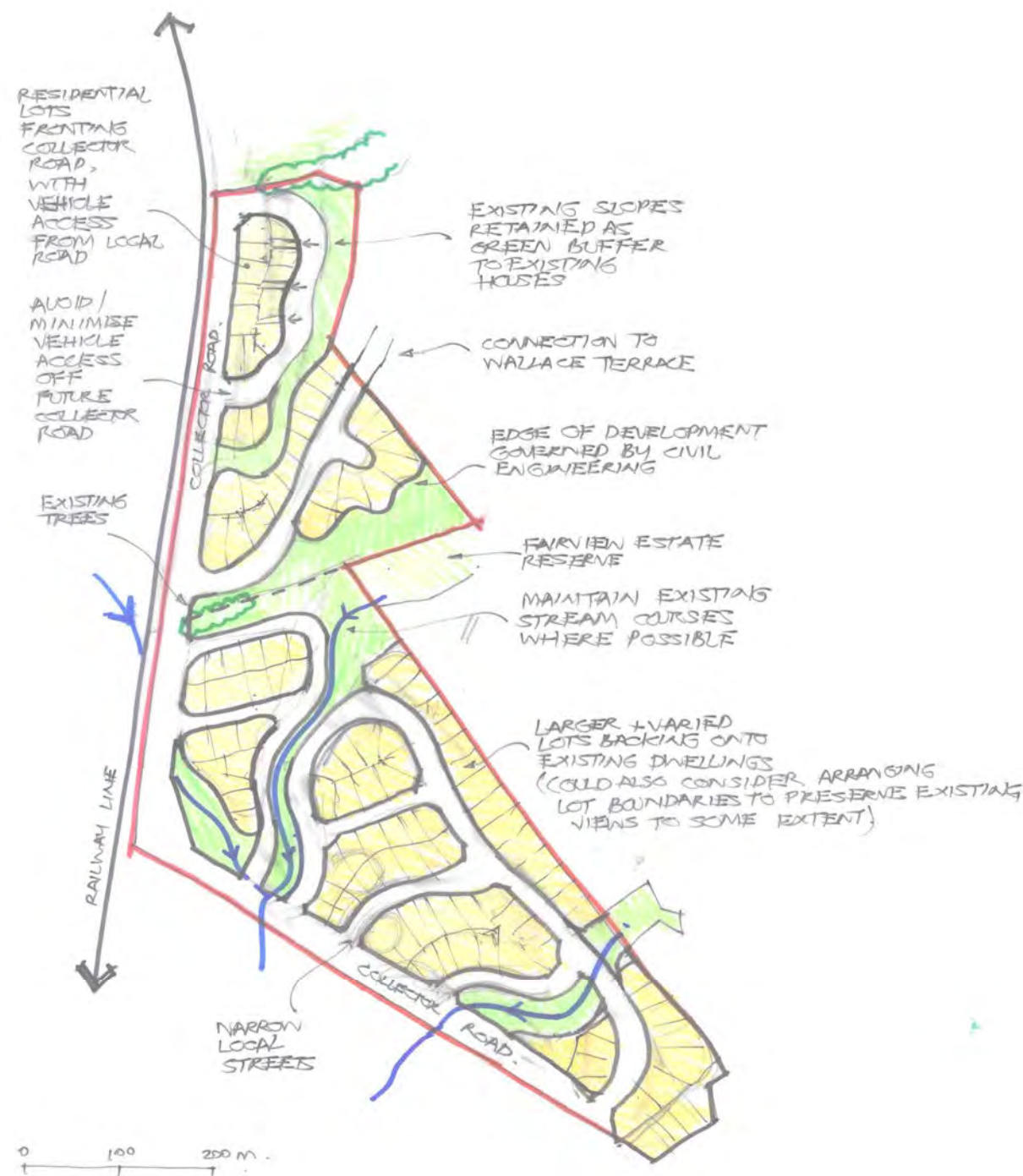
The key features which have informed the overall composition are as follows:

Topography

The older parts of central Te Awamutu to the east of the site tend to be on land which is more level or has relatively shallow changes in level. As the town has grown outwards, later development has occurred on land with steeper contours. This includes the residential areas to the west of Fairview Road, which also abuts the subject site. This is apparent in the road pattern which is relatively straight and gridded to the east of Fairview Road, but becomes more irregular and sinuous to the west, where significant level changes need to be accommodated.

This change from a relatively level to a steeper topography from east to west is continued into the subject site which generally falls from steeper slopes to the east and south, down to relatively level ground along the western boundary. This site boundary is relatively level and is adjacent to the North Island Trunk Main which, as a railway line, is at a relatively flat gradient.





Early Concept Design

The northern half of the site has steeper escarpments as part of the overall fall of the land from east to west. This is also the case at the northern extremity of the site, where an existing spur in the terrain separates the site from Centennial Park to the north.

North Island Main Trunk (NIMT)

NMIT is the main rail connection between Wellington and Auckland. The section of track next to the site is electrified and single track and was originally built at the end of the 19th century. This line is active and used for both freight and periodic passenger trains. In terms of the site, the trains are a source of noise for properties on either side of rail alignment.

Existing Streams and Wetlands

Three streams cross the southern half of the site and ultimately combine to the south-west of the site. These streams coincide with the low-lying contours on the site and also relate to the existing pockets of wetlands.

Vegetation

The site is generally open in nature, with limited tree growth at boundaries or areas of steeper ground unsuitable for agricultural purposes. While much of the site is either pasture or utilized for crops, there is smaller scale undergrowth at boundaries and in the vicinity of the wetland areas of the site.

Views

While the change in elevation of the site from the low-lying areas to the upper eastern edges presents its own challenges for land development, this does provide the opportunity for long-range views to the west. unobstructed view to distant hills and peaks.

2.2.2 Proposed Composition

Based on this range of influences on the composition of the scheme, a number of design iterations have been explored. With respect to the final preferred scheme, the major design moves that have been adopted are as follows:

Stormwater Reserve

Analysis of topography, ecological value and stormwater flows, in conjunction with potential earthworks, has provided direction as to the location and scale of stormwater reserve space on the site. The largest area of stormwater reserve is proposed at the lowest lying parts of the site, in the vicinity of two of the existing streams and associated wetlands.

Collector Road

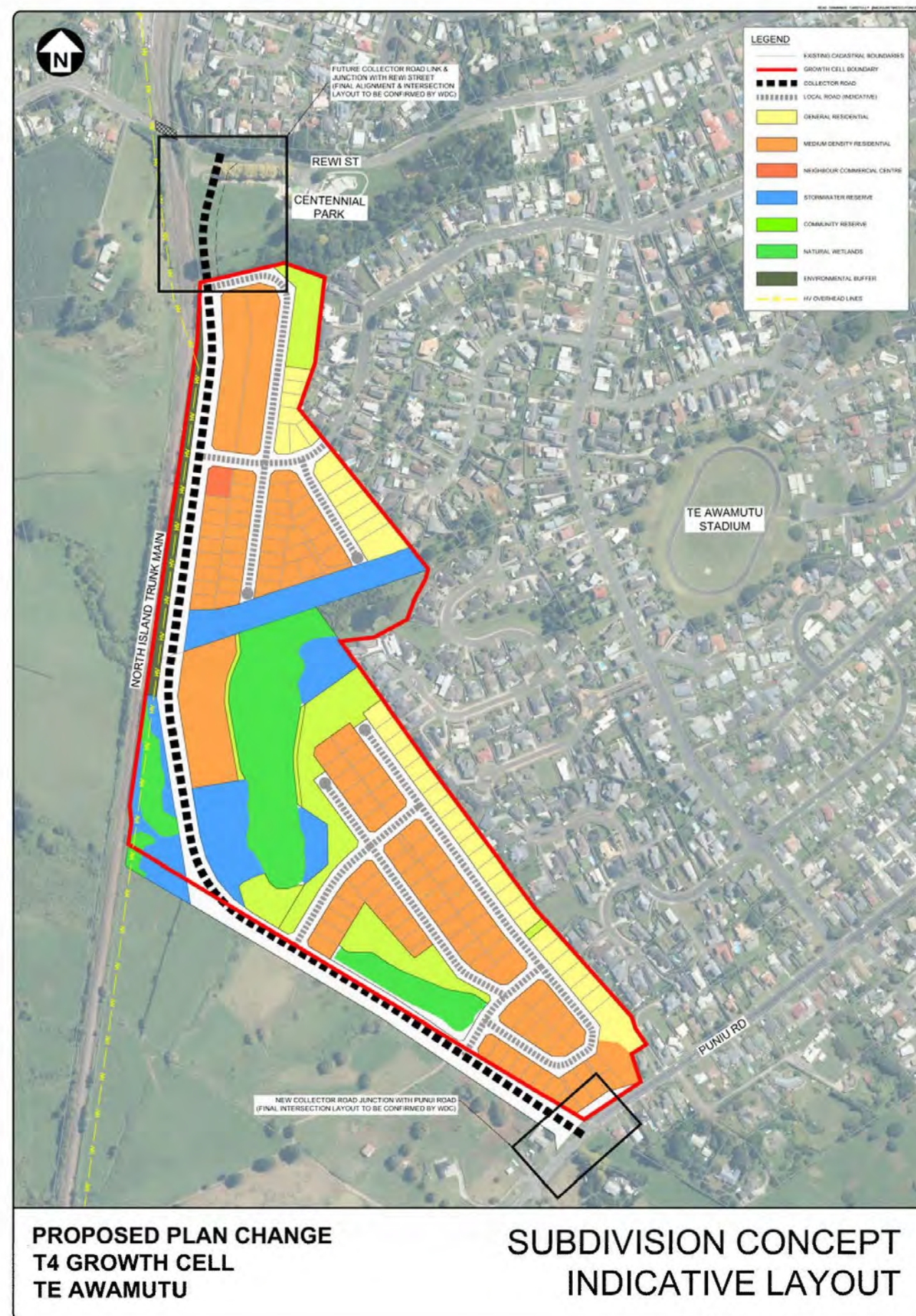
In accordance with the long-term planning for this part of Te Awamutu, a collector road is provided for on the western boundary adjacent to the NIMT and on the south-western boundary. It is noted that the collector road location to the south-west straddles the existing site boundaries.

Environmental Buffer

A separating buffer space is proposed between the proposed collector road and the NIMT to the west. As well as providing additional separating distance between the railway line and the future housing on the site, this offers the opportunity to obscure direct views of the railway line from future housing through tree planting. While trees will not reduce transmitted noise from the railway, obscuring visibility may improve the perception of the noise levels.

Natural Inland Wetland and Stormwater Reserve

The proposed stormwater reserve incorporating existing inland wetland areas is also anticipated to serve as recreational space for the community. In addition, the existing Centennial Park to the north of the site will also be accessible to the T4 site by the collector road and proposed local roads for vehicles, cyclists or pedestrians.



Community Reserve

Community reserve space is proposed at the north-east corner of the site, where the steepness of the existing land precludes development. A smaller reserve connection is also proposed on the eastern boundary to allow for a connection to the existing Mountain View Reserve on Meddings Crescent. As well as supporting pedestrian movement to the east and Te Awamutu Stadium, this also supports stormwater management.

Parts of the boundary of the natural wetlands are also proposed for community reserve space, with access anticipated via the street network and a connected network of paths for pedestrians and cyclists. With the scale of natural wetland and stormwater reserve proposed for the site compared to the extent of residential development, open space amenity on the site is well served. The connections to existing open spaces in the surrounding community provide further access to open space for residents.

Residential Development

Most of the remaining land in the development has been allocated to residential land and associated streets. The proposed layout of these residential areas follows a process of trialing alternative options and generally reflects the principles identified early in the design process, where:

- The collector road is accommodated on the site as a given requirement, which has the potential to be edged with attractive building frontages with private open spaces to the quieter eastern side.
- The stormwater reserve spaces and the natural inland wetlands, are treated as open spaces assets that are treated as positive outlook spaces for surrounding residential development.
- The adoption of rear lots is minimised.
- The layout aims to maximise the incorporation of double-sided streets to minimise road area and maximise developable land.
- A north / south orientation of streets is adopted as far as possible to allow maximise solar access for all lots generally, where private open space in lots at the rear of dwellings can receive sunshine from west or east.

The Waipa District Plan identifies the T4 Residential Growth Cell as having a capacity of 348 dwellings. This estimate may not have taken into account areas of steep terrain, the extent of the site that is needed for stormwater management purposes, and the extent of the site that contains natural inland wetlands.

To address the strategic growth target, approximately three-quarters of the land identified for residential use has been categorised as medium density residential. The following table summarises the extent of land uses proposed by the concept subdivision plan. In terms of overall utilisation of land, the percentage of land use allocated to residential use is about 41% of the total site area.

LAND USE	Land Area (Ha)	%	UNITS	Number of Dwellings
GENERAL RESIDENTIAL	2.64	9.7%	Ha	40
MEDIUM DENSITY RESIDENTIAL	8.62	31.6%	Ha	315
R.O.W ACCESS LOTS	0.09	0.3%	Ha	
NEIGHBOURHOOD CENTRE	0.11	0.4%	Ha	
STORMWATER RESERVE	2.9	10.6%	Ha	
COMMUNITY RESERVE	2.64	9.7%	Ha	
NATURAL WETLANDS	3.46	12.7%	Ha	
ENVIRONMENTAL BUFFER AREA	0.55	2.0%	Ha	
ROAD	6.24	22.9%	Ha	
TOTAL	27.25	100%	Ha	355

The residential densities that result are as follows:

- GROSS DENSITY (No. of lots / total area excluding environmental areas and roading) 24.75 DWELLINGS/Ha
- NET DENSITY (No. of lots/residential area) 31.32 DWELLINS/Ha

A significant proportion of the land is required for stormwater reserve space, to retain and enhance the natural inland wetlands, the collector road and the environmental buffer associated with the collector road. The smaller single-sided streets adjoining parts of the stormwater reserves also affect the balance of land uses. However, this approach does offer the opportunity for dwellings to front both the perimeter streets and also the reserve spaces. This follows good urban design practice in terms of overlooking and stewardship of the public realm.

Medium Density Residential Quality

The average lot size in the medium density areas is approximately 274 sq.m. While this is small compared to more traditional residential lot sizes in Te Awamutu, it is a typical lot size being utilised for new housing in other urban centres. Depending on the proposed dwelling sizes, this average lot size can be used for single or multi-storey detached dwellings. Further efficiencies in the use of lot areas can be achieved where dwellings are configured as duplex / semi-detached typologies. Beyond this, the more comprehensive development of clusters of lots could achieve satisfactory outcomes in the form of short terraces or courtyard housing.

A common factor of densities that go beyond detached housing typologies is that greater design effort is generally required to ensure that building and landscape designs are complementary. Dwellings and associated garden space should take into account the interaction of different ownerships in terms of site planning, pedestrian and vehicular access, privacy of indoor and outdoor spaces, access to sunshine. The effect of development on adjacent spaces should also be considered, encompassing aspects such as CPTED, overlooking, landscape design and architectural design.

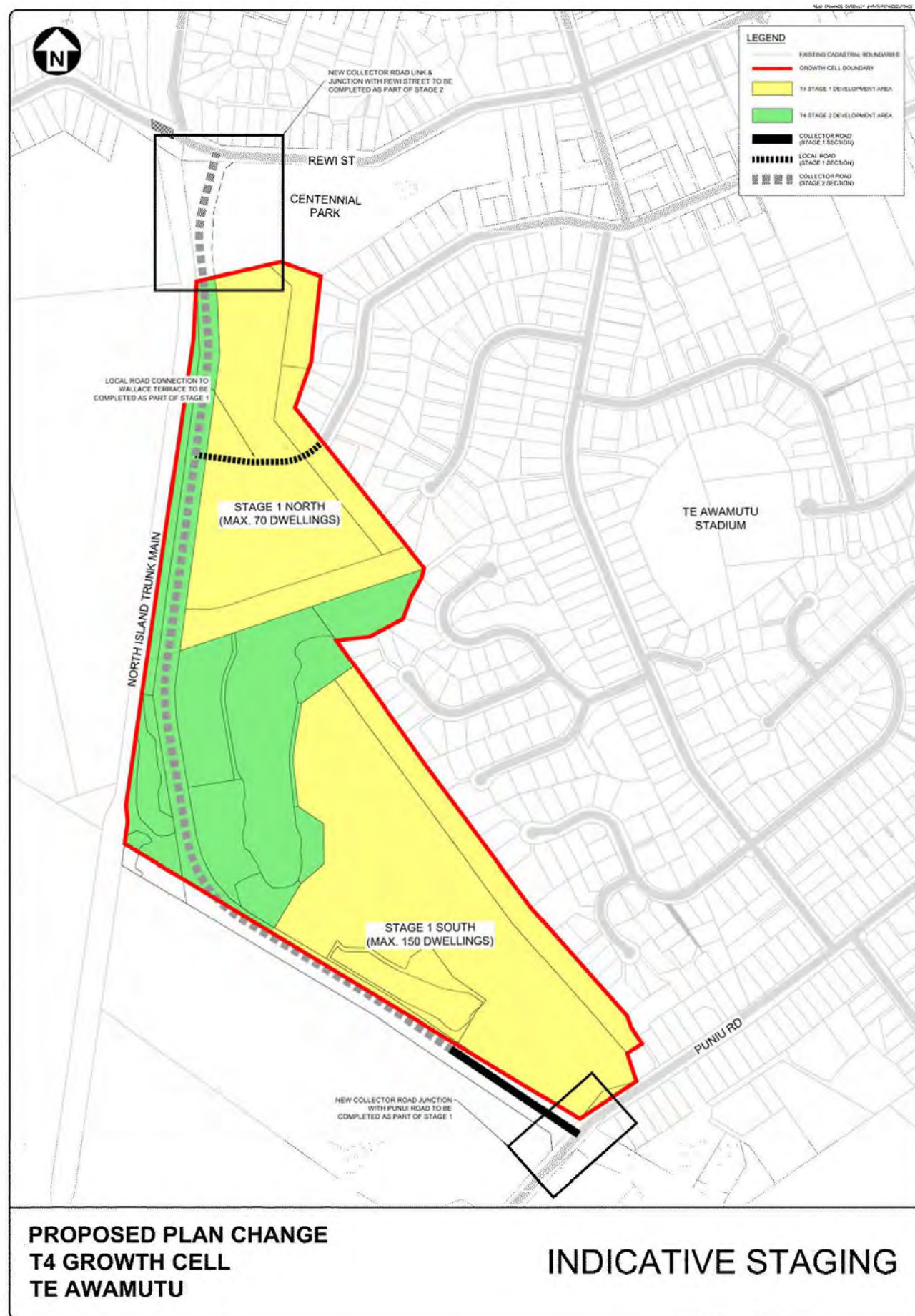
Typical measures to ensure good quality outcomes include:

1. Building and landscape designs prepared with a consistent design approach developed and maintained from the outset across multiple dwellings.
2. Preparation of design guidance that can operate in conjunction with District Plan Rules.
3. Review of proposals by council or another independent reviewer, relative to design guidance. (this process needs to be an obligatory process to ensure that the review process has sufficient weight).
4. A follow-up compliance process to ensure approved designs are actually built.

It is noted that identifying design standards early is important. As rules in themselves do not guarantee a positive outcome, there needs to be a process put in place that ensures design proposals are reviewed and developed and approved.

Neighbourhood Centre

A relatively compact retail provision is anticipated for the scheme of up to 750 sq.m. GFA. This is aimed at providing local amenity and servicing, where convenient access for local residents will also correspond with commercial aims of maximising passing trade. For the latter point, good pedestrian access and healthy levels of passing vehicular traffic will be important to trade and maximising potential customer numbers.



Based on these considerations, three alternative locations have been identified:

- **Northern edge of site at Centennial Park** – for a clear public interface with the park.
- **Junction of Wallace Terrace and the proposed collector road** – for good exposure to passing trade and neighbourhood convenience.
- **South-western corner of T4** – for a central location relative to T4.

Only one of these locations would be developed as a local centre, with the following aspects likely informing the preferred location from a commercial perspective:

- Distance from the existing Puniu Road Dairy at the junction of the existing retail provision at the corner of Puniu Road and Bank Street, to the east of the T4 site.
- The scale of passing trade and the community catchment served.
- Proximity to Centennial Park.

It is expected that the neighborhood centre would support businesses such as a dairy, hairdresser, café or specialty retail that becomes a destination in its own right and is not reliant on passing trade. The final outcome here will be determined by commercial considerations.

2.3 Circulation

Movement networks define the urban pattern of every place. Successful streets are more than roads; they are spaces that encourage pedestrian movement, social interaction and connectivity with external networks. The specific approaches to the movement of people, bicycles and vehicles are as follows.

Wallace Terrace

The proposed concept takes advantage of the current cul-de-sac of Wallace Terrace to connect the proposed scheme to the existing neighbourhood to the east. Access to the site is proposed via an extension to the existing Wallace Terrace or from either end of the proposed collector road. The extension of Wallace Terrace to the collector road is a natural connection to make and converts it from a long cul-de-sac to a more useful connecting street.

Collector Road

The provision of the collector road on the western side of the site will support vehicle, bicycle and pedestrian movement around this western edge of Te Awamutu. At the development level, the collector road provides access to the site from four different points, including the extension of Wallace Terrace.

Local Streets

Most of the residential lots within the development are accessed from local road frontages. At the southern end of the site, the streets are mostly double fronted and form a small grid of streets. The streets largely allow access from two directions for ease of movement. The exceptions are the two cul-de-sacs that end at the central stormwater reserve area. Because these are relatively short. The island of residential development in the middle of the site is accessed from the collector road.

The northern area of residential development builds on the connection of Wallace Terrace to the collector road, with additional streets that break up the development areas into suitable residential street blocks. As with the southern end of the site, there are relatively short cul-de-sacs which extend to the central stormwater reserve. While cul-de-sacs, they do offer pedestrian and bicycle connection to the open space in the middle of the site, as well as direct visual connections southwards.

Land Ownership and Staging

The proposed plan with a central stormwater reserve with the main blocks of residential development rising to north and south reflects the existing topography. This also reflects the current separate ownership of the land, where the north and south ends of the site are in different ownership. The existing west-east boundary is located in the proposed area of wetland. The result of this is that there is a natural break in the development which allows development of each land holding to occur at different times.



Open Space Provision

In New Zealand, there are guidelines rather than strict requirements for the size of parks. The New Zealand Recreation Association (NZRA) guidelines are a common reference and aim to ensure that recreational areas are well-planned, safe, and accessible to the community. They cover aspects such as design, management, and maintenance of parks and open spaces to promote high-quality recreational environments.

The NZRA has also developed a Parks Categories Framework (2017) which identifies a range of open space types as an industry guide for the parks and open space sector in New Zealand. While this is subject to variation, the broad categories identified are as follows:

1. **Sport and Recreation** – Parks set aside and developed for organised sport and recreation activities.
2. **Neighbourhood** – Parks developed and used for informal recreation and sporting activities, play and family-based activities, and social and community activities
3. **Public gardens** – parks and gardens to a very high horticultural standard.
4. **Nature** - parks that offer the experience and / or protection of the natural environment, containing native bush, coastal margins, forestry, farm parks, wetlands, riparian areas and water bodies.
5. **Cultural Heritage** – Parks that protect the built cultural and historical environment, and / or provide for heritage conservation, education, commemoration, mourning and remembrance.
6. **Outdoor Adventure** – parks developed for recreation and sporting activities and associated built facilities that require a large-scale forested, rural or peri-urban environment.
7. **Civic** – Areas of open space often provided within or adjacent to central business districts.
8. **Recreation and Ecological Linkages** – Areas of open space that are often linear in nature that provide pedestrian and cycle linkages, wildlife corridors and access to water margins.

The current south-western edge of Te Awamutu is presently served by a number of small parks. These would generally equate to the Neighbourhood Park category, as identified by the NZRA above. This type of park is ideally located within a 10 minute walk or 500m radius of the residential areas served. When a 500m radius is applied to the existing parks, the existing residential neighbourhood is generally well covered (Refer to fig. SK.07).

The reality of a 10-minute walking distance will be limited by the existing street configuration and would likely have a more constrained catchment per existing park. However, the existing provision of open space is still relatively accessible to existing residents. The T4 site is well covered by existing park space.

It is noted that not all existing parks are equal in terms of the facilities provided. For example, Mountain View Reserve on the eastern boundary of the T4 site has considerable level changes and does not have any significant park facilities. It does of course support connectivity and the amenity of the long-range views to the west. By contrast, Centennial Reserve is a more important park for Te Awamutu, with a well-developed skatepark and other play facilities.

While the T4 site proposal realises an opportunity to increase residential growth for Te Awamutu, the scheme also provides for extension of existing open space provision. Park categories are addressed as follows:

- **Neighbourhood** – the proposed scheme offers the opportunity for two additional neighbourhood play parks as part of a wider open space network.
- **Nature** - the stormwater characteristics of the site require that a significant proportion of the lower lying parts of the site are allocated to stormwater and ecological purposes.
- **Cultural Heritage** – the proposed T4 configuration allows for defined open space around the existing archeological site at the north-east corner of the site.
- **Recreation and Ecological Linkages** – The proposed stormwater and ecological areas associated with the scheme offer an extended open space network beyond the more defined park spaces.



While much of the open space proposed in T4 is on the basis of environmental and stormwater management requirements, the end result will offer a significant open space amenity for the existing and proposed residential areas. With new road and pathway connections, the proposed open space will have good access to the existing urban areas of Te Awamutu.

Centennial Park

The proposed collector road is an alternative to the preceding Western Corridor project, which has a designated route to the west of the T4 site and the railway line. The collector road has been accommodated on the western side of the T4 site, but is still required to extend through Centennial Park to Rewi Street.

A concept plan was developed for Centennial Park in 2020 and parts of this have now been implemented (refer to figure SK.04). While there are some variations, the general approach is unchanged. In accommodating the proposed collector road, the following principles have been devised with respect to Centennial Park:

- Locate the collector road as far to the west as possible, noting that the main governing factor here is the junction configuration at Rewi Street.
- With reference to the concept plan for the park and the as-built situation, identify an appropriate approach that retains the amenity of the park for users and potentially improves it.

With the collector road located on the western edge of the site, the main impact is the reduction in space available for the bicycle track and the dog walking area to the south. To allow for this, there is the opportunity to extend the level area of ground southwards to the T4 boundary to accommodate a reconfigured cycle track and dog walking area (refer to figure SK.06).

In addition, there is the opportunity to extend the open space as a walking trail along the north-eastern corner of the T4 site and extend the walking trails into the T4 area and to the other pockets of community open space proposed.

2.4 Diversity

Successful urban environments comprise a rich mix of uses, activities, cultures and demographics and provide for the old and the young, as much as they do for the rich and the poor.

The scheme provides for a mix of outcomes in the following ways:

- The proposed range of lot sizes provides for a number of different house typologies of different values.
- The design of streets and reserve spaces, and the manner with which the buildings interact with them should ensure that they are attractive, animated, well used, well supervised and easily maintained.
- The proposed spaces for stormwater management and to be retained as inland wetlands will also serve as open space amenity spaces for the community.
- Because the stormwater reserve spaces are largely derived from the existing contours of the site, they have a relatively organic and naturalistic plan-form that contrasts with the more rectilinear forms of the residential street blocks.
- While the gridded street layouts contrast with parts of the natural topography, their straight lines allow for outward views down streets. This is particularly appealing with the available views to the open countryside to the west.



2.5 Sustainability

Sustainable design requires a holistic approach embracing social, environmental and economic dimensions. Urban environments should seek to meet current needs without compromising the ability of future generations to meet theirs.

The proposed scheme addresses sustainability as follows:

- **Social** - the scheme has allowed for connections into the wider neighbourhood at Wallace Terrace and Mountain View Reserve to ensure that the scheme is a connected part of the wider community.
- **Environmental** - the layout of the streets allows good solar access to dwellings by virtue of the approximate north / south orientation. The majority of the proposed lots face either east or west, which allows their rear private gardens to receive sunshine for part of the day. In addition, the civil engineering design of the site and open spaces will be closely related to the existing ecology and hydrology of the site. The plan change proposes a net gain in terms of the value and extent of natural wetlands within the structure plan area.
- **Economic** - The scheme offers the potential for a range of property values, while also adding value through the fit of the design with the wider neighbourhood.
- **Cultural** - The outward views to the wider landscape and visible peaks connects the site to its place. The detailed design of the public realm offers the opportunity to reflect the cultural importance of the place through detail and naming.

2.5.1 Carbon Emissions

As a further contemporary concern relating to the environmental performance of development, consideration has been given to how the development may perform in terms of carbon emissions. In broad terms, as highlighted by the New Zealand Green Building Council:

- Embodied carbon relates to carbon emissions generated in the lifecycle of a construction project, relating to extraction of raw materials through to demolition and disposal. This is estimated at about 9% of New Zealand carbon emissions and is the second largest source of built environment related. While detailed analysis of the range of factors is still being devised for land development, there are a range of principles that can be considered relative to construction projects. The following table relates the proposed scheme to these aspects which are summarized from a number of disparate sources:

Strategy	Proposed Scheme
Infrastructure	
○ Incorporate green spaces such as parks, gardens, and tree-lined streets to improve air quality and absorb carbon dioxide.	The density of residential development is expected to allow for significant areas of private garden space. In addition, there are substantial areas of public open space, including the natural inland wetlands (which will include wetland and riparian planting). In the public realm the smaller streets are planned as 20m wide reserves which can support good tree planting.
○ Use wetlands and communal parks for carbon sequestration through plant photosynthesis and soil carbon storage, which helps reduce atmospheric carbon dioxide levels and the urban heat island effect.	The scheme has been organised around the retention and improvement of existing wetland areas.
○ Wetlands and communal parks can promote sustainable transportation options such as walking and biking paths, which reduce carbon emissions from cars.	The wetlands and their proposed pedestrian and cycle routes connect to the existing residential areas to the east, with existing community facilities. Their connection to the collector road also allows relatively level access to Centennial Park to the north.

Strategy	Proposed Scheme
Control embodied energy and carbon through efficient design of infrastructure.	The overall design of residential street blocks and roads is relatively efficient in terms of land area. This will translate to below ground infrastructure such as wastewater, water supply, power and communication lines. In particular, the widespread use of double-sided streets makes the most of all assets. A general sustainability principle that applies to construction projects is that products and materials that are less energy and carbon intensive in their manufacture or transportation tend to be less expensive as well. While this has to be considered in light of longevity and robustness, the consistent consideration of efficiency is supported.
Consider the full life-cycle performance of products in terms of embodied energy and carbon emissions.	This aspect relates to the issue of longevity, as a product that involves more energy and carbon to manufacture may have a significantly longer useful life and save on the costs and carbon impacts of replacements that would otherwise be required more quickly. This relates to the typical consideration of capital cost versus operational and maintenance costs. As much as these aspects relate to dollars, they also have a parallel cost in energy and carbon emissions.
Transportation & Road Network	
Implement a grid or network system: By implementing a grid or network system, multiple routes can be provided for vehicles, pedestrians, and bicyclists, which can distribute traffic and reduce congestion. This can ultimately reduce the number of cars on the road and the carbon emissions associated with driving.	The site is constrained by its location on the edge of Te Awamutu, with the NMIT to the west. However, connections to the wider neighbourhood are maximized as far as possible for pedestrians and cyclists. The internal street layout is well connected and allows choice for residents in terms of vehicle movements. This means that travelling in a vehicle does not require excessive use of circuitous routes to make a journey in a preferred direction. While this is limited to the scale of the current development, any improvements to required vehicle travel distances are supportive of reduction in energy use and carbon emissions.
Use traffic calming measures: Traffic calming measures, such as roundabouts, speed humps, and traffic circles, can promote safer, slower traffic speeds and reduce the need for idling and sudden acceleration, ultimately reducing fuel consumption and emissions.	The overall development is likely a relatively low speed environment appropriate for a residential area. Consequently, significant rates of acceleration and deceleration associated with increased fuel use are less likely to occur as a matter of course.
Encourage alternative transportation: The subdivision design can encourage residents to use alternative modes of transportation, such as walking, biking, or public transportation, to nearby amenities, reducing carbon emissions from cars.	The scheme does encourage walking and cycling use. While Te Awamutu is presently not well served by public transport, features such as the proposed connector road could support public transportation in the future.
Building Design	
- Consider incorporating renewable energy sources into building designs to reduce the need for fossil fuel use. - Incorporating passive solar design principles in the subdivision can help to reduce energy consumption by maximizing the use of natural light and heat. The design can include strategic placement of windows, shading devices, and thermal mass materials to help maintain a comfortable indoor temperature without the need for artificial heating or cooling.	At the level of site planning, the orientation of streets and ultimately buildings are useful in terms of both passive and active solar gains. Lot orientations allow buildings to face northwards in terms of roof orientation and possible photovoltaic use. Similarly, passive solar gains could be achieved from east, north and west solar access. The latter relates to window orientation and the design of the building envelopes.

2.6 Character

How a city / town / village looks and feels and the way its neighbourhoods express their character and personality are crucial to its identity.

The existing built fabric of Te Awamutu displays a range of building types that are representative of the eras in which they were built, rather than of the specific location and context. These examples do not offer any particular inspiration for how the site might be developed in an architectural manner.

However, it is likely that the character of the future development will be determined more by the existing location and context of the site, with open countryside views to the west and the distant and distinctive mountain peaks. The proposed concept design with its central open spaces, west facing slopes and west/east streets will maintain this outward connection to the wider setting. The fact that the site has a relatively mixed use in terms of layout, form of residential development, inclusion of stormwater reserve and wetland areas also suggests a more engaging interface of town and countryside. This is a more constructive and creative approach than just an arbitrary fence line and town boundary.

2.7 Desirability

Desirability, whilst difficult to define, is a fundamental characteristic of successful places (& people). Desirability of place is influenced by location, environment, visual amenity, materiality, architectural quality, aesthetics and beauty. The aim is to make this development a desirable place to live in Te Awamutu. The site has several convenient open space amenities and supports Te Awamutu as a place to move around on foot or on bicycle. As noted, a key feature of the site generally is its aspect to the countryside views to the west.

2.8 Lifestyle

As a place reflects the lives of its inhabitants, it should also acknowledge life as a 24-hour / 7-day / 365-day experience. Successful places accommodate a full spectrum of lifestyle expectations, including civic events and celebrations. The mix of uses and wider movement connections to the existing community support a range of lifestyle choices for different people. This is both in terms of the types of housing possible and the range of activities and connections to the wider area.

2.9 Stewardship

The design, layout and orientation of buildings and spaces can actively promote or compromise community stewardship, security and civic pride within urban environments.

The proposed scheme will be successful if people value the place and look after it. To support this, the configuration of streets and spaces is organised as follows:

- Open spaces are edged in part with streets and building frontages to provide good access and overlooking of open space.
- Open spaces as both functional and outlook spaces are centrally positioned and easily accessible.
- The interface of the private residential areas of the site and the public realm are generally either at street edges or where private space adjoins public open space. In all situations, stewardship will be supported through:
- The adoption of good quality boundary treatments, whether soft landscape, fencing, walls or other features, with variety in treatment, height and yard depth.
- The provision of gates or entrances that communicate the importance of the public realm and a sense that the building frontage is used by residents and is important to them.

- The provision of overlooking of the public realm from either private open space, ground floor accommodation or upper spaces that overlook the street or public open space.

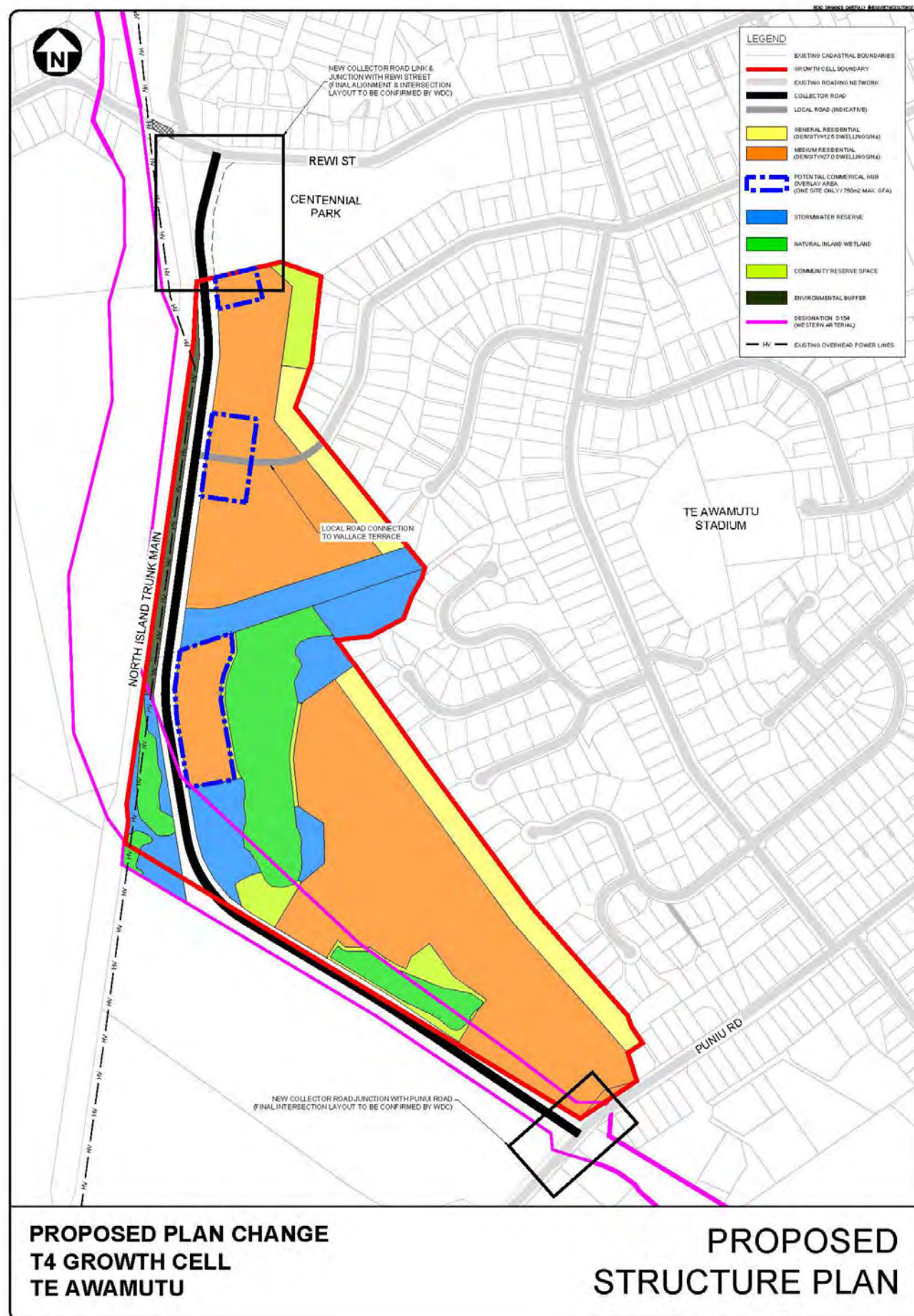
A summary of the wide-ranging recommendations of the National Guidelines for Crime Prevention Through Environmental Design (CPTED) in NZ is contained in Appendix 2 with commentary relative to the proposed scheme. In broad terms, the proposed scheme follows the general recommendations at the current level of detail.

2.10 Behaviour

Places are shaped by the activities and behaviour of their citizens. Rules, regulations and the behavioral expectations we place on each other have significant impacts on the quality of our built environments.

To support a good quality environment overall, design effort put into the following areas can be very effective, without necessarily requiring significant development cost:

- Architectural design and expression;
- Street address and presentation;
- Greenness; and
- Landscape setting.



3 Proposed Structure Plan

The proposed structure plan is based on detailed consideration of the site and the design of a detailed scenario that takes into account a number of factors. The more detailed proposals for the site as described have allowed the following key concepts to be incorporated into the structure plan:

- The site aligns with the boundary proposed for the T4 Growth Cell.
- A collector road is allowed for on the western boundary of the site, connecting Rewi Street to the north with Puniu Road to the south. This also serves as a setback for future buildings from the North Island Trunk Main.
- The existing Wallace Terrace is extended from the eastern boundary to the new collector road.
- Existing wetland areas are shown as Natural Inland Wetland, with additional Stormwater Reserves also identified.

Environmentally, a key aspect of the structure plan is the significant area of land allocated to stormwater reserve and natural inland wetlands. This is essential to management of stormwater, while the retention and enhancement of the natural inland wetlands provides ecological, environmental quality and value.

Integrating with this from a development and economic perspective, the proposed housing areas offer a range of types and sizes of lots and therefore dwelling size. While connected to the existing residential areas on the western edge of Te Awamutu, the proposed scheme may also be considered as a new neighbourhood.

From an urban design perspective, structure plans generally offer a broad direction and vision for a scheme but need to allow flexibility to accommodate changing and evolving requirements. This is particularly the case where development is likely to be planned in detail and constructed over a number of stages. Even with a small-scale stage project, latter stages are informed in response to both the preceding work and the changing external demands of the project.

4 Conclusion

The proposed concept design and resultant proposed structure plan for the T4 site is based on thorough analysis of site opportunities and constraints. Collectively, these are relatively complex and have resulted in a preferred concept design for the site that is grounded in its context.

In terms of development capacity, the proposed scheme is an efficient approach to the site. In addition, the scheme also provides opportunities for development to be staged in accordance with land ownership boundaries or in other combinations.

From the perspective of achieving an attractive place, the proposed approach offers a potentially attractive outcome that transitions from town to country in a distinctive way. The proposed scheme is considered to be a successful plan for the growth of the western side of Te Awamutu.

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