

APPENDIX P

Plan Change 5 Peacocke Integrated Transport Assessment

Hamilton City Council

ISSUE 1, 3 AUGUST 2021



Plan Change 5 Peacocke Integrated Transport Assessment

Hamilton City Council

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1. INTRODUCTION AND PURPOSE

1.1. Purpose

Hamilton City Council (HCC) engaged Gray Matter to assess the transport impacts of the proposed Plan Change for the Peacocke Structure Plan area and to provide technical advice on transport related issues and provisions. Plan Change 5 (PC5) comprises a review of the current structure plan and the indicative transport network, increase in development density, a greater focus on mode shift to non-vehicular modes of transport, public transport and freight, and greater recognition of ecological and significant natural areas (SNAs).

This Integrated Transport Assessment (ITA) informs the proposed changes to the structure plan. Its purpose is to:

- = Review transport policy and objectives in context of the District Plan and local, regional and national transport strategies;
- = Assess the likely transport effects; and
- = Review the Plan Change rules for practicability and effectiveness.

1.2. Plan Change Overview

The outcome sought by the Peacocke Plan Change is a revised structure plan and district plan provisions that will assist in creating an attractive and sustainable community in Peacocke.

The project objectives are to

- = Develop a revised structure plan and planning provisions that deliver on the relevant wider programme benefits.
- = Develop the project outcomes in partnership with internal and external stakeholders and key land-owners.
- = Enhance the environment, specifically in relation to water quality and biodiversity outcomes that are consistent with the outcomes sought in the Mangakootukutuku ICMP and the draft Biodiversity Strategy.
- = Increase public transport, cycling and walking modes as set out in Access Hamilton, including the ability to assist in achieving the following Access Hamilton KPIs:
 - o 20% of all trips are by Public Transport within 10 years.
 - o 40% of all short trips (less than 2km) are by walking or cycling.
- = Develop a land use pattern that provides housing choice while creating accessible new community nodes.
- = Ensure landscape and urban design excellence.

The transport mode shift objectives Access Hamilton are challenging.

1.3. Document Structure

This report includes the following:

- = Background – a summary of the current structure plan and Hamilton Southern Links.
- = Strategic framework – national, regional and local policy that impacts the transport network.
- = Transport issues – a description of current transport issues affecting the Peacocke area.

- = Proposal – proposed structure plan details including discussion and assessment of the proposed transport network, hierarchy, cross-sections, and timing for construction of the strategic transport network.
- = Specific assessments for the north-south arterial, traffic modelling and the SH3/Hall Road intersection.
- = Proposed objectives and policies
- = Conclusion and recommendations.

2. BACKGROUND

2.1. Current Structure Plan

The current planned transport network for Peacocke includes a north-south major arterial corridor and minor arterial corridors in both the north-south and east-west directions. It aims to provide access to surrounding areas, with connections to the Waikato River for walking and cycling. The arterial network was determined through the Southern Links project and will not change. Parts of the transport network are currently being constructed to support growth in Peacocke.

The current transport related objectives specific to Peacocke and the citywide transport objectives and policies are set out below. They seek to integrate land use and transport through increasing density around nodes and transport corridors as well as reducing the dependency on the vehicle for travel. Many of these themes have been reinforced and further developed as part of the plan change. For example, reducing the dependency on the vehicle and encouraging travel by public transport has become stronger by prioritising walking, cycling and public transport over the private vehicle.

Table 1 Operative District Plan – Objectives and policies related to Peacocke Structure Plan (left) and Transport (right)

Objectives	Policies	Objective	Policies
3.4.1.4 Integrate movement routes with surrounding neighbourhoods.	3.4.1.4a Extend existing primary movement routes into the growth cell and use new routes to 'stitch' these together. Use these routes to orientate the secondary street network.	Integrated Transport Network 25.14.2.1 An integrated multi-modal transport network that meets national, regional and local transport needs and is: <ul style="list-style-type: none"> • Responsive • Efficient • Affordable • Safe • Accessible • Sustainable • Integrated with land use 	Land Use Integration 25.14.2.1a The transportation network and related infrastructure is planned, designed, constructed and managed in a manner that: <ol style="list-style-type: none"> i. Is consistent with and supports the land-use spatial framework for the City (Figure 2.1a in Chapter 2). ii. Promotes vibrant business centres. iii. Contributes to safe and efficient multi-modal transport corridors serving the Central City, business centres and other key destinations. iv. Contributes to a transportation network that: <ol style="list-style-type: none"> A. Is accessible to all users, including transport disadvantaged and mobility impaired. B. Maximises opportunities for walking, cycling and passenger transport. C. Creates good connections between residential areas, passenger transport services, schools, employment nodes, recreation areas, shops and other destinations. D. Provides a choice of routes and transport modes for travelling. v. Recognises the need for effective long-term solutions that are affordable and practicable.
	3.4.1.4b Create a high degree of connectivity both within and out of the Structure Plan area.		
3.4.1.5 Ensure that higher density development is linked to social and natural amenity.	3.4.1.4c Enable access to employment, entertainment, retail and recreation through the integrated transport network.		
	3.4.1.4d Seek ways to reduce the impact of major movement barriers such as major arterial roads, the Mangakotukutuku Gully and the Waikato River.		
	3.4.1.5a Increase density around nodes, parks and riverfront areas.		
	3.4.1.5b Take advantage of areas of high amenity.		
	3.4.1.5c Intersect proposed passenger transport routes with nodes for critical mass of population and efficient interchange capabilities.		
	3.4.1.5d Encourage urban form that reduces dependency on the car by focusing on intensification and encouraging walking, cycling and the use of passenger transport.		

<p>3.4.1.6 Encourage an overlapping mix of land uses.</p>	<p>3.4.1.6a Provide a wide variety of land use activities within comfortable walking distance of the highest population densities and amenity.</p> <p>3.4.1.6b Use mixed use planning rules to encourage a diverse and compatible range of activities, both vertically and horizontally.</p>		<p>Transport Network 25.14.2.1b The transportation network and related infrastructure is planned, designed, constructed and managed in a manner that:</p> <ul style="list-style-type: none"> i. Recognises the affordability of providing new public infrastructure and other actions to increase the capacity of the transport network to accommodate growth. ii. Enables flexible management of transport corridors to allow them to perform their function within the City's transport corridor hierarchy. iii. Promotes energy conservation and efficiency. iv. Promotes a safe and efficient transport network. v. Allows for network utility infrastructure, and streetscape amenity. vi. Provides access to and has regard for the safety and needs of the mobility impaired, transport disadvantaged, cyclists, pedestrians, passenger transport users, and others using the transport corridor to move from place to place. vii. Contributes to the social, economic, cultural and environmental needs of current and future users of the transport network. viii. Takes account of the whole of life operational and maintenance costs of the transport network.
<p>3.4.1.9 Locate neighbourhood centres within walking distance to recreational areas.</p>	<p>3.4.1.9a Development should be contained in distinctive neighbourhoods that are walkable and safe and linked by a high quality open space network.</p>		
			<p>Adverse Effects of the Transport Network 25.14.2.1c Adverse effects of new transport infrastructure and changes to the existing transport network are minimised while recognising:</p> <ul style="list-style-type: none"> i. Amenity values of adjacent activities, ii. Cultural and heritage values, biodiversity, and iii. Safety, access and mobility of all users iv. The function and the location that that part of the transport network has within the transport corridor hierarchy. v. The character and purpose of the zone in which it is located.
			<p>25.14.2.1d The design, location and quantity of parking infrastructure is managed in a way that:</p> <ul style="list-style-type: none"> i. Provides for special design requirements of transport network users. ii. Minimises adverse effects arising from an over- or under-supply of parking. iii. Minimises adverse safety and efficiency effects on the transport network. iv. Maximises opportunities for the efficient use of existing parking infrastructure. v. Trips by active modes and passenger transport are encouraged through integration with travel demand management and passenger transport options.

		<p>Adverse Effects on the Transport Network</p> <p>25.14.2.1e Adverse effects of subdivision, use and development activities on the transport network are avoided or minimised with particular regard to:</p> <ul style="list-style-type: none"> i. Connections to, and integration with, the transport network. ii. Reverse-sensitivity effects of land uses sensitive to adverse transport effects (e.g. noise). iii. Promoting streetscape amenity. iv. Ensuring performance, condition, safety, efficiency and long-term sustainability and affordability of the transport network. v. Ensuring trips by active modes and passenger transport are encouraged through integration with travel demand management and passenger transport options. vi. Protection of strategic and arterial transport networks, including associated intersections. <p>25.14.2.1f Integrated Transport Assessments shall be required for new subdivision, use or development of a nature, scale or location that has the potential to generate significant adverse transportation effects.</p> <p>25.14.2.1g Buildings, structures and trees shall not create a potential hazard to the flight paths of aircraft or any other operations associated with Hamilton Airport by intruding within the airport's airspace.</p>
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The figure below shows the current structure plan staging and transport network.

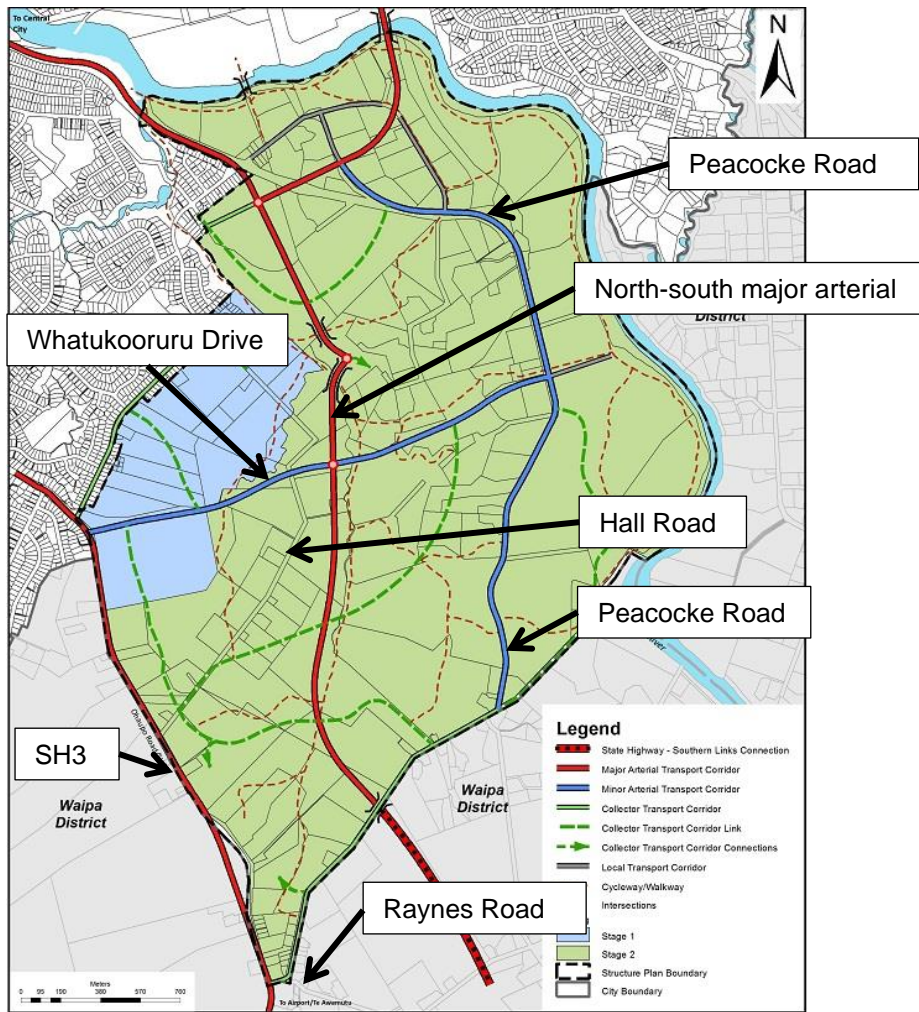


Figure 1: Current structure plan transport network¹ and key features

The key transportation features include²:

- = Walkway and cycleway route linking all parts of Peacocke to the Central City via the Mangakootukutuku Gully and Waikato River corridor. Due to ecological reasons the provision of walking and cycling through the Mangakootukutuku Gully has been altered in favour of more accessible travel routes along the tops and edges of the gully network.
- = 'City Link' major arterial route which traverses through the central portion of Peacocke and links with Cobham Drive at the Cobham Bridge, to provide a direct route to the Central City and hospital.
- = 'Eastern Link' major arterial route which branches from the City Link route and crosses the Waikato River near Echo Bank Place linking with Cobham Drive and the Hamilton Ring Road, thus providing a direct route to the eastern side of the City.

¹ <https://www.hamilton.govt.nz/our-council/council-publications/districtplans/ODP/appendix2/Pages/Peacocke-Structure-Plan.aspx>

² <https://www.hamilton.govt.nz/our-council/council-publications/districtplans/ODP/chapter3/Pages/3-4-Peacocke.aspx>

- = 'City Link' major arterial route forms part of the 'Southern Links' network that will likely connect with Kahikatea Drive in the west, and the Waikato Expressway in the east which provides strong connectivity in all directions (this link is shown on the figure in the following section).
- = Minor arterial network that provides a link between the western and eastern sides of the growth cell, and the main north-south corridor for the eastern part of the growth cell.
- = Collector road network that links individual residential neighbourhoods with each other and with the arterial roading network.

2.2. Hamilton Southern Links

Southern Links is the state highway and local arterial road network in the southern part of Hamilton. The detailed objectives are described in the Notice of Requirement. They are summarised as:

- = Improve transport connections for strategic and economic growth, access to markets, transport efficiency and road safety;
- = Develop and appropriate road hierarchy in the sub-region and recommendations for the periphery of the study areas
- = Improve options for public transport and walking/ cycling
- = Improve amenity and safety through reduced conflict and crash potential along the existing SH1, SH3, SH21 and existing key arterial and collector roads within Hamilton City and key local roads.

When completed, the Southern Links network will:

- = Link SH1 from Kahikatea Drive in Hamilton City to Tamahere and the Waikato Expressway in the south;
- = Link SH3 from Hamilton Airport to central and east Hamilton;
- = Establish a key transport network within the Peacocke growth cell; and
- = Provide the building blocks for further urban development in the region.

Delivery of Southern Links will likely be influenced by the Hamilton-Waikato Metro Spatial Plan – Transport Programme Business Case which is expected to be complete in early/mid-2022.

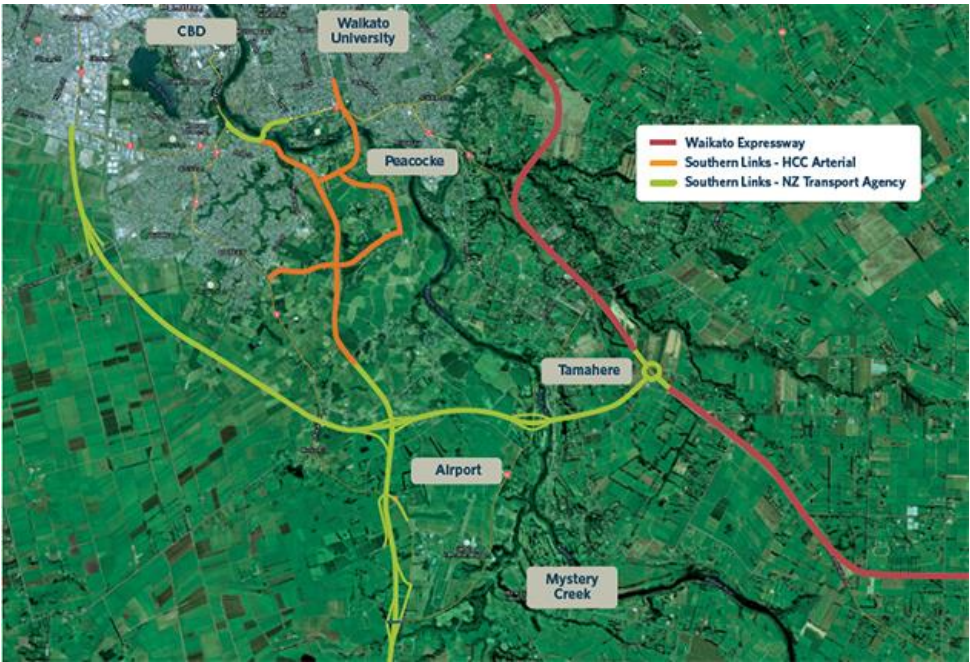


Figure 2: Southern Links Network³

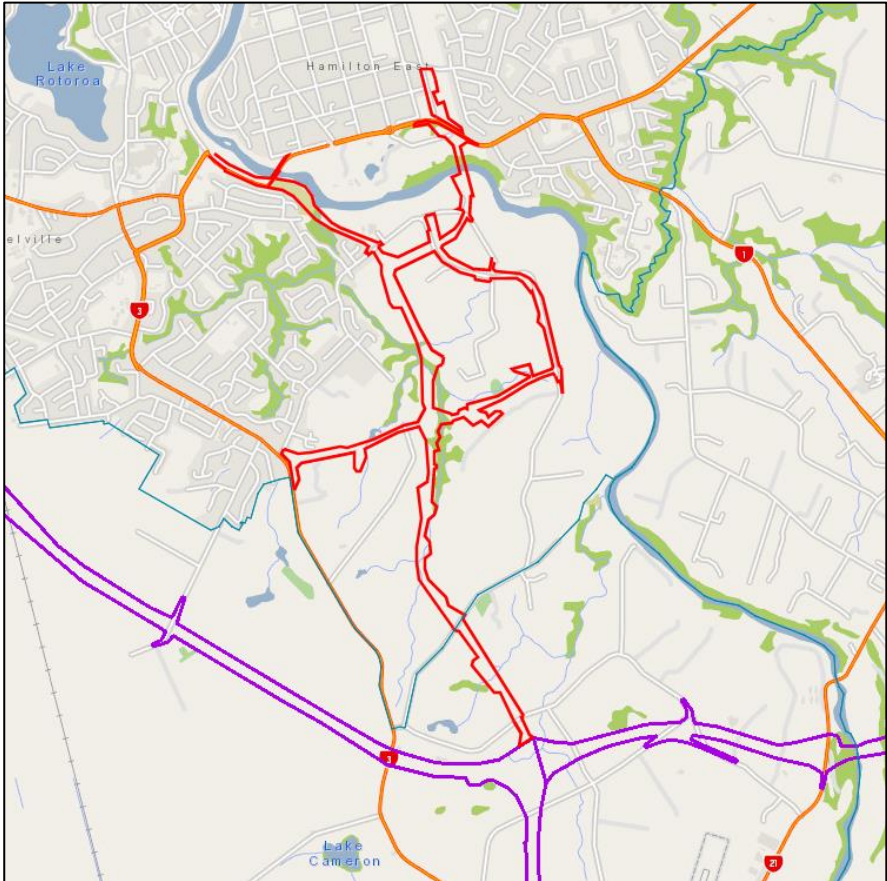


Figure 3: Southern Links Designation and the existing road network in relation to Peacocke.

³ <https://www.hamilton.govt.nz/our-city/regional-alliances/southernlinks/Pages/default.aspx>

2.3. Development Trends and Challenges

HCC's Access Hamilton Strategy aims to create a more accessible city with mode share for public transport, walking and cycling increased from 14% to 29% by 2028 and the percentage of short trips (<2km) undertaken by foot increased to 50%. This level of mode shift is unlikely to be achievable across the city due to existing constraints and separation of work, live and play functions. Therefore, growth areas such as Peacocke will need to achieve a greater than average mode shift for Hamilton to achieve its aims for mode share. Peacocke is well located (e.g. it is close to the CBD and destinations like the Waikato University, Hamilton Gardens and Hamilton International Airport) to drive this mode shift through integration of land use and transport, and promoting connectivity within the Structure Plan area and to neighbouring destinations.

The National Policy Statement on Urban Development (NPS-UD) recognises the national significance of having well-functioning environments that enable all people and communities to provide for their social, economic and cultural wellbeing, and for their health safety, now and into the future. It also recognises the national significance of providing sufficient development capacity to meet the different needs of people and communities. The policy requires all councils to plan well for growth and achieve a well-functioning urban environment for all people, communities and future generations.

For transportation this presents challenges:

- = Increasing density through smaller lot sizes and different building typologies results in more frequent vehicle crossings increasing the risk of crashes between pedestrian, cyclists and manoeuvring vehicles.
- = Duplex developments create wider, more frequent vehicle crossings. Terrace developments also have the potential to increase the number of vehicle crossings.
- = The NPS-UD requirements to remove requirements for off-street parking will likely increase demand for on-street parking. On-site parking provided for development may reduce. Comprehensive Parking Management Plans are likely to be required in areas of high parking demand.
- = Uncertainty over the quantity and locations for accessible parking. While the Building Code require accessible parking to be provided it is linked to minimum parking standards. This means there is the potential for no accessible parking to be provided.
- = Narrower local streets and rear lanes present challenges to accommodate manoeuvring of larger vehicles such as buses, refuse trucks, moving trucks, deliveries and emergency vehicles. The ability to support other functions such as placement of refuse and recycling bins, provide for amenity, provide for stormwater management and provision of on-street parking can also be adversely impacted.
- = Desire to provide step-free universal access for all users, including transport disadvantaged and mobility impaired, throughout the transport system. This may be challenging in some areas due to the topography with Peacocke.
- = Centralised collection of refuse and recycling for apartments and higher density developments can have an adverse impact on Council achieving its goals for sustainability if recycling is not collected separately and simply sent to the landfill.

3. STRATEGIC FRAMEWORK

3.1. Summary

The Peacocke transport network is supported by a framework of transport related strategies and policies seeking to meet national, regional and local objectives. This section provides an overview of relevant strategies and policies, along with a brief summary of how the Peacocke area and Plan Change objectives is influenced by or can support each policy. We have included:

- = Government Policy Statement on Land Transport 2021-2031;
- = Vision Zero;
- = Waka Kotahi Investment Proposal 2021-2031;
- = Waikato Regional Land Transport Plan 2021-2031;
- = Waka Kotahi Keeping Cities Moving;
- = Hamilton-Waikato Metro Spatial Plan;
- = Access Hamilton; and
- = Waipa District Council structure plans.

HCC has other strategies and plans in place for speed management, walking and cycling, and recently completed a Biking and Micro-mobility Programme Business Case.

The Transportation Network objectives of the Plan Change are set out below. The citywide transport objectives and policies (provided at Table 1) are applicable but are not changing so are not repeated here.

Table 2 Proposed Transport Network Objectives

Reference	Objective	Relevant Policies
DEV01-PSP: O17	An integrated and efficient pattern of land use and transportation so as to sustainably manage the impact of development on existing and planned transport infrastructure.	DEV01-PSP: P40 DEV01-PSP: P41 DEV01-PSP: P42 DEV01-PSP: P43
DEV01-PSP: O18	The transport system in Peacocke provides a high level of connectivity within the structure plan area and to surrounding neighbourhoods.	DEV01-PSP: P39 DEV01-PSP: P40 DEV01-PSP: P42 DEV01-PSP: P43 DEV01-PSP: P49 DEV01-PSP: P51
DEV01-PSP: O19	The transport network reduces car dependency and encourages mode shift by: <ol style="list-style-type: none"> 1. Providing a well-connected transport network that prioritises walking and cycling. 2. Designing the transport network to provide safe, direct and universally accessible routes for people walking and cycling throughout the structure plan area. 3. Integrating with land use to support the provision of a frequent public transport service. 	DEV01-PSP: P39 DEV01-PSP: P40 DEV01-PSP: P41 DEV01-PSP: P44 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P47 DEV01-PSP: P48 DEV01-PSP: P49 DEV01-PSP: P50 DEV01-PSP: P51 DEV01-PSP: P52

Reference	Objective	Relevant Policies
DEV01-PSP: O20	The transport network is designed to be a high amenity environment that incorporates stormwater management.	DEV01-PSP: P43 DEV01-PSP: P53

3.2. Government Policy Statement on Land Transport 2021-2031 (GPS)

HCC's, its neighbours and Waka Kotahi's objectives are underpinned by the Government Policy Statement on Land Transport. The GPS has four strategic priorities which are shown below along with the Transport Outcomes Framework.

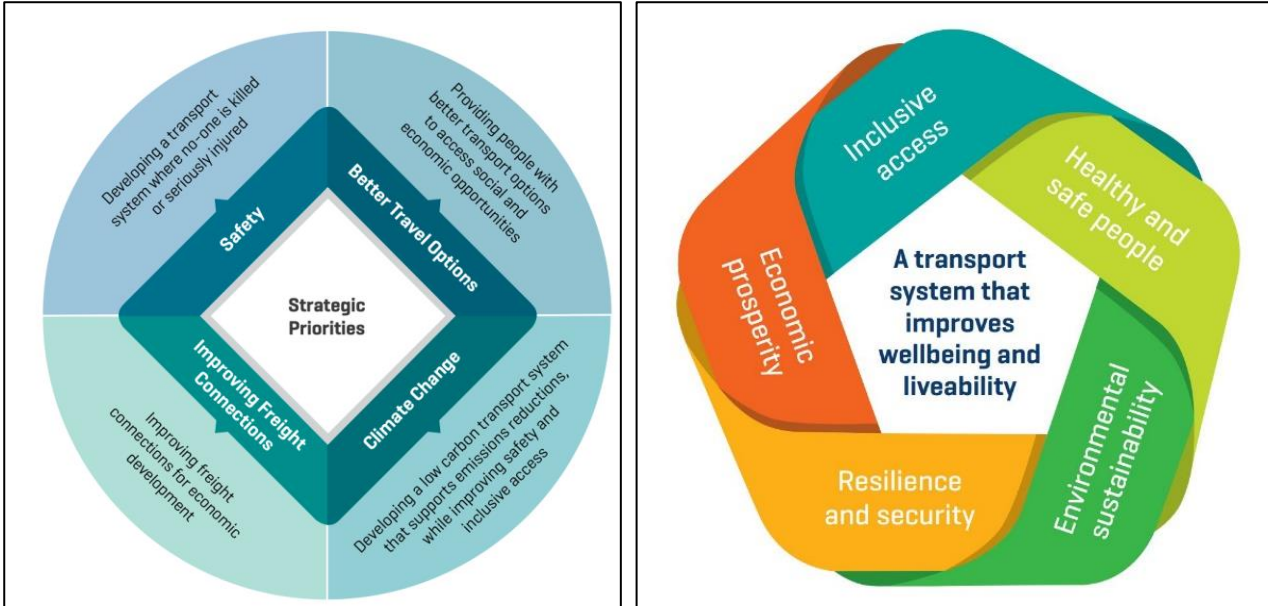


Figure 4: Government Policy Statement 2021 (left = strategic priorities; right = Transport Outcomes Framework)

The transport objectives of the Plan Change are well-aligned with the GPS through the integration and land use and transport, supporting connectivity, reducing car dependency and encouraging mode shift. Development of the Peacocke structure plan area provides opportunity to support every GPS outcome above as discussed below:

Table 3 GPS Outcome and Peacocke support

GPS Outcome	Opportunity to Support	Proposed Transport Objectives, Policy
Inclusive access	Providing for and supporting a range of transport modes that meet the needs of everyone. Requiring specific assessment demonstrating prioritising walking and cycling, universal access	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O19 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P50
Resilience and security	Multiple transport links and mode choices, increasing ability of the network to recover from disruption and maintain an acceptable operational level of service.	Objective 25.14.2.1 Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: P51

GPS Outcome	Opportunity to Support	Proposed Transport Objectives, Policy
Economic prosperity	Excellent multi-modal connections to transport nodes and surrounding areas. Developing the network to encourage the right traffic on the right routes supporting freight movement on the arterial network	Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O18 DEV01-PSP: P40
Environmental sustainability	Minimising effects on significant natural areas, except where crossed by the transport network. Supporting the transition to less carbon emissions by providing for and encouraging zero-emission transport modes.	Objective 25.14.2.1 Policy 25.14.2.1c DEV01-PSP: O17 DEV01-PSP: P53
Healthy and safe people	Providing a safe transport network and supporting healthy travel choices.	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O19 DEV01-PSP: P47 DEV01-PSP: P52

3.3. Vision Zero

The national Road to Zero strategy for 2020-2030 outlines a plan to stop people being killed or injured on our roads. It is based on the Vision Zero approach and supporting the GPS outcome seeking healthy and safe people.

As a city, Hamilton has a Vision Zero aspiration for road safety – *“This means we will not accept the death of any person on our transport system. We will design and deliver infrastructure that recognises humans are fallible and that when we make a mistake, we should not pay for it with our life”⁴.*

In accordance with Vision Zero principles and recognising that a safe transport system is vital to the success of the Peacocke Structure Plan area and the wider city, streets will be designed to protect pedestrians, cyclists and other vulnerable road users, and prevent death and serious injuries for all road users. This will lead to a more vibrant, healthy urban environment.

One of the main differences between the traditional approach to transport design and the Vision Zero approach is the reduced tolerance for death and serious injury resulting from the operation of the transport network. One of the main methods for achieving this is by designing roads so motorists will drive more slowly, i.e. survivable speeds. Some of the tools for achieving this include:

- = Providing narrow carriageways.
- = Providing narrow intersections: allow larger vehicles to use the whole intersection and cross the centreline or centre of the carriageway.
- = Limiting forward visibility, through geometry and/or planting.
- = Increasing side friction, through planted berms, kerb buildouts etc.
- = Using vertical deflection (raised crossings and raised tables).

⁴ Refer to Hamilton City Council Website: <https://www.hamilton.govt.nz/our-services/transport/accesshamilton/Pages/default.aspx>

Changes to the Peacocke Structure Plan better support Vision Zero through Objective O18 which states “*Designing the transport network to provide safe, direct and universally accessible routes ...*” and prioritise walking, cycling and public transport over the private vehicle (refer to Objectives O18, O19 and Policies P49, P50).

Development of an integrated walking and cycling network will separate vulnerable road users from vehicles on collector roads (e.g. Policy P52) making these modes safer and more attractive to support mode shift.

The proposed changes to the Structure Plan provide guidance on design speed, width of the carriageway and footpaths and introduce requirements separated cycleways on the collector network, guidance on the design of rear lanes and how they interact with the public transport network. Specific design of features such as intersections and pedestrian facilities will need to be considered during detailed design of individual developments.

3.4. Waka Kotahi Investment Proposal 2021-2031 (WKIP)

The Waka Kotahi Investment Proposal⁵ sets out the programme of activities that they propose for inclusion in the National Land Transport Plan (NLTP). Waka Kotahi uses *Arataki: our plan for the land transport system 2021–31*, their 10-year view of what is needed across New Zealand’s land transport system, to deliver the GPS priorities and the government’s longer-term outcomes. It is framed by five step changes where there is a need for change. The step changes and how they relate to the Peacocke Structure Plan are outlined below:

Table 4 Waka Kotahi step changes / drivers, and Peacocke support

Waikato Context	Opportunity to Support	Proposed Transport Objectives, Policy
Improving safety	Building a safe transport network that is integrated with land use and deliver safe travel speeds	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O19 DEV01-PSP: P47 DEV01-PSP: P52
Better travel options	Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres. Develops a well-connected network that is continuous and safe Design infrastructure that makes walking and cycling safe and attractive Work together to develop travel options for the north-south arterial through the Metro Spatial Plan and Keeping Cities Moving	Objective 25.14.2.1 Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: O19 DEV01-PSP: P41 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P48 DEV01-PSP: P50
Better freight connections	Provides efficient connections with the wider network through the Southern Links network. Develops the network to encourage the right traffic on the right routes, i.e. supporting freight movement on the arterial network	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O18 DEV01-PSP: P40

⁵ <https://www.nzta.govt.nz/planning-and-investment/national-land-transport-programme/waka-kotahi-investment-proposal-2021-31/>

Waikato Context	Opportunity to Support	Proposed Transport Objectives, Policy
Climate change	Supporting and encouraging environmentally friendly modes, protecting significant natural areas, reducing emissions by optimising transport and supporting low-emission travel options.	Objective 25.14.2.1 Policy 25.14.2.1b Policy 25.14.2.1c DEV01-PSP: O19 DEV01-PSP: P50
Working together	Implement a walking and cycling networks that link to the existing networks Work together through the Metro Spatial Plan to deliver infrastructure to support mode shift and development of Peacocke and Southern Links networks	Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O17

The Peacocke Plan Change is well-aligned with the step-changes and drivers of the WKIP through a focus on integrating land use and transport to drive mode shift. However, only two projects related to Peacocke are included in the WKIP:

- = Waka Kotahi’s part of Hamilton Southern Links
 - o Identified as contributing to the GPS priority of “Better Travel Options”. The focus of this priority is to provide people with better travel options to access places for earning, learning and participating in society, measured through use of public transport, walking and cycling along with environmental indicators;
 - o Investigation proposed for 2021-24; and
 - o Property purchase proposed for 2021-24, 2024-27 and 2027-31.
- = SH3/ Raynes Road intersection
 - o Identified as contributing to the GPS priority of “Improving Safety”. The focus of this priority is to develop a transport system where no-one is killed or seriously injured, measured by the number of deaths and serious injuries on our roads; and
 - o Implementation proposed for 2021-24.

3.5. Waikato Regional Land Transport Plan 2021-2051

The Waikato Regional Land Transport Plan (WRLTP) 2021-2051 outlines the strategic direction for land transport in the Waikato Region. It describes what the region is aiming to achieve for the land transport system in the context of a growing Hamilton-Waikato metro-spatial area. The Regional Transport Committee endorsed the WRLTP in June 2021.

The Plan Change is well-aligned with the WRLTP as discussed in the following table.

Table 5 WRLTP Objectives and Peacocke support

WRLTP Objectives	Peacocke Response	Proposed Transport Objectives, Policy
An efficient and resilient land transport system that advances regional economic wellbeing, and facilitates the movement of people and freight on strategic corridors in the upper North Island.	Peacocke is consistent with Southern Links and provides an arterial network that provides for the movement of people and freight.	Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O17 DEV01-PSP: O18

WRLTP Objectives	Peacocke Response	Proposed Transport Objectives, Policy
A planned transport response that supports liveable urban areas and future growth areas.	Peacocke is consistent with Southern Links and planned urban development Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres. Design focus on providing low speed urban environments.	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: O19 DEV01-PSP: P44 DEV01-PSP: P46
A safe, accessible transport system in the Waikato region, where no one is killed or seriously injured.	Design focus that prioritises walking, cycling and PT in a low speed urban environment.	Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O19 DEV01-PSP: P47 DEV01-PSP: P52
A transport system that provides an inclusive range of integrated, safe, accessible, quality travel choices for people to meet their social, economic and cultural needs.	Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres.	Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O19 DEV01-PSP: P41 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P48 DEV01-PSP: P49 DEV01-PSP: P50
An environmentally sustainable, energy efficient and low-carbon transport system that delivers emissions reductions and enhances communities' long-term resilience to the effects of climate change.	Supporting and encouraging environmentally friendly modes. Integrating with significant natural areas to protect their core functions Reducing emissions by optimising transport and supporting low-emission travel options.	Objective 25.14.2.1 Policy 25.14.2.1c DEV01-PSP: O19 DEV01-PSP: P44 DEV01-PSP: P50
Collaboration around spatial and place-based planning results in a safe and efficient transport system that supports thriving and healthy urban and rural communities and economic wellbeing.	Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres. Consistent with the Southern Links designation which means its consistent with regional objectives	Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O17 DEV01-PSP: O18

Table 6 WRLTP Policies relevant to Peacocke

WRLTP Objectives	Peacocke Response	Proposed Transport Objectives, Policy
<p>Develop multi-modal transport solutions that support agreed national, regional and spatial planning outcomes for housing and growth.</p>	<p>Peacocke is consistent with Southern Links and provides an arterial and local transport networks that support planned urban development.</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: P44 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P47</p>
<p>Support key urban development projects that support Hamilton-Waikato metro spatial outcomes.</p>	<p>Consistent with development of infrastructure within Peacocke. Southern Links to be considered in Hamilton-Waikato Metro Spatial Plan Transport Programme Business Case.</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O18 DEV01-PSP: P39 DEV01-PSP: P40 DEV01-PSP: P51</p>
<p>Provide an inclusive transport system, including:</p> <ul style="list-style-type: none"> = public transport in and between centres. = rapid and high frequency public transport on core corridors in greater Hamilton. = passenger rail between Hamilton and Auckland. = alternative delivery modes to improve rural access. = safe and accessible walking and cycling networks. 	<p>Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres. Engagement with WRC has identified PT corridors and locations for proposed PT hubs and bus stops on minor arterials</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: O19 DEV01-PSP: P41 DEV01-PSP: P42 DEV01-PSP: P44 DEV01-PSP: P45 DEV01-PSP: P46 DEV01-PSP: P48 DEV01-PSP: P50 DEV01-PSP: P52</p>
<p>Promote initiatives that support travel behaviour change, mode shift and compact urban form.</p>	<p>Prioritises walking, cycling and PT by providing higher density around key transport corridors and activity centres. Defines the PT network Directs development of continuous and safe walking and cycling network</p>	<p>Policy 25.14.2.1a DEV01-PSP: O17 DEV01-PSP: O19 DEV01-PSP: P41 DEV01-PSP: P42 DEV01-PSP: P44 DEV01-PSP: P48 DEV01-PSP: P49</p>
<p>Look for funding opportunities to advance access and mobility outcomes.</p>	<p>-</p>	<p>-</p>
<p>Uptake new technology to enhance transport outcomes.</p>	<p>Detailed design can implement measures such as PT priority at intersections</p>	<p>Policy 25.14.2.1b</p>
<p>Encouraging urban form that supports low carbon and low emission transport options.</p>	<p>Urban form locates density around collector corridors and activity centre to prioritise movement by walking, cycling and PT.</p>	<p>DEV01-PSP: O17 DEV01-PSP: P39 DEV01-PSP: P40 DEV01-PSP: P41</p>

3.6. Waka Kotahi Keeping Cities Moving

“Keeping Cities Moving” is Waka Kotahi’s plan for mode shift. The objective is to grow the share of travel by public transport, walking and cycling in order to help cities thrive. The transport network needs to provide mode choices and help people move around easily.

Waka Kotahi’s plan (page 6) looks to support thriving urban areas in three ways:

- = shaping urban form;
- = making shared and active modes more attractive; and
- = influencing travel demand and transport choices.

The Peacocke Structure Plan provides opportunities to implement all three of the above methods to support a thriving urban area. The transport objectives of the Plan Change (i.e. O17, O18 and O19) are well-aligned with Keeping Cities Moving as they seek an integrated and efficient pattern of land use and transport, providing a high level of connectivity and reducing car dependence and encouraging mode shift.

The area specific plan for the Waikato (*Hamilton-Waikato Regional Mode-shift Plan*) lists Peacocke as a key area for the transport intervention “*place shaping*”, or “*ensuring layout and design of new urban areas supports the use of public transport, walking and cycling*”. As examples, the transport policies of the Plan Change direct:

- = connectivity and integration of transport and land use (P39 and P40);
- = development of walkable neighbourhoods (P45);
- = delivery of high quality and accessible PT (P42 and P46);
- = a continuous and safe walking and cycling network (P45 and P49); and
- = prioritises pedestrians and cyclists over vehicles (P50).

3.7. Hamilton-Waikato Metro Spatial Plan

The Hamilton-Waikato Metro Spatial Plan⁶ has the vision for the Hamilton-Waikato metro area as “*a place where our people can easily access employment, education and health facilities, serviced by reliable and efficient transport connections and great places.*” The plan’s vision is supported by six transformational moves. These are listed below, along with the relevance of the Peacocke area.

Table 7 Metro Spatial plan

Transformational Move	Peacocke support	Proposed Transport Objectives, Policy
Waikato River: celebrating the Waikato River as the defining ecological feature connecting the metro area to the heart of a blue-green network supporting environmental and recreational use and creating a sense of place.	Multiple connections to the river and gully network for walking and cycling (although access to gully network is limited for ecological reasons). Stormwater devices integrated into a green network with pedestrian access	DEV01-PSP: O18 DEV01-PSP: O20 DEV01-PSP: P53

⁶ <https://futureproof.org.nz/h2a/metrosatialplan/>

Transformational Move	Peacocke support	Proposed Transport Objectives, Policy
<p>A radical transport shift: a multimodal transport network, connecting the metro area and facilitating a radical shift to using public transport through the establishment of a rapid and frequent public transport network shaped around where and how our communities will grow.</p>	<p>Provides a multi-modal network, that prioritises public transport services and separates cyclists from vehicles.</p> <p>Higher development density supports use of alternative modes</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1a Policy 25.14.2.1b DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: P44 DEV01-PSP: P49 DEV01-PSP: P50 DEV01-PSP: P52</p>
<p>A vibrant metro core and lively metropolitan centres: growing Hamilton central city as our civic, administrative, cultural and commercial metro core, alongside lively metropolitan centres, well connected by public transport and safe walking and cycling networks, where people can afford to live, work and play.</p>	<p>Reliable links to Hamilton city centre and the local centre within Peacocke.</p> <p>Arterial connections provide for vehicle connectivity with strong walking and cycling links provided</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O17 DEV01-PSP: O18 DEV01-PSP: O19 DEV01-PSP: P39 DEV01-PSP: P40 DEV01-PSP: P41</p>
<p>A strong and productive economic corridor: establishing an economic corridor that links the highly productive employment areas between Ruakura, Hamilton central city and north to Horotiu.</p>	<p>Peacocke arterial network connected to city wide and planned regional network supporting economic and movement functions.</p>	<p>Objective 25.14.2.1 Policy 25.14.2.1a DEV01-PSP: O18 DEV01-PSP: P40</p>
<p>Iwi aspirations: enhancing the environmental health and wellbeing of the Waikato River in accordance with the Te Ture Whaimana o Te Awa o Waikato – Vision and Strategy for the Waikato River, while supporting iwi in embracing social and economic opportunities within the metro area with a specific emphasis on Hopuhopu and Ruakura.</p>	<p>Protection of significant natural areas.</p>	<p>DEV01-PSP: O18 DEV01-PSP: O20 DEV01-PSP: P53</p>
<p>Thriving communities and neighbourhoods: enabling quality denser housing options that allow our natural and built environments to coexist in harmony increasing housing affordability and choice to meet the needs of growing and changing communities.</p>	<p>Efficient land use and transport network planning and integration.</p>	<p>Objective 25.14.2.1 DEV01-PSP: O17 DEV01-PSP: O19</p>

3.8. Access Hamilton

Access Hamilton⁷ was first developed in 2010 and was refreshed in 2018 to ensure the city can respond to higher than expected growth in the best way possible to achieve the following outcomes areas:

⁷ <https://www.hamilton.govt.nz/our-services/transport/accesshamilton/Pages/default.aspx>

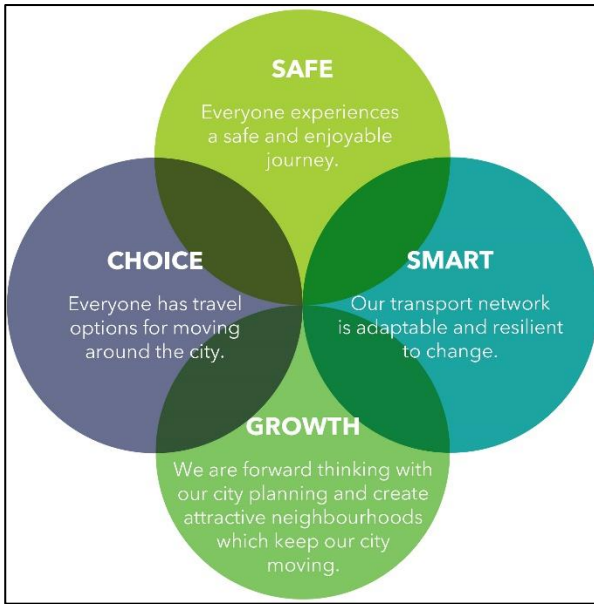


Figure 5: Access Hamilton Transport Outcome Areas

Access Hamilton identifies investment opportunities in transport activities across a range of modes. It has a strong focus on improving accessibility for pedestrians and cyclists and public transport users and supporting new growth areas. Investment in the transport system aims to deliver a reduction in serious injuries by 30% by 2028 and 60% by 2048, with an overarching goal of zero deaths. It also aims to create a more accessible city with mode share for public transport, walking and cycling increased from 14% to 29% by 2028 and the percentage of short trips (<2km) undertaken by foot increased to 50%.

Key features of the programme are the removal of public transport congestion hotspots in the short term, the development of the Mass Transit Plan to improve public transport options and new infrastructure to support growth cells including Peacocke and Southern Links.

3.9. Waipa District Council

Waipa District Council have structure plans in place that are likely to affect the Peacocke area. These are summarised, along with the potential impact on Peacocke, below:

Table 8 Waipa District Council Growth Areas

Name	Description	Relevance to Peacocke area
Houchens Road Structure Plan	Area of planned development west of Peacocke, on the western side of SH3. Large lot residential subdivision	Access via Houchens Road/ Ohaupo Road intersection requires an upgrade Any change to access with SH3 will require Waka Kotahi approval
Airport – northern precinct	Potential expansion of the current Northern Precinct to the Southern Links designation Industrial activities	Likely to increase demand for trips between Peacocke and Airport

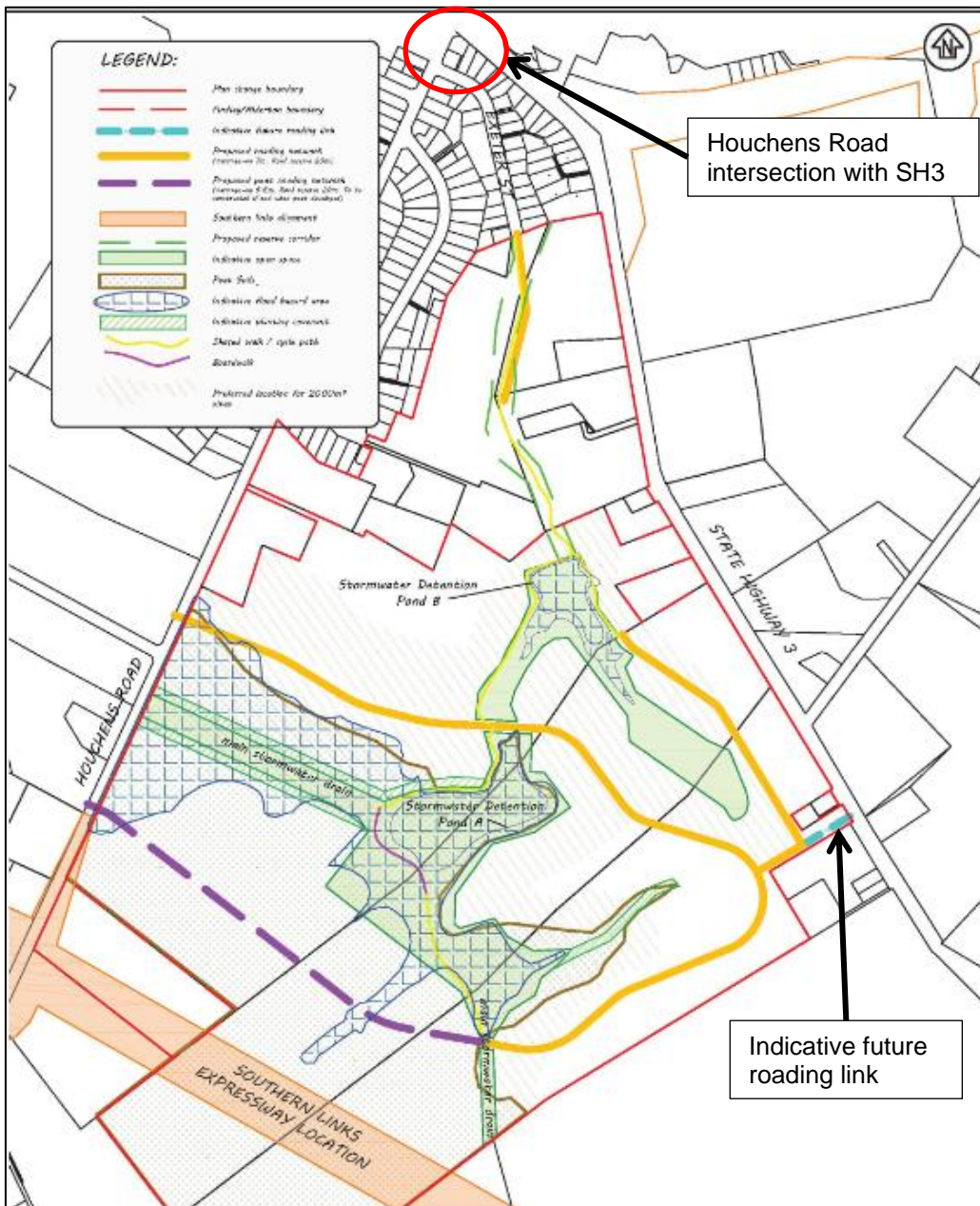


Figure 6: Houchens Road Structure Plan (Waipa District Plan, Appendix S13 -Houchens Road Structure Plan)

While the structure plan shows an indicative roading link to SH3, the assessment was based on an upgrade of the SH3/Houchens Road intersection and did not require a second access to SH3. This is reflected in the Waipa District Plan⁸ which only describes mitigation at the SH3/ Houchens Road intersection. This intersection may only be practicable after constructing sufficient stages of Southern Links that allows revocation of state highway status from SH3/ Ohaupo Road.

⁸ Waipa District Plan, Rules 15.4.2.70 – 15.4.2.81

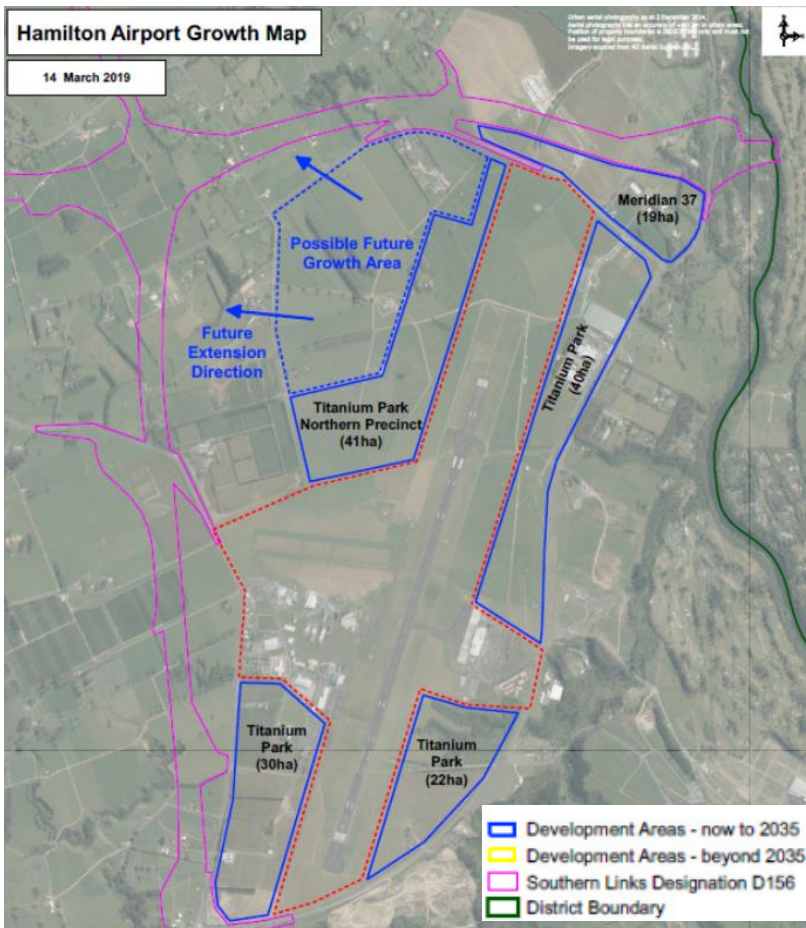


Figure 7: Airport (Waipa District Plan, Appendix S1 – Future Growth Cells)

3.10. Summary

In summary, the Plan Change is well aligned with the national, regional and local strategic transport frameworks. These frameworks seek improvement access for all users, provide safe transport networks, provide for economic growth and environmental sustainability/ climate change.

The current transport provisions of the District Plan support the strategic framework, but the Peacocke Plan Change seeks to go further through the objectives and policy seeking integration of land use and transport with a focus on higher density development near key transport corridors and activities nodes along with prioritising pedestrians and cyclists over vehicles. The policy framework providing supporting detail including requirements for the transport network to provide for public transport services and infrastructure, separation of cyclists from vehicles on the collector network and providing a continuous and safe walking and cycling network.

4. THE PROPOSED STRUCTURE PLAN

4.1. Integration with Land Use

The vision for the Peacocke area is that it will become a high-quality urban environment that is based on urban design best practice, social well-being, and environmental responsibility. It is important land development in the Peacocke area occurs in such a way that it takes advantage of its location, responds to and respects the important ecological values of the area and integrates with the transport network to ensure a high level of accessibility is maintained into and throughout the area.

The success of Hamilton's transport system relies on creating a new approach for multi-modal (different types of transport) movement. The Peacocke area will be developed in line with Hamilton's vision set out in Access Hamilton and consistent with Vision Zero. In a transport sense this means developing an integrated transport system that supports the proposed land use, comprising a multi-modal transport network that provides access to frequent public transport on key routes and a direct and accessible walking and cycling network, that is safe and enjoyable to use. The network will be constructed to meet best practice principles related to safety, coherence, directness, attractiveness and amenity which will assist in encouraging mode shift, in particular for shorter trips of less than 2km.

Key transport features that distinguish Peacocke from the current District Plan provisions are:

- = Wider footpaths on local corridors;
- = Provided separated cycle lanes on the collector network;
- = Identification of public transport routes so that infrastructure can be provided at the time of subdivision;
- = Bus stops are to be provided in-lane to minimise delays to the public transport services;
- = Provide for increased use of rear lanes for property access; and
- = Provide for higher density along identified public transport corridors and around the local centre and other areas of activity/amenity to support public transport services.

The Transportation Network objectives of the Plan Change are set out in Section 3.1 above. DEV01-PSP-O17 specifically addresses integration with the objective of *“An integrated and efficient pattern of land use and transportation so as to sustainably manage the impact of development on existing and planned transport infrastructure.”*

4.2. Hierarchy and Layout

The key transport features of the proposed structure plan are well aligned with the current structure plan. The proposed transport network includes:

- = Major and minor arterial networks that align with the current structure plan and Hamilton Southern Links;
- = Extending the minor arterial south of the Peacocke Local Centre through to the Peacocke Road/ Raynes Road intersection;
- = Revisions to alignment and location of the collector network; and
- = More direction on public transport routes and locations for bus stops on the minor arterial network.

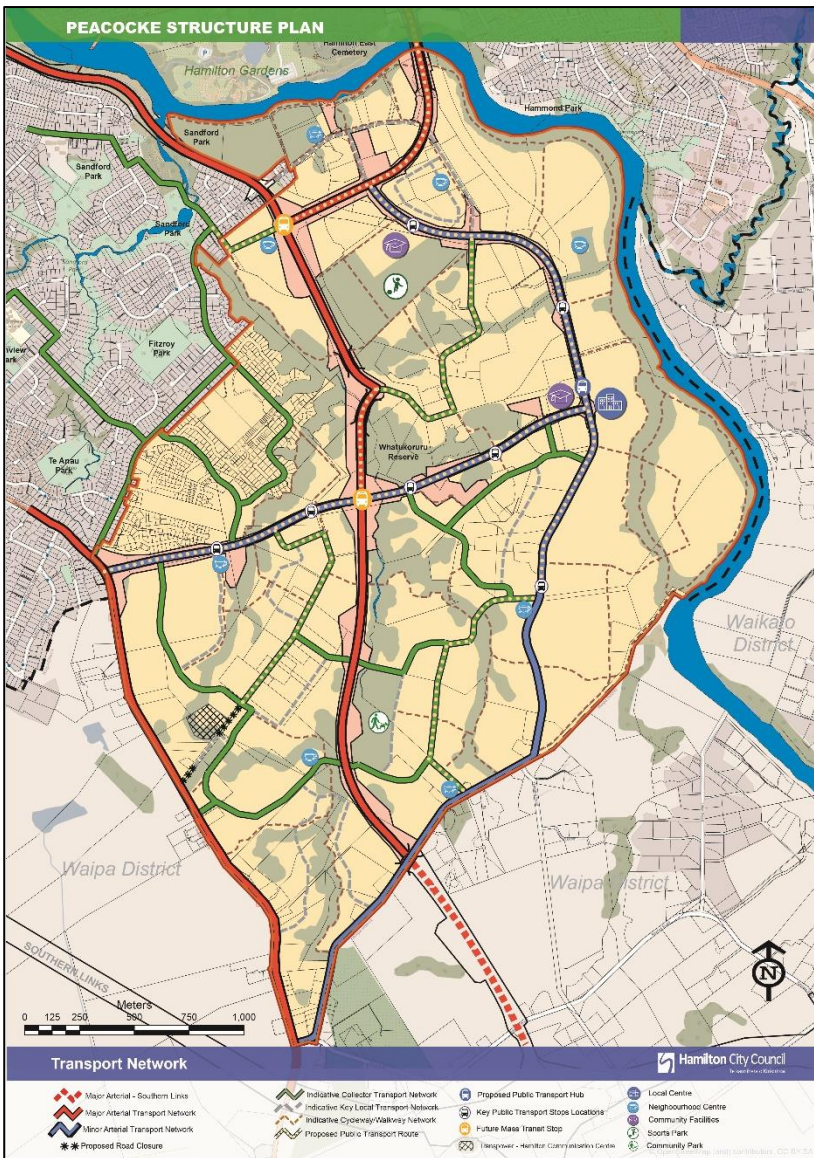


Figure 8: Proposed Structure Plan

4.3. Speed Management

The principles of the HCC Speed Management Plan seek that:

- = Where there are high numbers of people walking, biking and crossing the road the speed environment will be 30km/h;
- = Residential local roads will be constructed for a 40km/h environment; and
- = New roads will be constructed appropriate to the function and to create a safe and appropriate environment.

The proposed design speed environments are 30km/h on local residential corridors and 40km/h on the collector network. Peacocke has a lower design speed environment than other local roads to support mode shift and contribute to Vision Zero. These design speed environments are supported by the cross-sections developed for Peacocke. The proposed structure plan is consistent with the principles of the HCC Speed Management Plan.

4.4. Cross-Sections

4.4.1. Arterial Corridors

The major and minor arterial corridors within the structure plan area were designated through the Hamilton Southern Links project, except for the proposed extension south of the Peacocke local centre. The design and construction of arterial corridors is led by HCC, and it is not necessary for details to be provided in this Structure Plan.

SH3 is a major arterial in the HCC transport corridor hierarchy and identified as a Regional Strategic corridor in the One Network Road Classification. The form and function of this corridor will likely be reviewed following construction of Southern Links.

4.4.2. Collector Corridors

Collector corridors perform both a movement and property access function. Collector corridors connect local neighbourhoods and provides connections to the wider arterial network. Cycling and walking facilities within the collector corridor should be separated to ensure a safe and efficient pedestrian and cycling network that promotes active modes of transport. Property access is not restricted but will need to specifically consider inclusion of the separated cycle facilities to minimise disruption of cycle travel and improve road safety.

The proposed cross-sections depart from the District Plan standards (Appendix 15, Table 15-6a)ii) due to the introduction of separated cycle lanes. The District Plan anticipate 1.5m wide on-road cycling, but the Structure Plan requires a 2m cycle lane with 0.6m buffer (2.7m total width) to the parking/ berm.

The Structure Plan specifically identifies the public transport corridors on some collector corridors as they require slightly wider movement lanes (3.4m). On other collectors 3.2m wide lanes are adequate.

The proposed cross-sections are shown below, noting that the 2.5m wide berm/ parking lane/ bus shelter will likely alternate along the road so that parking is provided on both sides.

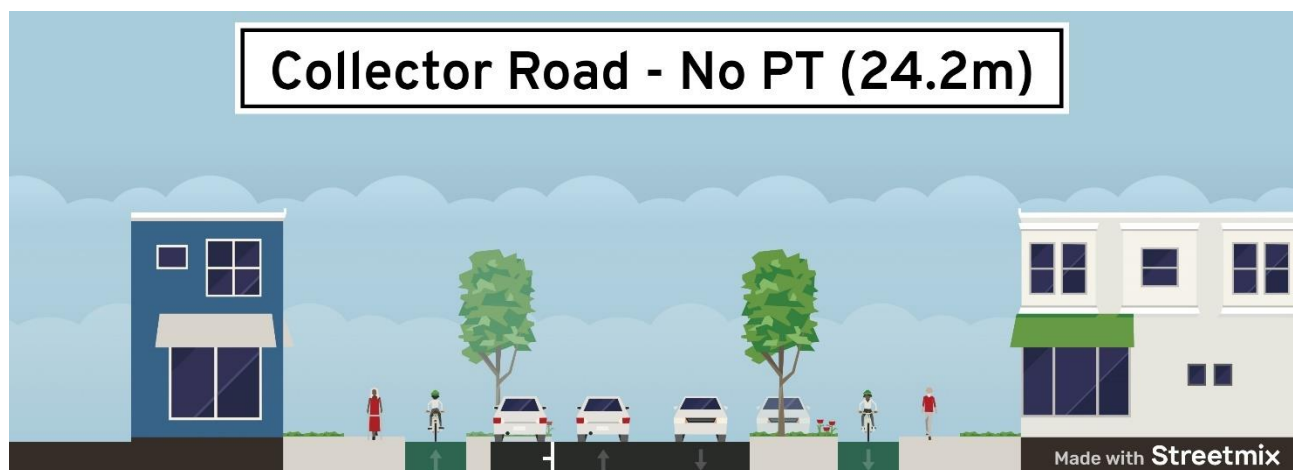


Figure 9: Proposed Collector Cross-Section

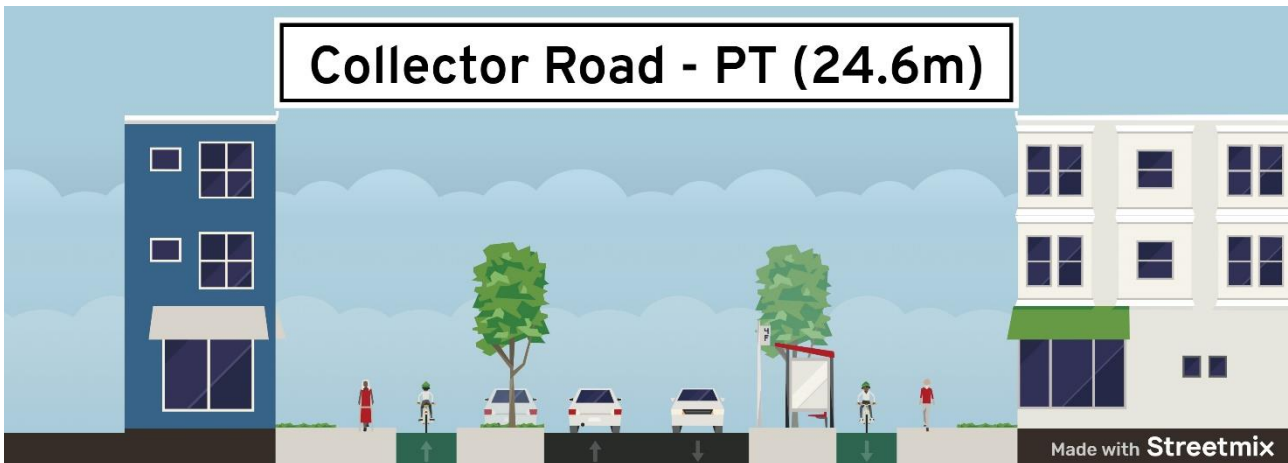


Figure 10: Proposed Collector Cross-Section for Identified PT Routes

4.4.3. Local Corridors

The principal transport function of local corridors is to provide property access, with low traffic volumes and low vehicle speeds. Walking and cycling are prioritised as the fundamental units of movement, with through traffic discouraged. Movements by heavy vehicles are expected to be by emergency vehicles, rubbish and refuse collection trucks and deliveries/ moving trucks, so the local corridors need to adequately provide for manoeuvring of these large vehicles. These local corridors also have an important function in enhancing the urban environment by providing amenity through landscaping and street trees, stormwater management and providing space for other infrastructure.

The District Plan (Appendix 15, Table 15-6a)ii) currently provides for two different local corridor cross-sections, 16m where there are 10-20 lots and 20m where there are more than 20 lots. This Structure Plan simplifies this by providing a single cross-section standard to support transport functions. It acknowledges additional width may be required to provide for stormwater management and landscaping. The Plan Change supports the use of rear lanes which reduces the need for two local corridors standards. This simplification is supported by new subdivision standards that control block length and depth which support development of more walkable neighbourhoods. For example, the rules⁹ limit block length to 250m and block perimeter to 750m.

The proposed 16.8m width of local transport corridors within Peacocke departs from the District Plan standard for low volume local corridors by:

- = Providing wider footpaths to support active modes. 1.8m width footpaths are required compared to the District Plan standard of 1.5m; and
- = Increasing the berm width from 2.0m to 2.1m to better accommodate parked cars.

⁹ Rule SUB-PREC1-PSP: R18 Block Structure and roading

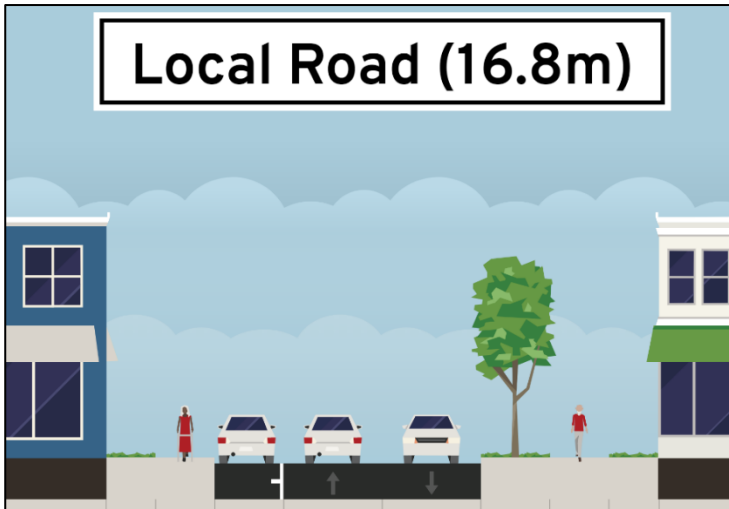


Figure 11: Proposed Local Corridor Cross-Section

4.5. Rear Lanes

The Structure Plan promotes the use of rear lanes to provide an alternative for vehicle access to properties which minimises the number of vehicles crossings along pedestrian and cycling routes. This has significant benefits for pedestrians and cyclists by reducing the number of potential conflict points, this is especially important on collector corridors where separated cycle lanes are provided.

The Structure Plan adopts the District Plan standard for design of rear lanes and specifies a minimum width of 7m¹⁰. The subdivision rules¹¹ limit the maximum number of residential units served by a rear lane to 20 units.

In an ideal Vision Zero environment vehicle crossings across the separated cycle lane would be avoided. Design of the arterial network avoids direct property access where traffic volumes and speeds will be higher. However, this is not practicable for the collector network where a degree of property access is required. It is proposed to minimise the number of vehicle crossings through the separated cycle lanes through the proposed provisions¹² which requires that *“In the Peacocke Structure Plan area, on collector roads where a shared path or separated cycleway are provided, there shall be a minimum distance of 50m between vehicle crossings.”*

Where vehicle crossings are provided there are a number of ways to design the interface to prioritising pedestrians and cyclists over manoeuvring vehicles. The proposed assessment criteria¹³ require that these crossings are *“designed to maximise the safety of pedestrians and cyclists”*. The NACTO Urban Bikeway Design Guide provides the following guidance.

¹⁰ Rule 25.14.4.1h)vii)

¹¹ SUB-PREC1-PSP: R20 Provision of parking and access

¹² Rule 25.14.4.1a)v)

¹³ Rule 1.33 P5 l) Subdivision in the Peacocke Structure Plan

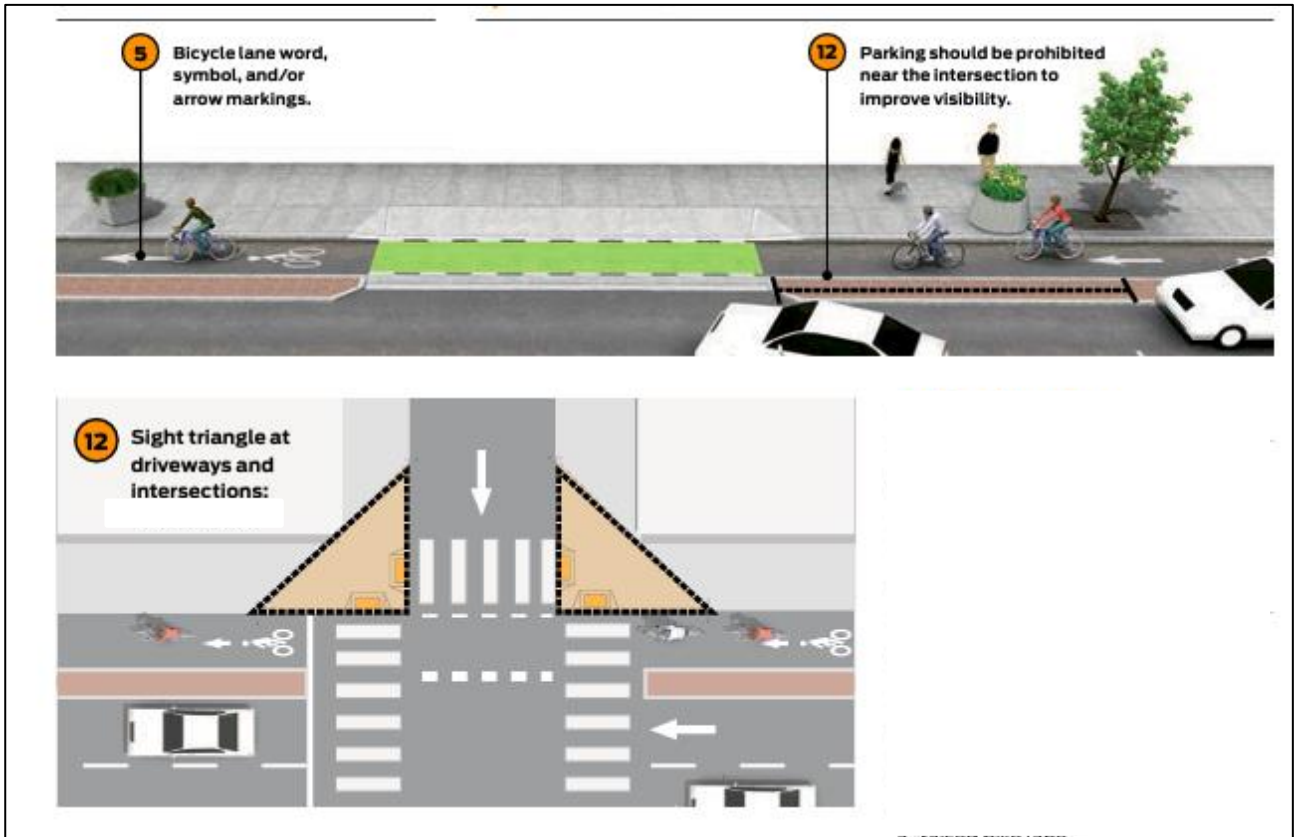


Figure 12: Guidance on Cycle Lane/ Vehicle Crossing Interface¹⁴

4.6. Public Transport

Public transport routes have been identified within the structure plan based on the development of a public transport network by Waikato Regional Council (WRC). These routes will be supported by enabling higher density development on these corridors, which will support the creation of a viable, frequent public transport service.

Engagement with Waikato Regional Council included discussion on:

- = Cross-sections for collector corridors;
- = Location for proposed public transport hubs and bus stops on minor arterials;
- = Routes for key/ frequent services; and
- = Routes for local services.

The proposed public transport network is shown below.

¹⁴ <https://nacto.org/publication/urban-bikeway-design-guide/>

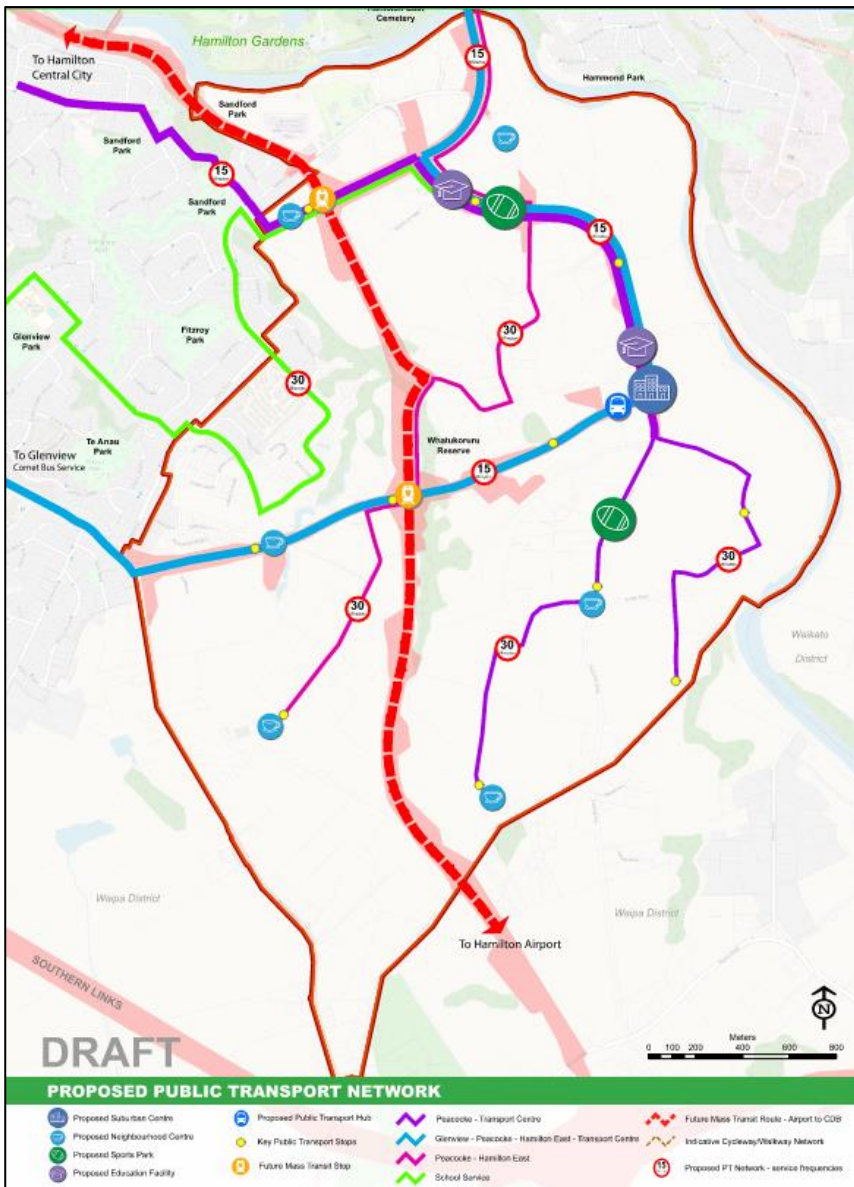


Figure 13: Public Transport Corridors

The introduction of separated cycle lanes and in-lane bus stops means it is challenging to retro-fit bus stop infrastructure, so it needs to be provided at the time of subdivision. It is proposed to identify the proposed collector road for public transport services within the District Plan to recognise that these corridors require a slightly wider movement space and specific design and construction of bus stop infrastructure at the time of subdivision.

The proposed policy and rule framework (SUB-PREC1-PSP: P8, P9 and P16, SUB-PREC1-PSP: R25) directing the provision of public transport infrastructure are supported by existing and proposed assessment criteria (for example criteria G1e) and P5m)).

4.7. Infrastructure and Staging

HCC is currently delivering much of the strategic transport infrastructure necessary to support the Peacocke Structure Plan through funding received from the Government’s Housing Infrastructure Fund. Delivery of the north-south major arterial network is not funded in the 2021-2031 LTP.

The Plan Change provides a staging programme to ensure that urbanisation does not occur out of sequence with the delivery of key strategic infrastructure.

This excludes delivery of the north-south arterial will be influenced by the Hamilton-Waikato Metro Spatial Plan – Transport Programme Business Case (PBC) which is expected to be complete in early/mid-2022.



Figure 14: 2018-2028 Peacocke Delivery¹⁵

¹⁵ <https://www.hamilton.govt.nz/our-city/city-development/peacocke/upcoming-works/Pages/default.aspx>

5. LOCATION SPECIFIC ASSESSMENTS

5.1. North-South Major Arterial

The Southern Links north-south major arterial corridor was designated with width to support a four-lane road corridor. Currently there is no funding for construction of this corridor within HCC's LTP.

Through the current Peacocke Strategic Transport project HCC is working to establish a walking and cycling route along the designation. This will support HCC's objectives for mode shift by creating a dedicated walking and cycling corridor that provides a direct route from the centre of the structure plan area to the north. Waka Kotahi have indicated that financial assistance is unlikely. HCC have indicated that it is unlikely to be an investment priority for the Biking and Micro-mobility Programme. A walking and cycling connection may therefore not be realised before the north-south arterial is construction (more than 10 years away).

The long-term allocation of space in this corridor will be influenced by the Hamilton-Waikato Metropolitan Spatial Plan – Transport Programme Business Case which is due for completion in early/mid-2022. In the medium/ long-term, the priority is likely to shift towards providing for walking, cycling and public transport. For example, the four lanes could be allocated as two for public transport and two for general traffic.

The current structure plan indicates collector intersections with the north-south major arterial. The location of these connections has changed as a result of changes in the network layout. These interactions are not shown on the Southern Links designation. The form of any connection has not been determined and a wide range of options exist from full access (e.g. a roundabout) through to limited access via left-in/left-out arrangement, only providing access for walking and cycling, or no access.

The Structure Plan continues to provide for this major arterial transport corridor without constraining future decisions on the form or allocation of space.

5.2. Southern Links Modelling

Development of this plan change has not included traffic modelling. Carrying out modelling of the network was not considered necessary as the arterial network was extensively modelled during investigation and designation of the Southern Links network. This modelling was based on a 2041 land use with 8,028 households and a population of 22,077¹⁶. It confirmed the location and form of the transport network as well as testing intersections on the arterial network.

Council's Detailed Business Case¹⁷ supporting the application to the Housing Infrastructure Fund anticipated development of 8,400 homes over the next 30 years. This is approximately 5% more dwellings than modelled in the Southern Links investigation. More recently modelling has been completed to support implementation of strategic transport infrastructure for Peacocke and to refine design of the network and arterial intersections.

Due to changes in how the structure plan responds to issues related to ecology, significant natural areas (SNA) and stormwater requirements, the Plan Change anticipates that Peacocke will accommodate between 7,500 and 8,000 new homes. This is consistent with the Southern Links modelling. The reduction in developable area means that net density within Peacocke targets 20-50 dwellings per hectare, with higher density concentrated around nodes and public transport corridors.

¹⁶ Southern Links Scheme Assessment, Appendix E: Transport

¹⁷ Hamilton – Peacocke Detailed Business Case, Housing Infrastructure Fund, November 2017

In summary, the expected population in Peacocke remains generally consistent with the earlier Southern Links modelling. The transport focus of the plan change is on integration of land use and transport to achieve mode shift to walking, cycling and public transport. This should mean that vehicular demand from the Structure Plan area is similar or less than originally planned for.

5.3. Hall Road Upgrade

Hall Road is currently a local no-exit road that forms a T-intersection with Ohaupo Road (SH3). The current traffic volume is approximately 300veh/day with 15,300veh/day and 11% on Ohaupo Road. SH3 is a Limited Access Road¹⁸, meaning that any vehicle crossings or intersections to SH3 need to be authorised by Waka Kotahi.

The current District Plan shows Hall Road as a local corridor. The current structure plan identifies it as a collector with no direct connection to SH3, but connections to Whatukooruru Drive through Stage 1B, and to and across the north-south arterial.

Within an increase in traffic from development on Hall Road, there is a significant risk of an increase in crashes and delays at the intersection. Due to the topography, there are no practicable options to safety provide for more intensive use of the intersection. Therefore, development on Hall Road will need to either be delayed until other internal connections are provided, or alternative access is provided. For example, a left-in/left-out arrangement may be acceptable when a roundabout is in place at the SH3/ Raynes Road intersection.

The proposed infrastructure staging sets out that the Hall Road upgrade needs to be dealt with as part of developing Stages D, E and H. HCC does not deliver the collector network and the developer of these stages will need to investigate options and deliver the infrastructure are part of their development.

¹⁸ <https://maphub.nzta.govt.nz/public/?appid=d4ae73824516451cbc9000850a9a1919>

6. PROPOSED OBJECTIVES AND POLICIES

6.1. ITA Requirements

The ITA requirements are to be expanded for development within the Peacocke Structure Plan area. Developments triggering an ITA (i.e. those generating more than 500veh/day or approximately 50 dwellings or providing a new transport corridor) will be required to prepare a Design Statement that provides specific consideration and assessment of matters including:

- = How walking will be prioritised including assessment of block layouts, design speed, point-to-point walking distances and provision of on-street parking; and
- = Universal design;
- = Refuse collection;
- = How off-street parking is to be provided; and
- = How on and off-street parking is to be designed to create a safe environment.

Assessment of these additional matters is required to ensure that development promotes mode shift and integrates with land use to prioritise walking, cycling and public transport.

Other matters such as refuse collection and on-street parking are necessary to address issues that are currently arising within medium density development in the city and are expected to become more complex with more intensive development in parts of Peacocke.

6.2. Active Modes and Universal Access

The proposed transport related objectives and policies support the vision for Peacocke to be a high-quality urban environment that is based on urban design best practice, social well-being, and environmental responsibility. By providing a high level of connectivity that prioritises walking and cycling, the structure plan area can make a meaningful contribution to HCC's aim to create a more accessible city with a high degree of mode share for public transport, walking and cycling. The Integration of land use and transport by providing higher density around key transport corridors and activity centres supports prioritising walking, cycling and PT especially for short trips (<2km).

The Plan Change prioritises walking and cycling as the primary units of movement within the structure plan area. This can be achieved through design that minimises wait times for pedestrians at intersections, and gradients and changes in grade are minimised so that access to the transport network is improved for the transport disadvantaged and less mobile users.

6.3. Accessible Parking

The Plan Change removes minimum parking requirements for residential activities in the structure plan area. HCC is preparing a city-wide separate plan change to address wider removal of parking standards.

The NPS-UD allows minimum requirements for accessible parking to be retained. The District Plan¹⁹ currently applies NZS4121²⁰ for accessible parking which is identified as an acceptable solution under the Building Act. However, it only requires accessible parking where other parking is provided. This restricts access for less mobile users in developments where parking is not provided.

¹⁹ Volume 2, Appendix 15, Table 15-1d

²⁰ NZS 4121:2001 Design for access and mobility - Buildings and associated facilities

The NPS-UD Car Parking Factsheet²¹ indicates that accessible parking could be required based on GFA, but does not provide any further guidance.

The proposed approach is to require that accessible car parking be provided for non-residential uses. The ratios have been calculated by using the current minimum parking standard for retail activities (one space per 20sq.m) to determine the equivalent GFA of the car park thresholds set in NZS4121.

Table 9 Proposed Accessible Parking Standard

GFA of building	Minimum number of accessible car park spaces for disabled users
0 - 400m ²	1
400 – 1000m ²	2
For every additional 1,000m ²	1 additional

Alternatives considered included:

- = Relying on developers to provide on-site parking triggering the requirements of NZS4121. This was not preferred as it presents a risk of excluding less mobile users from accessing non-residential uses where developers do not provide parking.
- = Relying on accessible parking to be provided on-street as part of subdivision and managed by Council bylaws. Providing on-street accessible parking requires specific design to ensure that 3.5m wide parking bays and accessible routes are provided as required by NZS4121. Providing parallel parking wider than 2.1m will require compromises in the form of the transport corridor and is undesirable. On-street parking can be more difficult for less mobile users to access safely and it is preferred to require on-site accessible parking.
- = Relying on assessment criteria to determine the effects of not providing accessible parking for non-residential activities. This was not preferred as it would not provide certainty that accessible parking would be provided.

There is a risk that the proposed approach will require every non-residential development up to 400sq.m GFA to provide an accessible park even though no other parking is provided. This means the site will need an on-site manoeuvring area and a vehicle crossing for this one accessible space. While this outcome is consistent with NZS4121 which requires any retail development above 20sq.m to provide an accessible space, it may not be in keeping with the intent of the NPS-UD in contributing to “well-functioning urban environments”. This could potentially be avoided by having a minimum GFA at which accessible parking is required, and the District Plan being clear that accessible parking could be provided on-street (rather than on-site).

²¹ <https://environment.govt.nz/publications/national-policy-statement-on-urban-development-2020-car-parking-fact-sheet/>

7. CONCLUSION

The success of Hamilton's transport system relies on creating a new approach for multi-modal (different types of transport) movement. The Peacocke area will be developed in line with Hamilton's vision for accessibility set out in Access Hamilton and is consistent with Vision Zero. In a transport sense this means providing a multi-modal transport network that provides access to frequent public transport on key routes and a direct and accessible walking and cycling network, that is safe and enjoyable to use. The network will be constructed to meet best practice principles related to safety, coherence, directness, attractiveness and amenity which will assist in encouraging mode shift, in particular for shorter trips of less than 2km.

The hierarchy and layout of the transport features of the proposed structure plan are well aligned with the current structure plan. Changes are proposed to the cross-section standards to better support a multi-modal network that prioritises active modes and is safe and enjoyable to use.

Key transport features that distinguish Peacocke from the current District Plan provisions are:

- = Designing the transport system to prioritise pedestrians and cyclists over vehicles;
- = Increased density around key transport routes and activity centres;
- = Wider footpaths on local corridors;
- = Separated cycle lanes on the collector network;
- = Identification of public transport routes so that infrastructure can be provided at the time of subdivision; and
- = Bus stops are to be provided in-lane to minimise delays to the public transport services;

The current transport provisions of the District Plan support the strategic transport framework, but the Peacocke Plan Change seeks to go further through the objectives and policy seeking integration of land use and transport with a focus on higher density development near key transport corridors and activities nodes along with prioritising pedestrians and cyclists over vehicles. The policy framework provides supporting detail including requirements for the transport network to provide for public transport services and infrastructure, separation of cyclists from vehicles on the collector network and providing a continuous and safe walking and cycling network. Alternatives to the proposed approach for accessible parking and access to Hall Road may merit reconsideration following submissions.

APPENDIX 1: HALL ROAD INTERSECTION

Existing Intersection

The existing Hall Road intersection joins Ohaupo Road where there is a southbound passing lane and a 100km/h speed limit. Waka Kotahi's MegaMaps (Edition 3) show the safe and appropriate speeds on both SH3 and Hall Road as 80km/h. The vertical and horizontal geometry of both roads restrict sight distance for drivers using the intersection.

We have completed a search of NZTA's Crash Analysis System (CAS) for crashes at the Hall Road/SH3 intersection for the period from 2016-2020. There have been four non-injury crashes at the intersection. The collision diagram is shown below.

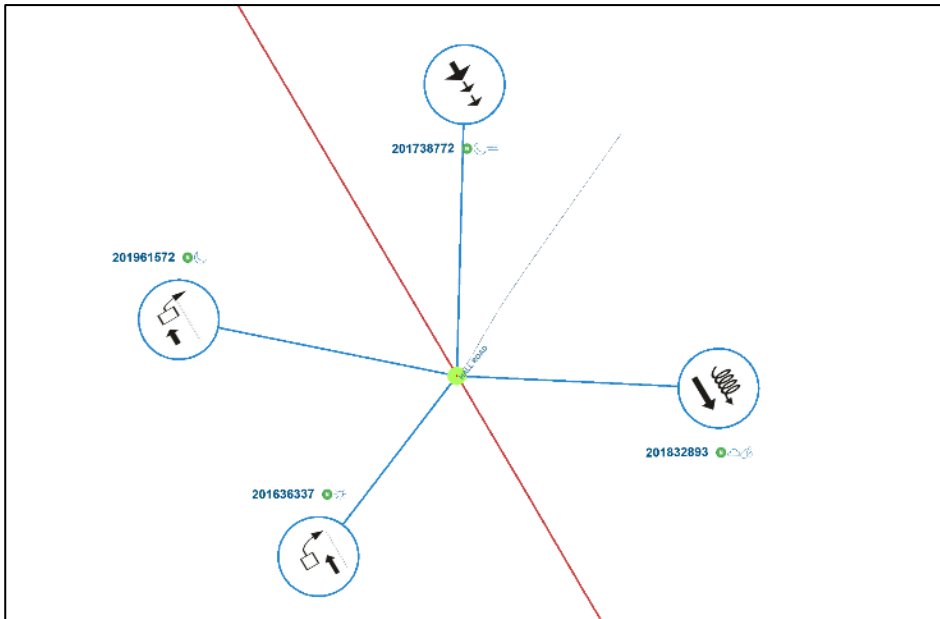


Figure 15: CAS Collision Diagram 2016-2020

Austrroads Guide to Design Part 4A – Signalised and Unsignalised Intersections provides guidance on Safe Intersection Sight Distance (SISD)²². For a 110km/h design speed 285m SISD is required, this reduces to 214m for a 90km/h design speed. As illustrated below, complying sight distance is not provided at the intersection.

²² Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, Table 3.2

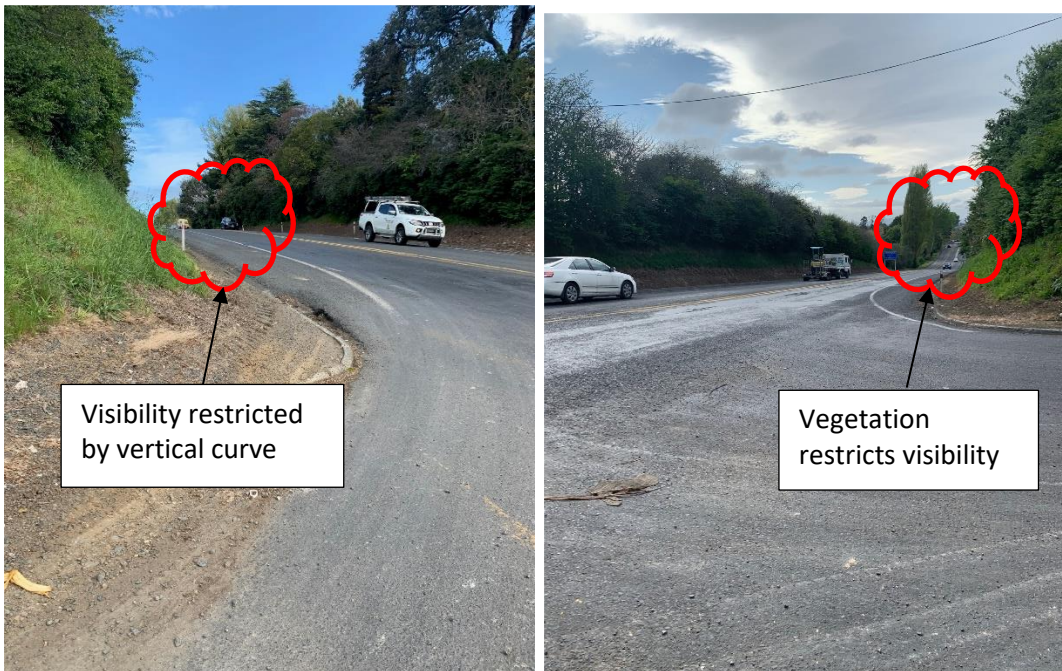


Figure 16: SISD Hall Road (left photo, visibility to the left, right photo visibility to the right)

While the Hall Road approach to Ohaupo Road is relatively straight, the limit line is located west of a crest curve which restricts visibility to the limit line. For a 90km/h design speed, Austroads requires Approach Sight Distance (ASD) of 139m. This is not achieved at the existing intersection.

In summary, the existing intersection does not provide the required SISD or ASD. Within an increase in traffic from development of the Peacocke Structure Plan, there is a significant risk of an increase in crashes and delays at the intersection. Due to the topography, there are no practicable options to safely provide for more intensive use of the intersection.

Options for Relocated Intersection

Relocating the Hall Road intersection provides an opportunity for the realigned Hall Road to be aligned with a future access to the Houchens Road Structure Plan which shows an “*indicative future roading link*” just north of the water reservoir. HCC has plans to develop a second reservoir adjacent to the current reservoir which may impact on the location of any relocated intersection.

A relocated intersection may only be practicable after constructing sufficient stages of Southern Links that allows revocation of state highway status from SH3/ Ohaupo Road. The Houchens Road Structure Plan assessment was based on an upgrade of the SH3/Houchens Road intersection and did not require a second access to SH3.

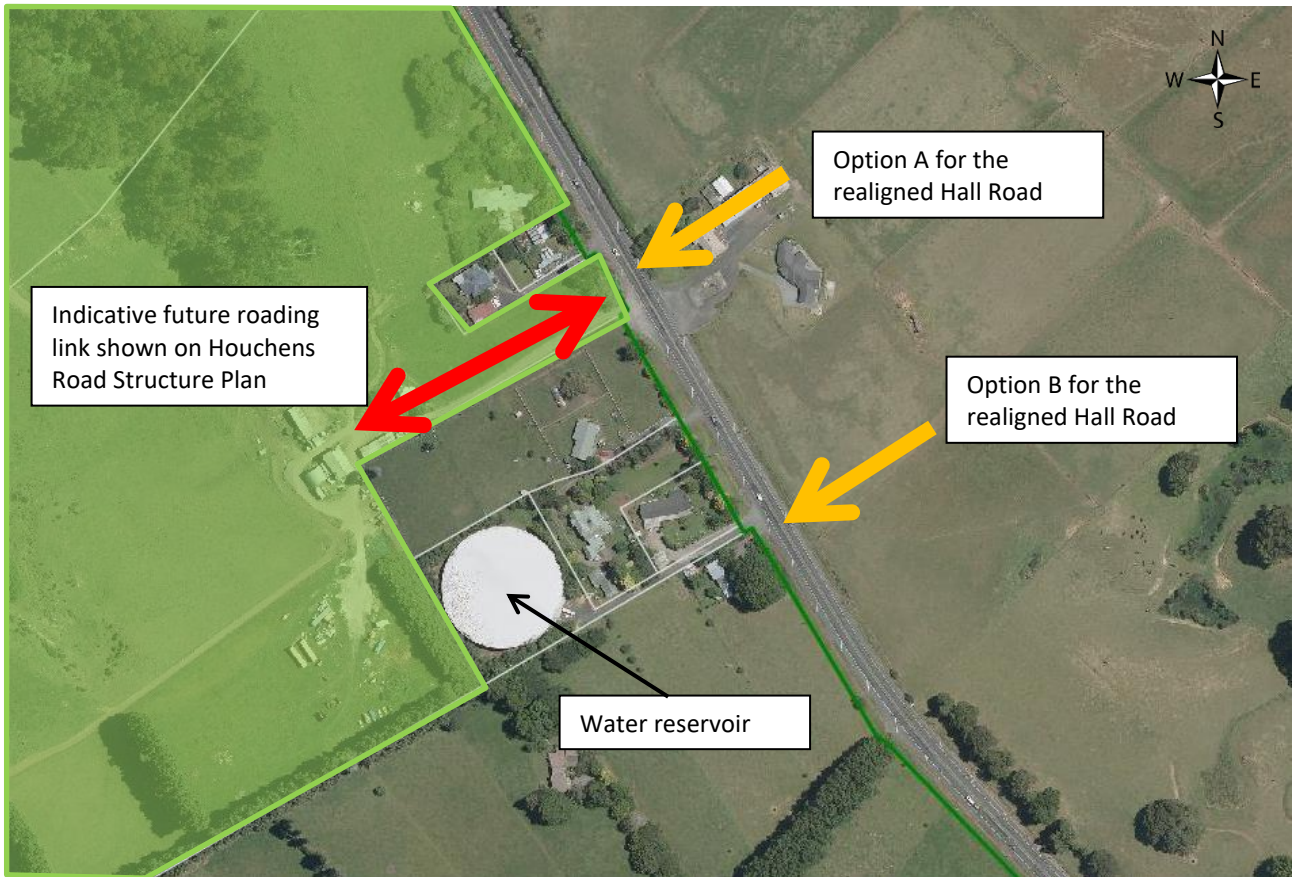


Figure 17: Houchens Road Structure Plan “indicative future roading link”

For the purpose of this assessment we have identified two locations for relocating Hall Road to a new intersection with SH3. Option A is to locate Hall Road to create a cross-roads intersection that could ultimately be formed as a roundabout also serving the Houchens Road Structure Plan. This option has a significant impact on the dwelling on the eastern side of SH3.

Option B is shown approximately 150m south of Option A and generally located near the access to the water reservoir. While Option B maximises the available sight distance for the realigned Hall Road and avoids the existing dwelling, it does not present the same opportunities for integration with the Houchens Road Structure Plan. Option B may need to be located further south to avoid HCC’s proposed second reservoir.

Depending on the timing of development and future boundary relocations, there may be an opportunity to shift the Hall Road intersection further south of Option B to avoid the existing dwellings and create a roundabout south of the reservoir.

Our analysis has considered the following alternatives in a high-level assessment against road safety, efficiency and cost:

- Option 1: Priority controlled with a right turn bay;
- Option 2: Left-in/left-out intersection; and
- Option 3: Roundabout.

Table 10 Option Assessment for Hall Road Upgrade

Option	Safety	Efficiency	Cost	Location: Option A vs Option B	Summary
No connection while SH3 remains state highway	<ul style="list-style-type: none"> No intersection = no safety concerns 	<ul style="list-style-type: none"> No intersection = no impacts on through traffic 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	Preferred while SH3 is state highway
Connection once Southern Links is complete	<ul style="list-style-type: none"> Introduces new intersection and conflict points Reduce likelihood of crashes if lower volume and lower speeds 	<ul style="list-style-type: none"> Disruption to through traffic on a local arterial. Lower traffic volumes reduces the impact. Scale of effect depends on form of connection 	<ul style="list-style-type: none"> Depends on form of connection – see options below 	<ul style="list-style-type: none"> Provides flexibility 	May be acceptable if connection to Houchens Structure Plan is desirable and form/ function of SH3 is changed. Direct connection not shown on current structure plan.
Option 1: Right Turn Bay	<ul style="list-style-type: none"> Allows space for northbound vehicles to wait for gaps to right turn. Does not change the number of conflict points. High speeds on the approaches remain. Risk of right-out crashes remains Difficult to provide safe access to properties on west side of SH3 	<ul style="list-style-type: none"> Minimal disruption to through traffic. May be difficult to find gaps during peak periods to right turn in and out of Hall Road, resulting in long delays. 	<ul style="list-style-type: none"> Relatively low costs for pavement widening and remarking Property impacts could be limited to within Peacocke Structure Plan 	<ul style="list-style-type: none"> Option A could result in a crossroads intersection that would need upgrading Option B would result in head-to-head right turn bays. Concerns that sight distance would be obstructed by turning vehicles. Impacts on properties on west side of SH3. 	Not preferred Safety concerns remain for right turns in and out of side road and properties on west side of SH3. The right turn bay would minimise delays to through traffic by allowing right turning traffic to wait for gaps.
Option 2: left-in/ left out only	<ul style="list-style-type: none"> Reduces the number of conflict points at the intersection. Will require a median island/ barrier on Ohaupo Road to prevent right turns. Introduces risk of u-turns elsewhere. 	<ul style="list-style-type: none"> Minimal disruption to through traffic. Will require longer diversions for right turning traffic (e.g. via roundabout at SH3/ Whatukooruru Drive). May only be practicable after constructing sufficient stages of Southern Links to allow revocation of state highway status from SH3/ Ohaupo Road. 	<ul style="list-style-type: none"> Relatively low costs for pavement widening and remarking plus costs for barrier treatment Property impacts could be limited to within Peacocke Structure Plan. 	<ul style="list-style-type: none"> Could be implemented at both locations as an interim option. Both would impact on properties on west side of SH3. Ultimately could result in head-to-head right turn bays 	May be acceptable as interim if roundabout at SH3/ Raynes Road Restricting right turns at the intersection minimises conflict points. This option would require either wire rope barrier or a solid median on SH3 to ensure vehicles do not right turn in or out of Hall Road. This option will result in diversions/ u-turns which may need to be specifically accommodated.

Option	Safety	Efficiency	Cost	Location: Option A vs Option B	Summary
Option 3: Roundabout ²³	<ul style="list-style-type: none"> Minimises the number of conflict points for a crossroads intersection Potential conflict speeds will be lower. 	<ul style="list-style-type: none"> Imposes delays for through traffic Reduced delays for vehicles on Hall Road May result in three roundabouts located within 2.4km²⁴ of each other which may be undesirable for the function of SH3. 	<ul style="list-style-type: none"> Is likely to be the most expensive option Likely to require land to accommodate an Austroads compliant roundabout. 	<ul style="list-style-type: none"> Better suited to Option A Option B would not allow good integration with Houchens Road Structure Plan and potentially clashes with proposed reservoir 	<p>Preferred if connection to Houchens Structure Plan is desirable and form/ function of SH3 is changed.</p> <p>A roundabout is the most desirable solution to provide safe access Peacocke.</p> <p>Could be developed to provide access to Houchen Road development</p>

²³ Austroads Guide to Road Design Part 4B: Desirable for 90km/h design speed = 22m central island and 6.2m circulating. Inscribed circle diameter = 56.4m

²⁴ The distance between the roundabout at Whatukooruru Drive and the Raynes Road intersection is 2.4km

The current speed limit is 100km/h. In 2020 Waka Kotahi consulted the community on potential changes to the speed limits on SH1, SH3 and SH26 in Hamilton²⁵. This included the potential for an 80km/h speed limit on Ohaupo Road (SH3) from south of the new SH3 Ohaupo Road / Whatukooruru Drive roundabout (new speed limit change point) to 330m north of Rukuhia Road and a variable 60km/h speed limit at the SH3/ Raynes Road intersection. To date, no changes have been implemented. Any speed limit review is likely to be influenced by the implementation of Waka Kotahi's planned safety improvements at the SH3/ Raynes Road intersection. Lowering the speed limit on SH3 to 80km/h would be consistent with the Safe and Appropriate Speed and lower the minimum design standards (e.g. sight distance, roundabout diameter) for any works at a new intersection.

The long-term preferred option is a single roundabout that provides safe access to both the Peacocke and Houchens Road Structure Plans as it would minimise the number of intersections on this major arterial corridor. However, the timing for development within the Houchens Road Structure Plan area is uncertain. The final form and location for realignment of Hall Road and new intersection with SH3 will be led by the developer so that it integrates with the adjacent residential development. Consultation with and approval from Waka Kotahi will also be required.

An interim arrangement for the realignment of Hall Road could be constructing a left-in/left-out intersection. This relies on an internal connection being provided between Hall Road and Whatukooruru Drive (east-west minor arterial) to allow trips to the north. Access for northbound vehicles would either be through u-turns at the Whatukooruru Drive roundabout or from Raynes Road (this assumes that a connection is provided between Raynes Road and Hall Road).

The proposed infrastructure staging sets out that the Hall Road upgrade needs to be dealt with as part of developing Stages D, E and H. HCC does not deliver the collector network and the developer of these stages will need to investigate options and deliver the infrastructure as part of their development.

Conclusion

As part of future development within the Peacocke Structure Plan Hall Road will need to be upgraded to a collector transport corridor and the current intersection with SH3 to be closed as it does not meet the required design standards. Due to the topography, there are no practicable options to safely provide for more intensive use of the existing intersection.

²⁵ <https://www.nzta.govt.nz/projects/hamilton-city-speed-review/>