

VOLUME 4

# Takaanini Level Crossings Urban Design Evaluation (UDE)

October 2023

Version 1

## Document Status

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## Glossary of defined terms and acronyms

We note that ‘Takaanini’ (with double vowels is used throughout the Report Acknowledging the ongoing kōrero and guidance from Manawhenua on the cultural landscape. ‘Takanini’ is used where reference is made to a specific and existing named place (e.g., Takanini Road, Takanini Town Centre etc.). Manawhenua is also used throughout the Report as while gifting the programme name as Te Tupu Ngātahi, Manawhenua confirmed this was an appropriate spelling (capital ‘M’ and one word). Notwithstanding this, the term is spelled as two words in other fora and the proposed designation conditions – Mana Whenua.

| Acronym/Term   | Description   |
|--|---|
| <b>AEE</b>   | Assessment of Effects on the Environment report   |
| <b>AT</b>  | Auckland Transport  |
| <b>AUP:OP</b>  | Auckland Unitary Plan: Operative in Part  |
| <b>CPTED</b>   | Crime Prevention through Environmental Design   |
| <b>DBC</b>   | Detailed Business Case  |
| <b>Design Framework or Design Framework Principles</b> | Te Tupu Ngātahi Design Framework  |
| <b>ECE</b>   | Early Childhood Education   |
| <b>FTN</b>   | Frequent Transit Network  |
| <b>NIMT</b>  | North Island Main Trunk   |
| <b>NPS-UD</b>  | National Policy Statement on Urban Development  |
| <b>NoR</b>   | Notice of Requirement   |
| <b>NoR 1</b>   | Notice of Requirement 1: Takaanini Level Crossings Project (Spartan Road, Manuia Road, Manuroa Road, and Taka Street) |
| <b>NoR 2</b>   | Notice of Requirement 2: Takaanini Level Crossings Project (Walters Road)   |
| <b>PC78</b>  | Plan Change 78 to the Auckland Unitary Plan: Operative in Part  |
| <b>RMA</b>   | Resource Management Act 1991  |
| <b>Te Tupu Ngātahi</b>                                 | Te Tupu Ngātahi Supporting Growth Alliance  |
| <b>TLC / the Project</b>                               | Takaanini Level Crossings Project   |
| <b>UDE</b>   | Urban Design Evaluation   |
| <b>ULDMP</b>   | Urban Landscape and Design Management Plan  |
| <b>Waka Kotahi</b>                                     | Waka Kotahi New Zealand Transport Agency  |

## Executive Summary

This Urban Design and Evaluation (**UDE / Report**) has been prepared to support the Notices of Requirement (**NoR**) for the Takaanini Level Crossings Project (**TLC / the Project**) lodged by Auckland Transport (**AT**) as a requiring authority under the Resource Management Act 1991 (**RMA**). The NoRs seek to protect land to construct, operate and maintain five grade separated rail crossings across the North Island Main Trunk (**NIMT**) rail line in Takaanini (Spartan Road, Manuia Road, Manuroa Road, Taka Street and Walters Road).

### Evaluation Undertaken

This UDE contains an evaluation section for common matters relating to the TLC as a whole and for each of the individual project areas. These evaluations have been prepared based on the guidance and principles established in Te Tupu Ngātahi Supporting Growth (**Te Tupu Ngātahi**) programme wide document - Te Tupu Ngātahi Design Framework (**Design Framework or Design Framework principles**).

The UDE provides urban design commentary and recommends a framework for how and where urban design outcomes should be considered in future design stages. These recommendations may form the basis of an urban design condition or where there is overlap with other disciplines (for example ecological, landscape, visual or water quality related recommendations) could be integrated in the relevant specialist conditions.

The recommendations are summarised as urban design outcomes sought and are required to address the urban design related effects of the Project. Additional urban design opportunities have also been identified for consideration either by the requiring authorities or other parties at future stages of design. These are locations where additional design implementation could further support the outcomes and contribute to a well-functioning, positive urban environment. However, these are not required to mitigate the effects of the Project and are typically intended to occur outside of the proposed designation boundaries and therefore are not proposed to be implemented as part of these designations.

### Summary of urban design outcomes sought

Overall, the Project has been found to be generally supportive of the Design Framework principles.

The preparation of an Urban and Landscape Design Management Plan (**ULDMP**) in future delivery stages is recommended for the TLC to further develop the urban design outcomes recommended as summarised below.

The ULDMP should address the following Project specific outcomes:

#### ENVIRONMENT

- A landscape plan that considers recommendations from the landscape and visual, arboriculture, flooding and ecological assessments including street tree and stormwater devices, interface for visual screening and amenity, construction compound and private property reinstatement and treatment of batter slopes.
- The landscape outcomes should support the principles of Auckland's Urban Ngāhere Strategy and reinforce the wider vegetation patterns of the local landscape and the wider walking and cycling network.

- Integration of stormwater devices to ensure an appropriate interface with adjacent land uses, specifically where they are proposed in areas zoned high density.
- Measures to demonstrate that the Project has adapted to the changing climate such as reducing urban heat island effects in future urbanised areas, supporting modal shift and accounting for flood hazard risks.

## **SOCIAL**

- In future design stages, Manawhenua shall be invited as Partners to provide input on the cultural landscape and design matters including how Project outcomes reflect their identity and values.
- The identification, development and integration of key local community and identity drivers within the project areas should be demonstrated. Key local identity drivers to be addressed include:
  - Challen Close Park and the local centre at Manuia Road project area;
  - the Scout Hall/community zone between Manuia and Manuroa Road project area;
  - the Takaanini Train Station at Manuroa Road and Taka Street project areas;
  - Takanini Reserve at Taka Street project area; and
  - the Takanini Town Centre at Walters Road project area.
- A CPTED review of the project should address, at a minimum, the current areas identified as potential CPTED risks. These include:
  - Spartan Road Active Mode project area;
  - entry points to Manuroa Road and Spartan Road Active Mode project areas;
  - post construction land parcels under and adjacent to the bridge structure at Walters Road;
  - post construction land parcels under and adjacent to the bridge structure at Taka Street, particularly the areas connecting into the Takaanini Train Station, Takanini Reserve and Takanini Road; and
  - between the existing Manuia Road and proposed bridge.

## **BUILT FORM**

- Known or planned changes of residential density that have the potential to alter the perceived scale and impact of the proposed project functions should be identified and addressed.
- Resolution of any potential conflict between placemaking aspirations within local communities and the scale of the proposed movement functions of the project should be addressed.
- Develop an urban integration strategy to address the following:
  - Interface with bridging structures, retaining walls, accessway arrangements and connections, particularly where project areas border/overlook property boundaries. In particular, this includes the interface between the Takanini Care Home and Taka Street. Where there is retaining walls that interface with residential development (particularly at Manuia Road) consideration of buffers and softening elements should be undertaken;
  - Recognises the transition of residential density adjacent to the project areas, providing an interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development and community amenities such as the Takaanini Train Station, Takanini Reserve and Takanini Town Centre; and
  - Provision of visual screening in response to industrial interfaces.

## **MOVEMENT**

- Permeability of the project for active modes that addresses connectivity (such as midblock crossings), modal priority and permeable access to destinations such as centres, transport interchanges, open spaces and community facilities. Demonstration of place specific active mode solutions should include connections to:
  - Takaanini Train Station from Manuroa Road and Taka Street;
  - Takanini Reserve from Taka Street;
  - Takanini Town Centre on the eastern side of the rail line from Walters Road; and
  - the Taka Street mid-block crossing on western side of the proposed bridge.
- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within the Project. Demonstration of specific intersection responses include:
  - Where accessways intersect with Manuia Road, Taka Street and Walters Road;
  - Intersections with Great South Road and Manuia Road, Taka Street and Walters Road;
  - Arion Road / Walters Road;
  - Proposed Manuia Road Crossing and Oakleigh Avenue;
  - Walters Road / Porchester Road; and
  - Taka Street / Takaanini School Road / Kauri Heart Avenue.

## **LAND USE**

- Demonstration of how land portions following the construction of the Project are redefined and integrated with the expected future land use function.



# 1 Introduction

## 1.1 Purpose and scope of this evaluation

This UDE has been prepared to inform the Assessment of Effects on the Environment (**AEE**) for two NoRs being sought by Auckland Transport (**AT**) for the Project under the RMA. The Project proposes to construct five new bridges across five project areas: **NoR 1** relates to four of the proposed project areas (referred to as Spartan Road, Manuia Road, Manuroa Road and Taka Street) while **NoR 2** relates to the remaining project area (referred to as Walters Road). Specifically, the UDE provides an overview of the urban design considerations and inputs as well as an evaluation and identification of future transport and land use integration opportunities for the Project.

This Report should be read alongside the AEE, which contains further details on the history and context of the TLC. The AEE also contains a detailed description of works to be authorised within the NoRs, and the typical construction methodologies that will be used to implement this work. These have been reviewed by the author of this evaluation and have been considered as part of this UDE. As such, they are not repeated here.

The key matters addressed in this Report are as follows:

- (a) Identifying and describing the current and future context of the project areas relevant to the urban form;
- (b) Undertaking an evaluation of each of the project areas against the Design Framework principles;
- (c) Identifying and recommending urban design outcomes and opportunities that need to be considered as part of future design processes to ensure positive urban outcomes;
- (d) Presenting a map which spatially identifies these urban design outcomes and opportunities; and
- (e) Presenting an overall summary of the urban design outcomes associated with the Project and whether the proposals are supportive of the outcomes envisaged in the Design Framework principles.

## 1.2 Report Structure

This Report is structured to reflect the key matters listed above in section 1.1. In order to provide a clear evaluation of the NoRs, the Report will evaluate the common matters of the TLC as an overall network distinguishing between the multi modal project areas and active mode project areas where applicable. This will be followed by an evaluation of each of the individual project areas (i.e., Spartan Road, Manuia Road, Manuroa Road, Taka Street and Walters Road) with specific matters.

Where the individual project areas are discussed, these are arranged in geographical order along the North Island Main Trunk line (**NIMT**) moving north to south.

## 2 Project description

The overall Project proposes the removal and/or replacement of four existing road over rail level crossings at Spartan Road, Manuroa Road, Taka Street and Walters Road in Takaanini. As further discussed in the AEE, the Project responds to functionality and safety issues anticipated at these crossings from the increasing number of train movements along the NIMT. The Project and indicative design also takes into account the long-term planned expansion of the NIMT from the current two rail tracks to up to four tracks. The increased rail frequency will lead to greater barrier arm down-time and therefore increased severance and congestion in the area.

The Project primarily involves the construction of five new bridges to support safe and reliable east-west transport movement across the NIMT in Takaanini. This includes dedicated active mode bridges at Spartan Road and Manuroa Road, and two-lane arterial road bridges with active mode facilities at Manuia Road, Taka Street and Walters Road. Manuia Road is a new east-west connection in the network, acting as a replacement for vehicular trips that would have used the closed Spartan and Manuroa Road level crossings. The bridges and associated works/improvements are located across five project areas and will be progressed as two NoR packages (refer to Figure 1 and Table 1)

The indicative design has been prepared for assessment purposes, and to indicate what the final design of the Project may look like. The final design will be refined and confirmed at the detailed design stage. Key features of the works common across project areas include the following:

- Bridge structures across the NIMT with a vertical clearance from existing ground level to road surface of approx. 7.8m;
- Works to tie in with existing roads;
- Batters and/or retaining and associated cut and fill activities;
- Vegetation removal within the project areas to enable construction; and
- Areas identified for construction related activities including site compounds, construction laydown, alternative access, and construction traffic manoeuvring.

Further details of each project area are provided in the following sections below.

**Table 1: The TLC project areas and NoR packages**

| NoR Reference                           | Project area        | Description   | Requiring Authority |
|---|---------------------|---|---------------------|
| Takaanini Level Crossings Project NoR 1 | <b>Spartan Road</b> | Closure of the existing level crossing, construction of a new bridge with walking and cycling facilities across the NIMT and associated works                           | Auckland Transport  |
|   | <b>Manuia Road</b>  | Construction of a new bridge with general traffic lanes and walking and cycling facilities across the NIMT and associated works   |                     |
|   | <b>Manuroa Road</b> | Closure of the existing level crossing, construction of a new bridge with walking and cycling facilities across the NIMT and associated works                           |                     |
|   | <b>Taka Street</b>  | Closure of the existing level crossing, construction of a new bridge with general traffic lanes and walking and cycling facilities across the NIMT and associated works |                     |
| Takaanini Level Crossings Project NoR 2 | <b>Walters Road</b> | Closure of the existing level crossing, construction of a new bridge with general traffic lanes and walking and cycling facilities across the NIMT and associated works |                     |



Figure 1: Overview of the Project, project areas and NoR extents


## 2.1 NoR 1 – Spartan Road, Manuia Road, Manuia Road and Taka Street

### 2.1.1 Spartan Road project area

As set out in Table 2 below, the proposed works within the Spartan Road project area include closure of the existing level crossing and replacement with a new active modes bridge across the NIMT.

Table 2: Overview of Spartan Road project area

| NoR 1 - Spartan Road project area |  |
|-----------------------------------|--|
|                                   |  |
| Key features                      |  |
| Overview                          | <ul style="list-style-type: none"> <li>• Closure of the existing road corridor to vehicular traffic across the NIMT</li> <li>• Construction of an active mode bridge across the NIMT</li> <li>• Construction of cul-de-sacs (accommodating footpaths) and works to tie into the existing corridor on either side of the NIMT along Spartan Road</li> <li>• Ramps and stairs will connect to the bridge on either side (east and west) of the NIMT and will tie into the cul-de-sacs</li> </ul> |
| Other structures                  | <ul style="list-style-type: none"> <li>• None</li> </ul>   |
| Other road closures / cul-de-sacs | <ul style="list-style-type: none"> <li>• None</li> </ul>   |

|                           |   |
|---------------------------|---|
| Speed environment         | <ul style="list-style-type: none"> <li>• 50km/h (where it is trafficked)</li> </ul>   |
| Access lanes              | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| Intersections             | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| Stormwater infrastructure | <ul style="list-style-type: none"> <li>• Kerb and channel along road edge</li> </ul>  |
| Typical cross sections    |  <p>The diagram illustrates a cross-section of an 'Active Mode Bridge'. It features a central pedestrian lane on the left, highlighted in blue with a white walking figure icon, and a cyclist lane on the right, highlighted in green with a white bicycle icon. Above the pedestrian lane, a grey silhouette of a person is shown with an upward-pointing arrow. Above the cyclist lane, a grey silhouette of a person on a bicycle is shown with a downward-pointing arrow. The bridge is supported by two grey pillars on either side, with a grey kerb and channel along the outer edges.</p> <p><b>ACTIVE MODE BRIDGE</b></p> |

### 2.1.2 Manuia Road project area

As set out in Table 3 below, the proposed works within the Manuia Road project area include construction of a new grade-separated road crossing (bridge) across the NIMT. The new bridge will accommodate one vehicle lane in each direction and active mode facilities.

**Table 3: Overview of the Manuia Road project area**

| <b>NoR 1 – Manuia Road project area</b> |   |
|---|---|
|   |   |
| <b>Key features</b>                     |   |
| Overview                                | <ul style="list-style-type: none"> <li>• There is currently no existing east-west corridor / level crossing across the NIMT in this project area</li> <li>• Construction of a new arterial road bridge across the NIMT accommodating two lanes (one in each direction) and separated active mode facilities</li> <li>• Construction of new arterial road corridors tying into either side of the bridge (east and west of the NIMT) accommodating two vehicle lanes (one in each direction) and separated active mode facilities</li> </ul> |
| Other structures                        | <ul style="list-style-type: none"> <li>• Retaining/abutment walls (either side of the NIMT)</li> </ul>  |
| Other road closures / cul-de-sac        | <ul style="list-style-type: none"> <li>• Reconstruction of existing cul-de-sac at Hitchcock Road (east of the NIMT) to tie into the new intersection at Oakleigh Avenue/ Manuia Road / Hitchcock Avenue (as described below) and upgrade with footpath</li> </ul>   |
| Speed environment                       | <ul style="list-style-type: none"> <li>• 50km/h</li> </ul>  |
| Access lanes                            | <ul style="list-style-type: none"> <li>• Existing Manuia Road will be reconfigured into an access lane for remaining properties, tying in with the new Manuia Road corridor/ bridge (west of NIMT)</li> </ul>   |
| Intersections                           | <ul style="list-style-type: none"> <li>• Upgrade of the existing Great South Road/ Challen Close/ Manuia Road intersection to provide for signalisation, footpath upgrades and tie in works with the existing roads</li> </ul>  |

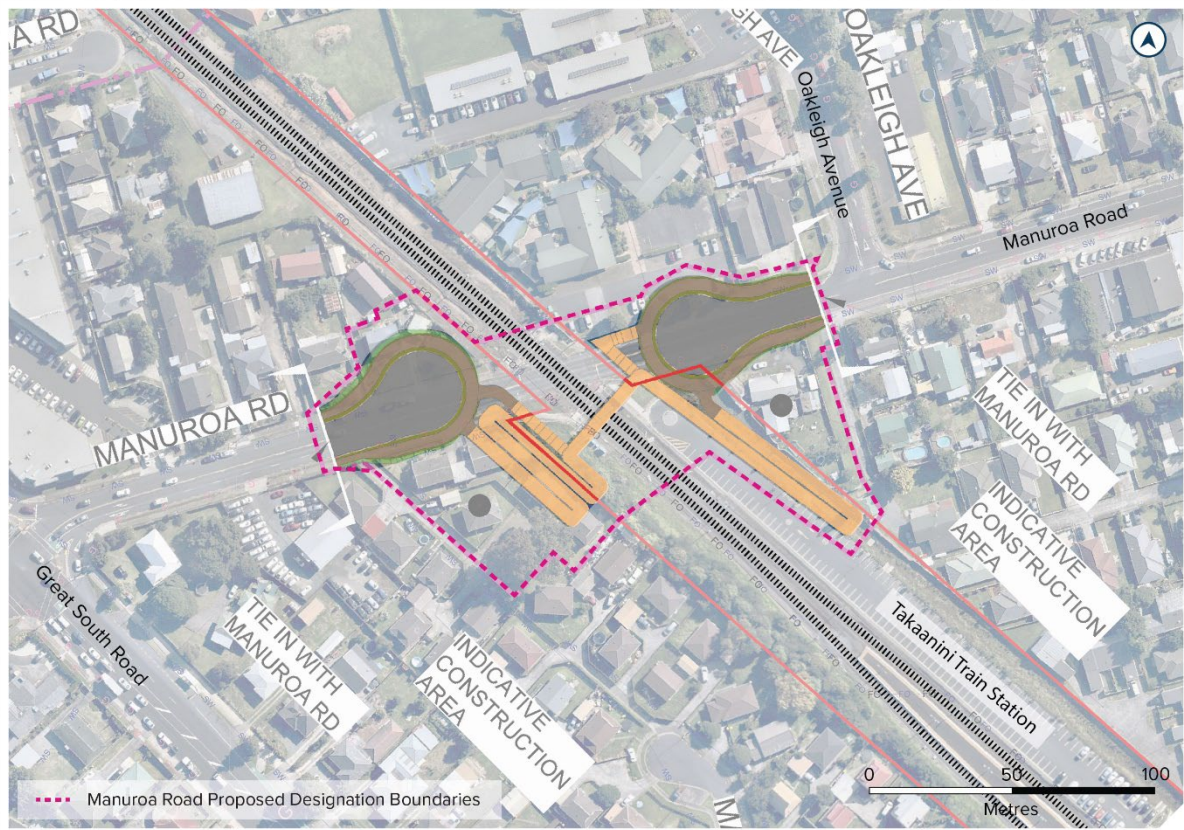
|                                  |   |
|----------------------------------|---|
|                                  | <ul style="list-style-type: none"> <li>• New roundabout intersection at Oakleigh Avenue/ Manuia Road / Hitchcock Avenue with active mode facilities and tie in works</li> </ul>   |
| <p>Stormwater infrastructure</p> | <ul style="list-style-type: none"> <li>• Stormwater culvert and associated flood offset storage area</li> <li>• Kerb and channel along road edge</li> </ul> <p><i>Note: NoR has also considered space requirements for future stormwater treatment devices (though subject to future Regional Plan consenting process)</i></p>  |
| <p>Typical cross sections</p>    | <p>The image contains two diagrams illustrating typical cross sections of road infrastructure. The top diagram, labeled "TWO LANE ARTERIAL BRIDGE", shows a cross-section with a central two-lane road (yellow with white triangles), flanked by green bicycle lanes and blue pedestrian paths. The bottom diagram, labeled "TWO LANE ARTERIAL", shows a similar cross-section but with a central two-lane road (yellow with white triangles) flanked by green bicycle lanes and blue pedestrian paths, with trees and a kerb on the sides.</p> |

### 2.1.3 Manuroa Road project area

As set out in Table 4 below, the proposed works within the Manuroa Road project area include closure of the existing level crossing and replacement with a new active modes bridge across the NIMT.

Table 4: Overview of the Manuroa Road project area

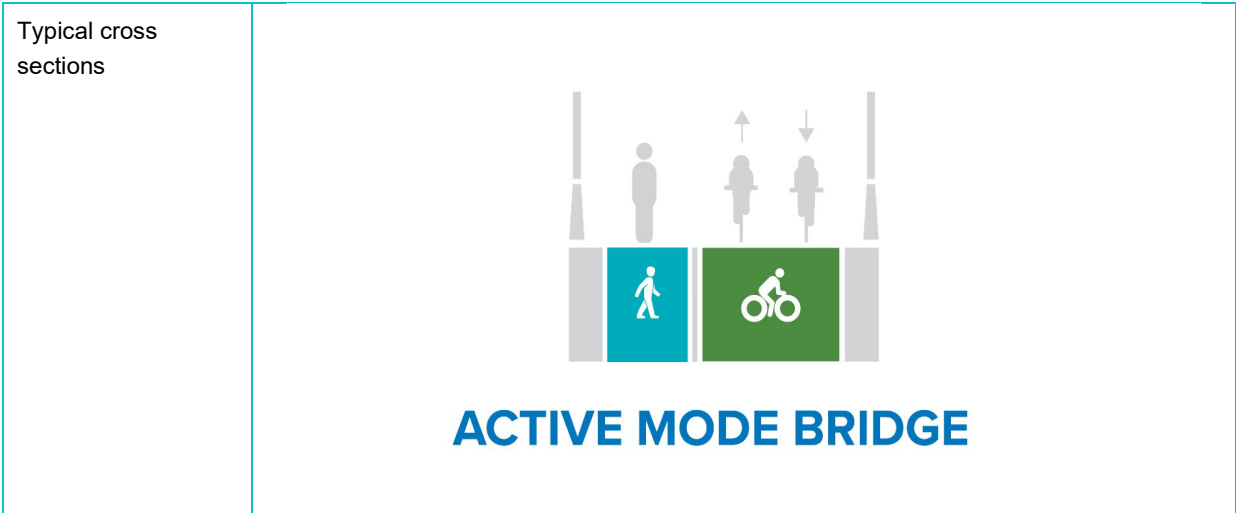
**NoR 1 – Manuroa Road project area**



**Key features**

|                                  |  |
|----------------------------------|--|
| Overview                         | <ul style="list-style-type: none"> <li>• Closure of the existing road corridor to vehicular traffic across the NIMT</li> <li>• Construction of an active mode bridge across the NIMT</li> <li>• Construction of cul-de-sacs (accommodating footpaths) and works to tie into the existing corridor on either side of the NIMT along Manuroa Road</li> <li>• Ramps and stairs will connect to the bridge on either side (east and west) of the NIMT and will tie into the cul-de-sacs</li> </ul> |
| Other structures                 | <ul style="list-style-type: none"> <li>• None</li> </ul>   |
| Other road closures / cul-de-sac | <ul style="list-style-type: none"> <li>• None</li> </ul>   |
| Speed environment                | <ul style="list-style-type: none"> <li>• 50km/h (where it is trafficked)</li> </ul>  |
| Access lanes                     | <ul style="list-style-type: none"> <li>• None</li> </ul>   |
| Intersections                    | <ul style="list-style-type: none"> <li>• None</li> </ul>   |
| Stormwater infrastructure        | <ul style="list-style-type: none"> <li>• Kerb and channel along road edge</li> </ul>   |

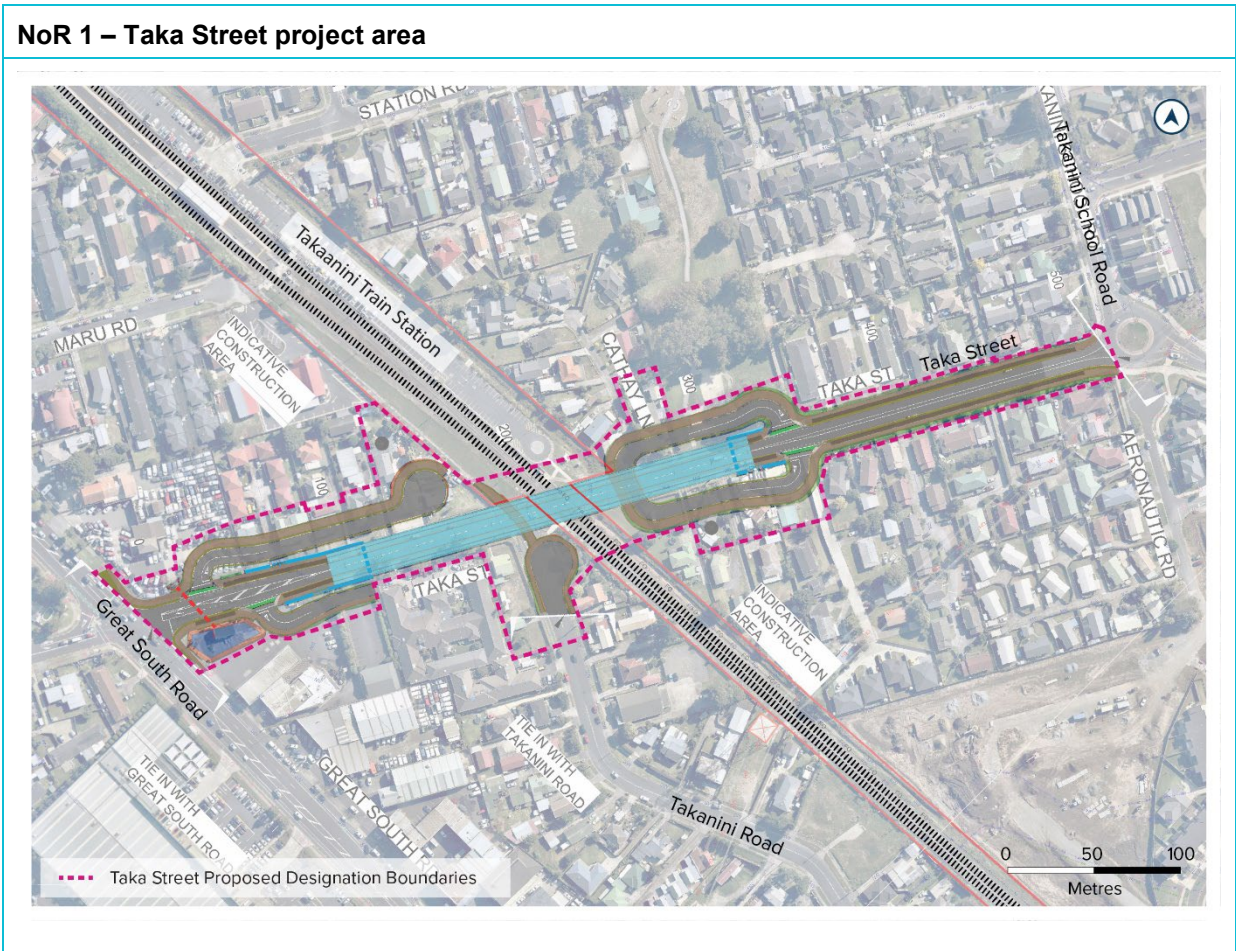





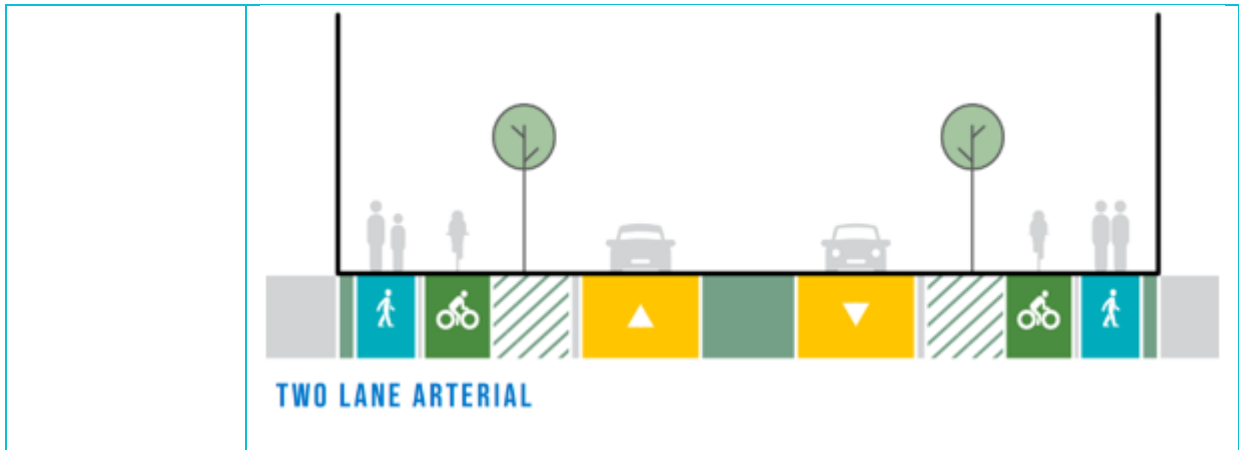
### 2.1.4 Taka Street project area

As set out in Table 5 below, the proposed works within the Taka Street project area include closure of the existing level crossing and replacement with a new grade-separated road crossing (bridge) across the NIMT. The new bridge will accommodate one vehicle lane in each direction and active mode facilities.

Table 5: Overview of the Taka Street project area



| <b>Key features</b>              |   |
|----------------------------------|---|
| Overview                         | <ul style="list-style-type: none"> <li>• Construction of an arterial road bridge across the NIMT accommodating two vehicle lanes (one in each direction) and separated active mode facilities</li> <li>• Construction of arterial road corridors tying into either side of the bridge and existing intersections (east and west of the NIMT). The corridors will accommodate two vehicle lanes (one in each direction) and separated active mode facilities</li> </ul>  |
| Other structures                 | <ul style="list-style-type: none"> <li>• Retaining/abutment walls</li> </ul>  |
| Other road closures / cul-de-sac | <ul style="list-style-type: none"> <li>• Closure of existing Takanini Road (north) to vehicular traffic at the intersection with Taka Street bridge i.e., no through-traffic provision. Replacement with a cul-de-sac and works to tie into the existing corridor of Takanini Road to the south. Active modes connection from Takanini Road to Takaanini Station (under the new Taka Street bridge)</li> </ul>  |
| Speed environment                | <ul style="list-style-type: none"> <li>• 50km/h</li> </ul>  |
| Access lanes                     | <ul style="list-style-type: none"> <li>• Construction of four access lanes: <ul style="list-style-type: none"> <li>• Construction of a new access lane (cul-de-sac) located west of the NIMT and north of the Taka Street road corridor. It accommodates a footpath on the northern side and bi-directional traffic. The access lane will tie in with the Taka Street corridor and allows access to existing properties to remain and Takaanini Station</li> <li>• Construction of a new access lane located west of the NIMT and south of the Taka Street road corridor. It accommodates a footpath on the southern side and bi-directional traffic. The access lane will tie in with the Taka Street corridor and allows access to existing properties to remain</li> <li>• Construction of two access lanes located west of the NIMT (north and south of the Taka Street road corridor and looping under the new Taka Street bridge). They accommodate a footpath on the outer edge and bi-directional traffic. The access lane(s) will tie in with the Taka Street corridor and allows access to existing properties to remain including Takaanini Reserve and Cathay Lane</li> </ul> </li> </ul> |
| Intersections                    | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| Stormwater infrastructure        | <ul style="list-style-type: none"> <li>• Stormwater culvert and associated flood offset storage area</li> <li>• Kerb and channel along road edge</li> </ul> <p><i>Note: NoR has also considered space requirements for future stormwater treatment devices (though subject to future Regional Plan consenting process)</i></p>  |
| Typical cross sections           |  <p style="text-align: center;"><b>TWO LANE ARTERIAL BRIDGE</b></p>   |

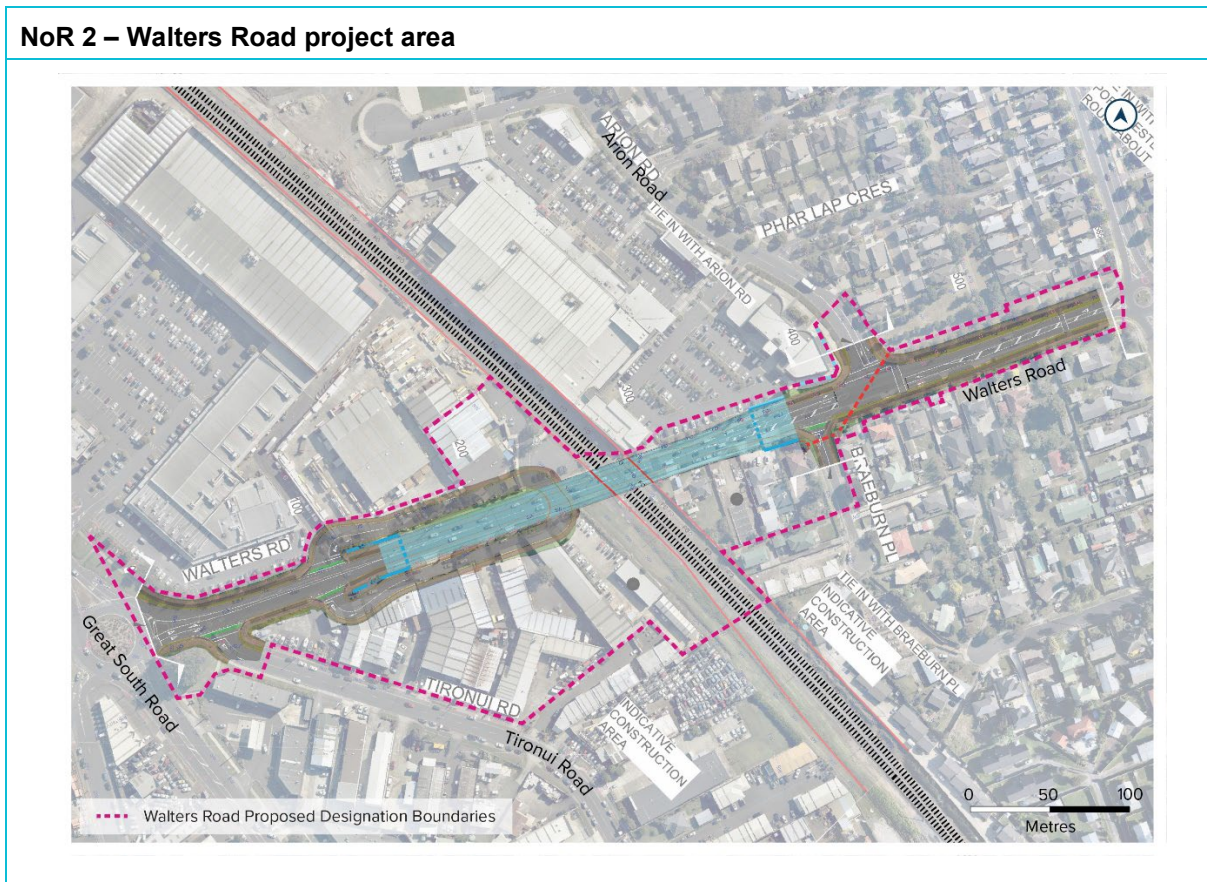



## 2.2 NoR 2 – Walters Road

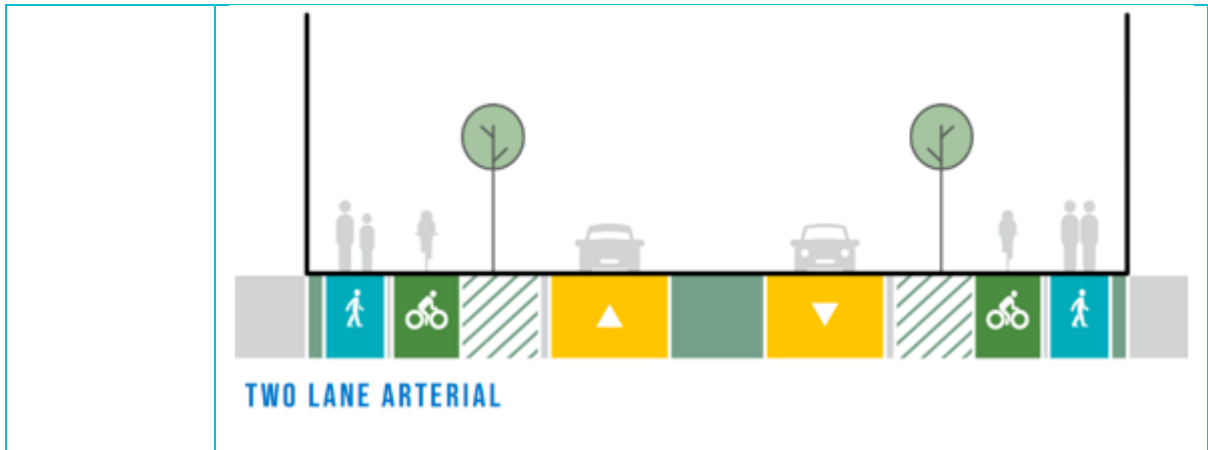
### 2.2.1 Walters Road project area

As set out in Table 6 below, the proposed works within the Walters Road project area include closure of the existing level crossing and replacement with a new grade-separated road crossing (bridge) across the NIMT. The new bridge will accommodate one vehicle lanes in each direction and active mode facilities.

Table 6: Overview of Walters Road project area



| <b>Key features</b>              |   |
|----------------------------------|---|
| Overview                         | <ul style="list-style-type: none"> <li>• Construction of an arterial road bridge across the NIMT accommodating two vehicle lanes (one in each direction) and separated active mode facilities</li> <li>• Construction of arterial road corridors tying into either side of the bridge and existing intersections (east and west of the NIMT). The corridors will accommodate two vehicle lanes (one in each direction) and separated active mode facilities</li> </ul>  |
| Other structures                 | <ul style="list-style-type: none"> <li>• Retaining/abutment walls</li> </ul>  |
| Other road closures / cul-de-sac | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| Speed environment                | <ul style="list-style-type: none"> <li>• 50km/h</li> </ul>  |
| Access lanes                     | <ul style="list-style-type: none"> <li>• Construction of two access lanes located west of the NIMT (north and south of the Walters Road corridor and looping under the new Walters Road bridge). They accommodate a footpath on the outer edge and bi-directional traffic. The access lane(s) will tie in with the Walters Road corridor and allows access to remaining properties</li> </ul>   |
| Intersections                    | <ul style="list-style-type: none"> <li>• Upgrade of the existing Arion Road / Walters Road intersection to provide for footpath upgrades and works to tie into existing Arion Road</li> <li>• Upgrade of the existing Braeburn Place / Walters Road intersection to provide for footpath upgrades and works to tie into existing Braeburn Place</li> <li>• Upgrade of the existing Tironui Road / Walters Road intersection to provide for footpath upgrades and works to tie into existing Tironui Road</li> </ul>   |
| Stormwater infrastructure        | <ul style="list-style-type: none"> <li>• Stormwater culvert</li> <li>• Kerb and channel along road edge</li> </ul> <p><i>Note: NoR has also considered space requirements for future stormwater treatment devices (though subject to future Regional Plan consenting process)</i></p>   |
| Typical cross sections           |  <p>The diagram illustrates a cross-section of a two-lane arterial bridge. From left to right, it shows a pedestrian lane (blue square with a person icon), a bicycle lane (green square with a bicycle icon), a vehicle lane (yellow square with an upward-pointing triangle icon), another vehicle lane (yellow square with a downward-pointing triangle icon), another bicycle lane (green square with a bicycle icon), and a final pedestrian lane (blue square with a person icon). Silhouettes of a person, a cyclist, and two cars are shown above the respective lanes. The text 'TWO LANE ARTERIAL BRIDGE' is written in blue capital letters below the diagram.</p> |



## 3 The design context and assessment methodology

### 3.1 Te Tupu Ngātahi Design Framework

This UDE contains an evaluation section which has been prepared for each of the project areas based on the guidance and principles established in Te Tupu Ngātahi Programme Wide Design Framework principles.

The Design Framework takes a systems approach as the basis on which urban areas are organised and understood and pulls these apart as a series of layers: environment, social, built form, movement and land use, with cultural and sustainability values underpinning and spanning across these. In this way, transport networks are not seen in isolation, but rather in terms of how they can contribute to the urban system as a whole.

There are twenty design principles that have been established within these layers to provide high level guidance on the attributes of responsive, resilient, sustainable, vibrant, and high-quality urban environments. Each of the principles describe what ‘good looks like’ and what to aim for in the design of transport networks. The principles sit within an integrated system across the various layers, to be prioritised and applied according to desired outcomes articulated in the strategic policy direction and the unique needs of each context.

The Design Framework principles are relevant across the Supporting Growth Programme as they contribute to the understanding of the development of route options in terms of their place context, built form interfaces, movement functions and modal priorities. They also inform the design development of route options at each phase with specific urban design considerations including:

- Land use and corridor interface;
- Connectivity and access;
- Character and sense of place;
- Integration with future development; and
- Response to topography.

The Design Framework sits within the context of a range of established strategic plans, policies and design guidance that guide urban development outcomes at the:

- National level (e.g. National Policy Statement on Urban Development (**NPS-UD**), Government Policy Statement on Land Transport, NZ Transport Agency Bridging the Gap, Regional Land Transport Plan, New Zealand Urban Design Protocol); and
- Local level (e.g. Auckland Plan 2050, Auckland Transport Alignment Project, AT Roads and Streets Framework, AT Transport Design Manual, Auckland Unitary Plan: Operative in Part (**AUP:OP**), AT Sustainability Framework, Auckland Transport Code of Practice).

The established strategic plans and guidance outlined above informed the development of the Design Framework content and they are referenced in general terms as they relate to the attributes that will contribute to healthy, connected, and sustainable communities. Where more recent design guidance was available that did not form part of these published reports, the Design Framework included more detail, e.g. the approach to the location of rail, rapid transit, and the role of active modes.

As set out in the AEE, Manawhenua have also been actively involved as partners in the Project (both business case and current NoR phase). Through this partnership, project specific outcomes have been identified. These outcomes have informed this evaluation and corresponding recommendations as they relate to ongoing partnership and co-design with Manawhenua.

## 3.2 Existing and likely future environment

The AEE outlines the key attributes of the existing and likely future environment of the Project across each of the five project areas. Each section is described in the AEE under key features of:

- Current land use;
- Community and recreation facilities;
- Watercourses;
- Vegetation and recreational facilities;
- Historic heritage and archaeological values;
- Existing designations;
- Current zoning;
- Precincts;
- Other non-statutory features; and
- Likely future zoning.

Further project areas-specific descriptions (Spartan to Walters Road) are also provided in Sections 5 - 9 of this Report below.

## 3.3 National Policy Statement on Urban Development 2020

The NPS-UD came into effect on 20 August 2020 and sets out a list of things that local authorities must do to give effect to the objectives and policies defined within the policy statement. The NPS-UD recognises that urban intensification, and any future development that enables intensification, can result in significant changes in amenity values appreciated by some people. The NPS-UD does not explicitly address or refer to urban design but sets out the characteristics and rationale for “*well-functioning urban environments*” that enable all communities to provide for their social, economic, and cultural well-being and for their health and safety, now and into the future. This includes, amongst other requirements, the enabling of density and development capacity through “upzoning” and more enabling planning provisions:

- Around centre zones;
- In areas with employment opportunities; and
- In areas that are well serviced by existing or planned public transport or where there is high demand for housing or business.

In the context of the Project, the NPS-UD defines well-functioning urban environment, which is one that provides “*good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport*”.

The NPS-UD also directs councils to enable building heights of six storeys or more within a walkable catchment of rapid transit stops. This is aligned with the Design Framework principles of increasing

density in and around centres and stations to create vibrant walkable/cyclable communities that is supported by public transport and a range of amenities and land uses.

Four of the proposed project areas (Spartan Road, Manuia Road, Manuroa Road and Taka Street) are within walkable catchment of the Takaanini Train Station<sup>1</sup> (see Figure 2). This policy therefore could have direct implications to the surrounding future urban environment at these locations. This has been identified in Auckland Council's preliminary response zoning. The land use planning identified as part of this response has been used as a basis for the land use planning identified in the following commentary and maps.

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<sup>1</sup> Based on Auckland Council's Plan Change 78 GIS viewer at the time of writing, i.e., within 1200m





Figure 2: Planned environment under Plan Change 78

### 3.4 Auckland Council Guidance

At a local level, the key urban design considerations and provisions of the AUP:OP relevant to the Project include:

- Regional Policy Statement B2: Urban Growth and Form;
- Regional Policy Statement B3: Infrastructure Transport and Energy;
- Chapter E26: Infrastructure;
- Chapter E38: Urban Subdivision; and
- Chapter H: Zones.

The urban design specific commentary within the evaluations in the following sections broadly address the objectives and policies of the relevant sections of the Regional Policy Statement and Chapters of the AUP:OP as listed above.

In addition, the Auckland Plan 2050 sets the vision and direction for Auckland and the Design Framework directly references this plan. It illustrates how the outcomes of the Auckland Plan are linked to the design principles set out for the Supporting Growth Programme in the Framework.

### 3.5 Preparation for this evaluation

Work undertaken for this evaluation commenced in 2022. In summary, the preparation for this work has included:

- Review of the TLC specialist briefing package, the TLC Detailed Business Case (**DBC**) design drawings and the GIS viewer of Te Tupu Ngātahi;
- Site visit(s) with members of the Project team;
- Desktop study on the project area and surrounding context; and
- Technical specialist workshop.

## 4 The TLC – Overall network

This section evaluates common or general urban design matters of the TLC i.e., the combination of road closures and grade separated crossings across the project areas. Where there is a specific commentary relating to just the multi modal project areas (Manuia Road, Taka Street and Walters Road) and not the active mode project areas (Spartan Road and Manuroa Road) or vice versa, this has been distinguished.

The evaluation measures these against the relevant Design Framework Principles and provides urban design focused commentary on the current design detail. It also recommends common urban design outcomes that should be considered in future design stages. These recommendations could form the basis of an urban design specific designation condition, and where there is an overlap of urban design outcomes with other considerations (for example ecological, landscape, visual or water quality related recommendations) they could be integrated within the relevant specialist conditions.

**Table 7: Common urban design matters**

| Principle  | Explanation   | Application common to all Project Areas   |
|--|---|---|
| <b>ENVIRONMENT</b>   |   |   |
| <b>1.1</b><br><br><b>Support and enhance ecological corridors and biodiversity</b>           | Mitigate the effects on or enhance existing ecological corridors through the placement and design of movement corridors | <ul style="list-style-type: none"> <li>The project areas do not intersect with any identified corridors/areas of ecological significance or biodiversity under the AUP:OP</li> <li>The project areas each provide spatial provisions within the design designation (e.g., at boundaries, alongside bridge abutments and retaining, and within berms) that have the potential to support ecological enhancement and biodiversity in the local environment by providing contiguous space for diverse planting responses</li> <li>Within each designation there is sufficient land post construction for future design stages to consider a landscape response that contributes to the ecological enhancement and biodiversity in the local environment</li> </ul> |
| <b>1.2</b><br><br><b>Support water conservation and enhance water quality in a watershed</b> | Take into account and work with the existing watershed as part of a whole system  | <ul style="list-style-type: none"> <li>There is some flexibility within the designation boundary and proposed cross section to provide natural drainage to stormwater raingardens to address water quality and hard engineering solutions</li> </ul> <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>A preferred treatment approach has been proposed within the designation boundaries. These will be further elaborated on under each of the individual project area evaluations</li> <li>Future development and definition of these is recommended at a future design stage. This is to provide an appropriate interface and amenity to</li> </ul>   |

| Principle  | Explanation  | Application common to all Project Areas   |
|--|--|---|
|  |  | the surrounding future context/land use for the project areas   |
| <b>1.3</b><br><b>Minimise land disturbance, conserve resources and materials</b>                       | Respect the existing topography, landforms and urban structure in the placement of strategic corridors. Minimise the quantity of hard engineering materials required. Minimise, mitigate any adverse effects of activities on the environment  | <ul style="list-style-type: none"> <li>The project areas are set within existing urbanised areas with minimal impact on topography. Further design investigation may be required to determine the extent of earthworks, that may be required at the future regional consenting phase</li> </ul> <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>The proposed ramp arrangement impacts the surrounding land use and increases land take and quantity of hard engineering materials. Future design stages should consider how to mitigate this impact including whether an alternative form of arrangement or access would be appropriate, for example an elevator</li> </ul>   |
| <b>1.4</b><br><b>Adapt to a changing climate and respond to the microclimatic factors of each area</b> | Design for predicted future regional climatic impacts in the corridor location. Consider the positive contribution that the orientation of transport corridors can make to the local climate of future places and streets  | <ul style="list-style-type: none"> <li>The project areas provide space for street tree planting within the berms that, when delivered, will contribute to the amenity of the area by providing shade and microclimatic cooling qualities</li> <li>The project areas provide active modes facilities, supports public transport connections and access to public transport facilities (i.e., Takaanini Train Station). This supports modal shift and reduction of transport related climate change contributions</li> <li>Within the designation boundaries there is land post construction that provides opportunity to consider a landscape and/or naturalised stormwater treatment response including amenity planting and water sensitive design elements. This demonstrates contribution to the local climatic environment and urban heat island effects</li> </ul> |
| <b>SOCIAL</b>  |  |   |
| <b>2.1</b><br><b>Identity and place</b>  | The identity or spirit of place is generally acknowledged as the unique amalgam of the inherent built, natural and cultural qualities of a place. Responding to identity in the location and type of new corridors can provide a sense of continuity and contribute to our collective memory | <ul style="list-style-type: none"> <li>Future design stages need to consider how design expression of the project areas could reflect local identity drivers and integrate and interface with the surrounding land use area. This includes: <ul style="list-style-type: none"> <li>cultural values and narrative expressions in partnership with Manawhenua; and</li> <li>addressing the existing and future amenity values of the surrounding area</li> </ul> </li> </ul>  |

| Principle  | Explanation   | Application common to all Project Areas   |
|--|---|---|
|  |   | <ul style="list-style-type: none"> <li>• Consideration of street tree selection and placement provides the opportunity to reflect and enhance the unique local character inherent in the built, natural and cultural qualities of the location</li> <li>• In future design stages, Manawhenua will be invited to provide input into relevant cultural landscape and design matters including how desired outcomes reflect their identity and values</li> </ul>  |
| <p><b>2.2</b><br/><b>Respect culturally significant sites and landscapes</b></p> | <p>Acknowledge significant sites and features in the layout of movement corridors including ridgelines or horizons</p>  | <ul style="list-style-type: none"> <li>• The AUP:OP does not identify any locations within the Sites and Places of Significance to Mana Whenua Overlay along or in close proximity to the TLC. However, Manawhenua have indicated the area in general holds deep historical and cultural significance with a challenging history and a high level of sensitivity. In future design stages, Manawhenua will be invited to provide input into relevant cultural landscape and design matters including how desired outcomes could reflect their identity and values</li> </ul>  |
| <p><b>2.3</b><br/><b>Adaptive corridors</b></p>                                  | <p>Corridors should demonstrate flexibility to respond to changes in their function and physical interfaces. Consider an adaptive approach in the way strategic corridors are designed to be able to respond to changes in land use, the way we move around and utilise technology over time</p> <p><b>Future Growth</b></p> <p>Consider the existing and future movement and place context that will be supported by the Project and the ability of the design to accommodate change over time</p> | <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>• The proposed cross section provides space for all modes</li> <li>• The proposed typical cross section has the spatial provisions to be flexible, re-configurable and adaptable for changing transport needs. For example, future bus priority measures and future expansion of any walking and cycling networks can be accommodated within the designation</li> <li>• There is flexibility and spatial provisions within each of the designation boundaries to respond to future interfaces and provide for non-transport functions. For example, ecological response, water management or community functions that deliver a positive contribution to sense of belonging and place context</li> </ul> <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>• There is flexibility and spatial provisions within each of the designation boundaries to accommodate its proposed function as well as opportunity for non-transport functions. For example, ecological response, water management or community functions that deliver a positive contribution to sense of belonging and place context</li> </ul> |

| Principle                                    | Explanation   | Application common to all Project Areas   |
|--|---|---|
| <p><b>2.4</b><br/><b>Social cohesion</b></p> | <p>Provide clear, effective and legible connectivity between community and social functions</p>   | <ul style="list-style-type: none"> <li>Overall the Project delivers a positive contribution to community resilience by supporting connectivity in the wider network to existing local/neighbourhood centres, community facilities and open spaces. However, in some locations, direct accessibility and connectivity is compromised. Refer to the individual project area evaluations for specific commentary</li> <li>The project areas enable equitable east-west connectivity and cross corridor access of the rail line to commercial centres, employment lands and areas of high density. Further development at future design stages should be undertaken to consider fine grain pedestrian access at crossings points for intersections and mid-block crossings</li> <li>The project areas support the provision of modal choices by accommodating space for active modes and public transport functions</li> <li>Future design stages should consider how the project areas can deliver a positive contribution to sense of belonging and participation, community resilience and the creation of spaces for people to seamlessly connect. This could include opportunities for multi-functional use and activation of the project areas through the following: <ul style="list-style-type: none"> <li>Extending existing open space or community functions;</li> <li>Provision of community functions within the designation; and</li> <li>Supporting active mode movement into adjacent areas</li> </ul> </li> </ul> <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>The proposed ramp arrangements at Spartan and Manuroa Road extends distance of travel for active mode users and does not provide a direct desire line. Future design stages should consider alternative arrangements that provide a shorter, and more direct, convenient, and legible connection.</li> </ul> |
| <p><b>2.5</b><br/><b>Safety</b></p>          | <p>Provide a safe and convenient network of routes accessible to people of all ages and abilities</p> <p><b>Universal Access</b></p> <p>Focus on the needs of the customer by placing importance on the spatial</p> | <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>The project areas will deliver a greater level of access and movement to future local communities, with the provision of fully segregated active mode solutions</li> <li>Further development is needed at future design stages of the final crossing points at intersections</li> </ul>   |

| Principle   | Explanation  | Application common to all Project Areas   |
|---|--|---|
|   | <p>requirements that provide for universally inclusive and safe facilities with good physical and visual links</p>   | <p>and mid-block crossings. This is required to confirm and reinforce a sense of personal safety and provide for equitable local connectivity and access</p> <ul style="list-style-type: none"> <li>• The proposed projects accommodate the universal design approach and accessibility to all parts of user journeys</li> <li>• There is potential Crime Prevention through Environmental Design (<b>CPTED</b>) related concerns within each of the project areas. Specific locations and recommendations will be discussed within individual project area evaluations.</li> <li>• However, in general further definition and resolution is needed at future design stages to address: <ul style="list-style-type: none"> <li>○ spatial arrangement;</li> <li>○ residential street address and public private interface; and</li> <li>○ space function under bridges and around access lanes</li> </ul> </li> </ul> <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>• At future design stages consider CPTED principles in the design of the crossings. Allow appropriate visual clearance and setback of landscape and built form from entry points i.e. stairway, elevator and/or ramp entry</li> <li>• There is opportunity to consider alternative forms of equitable access, such as elevators</li> </ul> |
| <b>BUILT FORM</b>   |  |   |
| <p><b>3.1</b><br/><b>Align corridors with density</b></p>                                   | <p>Locate stations/stops and corridors within walking distance of higher density development to facilitate modal shift, support commercial and mixed use centres and contribute to vibrant, active urban environments</p> <p><b>Active Mode Catchments</b></p> <p>Locate stations and interchange facilities in places that align with areas of greater density and is centered on the active mode catchment</p> | <ul style="list-style-type: none"> <li>• The project areas will provide a core transport function as east-west connectors in the Takaanini area supporting the requirements of the NPS-UD and the MDRS. This includes supporting increased development capacity within a walkable catchment of Takaanini Train Station</li> <li>• Through enabling key connections to the Takaanini Train Station and the wider existing active modes network, the project areas support modal shift and provide a positive contribution to the vibrancy and activation of the varied urban environments within the Takaanini area</li> </ul>   |
| <p><b>3.2</b><br/><b>Corridor scaled to the surrounding context and urban structure</b></p> | <p>Align the speed, type and scale of transport corridors and infrastructure with the environment that it moves</p>  | <ul style="list-style-type: none"> <li>• The project areas provide an appropriate response to the potential needs of the adjacent precinct functions, by providing connectivity through efficient localised movement and provision of mixed mode travel. This includes</li> </ul>   |

| Principle  | Explanation   | Application common to all Project Areas   |
|--|---|---|
|  | <p>through (appropriate scale to the context)</p> <p><b>Respond to Land Use</b></p> <p>The size, design and location of the facilities should respond to the adjacent land use and respect natural features. This minimises any 'left over' spaces and disconnected pockets of land that need integration</p> | <p>industrial employment land, future areas of high density residential, Takaanini Local Centre and to Takaanini Train Station</p> <ul style="list-style-type: none"> <li>The physical scale of the crossings poses challenges to their existing surrounding context as a result of minimum clearance requirements for the rail line. In some locations the size and position of the crossings contribute to impacts such as overshadowing to some properties. Future development should consider appropriate building setbacks to mitigate or avoid overshadowing effects</li> </ul>   |
| <p><b>3.3</b></p> <p><b>Facilitate an appropriate interface between place and movement</b></p> | <p>Facilitate the opportunity for place as well as movement in corridors (people-oriented streets)</p>  | <ul style="list-style-type: none"> <li>It is recommended that an appropriate landscape response is considered as part of the strategy to address interface. This could include: <ul style="list-style-type: none"> <li>softening of hardscape surfaces and materials;</li> <li>visual screening and buffers to crossing structures;</li> <li>separation of public and private boundaries;</li> <li>active mode pathway legibility; and</li> <li>overall amenity and identity of the project area</li> </ul> </li> </ul> <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>The typical project area cross sections provide a flexible platform to address the opportunity for place as well as movement function with clear allocation of street space. For example separated pedestrian and cycle facilities and potential road berm spaces along at-grade areas that provide safe waiting zones for pedestrians</li> <li>An urban integration strategy should be developed in future stages to address interface issues with bridging structures, retaining walls and access lanes. This is particularly important to be considered where project areas overlook property boundaries, or directly interface with residential areas. Things to consider include: <ul style="list-style-type: none"> <li>pedestrian permeability;</li> <li>active frontages;</li> <li>definition and re-integration of land post construction into adjacent land use;</li> <li>an appropriate landscape response to separate public private boundaries; and</li> <li>maximising built form outcomes</li> </ul> </li> </ul> |



| Principle   | Explanation  | Application common to all Project Areas   |
|---|--|---|
|   |  | <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>An appropriate landscape response is recommended where the project areas interface with adjacent properties and between the proposed cul-de-sac and rail line</li> </ul>  |
| <b>MOVEMENT</b>   |  |   |
| <p><b>4.1</b><br/><b>Connect nodes</b></p>                                | <p>Provide tangible connectivity between identified activity nodes</p> <p><b>Cross Corridor Connectivity</b><br/>Balance the functional access requirements across the Project corridor with the optimal location to provide connections into the surrounding area</p>   | <ul style="list-style-type: none"> <li>The project areas provide tangible and direct connectivity between existing industrial / employment areas, future areas of high density residential, local communities and mixed use centres within the Takaanini area</li> </ul>  |
| <p><b>4.2</b><br/><b>Connect modes</b></p>                                | <p>Provide for choice in travel and the ability to connect at interchanges between modes</p> <p><b>Permeability</b><br/>Provide a level of permeability for stations that supports access into the surrounding streets/corridors</p>   | <ul style="list-style-type: none"> <li>The project areas provide direct connectivity for all modes to the wider network. However, it is recommended that in future design stages consideration is given to the detailed connections to any future active mode network design</li> </ul>   |
| <p><b>4.3</b><br/><b>Support access to employment and industry</b></p>    | <p>Align the corridor location and typology to provide direct and efficient access to areas of employment and industry</p>   | <ul style="list-style-type: none"> <li>The project areas support tangible east-west accessibility to areas of employment and industry within Takaanini. This includes the Takanini Town Centre, multiple industrial land use zones, neighbourhood centres, and future development areas that support employment</li> </ul>  |
| <p><b>4.4</b><br/><b>Prioritise active modes and public transport</b></p> | <p>Provision of quality active mode corridors and dedicated public transport corridors to enable a modal shift away from private vehicle use</p> <p><b>Walkability</b><br/>Locate the station and interchange facility within or in close proximity and walking distance of local activity hubs/town centres</p> <p><b>Modal Priority</b><br/>Consider efficient connectivity between transport modes by:<br/>Providing access that is aligned with the desired modal hierarchy:<br/>1) pedestrians;</p> | <ul style="list-style-type: none"> <li>The cross section design provides allocation for active modes through separated pedestrian and cycle pathways. There is an opportunity to provide cycle parking in future design stages where appropriate, such as areas adjacent to the Takaanini Train Station, or Takaanini Local Centre</li> </ul> <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>Further development of safe and prioritised active mode connections at intersections and the provision of mid-block crossings at future design stages will provide a higher level of service to active and micro modes and further encourage modal shift</li> </ul> |

| Principle  | Explanation  | Application common to all Project Areas  |
|--|--|--|
|  | <p>2) cyclists/micro-mobility;<br/>3) public transport;<br/>4) drop off/pick up/taxis; and<br/>5) private vehicles / parking</p> <p>Minimising the interchange time and distance between transport modes by designing direct, safe and self-explaining linkages. Minimising the conflict between modes</p>                 | <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>The designation boundaries provide flexibility in the cross section to accommodate separated active mode pathways</li> </ul>   |
| <p><b>4.5</b><br/><b>Support inter-regional connections and strategic infrastructure</b></p> | <p>Consider the location and alignment of significant movement corridors and placement of infrastructure (power, wastewater, water) to the network</p>   | <ul style="list-style-type: none"> <li>While the project areas themselves do not form part of any inter-regional connection, they do support the strategic infrastructure planning of the rail line. The crossings meet the vertical and horizontal clearance to accommodate the future movement and expansion of the rail line i.e., four tracking</li> </ul>   |
| <p><b>4.6</b><br/><b>Support legible corridor function</b></p>                               | <p>Consider how the corridor can be clearly navigated and understood by users moving from place to place</p> <p><b>Legible Connections</b></p> <p>To achieve a positive and engaging street presence provide clear physical and visual connection between station and interchange facilities and surrounding corridors</p> | <p><b>Multi Modal Project Areas:</b></p> <ul style="list-style-type: none"> <li>The typical cross section, both at-grade and on the proposed bridges, accommodates a range of modes with clear allocation of street space that inherently supports future community connectivity, mobility and travel choice</li> <li>Further development of midblock crossings as well as prioritised crossings at intersections is needed at future design stages. This will provide clear and legible cross corridor access and connectivity between areas of high density, centres, and public transport options</li> </ul> <p><b>Active Mode Project Areas:</b></p> <ul style="list-style-type: none"> <li>The proposed ramp arrangements at Spartan and Manuroa Road extends distance of travel for active mode users and does not provide a direct desire line. Future design stages should consider alternative arrangements that provide a shorter, and more direct, convenient, and legible connection</li> <li>Further resolution of entry points and spatial arrangement of any stairs, elevators and ramps, is needed at future design stages. This could consider visual clearance and sightlines towards entry points, as well as visual cues and wayfinding signage to aid legibility</li> </ul> |

| Principle  | Explanation  | Application common to all Project Areas   |
|--|--|---|
| <b>5.1 Public transport directed and integrated into centres</b> | Locate rapid transit interchanges within centres (local, town and metro) to support a mix of uses and provide modal choice to a larger number of users | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the TLC. The project areas are not related to the location of rapid transit interchanges</li> </ul>   |
| <b>5.2 Strategic corridors as urban edges</b>                    | Strategic corridors as potential definers of a land use edge   | <ul style="list-style-type: none"> <li>This principle is not directly relevant to four of the project areas, including Spartan Road, Manuroa Road, Taka Street and Walters Road. This principle is relevant to Manuia Road and will be discussed below</li> </ul> |

## 5 Spartan Road project area

### 5.1 Existing environment

The Spartan Road project area (refer to Figure 3) connects an interchange on Great South Road with the Takaanini industrial area. A combination of light and heavy industrial land use surrounds the project area and there is no notable community or open space amenity that connects with it.

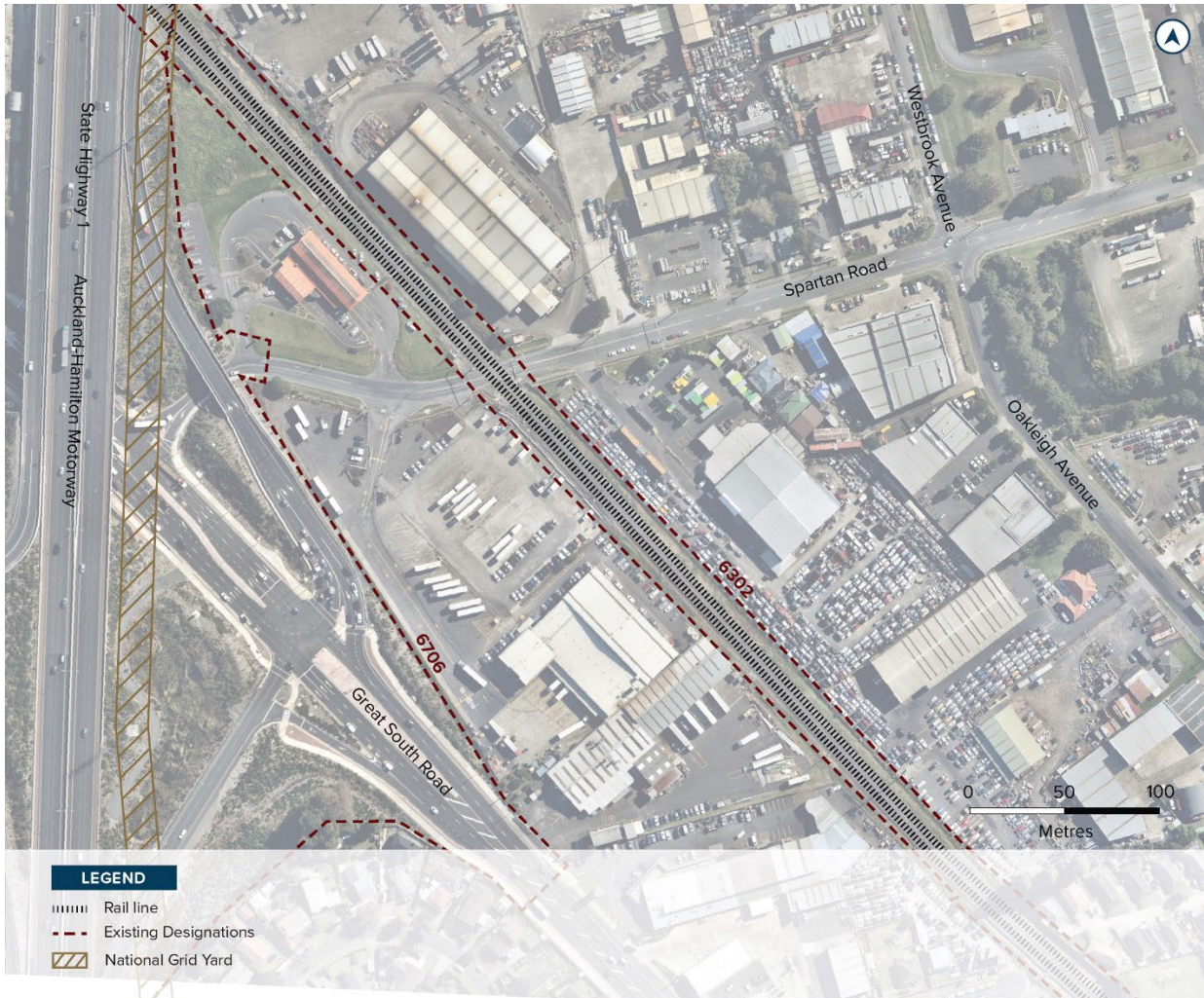


Figure 3: Existing Environment - Spartan Road project area

## 5.2 Likely future environment

There is no indication that the surrounding area will change from its existing context, with the future surrounding land use remaining light and heavy industrial (refer to Figure 4 below). The proposed active mode project area will connect the industrial area to the Great South Road Frequent Transit Network (**FTN**) and the wider walking and cycling network. It is anticipated that this project area will be used to provide access to employment.

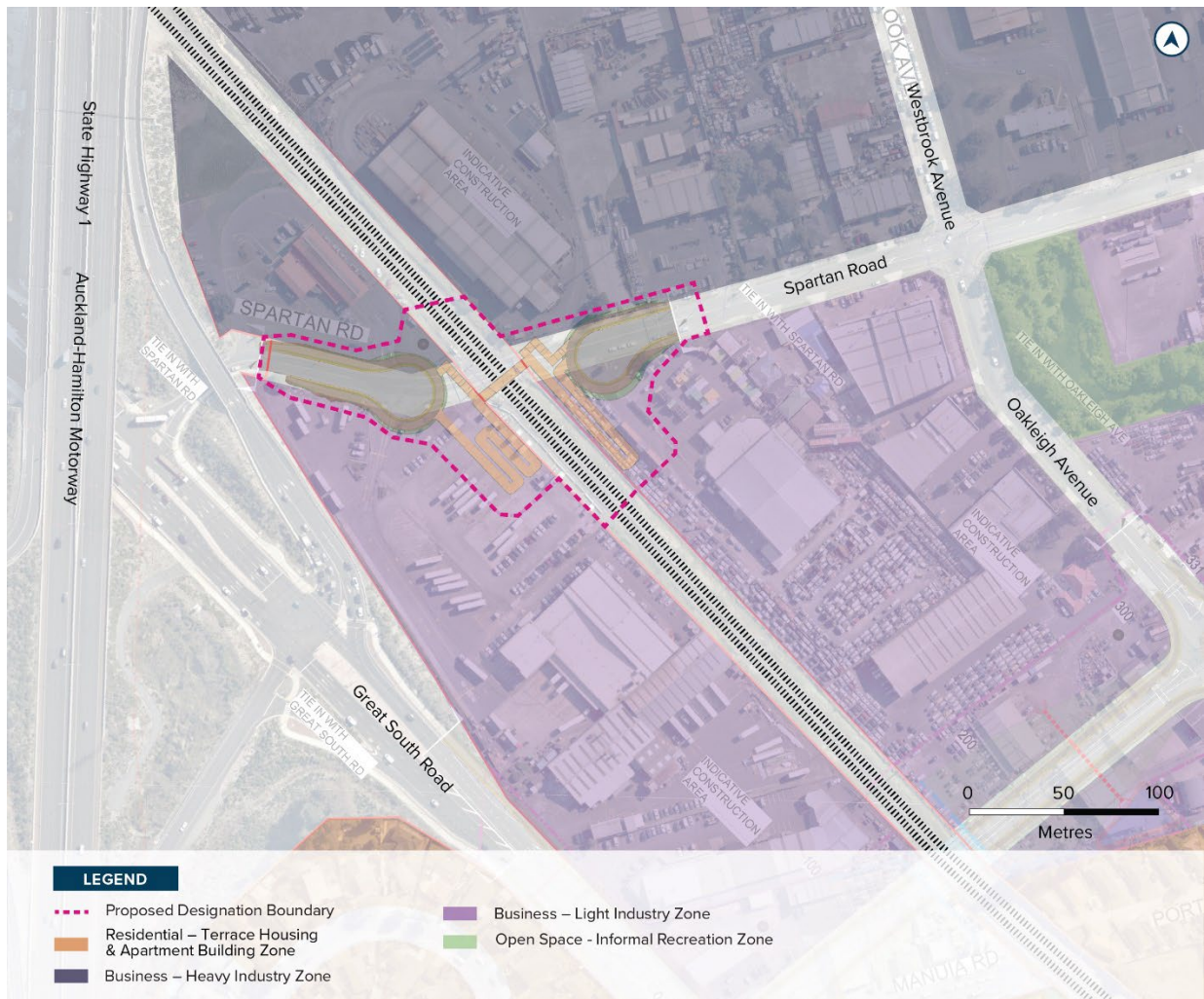


Figure 4: Likely Future Environment – Spartan Road project area

### 5.3 Urban design evaluation – Spartan Road

The evaluation in Table 8 below considers urban design commentary specific to the proposed Spartan Road project area not discussed above regarding the overall TLC. In addition, Figure 5 below illustrates the outcomes and opportunities that pertain to this project area.

Table 8: Urban Design Evaluation for Spartan Road

| Principle  | Application to Spartan Road  |
|--|--|
| <b>1.1</b><br><b>Support and enhance ecological corridors and biodiversity</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul> |
| <b>1.2</b><br><b>Support water conservation</b>                                | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul> |

| Principle  | Application to Spartan Road   |
|--|---|
| <b>and enhance water quality in a watershed</b>  |   |
| <b>1.3 Minimise land disturbance, conserve resources and materials</b>                       | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>1.4 Adapt to a changing climate and respond to the microclimatic factors of each area</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.1 Identity and place</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.2 Respect culturally significant sites and landscapes</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.3 Adaptive corridors</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.4 Social cohesion</b>   | <ul style="list-style-type: none"> <li>The project area provides direct connectivity for active modes users from the Great South Road FTN and the Takaanini industrial area</li> <li>The shape of the designation on the western side of the rail line constrains the opportunity to providing an alternative ramp arrangement. At future design stages the designation should consider ramp arrangements that provide the most appropriate urban outcomes</li> </ul>   |
| <b>2.5 Safety</b>  | <ul style="list-style-type: none"> <li>There is a CPTED concern for this project area due to its location in an industrial environment with limited passive surveillance. Specifically, where the proposed ramp is isolated between the rail line and industrial properties. Future design stages should consider a ramp arrangement that minimises the distance away from the road and ensures clear site lines are kept. Land within the designation post construction should be retained if it enables clear sightlines from the road</li> </ul> |
| <b>3.1 Align corridors with density</b>  | <ul style="list-style-type: none"> <li>This principle is not relevant to the Spartan Road project area as its function is to provide connectivity to the Takaanini Industrial area</li> </ul>   |

| Principle  | Application to Spartan Road  |
|--|--|
| <b>3.2</b><br><b>Corridor scaled to the surrounding context and urban structure</b>  | <ul style="list-style-type: none"> <li>The scale of the structure is generally consistent with the industrial context and surrounding large scale building form</li> </ul>   |
| <b>3.3</b><br><b>Facilitate an appropriate interface between place and movement</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.1</b><br><b>Connect nodes</b>   | <ul style="list-style-type: none"> <li>The project area connects active mode users between the future Great South Road FTN and the Te Mahia Station slightly further north to the employment lands within the Takaanini industrial area</li> </ul> |
| <b>4.2</b><br><b>Connect modes</b>   | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.3</b><br><b>Support access to employment and industry</b>                       | <ul style="list-style-type: none"> <li>The project area provides direct active mode connectivity to the Takaanini light and heavy industrial area</li> </ul>   |
| <b>4.4</b><br><b>Prioritise active modes and public transport</b>                    | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.5</b><br><b>Support inter-regional connections and strategic infrastructure</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.6</b><br><b>Support legible corridor function</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>5.1</b><br><b>Public transport directed and integrated into centres</b>           | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Spartan Road project area</li> </ul>   |
| <b>5.2</b> <b>Strategic corridors as urban edges</b>                                 | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Spartan Road project area</li> </ul>   |

**Figure 5: Spartan Road – Outcomes & Opportunities**

State Highway 1

Auckland-Hamilton Motorway

TIE IN WITH SPARTAN RD

Great South Road

INDICATIVE CONSTRUCTION AREA

SPARTAN RD

TIE IN WITH SPARTAN RD

Spartan Road

Westbrook Avenue

TIE IN WITH OAKLEIGH AVE  
Oakleigh Avenue

INDICATIVE CONSTRUCTION AREA



**OUTCOMES**

**Active Mode Permeability**

- 1 - Re-evaluate and refine accessway arrangement to provide a shorter, more direct, convenient, and legible connection that supports equitable access.
- 2 - Provide clear, legible and direct active modes access to crossing from Spartan Road. Consider sightlines, CPTED principles, visual cues and wayfinding to aid in legibility and perception of safety.

3 **Interface** - Refine crossing configuration to provide appropriate public private interface to industrial area.

4 **Land Post Construction** - Redefine and integrate land post construction to support industrial redevelopment.

5 **Landscape Response** - Consider a landscape response that provides an appropriate interface with industrial area. This should contribute to visual screening, amenity, future built form setback and ecological outcomes.

6 **Identity** - Design expression of crossing to reflect local identity drivers. Design responses could be shown through accessway arrangement, signage materiality, and treatments.

**KEY**

- - - Proposed Designation Boundary
- █ Active Modes Crossing
- ↔ Active Modes Connection
- █ Landscape Response/Interface
- █ Industrial Interface

*Land Use - Zoning under Plan Change 78*

- █ Heavy Industrial Zone
- █ Light Industrial Zone
- █ Open Space



## 6 Manuia Road project area

### 6.1 Existing environment

The Manuia Road Project area (refer to Figure 6) is surrounded by a mixture of land uses and built form typologies. To the north is the Takaanini industrial area with several sites relating to automotive use. Outside the industrial zone is predominately residential with low density standalone dwellings. Two parcels of Informal Recreation zoned land are to the east, just beyond the likely area of influence. While a small parcel of Open Space - Community zoned land utilised as a scout hall sits adjacent to the rail corridor with access from both Manuia Road and Manuroa Road.

A cluster of community and Early Childhood Education (**ECE**) facilities are located along Oakleigh Avenue / Manuroa Road and include the Takaanini Family Service centre, Early Learning Counties Manukau Takaanini, TopKids Manuroa childcare and BestStart Manuroa Road.

The Gateway Takaanini local shopping centre interfaces with Manuia Road, Manuroa Road and Great South Road containing a mix of food and beverage, retail and commercial functions, while across Great South Road is a small local centre and Challen Close Park.



Figure 6: Existing Environment – Manuia Road project area

## 6.2 Likely future environment

The surrounding context of this project area is anticipated to change in the future where it has been zoned residential. The upzoning of the residential blocks under Plan Change 78 Auckland Unitary Plan: Operative in Part (**PC78**), provides for future development with a minimum of six storeys. The commercial and community facilities to the south of the project area are included within this high density residential zoning (see Figure 7 below). As discussed, in Section 5.2 of this Report there is no indication of change to the Takaanini industrial area to the north.

The project area forms a direct connection between Great South Road FTN and Oakleigh Avenue prioritising movement into the Takaanini industrial area to the north including freight.

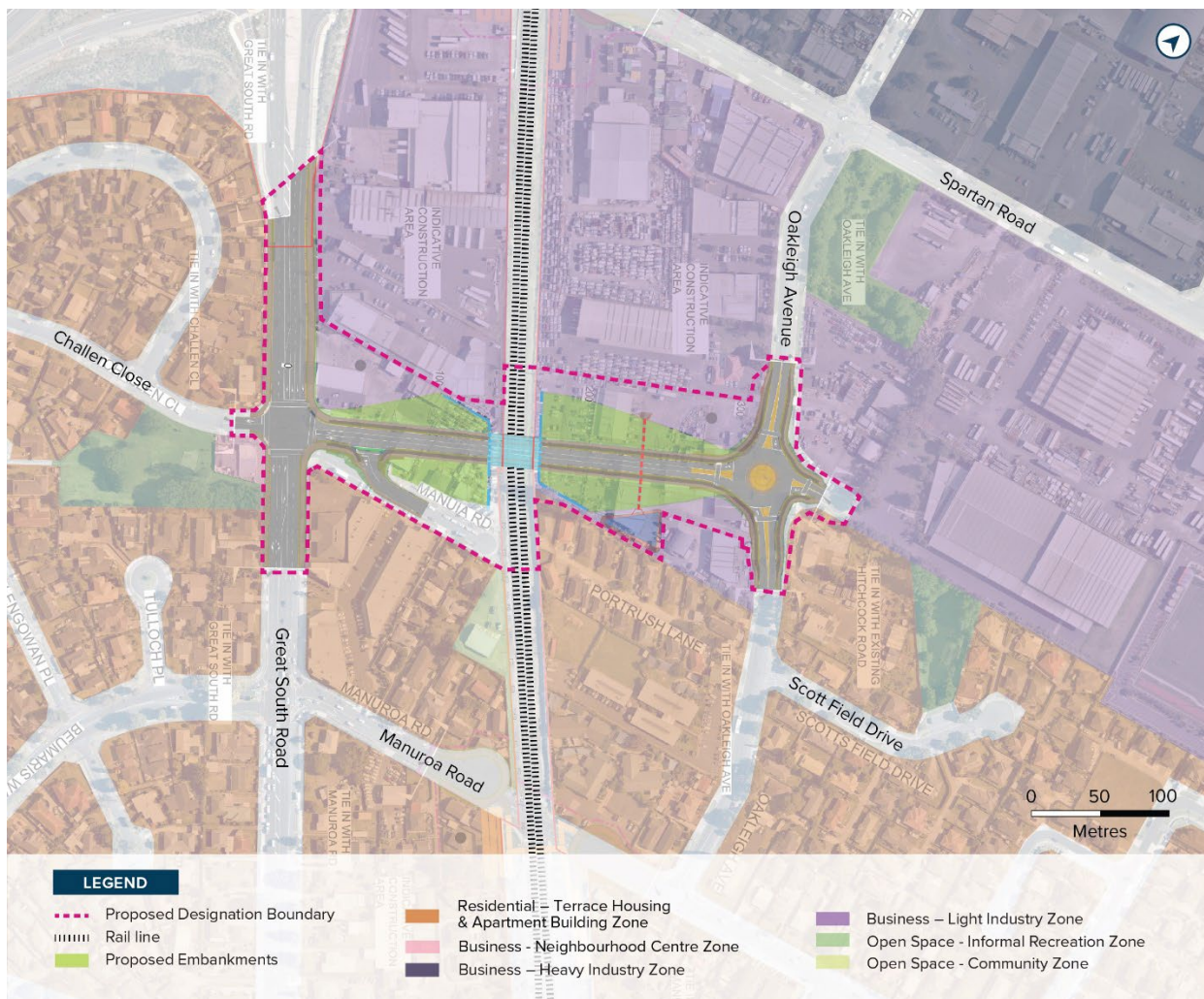


Figure 7: Likely Future Environment – Manuia Road project area

## 6.3 Urban design evaluation – Manuia Road

The evaluation in Table 9 below considers urban design commentary specific to the proposed Manuia Road project area not discussed above regarding the overall TLC. In addition, Figure 8 below illustrates the outcomes and opportunities that pertain to this project area.

Table 9: Urban Design Evaluation for Manuia Road

| Principle  | Application to Manuia Road   |
|--|--|
| <b>1.1</b><br><b>Support and enhance ecological corridors and biodiversity</b>                         | <ul style="list-style-type: none"> <li>There is opportunity for ecological improvements along the southern edge of the proposed bridge, particularly west of the rail line and the existing Manuia Road. These parcels are of a size and shape that could provide planting or open space opportunities</li> </ul>  |
| <b>1.2</b><br><b>Support water conservation and enhance water quality in a watershed</b>               | <ul style="list-style-type: none"> <li>A stormwater treatment device has been proposed on the eastern side of the Project area. Further refinement of the stormwater device's configuration and arrangement during future design stages is recommended to define the final form and interface with the surrounding land uses. For example, edges may be configured in a naturally shaped manner and fully integrated with existing natural drainage features and vegetation</li> </ul>   |
| <b>1.3</b><br><b>Minimise land disturbance, conserve resources and materials</b>                       | <ul style="list-style-type: none"> <li>The project alignment does not follow the existing corridor alignment or the existing urban structure. The proposed alignment bisects industrial land parcels resulting in land either side of the project area post construction. However, this alignment does provide a shorter and more direct connection between Great South Road and Oakleigh Avenue and broadly defines the boundary between industrial and residential land uses</li> <li>The proposed bridge shows embankments on either side. It is recommended that wrap back retaining walls are used where appropriate instead of embankments. This will minimise the extent of earthworks needed and allow the reintegration and redevelopment of land post construction to support adjacent land use</li> </ul> |
| <b>1.4</b><br><b>Adapt to a changing climate and respond to the microclimatic factors of each area</b> | <ul style="list-style-type: none"> <li>This evaluation against this Principle is broadly discussed above regarding the TLC overall network</li> </ul>  |
| <b>2.1</b><br><b>Identity and place</b>  | <ul style="list-style-type: none"> <li>This Principle is broadly discussed above regarding the TLC overall network. An example of an identity driver to be addressed within this project area is the local centre and Challen Close Park</li> </ul>  |
| <b>2.2</b><br><b>Respect culturally significant sites and landscapes</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>2.3</b><br><b>Adaptive corridors</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>2.4</b><br><b>Social cohesion</b>   | <ul style="list-style-type: none"> <li>To enable equitable local connectivity and cross corridor access further development at future design stages should be undertaken for crossing points. This includes:</li> </ul>  |

| Principle  | Application to Manuia Road  |
|--|---|
|  | <ul style="list-style-type: none"> <li>○ Prioritised active modes crossings at the intersection with Great South Road to enable connectivity around the local centre; and</li> <li>○ Prioritised active modes crossings at the proposed roundabout on Oakleigh Avenue. Use appropriate set back of crossing points to enable user safety and comfort</li> <li>● In consideration of potential CPTED issues and overshadowing, open space functions for the area between the proposed bridge and existing Manuia Road provides more opportunity than other land use functions such as industrial/residential development or parking. The size, shape and location of this parcel could provide an ideal community function to support future adjacent residential intensification</li> </ul>   |
| <p><b>2.5 Safety</b></p>   | <ul style="list-style-type: none"> <li>● At future design stages the land post construction on both sides of the rail line, including the proposed embankment areas would require CPTED considerations. Specifically, the existing Manuia Road which has limited street address and passive surveillance. Future design considerations should respond to and incorporate CPTED principles, including clear sightlines, appropriate planting, good levels of lighting and passive surveillance to mitigate entrapment zones</li> </ul>   |
| <p><b>3.1 Align corridors with density</b></p>                                   | <ul style="list-style-type: none"> <li>● Future design stages should consider the use of retaining walls where appropriate alongside the bridge (instead of embankments) to maximise future development within walkable distance to the station</li> </ul>  |
| <p><b>3.2 Corridor scaled to the surrounding context and urban structure</b></p> | <ul style="list-style-type: none"> <li>● Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <p><b>3.3 Facilitate an appropriate interface between place and movement</b></p> | <ul style="list-style-type: none"> <li>● Key focus areas within the Project area that require further resolution in future design stages to demonstrate the place function include:               <ul style="list-style-type: none"> <li>○ the access lane environment and how this interfaces with and connects to the adjacent residential block; and</li> <li>○ the retained interface between the proposed bridge and adjacent industrial and residential land, including any visual or landscape buffers and development controls such as setbacks</li> </ul> </li> <li>● A landscape response is recommended as an interface between the project area and the residential blocks to the south. These will ideally act as a buffer, providing visual screening, amenity and the softening of hardscape surfaces and materials.</li> <li>● The area between the proposed bridge and existing Manuia Road is not suitable for future development but has the potential for open space functions</li> </ul> |
| <p><b>4.1 Connect nodes</b></p>  | <ul style="list-style-type: none"> <li>● The project area connects the future Great South Road FTN and employment lands at the Takaanini industrial area</li> </ul>   |
| <p><b>4.2 Connect modes</b></p>  | <ul style="list-style-type: none"> <li>● Detailed development of active mode connections into the existing network on Great South Road and Oakleigh Avenue is required at future design stages</li> </ul>   |

| Principle  | Application to Manuia Road  |
|--|---|
| <b>4.3</b><br><b>Support access to employment and industry</b>                       | <ul style="list-style-type: none"> <li>The project area provides connectivity and efficient localised movement to the light and heavy industrial area to the north from Great South Road FTN</li> </ul>   |
| <b>4.4</b><br><b>Prioritise active modes and public transport</b>                    | <ul style="list-style-type: none"> <li>There are potential priority conflicts between active modes and the ongoing freight and industrial functions of the project area, especially at the intersections with Great South Road and Oakleigh Avenue. These should be further identified and addressed in future design stages of the Project</li> </ul>  |
| <b>4.5</b><br><b>Support inter-regional connections and strategic infrastructure</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>4.6</b><br><b>Support legible corridor function</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>5.1</b><br><b>Public transport directed and integrated into centres</b>           | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Manuia Road project area</li> </ul>   |
| <b>5.2 Strategic corridors as urban edges</b>  | <ul style="list-style-type: none"> <li>The project area is well aligned as a land use edge, predominately defining the boundary between the Takaanini industrial area to the north and residential land to the south. This is ideally located to minimise the impact and disturbance to existing urban form and separate industrial and residential land uses, while providing efficient connectivity for freight movement into the industrial area. However, the project area does intersect with a small area of industrial land use resulting in a smaller industrial parcel to the southeast. Further development of the design would need to consider: <ul style="list-style-type: none"> <li>Ensuring an appropriate interface and buffer between industrial and residential land uses, including but not limited to the minimum planted strip required by Auckland Council zoning policies;</li> <li>Provision of separated access for both the industrial and residential uses; and</li> <li>Orientation of future development to minimise visual impact</li> </ul> </li> <li>There is the opportunity for this isolated parcel of industrial land use to be reintegrated in the future as part of the wider residential block</li> </ul> |

**Figure 8: Manuia Road – Outcomes & Opportunities**



**OUTCOMES**

- 1 Active Mode Permeability** - Provide prioritised crossing points to enable equitable local accessibility and support connectivity to the wider network and around local centre.
- 2** - Prioritised active modes crossings. Use appropriate set back from intersection to enable user safety and comfort.
- 3 CPTED** - Resolve future function of residual areas to address CPTED principles that consider public/private interface.
- 4 Land Post Construction** - Redefine and integrate land post construction to support adjacent land use.
- 5 Interface** - Urban interface outcomes to provide an appropriate public private interface to adjacent residential block and any future high density redevelopment.
- 6** - Consider retaining walls instead of embankments to maximise future built form outcomes.
- 7 Scale** - Consider scale impacts of the bridge on surrounding context including overshadowing, building setbacks/interface, function of land post construction and landscape response.

**OPPORTUNITIES**

- 1** Opportunity to provide open space and planting. The size, shape and location of this parcel provides an ideal community function to support the adjacent residential block and any future high density redevelopment.
- 2** Opportunity for rezoning and consolidation as part of residential block, to define an urban edge, maximise built form outcomes and resolve land use interface conflicts.
- 3** Opportunity for future redevelopment of high density residential blocks. Consider retaining, built form setbacks, accessways and open space allocation.

**KEY**

- - - Proposed Designation Boundary
  - ↔ Active Modes Connection
  - ↔ Active Modes Crossing
  - ▬ Retaining Wall
  - ▬ Landscape Response Interface
  - ▬ Residential Interface
  - ▬ Industrial Interface
  - ▬ Industrial Land Post Construction
  - ▬ Bridge Structure
- Land Use - Zoning under Plan Change 78*
- Business - Local Centre
  - Terrace Housing & Apartment Building Zone
  - Light Industrial Zone
  - Open Space

## 7 Manuroa Road project area

### 7.1 Existing environment

The existing urban form is predominately low density residential dwellings. Several notable community facilities also interface with Manuroa Road. This includes the Takaanini Train Station with direct access to the existing park and ride facility alongside the rail line, and the scout hall zoned Open Space – Community. The area also includes a local centre at the intersection with Princess Street, which includes another childcare (as seen below in Figure 9).

The same cluster of community and ECE facilities noted in Manuia Road are located immediately northwest of the project area including the Takaanini Family Service centre, Early Learning Counties Manukau Manukau Takaanini, TopKids Manuroa childcare and BestStart Manuroa Road.



Figure 9: Existing Environment – Manuroa Road project area

### 7.2 Likely future environment

The surrounding context of this project area is anticipated to change in the future. The upzoning of the surrounding residential blocks under PC78 (see Figure 10), provides for future development with a

minimum of six storeys. The commercial and community facilities to the north of the project area are included within this high density residential zoning.

The project area provides active modes connectivity between Great South Road FTN and the Takaanini residential area and local centre. The proposed designation also overlaps with the Takaanini Train Station, connecting the crossing to the northern end of the existing park and ride which has the potential to be redeveloped in the future.

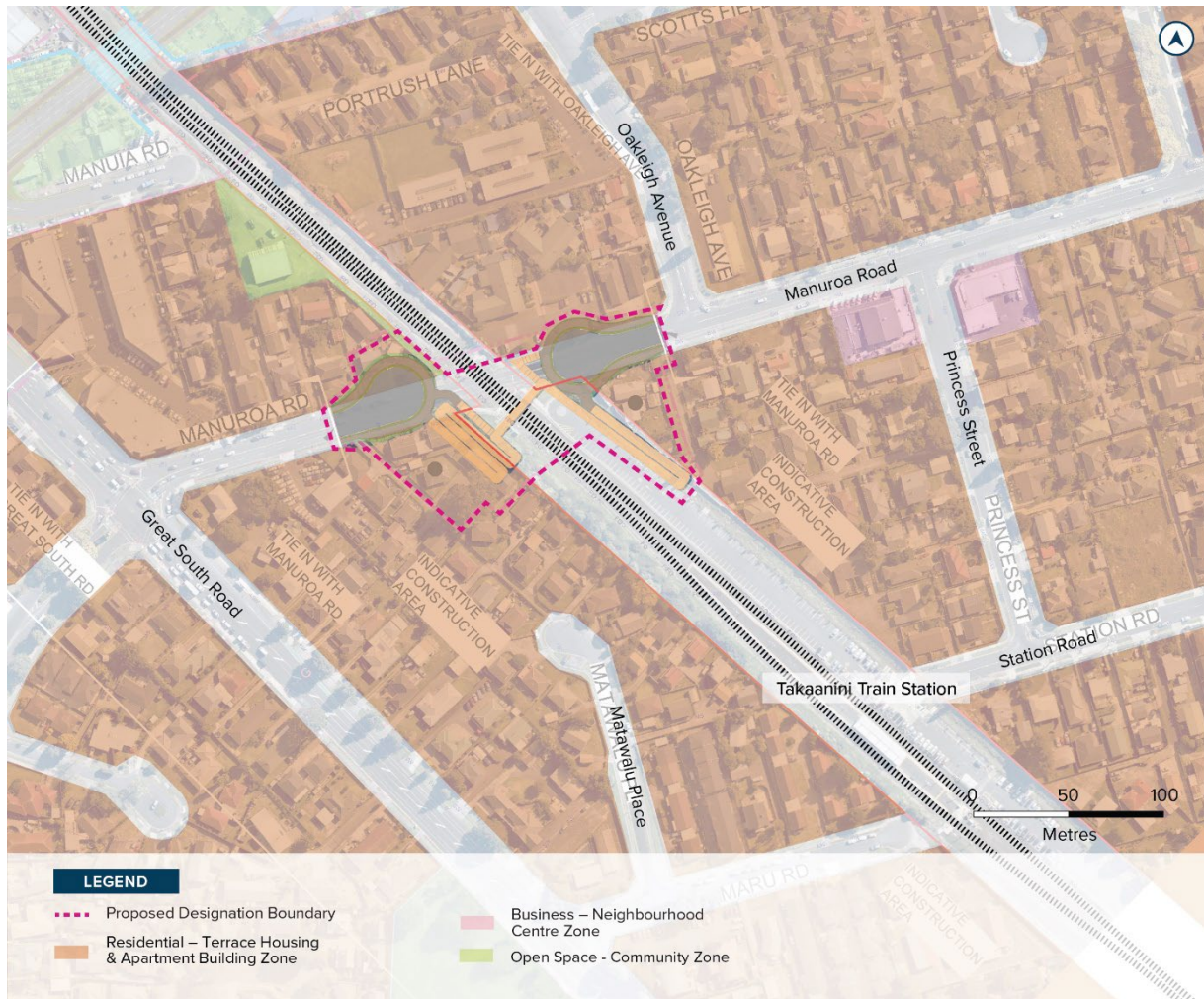


Figure 10: Likely Future Environment – Manuroa Road project area

### 7.3 Urban design evaluation – Manuroa Road

The evaluation in below Table 10 below considers urban design commentary specific to the proposed Manuroa Road project area not discussed above regarding the overall TLC. In addition, Figure 11 below illustrates the outcomes and opportunities that pertain to this project area.



**Table 10: Urban Design Evaluation for Manuroa Road**

| Principle  | Application to Manuroa Road  |
|--|--|
| <p><b>1.1</b><br/><b>Support and enhance ecological corridors and biodiversity</b></p>                         | <ul style="list-style-type: none"> <li>• There is opportunity to provide a landscape response that integrates with the existing tree line along the western boundary of the rail line</li> </ul>   |
| <p><b>1.2</b><br/><b>Support water conservation and enhance water quality in a watershed</b></p>               | <ul style="list-style-type: none"> <li>• There is an existing swale and culvert along the park and ride. At future design stages consider additional planting opportunities to enhance the swale and support better water quality</li> </ul>   |
| <p><b>1.3</b><br/><b>Minimise land disturbance, conserve resources and materials</b></p>                       | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>1.4</b><br/><b>Adapt to a changing climate and respond to the microclimatic factors of each area</b></p> | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.1</b><br/><b>Identity and place</b></p>  | <ul style="list-style-type: none"> <li>• Future design considerations for the project area should have an integrated identity with the Takaanini Train Station such as materiality, signage and other design elements</li> </ul>   |
| <p><b>2.2</b><br/><b>Respect culturally significant sites and landscapes</b></p>                               | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.3</b><br/><b>Adaptive corridors</b></p>  | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.4</b><br/><b>Social cohesion</b></p>   | <ul style="list-style-type: none"> <li>• As identified under the existing context in section 8.1 of this Report, there are many social and community functions that are within the immediate context of the Manuroa Road project area. The project area provides key east west connectivity for active modes users between these functions and to the Great South Road FTN</li> <li>• There is opportunity at future design stages to incorporate open space or community functions within the designation. This should be integrated with the future access arrangement for the project area</li> </ul> |
| <p><b>2.5</b><br/><b>Safety</b></p>  | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>3.1</b><br/><b>Align corridors with density</b></p>  | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |

| Principle  | Application to Manuroa Road   |
|--|---|
| <b>3.2</b><br><b>Corridor scaled to the surrounding context and urban structure</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>3.3</b><br><b>Facilitate an appropriate interface between place and movement</b>  | <ul style="list-style-type: none"> <li>Further consideration and refinement of the crossing configuration, including any stairs/ramps/elevators is needed. This is to ensure that it provides an appropriate public/private interface into the surrounding residential area, particularly where accessways border or overlook property boundaries</li> </ul>  |
| <b>4.1</b><br><b>Connect nodes</b>   | <ul style="list-style-type: none"> <li>The project area provides direct access to the northern end of the existing Takaanini Train Station park and ride. Future design stages should:               <ul style="list-style-type: none"> <li>provide legible connectivity for active mode users to and from the station. This could include appropriate wayfinding and signage, visual cues and clear sightlines; and</li> <li>consider interface opportunities that integrate the project area and any future masterplan for the station</li> </ul> </li> </ul> |
| <b>4.2</b><br><b>Connect modes</b>   | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>4.3</b><br><b>Support access to employment and industry</b>                       | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>4.4</b><br><b>Prioritise active modes and public transport</b>                    | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>4.5</b><br><b>Support inter-regional connections and strategic infrastructure</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>4.6</b><br><b>Support legible corridor function</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>5.1</b><br><b>Public transport directed and integrated into centres</b>           | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Manuroa Road project area</li> </ul>  |
| <b>5.2</b><br><b>Strategic corridors as urban edges</b>                              | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Manuroa Road project area</li> </ul>  |

**Figure 11: Manuroa Road – Outcomes & Opportunities**



**OUTCOMES**

**1 Active Mode Permeability**

- 1 - Re-evaluate and refine accessway arrangement and spatial scale to provide a shorter, more direct, convenient, and legible connection that supports equitable access.
- 2 - Provide clear, legible and direct active modes access to crossing from Manuroa Road. Consider sightlines, CPTED principles, visual cues and wayfinding to aid in legibility and perception of safety.
- 3 - Connect key community and ECE facilities on Manuroa Rd/Oakleigh Ave with active mode pathways.

- 4 - Provide direct active mode connection to Takaanini Train Station. Consider the use of appropriate wayfinding and signage, visual cues and clear sightlines to support legible connectivity.

- 5 **Interface** - Refine crossing configuration to provide appropriate public private interface to residential area, particularly where it overlooks or is adjacent to property boundaries.

- 6 **Land Post Construction** - Redefine and integrate land post construction to support future high density residential redevelopment.

- 7 **Landscape Response** - Consider a landscape response that provides an appropriate interface with residential area. This should contribute to visual screening, amenity, future built form offset and ecological outcomes.

- 8 **Identity** - Design expression of crossing to reflect local identity drivers including Takaanini Train Station. Design responses could be shown through accessway arrangement, signage materiality, and treatments.

**OPPORTUNITIES**

- 1 Opportunity to incorporate open space or community functions within the designation. This should be integrated with the future access arrangement.
- 2 Opportunity for restoration and enhancement of existing swale to support ecological outcomes.
- 3 Opportunity to provide a landscape response that integrates with the existing tree line along western boundary of the rail line.

**KEY**

- - - Proposed Designation Boundary
- Active Modes Crossing
- Active Modes Connection
- Landscape Response/Interface
- Residential Interface
- Land Use - Zoning under Plan Change 78
- Terrace Housing & Apartment Building Zone
- Business - Local Centre
- Open Space

## 8 Taka Street project area

### 8.1 Existing environment

The existing Taka Street sits within a residential setting surrounded by low density dwellings, connecting Great South Road and Kauri Heart Avenue, with an intersection with Takanini Road.

Several notable community facilities interface with the road. These include the following:

- Takaanini Train Station with access to the existing park and ride facility alongside the rail line;
- Amber Early Learning Centre;
- Takanini Care Centre;
- Te Kōhanga Reo o Humarie;
- A Church; and
- Takanini Reserve.

Close to the existing crossing along Takanini Road is the Takaanini Hall, the local community centre. This is a key community asset and spatial connector opportunity for active modes to the Takaanini Train Station (see Figure 12 below).



Figure 12: Existing Environment – Taka Street project area

## 8.2 Likely future environment

The surrounding context of this project area is predominantly residential which is anticipated to change in the future. The upzoning of the residential blocks under PC78, provides for future development with a minimum of six storeys. The likely future environment / zoning around the Taka Street Project area can be seen in Figure 13.

The project area is aligned with the existing at-grade Taka Street directly connecting Great South Road FTN with Takaanini School Road/Kauri Heart Avenue, existing active mode facilities and the Takaanini residential area. The designation overlaps with the Takaanini Train Station and Takaanini Reserve, however, removes direct access from Taka Street to these amenities. These will be accessed via the proposed access lanes.

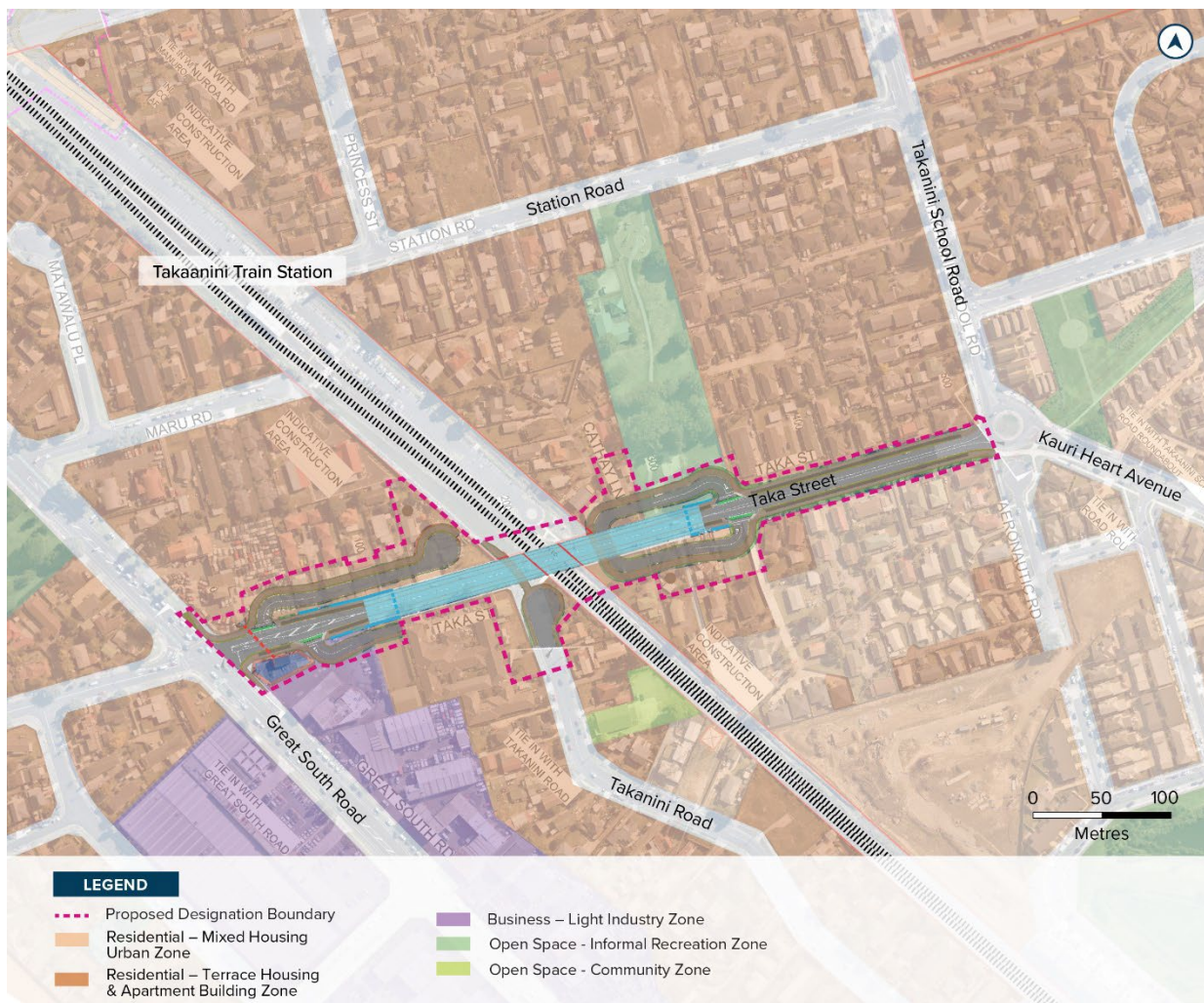


Figure 13: Likely Future Environment – Taka Street project area

## 8.3 Urban design evaluation – Taka Street

The evaluation in Table 11 below considers urban design commentary specific to the proposed Taka Street project area not discussed above regarding the overall TLC. In addition, Figure 14 below illustrates the outcomes and opportunities that pertain to this project area.

Table 11: Urban Design Evaluation for Taka Street

| Principle  | Application to Taka Street  |
|--|---|
| <b>1.1</b><br><b>Support and enhance ecological corridors and biodiversity</b>                         | <ul style="list-style-type: none"> <li>The proposed eastern access lane interfaces with the Takanini Reserve. In future design stages consider an appropriate landscape response that integrates with the reserve and identifies opportunities for restoration and enhancement</li> </ul>   |
| <b>1.2</b><br><b>Support water conservation and enhance water quality in a watershed</b>               | <ul style="list-style-type: none"> <li>A stormwater treatment device is proposed on the western intersection with Great South Road. Future design stages should demonstrate an appropriate interface and integration with the surrounding context and amenity</li> </ul>  |
| <b>1.3</b><br><b>Minimise land disturbance, conserve resources and materials</b>                       | <ul style="list-style-type: none"> <li>The project area demonstrates a generally efficient alignment utilising the existing at grade crossing and road reserve of Taka Street. However, there is still impact on the adjacent area resulting in land post construction that will require reintegration</li> </ul>   |
| <b>1.4</b><br><b>Adapt to a changing climate and respond to the microclimatic factors of each area</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.1</b><br><b>Identity and place</b>  | <ul style="list-style-type: none"> <li>The project area should respond to the existing and future amenity values of the Takaanini Train Station and Takanini Reserve.</li> <li>Future design considerations for the project area should have an integrated identity with the Takaanini Train Station and Takanini Reserve such as materiality, signage and other design elements.</li> </ul>                  |
| <b>2.2</b><br><b>Respect culturally significant sites and landscapes</b>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.3</b><br><b>Adaptive corridors</b>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>  |
| <b>2.4</b><br><b>Social cohesion</b>   | <ul style="list-style-type: none"> <li>The proposed crossing compromises direct accessibility to Takaanini Train Station and Takanini Reserve. Future design stages should provide clear, effective and legible connectivity for active modes between these two amenities and Taka Street. Consider appropriate wayfinding, signage and landscape design to support and strengthen this connection</li> </ul> |

| Principle   | Application to Taka Street   |
|---|--|
|   | <ul style="list-style-type: none"> <li>• Takaanini Hall is a key community asset. Consider the opportunity to connect Takaanini Hall to Takaanini Train Station through a clear and legible active modes path</li> <li>• There is opportunity to extend the Takanini Reserve and support the connection through to Takaanini Train Station through the reintegration of the land post construction on Cathay Lane</li> <li>• To enable equitable local connectivity and cross corridor access further development at future design stages should be undertaken for crossing points and potential midblock crossings. This includes: <ul style="list-style-type: none"> <li>○ Prioritised active modes crossings at intersections with Great South Road, Kauri Heart Avenue and adjoining access lanes; and</li> <li>○ Prioritised active modes mid-block crossing between proposed bridge and Kauri Heart Avenue to enable user safety and support a legible connection to/from Takaanini Train Station and reserve</li> </ul> </li> </ul> |
| <p><b>2.5</b><br/><b>Safety</b></p>   | <ul style="list-style-type: none"> <li>• Unresolved land post construction adjacent to the rail line and under the bridge could result in potential CPTED issues. Further resolution of the spatial arrangement is needed in future design stages in order to provide a legible and safe connection between Taka Street and Takaanini Train Station. Things to consider include: <ul style="list-style-type: none"> <li>○ Application of CPTED principles;</li> <li>○ Arrangement and position of retaining walls/abutments and planting to enable clear sightlines and reduce non-functional spaces;</li> <li>○ Public/private interface response; and</li> <li>○ Appropriate landscape response.</li> </ul> </li> <li>• There is the opportunity to extend vehicular access under the bridge by connecting the north western access lane to Takanini Road and the access lane loop to the Takaanini Train Station. This could support functionality and passive surveillance in these spaces</li> </ul>                                  |
| <p><b>3.1</b><br/><b>Align corridors with density</b></p>                                   | <ul style="list-style-type: none"> <li>• Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>3.2</b><br/><b>Corridor scaled to the surrounding context and urban structure</b></p> | <ul style="list-style-type: none"> <li>• The surrounding context of the project area which includes a neighbourhood park (Takanini Reserve), care home and local community amenities, is particularly sensitive to the scale of the crossing structure. Careful consideration is required to minimise the impact of the crossing and provide an appropriate transition to adjacent residential development. Considerations could include: <ul style="list-style-type: none"> <li>○ Size and scale of structural elements;</li> <li>○ Visual screening;</li> <li>○ Materiality; and</li> <li>○ Landscape response.</li> </ul> </li> </ul>   |
| <p><b>3.3</b><br/><b>Facilitate an appropriate interface between place and movement</b></p> | <ul style="list-style-type: none"> <li>• The project area interfaces with several different land uses, both public and private but predominantly residential. Future design stages need to consider an appropriate design response between the following: <ul style="list-style-type: none"> <li>○ The access lane and Takanini Reserve;</li> <li>○ Connection between the Takaanini Station and the Takanini Reserve;</li> <li>○ Access lanes and residential properties; and</li> <li>○ Access lanes and bridging structures</li> </ul> </li> </ul>  |

| Principle  | Application to Taka Street   |
|--|--|
|  | <ul style="list-style-type: none"> <li>It is recommended that a landscape response (discussed within the TLC overall network) is considered to address the interfaces identified above</li> <li>There is spatial allowance to provide an appropriate interface between the care home and bridge post construction. This could include a landscape response or reinstatement of their carparking/circulation space</li> </ul>                   |
| <b>4.1</b><br><b>Connect nodes</b>   | <ul style="list-style-type: none"> <li>The project area connects the future Great South Road FTN to key community amenities such as Takaanini Train Station, Takanini Reserve and future residential development</li> <li>There is opportunity to provide active modes connectivity between Takaanini Hall and Takaanini Train Station</li> </ul>  |
| <b>4.2</b><br><b>Connect modes</b>   | <ul style="list-style-type: none"> <li>Detailed development of active mode connections into the existing network on Great South Road and Takanini School Road/Kauri Heart Avenue is required at future design stages</li> </ul>  |
| <b>4.3</b><br><b>Support access to employment and industry</b>                       | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.4</b><br><b>Prioritise active modes and public transport</b>                    | <ul style="list-style-type: none"> <li>This project area supports the wider active mode network by providing connectivity to existing facilities on Great South Road and Kauri Heart Avenue, which are identified within the future network under AT's Future Connect.<sup>2</sup> It also provides a direct and legible connection through to Walter Strevens Drive also identified by Future Connect as a proposed cycle facility</li> </ul> |
| <b>4.5</b><br><b>Support inter-regional connections and strategic infrastructure</b> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <b>4.6</b><br><b>Support legible corridor function</b>                               | <ul style="list-style-type: none"> <li>The access lanes provide a gateway to the Takaanini Train Station and Takanini Reserve. Future design stages should consider the extension of the active modes pathways into these areas. Wayfinding and signage features will be important to support this connection as these destinations will no longer directly address Taka Street</li> </ul>   |
| <b>5.1</b><br><b>Public transport directed and integrated into centres</b>           | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Taka Street project area</li> </ul>  |
| <b>5.2 Strategic corridors as urban edges</b>  | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Taka Street project area</li> </ul>  |

<sup>2</sup> Auckland Transport, Future Connect GIS Viewer. <https://mahere.at.govt.nz/FutureConnect/>



**Figure 14: Taka Street – Outcomes & Opportunities**



**OUTCOMES**

- 1 Active Mode Permeability**
  - Provide clear, effective and legible connectivity for active modes between Takaanini Train Station, Takaanini Reserve and Taka Street. Consider appropriate wayfinding, signage and landscape design to support and strengthen these connections.
  - Provide prioritised active mode crossing points including mid block crossings at appropriate locations to enable equitable local access and connectivity to wider network.
- 2 Land Post Construction** - Redefine and integrate land post construction to support adjacent land use.
- 3 Interface**
  - Urban integration strategy to address interface of bridging structures, retaining walls, accessways, Takaanini Station /Reserve and residential land use.
  - Urban interface outcomes that provides pedestrian permeability and responds to public private interfaces and defines residual land parcels.
- 4 Scale** - Consider scale impacts of the bridge on surrounding residential context. Considerations could include size/scale of structural elements, visual screening, materiality and landscape response.

- 7 Identity** - Future design considerations for the crossing should have an integrated identity with the Takaanini Train Station and Takaanini Reserve for example materiality, signage and other design elements.
- 8 CPTED** - Resolve spatial arrangement and functionality of residual area around accessway and under bridge to address CPTED issues.
- 9 Landscape Response** - Provide a landscape response to form an appropriate interface with residential areas and Takaanini Reserve. Consider how this can contribute to visual screening, local identity and ecological outcomes.
- 10 Stormwater Response** - Further refinement of the stormwater device's configuration/arrangement to interface with surrounding land uses.

**OPPORTUNITIES**

- 1** Opportunity for vehicular access under bridge to support connectivity, functionality and passive surveillance.
- 2** Opportunity to extend Takaanini Reserve and support the connection to Takaanini Train Station through the reintegration of land post construction on Cathay Lane.
- 3** Opportunities for restoration/enhancement of Takaanini Reserve through landscape response.
- 4** Opportunity to connect key community amenities with active mode pathways.

**KEY**

- - - Proposed Designation Boundary
  - ↔ Active Modes Connection
  - ↔ Active Modes Crossing
  - ↔ Vehicular Connection
  - ▨ Landscape Response/Interface
  - ▨ Residential Interface
  - ▨ Industrial Interface
  - ▨ Residential Land Post Construction
  - ▨ Bridge Structure
  - ▨ Space Under Bridge
- Land Use - Zoning under Plan Change 78*
- ▨ Mixed Housing Urban Zone
  - ▨ Terrace Housing & Apartment Building Zone
  - ▨ Light Industrial Zone
  - ▨ Open Space

## 9 Walters Road project area

### 9.1 Existing environment

The existing Walters Road crossing connects Great South Road with Porchester Road and interfaces with the Takaanini Town Centre to the North. There is a ECE facility and water retention area also on the northern side that directly interface with the road (see Figure 15 below).



Figure 15: Existing Environment – Walters Road project area

### 9.2 Likely Future Environment

Current zoning does not indicate any significant change to the surrounding land use or density of this project area, remaining predominately local centre and industrial. As visible in Figure 16, the residential zone on the eastern side of the rail line is outside of a walkable catchment to a rapid transit station and therefore has not been identified as potential high density development of six storey's or more. However, under the MDRS there is still capacity for intensification in the future for up to three storeys.

The project area is aligned to the existing at-grade Walters Road, connecting Great South Road and Porchester Road FTN's as well as the Takaanini Town Centre to the north.

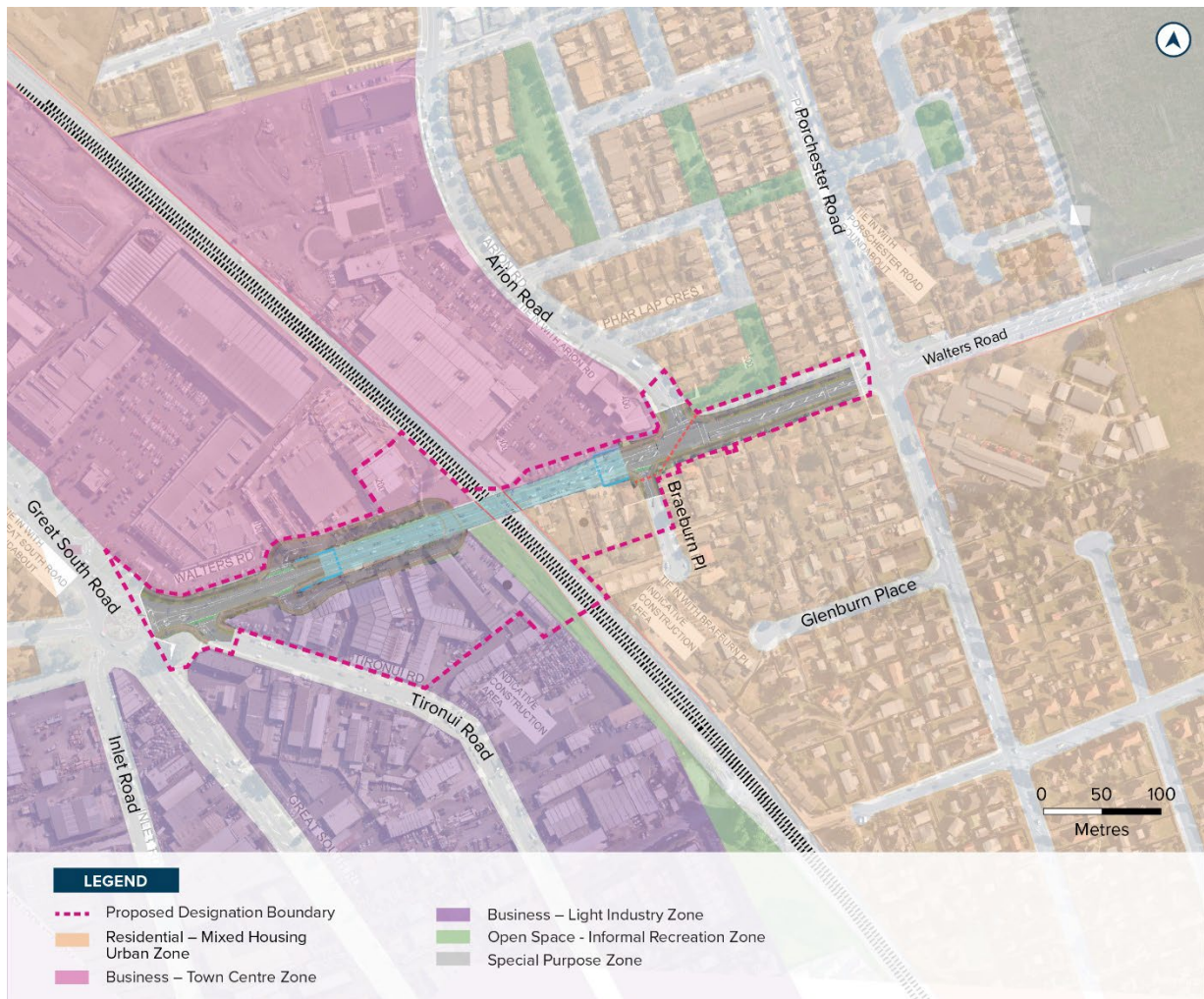


Figure 16: Likely Future Environment – Walters Road project area

### 9.3 Urban Design Evaluation – Walters Road

The evaluation in Table 12 below considers urban design commentary specific to the proposed Walters Road project area not discussed above regarding the overall TLC. In addition, Figure 17 below illustrates the outcomes and opportunities that pertain to this project area.

Table 12: Urban Design Evaluation for Walters Road

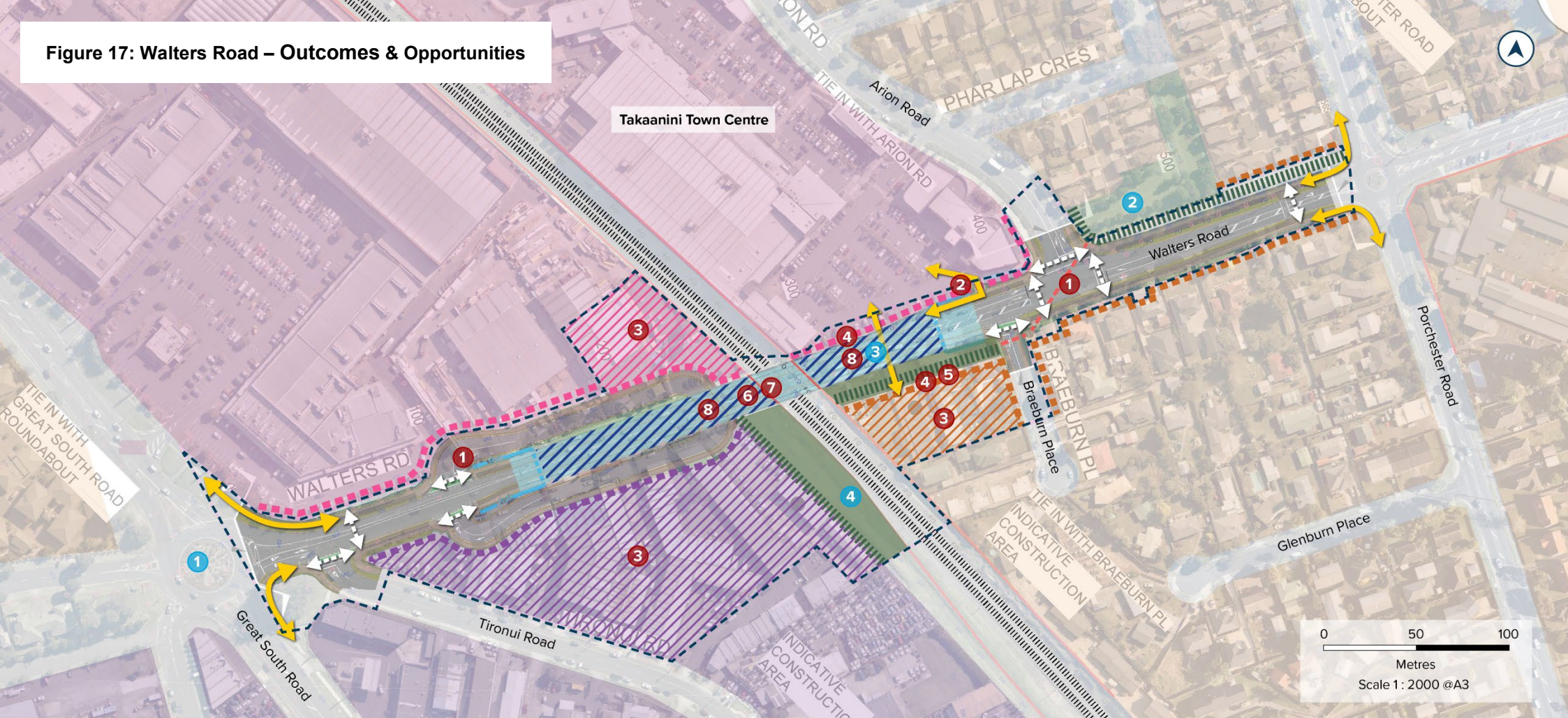
| Principle  | Application to Walters Road   |
|--|---|
| <p>1.1</p> <p><b>Support and enhance ecological corridors and biodiversity</b></p> | <ul style="list-style-type: none"> <li>There is opportunity to provide a landscape response that integrates with the existing open space along the western boundary of the rail line</li> </ul> |

| Principle   | Application to Walters Road  |
|---|--|
| <p><b>1.2</b><br/>Support water conservation and enhance water quality in a watershed</p>               | <ul style="list-style-type: none"> <li>The project area interfaces with open space on the corner of Arion Road. There is opportunity here for an integrated stormwater strategy and enhancement of the existing open space</li> </ul>  |
| <p><b>1.3</b><br/>Minimise land disturbance, conserve resources and materials</p>                       | <ul style="list-style-type: none"> <li>The project area demonstrates a generally efficient alignment accommodating the bridge within the existing road reserve of Walters Road. However, the project area affects a number of large industrial land parcels resulting in land post construction of a significant size and shape. Future reintegration is required to support redevelopment</li> </ul>  |
| <p><b>1.4</b><br/>Adapt to a changing climate and respond to the microclimatic factors of each area</p> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.1</b><br/>Identity and place</p>  | <ul style="list-style-type: none"> <li>The project area should address the existing and future amenity values and urban space qualities of the Takaanini Town Centre. Opportunities should include design elements such as:                             <ul style="list-style-type: none"> <li>Appropriate planting;</li> <li>Wayfinding and signage; and</li> <li>Materiality that reflects the town centre qualities</li> </ul> </li> </ul>  |
| <p><b>2.2</b><br/>Respect culturally significant sites and landscapes</p>                               | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.3</b><br/>Adaptive corridors</p>  | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>2.4</b><br/>Social cohesion</p>   | <ul style="list-style-type: none"> <li>The proposed crossing compromises direct accessibility to the Takaanini Town Centre from Walters Road. Future design stages should consider how to provide connectivity for active modes to the Town Centre. There is opportunity to provide an active modes ramp along the north side of the crossing</li> <li>There is opportunity to extend the Takaanini Centre public realm into the space beneath the proposed bridge structure. This could provide north-south connectivity to the residential area</li> <li>To enable equitable local connectivity and cross corridor access further development at future design stages should be undertaken for crossing points and potential midblock crossings. This includes:                             <ul style="list-style-type: none"> <li>Prioritised active modes crossing at Great South Road intersection to enable connectivity to the active mode network. Ensure appropriate setback of crossing points to maintain user safety;</li> <li>Prioritised crossing points at proposed access lanes and across Braeburn Place; and</li> <li>Prioritised crossing points at Arion Road</li> </ul> </li> </ul> |

| Principle   | Application to Walters Road  |
|---|--|
| <p><b>2.5</b><br/><b>Safety</b></p>   | <ul style="list-style-type: none"> <li>Unresolved land post construction adjacent to the rail line and under the bridge could result in potential CPTED issues. Further resolution of the spatial arrangement is needed in future design stages in order to provide a legible and safe connection around the local centre and industrial zone. The design response must consider CPTED principles</li> </ul>   |
| <p><b>3.1</b><br/><b>Align corridors with density</b></p>                                   | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>3.2</b><br/><b>Corridor scaled to the surrounding context and urban structure</b></p> | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |
| <p><b>3.3</b><br/><b>Facilitate an appropriate interface between place and movement</b></p> | <ul style="list-style-type: none"> <li>Key interface considerations for this project area are the Takaanini Town Centre and residential development between Arion Road and the rail line. Future design stages should address how the bridge interfaces appropriately with these areas in particular the provision of active edge permeability</li> </ul>  |
| <p><b>4.1</b><br/><b>Connect nodes</b></p>  | <ul style="list-style-type: none"> <li>The project area forms a direct connection between the Great South Road and Porchester road FTN's as well as Takaanini Town Centre. It forms a key east/west link in the wider active mode network</li> </ul>   |
| <p><b>4.2</b><br/><b>Connect modes</b></p>  | <ul style="list-style-type: none"> <li>Detailed development of active mode connections into the existing network on Great South Road and Porchester Road is required at future design stages</li> </ul>  |
| <p><b>4.3</b><br/><b>Support access to employment and industry</b></p>                      | <ul style="list-style-type: none"> <li>The project area provides connectivity and efficient localised movement to the Takaanini Centre providing access to both sides of the rail line including to the light industrial area to the south-east</li> </ul>   |
| <p><b>4.4</b><br/><b>Prioritise active modes and public transport</b></p>                   | <ul style="list-style-type: none"> <li>The project area supports connectivity and strengthens the wider network of active modes and public transport. This is reinforced by AT's future connect which identifies Walters Road as a major/primary route in the active modes network</li> <li>Further development of safe and prioritised active mode crossings at the Great South Road intersection and connection into the wider network is needed. Intersection design, including appropriate setbacks and locations, require careful consideration to minimise conflict between modes</li> <li>Future design stages should include north south crossings at the Arion Road intersection</li> </ul> |
| <p><b>4.5</b><br/><b>Support inter-regional connections and</b></p>                         | <ul style="list-style-type: none"> <li>Refer to Table 7: Common urban design matters in relation to this design principle</li> </ul>   |

| Principle  | Application to Walters Road   |
|--|---|
| <b>strategic infrastructure</b>                                  |   |
| <b>4.6 Support legible corridor function</b>                     | <ul style="list-style-type: none"> <li>The proposed Crossing compromises direct accessibility to the Takaanini Town Centre from Walters Road. Future design stages should consider how to provide connectivity for active modes to the Town Centre. There is also opportunity to provide an active modes ramp along the north side of the crossing</li> </ul> |
| <b>5.1 Public transport directed and integrated into centres</b> | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Walters Road Crossing</li> </ul>  |
| <b>5.2 Strategic corridors as urban edges</b>                    | <ul style="list-style-type: none"> <li>This principle is not directly relevant to the Walters Road Crossing</li> </ul>  |

Figure 17: Walters Road – Outcomes & Opportunities



**OUTCOMES**

- 1 Active Mode Permeability**
  - Provide prioritised active mode crossing points at accessways and intersections to enable equitable local accessibility and support connectivity with 'major/primary' role in wider active modes network.
  - Integrated urban edge response with the proposed Takaanini centre to enable active edge permeability. Consider how to provide active modes connectivity and accessibility into the Town Centre from Walters Road.
- 2 Land Post Construction** - Redefine and integrate land post construction to support adjacent land use.
- 3 Interface**
  - Urban integration strategy to address interface with Takaanini Town Centre and potential residential redevelopment.
  - Urban interface outcomes that provides pedestrian permeability, responds to public private interfaces and defines land post construction.
- 4 Scale** - Consider scale impacts of the bridge on surrounding context including overshadowing, building offsets/interface, space function of land post construction and landscape response.
- 7 Identity** - Address the existing and future amenity values and urban space qualities of the Takaanini Town Centre. Consider design elements such as appropriate planting, wayfinding and signage and materiality that reflects the town centre qualities.
- 8 CPTED** - Resolve spatial arrangement and functionality of residual land around accessway and under bridge to address CPTED issues.

**OPPORTUNITIES**

- 1** Opportunity for further development of safe and prioritised active mode crossings at Great South Road intersection and connection into the wider network. Crossing design including appropriate setbacks and locations needs careful consideration to minimise conflict between modes.
- 2** Opportunity to form integrated stormwater strategy and enhancement of the existing open space.
- 3** Opportunity to extend Takaanini Centre public realm and provide north-south connectivity to residential area. Future design stages should incorporate CPTED principles.
- 4** Opportunity to provide a landscape response that integrates with the existing open space along the western boundary of the rail line.

**KEY**

- - - Proposed Designation Boundary
  - ↔ Active Modes Connection
  - ↔ Active Modes Crossing
  - ▨ Landscape Response/Interface
  - ▨ Centre Interface
  - ▨ Residential Interface
  - ▨ Industrial Interface
  - ▨ Space Under Bridge
  - ▨ Centre Land Post Construction
  - ▨ Residential Land Post Construction
  - ▨ Industrial Land Post Construction
  - ▨ Bridge Structure
- Land Use*
- ▨ Business - Town Centre
  - ▨ Mixed Housing Urban Zone
  - ▨ Light Industrial Zone
  - ▨ Open Space

# Appendix A

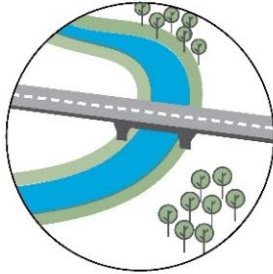
## Design Framework Principles



# 1 Appendix A - Design Framework Principles

The adopted Design Framework principles, outcomes and measures are summarised here for reference and have been extracted from the full Te Tupu Ngātahi Design Framework.

# ENVIRONMENT



## 1.1 Support and enhance ecological corridors and biodiversity

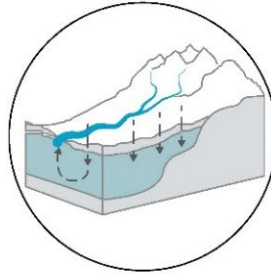
In the placement and design of movement corridors mitigate the effects on or enhance existing ecological corridors.

### Outcome:

- The preservation of the biosphere, continuity of natural systems (at a range of scales) and contribution to climate change mitigation through emissions uptake.
- Contribution to the legibility of an area, open space corridors for movement and community use and increased community connection to natural habitats.
- Supports and rehabilitates the natural landscape.

### Measure:

- Continuity/ severance of ecological corridors and enhanced biodiversity.
- Protection and enhancement of significant ecological areas (SEAs).



## 1.2 Support water conservation and enhance water quality in a watershed

Take into account and work with the existing watershed and aquifers as part of a whole system.

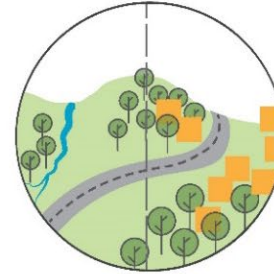
It is important that the mauri of waterways is restored, maintained and preserved for future generations. Connection to the Māori world view is described in the Te Aranga Principles - Mauri Tu: Environmental Health

### Outcome:

- Use of natural systems to support design outcomes, reduces hard engineering solutions and thereby carbon emissions.
- Supports natural water cycles that the biosphere and communities depend on.
- Reduces the cost of water quality treatment.
- Supports and restores the coastal landscape.

### Measure:

- Continuity/ severance of watershed.
- Allocation of land area for water quality treatment.
- Water quality treatment systems - swales, rain gardens, bioswales and wetlands are to be located within the corridor and not reliant on out of corridor treatment



## 1.3 Minimise land disturbance, conserve resources and materials

Respect the existing topography, landforms and urban structure in the placement of strategic corridors. Minimise the quantity of hard engineering materials required. Minimise, mitigate any adverse effects of activities on the environment.

Landforms and built heritage including movement networks can embody a history and create a distinctive sense of place. They help to provide an understanding and connection to the former natural and cultural history.

Connection to the Māori world view is described in the Te Aranga Principles - Tohu: The wider cultural landscape

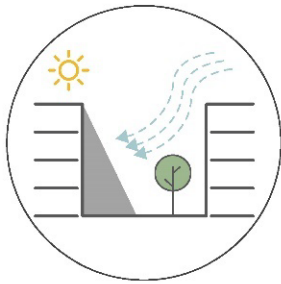
### Outcome:

- Reduces carbon emissions, waste of resources and impact on the biosphere.
- Protection of elite soils that support food production.

### Measure:

- Works with/ against land, topography or urban structure.
- Utilisation of existing corridors to minimise land disturbance.

# SOCIAL



## 1.4 Adapt to a changing climate and respond to the microclimatic factors of each area

Design for predicted future regional climatic impacts in the corridor location. Consider the positive contribution that the orientation of transport corridors can make to the local climatic environment of future places and streets.

### Outcome:

- Long term planning in regard to climate change such as sustainable management of resources and development and adoption of renewable energy.
- Maintains key corridors and infrastructure resilience.
- Creates a streetscape environment that considers the quality of the experience for people. Supports and encourages foot traffic to local destinations.

### Measure:

- Corridor provides for active modes and public transport options to support modal shift and reduce climate change impacts.
- Consideration of future flood levels.
- Responds to the microclimatic conditions and characteristics of the area.
- Accommodates amenity measures such as space for shade, trees, wind protection, orientation of connections.



## 2.1 Identity and place

The identity or spirit of place is generally acknowledged as the unique amalgam of the inherent built, natural and cultural qualities of a place.

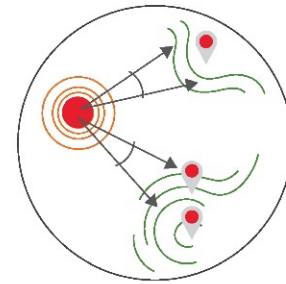
Responding to identity in the location and type of new corridors can provide a sense of continuity and contribute to our collective memory.

### Outcome:

- Supports social cohesion, sense of belonging and pride in an area through clear connection to history and identity of a place.
- Supports outstanding natural landscapes and features.

### Measure:

- Considers, respects and/or enhances the established identity/ form/ layout of a place.
- Preserves the amenity values and quality of a place.
- Responds to the underlying topography and natural characteristics of a place.
- Contributes to the placemaking drivers of its context.



## 2.2 Respect culturally significant sites and landscapes

Acknowledge significant sites and features in the layout of movement corridors including ridgelines or horizons.

Protecting or featuring these vistas or landmarks acknowledges the wider cultural or natural landscape and provides context and orientation for people who are either moving through or living within an area.

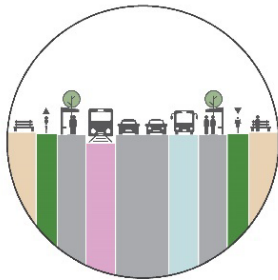
Connection to the Māori world view is described in the Te Aranga Principles - Tohu: The wider cultural landscape.

### Outcome:

- Supports the cultural context of places.

### Measure:

- Location of strategic corridor considers, respects and/or enhances significant sites and features.
- Establishes or acknowledges viewshafts and terminating vistas.



### 2.3 Adaptive corridors

Corridors should demonstrate flexibility to respond to changes in their function and physical interfaces.

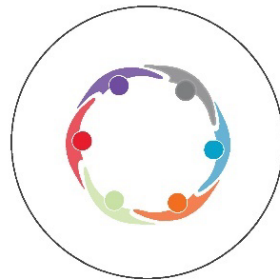
Consider an adaptive approach in the way strategic corridors are designed to be able to respond to changes in land use, the way we move around or utilise technology over time.

#### Outcome:

- Look to preserve, repurpose existing corridors over time to support long term whole of life beneficial use.
- Reduce the need to update and replace corridors, saving emissions and materials
- Minimise social disruption.
- Minimise significant and permanent engineering interventions/solutions.

#### Measure:

- Utilisation and adoption of existing corridors.
- Corridor configuration that does not preclude active modes or public transport.
- Accommodate variations and future changes in noise levels generated by corridor function.
- Provision of space function for non transport functions such as ecological diversity, water management and recreation.



### 2.4 Social cohesion

Provide clear, effective and legible connectivity between community and social functions.

#### Outcome:

- Deliver a positive contribution to the sense of belonging and participation, as well as community resilience.
- Establish and support a positive spatial relationship to the grain of future development.
- Supports the creation of spaces where people can seamlessly connect.
- Support modal shift to allow a diversity of choices to more of the population.

#### Measure:

- Address potential severance issues between areas through the network layout and providing universal access.
- Avoid isolated or fragmented areas of Future Urban Zones.
- Provision of modal choices.
- Provides connectivity and equitable access to community facilities and open spaces.



### 2.5 Safe corridors

Provide a safe and convenient network of routes accessible to people of all ages and abilities.

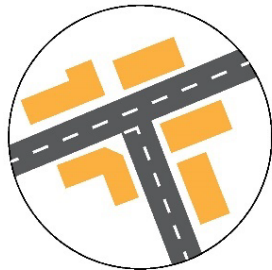
#### Outcome:

- Supporting a greater level of movement that promotes a sense of personal safety.
- Provide safe crossings for people crossing roads and railways.
- Illustrates the universal design approach and accessibility in to all parts of user journeys.
- Reduce deaths and injuries on the road network.

#### Measure:

- Support personal safety in the environment (CPTED) in the layout or colocation of different modes/ land uses.
- Clear and legible mixed modal zones.
- Grade separated crossings for pedestrians and cyclists.
- Corridor configuration that supports safe pedestrian environments.

# BUILT FORM



### 3.1 Align corridors with density

Locate stations/stops and corridors within walking distance of higher density development to facilitate modal shift, support commercial and mixed use centres and contribute to vibrant, active urban environments.

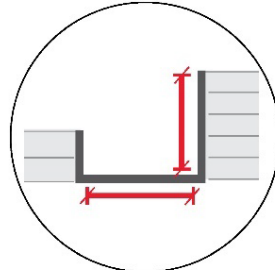
Density (and a diversity of housing choices) gives people the opportunity to live in neighbourhoods that meet their lifestyle preferences and economic means. Residents should be provided with the choice to live in amenity-rich neighbourhoods where they are a short walk or bike ride away from shopping, parks, schools and cafés and are encouraged to take public transport to work and regional destinations.

#### Outcome:

- Provides opportunity for greater housing diversity and choice.
- Reduces car dependency and emissions, linear servicing infrastructure and climate change impacts.
- Align appropriate corridor typologies with public private interfaces that support density.

#### Measure:

- Corridors aligned/ not aligned to areas of higher density.
- Corridors located near/through interchanges and centres.



### 3.2 Corridor scaled to the surrounding context and urban structure

Align the speed, type and scale of transport corridors and infrastructure with the environment that it moves through (appropriate scale to the context).

Corridor configuration should respond to contextual drivers and support different functional requirements at a regional, sub-regional and neighbourhood scale. Corridor functions should support efficient movement, higher density living, mixed mode travel and placemaking.

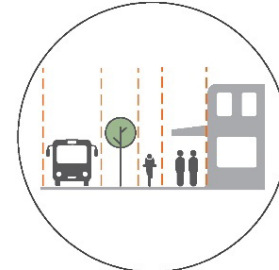
Refer to Locational Principles in Appendix E.

#### Outcome:

- Corridors should demonstrate support for economic outcomes through efficient regional movement.
- Corridors should enable mass rapid transit and multi modal options that contribute to climate change mitigation.
- Maintain or improve amenity of the environment through which the corridor passes.
- Corridor should minimise impacts of widening in relation to existing land use patterns.

#### Measure:

- Scale is/ isn't appropriate to the surrounding context.
- Corridor arrangement supports adjacent land use and provides an appropriate interface.



### 3.3 Facilitate an appropriate interface between place and movement

Facilitate the opportunity for place as well as movement in corridors (people oriented streets)

Corridors should deliver street typologies scaled to the adjoining land use that provide a clear movement function as well as an appropriate interface to built form.

Refer to Locational Principles Appendix E.

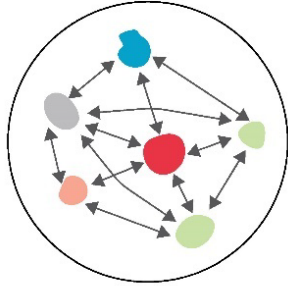
#### Outcome:

- Social cohesion and economic benefit for local businesses.
- Opportunity for people oriented streets, potential for streets as public spaces.
- Supports connectivity and interface to open spaces and public spaces.

#### Measure:

- Supports appropriate public private interfaces.
- Appropriate allocation of street space between competing uses.
- Provides connectivity at a fine grain (pedestrian) level
- Appropriate and positive influence on future urban form.

# MOVEMENT



## 4.1 Connect nodes

**Provide tangible connectivity between identified activity nodes.**

Corridors should provide direct and legible connections between key destinations.

Corridors should consider connectivity for all modes (walking, cycling, public transport, freight transport and private vehicle). Connect between areas as well as through central corridors.

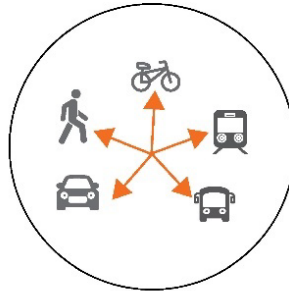
Corridors should accommodate any identified cross connections between nodes outside of strategic corridors.

**Outcome:**

- Provides community connectivity, mobility and choice.
- Reduces car dependency and emissions as well as climate change impacts.
- Reduces travel times between destinations.

**Measure:**

- Provides clear and tangible connectivity between complementary destinations.



## 4.2 Connect modes

**Provide for choice in travel and the ability to connect at interchanges between modes.**

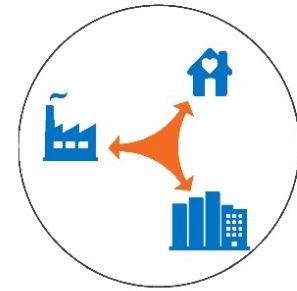
Provide access to multiple travel modes. Corridors can contribute to outcomes for a wider cross section of the community (including elderly, children and mobility-impaired users) when they support safe, comfortable and attractive multi-modal transport for all users.

**Outcome:**

- Provides community connectivity, mobility and choice.
- Provides economic benefit at interchanges.
- Reduces car dependency and emissions as well as climate change impacts.

**Measure:**

- Modal connections and interchange is/ isn't accommodated.
- Transition between modes is easy, convenient, safe and smooth,
- Clear and legible interchanges.



## 4.3 Support access to employment and industry

**Align the corridor location and typology to provide direct and efficient access to areas of employment and industry.**

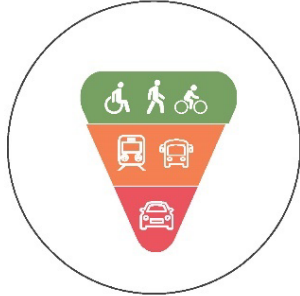
**Outcome:**

- Supports the efficient movement of resources.
- Provision of modal choices to enable equitable access to areas of employment and industry.

Refer to Locational Principles in Appendix E.

**Measure:**

- Provides tangible connectivity to areas of employment and industry.



#### 4.4 Prioritise active modes and public transport

Provision of quality active mode corridors and dedicated public transport corridors to enable a modal shift away from private vehicle use.

Dedicated and connected active mode networks provide choices for people walking and cycling, reduces land consumption, and improves overall network efficiency.

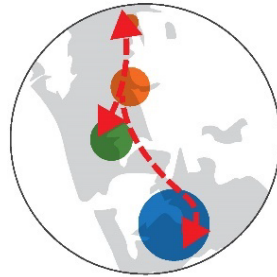
Dedicated and efficient public transport corridors provide modal choice to a larger number of users and reduces the impact on the environment.

**Outcome:**

- Supports community connectivity, mobility and choice.
- Reduction of car dependency and emissions, reduces climate change impacts.
- Supporting healthy lifestyles of the community by replacing short motor vehicle trips by alternative modes.
- Reduce environmental impact of travel.

**Measure:**

- Connectivity and quality of active paths.
- Prioritised network for public transport.



#### 4.5 Support inter-regional connections and strategic infrastructure

Consider the location and alignment of significant movement corridors and placement of infrastructure (power, waste water, water) to the network.

Locate significant infrastructure in appropriate locations and away from primarily residential areas.

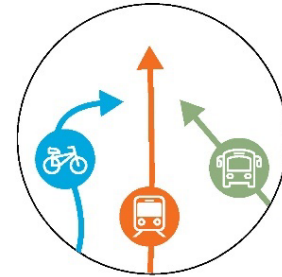
Identify corridor hierarchies and functions to allow for differentiation between inter-regional trips and local trips.

**Outcome:**

- Supports strategic infrastructure planning.
- Considers a coordinated approach between freight and passenger rail services.

**Measure:**

- Alignment of significant infrastructure along strategic corridors.
- Provide direct connections to rail, port and airport.
- Minimise the number of local trip movements from inter-regional routes.



#### 4.6 Support legible corridor function

Consider how areas can be clearly navigated and understood by users moving from place to place.

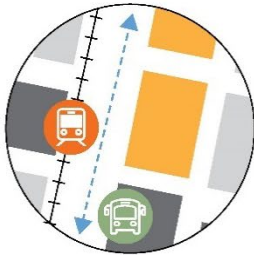
**Outcome:**

- Corridors designed and developed to suit the corridor function.
- Supports community connectivity, mobility and choice.

**Measure:**

- Provides clear gateways into areas.
- Provides direct connections between destinations.
- Corridor configuration provides clear modal interactions and priorities.

## LAND USE



### 5.1 Public transport directed and integrated into centres

Locate rapid transit interchanges within centres (local, town and metro) to support a mix of uses and provide modal choice to a larger number of users.

Bringing public transport into a centre that has a higher level of density will cater for a greater number of users as well as providing accessible and viable alternatives to private vehicles.

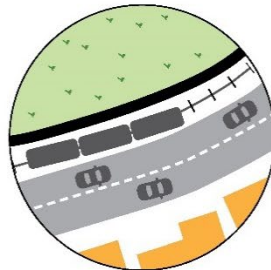
Refer to Locational Principles in Appendix E.

#### Outcome:

- Supports community connectivity, mobility and choice.
- Supports higher densities in and around interchanges and centres.
- Reduction of car dependency and emissions, reduces climate change impacts.

#### Measure:

- Public transport is/ isn't directed and integrated into centres.
- Interchanges are located in centres.
- Clear modal interactions at interchanges.



### 5.2 Strategic corridors as urban edges

Strategic corridors as potential definers of a land use edge.

Providing an edge that supports the containment of land use and restricts unwanted development outside of the identified urban areas.

#### Outcome:

- Supports connectivity but restricts unwanted development.
- Minimises land take, disturbance and biodiversity impacts.

#### Measure:

- Enables/ does not enable a land use edge.
- Provides appropriate corridor configuration with limited access.