TE TUPU NGĀTAHI
SUPPORTING GROWTH

Warkworth Urban Design Evaluation

May 2023

Version 1.0

WAKA KOTAHI
NZ TRANSPORT AGENCY

New Zealand Government

4. Document Status

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5. Revision Status

Version	Date	Reason for Issue
1.0	12/05/2023	Final for Lodgement

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9. Glossary of Defined Terms and Acronyms

Table 1: Glossary of defined terms and acronyms

Acronym/Term	Description
AEE	Assessment of Effects on the Environment report
AT	Auckland Transport
AUP:OP	Auckland Unitary Plan: Operative in Part
CEDF	Cultural and Environmental Design Framework
CPTED	Crime Prevention through Environmental Design
DBC	Detailed Business Case
FTN	Frequent Transit Network
MCA	Multi-Criteria Assessment
N/A	Not Applicable
NPS	National Policy Statement
NPS:UD	National Policy Statement on Urban Development
NOR	Notice of Requirement
NZ	New Zealand
NZUP	New Zealand Upgrade Programme
RLTP	Auckland Regional Land Transport Plan
RMA	Resource Management Act 1991
SH1	State Highway One
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Alliance
TDM	AT's Transport Design Manual
THAB	Terraced House and Apartment Building zone
ULDMP	Urban Landscape and Design Management Plan
Waka Kotahi	Waka Kotahi New Zealand Transport Agency

10. Executive Summary

This Urban Design Evaluation (UDE) supports the Notices of Requirement (NoRs) for the suite of projects in Warkworth (the Project) lodged by Waka Kotahi NZ Transport Agency (WK) and Auckland Transport (AT) as requiring authorities under the Resource Management Act 1991 (RMA). The notices of requirement propose eight new designations.

Table 2: Outline of NORs

Corridor	NOR	Description	Requiring Authority
Northern Public Transport Interchange + Park and Ride and Western Link - North	1	Construction of a public transport hub with associated facilities + park and ride facility (approximately 228 carparks) Construction of a four lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Woodcocks Road Upgrade (Western Section)	2	Upgrade of Woodcocks Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Existing State Highway 1 Upgrade - Southern	3	Upgrade of Sandspit Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Matakana Road Upgrade	4	Upgrade of Matakana Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Sandspit Road Upgrade	5	Upgrade of Sandspit Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Western Link South	6	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Sandspit Link	7	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Wider Western Link - Northern	8	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport

This UDE contains an evaluation section for each NOR which has been prepared based on the guidance and principles established in Te Tupu Ngātahi Design Framework (Design Framework). The UDE provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design opportunities should be considered in future design stages. These recommendations should 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 should be integrated within the relevant specialist conditions.

The recommendations are summarised as urban design outcomes sought and where additional urban design opportunities have been identified during the evaluation, they are also mapped for each NOR for consideration either by the requiring authorities or other parties at future stages of design and development of the Project. These opportunities are not however required to mitigate the anticipated urban design effects of the Projects.

11. 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 all NORs to further develop the urban design outcomes recommended as summarised under each NOR evaluation.

Details of the urban design recommendations are included under each NOR and are not repeated in this summary for brevity.

1. Introduction

The Warkworth Strategic and Local Package is comprised of eight projects which will be provided for by eight NORs as a single Assessment of Effects on the Environment (AEE) package and include:

- Urbanisation of existing corridors – Woodcocks Road (western section), Matakana Road, Sandspit Road, State Highway 1 (southern section)
- New arterial corridors – Wider Western Link (northern section), Sandspit Link, Western Link - South
    - New Northern Public Transport Hub + Park and Ride and Western Link – North

Figure 1-1: Overview of the Warkworth Strategic and local Package

2. Purpose and scope of this evaluation

This **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 Warkworth Strategic and Local Package (the Project).

This evaluation should be read alongside the AEE, which contains further details on the history and context of the Project. The AEE also contains a detailed description of works to be authorised within each NoR, and the typical 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 sections addressed for each project are outlined in Table 3: Evaluation Structure.

Table 3: Evaluation Structure

Sections	Location in document
Description of the Project	Page 6 - Project Description
Corridor form and function	Page 13 Corridor form and function
Corridor Design Context	Page 11 The Design Context
Existing and Likely future environment	Page 14 Existing and likely future environment
Summary of urban design evaluation and recommendations	Within each NOR section
Summary map of urban design outcomes and opportunities	Within each NOR section
Evaluation against Te Tupu Ngātahi Design Framework principles	

3. The Design Context

This evaluation which has been prepared for each of the NORs is based on the guidance and principles established in the Te Tupu Ngātahi programme wide document – *Te Tupu Ngātahi Design Framework (**Design Framework or Design Framework Principles** – refer to Appendix A)*

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 rather in terms of how they can contribute to the urban system as a whole.

There are twenty design principles that have been established (as part of the Design Framework) 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 Projects within the Te Tupu Ngātahi Supporting Growth Programme as they contribute to the understanding of the development of route options in terms of; 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
- 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 (NPS) on Urban Development, Government Policy Statement (GPS) on Land Transport, Medium Density Housing Standards (MDRS), NZ Transport Agency Bridging the Gap, Regional Land Transport Plan); and
- Local level (e.g. Auckland Plan 2050, Auckland Transport Alignment Project (ATAP), Auckland Transport Roads and Streets Framework, Transport Design Manual, Auckland Unitary Plan (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 design guidance was not available, the Design Framework included more detail, e.g. the approach to the location of rail, rapid transit and the role of active modes.

National Policy Statement on Urban Development 2020 (NPS:UD)

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 NPS:UD. 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 increased commercial and residential activity around:

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

This aligns with the Design Framework principle of increasing density in and around centres to create vibrant walkable/cyclable communities that support public transport, have compact urban forms, a strong sense of place and a community focal point.

Auckland Council

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;
- Regional Policy Statement B4: Natural Heritage (E38: Urban Subdivision);
- Chapter E38: Subdivision;
- Chapter H: Zones (including structure planned zones);
- Chapter M: Appendix 1 Structure plan guidelines.

The specific urban design commentary within the corridor evaluations (outlined in the sections below) 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 in the Design Framework.

The urban design commentary also refers to the Warkworth Structure Plan (June 2019) which sets out a pattern of land uses and the supporting infrastructure network for the Future Urban zoned land around Warkworth. The plan was been prepared in the context of the existing town of Warkworth and seeks to weave new development areas back into the fabric of the existing urban area.

The structure plan sets opportunities and constraints in and around the Future Urban zone. Some of the key high-level features of the Warkworth Structure Plan relevant to this evaluation include:

- Ecological and stormwater areas are set aside from any built urban development.
- The new residential areas across the Future Urban zone enable around 7,500 dwellings and offer a range of living types from spacious sections around the fringe to more intensive dwellings such as town houses and apartments around the new small centres and along public transport routes.
- Warkworth's local and rural character is protected through various measures including provisions to protect the bush-clad town centre backdrop by the Mahurangi River and retaining the Morrison's Heritage Orchard as a rural feature of the town.
- New employment areas are identified, comprising land for new industry (e.g. warehousing, manufacturing, wholesalers, repair services) and land for small centres (e.g. convenience retail,

local offices, restaurants/cafés). The existing Warkworth town centre by the Mahurangi River will remain as the focal point of the town.

The land uses are supported by infrastructure including:

- Prioritising active transport in Warkworth through a walking and cycling network providing connectivity to new and existing centres, employment areas, schools and public transport stations.
- A roading network including a potential southern interchange on Ara Tūhono – Pūhoi to Warkworth (south facing ramps only).
- A public transport network that connects with a bus station/interchange in Warkworth's southern Local Centre and a Park and Ride connected to the strategic network.

4. Project Description

The projects have been combined into one lodgment package (**Warkworth Strategic and Local Package**) which will be lodged with Auckland Council. The package is comprised of eight projects which will be provided for by eight NORs as a single Assessment of Effects on the Environment **(AEE)** package and include:

- Urbanisation of existing corridors within a predominantly urban environment – Woodcocks Road (western section), Matakana Road, Sandspit Road, State Highway 1 (southern section). This primarily involves the upgrade and widening of existing transport corridors to provide for a high-quality walking and cycling facilities and urban geometric standards.
- New arterial corridors to provide access to future growth areas – Wider Western Link (northern section), Sandspit Link, Western Link - South
- New Northern Public Transport Hub and Park and Ride and Western Link – North

The Project comprises eight NOR's including:

- Northern Public Transport Hub + Park and Ride and Western Link – North (NOR 1)
- Woodcocks Road Upgrade (NOR 2)
- State Highway 1 (Southern Section) Upgrade (NOR 3)
- Matakana Road Upgrade (NOR 4)
- Sandspit Road Upgrade (NOR 5)
- Western Link - South (NOR 6)
- Sandspit Link (NOR 7)
- Wider Western Link (Northern Section) (NOR 8)

12. Corridor form and function

Section 8 and 9 of the AEE outlines the key physical elements of the Project across each of the NOR sections and how the different elements of the Project will operate once the Project is implemented.

The design of the Project is commensurate with the 'route protection' phase of the Project, as such, only a concept level of design has been undertaken. The design will be further refined through subsequent phases of the Project and will be undertaken within the scope of the designation conditions and future resource consent conditions. The detailed design of the Project will be undertaken prior to construction and reflected in the Outline Plan(s) which will be submitted to Council as set out in s176A of the RMA.

Each NOR section is described in the AEE under the key feature headings:

- Public Transport
- Walking and Cycling Facilities;
- General Traffic;
- Access;
- Speed Environment;
- Signalised intersections; and
- Stormwater infrastructure.

13. Existing and likely future environment

Section 9 of the AEE outlines the key attributes of the existing and likely future environment of the Project across each of the NOR sections. Each section is described in the AEE under key features of:

Planning context and land use

- Current land use and urban form
- Current zoning
- Likely future zoning – Warkworth Structure Plan
- Overlays
- Controls
- Existing designations

Human environment

- Transport
- Historic heritage and archaeological values
- Community and recreational facilities
- Noise and vibration
- Areas of cultural value

Natural and physical environment

- Geology
- Hydrology and natural hazards, including watercourses
- Terrestrial ecology
- Topography and landscape context

14. Preparation for this evaluation

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

- Review of the Warkworth specialist briefing package, the Detailed Business Case (**DBC**) design drawings and the Te Tupu Ngātahi GIS viewer;
- A review of the statutory setting of the project and surrounding context;
- A review of the base map data such as contours and aerial photography;
- A detailed site visit including taking representative photographs along the route was undertaken on 23 June and again on 5 October 2022 by Ben Frost to understand the nature of the receiving environment and its physical and visual relationship to the surrounding environment, as well as the context, character and urban setting from the wider area.
- A site visit with Auckland Council representatives was undertaken on 21st February 2023 by Ben Frost prior to soft lodgement.

15. All Warkworth NoRs

16. Introduction

This section evaluates common or general urban design matters across all Warkworth NOR's against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where common urban design outcomes should be considered in future design stages. These recommendations could form the basis of an urban design specific designation condition. Where there is an overlap between urban design and other discipline outcomes ie. ecological, landscape, visual or water quality recommendations, these could be integrated in the designation conditions.

17. Urban design matters common to all NORs

Table 4: Common urban design matters

Principle	Explanation	Application common to all NORs
ENVIRONMENT		
1.1 **Support and enhance ecological corridors and biodiversity**	Mitigate the effects on or enhance existing ecological corridors through the placement and design of movement corridors	– It is noted that detailed water quality and detention / retention requirements for the corridor will be decided in the future consenting stage of the Project. – The proposed corridor and associated designation boundary provide spatial provisions (within the cross section and wider boundary) that have the potential to support ecological connectivity and biodiversity in the local environment by providing contiguous space for diverse planting responses. – Opportunities within the immediate landscape of the corridors to support and enhance indigenous biodiversity are detailed in the Warkworth Package: Assessment of Ecological Effects. – There are twelve water course bridge crossings proposed along the various corridors. All crossings should incorporate bridging structures to reinforce broader connectivity outcomes for ecology and water quality by minimising stream interruptions and ensuring a connected natural system. – Stream crossings where existing culverts are to be upgraded or lengthened will be improved so that fish passage is provided.
1.2 **Support water conservation and enhance water quality in a watershed**	Take into account and work with the existing watershed as part of a whole system.	– An Integrated Stormwater Strategy is proposed that identifies preferred treatment approaches within each corridor / interchange. This identifies a preference for the use of green infrastructure for new treatment devices across the corridor such as wetland ponds, linear treatment as well as the use and / or enhancement of existing public stormwater treatment ponds. – The proposed typical corridor cross sections and designation boundaries allows spatial provisions to provide natural drainage

Principle	Explanation	Application common to all NORs
		to stormwater raingardens to address water quality and reduce hard engineering solutions. – Further refinement of the wetland pond configuration and arrangements during the detailed design stage is recommended to define the wetland final form and interface with the surrounding land uses. For example, wetland edges may be configured in a naturally shaped manner and fully integrated with existing natural drainage features and vegetation – particularly adjacent the Mahurangi River and tributaries. – Future development and definition of the proposed stormwater treatment devices, swales and ponds is recommended to provide an appropriate interface with the surrounding context and amenity for the corridor. – Integrate amenity and recreational aspects into stormwater elements.
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.	– The proposed corridors demonstrate a generally efficient alignment in relation to existing property boundaries along each corridor / interchanges minimising land impacts and inefficient residual land portions. – The proposed corridor upgrades generally follow the vertical geometry of the existing corridor, minimising land disturbance. Further vertical integration adjacent to stream crossings and bridging structures should be developed at a detailed design stage to allow an appropriate transition and interface to adjacent built form. An assessment of natural landform modification and mitigation recommendations are outlined in the Warkworth Strategic and Local Package *of Landscape and Visual Effects.* – If practicable, opportunities should be explored at future detailed design stages to redefine and integrate residual land along the corridor frontage with the expected future land use function. – The proposed corridor cross section has the potential to impact tree and vegetation cover within the designation. An assessment of the potential losses and mitigation recommendations are outlined in the Warkworth Strategic and Local Package *of Arboricultural Effects and the* Warkworth Strategic and Local Package *of Landscape and Visual Effects,* however further definition and design of the corridor landscape should be developed in future design stages and should address how the proposed corridor landscape: ○ Responds to pedestrian amenity outcomes; ○ Provides replacement and augmented canopy shading to each corridor; ○ Mitigates urban heat island effects within the environment of each corridor; ○ Contributes to biodiversity values within the corridor; and ○ Responds to and improves landscape character and values within each corridor.

Principle	Explanation	Application common to all NORs
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 climate of future places and streets.	– The proposed corridor designs, including identified watercourse and stream crossings, adopt a vertical geometry that accommodates future stormwater events including the applied climate change factors as stated in Auckland Council Stormwater Code of Practice. – The proposed corridors provide space for street tree planting that, when delivered, will contribute to the amenity of the area by providing shade and microclimatic cooling qualities to demonstrate consideration of urban heat island effects in this future urbanized area. – Further definition and design of the corridor landscape should be developed in future design stages. – The proposed corridors provide for active modes and prioritises public transport options to support modal shift and reduce transport related climate change contributions.
SOCIAL		
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. **Local Identity** Locate the public transport facilities to maximise the placemaking potential and enhance local identity.	– The proposed corridors pass through highly varied future and existing urban environment that is planned to change to mixed and denser residential land uses, the proposed cross sections have spatial flexibility that is capable of responding to a range of characteristics (identity drivers) that may arise from this change. In these areas the cross section can provide support for active edges (where there is visual engagement between the built form and the street), permeable access for pedestrians, and vegetation appropriately scaled to built form. – There is opportunity to improve connectivity and interface with watercourse crossings to enhance their distinctive landscape qualities (character drivers) for their local communities. – 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.
2.2 **Respect culturally significant sites and landscapes**	Acknowledge significant sites and features in the layout of movement corridors including ridgelines or horizons.	– Under the AUP:OP, there are no known sites of significance to Mana Whenua that have been identified along or in close proximity to the proposed corridor. – Manawhenua have been involved in regular hui and site visits with the Project team to share sites/areas that are of significance to Manawhenua and identify opportunities within and adjacent to the Project to acknowledge, respond, protect and incorporate their cultural narrative. – In future design stages, Manawhenua will be invited as Partners to provide input into other relevant cultural landscape and design matters including how desired outcomes reflect their identity and values. This could include but is not limited to: ○ Opportunities for the betterment of Mahurangi River and its interface with the corridor

Principle	Explanation	Application common to all NORs
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 and utilise technology over time. **Future Growth** 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.	– The proposed typical corridor cross sections have the spatial provisions to be flexible, re-configurable and adaptable for changing transport needs. For example, modal changes, future bus priority measures at intersections, bus stations integration with future walking and cycling networks can be accommodated within the corridor. – The proposed typical cross sections provide space for all modes, with spatial provisions at the corridor edges that accommodate active frontages, provide permeability for access to adjacent land use types and movement corridors.
2.4 **Social cohesion**	Provide clear, effective and legible connectivity between community and social functions.	– The proposed typical corridor cross sections support the creation of spaces where corridor access can be provided through a permeable interface at the corridor boundary. – The proposed corridor alignments and various functions can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing local, neighbourhood and town centres and open spaces. Refer to individual NOR sections for specific focus areas. – To enable equitable local connectivity and cross corridor access to commercial centres and areas of high density, further development at the detailed design stage should be undertaken of crossing points for multi-lane intersections and potential midblock crossings.
2.5 **Safety**	Provide a safe and convenient network of routes accessible to people of all ages and abilities. **Universal Access** Focus on the needs of the customer by placing importance on the spatial requirements that provide for universally inclusive and safe facilities with good physical and visual links.	– The proposed corridor will deliver a greater level of access and movement to future local communities, with the provision of fully segregated active travel solutions. – The proposed corridor accommodates the universal design approach and accessibility to all parts of user journeys. – The proposed functionality and configuration of the public transport interchanges provides for walking and cycling access to each bus hub which supports a greater level of access and movement for future local communities, promoting a sense of personal safety for pedestrians and cyclists. – The future design and functional layout of the bus interchanges/hubs as well as future corridor design stages should respond to and incorporate CPTED principles, including clear sightlines, good levels of lighting, passive surveillance, and avoidance of entrapment zones.

Principle	Explanation	Application common to all NORs
		– There is opportunity for future adjacent development to provide additional passive surveillance and activation improving CPTED outcomes for the project. – A CPTED audit of each NOR project should be carried out against the proposed design and should address, at a minimum, the current identified CPTED risks outlined in each NOR evaluation. – Future development and detailed design of the final crossing points to all bus platforms is required to confirm and reinforce a sense of personal safety and provide for equitable local connectivity and access. – Further design detail of safe prioritised active modes crossings across the corridor and intersections addressing: ○ Legibility; ○ Directness; ○ Eliminating modal conflicts; and ○ Minimising crossing times and distances – Future design of intersections such as and will need to ensure crossings are accessible to people of all ages and abilities.
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. **Active Mode Catchments** Locate stations and interchange facilities in places that align with areas of greater density and is centered on the active mode catchment.	– The proposed bus interchange / hub locations will provide the core transport function of a new multi modal transport network that will support the requirements of Policies 1 and 3 of the NPS:UD for co-locating public transport networks in areas of planned higher density residential development. – All corridors prioritise active modes to provide direct access to both housing and employment areas. The combination of the core corridor functions and alignment to key destinations will maximise the benefits of modal shift and provide a positive contribution to the vibrancy and activation of the varied urban environments within Warkworth.
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). **Respond to Land Use** The size, design and location of the facilities should respond to the adjacent land use and respect natural	– The majority of the NOR corridors traverse the Future Urban Zone. Woodcocks Road, Western Link - South and Matakana Road all have varying degrees of interface with Mixed Housing Suburban and Mixed Housing Urban which are subject to change as a result of the increased development capacity requirements of the NPS:UD. – Overall, the proposed corridor configuration and scale provides an appropriate response to the potential needs of the adjacent area functions (access to and from adjacent built form and general spatial layout). Examples include efficient localised

Principle	Explanation	Application common to all NORs
	features. This minimises any 'left over' spaces and disconnected pockets of land that need integration.	movement using single lanes for the majority of proposed corridors and alignment with known higher density housing land uses, and the provision of mixed mode travel.
3.3 Facilitate an appropriate interface between place and movement	Facilitate the opportunity for place as well as movement in corridors (people-oriented streets)	– The proposed corridor 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 that provide safe waiting zones for pedestrians. – In the absence of medians, signalised or legal crossings, spaced appropriately for the adjacent land-uses and pedestrian desire routes involved, should be considered. – Direct private vehicular access is generally not accommodated onto the corridor, however a pedestrian permeable interface or active frontage interface is supported at all locations along the corridor. – An urban integration strategy should be developed to coordinate with landowners in future stages to address interface issues. This will enable an appropriate interface with adjacent land uses that will provide for active edge permeability and ensure local access and connectivity can be achieved.
MOVEMENT		
4.1 Connect nodes	Provide tangible connectivity between identified activity nodes. **Cross Corridor Connectivity** Balance the functional access requirements across the Project corridor with the optimal location to provide connections into the surrounding area.	The proposed corridors provide tangible and direct connectivity between existing and future industrial / employment areas, suburban communities and local centres. There are opportunities in the future development of each NOR to provide direct connections across the corridors: ○ between local, neighbourhood and town centre functions and the communities they serve. ○ between open spaces and reserves along the wider blue-green network.
4.2 Connect modes	Provide for choice in travel and the ability to connect at interchanges between modes. **Permeability** Provide a level of permeability for stations that supports access into the surrounding streets/corridors.	– The proposed corridors provide future connectivity for all modes (walking, cycling, public transport and private vehicles). – All corridors provide a direct and prioritised active mode connection to the proposed bus interchanges / hubs. – Connectivity to the surrounding street network and access to the wider area is generally identified and accommodated, however it is recommended that further consideration in future design stages is given to the detailed connections to any future active mode network design as per the Warkworth cycling and micro mobility strategy.

Principle	Explanation	Application common to all NORs
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.	– The proposed corridors prioritise active modes to provide direct access to and support for existing and planned commercial, industrial and employment areas including along: ○ Woodcocks Road; and ○ Wider Western Link. – The proposed bus interchange/ hubs prioritises public transport connectivity to support local trips and trips from the broader hinterland to areas of employment including: ○ Future local centres in the west and south including areas of ○ mixed use development; ○ Warkworth Town Centre, ○ North Harbour / Albany via express bus services
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. **Walkability** Locate the station and interchange facility within or in close proximity and walking distance of local activity hubs/town centres. **Modal Priority** Consider efficient connectivity between transport modes by: Providing access that is aligned with the desired modal hierarchy; 1) pedestrians, 2) cyclists/micro-mobility, 3) public transport, 4) drop off/pick up/taxis, and 5) private vehicles / parking. Minimising the interchange time and distance between transport modes by designing direct, safe and self – explaining linkages.	– The corridor design and designation boundary provides access for active modes, and public transport through the provision of: ○ High quality walking and cycling facilities, space for cycle parking close to Bus hubs/interchanges. There is an opportunity to provide additional cycle parking in future design stages. ○ Bus hubs/interchanges adjacent to both housing, commercial and employment land and destinations along the corridor. – Further development of dedicated active mode connections at intersections and the provision of mid-block crossings at the future detailed design stage will provide a higher level of service to active and micro modes and further encourage modal shift. – Potential priority conflicts between active modes / public transport and freight function of sections of the corridor should be further identified and addressed in the future design of the Project.

Principle	Explanation	Application common to all NORs
	Minimising the conflicts between modes.	
4.5 Support inter-regional connections and strategic infrastructure	Consider the location and alignment of significant movement corridors and placement of infrastructure (power, wastewater, water) to the network.	– Existing and future freight-related operations are located along specific corridors due to competitive advantages that proximity affords adjacent Ara Tuhono and SH1, including shorter transit times to end destinations and improving overall supply chain efficiency.
4.6 Support legible corridor function	Consider how the corridor can be clearly navigated and understood by users moving from place to place. **Legible Connections** To achieve a positive and engaging street presence provide clear physical and visual connection between station and interchange facilities and surrounding corridors.	– The typical cross sections accommodate a range of modes with clear allocation of street spaces that inherently supports future community connectivity, mobility and travel choice. – Further development of active mode midblock crossings and along each corridor at the detailed design stage will provide clear and legible cross corridor access and connectivity between areas of high density, centres and community amenties.
LANDUSE		
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.	– The bus interchanges / hubs provide a direct and prioritised public transport connection as part of the local and strategic network that connects existing and future neighbourhood centres within Warkworth, surrounding coastal settlements, and supports regional trips through to Orewa, Albany, and beyond.
5.2 Strategic corridors as urban edges	Strategic corridors as potential definers of a land use edge.	– This principle relates only to the new southern interchange on Ara Tūhono which while part of the of the wider network is not subject to an NOR as part of this package.

18. All Warkworth NoRs

19. Summary of urban design evaluation and recommendations for all NORs

A summary of the recommended urban design outcomes and opportunities for all NORs are outlined below. These are recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

For the full list of urban design commentary common to all NORs, refer to *Table 4: Common urban design matters* above. The ULDMP should address the following outcomes for all NoRs:

ENVIRONMENT

- A landscape plan that considers recommendations from the landscape and visual, arboriculture, flooding and ecological assessments including street tree and stormwater raingarden and wetland planting, construction compound and private property reinstatement and treatment of batter slopes. The landscape plan should also demonstrate integration of Mahurangi River and its tributaries where the corridor intersects or sits adjacent with the existing Blue-Green Network. The landscape outcomes should support the principles of Auckland's Urban Ngahere Strategy and reinforce the wider vegetation patterns of the local landscape and create connections to proposed greenways and the wider walking and cycling network.
- Integration of wetlands to ensure an appropriate interface with adjacent land uses.
- 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 into relevant cultural, landscape and design matters including how desired outcomes reflect their identity and values.

BUILT FORM

- Resolution of any potential conflict between placemaking aspirations within local communities and the scale and operating speed of the proposed movement functions of the corridor should be addressed.
- Known or planned changes of land use and residential density that have the potential to alter the perceived scale and impact of the proposed corridor functions should be identified and addressed.
- Resolution of any potential conflict between placemaking aspirations within local communities and the scale and operating speed of the proposed movement functions of the corridor should be addressed.

MOVEMENT

- A modal integration strategy that addresses the movement and place function of the corridor that incorporates placemaking opportunities arising from adjacent landuse

LANDUSE

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

20. NOR 1 – Northern Public Transport Hub and Western Link - North

21. Introduction

This evaluation considers the proposed NOR 1 –Northern Public Transport Hub and Western Link - North against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 12: Urban Design Evaluation for NOR 1 Northern Public Transport Hub + park and Ride and Western Link - North in Appendix A only outlines urban design commentary specific to NOR 1. For commentary common to all NoRs, refer to *Table 4: Common urban design matters*.

22. Summary of urban design evaluation and recommendations for NOR 1

Overall, the proposed corridor design and configuration for NOR 1 is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 1 are outlined below and illustrated in Figure 42-1: 1 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 1:

ENVIRONMENT

- Integration of wetlands to ensure an appropriate interface with the Public Transport Hub. The layout and composition of any wetlands should be reviewed for landscape integration opportunities and creating a positive interface with adjacent urban form and the Public Transport Hub.
- 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. The large Park and Ride carpark in particular should demonstrate consideration of urban heat island effects in this future urbanized area. Proposed amenity planting and water sensitive design elements should be incorporated at future design stages to provide relief for people walking to and from vehicles and from the street.
- Two new road bridges across the a permanent stream, will require significant resource and materials to construct, however the exact details of the earthworks required for the corridor are not fully resolved and should be reviewed for landscape integration opportunities to minimise land disturbance and conserve materials.

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 1 should be demonstrated. Key NOR 1 local identity community functions to be addressed include:
  - The Future Business – Local Centre Zone on the Western Link.
  - The large Future Mixed Housing Urban Zone surrounding the Local Centre.
  - Warkworth Showgrounds.
  - The two proposed bridge crossings with the first 250m of the Western Link.
- Future design stages should demonstrate the project response to both the locational drivers outlined above and placemaking drivers including:
  - Improved pedestrian and cyclist connectivity to the Local Centre and Mixed Housing Urban areas outlined above.
  - Interface, modal priority and access arrangements along the Western Link.
  - Cultural values and narratives
- To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including:
  - Woodcocks Road
  - North-South thru the Southern Interchange
  - At the southern end of NOR 1 before the bridge crossing.
- The future freight function of NOR 1 that connects an area of future industrial land to the south (via Woodcocks Road and the Wider Western Link) a potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement function. A NOR 1 place specific response to integrating these functions should be identified and addressed in future design states of the project.
- A CPTED audit of the corridor within NOR 1 should address, at a minimum, the current identified CPTED risks including:
  - The future carpark facility adjacent mixed use landuse.
  - The public transport hub.
  - Active mode connections from the Western Link and any side roads to the Public Transport Hub.

BUILT FORM

- An urban interface approach within the corridor that:
  - Responds to the spatial character of proposed mixed use and nearby local centre environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - Demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - Recognises the transition of densities from future Business – General Business Zone, Business – Mixed Use Zone, Residential – Mixed Housing Urban Zone to the Business – Local Centre further south and provides a corridor interface that supports permeable pedestrian access and

responds to the changing built form interface and spatial character of adjacent future development.

- Key focus areas within NOR 1 that require further resolution in future design stages to demonstrate the potential scale and urban structure response include:
  - The walk-up catchments of the proposed Public Transport Hub within NOR 1 and for the length of the Western Link.
  - The corridor edges and interfaces with Business – Local Centre Zone, Business Mixed Use Zone and Business – General Business Zone land.
  - The built form interface with the FUZ that remains.
  - Further vertical integration adjacent to bridging structures along the Western Link developed at a detailed design stage to allow an appropriate transition and interface to adjacent built form.

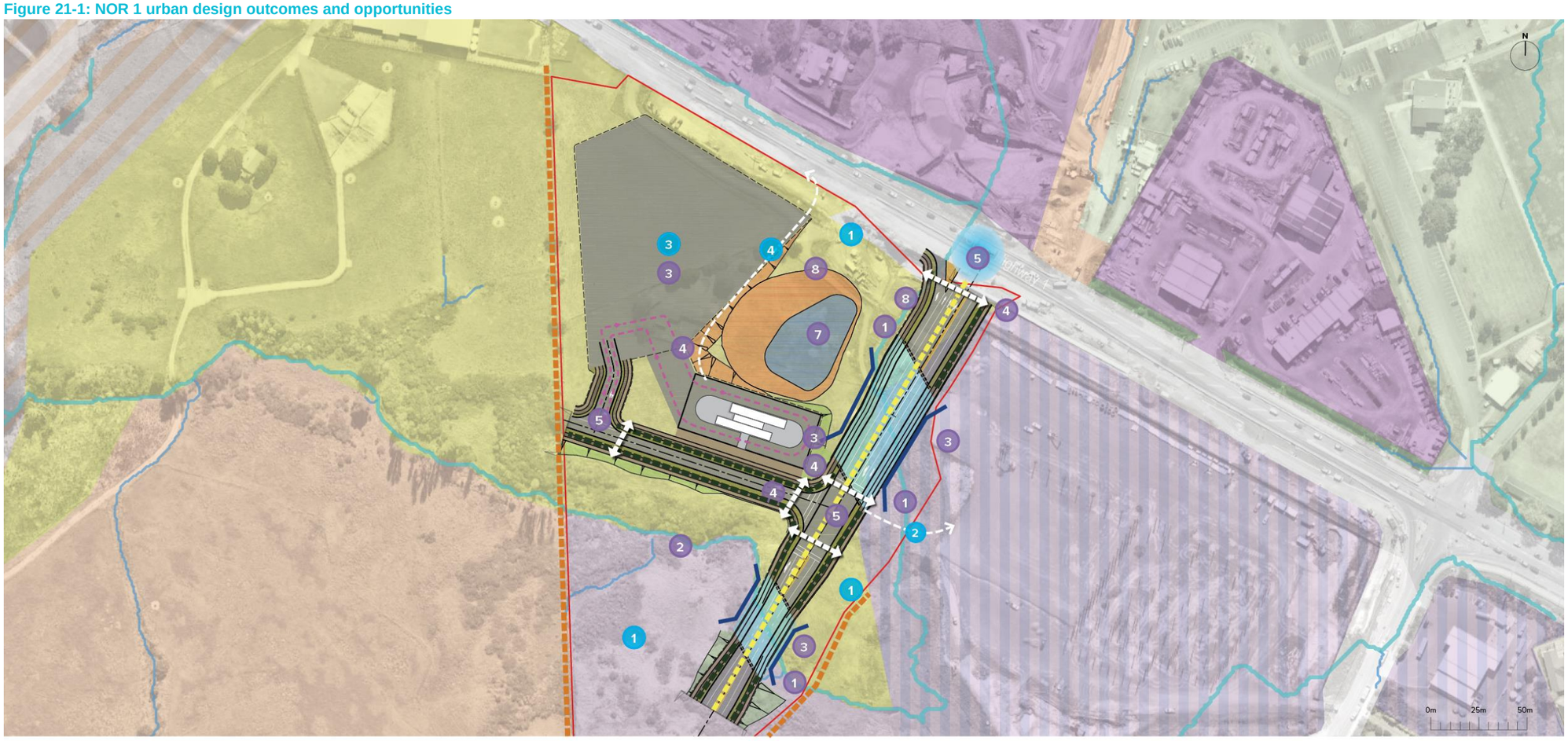
MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as centres, Public Transport Hub, open spaces and community facilities. Demonstration of place specific active mode cross corridor solutions should include:
  - SH1 / Western Link.
  - Western Link / Local access road to Park and Ride.
  - SH1 / Western Link through to the Public Transport Hub (offroad).
- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 1. Demonstration of specific intersection responses to ensure connectivity between the Public Transport Hub, Warkworth Showgrounds to the north, and the Business – Local Centre Zone to the south – see intersection locations above.
- A modal integration strategy that addresses:
  - The potential conflict between the continued freight function of the corridor and placemaking opportunities arising from the introduction of the Public Transport Hub.
  - The functional layout of the Public Transport Hub area to provide for legibility and clear wayfinding for active modes through and around the park and ride area and from the Western Link.
  - The potential conflict between the future high movement function of the corridor and placemaking opportunities arising from the surrounding Business – Mixed Use Zone.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated to support a landuse transition buffer and/or any proposed development / redevelopment together to the Public Transport Hub, park and ride facility and the northern end of the Western Link., in particular areas:
  - Surrounding the Park and Ride.
  - On the north side of the Western Link, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent SH1 intersection and proposed wetlands.

Figure 21-1: NOR 1 urban design outcomes and opportunities



NOR 1 - NORTHERN PUBLIC TRANSPORT HUB + PARK AND ROUTE

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, employment and bussiness land, open spaces and community facilities.
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the Hudson road intersection which connects employment land to medium density development.
7. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to reserve / parks.
8. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.
1. **Land post construction -** Opportunity to demonstrate how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Walking and Cycling -** Opportunity to connect key landuse / destinations with Public Transport Hub
3. **Climate Change -** Opportunity to show consideration of urban heat island effects. Proposed amenity planting and water sensitive design elements should be incorporated at future design stages to provide relief for people walking to and from vehicles and from the street.
4. **Public Transport -** Opportunity to connect express service directly with SH1 to avoid backtracking.

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes

- Residential and mixed-use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structure.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Business - Mixed Use
- Business - Light Industry
- Business - General Business Zone
- Bus Traffic Flow Path
- Fill
- Cut

23. NOR 2 – Woodcocks Road Upgrade - West

24. Introduction

This section considers the proposed NOR 2 – Woodcocks Road Upgrade (Mansell Drive to Wyllie Road) against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 5: Urban design evaluation for 2 – Woodcocks Road Upgrade in Appendix A only outlines urban design commentary specific to NOR 2. For commentary common to all NORs, refer to *Table 4: Common urban design matters*.

25. Summary of urban design evaluation and recommendations for NOR 2

Overall, the proposed NOR 2 corridor design and configuration is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 2 are outlined below and illustrated in Figure 2: 2 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 2:

ENVIRONMENT

- Integration of wetlands to ensure an appropriate interface with adjacent land uses, specifically where these are proposed in the Residential Mixed Housing Urban Zone.

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 2 should be demonstrated. Key NOR 2 local identity community functions to be addressed include:
    - The Business – Heavy Industry Zone at the future Wider Western Link – future residential development.
    - Future Primary School and connections through to Mahurangi College.
    - The landscape character drivers of the tributaries of the Mahurangi River.
    - The urban space qualities of medium density land uses adjacent the Mahurangi River, areas of established native vegetation, and the transition to industrial/business landuse at the eastern end of Woodcocks Road.
- Key NOR 2 distinctive landscape character qualities of open spaces, stream and conservation zones include:
    - Open space linkages along the Mahurangi River.

- Mature indigenous vegetation marking the alignment of the Mahurangi River.
- Constructed wetlands and their integration with riparian corridors.

- The proposed corridor alignment and function can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing and future local, neighbourhood and town centres, schools, community functions and open spaces. Key school, community and business functions within NOR 2 to be addressed include:
  - Mahurangi College and a proposed future Primary School (opposite Mason Heights)
  - Industrial and employment land at the eastern and western ends of Woodcocks Road.

- The connection of this corridor to the future industrial land and its proximity to the future Southern Interchange will change the function and nature of the corridor. The potential conflict between the existing high movement and freight function of the corridor which connects existing and future employment, residential land, and educational facilities will require careful and deliberate consideration in future design stages of the project. A modal integration strategy should outline how this is addressed. The strategy should address intersection design to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes.

- Intersection design in particular requires refinement at further design stages to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes. The following intersections require further attention:
  - Mansell Drive.
  - Mason Heights.
  - Wider Western Link.

- A CPTED audit of the NOR 2 project should address, at a minimum, the current identified CPTED risks including:
  - The corridor interface with the Business – Heavy Industrial Zone at the western end of NOR 2,
  - The two proposed bridges near the Wider Western Link and Falls Road
  - The frontage on to proposed wetlands near the Wider Western Link and Falls Road.

BUILT FORM

- An urban interface approach within the corridor that:
  - responds to the spatial character of proposed centre environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - recognises the transition of densities from future Residential – Mixed Housing Suburban Zone to Business – Light Industry and Heavy Industrial Zones and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:
  - Mahurangi College and a proposed future Primary School.
  - Industrial and employment land at the eastern and western ends of Woodcocks Road.

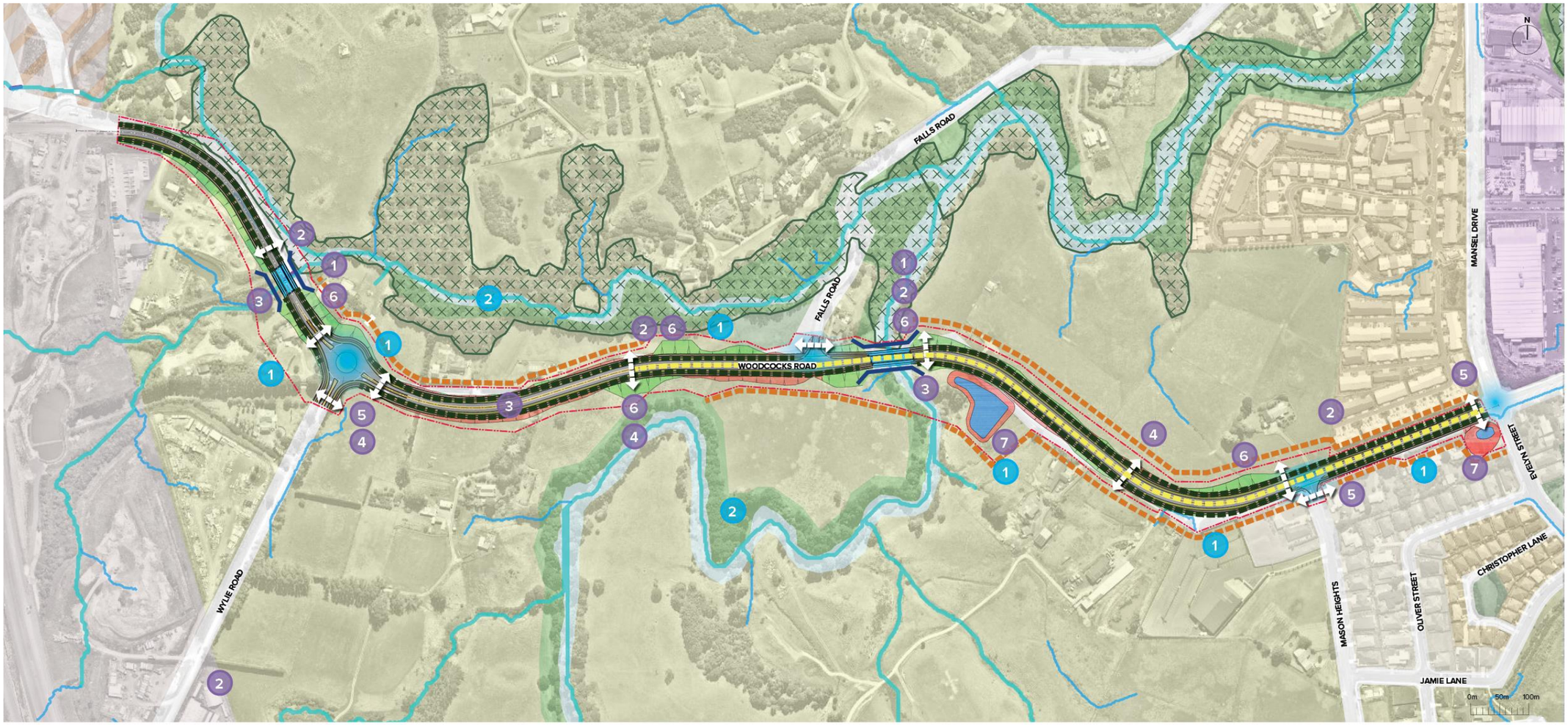
- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 2. Demonstration of specific intersection responses to ensure connectivity between the Residential – Mixed Housing Urban Zone and the schools, employment land, and town centre further east including:
  - Mansell Drive.
  - Mason Heights intersection.
  - Falls Road.
  - Wider Western Link.

- A modal integration strategy that addresses the potential conflict between the continued freight function of the corridor and placemaking opportunities arising from Residential – Mixed Housing Urban Zone.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:
  - On both sides of Matakana Road within NOR 2, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent the intersection with Woodcocks Road and proposed wetlands.

Figure 24-1: NOR 2 urban design outcomes and opportunities



NOR 2 - WOODCOCKS ROAD UPGRADE (WESTERN SECTION)

Outcomes Opportunities

1. **Ecological connectivity -** support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, employment and bussiness land, open spaces and community facilities.
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the Wyllie road roundabout which connects employment land to medium density development.
6. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses and established native forest along the Mahurangi River corridor
7. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and future urban zones.

1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structure
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Informal Recreation Zone
- Open Space - Conservation Zone
- Rural - Rural Production Zone
- Business - Light Industry
- SEA - Terrestrial
- Fill
- Cut

26. NOR 3 – State Highway 1 Upgrade - South

27. Introduction

This evaluation considers the proposed NOR 3 State Highway 1 Upgrade – South against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 8: Urban Design Evaluation for State Highway 1 Upgrade (southern section) in Appendix A only outlines urban design commentary specific to NOR 3. For commentary common to all NoRs, refer to *Table 4: Common urban design matters*.

28. Summary of urban design evaluation and recommendations for NOR 3

Overall, the proposed corridor design and configuration for NOR 3 is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 3 are outlined below and illustrated in Figure 6: 3 urban design outcomes and opportunitieswhich is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 3:

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 3 should be demonstrated. Key NOR 3 local identity community functions to be addressed include:
  - The landscape character drivers of permanent stream crossings flowing to the Mahurangi River.
  - The urban space qualities of future THAB and local centre land use at the intersection with the Wider Western Link.
  - Morrisons Heritage Orchard.
  - Constructed wetlands and their integration within the FUZ.
  - The threshold between the future urban zone and rural landuse at the southern end of NOR 3

- The proposed corridor alignment and function can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing and future local, neighbourhood and town centres, schools, community functions and open spaces. Key school, community and business functions within NOR 3 to be addressed include:
  - Mahurangi College at the Intersection with SH1 and Woodcocks Road.
  - Interface with industrial and employment land north of the Western Link.
  - Future THAB and local centre land use at the intersection with the Wider Western Link.

- To enable equitable local connectivity and cross corridor access between existing residential areas which have been orientated away from SH1, industrial land to the west and FUZ to the south, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including:
    - Fairwater Road.
    - Wech Drive including a safe and legible connection through to Fairwater Road intersection providing access to the bidirectional cycleway on the west side of the corridor.
    - McKinney Road and Western Link.
    - Valerie Close.
    - Wider Western Link. The proposed roundabout at the intersection of SH1 and Wider Western Link is a key connection between communities with future THAB and local centre landuse planned. An outcome that would support this is to reduce the scale of the roundabout to suit this context and provide safe and comfortable crossing points for people walking and cycling.

- Ara Tūhono and the future Southern Interchange will change the function and nature of the SH1 corridor. The potential conflict between the existing high movement and freight function of the corridor which connects existing and future employment, residential land, and educational facilities will require careful and deliberate consideration in future design stages of the project. A modal integration strategy should outline how this is addressed. The strategy should address intersection design to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes

- Intersection design in particular requires refinement at further design stages to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes. The following intersections require further attention:
    - Fairwater Road.
    - Wech Drive including a safe and legible connection through to Fairwater Road intersection providing access to the bidirectional cycleway on the west side of the corridor.
    - McKinney Road and Western Link.
    - Valerie Close.
    - Wider Western Link.
- A CPTED review of the NOR 2 project should address, at a minimum, the current identified CPTED risks including:
    - The existing side road along Wech Drive and corridor interface through to Fairwater Road.
    - The corridor interface with the future local centre and its connection with the Wider Western Link and Bus Hub.
    - The frontage on to proposed wetlands between the Wider Western Link and the Western Link.

BUILT FORM

- An urban interface approach within the corridor that:
    - responds to the spatial character of proposed centre environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.

- demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
- recognises the transition of densities from future Residential – Mixed Housing Urban and Suburban Zones, THAB through to Business – Light Industry and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:
  - The intersection with the Wider Western Link providing access to the local centre and southern public transport interchange.
  - Permanent Stream crossings and connections with future open space corridors.
  - Morrisons Heritage Orchard.
  - Employment land with access off the Western Link.

- Demonstration of specific intersection response between THAB and Residential – Mixed Housing Urban Zone and the future local centre and public transport interchange on the Wider Western Link is required to provide legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 3.

- A modal integration strategy that addresses the potential conflict between the continued freight function of the corridor and placemaking opportunities arising from proximity to THAB and local centre at the intersection with the Wider Western Link. The strategy should address intersection design to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:
  - On both sides of SH1 within NOR 3, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent intersections and proposed wetlands.

Figure 27-1: NOR 3 urban design outcomes and opportunities (Sheet 1 / 2)

NOR 3 - STATE HIGHWAY 1 (NORTHERN SECTION)

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/2

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as employment land, bussiness land, open spaces and community facilities
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the Fairwater road roundabout and McKinney Road intersection
6. **Wetlands -** Consider integration outcomes for the wetland such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and future urban zones.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuse.

1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Interface and visual / landscape buffer considerations for beween industrial, business and mixed use residential and rural landuse/zones.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structures
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Fill
- Cut
- Open Space - Sport and active recreation zone
- Business - Local centre zone
- Business - Light Industry
- Rural - Rural Production zone
- SEA - Terrestrial
- Bi-Directional cycling facilities

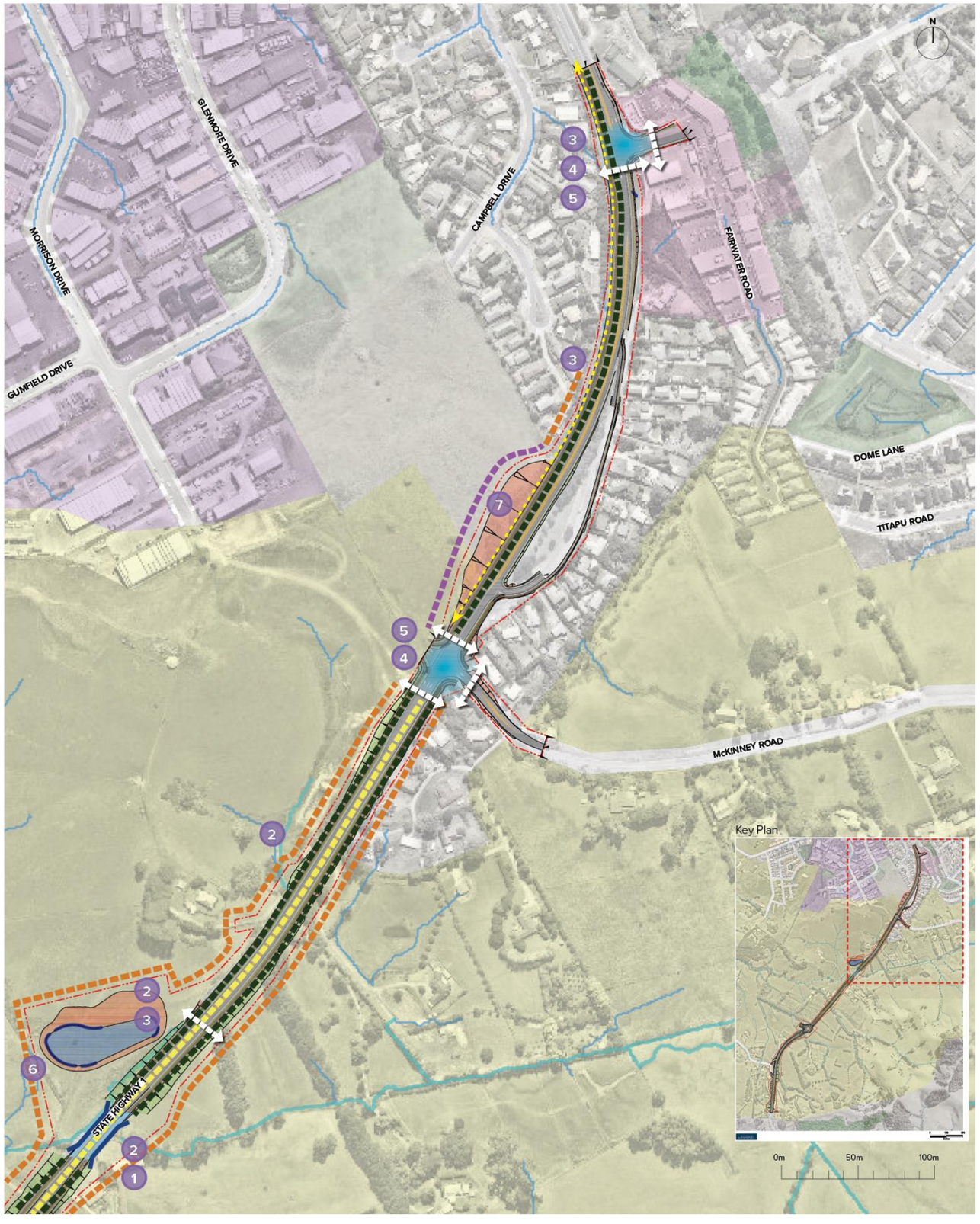


Figure 27-2: NOR 3 urban design outcomes and opportunities (Sheet 2 / 2)

NOR 3 - STATE HIGHWAY 1 (SOUTHERN SECTION)

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 2/2

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as employment land, bussiness land, open spaces and community facilities
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the SH1 road roundabout and McKinney Road intersection
6. **Wetlands -** Consider integration outcomes for the wetland such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and future urban zones.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuse.

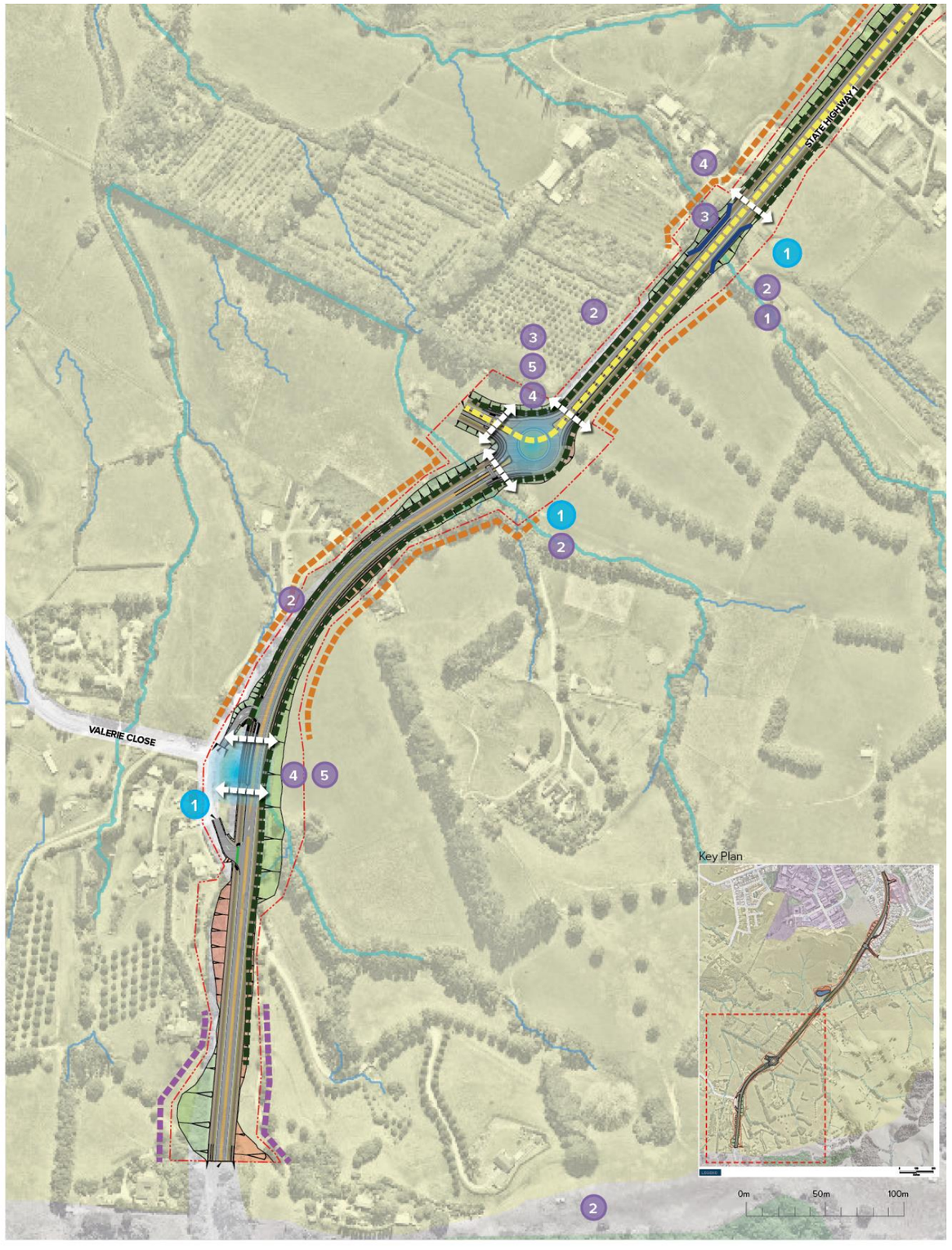
1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Interface and visual / landscape buffer considerations for industrial, business and rural landuse/zones.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structures
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Fill
- Cut
- Open Space - Sport and active recreation zone
- Business - Local centre zone
- Business - Light Industry
- Rural - Rural Production zone
- SEA - Terrestrial



29. NOR 4 – Matakana Road Upgrade

30. Introduction

This section considers the proposed NOR 4 – Matakana Road Upgrade against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 6: Urban Design Evaluation for Matakana Road Upgrade in Appendix A outlines urban design commentary specific to NOR 4. For commentary common to all NORs, refer to *Table 4: Common urban design matters.*

31. Summary of urban design evaluation and recommendations for NOR 4

Overall, the proposed NOR 4 corridor design and configuration is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 4 are outlined below and illustrated in Figure 30-1: 4 urban design outcomes and opportunities (Sheet 1 / 2) which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 4:

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 4 should be demonstrated. Key NOR 4 local identity community functions to be addressed include:
  - The interface between existing residential development and future residential development
  - The interface and transition between rural and urban landuse at the northern end of the corridor.
  - The landscape character drivers of the tributaries of the Mahurangi River.
  - The urban space qualities of medium density land uses adjacent to areas of established vegetation, areas of established native vegetation, and the transition towards Hill Street Intersection.
- Key NOR 4 distinctive landscape character qualities of open spaces, stream and conservation zones include:
  - Open space linkages and connection with the riparian corridor adjacent to NOR 4.
  - Constructed wetlands and their integration with riparian corridors.
- Enable equitable local connectivity and cross corridor access to employment land and areas of high density, further development at the detailed design stage should be undertaken of crossing points at potential midblock crossings including:
  - Te Honohono ki Tai (Matakana Link Road)

- Sandspit Road.
- Clayden Road.
- Melwood Drive including connectivity between residential areas Northwood Close, Matakana Road, and future residential development to the north.

– To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including:

- The transition between the proposed bi-directional and uni directional cycleway close to Hill Street Intersection.
- Te Honohono ki Tai (Matakana Link Road)
- Sandspit Road.

– A CPTED audit of the NOR 4 project should address, at a minimum, the current identified CPTED risks including:

- Limited passive surveillance along the southern portion of the corridor due to areas of vegetation and steep topography.
- Future active mode connections to Northwood Close.
- Future active mode connections to Open Space – Conservational Zone.

BUILT FORM

– An urban interface approach within the corridor that:

- responds to the spatial character of proposed residential environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
- demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
- Recognises the interface with FUZ and Open Space – Conservational Zone on the eastern side of the corridor up to Sandpit Link.
- recognises the transition of densities from future Residential – Mixed Housing Suburban Zone , Residential – Mixed Housing Urban Zone, Residential - Single House Zone, and Residential - Large Lot Zone and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.

MOVEMENT

– Demonstration of specific intersection responses to ensure connectivity between the Residential – Mixed Housing Urban Zone and Town Centre including the following locations:

- Te Honohono ki Tai (Matakana Link Road).
- Sandspit Road.
- Clayden Road.
- Melwood Drive including connectivity between residential areas Northwood Close, Matakana Road, and future residential development to the north.

– Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 4. As the surrounding area is progressively urbanised the intersection

with Te Honohono ki Tai (Matakana Link Road) in particular requires redesign to fit the medium to high density residential landuse that is already been structure planned. The intersection is currently a roundabout scaled to a rural high speed corridor context. Permeability of the corridor for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations.

- Demonstration of place specific active mode cross corridor solutions should include:
  - At the northern end of Northwood Close (between the Residential – Single House Zone and Residential – Mixed Housing Urban Zone.
  - The Open Space – Conservation Zone approximately 250m south of Te Honohono ki Tai (Matakana Link Road).
  - Melwood Drive

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:
  - On both sides of Matakana Road within NOR 4, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent the intersection with Te Honohono ki Tai (Matakana Link Road) and proposed wetlands.

Figure 30-1: NOR 4 urban design outcomes and opportunities (Sheet 1 / 2)

NOR 4 - MATAKANA ROAD UPGRADE

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/2

Outcomes Opportunities

1 **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity along the Mahurangi River.

2 **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.

3 **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.

4 **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, open spaces and community facilities

5 **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the clayden road ixntersection which connects residential large lot land to medium density development.

6 **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and Future Urban zones.

7 **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.

1 **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.

2 **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

3 **Walking and cycling -** As the surrounding area is progressively urbanised the intersection with Matakana Link Road in particular requires redesign to fit the medium to high density residential landuse that is already been structure planned

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Interface and visual / landscape buffer considerations for industrial, business and rural landuse/zones.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Large Lot
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing urban Zone
- Precincts
- Fill
- Cut
- Open Space - Sport and active recreation zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Special Purpose Zone
- Rural - Mixed Rural Zone
- SEA - Terrestrial

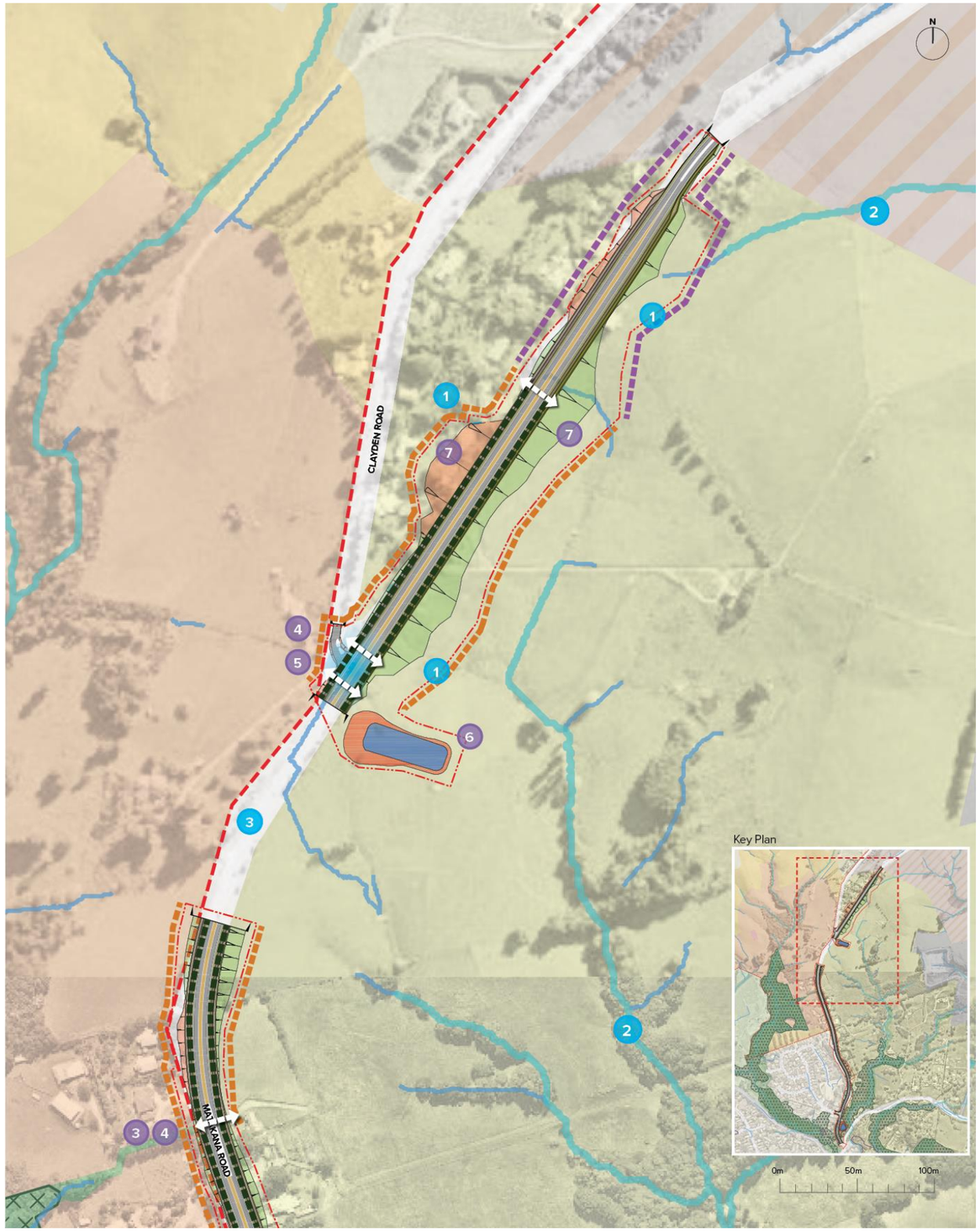


Figure 30-2: NOR 4 urban design outcomes and opportunities (Sheet 2 / 2)

NOR 4 - MATAKANA ROAD UPGRADE

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 2/2

Outcomes Opportunities

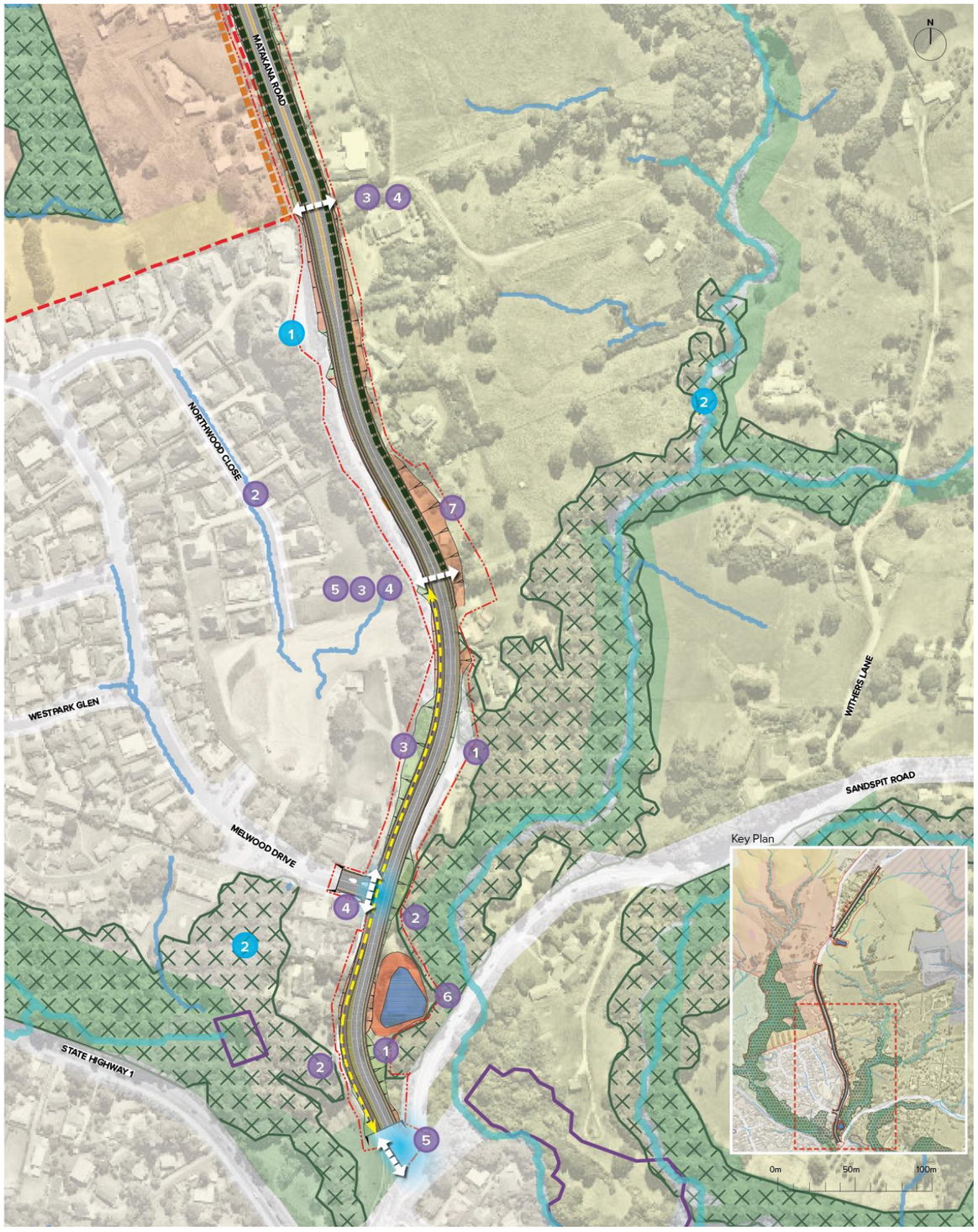
1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity along the Mahurangi River.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, open spaces and community facilities
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the sandspit road intersection which connects residential large lot land to medium density development.
6. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and Future Urban zones.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.
1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Large Lot
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing urban Zone
- Historic Heritage Overlay
- Precincts
- Fill
- Cut
- Open Space - Sport and active recreation zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Special Purpose Zone
- Rural - Mixed Rural Zone
- SEA - Terrestrial
- Bi-Directional cycling facilities



32. NOR 5 – Sandspit Road Upgrade

33. Introduction

This evaluation considers the proposed NOR 5 – Sandspit Road Upgrade against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 7: Urban Design Evaluation for 5 – Road Upgrade in Appendix A only outlines urban design commentary specific to NOR 5. For commentary common to all NoRs, refer to *Table 4: Common urban design matters*.

34. Summary of urban design evaluation and recommendations for NOR 3

Overall, the proposed NOR 3 corridor design and configuration is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 5 are outlined below and illustrated in Figure 5: 5 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 5:

ENVIRONMENT

- Integration of wetlands with adjacent indigenous vegetation.
- New structures minimise disturbance and maintain a connected natural system where the corridor runs adjacent to indigenous forest between Park Lane and Millstream Place.

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 5 should be demonstrated. Key NOR 5 local identity community functions to be addressed include:
    - The landscape character drivers of the tributaries of the Mahurangi River.
    - The landscape protection area on the south side of the corridor.
    - The urban space qualities of residential land use adjacent the Mahurangi River, areas of established native vegetation, and the transition via Hill Street intersection between the town centre to the west and residential landuse to the north.
- Key NOR 5 distinctive landscape character qualities of open spaces, stream and conservation zones include:
    - Open space linkages along the Mahurangi River and its tributaries including the landscape protection area between Sandspit Road and the Mahurangi River.
    - Mature indigenous vegetation marking the alignment of the riparian corridors.
    - Constructed wetlands and their integration with riparian corridors.

- Intersection design in particular requires refinement at further design stages to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, prioritise active modes by reducing the time and distance to cross vehicle lanes and enables access for people of all ages and abilities. The following intersections require further attention:
  - Matakana Road and Elizabeth Street (access to town centre)
  - The transition points between the bi-directional cycleway / offroad multi user path and uni directional cycleway.
  - Sandspit link
- To enable equitable local connectivity and cross corridor access between areas of medium and high density, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including:
  - Sandspit Link.
  - Withers Lane.
  - Matakana Road – with a strong focus on creating a seamless connection between the community in the north east quadrant of the town (along Sandspit Road) with the Warkworth Town centre.
- A CPTED audit of the NOR 5 project should address, at a minimum, the current identified CPTED risks including:
  - Limited passive surveillance along the western portion of the corridor due to areas of vegetation and steep topography.
  - Cycle and walking bridge at the western end of NOR 5.
  - Limited passive surveillance along the corridor between the Landscape Protection Zone (identified in the Structure Plan) and the Residential – Single House Zone.

BUILT FORM

- An urban interface approach within the corridor that:
  - Responds to the spatial character of proposed environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - Responds to the established native riparian vegetation and steep topography between Matakana Road and Sandspit Link.
  - demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - Recognises the transition of densities from the town centre at the western end to future Residential – Single House and Large Lot Zone.
  - Provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:

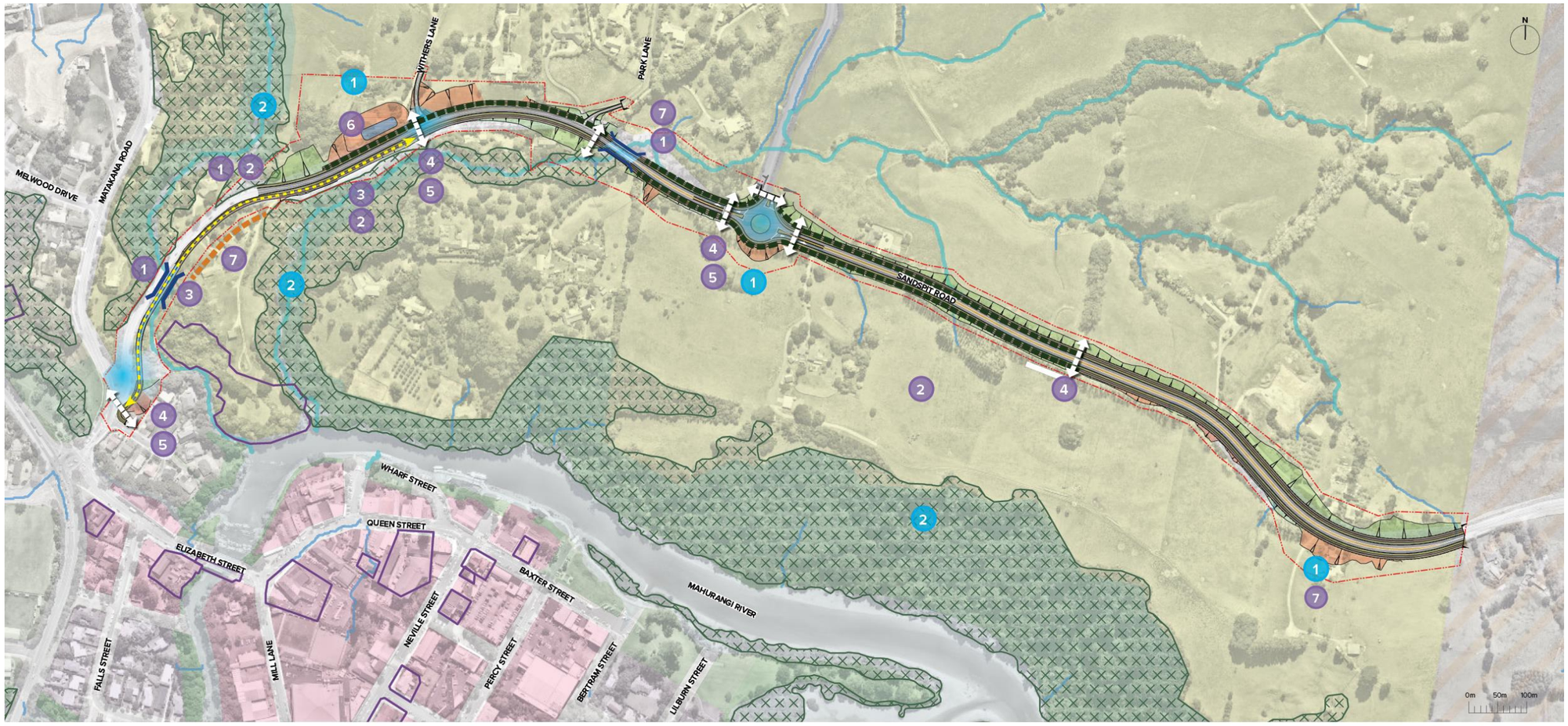
  - The transition points between the bi-directional cycleway / offroad multi user path and uni directional cycleway.
  - Matakana Road
  - Sandspit Link
  - Approx 400m east of Sandspit Link

- The high movement function of the corridor and placemaking opportunities arising from the Future Urban Zone to the north and landscape protection to the south requires a modal integration strategy that outlines how this is addressed. The strategy should address intersection design to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:
  - On both sides of Sandspit Road within NOR 5, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent the intersection with Sandspit Link and proposed wetlands.

Figure 33-1: NOR 5 urban design outcomes and opportunities



NOR 5 - SANDSPIT ROAD UPGRADE

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity along the Mahurangi River.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, employment and bussiness land, open spaces and community facilities.
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections.
6. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and future urban zones.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuse.

1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structures
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Open Space - Informal Recreation Zone
- Open Space - Conservation Zone
- Rural - Mixed Rural Zone
- Rural - Rural Production Zone
- Business - Mixed use Zone
- Business - Town Centre Zone
- SEA - Terrestrial
- Bi-Directional cycling facilities
- Historic Heritage Overlay
- Fill
- Cut

35. NOR 6 – Western Link - South

36. Introduction

This evaluation considers the proposed NOR 6 Western Link South against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 8: Urban Design Evaluation for Western Link - South in Appendix A only outlines urban design commentary specific to NOR 6. For commentary common to all NORs, refer to *Table 4: Common urban design matters*.

37. Summary of urban design evaluation and recommendations for NOR 6

Overall, the proposed corridor design and configuration for NOR 6 is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 6 are outlined below and illustrated in Figure 8: 6 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 6:

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 6 should be demonstrated. Key NOR 6 local identity community functions to be addressed relate to interface issues between potential opposing landuses on either side of the corridor.
- To enable equitable local connectivity and cross corridor access between future residential (FUZ) to the south, employment land to the north, and through to key destinations at either of the corridor further development will be required at future design stages. Further development of crossing points at intersections and potential midblock crossings are required including:
    - Evelyn St / Jamie Lane intersection
    - SH1 / McKinney Road intersection
- Intersection design in particular requires refinement at further design stages to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes. The following intersections require further attention:
    - Woodcocks Road (links to Mahurangi College)
    - SH1 (links to local centre to the south and town centre to the north)
- The future freight function of NOR 6 associated with existing and future industrial land on the north side of the corridor poses a potential conflict between placemaking aspirations within local communities on the south side of the corridor and the scale and speed of the proposed movement function. An NOR 6 place specific response to integrating these functions should be identified and

addressed in future design states of the project. Reducing the number of access points to industrial land on the north side of the corridor will help reduce the number of conflict locations.

- A CPTED audit of the NOR 6 corridor should address, at a minimum, the current identified CPTED risks including:
  - The corridor interface with the Business – Light Industrial on the north side and Residential – Mixed Housing Suburban.
  - The frontage on to the proposed wetland at the north end and its location adjacent to an existing wetland.
  - Surveillance restrictions due to large cut/fill batters throughout the corridor.

BUILT FORM

- An urban interface approach within the corridor that:
  - responds to the spatial character of both residential/employment land environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - recognises the transition of landuse typology from future Residential – Mixed Housing Suburban Zone to Business – Light Industry and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:
  - Jamie Lane (transition from bidirectional cycleway to uni directional).
  - Morrison Drive.
  - Woodcocks Road (links to Mahurangi College
  - SH1 (links to local centre to the south and town centre to the north)
- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 6. Demonstration of specific intersection responses to ensure connectivity between the Residential – Mixed Housing Suburban Zone, Business – Light Industry and key destinations at either end of the NOR 6 corridor pertain to the same intersection/crossing locations as above.

  The potential conflict between the continued freight function of the corridor and placemaking opportunities arising from the introduction of residential land on the south side of the corridor and walking and cycling facilities connection to nearby schools along the Western Link will require careful and deliberate consideration in future design stages of the project.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:

- On both sides of the Western Link within NOR 6, particularly where large cut/fill batters are indicated.
- Any residual land adjacent the intersection with Western Link and proposed wetlands.

Figure 36-1: NOR 6 urban design outcomes and opportunities

NOR 6 - NEW WESTERN LINK ROAD SOUTH

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as future schools, employment and bussiness land, open spaces and community facilities.
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the Evelyn St and SH1 roundabout which connects residential land to medium density development.
6. **Wetlands -** Consider integration outcomes for the wetland such as setbacks, arrangement and scale of planting to support an appropriate interface to reserve / parks and the adjacent light industry.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.

1. **Land post construction -** Opportunity to demonstrate how any land portions following the construction of the Project are redefined and integrated with the expected future land use function.

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Interface and visual / landscape buffer considerations for industrial, business and rural landuse/zones.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structures.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and active recreation zone
- Business - Light Industry
- Fill
- Cut

38. NOR 7 – Sandspit Link

39. Introduction

This evaluation considers the proposed NOR 7 Sandspit Link against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 11: Urban Design Evaluation for NOR 7 Sandspit Link in Appendix A only outlines urban design commentary specific to NOR 7. For commentary common to all NORs, refer to *Table 4: Common urban design matters*.

40. Summary of urban design evaluation and recommendations for NOR 7

Overall, the proposed corridor design and configuration for NOR 7 is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 7 are outlined below and illustrated in Figure 8: 7 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 7:

ENVIRONMENT

- Integration of the three proposed wetlands to ensure an appropriate interface with adjacent land uses, specifically where these are proposed in the Residential - Mixed Housing Urban Zone at the western end of the corridor.

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 7 should be demonstrated. Key NOR 7 local identity community functions to be addressed include:
  - The tributaries of the Mahurangi River and adjacent areas of established native vegetation.
  - The Residential - Mixed Housing Urban Zone
  - The Hinterland beyond the FUZ to the north
- Key NOR 7 distinctive landscape character qualities of open spaces, stream and conservation zones include;
  - Open space linkages along the Mahurangi River
  - Mature riparian vegetation marking the alignment of the Mahurangi River.
  - Constructed wetlands and their integration with the catchment
- The proposed corridor alignment and function can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing

and future local, neighbourhood and town centres, schools, community functions and open spaces. Key community functions within NOR 7 to be addressed include:

  - Open Space - Conservation Zone and Landscape Protection area identified in the Structure Plan.

- Intersection design in particular requires refinement at further design stages to ensure walking and cycling facilities are legible, direct, minimise potential negative intersections between modes, and prioritise active modes by reducing the time and distance to cross vehicle lanes. The following intersections require further attention.

  - Sandspit Link
  - Matakana Road.
  - Within 50m of each bridge crossing

BUILT FORM

- An urban interface approach within the corridor that:

  - responds to the spatial character of proposed centre environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - recognises the transition of densities from future Residential – Mixed Housing Urrban Zone to Residential – Mixed Housing Suburban and Single House Zones and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.
  - Recognises the interface between the Residential – Mixed Housing Urban / Suburban Zones adjacent large cut/fill batters and the road corridor.
  - Recognises the built form interface, any visual or landscape buffers and development controls proposed for the operational or retired Limestone Quarry.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:

  - Sandspit Link
  - Matakana Road.
  - Within 50m of each bridge crossing

- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 7. Demonstration of specific intersection responses to ensure connectivity between the Residential – Mixed Housing Urban Zone and the schools, employment land, further west, specifically Te Honohono ki Tai (Matakana Link Road).

- A modal integration strategy that addresses the potential conflict between the high movement function of the corridor and placemaking opportunities arising from Residential – Mixed Housing Urban Zone.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:
    - On both sides of Sandspit Link within NOR 7, particularly where large cut/fill batters are indicated.
    - Any residual land adjacent the intersection with Sandpit Road and the three proposed wetlands.

Figure 39-1: NOR 7 urban design outcomes and opportunities

NOR 7 - NEW SANDSPIT LINK ROAD

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as open spaces and community facilities
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections.
6. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the corridoor and Future urban Zone.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.

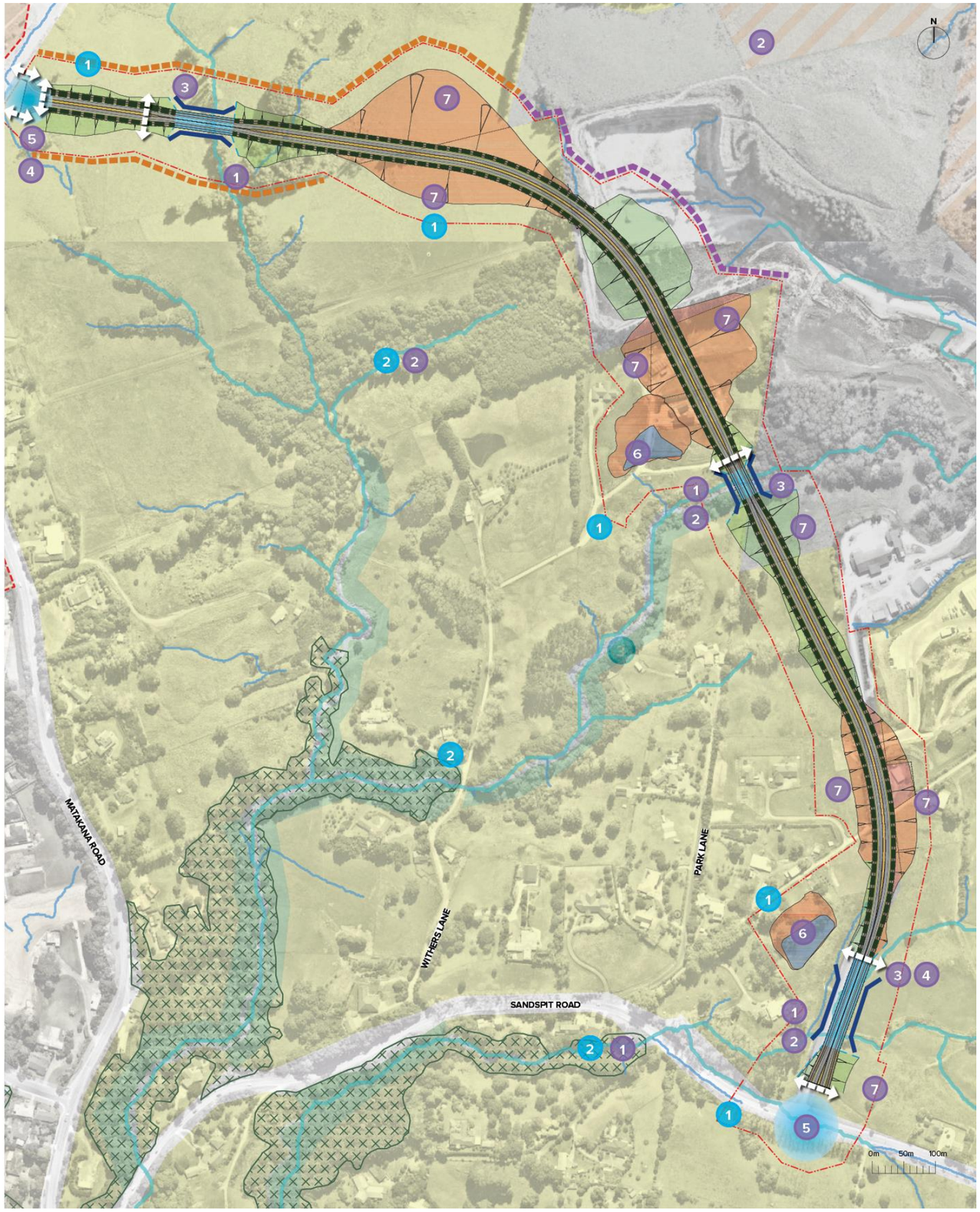
1. **Land post construction -** Opportunity to demonstrate how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structure.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Interface and visual / landscape buffer considerations for industrial, business and rural landuse/zones.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Large Lot
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing urban Zone
- Fill
- Open Space - Sport and active recreation zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Special Purpose Zone
- Strategic Transport Corridor
- SEA - Terrestrial
- Cut



41. NOR 8 – Wider Western Link - North

42. Introduction

This evaluation considers the proposed NOR 8 – Wider Western Link against the relevant Design Framework Principles. It provides urban design focused commentary on the current design detail and recommends the framework for how and where any urban design outcomes should be considered in future design stages.

Table 8: Urban Design Evaluation for Western Link (northern section) in Appendix A only outlines urban design commentary specific to NOR 8. For commentary common to all NORs, refer to *Table 4: Common urban design matters*.

43. Summary of urban design evaluation and recommendations for NOR 8

Overall, the proposed corridor design and configuration for NORs 8 is generally supportive of the Design Framework principles. A summary of the recommended urban design outcomes and opportunities for NOR 8 are outlined below and illustrated in Figure 9: 8 urban design outcomes and opportunities which is recommended to form a part of the Urban and Landscape Design Management Plan (ULDMP) to assist with in future delivery stages. This is to ensure the detailed design of the corridor responds appropriately to the principles and the project specific urban design outcomes sought.

The ULDMP should address the following Project specific outcomes for NOR 8:

ENVIRONMENT

- Integration of wetlands to ensure an appropriate interface with adjacent land uses, specifically where these are proposed in both the Business – heavy Industry Zone and Residential Mixed Housing Urban Zone.
- The intersection with Ara Tūhono and new road bridge across the right branch of the Mahurangi River will require significant resource and materials to construct, however the exact details of the earthworks required for the corridor are not fully resolved and should be reviewed for landscape integration opportunities to minimise land disturbance and conserve materials.

SOCIAL

- The identification, development and integration of key local community and identity drivers within NOR 8 should be demonstrated. Key NOR 8 local identity community functions to be addressed include:
  - The bridge across the Mahurangi River (right branch) which forms the transition between Business - Heavy Industry Zone on the north side and residential landuse on the south side.
  - The landscape character drivers of the tributaries of the Mahurangi River (right branch)
  - The Business – Heavy Industry Zone.
  - Proximity to Ara Tūhono
- Key NOR 8 distinctive landscape character qualities of open spaces, stream and conservation zones include:

- Open space linkages along the Mahurangi River and its tributaries including area of indigenous forest.
- Constructed wetlands and their integration with the Mahurangi River catchment.

- The proposed corridor alignment and function can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing and future local, neighbourhood and town centres, schools, community functions and open spaces. Key business functions within NOR 8 to be addressed include the Industrial and employment land along NoR8.
- To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including:

  - Woodcocks Road
  - North-South thru the Southern Interchange
  - At the southern end of NOR 8 before the bridge crossing.
  - The Residential – Mixed Housing Suburban and Urban Zones immediately east of the corridor across the Mahurangi River. In addition this provides more direct access to Mahurangi College and a proposed future Primary School on Woodcocks Road.

- The future freight function of NOR 8 that connects the large future industrial land and its proximity to the future Southern Interchange poses a potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement function. An NOR 8 place specific response to integrating these functions should be identified and addressed in future design states of the project.
- A CPTED audit of the corridor within NOR 8 should address, at a minimum, the current identified CPTED risks including:

  - The Business – Heavy Industry Zone south of the bridge crossing.
  - The overbridge environment across and below the Mahurangi River (right branch).

BUILT FORM

- An urban interface approach within the corridor that:

  - responds to the spatial character of proposed centre environments and supports quality public realm infrastructure, ample pedestrian footpath width, frequent pedestrian crossing points and street trees for shade and amenity.
  - demonstrates the proposed modal connections, modal hierarchy, built form interfaces and arrangements along the corridor.
  - recognises the transition of densities from future Business –Heavy Industry Zones to Residential – Mixed Housing Urban Zone and provides a corridor interface that supports permeable pedestrian access and responds to the changing built form interface and spatial character of adjacent future development.
  - considers the scale, visual integration, interface and sense of place qualities of the bridge structure across the Mahurangi River and adjacent future development.

MOVEMENT

- Permeability of the corridor for active modes that addresses cross corridor connectivity (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 cross corridor solutions should include:

  - Mahurangi College and a proposed future Primary School.
  - Industrial and employment land at the eastern and western ends of Woodcocks Road.
  - The Residential – Mixed Housing Suburban and Urban Zones immediately east of the corridor across the Mahurangi River.

- Legibility, connectivity demands, safety and modal priority for active modes should be addressed for intersections within NOR 8. Demonstration of specific intersection responses to ensure connectivity between the Residential – Mixed Housing Urban Zone and the schools, employment land, bus hub local centre to the north including:

  - Woodcocks Road
  - The Southern Interchange
  - SH1

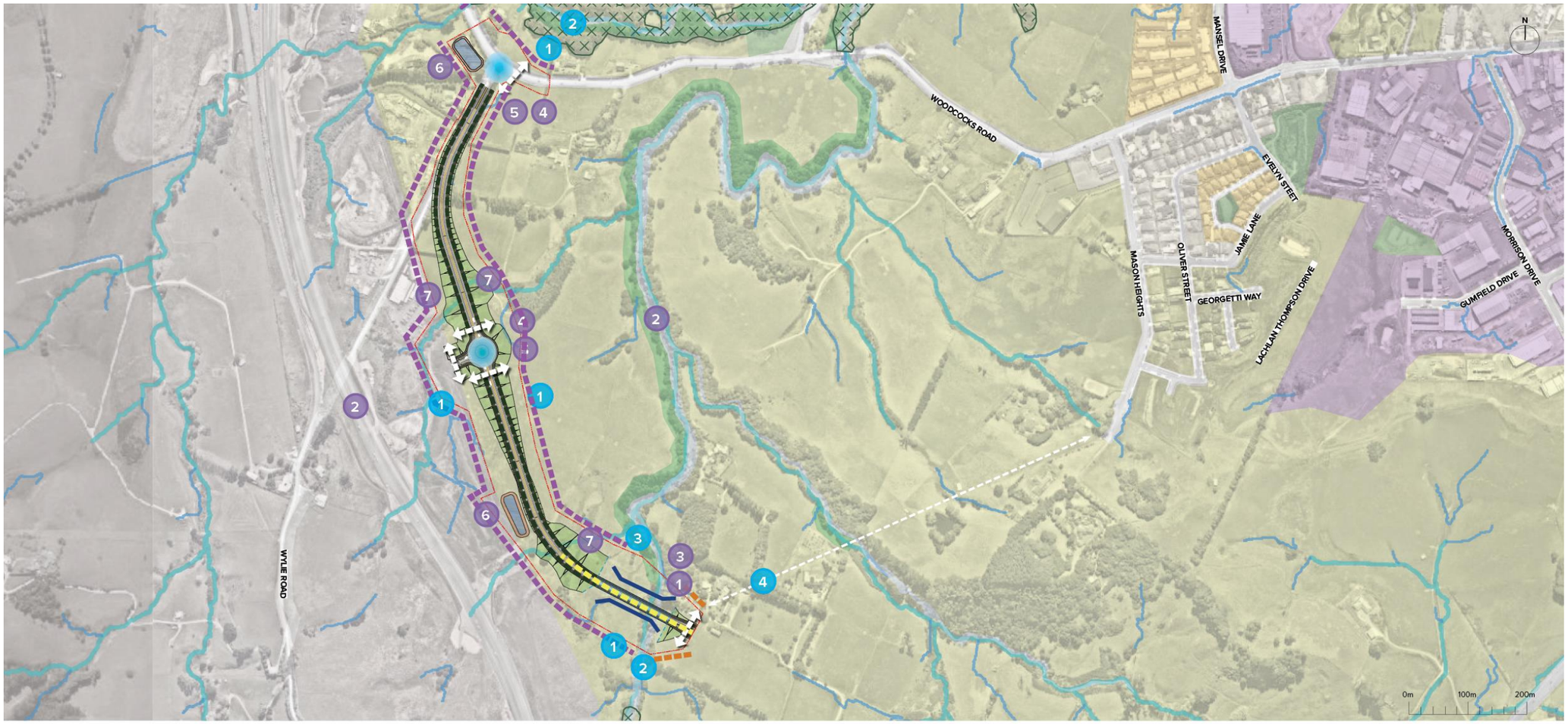
- A modal integration strategy that addresses the potential conflict between the continued freight function of the corridor and placemaking opportunities arising from Residential – Mixed Housing Urban Zone and its proximity to the future local centre to the north.

LANDUSE

- Demonstration of how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function, in particular areas:

  - On both sides of the Wider Western Link within NOR 8, particularly where large cut/fill batters are indicated.
  - Any residual land adjacent the intersection with the Southern Interchange and proposed wetlands.

Figure 42-1: NOR 8 urban design outcomes and opportunities



NOR 8 - NEW WIDER WESTERN LINK ROAD

Outcomes Opportunities

1. **Ecological connectivity -** Landscape outcomes should reinforce the wider vegetation patterns of the local open spaces and support ecological connectivity and biodiversity in the local environment.
2. **Identity drivers -** Key local community, landscape character and identity drivers should be identified, developed and integrated with the adjacent land use functions and future design response.
3. **CPTED -** Future design should incorporate CPTED principles including clear sightlines, good levels of lighting and passive surveillance.
4. **Active mode permeability -** Corridor permeability for active modes that addresses cross corridor connectivity (midblock crossings), modal priority and permeable access to destinations such as employment and bussiness land, open spaces and community facilities.
5. **Active mode legibility and priority -** Legibility, connectivity demands, safety and modal priority for active modes should be addressed at intersections, particulary at the Wider western link road roundabout which connects to medium density development.
6. **Wetlands -** Consider integration outcomes for wetland/s such as setbacks, arrangement and scale of planting to support an appropriate interface to the road corridoor and Future Urban Zone.
7. **Earthworks -** Minimise Earthworks & Level changes at corridor boundaries & Interfaces with future development areas to enable integration with adjoining future landuse. Use retaining structures in areas where space in insufficent to deploy earthworks batters or where earthworks negatively impacts the efficieny of adjacent landuses.

1. **Land post construction -** Opportunity to demonstrate how any residual land portions following the construction of the Project are redefined and integrated with the expected future land use function.
2. **Wider connectivity -** Opportunity to reinforce visual connections to the wider community and landscape features.
3. **Betterment of the Mahurangi River -** betterment of Mahurangi River interface with road corridor. Through a cultural intergration strategy that reinforces identity drviers of the local area.
4. **Walking and cycling -** improve connectivity to Mixed Housing Suburban and Urban Zones and education facilities on Woodcocks Road immediately east of the corridor across the Mahurangi River.

OUTCOMES AND OPPORTUNITIES PLAN - SHEET 1/1

Outcomes

- Residential (Mixed Housing Urban / THAB) and Buisness - Mixed-Use integration / interface that enables buildings and spaces to positively address and integrate with the corridor.
- Intersection arrangement that addresses multi-modal priority, safety and legibility.
- Cross corridor active mode connection.
- Consideration of visual integration, interface and sense of place for the bridge structure.
- Landscape outcomes should provide replace and augment canopy shading to the corridor. Outcomes to reflect and enhance the local character inherent in the built, natural and cultural qualities of the location within the corridor.
- Consideration of potential modal conflicts between the future freight movement, placemaking and active mode functions.
- Interface and visual / landscape buffer considerations for industrial, business and rural landuse/zones.

LEGEND

- Designation Boundary
- Future Urban Zone - FUZ
- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Open Space - Informal Recreation Zone
- Open Space - Conservation Zone
- Open Space - Sport and Active Recreation Zone
- Rural - Rural Production Zone
- Business - Light Industry
- Strategic Transport Corridor Zone
- SEA - Terrestrial
- Fill
- Cut

1 Urban design evaluation tables

For urban design commentary common to all NORs, refer to *Table 4: Common urban design matters*.

44. NOR 1 – Northern Public Transport Hub and Western Link - North | Urban Design Matters

Table 12: Urban Design Evaluation for NOR 1 Northern Public Transport Hub + park and Ride and Western Link - North

Principle	Application to NOR 1
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 1 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetland at the corner of SH1 and Western Link ○ The permanent stream adjacent to the Western Link. ○ The proposed bridges across two permanent streams Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. There is a large wetland situated between SH1, the Western Link and the Park and Ride. This presents an opportunity for the wetland and associated plantings to be integrated and provide additional amenity and outlook for users of the Public Transport Hub.
1.3 Minimise land disturbance, conserve resources and materials	The location and composition of the Public Transport Hub and park and ride has been refined to minmise earthworks. The site slopes to the east toward a tributary and large culvert under SH1. The layout and composition of any wetlands should be reviewed for landscape integration opportunities and creating a positive interface with adjacent urban form and the Public Transport Hub.
1.4 Adapt to a changing climate and respond to the microclimatic factors of each area	The Park and Ride carpark should demonstrate consideration of urban heat island effects in this future urbanized area. Proposed amenity planting and water sensitive design elements should be incorporated at future design stages to provide relief for people walking to and from vehicles and from the street.
2.1 Identity and place	The existing setting of the Public Transport Hub and Park and Ride is expected to change significantly with the realisation of the Local Centre Zone land to the south and the Future Urban Zone to the south currently identified as Residential – Mixed Housing Suburban Zone. The further identification, development and integration of key local community and identity drivers within NOR 1 should be addressed in future design stages. Key NOR 1 local identity locations and functions include: ○ The Future Business – Local Centre Zone on the Western Link.

Principle	Application to NOR 1
	○ The large Future Mixed Housing Urban Zone surrounding the Local Centre. ○ Warkworth Showgrounds. ○ The two proposed bridge crossings with the first 250m of the Western Link. Future design stages should demonstrate the project response to both the locational drivers outlined above and placemaking drivers including: ○ Improved pedestrian and cyclist connectivity to the Local Centre and Mixed Housing Urban areas outlined above. ○ Interface, modal priority and access arrangements along the Western Link. ○ Cultural values and narratives In order to create a sense of identity and place, the future architectural design response of the public transport hub and associated facilities will need to consider the underlying identity drivers of the surrounding context such as: ○ Cultural values and narratives of Mana Whenua and other community members; ○ Any identified landscape character drivers of the public transport hub location; and ○ Urban space qualities of the potential high to medium density land uses surrounding the public transport hub location.
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support a landuse transition buffer and/or any proposed development / redevelopment together to the Public Transport Hub, park and ride facility and the northern end of the Western Link. ○ Surrounding the Park and Ride. ○ On the north side of the Western Link, particularly where large cut/fill batters are indicated. ○ Any residual land adjacent SH1 intersection and proposed wetlands.
2.4 **Social cohesion**	To enable equitable local connectivity and cross corridor access between future residential (FUZ) to the south, employment land to the south-west, and through to key destinations at either end of the corridor further development of crossing points at intersections and potential midblock crossings are required including: ○ SH1 / Western Link ○ Western Link / Local access road to Park and Ride ○ Western Link through to the Public Transport Hub (offroad)
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ Woodcocks Road ○ North-South thru the Southern Interchange ○ At the southern end of NOR 1 before the bridge crossing.

Principle	Application to NOR 1
	The future freight function of NOR 1 that connects an area of future industrial land to the south (via Woodcocks Road and the Wider Western Link) a potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement function. Reducing heavy vehicle through traffic along the Western Link will assist in mitigating this safety issue – this can be achieved by designing the corridor for light vehicles with appropriate horizontal and vertical deflection to prevent through put. SH1 should remain the primary through for delivery and heavy vehicles accessing commercial and industrial land south of Woodcocks Road from Ara Tuhono. A NOR 1 place specific response to integrating these functions should be identified and addressed in future design states of the project. A CPTED audit of the corridor within NOR 1 should address, at a minimum, the current identified CPTED risks including: ○ The future carpark facility adjacent mixed use landuse. ○ The public transport hub. ○ Active mode connections from the Western Link and any side roads to the Public Transport Hub.
3.1 **Align corridors with density**	The PT hub directly supports the requirements of Policies 1 and 3 of the NPS:UD for enabling increased development capacity adjacent to frequent PT network and centres. It is recommended that future design stages demonstrate the proposed modal connections, hierarchy, built form interfaces and arrangements that support the creation of vibrant, active urban environments.
3.2 **Corridor scaled to the surrounding context and urban structure**	For approximately 1.2km along the full length of the Western Link the landuse is Mixed Housing Suburban and Mixed Housing Urban which is subject to change as a result of the increased development capacity requirements of the NPS-UD – particularly given its proximity to a large Local Centre. This possible land use and residential density change has the potential to alter the perceived scale and impact of the proposed corridor functions. Any potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement functions of the corridor should be addressed in future design stages. Key focus areas within NOR 1 that require further resolution in future design stages to demonstrate the potential scale and urban structure response include: ○ The walk-up catchments of the proposed Public Transport Hub within NOR 1 and for the length of the Western Link ; ○ The corridor edges and interfaces with Business – Local Centre Zone, Business Mixed Use Zone and Business – General Business Zone land; ○ The built form interface with the FUZ that remains Further vertical integration adjacent to bridging structures along the SH1 crossing should be developed at a detailed design stage to allow an appropriate transition and interface to adjacent built form.
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 1 that require further resolution in future design stages to demonstrate the place interface / response to the proposed movement functions include: ○ The key intersections and mid-block crossings outlined for NOR 1 under principle 2.4 – Social Cohesion;

Principle	Application to NOR 1
	○ The wetland and where batter slopes are potentially required; and ○ The proposed bridge and interface with adjacent supermarket carpark. Relationship to the grain of adjacent residential and commercial landuses requires resolution and coordination with adjacent landowners in future stages to ensure local access and connectivity can be achieved, particularly where higher density housing is likely to occur.
4.1 **Connect nodes**	There are opportunities in the future development of the Project to consider wider active mode network connections to: ○ The Supermarket complex immediately east of the Public Transport Hub ○ The Warkworth Showgrounds immediately north of the Public Transport Hub ○ The proposed Buisess - Local Centre Zone immediately south of the Public Transport Hub
4.2 **Connect modes**	The station location and layout should consider legibility and clear wayfinding for all modes between the Public Transport Hub, carpark, and the Western Link. Further development of the functional layout of the bus facility is recommended.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.5 **Support inter-regional connections and strategic infrastructure**	The potential conflict between the high movement function of the corridor and placemaking opportunities arising from the introduction of the Public Transport Hub along the Western Link will require careful and deliberate consideration in future design stages of the project. Further urban design commentary on this issue is included under Principles 2.1, 2.4, 2.5, 3.3, and 4.1.
4.6 **Support legible corridor function**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 **Public transport directed and integrated into centres**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 **Strategic corridors as urban edges**	This principle is not directly relevant to the NOR 1 corridor as set out in Table 4.

45. NOR 2 – Woodcocks Road upgrade | Urban design matters

Table 5: Urban design evaluation for NOR 2 – Woodcocks Road Upgrade

Principle	Application to NOR 2
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 2 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include: ○ Artificial wetlands and swales within the corridor. ○ Where the corridor crosses the Mahurangi River near Falls Road and Wider Western Link. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities. There are two watercourse bridge crossing in NOR 2 at the Mahurangi River (Right Branch) and a tributary off the Left Branch of the Mahurangi River that presents an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising the river interruption and ensuring a connected natural system.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetland or raingardens to address water quality and reduce hard engineering solutions. The wetlands locations are located: ○ Adjacent Mason Heights Road. ○ Near the crossing of the right branch of the Mahurangi River. ○ Adjacent the Wider Western Link.
1.3 Minimise land disturbance, conserve resources and materials	Refer to Table 4: Common urban design matters in relation to this design principle.
1.4 Adapt to a changing climate and respond to the microclimatic factors of each area	Refer to Table 4: Common urban design matters in relation to this design principle.
SOCIAL	
2.1 Identity and place	The further identification, development and integration of key local community and identity drivers within NOR 2 should be addressed in future design stages. Key NOR 2 local identity locations and functions include: ○ The Business - Heavy Industry Zone at the future Wider Western Link – Future Residential development with the FUZ.

Principle	Application to NOR 2
	○ Future Primary School and connections through to Mahurangi College. ○ The landscape character drivers of the tributaries of the Mahurangi River. ○ The urban space qualities of medium density land uses adjacent the Mahurangi River, areas of established native vegetation, and the transition to industrial/business landuse at the eastern end of Woodcocks Road. ○ Cultural values and narratives.
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 2 corridor: ○ On both sides of Woodcocks Road within NOR 2, particularly where large cut/fill batters are indicated. ○ The intersection with Wider Western Link and proposed wetlands.
2.4 **Social cohesion**	The proposed corridor alignment and function can deliver a positive contribution to the sense of belonging and participation, as well as community resilience by supporting direct access to existing local, neighbourhood and town centres, schools, community functions and open spaces. Examples of school, community and business functions that will benefit from improved connectivity delivered by the project within NOR 2 include: ○ Mahurangi College and a proposed future Primary School. ○ Industrial and employment land at the eastern and western ends of Woodcocks Road. To enable equitable local connectivity and cross corridor access to employment land and areas of high density, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including: ○ Mansell Drive. ○ Mason Heights intersection. ○ Falls Road. ○ Wider Western Link.
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ Woodcocks Road between the proposed bi-directional and uni directional cycleway at Mansell Drive intersection; ○ adjoining side roads; and ○ any identified adjacent future community function or movement attractors. In addition to the common matters comment on intersection and crossing point design in Section 2.5 of Table 4, the following locations in NoR2 should be specifically addressed in future design stages: ○ Mansell Drive. ○ Mason Heights.

Principle	Application to NOR 2
	○ Wider Western Link. The future freight function of NoR1 that connects the large future industrial land and its proximity to the future Southern Interchange poses a potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement function. An NoR1 place specific response to integrating these functions should be identified and addressed in future design states of the project. A CPTED audit of the NOR 2 project should address, at a minimum, the current identified CPTED risks including: ○ The corridor interface with the Business – Heavy Industry Zone at the western end of NOR 2, ○ The two proposed bridges near the Wider Western Link and Falls Road ○ The frontage on to proposed wetlands near the Wider Western Link and Falls Road.
MOVEMENT	
3.1 Align corridors with density	Refer to Table 4: Common urban design matters in relation to this design principle.
3.2 Corridor scaled to the surrounding context and urban structure	Refer to Table 4: Common urban design matters in relation to this design principle.
3.3 Facilitate an appropriate interface between place and movement	Key focus areas within NOR 2 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The Residential – Mixed Housing Urban Zone between Falls Road and Mason Heights Road. ○ The interface between the Business – Heavy Industry Zone and Residential – Mixed Housing Urban Zone just west of Falls Road. ○ The Business – Heavy Industry Zone between the Wider Western Link and Falls Road.
4.1 Connect nodes	In addition to the common matters comment on cross corridor connections in Section 4.1 of Table 4, the following locations in NoR1 should be specifically addressed in future design stages: ○ midway between Wylie Road and Falls Road ○ Adjacent to Mahurangi River crossing ○ Approx 400m west of Mansel Drive
4.2 Connect modes	Refer to Table 4: Common urban design matters in relation to this design principle.
4.3 Support access to employment and industry	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 2
4.4 Prioritise active modes and public transport	Refer to Table 4: Common urban design matters in relation to this design principle.
4.5 Support inter-regional connections and strategic infrastructure	Woodcocks Roads will become a key arterial corridor that connects existing industrial/commercial land use activities within Warkworth to the Southern Interchange. The potential conflict between the continued and future freight function of the corridor and placemaking opportunities arising from the introduction of residential land and walking an cycling facilities connection adjacent schools along Woodcocks Road will require careful and deliberate consideration in future design stages of the project. Further urban design commentary on this issue is included under Principles 2.1, 2.4, 2.5, 3.3, 4.1 and 4.4.
4.6 Support legible corridor function	Refer to Table 4: Common urban design matters in relation to this design principle.
LANDUSE	
5.1 Public transport directed and integrated into centres	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 Strategic corridors as urban edges	This principle is not directly relevant to NOR 2.

46. NOR 3 – State Highway 1 - South | Urban Design Matters

Table 8: Urban Design Evaluation for NOR 3 State Highway (Southern Section Upgrade)

Principle	Application to NOR 3
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 3 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands between the Wider Western Link and the Western Link including integration with adjacent tributaries. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities.

Principle	Application to NOR 3
	The corridor sits adjacent to and crosses several vegetated tributaries within eth central portion of NOR 3 that feed into the Mahurangi River that presents an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising disturbance and ensuring a connected natural system.
1.2 **Support water conservation and enhance water quality in a watershed**	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. There are two wetlands near the central portion of the corridor which are located adjacent to a series of tributaries flowing down from steep hill country. This presents an opportunity for the wetland and associated plantings to seamlessly connect with the natural stream system.
1.3 **Minimise land disturbance, conserve resources and materials**	Refer to Table 4: Common urban design matters in relation to this design principle.
1.4 **Adapt to a changing climate and respond to the microclimatic factors of each area**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.1 **Identity and place**	The existing setting of the corridor is expected to change significantly with the realisation of the Business – Light Industry Zone land at the north west end of the corridor and the Future Urban Zone to the south. The future design response of the corridor will need to consider the underlying identity drivers of the surrounding context such as; ○ The landscape character drivers of permanent stream crossings flowing to the Mahurangi River. ○ The urban space qualities of future THAB and local centre land use at the intersection with the Wider Western Link. ○ Morrisons Heritage Orchard. ○ Constructed wetlands and their integration within the FUZ. ○ The threshold between the future urban zone and rural landuse at the southern end of NOR 3
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 4 corridor: ○ On both sides of SH1 within NOR 3 where large cut/fill batters are indicated. ○ Around Wech Drive and the intersection with the Western Link.

Principle	Application to NOR 3
	○ The intersection with Sandspit Link. ○ Proposed wetlands.
2.4 **Social cohesion**	To enable equitable local connectivity and cross corridor access between existing residential areas which have been orientated away from SH1, industrial land to the west and FUZ to the south, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including: ○ Fairwater Road. ○ Wech Drive including a safe and legible connection through to Fairwater Road intersection providing access to the bidirectional cycleway on the west side of the corridor. ○ McKinney Road and Western Link. ○ Valerie Close. ○ Wider Western Link.
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ Transition between sections of bi-directional and unidirectional cycleway near McKinney Road. ○ McKinney Road and Western Link. ○ Valerie Close. ○ Wider Western Link. Detuning the existing SH corridor to reflect its future form and function (more balanced movement and place function) will contribute to the safety of the corridor. In addition to the common matters comment on intersection and crossing point design in Section 2.5 of Table 4, the following locations in NoR1 should be specifically addressed in future design stages: ○ Fairwater Road. ○ Wech Drive including a safe and legible connection through to Fairwater Road intersection providing access to the bidirectional cycleway on the west side of the corridor. ○ McKinney Road and Western Link. ○ Valerie Close. ○ Wider Western Link. The proposed roundabout at the intersection of SH1 and Wider Western Link is a key connection between communities with future THAB and local centre landuse planned. An outcome that would support this is to reduce the scale of the roundabout to suit this context and provide safe and comfortable crossing points for people walking and cycling. A CPTED audit of the NOR 3 corridor should address, at a minimum, the current identified CPTED risks including: ○ The existing side road along Wech Drive and corridor interface through to Fairwater Road. ○ The corridor interface with the future local centre and its connection with the Wider Western Link and Bus Hub.

Principle	Application to NOR 3
	○ The frontage on to proposed wetlands between the Wider Western Link and the Western Link.
3.1 **Align corridors with density**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 3 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ Areas of future medium/high density land use adjacent to the corridor between ○ Interface with residential and industrial/business areas particularly at the Western Link intersection. ○ The rural urban boundary interface at the southern end of NOR 3. The future retrofit and urbansisation of existing rural corridor will need to balance high movement / limited access, lateral connectivity, property access together with pockets of higher place function adjacent active landuse ie. local centre at the Western Link intersection.
4.1 **Connect nodes**	In addition to the common matters comment on cross corridor connections in Section 4.1 of Table 4, the following locations in NOR 3 should be specifically addressed in future design stages: ○ The transition points between the bi-directional cycleway and uni directional cycleway near McKinney Road. ○ Approx 400m north of the Wider Western Link. ○ Valerie Close. ○ Fairwater Road. See also 2.4 and 2.5.
4.2 **Connect modes**	Further development of the functional layout of the SH1 and Wider Western Link intersection is recommended to provide for legibility and clear wayfinding for active modes between the Business – Local Centre / bus hub and THAB and Residential – Mixed Housing Urban Zones to the east.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Refer to Table 4: Common urban design matters in relation to this design principle. See also 2.5 in relation to proposed intersections and crossing points.
4.5	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 3
Support inter-regional connections and strategic infrastructure	
4.6 Support legible corridor function	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 Public transport directed and integrated into centres	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 Strategic corridors as urban edges	This principle is not directly relevant to the NOR 3 corridor as set out in Table 4.

47. NOR 4 – Matakana Road Upgrade | Urban Design Matters

Table 6: Urban Design Evaluation for Matakana Road Upgrade

Principle	Application to NOR 4
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 4 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands near the intersection with Sandpit Road and Sandspit Link ○ Where the corridor runs adjacent to indigenous forest at its southern end. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities. The corridor sits adjacent to several vegetated tributaries that feed into the Mahurangi River at its southern end that presents an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising disturbance and ensuring a connected natural system.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. The southernmost wetland is located adjacent a tributary feeding the River and is enclosed by established riparian vegetation. This presents an opportunity for the wetland and associated plantings to seamlessly connect with the natural stream system.
1.3	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 4
Minimise land disturbance, conserve resources and materials	
1.4 **Adapt to a changing climate and respond to the microclimatic factors of each area**	Refer to Table 4: Common urban design matters in relation to this design principle.
SOCIAL	
2.1 **Identity and place**	The further identification, development and integration of key local community and identity drivers within NOR 4 should be addressed in future design stages. Key NOR 4 local identity locations and functions include: ○ The interface between existing residential development and Future Residential development with the FUZ. ○ The landscape character drivers of the tributaries of the Mahurangi River. ○ The urban space qualities of medium density land uses adjacent to areas of established vegetation, areas of established native vegetation, and the transition towards Hill Street Intersection. ○ Cultural values and narratives.
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 4 corridor: ○ On both sides of Matakana Road within NOR 4, particularly where large cut/fill batters are indicated. ○ Any residual land adjacent the intersection with Te Honohono ki Tai (Matakana Link Road) and proposed wetlands.
2.4 **Social cohesion**	To enable equitable local connectivity and cross corridor access between areas of medium and high density, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including: ○ Te Honohono ki Tai (Matakana Link Road). ○ Sandspit Road. ○ Clayden Road. ○ Melwood Drive including connectivity between residential areas at Northwood Close and Matakana Road, and the FUZ to the north.

Principle	Application to NOR 4
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ The transition between the proposed bi-directional and uni directional cycleway close to Hill Street Intersection. ○ Te Honohono ki Tai (Matakana Link Road) ○ Sandspit Road. In addition to the common matters comment on intersection and crossing point design in Section 2.5 of Table 4, the recently constructed roundabout at Te Honohono ki Tai (Matakana Link Road) adjacent NoR1 should be specifically addressed in future design stages. A CPTED audit of the NOR 4 project should address, at a minimum, the current identified CPTED risks including: ○ Limited passive surveillance along the southern portion of the corridor due to areas of vegetation and steep topography. ○ Future active mode connections to Northwood Close. ○ Future active mode connections to Open Space – Conservational Zone.
BUILT FORM	
3.1 **Align corridors with density**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.3 **Facilitate an appropriate interface between place and movement**	The urbanisation of the existing rural corridor will need to balance high movement / limited access with lateral connectivity and property access together with pockets of higher place function. As such key focus areas within NOR 4 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The FUZ and Open Space – Conservational Zone on the eastern side of the corridor up to Sandpit Link. ○ The existing Melwood Drive community. ○ The Residential – Mixed Housing Urban on the western side of the corridor between Te Honohono ki Tai (Matakana Link Road) and Melwood Drive community.
MOVEMENT	
4.1 **Connect nodes**	In addition to the common matters comment on cross corridor connections in Section 4.1 of Table 4, the following locations in NOR 4 should be specifically addressed in future design stages:

Principle	Application to NOR 4
	○ At the northern end of Northwood Close (between the Residential – Single House Zone and Residential – Mixed Housing Urban Zone. ○ The Open Space – Conservation Zone 45pprox. 250m south of Te Honohono ki Tai (Matakana Link Road). ○ Melwood Drive See also 2.4 and 2.5.
4.2 Connect modes	Refer to Table 4: Common urban design matters in relation to this design principle.
4.3 Support access to employment and industry	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 Prioritise active modes and public transport	Refer to Table 4: Common urban design matters in relation to this design principle. See also 2.5, 3.3, and 4.5.
4.5 Support inter-regional connections and strategic infrastructure	The corridor has predominantly been scaled to fit within the topographical and existing land use constraints. In addition to the commentary in 2.5, the recently constructed roundabout at Te Honohono ki Tai (Matakana Link Road) is a specific opportunity for further development as the surrounding area is progressively urbanised. The roundabout is scaled to a rural high speed corridor context and will require redesign to fit the medium to high density residential landuse that is already been structure planned.
4.6 Support legible corridor function	Refer to Table 4: Common urban design matters in relation to this design principle.
LANDUSE	
5.1 Public transport directed and integrated into centres	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 Strategic corridors as urban edges	This principle is not directly relevant to NOR 4.

48. NOR 5 – Sandspit Road Upgrade | Urban Design Matters

Table 7: Urban Design Evaluation for NOR 5 – Sandspit Road Upgrade

Principle	Application to NOR 5
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 5 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands near Withers Lane. ○ Where the corridor runs adjacent to indigenous forest between Park Lane and Millstream Place. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities. The corridor sits adjacent to and crosses several vegetated tributaries that feed into the Mahurangi River at its eastern end that presents an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising disturbance and ensuring a connected natural system.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. The wetland near Wuthers Lane is located adjacent to tributaries feeding the Mahurangi River and are enclosed by established riparian vegetation. This presents an opportunity for the wetland and associated plantings to seamlessly connect with the natural stream system.
1.3 Minimise land disturbance, conserve resources and materials	Refer to Table 4: Common urban design matters in relation to this design principle.
1.4 Adapt to a changing climate and respond to the microclimatic factors of each area	Refer to Table 4: Common urban design matters in relation to this design principle.
2.1 Identity and place	The future design response of the corridor will need to consider the underlying identity drivers of the surrounding context such as: ○ The landscape character drivers of the tributaries of the Mahurangi River. ○ The urban space qualities of residential land uses adjacent the Mahurangi River, areas of established native vegetation, and the transition via Hill Street intersection between the town centre to the west and residential landuse to the east. ○ Cultural values and narratives.

Principle	Application to NOR 5
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 5 corridor: ○ On both sides of Sandspit Road within NOR 5 particularly where large cut/fill batters are indicated. ○ Any residual land adjacent to the intersection with Sandspit Link and proposed wetlands.
2.4 **Social cohesion**	To enable equitable local connectivity and cross corridor access between areas of medium and high density, further development at the detailed design stage should be undertaken of crossing points at intersections and potential midblock crossings including: ○ Sandspit Link. ○ Withers Lane. ○ Matakana Road – with a strong focus on creating a seamless connection between the community in the north east quadrant of the town (along Sandspit Road) with the Warkworth Town centre.
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ The transition points between the bi-directional cycleway / offroad multi user path and uni directional cycleway. ○ Matakana Road ○ Sandspit Link In addition, a CPTED audit of the NOR 5 project should address, at a minimum, the current identified CPTED risks including: ○ Limited passive surveillance along the western portion of the corridor due to areas of vegetation and steep topography. ○ Cycle and walking bridge at the western end of NOR 5. ○ Limited passive surveillance along the corridor between the Landscape Protection Zone (identified in the Structure Plan) and the Residential – Single House Zone.
3.1 **Align corridors with density**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 5
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 5 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The key intersections and mid-block crossings outlined under principle 2.4 – Social Cohesion. ○ The built form interface with areas of established native riparian vegetation and steep topography between Matakana Road and Sandspit Link.
4.1 **Connect nodes**	In addition to the common matters comment on cross corridor connections in Section 4.1 of Table 4, the following locations in NOR 5 should be specifically addressed in future design stages: ○ The transition points between the bi-directional cycleway / offroad multi user path and uni directional cycleway. ○ Matakana Road ○ Sandspit Link ○ Approx 400m east of Sandspit Link See also 2.4 and 2.5.
4.2 **Connect modes**	Further development of the functional layout of the Matakana Road intersection is recommended to provide for legibility and clear wayfinding for active modes through to the Warkworth Town Centre.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Potential priority conflicts between active modes / public transport and the high vehicle movement across Matakana, Sandspit Road Intersections should be further identified and addressed in future design states of the project.
4.5 **Support inter-regional connections and strategic infrastructure**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.6 **Support legible corridor function**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 **Public transport directed and integrated into centres**	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 5
5.2 Strategic corridors as urban edges	This principle is not directly relevant to NOR 5 corridor.

49. NOR 6 – Western Link | Urban Design Matters

Table 9: Urban Design Evaluation for NOR 6 Western Link

Principle	Application to NOR 6
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 6 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands at the northern and southern ends of the corridor. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. There are two wetlands at the northern and southern ends of the corridor which are located adjacent to a series of tributaries flowing down from steep hill country. This presents an opportunity for the wetland and associated plantings to seamlessly connect with the natural stream system.
1.3 Minimise land disturbance, conserve resources and materials	Refer to Table 4: Common urban design matters in relation to this design principle.
1.4 Adapt to a changing climate and respond to the microclimatic factors of each area	Refer to Table 4: Common urban design matters in relation to this design principle.
2.1 Identity and place	The existing setting of the corridor is expected to change significantly with the realisation of the Business – Light Industry Zone land on the north side of the corridor

Principle	Application to NOR 6
	and the Future Urban Zone to the south currently identified as Residential – Mixed Housing Suburban Zone. The further identification, development and integration of key identity drivers within NOR 6 should address the interface issues between potential opposing landuses on either side of the corridor.
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support a landuse transition buffer and/or any proposed development / redevelopment together to the NOR 6 corridor ○ On the north side of the Western Link, particularly where large cut/fill batters are indicated. ○ Residual land adjacent intersections and proposed wetlands.
2.4 **Social cohesion**	Due to the contrast in landuse on either side of the corridor (Light Industry Zone land on the north side of the corridor and the Future Urban Zone to the south identified as Residential – Mixed Housing Suburban Zone) To enable equitable local connectivity and cross corridor access between future residential (FUZ) to the south, employment land to the north, and through to key destinations at either of the corridor further development will be required at future design stages. Further development of crossing points at intersections and potential midblock crossings are required including: ○ Evelyn St / Jamie Lane intersection ○ SH1 / McKinney Road intersection
2.5 **Safety**	The future freight function of NOR 6 associated with existing and future industrial land on the north side of the corridor poses a potential conflict between placemaking aspirations within local communities on the south side of the corridor and the scale and speed of the proposed movement function. An NOR 6 place specific response to integrating these functions should be identified and addressed in future design states of the project. Reducing the number of access points to industrial land on the north side of the corridor will help reduce the number of conflict locations. A CPTED audit of the NOR 6 corridor should address, at a minimum, the current identified CPTED risks including: ○ The corridor interface with the Business – Light Industry on the north side and Residential – Mixed Housing Suburban. ○ The frontage on to the proposed wetland at the north end and its location adjacent to an existing wetland. ○ Surveillance restrictions due to large cut/fill batters throughout the corridor.
3.1 **Align corridors with density**	This principle is not directly relevant to the NOR 6 corridor as the area is predominantly zoned Business – Light Industry Zone and Future Urban Zone.

Principle	Application to NOR 6
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 6 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The built form interface between the opposing Business – Light Industry Zone and Residential – Mixed Housing Suburban Zone. ○ Visual or landscape buffers and development controls proposed for the Business – Light Industry Zone. ○ Large cut/fill batters throughout the corridor. The interface with residential and commercial landuse requires resolution and coordination with adjacent landowners in future stages to ensure local access and connectivity can be achieved, particularly where higher density housing is likely to occur.
4.1 **Connect nodes**	In addition to the common matters comment on cross corridor connections in Section 4.1 of Table 4, the following locations in NOR 6 should be specifically addressed in future design stages: ○ Mason Heights community at the transition point between the bi-directional cycleway and uni directional cycleway at the north end of the corridor. ○ Employment land off Morrison Drive See also 2.4 and 2.5.
4.2 **Connect modes**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.5 **Support inter-regional connections and strategic infrastructure**	The Western Link will become a key arterial corridor that connects existing industrial/commercial land use activities within Warkworth to the Southern Interchange. The potential conflict between the continued freight function of the corridor and placemaking opportunities arising from the introduction of residential land on the south side of the corridor and walking and cycling facilities connection to nearby schools along Woodcocks Road will require careful and deliberate consideration in future design stages of the project. Further urban design commentary on this issue is included under Principles 2.1, 2.4, 2.5, 3.3, 4.1 and 4.4.

Principle	Application to NOR 6
4.6 Support legible corridor function	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 Public transport directed and integrated into centres	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 Strategic corridors as urban edges	This principle is not directly relevant to the NOR 6 corridor as set out in Table 4.

50. NOR 7 – Sandspit Link | Urban Design Matters

Table 11: Urban Design Evaluation for NOR 7 Sandspit Link

Principle	Application to NOR 7
ENVIRONMENT	
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 7 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands and swales within the corridor. ○ Bridge crossings. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities. There are three bridge crossings in NOR 7 across tributaries that flow directly in to the upper tidal zone of the Mahurangi River. The bridges present an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising the river interruption and ensuring a connected natural system.
1.2 Support water conservation and enhance water quality in a watershed	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. These locations are proposed at: ○ The northern end of NOR 7 adjacent Matakana Road. ○ The centre of the corridor adjacent at bridge crossing. ○ The southern end of the corridor near Sandspit Road.
1.3 Minimise land disturbance, conserve	The corridor traverse's steep topography and required large cut and fill batters (up to 75m wide in places) together with three new road bridges. This will require significant resource and materials to construct relative to the lower density residential developed

Principle	Application to NOR 7
resources and materials	indicated in the structure plan. Identify further landscape integration opportunities to minimise earthworks and structures. In addition, landuse change may be required to reduce the need for infrastructure.
1.4 Adapt to a changing climate and respond to the microclimatic factors of each area	Refer to Table 4: Common urban design matters in relation to this design principle.
2.1 Identity and place	The further identification, development and integration of key local community and identity drivers within NOR 7 should be addressed in future design stages. Key NOR 7 local identity locations and functions include: ○ The bridges across stream tributaries including the landscape character drivers of the Mahurangi River catchment ○ The predominately low density residential landuse anticipated. ○ Cultural values and narratives.
2.2 Respect culturally significant sites and landscapes	Refer to Table 4: Common urban design matters in relation to this design principle
2.3 Adaptive corridors	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 7 corridor: ○ On both sides of the corridor within NOR 7, particularly where large cut/fill batters are indicated. ○ Any residual land adjacent the Sandspit Road intersection.
2.4 Social cohesion	Refer to Table 4: Common urban design matters in relation to this design principle.
2.5 Safety	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ Sandspit Link ○ Matakana Road. ○ Within 50m of each bridge crossing The through function of the corridor which provides a bypass around the Hill Street Intersection combined with a low activation environment due to the lower density residential environment anticipated may create safety issues for people walking and cycling. An NOR 7 place specific response to integrating these functions should be identified and addressed in future design states of the project.
3.1 Align corridors with density	Refer to Table 4: Common urban design matters in relation to this design principle.

Principle	Application to NOR 7
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 7 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The key intersections and mid-block crossings outlined for NOR 2 under principle 2.4 – Social Cohesion. ○ The interface between the Residential – Mixed Housing Suburban Zones adjacent large cut/fill batters and the road corridor. ○ The built form interface, any visual or landscape buffers and development controls proposed for the operational or retired Limestone Quarry.
4.1 **Connect nodes**	There are opportunities in the future development of the Project to consider wider active mode network connections to Matakana Road near Norwood Close.
4.2 **Connect modes**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Refer to Table 4: Common urban design matters in relation to this design principle. See also 2.5.
4.5 **Support inter-regional connections and strategic infrastructure**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.6 **Support legible corridor function**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 **Public transport directed and integrated into centres**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 **Strategic corridors as urban edges**	This principle is not directly relevant to NOR 7.

51. NOR 8 – Wider Western Link - North | Urban Design Matters

Table 10: Urban Design Evaluation for NOR 8 Wider Western Link (Northern Section)

Principle ENVIRONMENT	Application to NOR 8
1.1 Support and enhance ecological corridors and biodiversity	Opportunities within the immediate environment of NOR 8 to support ecological connectivity and biodiversity are identified in the Warkworth local and strategic packages: *Assessment of Ecological Effects* and include*:* ○ Artificial wetlands immediately south of the Southern Interchange and at the intersection with Woodcocks Road. ○ Mahurangi River (Right Branch) crossing. ○ Where the corridor runs adjacent to indigenous forest. Refer to the Warkworth local and strategic package: Assessment of Ecological Effects for details of these opportunities. There is one major bridge crossing in NOR 8 at the Mahurangi River (Right Branch) that presents an opportunity to reinforce broader connectivity outcomes for ecology and water quality by minimising the river interruption and ensuring a connected natural system.
1.2 **Support water conservation and enhance water quality in a watershed**	The proposed typical corridor cross section and designation boundary allows spatial provision to provide natural drainage to constructed wetlands or raingardens to address water quality and reduce hard engineering solutions. These locations are proposed at: ○ South of the Southern Interchange on the western side of the corridor. ○ West of the Intersection with Woodcocks Road
1.3 **Minimise land disturbance, conserve resources and materials**	The intersection with Ara Tūhono and new road bridge across the right branch of the Mahurangi River will require significant resource and materials to construct. Identify further landscape integration opportunities with the southern interchange to minmise earthworks and structures.
1.4 **Adapt to a changing climate and respond to the microclimatic factors of each area**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.1 **Identity and place**	The further identification, development and integration of key local community and identity drivers within NOR 8 should be addressed in future design stages. Key NOR 8 local identity locations and functions include: ○ The bridge across the Mahurangi River (right branch) which forms the transition between Business - Heavy Industry Zone on the north side and residential landuse on the south side.

Principle	Application to NOR 8
	○ The landscape character drivers of the tributaries of the Mahurangi River (right branch) ○ The Business – Heavy Industry Zone. ○ Proximity to Ara Tūhono
2.2 **Respect culturally significant sites and landscapes**	Refer to Table 4: Common urban design matters in relation to this design principle.
2.3 **Adaptive corridors**	If practicable, future land integration post construction should be considered in the following areas to support any proposed development / redevelopment adjacent to the NOR 8 corridor: ○ On both sides of the corridor within NOR 8, particularly where large cut/fill batters are indicated. ○ Any residual land adjacent the intersection with the Southern Interchange, Woodcocks Road and proposed wetlands. ○ Approach batters to the proposed bridge across the Mahurangi River
2.4 **Social cohesion**	To enable equitable local connectivity between areas of residential development north of the Mahurangi River (right branch) and existing residential/commercial landuse on Woodcocks Road, further offroad connections should be explored to avoid traversing the Heavy Industry Zone through to Woodcocks Road or Mason Heights. The current Structure Plan does not identified any road connections between these communities. While not part of the NOR 8, the corridor extends further south through to SH1 connecting a larger area of THAB, a Local Centre, and future bus hub. Ensure continuity and legibility between NOR 8 and the following: ○ The interface between Morrisons Heritage Orchard ○ Proposed THAB and local centre ○ The urban space qualities of THAB density land use adjacent to the corridor together with the proposed local centre, and the transition towards the intersection with SH1.
2.5 **Safety**	To reinforce the sense of personal safety and enable equitable local connectivity and access for active modes future development at the detailed design stage should be undertaken of the final crossing points including: ○ Woodcocks Road ○ North-South thru the Southern Interchange ○ At the southern end of NOR 8 before the bridge crossing. The future freight function of NOR 8 that connects the large future industrial land and its proximity to the future Southern Interchange poses a potential conflict between placemaking aspirations within local communities and the scale and speed of the proposed movement function. An NOR 8 place specific response to integrating these functions should be identified and addressed in future design states of the project. A CPTED audit of the corridor within NOR 8 should address, at a minimum, the current identified CPTED risks including: ○ The Business – Heavy Industry Zone south of the bridge crossing.

Principle	Application to NOR 8
	○ The overbridge environment across and below the Mahurangi River (right branch).
3.1 **Align corridors with density**	Refer to Table 4: Common urban design matters in relation to this design principle.
3.2 **Corridor scaled to the surrounding context and urban structure**	Refer to Table 4: Common urban design matters in relation to this design principle. See also 2.5.
3.3 **Facilitate an appropriate interface between place and movement**	Key focus areas within NOR 8 that require further resolution through the recommended urban integration strategy outlined in Section 3.3 of Table 4 include: ○ The key intersections and mid-block crossings outlined for NOR 8 under principle 2.4 – Social Cohesion. ○ The interface between the Business – Heavy Industry Zone and Residential – Mixed Housing Urban / Suburban Zones near the proposed Mahurangi River Bridge. ○ The built form interface, any visual or landscape buffers and development controls proposed for retained Business – Heavy Industry Zone.
4.1 **Connect nodes**	There are opportunities in the future development of the Project to consider wider active mode network connections to: ○ The Residential – Mixed Housing Urban Zone on Woodcocks Road ○ The Residential – Mixed Housing Surburban Zone west of the Mahurangi River (right branch) ○ The Local Centre, Bus Hub, and THAB Zone at the southern end of the Wider Western Link.
4.2 **Connect modes**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.3 **Support access to employment and industry**	Refer to Table 4: Common urban design matters in relation to this design principle.
4.4 **Prioritise active modes and public transport**	Refer to Table 4: Common urban design matters in relation to this design principle. See also 2.4 and 2.5.
4.5 **Support inter-regional connections and strategic infrastructure**	The potential conflict between the future freight function of the corridor and placemaking opportunities arising from the interface between the Business – Heavy Industry Zone and Residential – Mixed Housing Urban / Suburban Zones will require careful and deliberate consideration in future design stages of the project. Further

Principle	Application to NOR 8
	urban design commentary on this issue is included under Principles 2.1, 2.4, 2.5, 3.3, and 4.1.
4.6 **Support legible corridor function**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.1 **Public transport directed and integrated into centres**	Refer to Table 4: Common urban design matters in relation to this design principle.
5.2 **Strategic corridors as urban edges**	This principle is not directly relevant to NOR 8.

2 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

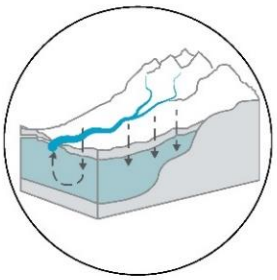
In the placement and design of movement corridors mitigate the effects on or enhance existing ecological corridors.

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 (SEA's).



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.

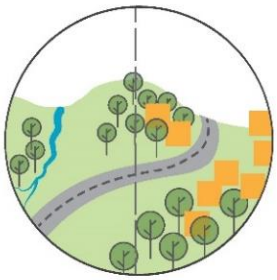
It is important that the mauri of waterways is restored, maintained and preserved for future generations. Connection to the Māori world view is described in the Te Aranga Principles - Mauri Tu: Environmental Health

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

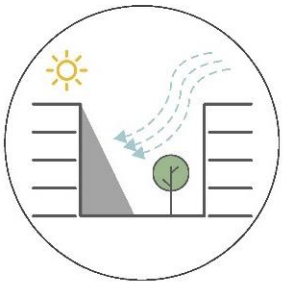
Outcome:

- 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 amalgram of the inherent built, natural and cultural qualities of a place.

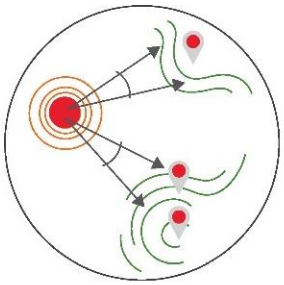
Responding to identity in the location and type of new corridors can provide a sense of continuity and contribute to our collective memory.

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.

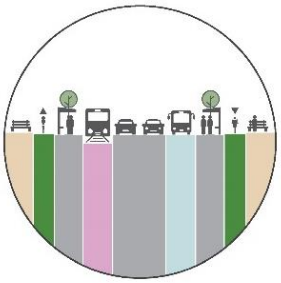
Connection to the Māori world view is described in the Te Aranga Principles - Tohu: The wider cultural landscape.

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 accessbility 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 enironments.

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.

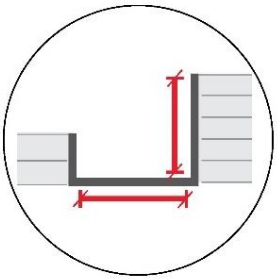
Density (and a diversity of housing choices) gives people the opportunity to live in neighbourhoods that meet their lifestyle preferences and economic means. Residents should be provided with the choice to live in amenity-rich neighbourhoods where they are a short walk or bike ride away from shopping,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

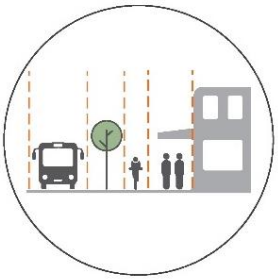
Refer to Locational Principles in Appendix E.

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.

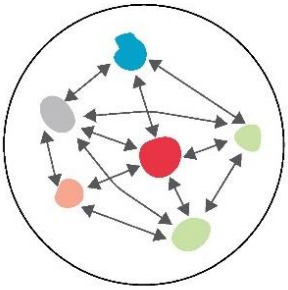
Outcome:

- 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.

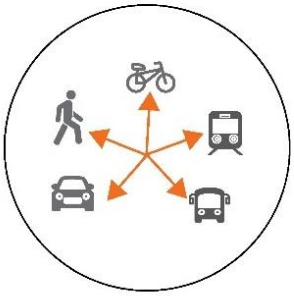
Corridors should accommodate any identified cross connections between nodes outside of strategic corridors.

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.

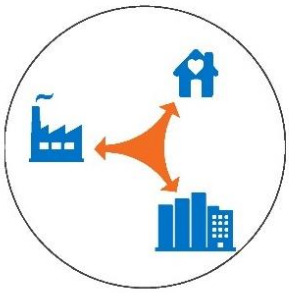
Provide access to multiple travel modes. Corridors can contribute to outcomes for a wider cross section of the community (including elderly, children and mobility-impaired users) when they support safe, comfortable and attractive multi-modal transport for all users.

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.

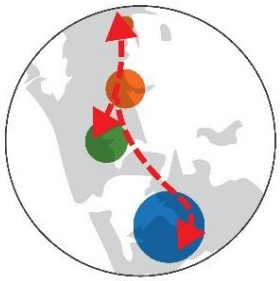
Dedicated and efficient public transport corridors provide modal choice to a larger number of users and reduces the impact on the environment.

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.

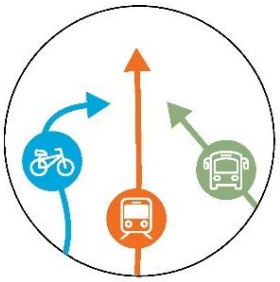
Identify corridor heirarchies and functions to allow for differentiation between inter-regional trips and local trips.

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.

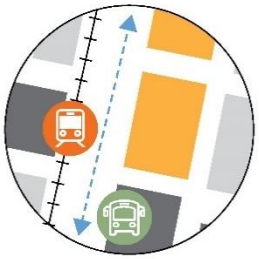
Outcome:

- 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.

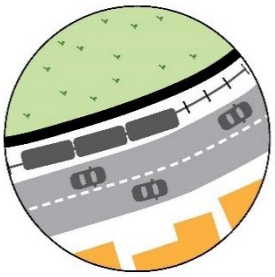
Refer to Locational Principles in Appendix E.

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.