TE TUPU NGĀTAHI
SUPPORTING GROWTH

North West Whenuapai Landscape Effects Assessment

December 2022

Version 1.0

WAKA KOTAHI
NZ TRANSPORT AGENCY

New Zealand Government

Document Status

Responsibility	Name
Author	Oliver May (AEE Specialist Landscape and Visual)
Reviewer	John Goodwin (AEE Specialist Landscape and Visual)
Approver	John Daly

Revision Status

Version	Date	Reason for Issue
1.0	16/12/2022	Notice of Requirement Lodgement

Table of Contents

Appendices

No table of contents entries found.

Table of Figures

Table of Tables

Abbreviations

Acronym/Term	Description
AEE	Assessment of Effects on the Environment
AC	Auckland Council
AT	Auckland Transport
AUP:OP PO7	Auckland Unitary Plan Operative in Part
BLI	Business – Light Industry Zone
BMU	Business – Mixed Use
FTN	Frequent Transit Network
FUZ	Future Urban Zone
HNC	High Natural Character area
LCDB	Land Cover Data Base
LEA	Landscape Effects Assessment
NoR	Notice of Requirement (under the Resource ManagementAct 1991)
NPS-UD	National Policy Statement-Urban Development
NPS-FM	National Policy Statement for Freshwater 2020
NZCPS	New Zealand Coastal Policy Statement 2010
NZDF	New Zealand Defence Force
ONC	Outstanding Natural Character
ONF	Outstanding Natural Feature
ONL	Outstanding Natural Landscape
PPC5	Proposed Plan Change 5
RMA	Resource Management Act 1991
RNZAF	Royal New Zealand Air Force
SEA	Significant Ecological Areas
SH16	State Highway 16
SH18	State Highway 18
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Programme
ULDMP	Urban and Landscape Design Management Plan
Waka Kotahi	Waka Kotahi NZ Transport Agency

Glossary of Acronyms / Terms

Acronym/Term	Description
Auckland Council	Means the unitary authority that replaced eight councils in the Auckland Region as of 1 November 2010.
Whenuapai Assessment Package	Four Notices of Requirement and one alteration to an existing designation for the Whenuapai Arterial Transport Network for Auckland Transport.
Baseline Landscape	The landscape and visual character as it exists at the commencement of the assessment process – i.e. prior to the construction of the proposed development.
Change Management	Identification of ways to enhance the landscape and actions to avoid, remedy or mitigate adverse landscape effects.
Designation Boundary	The extent of the proposed NoRs
Landscape	Is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations.[1]
Landscape Character	Is derived from the distinct and recognisable pattern of elements that occur consistently in a particular landscape. It reflects particular combinations of geology, landform, soils, vegetation, land use and features of human settlement. These elements create a unique sense of place defining different areas of the landscape.
Likely Future Environment	The landscape and visual character as a result of the future development proposed in the AUP:OP, including specific precinct plans, structure plans and proposed plan changes relating to the Project area. The likely future environment includes any existing baseline landscape elements (i.e. ONL's, protected vegetation, water ways, landform, sites and/or elements of cultural significance, and existing land-use scenarios) that are likely to endure following anticipated future development resulting from future urban zoning, AUP:OP overlays and land development projects (planned and/or under construction).
Landscape Effects	Landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. This may in turn affect the perceived value ascribed to the landscape.
Natural Character	The level of natural character (or naturalness) varies within each landscape/seascape and is the result of the combined levels of indigenous nature and perceived nature. These are typically defined by the extent to which natural elements, patterns and processes occur and are legible, and the nature and extent of human modification to the landscape and ecosystems.
Natural Character Effects	Natural character effects arise from landform modification and subsequent vegetation clearance within water bodies including wetlands, lakes and rivers and their margins.[2]

[1] NZILA Landscape Assessment and Sustainable Management Practice Note 10.1

[2] Resource Management Act 1991 and New Zealand Coastal Policy Statement 10.1

Acronym/Term	Description
Permanent Effects (Operational Effects)	Describes the effects on the landscape of completed works (including integrated landscape mitigation measures), the significance of physical landscape change and ultimately the resulting effects of the Projects on landscape character, natural character and visual amenity for both public and private viewing audiences.
Project area	Refers to the land being developed within the boundary of the NoRs.
Temporary Effects (Construction Effects)	Describes the anticipated impacts on the bio-physical elements and features of the landscape resource (landform, vegetation and hydrology) resulting from the construction of the Project. It also includes visual amenity effects for both public and private viewing audiences from construction works.
Visual Effects	Visual effects relate to the changes to amenity values of a landscape including the "natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".[3]

[3] Resource Management Act 1991.

1 Executive Summary

Assessment undertaken

This Landscape Effects Assessment (LEA) has been undertaken with reference to Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines[4]. It assesses the effects resulting from the proposed North West Local Arterial Network on the landscape which comprises physical and landscape character, natural character and visual amenity. Landscape effects result from natural or induced changes in the quality or character of landscape. Natural character effects relate to the changes to the condition of waterbodies and their margins..

Effects arise from change in the values associated with the landscape, not as simply as a result of the change itself. Visual effects are the result of change to the landscape and are a consequence of that change.

Changes during the construction process and/or activities associated with the implementation of development are considered separately to those generated by a completed development.

Project context summaries

NoR W1 Trig Road North

This project is set within an existing rural road corridor surrounded on either side by rural residential properties, agricultural production land and associated buildings. The surrounding land is zoned as FUZ and is expected to be urbanised in the future. The Whenuapai Structure Plan indicates that the future land use will be predominantly for business, commercial and industrial activities.

NoR W2 Māmari Road

The project is located along an existing north south rural road corridor which terminates either side of the Sinton Stream. At the northern end the road meets existing residential development, whereas the remainder of the route is surrounded by rural production land, rural residences and a local school. The entirety of the route is within FUZ land and will be urbanised in the future. The Whenuapai Structure Plan indicates that north of the Sinton Stream will be used for residential and south of the stream will be predominantly for business, commercial and industrial use.

NoR W3 Brigham Creek Road

Brigham Creek Road is an existing arterial road that connects SH16 (in the east) to SH18 (to the west) through the Whenuapai settlement. The existing road corridor includes a segregated active mode pathway and some street tree planting. The road is surrounded by rural properties to the east, the Whenuapai RNZAF base towards the centre and residential development to the west. Land to the south of the road corridor and at the eastern and western extents are largely zoned as FUZ. The Whenuapai Structure Plan indicates that south of Brigham Creek Road will developed primarily for business, commercial and industrial use, whereas to the north it is to be developed as residential.

NoR W4 Spedding Road

Spedding Road is an existing rural road which runs to the west of Trigg Road and is surrounded by rural production land and rural residences. The surrounding land is zoned as FUZ and is expected to

[4] 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', [Final Draft subject to final editing, graphic design, illustrations, approved by Tuia Pito Ora/NZILA 5 May 2021]

be urbanised in the future. The Whenuapai Structure Plan indicates that this will be predominantly for business, commercial and industrial use.

NoR W5 Hobsonville Road (alteration to existing designation 1437)

Hobsonville Road is an existing arterial road which traverses north-east from SH18 to Westgate junction. The existing road is bordered to the east and south by existing urban residential development. To the north and west the road borders a mix of rural residential, undeveloped fields and large lot commercial and business lots. The north-west of the route is primarily zoned as FUZ and BLI. The BLI is expected to continue to be developed for business and commercial use and the Whenuapai Structure Plan indicates that the FUZ will be developed for high and medium density residential development.

Potential Positive Effects

A number of positive landscape and visual effects are anticipated as a result of the Projects on completion of proposed mitigation.

Positive effects are likely to include:

- A landscaped streetscape to support emerging urban form within adjacent land;
- A net increase in green infrastructure within existing urban Project areas associated with street trees, berm and stormwater plantings, and planted stormwater wetlands. This will result in improved visual amenity for road users and adjacent viewing audiences within the context of the streetscape and expected future environment.
- Slower speed limits adjacent to existing dwellings and commercial activities improving the experiential qualities of the corridor for users and well as private properties adjacent to the road corridor.
- Assisting the delivering of the indicative esplanade reserves proposed within the Whenuapai Structure Plan.

Construction Effects

Adverse construction effects are expected to be primarily related to the presence of construction plant within existing and new road corridors, lighting of night works, construction sites and the construction of wetlands. The phasing of the Projects will increase the intensity of construction traffic moving along the Project routes throughout the construction period. The phasing of the works along the corridor reduces the length of time audiences are expected to experience adverse effects. Mitigation measures are proposed to reduce the impacts of these construction effects. The anticipated landscape and visual effects are considered with and without implementing mitigation measures.

Operational Effects

Adverse operational effects are expected to be as a result of a widened or introduced road corridor; changes in landform and alteration of watercourses. It is proposed that during the detailed design processes these adverse effects are addressed in the ULDMP. The anticipated landscape and visual effects are considered with and without implementing mitigation measures.

Proposed mitigation measures

Mitigation measures are recommended to reduce adverse effects of a low-moderate and above rating to a lower level.

Construction effects

Mitigation during construction is generally temporary (2-5 years) in nature and will address specific visual effects and impacts on the landscape as a result of the construction activity. ULDMP is recommended as a condition on the designation which should include the following matters:

- Provide hoarding around the boundaries of site compounds that face on to adjacent residential properties.
- Wherever possible, limit the removal of Scheduled notable trees and indigenous vegetation.
- Where topsoil is to be stored on site it is recommended that these areas are grassed to better integrate with the surrounding landscape.
- Wherever practicable consideration should be given to locating stockpiles at the edge of site compounds and grassing these to provide visual screening.
- Mitigate effects related to lighting during night time works by using directional lighting to prevent sky glow and glare/spill light falling on residential properties.

Operational effects

These are effects on the landscape of completed works (including integrated landscape mitigation measures). These effects are expected to endure, however may reduce over time as proposed planting matures. The measures to remedy and mitigate the adverse construction effects of the Project on the natural and urban landscape will be addressed within an ULDMP, these include the following matters:

- **Cut and Fill Batters (General areas)** - All cut and fill slopes to be shaped to a natural profile to integrate into the surrounding natural landform; benching and geometric angles should be avoided where practicable. These areas may be grassed or planted with trees and shrubs to integrate into the adjacent land use.
- **Site Compounds and Construction Yards** - Reinstate construction and site compound areas by removing any left-over fill and shaping ground to integrate with surrounding landform.
- **Impacts on private property** – the Project could potentially impact on existing property features in the following ways and mitigation may be required as a result of:
  - Encroachment into some private yards, impacting on residential amenity and existing entrance way design;
  - Surface level changes between private property and the upgraded road corridor and subsequent regrading of some driveways and private accessways;
  - Greater proximity of the carriageway and footpath/cycleway to property boundaries and increased traffic volumes.
  - Removal of existing boundary treatments

Conclusions

Across all NoRs the adverse landscape and visual effects without the implementation of mitigation proposals will range from **moderate-high** adverse to **very low** adverse during the construction phase. Landscape and visual effects during the operational phase, without mitigation are anticipated to range from **moderate** adverse to **low** adverse

It is anticipated that across all of the NoRs, where mitigation measures are undertaken landscape and visual effects will range from **very low** adverse to **low-moderate** adverse during the construction phase of works. With the project information currently available during the operational phase of works it is anticipated that landscape and visual effects will range from **low-moderate** adverse to **very low** adverse. Across all NoRs the proposed operational effects are assessed approximately 3-5 years

after implementation when proposed planting has become established. After implementation it is expected that landscape effects will diminish over time until planting is established;

The highest level of anticipated adverse landscape effects with or without mitigation are related to the potential removal of the large mature trees at the south east of the Whenuapai Settlement Open Space (NoR W3) or the scheduled notable trees adjacent to the Hobsonville School (NoR W4). Wetlands, watercourses and riparian vegetation are also sensitive to the changes proposed in the construction and operation of the Projects. In particular where there are new proposed crossing points, structures and culverts including the Sinton Stream, Totara Creek, Waiarohia Stream, Trig Stream and Rawiri Stream watercourses. The highest level of anticipated adverse visual landscape effects across all NoRs are related to retained residential properties where existing screening and filtering vegetation is removed and/or the road corridor moves closer to the audience. For all of the NoRs it is anticipated that adverse effects can mitigated and will become amalgamated into the emerging urban development.

2 Introduction

This landscape assessment has been prepared for the North West Local Arterial Network Notices of Requirement (**NoRs**) for Auckland Transport (**AT**) (the "Whenuapai Assessment Package"). The NoRs are to designate land for future local arterial transport corridors as part of Te Tupu Ngātahi Supporting Growth Programme (**Te Tupu Ngātahi**) to enable the construction, operation and maintenance of transport infrastructure in the North West Whenuapai area of Auckland.

The North West growth area is approximatively 30 kilometres north west of Auckland's central city. It will make a significant contribution to the future growth of Auckland's population by providing for approximately 42,355 new dwellings and employment activities that will contribute 13,000 new jobs across the North West. Whenuapai is one of these growth areas, located between State Highway 16 (**SH16**) and State Highway 18 (**SH18**) and at present is largely rural (but Future Urban Zoned) with an existing community consisting of new and more established residential, business and local centre land uses. This growth area is expected to be development ready by 2018-2022 with 401 hectares to accommodate 6,000 dwellings. Furthermore, a Whenuapai Structure Plan was adopted by the Council in 2016 and sets out the framework for transforming Whenuapai from a semi-rural environment to an urbanised community over the next 10 to 20 years.

The Whenuapai Assessment Package will provide route protection for the local arterials, which include walking, cycling and public transport (including the Frequent Transit Network (**FTN**)), needed to support the expected growth in Whenuapai.

This report assesses the landscape, natural character and visual effects of the North West Whenuapai Assessment Package identified in Figure 4-1 and Table 2-1 below.

The Whenuapai Assessment Package comprises five separate projects which together form the North West Whenuapai Arterial Network. The network includes provision for general traffic, walking and cycling, and frequent public transport

Refer to the AEE for a more detailed project description.

Table 2-1: North West Whenuapai Assessment Package – Notices of Requirement and Projects

Notice	Project
NoR W1	Trig Road North
NoR W2	Māmari Road
NoR W3	Brigham Creek Road
NoR W4	Spedding Road
NoR W5	Hobsonville Road (alteration to existing designation 1437)

2.1 Purpose and Scope of this Report

This assessment forms part of a suite of technical reports prepared to support the assessment of effects within the Whenuapai Assessment Package. Its purpose is to inform the AEE that accompanies the four NoRs and one alteration to an existing designation for the North West Whenuapai Assessment Package sought by AT.

This report considers the actual and potential effects associated with the construction, operation and maintenance of the Whenuapai Assessment Package on the existing and likely future environment as it relates to effects on the landscape and recommends measures that may be implemented to avoid, remedy and/or mitigate these effects.

The key matters addressed in this report are as follows:

a) Identify and describe the landscape context of the North West Whenuapai Assessment Package area;
b) Identify and describe the actual and potential landscape effects of each Project corridor within the North West Whenuapai Assessment Package;
c) Recommend measures as appropriate to avoid, remedy or mitigate actual and potential adverse effects on the landscape (including any conditions/management plan required) for each Project corridor within the North West Whenuapai Assessment Package; and
d) Present an overall conclusion of the level of actual and potential effects on the landscape for each Project corridor within the North West Whenuapai Assessment Package after recommended measures are implemented.

2.2 Report Structure

The report is structured as follows:

a) Overview of the methodology used to undertake the assessment and identification of the assessment criteria and any relevant standards or guidelines;
b) Description of each Project corridor and project features within the Whenuapai Assessment Package as it relates to the landscape;
c) Identification and description of the existing and likely future landscape;
d) Description of the actual and potential positive effects of the Project;
e) Description of the actual and potential adverse landscape effects of construction of the Project;
f) Description of the actual and potential adverse landscape effects of operation of the Project;
g) Recommended measures to avoid, remedy or mitigate potential adverse landscape effects; and
h) Overall conclusion of the level of potential adverse landscape effects of the Project after recommended measures are implemented.

This report 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 for the Project, likely staging and the typical construction methodologies that will be used to implement this work. These have been reviewed by the author of this report and have been considered as part of this assessment of landscape effects. As such, they are not repeated here, unless a description of an activity is necessary to understand the potential effects, then it has been included in this report for clarity.

2.3 Preparation for this Report

The assessment is derived from the following data collection and field work:

- Online data collection of aerial maps and AUP:OP / GIS overlays, primarily:
  - Significant Ecological Areas (SEAs)
  - Outstanding Natural Features (ONF) and Outstanding Natural Landscapes (ONL)
  - Outstanding Natural Character (ONC)

  - High Natural Character (HNC)
  - Land Cover Data Base (LCDB)
  - AUP:OP zones; and
  - Catchments and hydrology
- Desktop analysis of the roads, urban areas / future urban areas with Google Maps and Google Streetview.
- Site Visits to each of the Project areas, was undertaken in July 2020, November and December 2021 .
  - The purpose of these site visits was to understand and evaluate the existing baseline as part of determining the physical and sensory impacts the Projects would have on the site and broader landscape; and to identify the Projects' viewing audiences.
- A study of aerial photography including land use, landform and vegetation patterns was undertakento determine the visual catchment and viewing audience of the proposal.
- Private properties which are likely to be affected have been visually surveyed from nearby publicly accessible locations where possible, with further reference to aerial imagery to understand the nature of these potential viewing audiences.
- Review of related specialist reports including Ecology, Arboriculture and Urban Design.
- Environmental and planning information relied upon in this assessment is located in the AEE and Assessment of Ecological Effects.

3 Assessment Methodology

3.1 Overview

This Landscape Effects Assessment (LEA) has been undertaken with reference to Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines[5]. The same methodology applies to the construction and operational stages of the works and for NoRs (W1, W2, W3, W4 and W5).

While natural character, landscape and visual amenity effects assessments are closely related, they form separate procedures. An assessment of the effects on natural character of an activity involves consideration of the proposed changes to the current condition compared to the existing. The assessment of the potential effects on landscape considers effects on physical attributes, landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience.

A detailed description of the methodology is available in Appendix 3 of this assessment.

3.2 Scale of Effects

In determining the magnitude of potential and actual landscape and visual effects of the Project, a consistent 7-point rating scale has been used that is based on the recommendations in the Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines. The effects ratings referred to in this assessment are based upon a seven-point scale which ranges from 'very low' to 'very high' (a detailed description of these scales is available in Appendix 3 of this assessment).

3.3 Landscape Values, Landscape Sensitivity

Landscape values consider any scheduled high value landscape areas (ONLs, ONFs. HNCs or ONCs) at a national, regional or district level within or directly adjacent to the Project areas.

The sensitivity of landscape is influenced by the existing land use, future landscape direction (AUP:OP and also the Whenuapai Structure Plan). The interfaces between lands and water (riparian margins) are particularly sensitive to landscape change. Other landscape attributes may also be sensitive to the effects of landscape change such as topographical and landform features, vegetation, landmarks and landscape features in the contextual landscape.

3.4 Landscape and Natural Character Effects

Landscape effects are a result of physical change in the landscape, which may change the character of the landscape over time. Landscape effects relate to biophysical: abiotic (geophysical processes (landform) and drainage patterns), biophysical: biotic (vegetation cover, quality and pattern) and human attributes (land uses, active and passive recreation, amenity and built form).

Effects will be assessed in terms of:

- Temporary/construction effects, which relate to the construction activities required to implement the Project.

[5] 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', [Final Draft subject to final editing, graphic design, illustrations, approved by Tuia Pito Ora/NZILA 5 May 2021]

- Permanent/operational effects, the effects on the landscape of completed works (including integrated landscape mitigation measures).

Natural character effects pertains to changes to the coastal environment (including the coastal marine area), wetlands, and lakes and rivers[6] and their margins. Effects are primarily concerned with the degree to which natural processes, natural patterns and natural elements have undergone human modification

The natural character assessment for this Project applies to the existing water bodies and wetlands associated with the Sinton Stream, Pikau Stream, Totara Creek, Waiarohia Stream, Rawiri Stream and Trig Stream.

3.5 Visual Effects

Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape. Visual effects are considered for both temporary (construction effects) and permanent (operational effects) of the Projects.

Assessment photography was obtained during the project site visit in November and December 2021. The outlook from viewpoints that were captured onsite were photographed and assessed in variable weather conditions and at standing eye level.

3.6 Limitations and Project Assumptions

This landscape assessment does not specifically address and respond to Mana whenua values from a landscape planning perspective. This report references the latest data available in respect of these matters at the time of issue.

All site assessments have been undertaken from public land and supported through detailed desktop GIS mapping and aerial photograph information.

A range of assumptions have been made in order to establish a consistent approach across the projects and to clearly define the parameters of the context of the construction and operational phases. Detailed list of the Project Assumptions is available in Appendix 3 of this assessment.

The findings of this landscape effects assessment are underpinned by the following assumptions:

3.7 Statutory Guidance

3.7.1 Notice of Requirement

This assessment has been prepared to support the NoRs for the projects. The process for consideration of a NOR is set out in section 168 of the RMA. This includes consideration of the actual or potential effects (including positive effects) on the environment of allowing the requirement under the Resource Management Act (RMA).

[6] A 'river' is defined in the RMA as a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse.

3.8 Non-Statutory Guidance

The Whenuapai Structure Plan indicates how the future urban environment may develop over time, subject to future plan change processes.

3.8.1 Whenuapai Structure Plan September 2016

The stated Whenuapai Structure Plan sets out the framework for transforming Whenuapai from a semi-rural environment to an urbanised community. The structure plan will be implemented through a statutory plan change process to rezone land in Whenuapai.

Detailed analysis of the Whenuapai Structure Plan is available in Appendix 3 of this assessment.

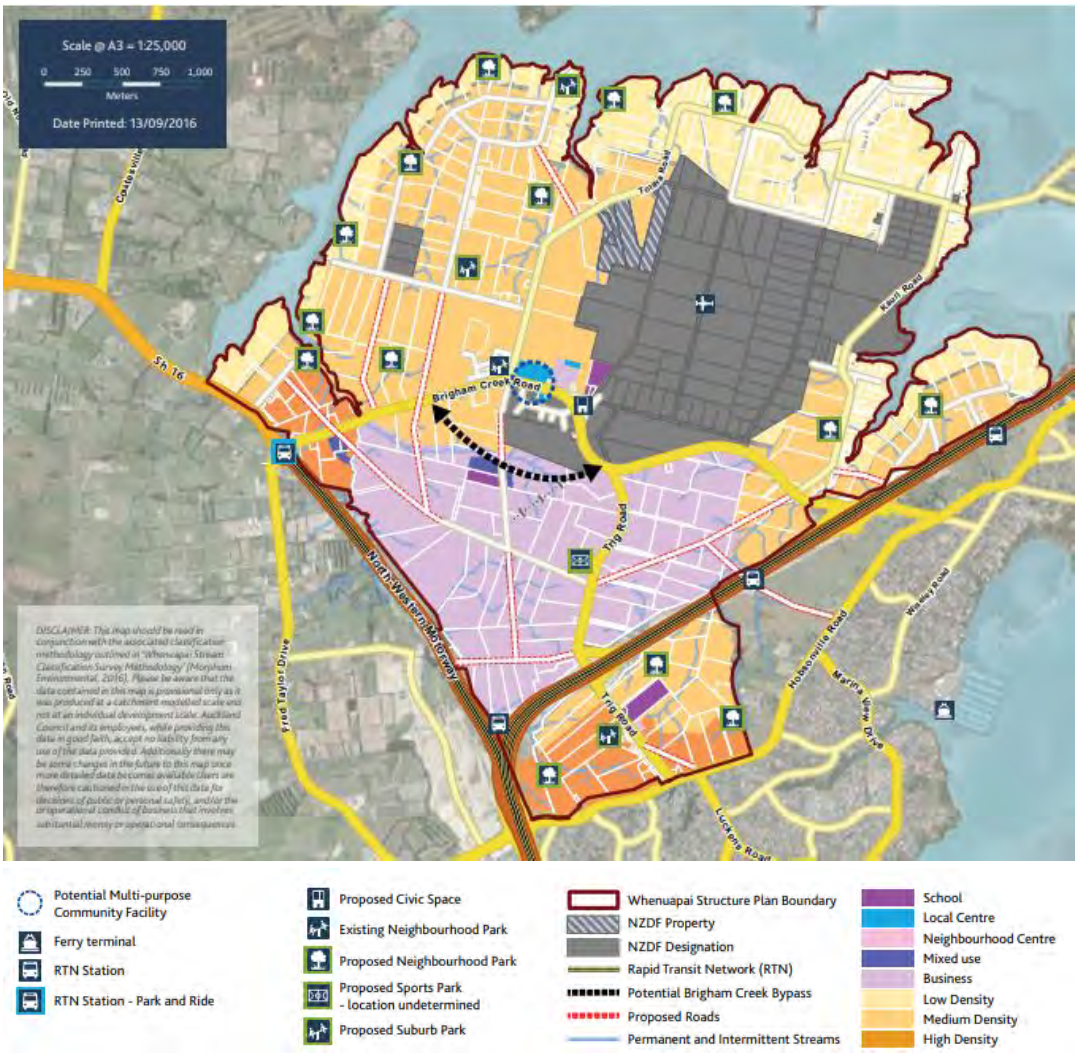


Figure 3-1: Whenuapai Structure Plan Map

3.8.2 National Policy Statement on Urban Development – NPS UD

The National Policy Statement-Urban Development (NPS-UD) came into effect on 20 August 2020 and sets out a list of things that local authorities must do to give effect to the objectives and policies defined within the policy statement.

Detailed analysis of the NPS UD is available in Appendix 3 of this assessment.

4 Whenuapai Assessment Package Overview

An overview of the Whenuapai Package is provided in Figure 4-1: North West Whenuapai Assessment Package – Overview of NoRs for Assessment

Table 4-1 below, with a brief summary of the Whenuapai Assessment Package projects provided in Figure 4-1.

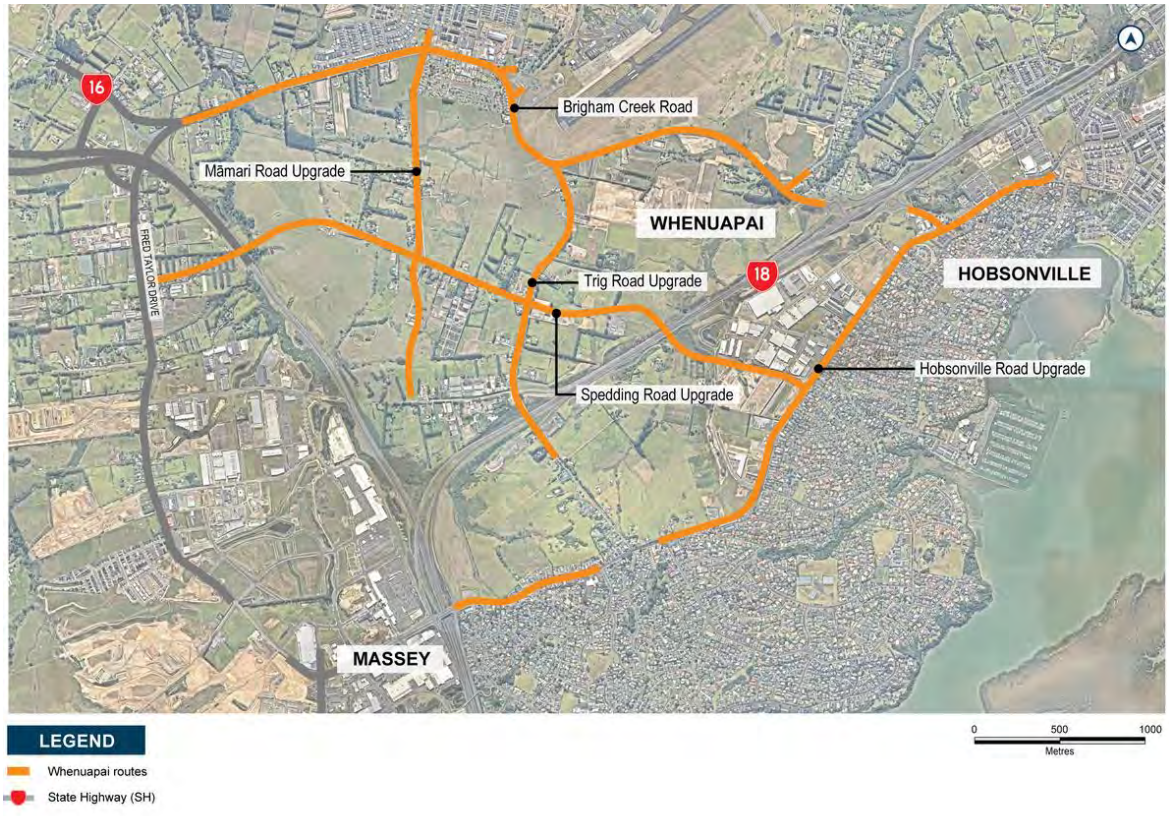


Figure 4-1: North West Whenuapai Assessment Package – Overview of NoRs for Assessment

Table 4-1: Whenuapai Assessment Package Project Summary

Corridor	NOR	Description	Requiring Authority
Trig Road North	NoR W1	Upgrade of Trig Road corridor to a 24m wide two-lane urban arterial cross-section with separated active mode facilities on both sides of the corridor.	Auckland Transport
Māmari Road	NoR W2	Extension and upgrade of Māmari Road corridor to a 30m wide four-lane urban arterial cross-section providing bus priority lanes and separated active mode facilities on both sides of the corridor.	Auckland Transport
Brigham Creek Road	NoR W3	Upgrade of Brigham Creek Road corridor to a 30m wide four-lane arterial cross-section with separated active mode facilities on both sides of the corridor.	Auckland Transport
Spedding Road	NoR W4	Upgrade of the existing Spedding Road corridor and new east and west extensions to form a 24m wide	Auckland Transport

Corridor	NOR	Description	Requiring Authority
		two-lane arterial with separated active mode facilities on both sides of the corridor.	
Hobsonville Road (alteration to existing designation 1437)	NoR W5	Alteration of the existing Hobsonville Road designation 1437 to provide for the widening of the Hobsonville Road corridor between Oriel Avenue and Memorial Park Lane. Upgrade of sections of Hobsonville Road corridor to a 30m wide four-lane cross section with separated active mode facilities on both sides of the corridor Upgrade of sections of Hobsonville Road corridor to a 24m wide two-lane cross section with separated active mode facilities on both sides of the corridor.	Auckland Transport

Please refer to the AEE for further information on these projects, including a project description, key project features and the planning context.

5 Whenuapai Positive Effects

Positive effects in relation to landscape and visual elements are primarily associated with the provision or improvement of urban design and landscape amenity. Although infrastructure projects often introduce or expand a transportation corridor, there are opportunities to improve the visual amenity, landscape legibility and improve landscape character features. Positive landscape effects may result from general landscape improvements associated with the project and / or specific mitigation measures designed to improve anticipated landscape and / or visual effects.

A number of positive landscape and visual effects are anticipated as a result of the operation of the Projects (including proposed mitigation). Positive effects are likely to include:

- A streetscape to support emerging the urban form on corridors with adjacent land FUZ areas and to integrate with and enhance existing urban corridors (Don Buck Road, Hobsonville Road and the existing urban sections on Brigham Creek Road and Riverhead Road));
- A net increase in green infrastructure within existing urban Project areas associated with street trees, berm and stormwater plantings and planted stormwater wetlands, resulting in improved visual amenity for road users and adjacent audiences within the context of the streetscape and the expected future environment.
- Slower speed limits adjacent to existing dwellings and commercial activities improving the experiential qualities of the corridor for users as well as private properties adjacent to the road corridor.

6 Whenuapai Construction and Operational Effects and Proposed Mitigation

6.1.1 Site Enabling Works

Construction Areas

Construction compounds, laydowns, construction machinery, earthworks, material storage will be present across all Projects in this Package. Night works, where required, in places will introduce light into an existing unlit environment. Landscape effects related to activities across this package of work will be; the construction of a new carriage way through undeveloped land (NoR W2, NoR W4, NoR); the widening of an existing road corridor (All NoRs); bridge construction (NoR W1, NoR W2, NoR W4) wetland/dry pond construction (All NoRs), and removal of existing buildings and development (NoR W2, NoR W3, NoR W4, NoR W5). A more detailed indicative construction methodology is available in the AEE, this details the sequencing, typical construction impacts and approximate construction timings.

Vegetation Clearance

Broad areas of street-side vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes for all NoRs. This consists of trees and shrubs located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, private gardens, exotic forest patches and cropland make up the majority of vegetation to be removed.

6.1.2 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

The mitigation measures for all activities and built elements during construction for all NoR Project Areas in this package are outlined below. An Urban and Landscape Design Management Plan (ULDMP) is recommended as a condition on the designation which should include the following matters:

- Provide hoarding around the boundaries of site compounds that face on to adjacent residential properties.
- Interpretation - Where practicable, during construction, install construction hoardings with interpretive panels in selected areas which are in close proximity and visible to the public, to provide information about the Project and its progress.
- Reinstate earth worked areas at the completion of works.
- Vegetation clearance: wherever possible, limit the removal of scheduled notable trees under the AUP and indigenous vegetation.
- Where topsoil is to be stored on site it is recommended that these are grassed to better integrate with the surrounding landscape.
- Wherever practicable consideration should be given to locating stockpiles at the edge of site compounds to provide visual screening.
- Wherever practicable retain stockpile and re-use top soil from existing pastoral land (within the Project area) to reduce the amount of truck movements, and associated visual effect.
- Mitigate effects related to lighting during night time works by using directional lighting to prevent sky glow and glare/spill light falling on residential properties.

6.1.3 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

The mitigation measures for all activities and built elements during operation for all NoR Project Areas in this package are outlined below. The measures to remedy and mitigate the adverse operational effects of the Project on the natural and urban landscape will be addressed under a ULDMP, which will lay out the main design themes, principles and outcomes of the Project.

- **Cut and Fill Batters (General areas)** - All cut and fill slopes to be shaped to a natural profile to integrate into the surrounding natural landform, benching and geometric angles should be avoided where practicable. These areas may be grassed or landscaped, to integrate into the adjacent land use.
- **Site Compounds and Construction Yards** - Reinstate construction and site compound areas by removing any left-over fill and shaping ground to integrate with surrounding landform.
- **Impacts on private property** – the Project could potentially impact on existing property features in the following ways:
  - Encroachment into some private yards, impacting on residential amenity and existing entrance way design;
  - Surface level changes between private property and the upgraded road corridor and subsequent regarding of some driveways and private accessways;
  - Greater proximity of the carriageway and footpath/cycleway to property boundaries and increased traffic volumes.
- For partially affected properties, where existing dwellings are assumed to remain, it is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property, unless other arrangements are requested by land owners.
- Noise mitigation measures and/or retaining walls (if proposed) are recommended to integrate with private boundary fencing reinstatement and any reinstatement planting required to replace vegetation lost through the Project works (i.e. to avoid double layering of noise walls and boundary fences). These features should be designed to minimise adverse visual amenity effects on residents, integrate with the layout and design of outdoor living spaces and in consideration of streetscape character.

7 NoR W1: Trig Road North Upgrade

7.1 Project Corridor Features

Trig Road is an existing rural arterial road extending from Brigham Creek Road in the north and Hobsonville Road in the south, providing an important connection between Whenuapai and West Harbour as well as the connection to SH18 and Hobsonville Road though east facing ramps.

The key landscape matters addressed for the Trig Road North Upgrade include:

- The nature and extent of impacts on the landscape as a physical resource during the construction period of the Project. A specific focus on the location of construction compounds, extent of vegetation clearance, the scale and location of proposed cut and fill slopes and the likely impacts of bridge construction.
- Consideration of landscape character effects and urban amenity issues in relation to the permanent landscape change, including specific assessment of how this corridor will integrate into the future urban environment;
- Potential removal of valued trees consideration of future opportunities to integrate existing trees.
- Consideration of landscape mitigation measures to be included within an Urban and Landscape Design Management Plan (ULDMP) as a condition on the proposed designation to address the potential landscape, natural character and visual effects arising from the operation the Project.

7.2 Existing and Likely Future Environment

7.2.1 Planning context

The Trig Road corridor runs through an existing rural environment, with the land either side of the Trig Road corridor currently zoned FUZ under the AUP:OP.

Table 7-1 below provides a summary of the North West existing and likely future environment

Table 7-1: Trig Road Upgrade Existing and Likely Future Environment

Environment today	Zoning	Likelihood of Change for the environment[7]	Likely Future Environment[8]
Undeveloped greenfield areas	Future Urban Zone	High	Urban
New Zealand Defence Force Air Base	Special Purpose - Airports and Airfields Zone	Low	Urban

Please refer to the AEE for further information on the planning context.

[7] Based on AUP:OP zoning/policy direction
[8] Based on AUP:OP zoning/policy direction

7.2.2 Baseline / Existing Landscape

7.2.2.1 Baseline Landscape

The Project is situated within the existing Trig Road corridor and extends into adjacent land that is characterised by flat to gently rolling pastoral fields and agricultural production.

The local landscape character of Trig Road is summarised below;

- Vegetation cover comprising stand-alone elements of indigenous vegetation, hedgerows, shelterbelts, trees and shrubs along field boundaries; exotic pastoral grassland and non-native stand-alone trees.
- The landscape is characterised by land modification associated with the surrounding rural agricultural productive land use.
- The landscape character value is low within the context of the existing road reserve. There is the potential to enhance this aspect of the landscape.

Landform and Hydrology

Trig Road traverses a gently sloping topography that is slightly elevated to the south, with a high point located at the approach to the SH18 overbridge. The northern extent of Trig Road close to the intersection with Brigham Creek Road is adjacent to a 100 year flood plain.

Landcover

The landscape east and west of Trig Road is characterised by irregular shaped geometric fields bound in parts by isolated elements of native vegetation, exotic grassland, hedgerows and amenity planting in proximity to dwellings. Exotic specimen trees are the predominant landcover on both sides of the road corridor and within the surrounding rural properties. Areas of open pasture are located directly adjacent to the road corridor along the length of the designation on both sides.

Stands of mature native trees located within the road reserve and within the roadside boundaries of private properties contribute to the landscape character of the surrounding landscape. These include a linear belt of mature Pohutukawa (Figure 7-1 below) along the south east field boundary of 92 Trig Road and a line of macrocarpa along the western boundary of 53-55 Trig Road. Land at Lyndale Nurseries and Touch of the Tropics Nursery features dense mature shelter belt planting and a range of mature exotic trees within the properties and towards the road frontage.

No scheduled notable trees are present within proximity of the Project.

Figure 7-1. View north along the road corridor from outside of 92 Trig Road.

Land Use

The existing Trig Road corridor is approximately 20m wide and zoned as ‘Road under the AUP:OP.

Land use either side of the existing road reserve is rural and is predominantly pastoral with associated dwellings (Figure 7-2). Commercial activities are concentrated to the southern portion of the corridor near to SH18 and Northside Drive.

Figure 7-2. View south east across pastoral fields, from outside of 43 Trig Road.

Scheduled Landscape and Ecological Features

There are no scheduled landscape or ecological features within or proximate to the Project area.

Historical and Cultural Associations

An unscheduled World War Two gun emplacement site is situated in 92 Trig Road, this is proposed for scheduling in Plan Change 5. While this is positioned outside of the proposed works the entrance to the lot will be affected, by the road widening and the intersection with Spedding Road.

7.2.2.2 Likely Future Environment

Overview

The land surrounding the Project will witness a significant change from rural to urban land use character over the next 10 years. It is anticipated that the abiotic features of the landscape will be altered over time as the surrounding landscape is urbanised.

It is anticipated that some of the defining biotic (land cover) features of the landscape will undergo substantial change alongside future development, with the removal of large areas of vegetation to accommodate the proposed development. This will likely involve the implementation of street tree plantings, public open space areas and general landscaping within the private yards of future housing development for public amenity.

It is anticipated that the existing vegetation, including the mature vegetation that define the road corridor and field patterns will be removed as part of the urbanisation process.

7.2.2.3 Whenuapai Structure Plan

The Whenuapai Structure Plan provides general guidance for how the FUZ land adjacent to the Project area should be developed over time. The structure plan is illustrated in Appendix 1.

Land Use

The Whenuapai Structure Plan indicates that either side of the Project Area is intended to be urbanised with a "Business" land use. The plan envisages this Business use to comprise Industrial, Retail and Services. Extensive industrial activities such as manufacturing, transport and storage, logistics, construction and wholesale trade are expected. Retail and services are expected to be required to support the increased amount of housing within the Structure Plan.

7.3 Extent of Visibility and Viewing Audience

The visual catchment is the area of land from which part or all of the Project area is visible. This is largely determined by landform, land cover and built elements, which in combination may obscure or filter views. The extent of visibility of the proposed road corridor is contained by the surrounding vegetation, in addition to some subtle changes in topography. Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects. In summary the viewing audience for the Project includes:

- *Public Views:* Transient public audience (vehicle users). Key roads where views can be obtained from include Northside Drive, Spedding Road and Brigham Creek Road. Views include:
  - Travelers (cars, pedestrians and cyclists) along Spedding Road which bisects the site (Refer Appendix 2 Site Photo 1);
  - Travelers (cars, pedestrians, and cyclists) to the north of the site along Brigham Creek Road (Refer Appendix 2 Site Photo 2); and
- *Private Views:* The viewing context also includes a relatively small private viewing audience, comprising views from rural residential and lifestyle dwellings as well as from the commercial and agricultural businesses located to the west of the rail corridor. Specifically:
  - Views from the residential properties with short driveways that immediately front on to Trig Road (19, 33, 43, 52, 47, 67, 82A, 84, 90, 92, 96, 96A Trig Road (Refer Figure 7-3 below), refer Appendix 2 Site Photo 3, 4 and 5); and;
  - Occupants of nearby commercial buildings along Trig Road adjacent the proposed corridor.

Views are well contained within the immediate area surrounding the road corridor due to the relatively flat landscape and intervening vegetation.

Over time, the audience is likely to grow to include residents of future urban developments within the FUZ area.

Figure 7-3. View south towards the residential property at 96 Trig Road.

7.4 Landscape Values

There are no regionally or nationally significant landscapes (ONLs, ONFs or ONCs) within or proximate to the proposed designation boundary. The nearest ONL is Area 1 – Paremoremo Escarpment, located in the Paremoremo Creek approximately 3.8km to the north of the site.

The gently sloping topography and the mature stands of vegetation contribute to the visual amenity of the landscape. The highly modified landscape has limited natural features, which are restricted to individual stands of native vegetation. There is no identified open space within close proximity to the proposed corridor and there are no views from any open spaces or sports fields towards the proposed corridor from the wider landscape.

7.5 Landscape Sensitivity

This corridor is situated within a broader landscape that has been assessed within the AUP:OP as being suitable for urbanisation. The proposed urbanisation of the surrounding landscape as indicated by the Whenuapai Structure Plan will be primarily industrial, retail and service buildings. The Project area is assessed as having a low sensitivity to landscape change.

7.6 Assessment of Landscape Effects and Measures to Avoid, Remedy or Mitigate Actual or Potential Adverse Effects

7.6.1 Positive Effects

Generalised positive effects related to the Project are covered in Section 5 of this report. Additional positive effects related specifically to this Project include:

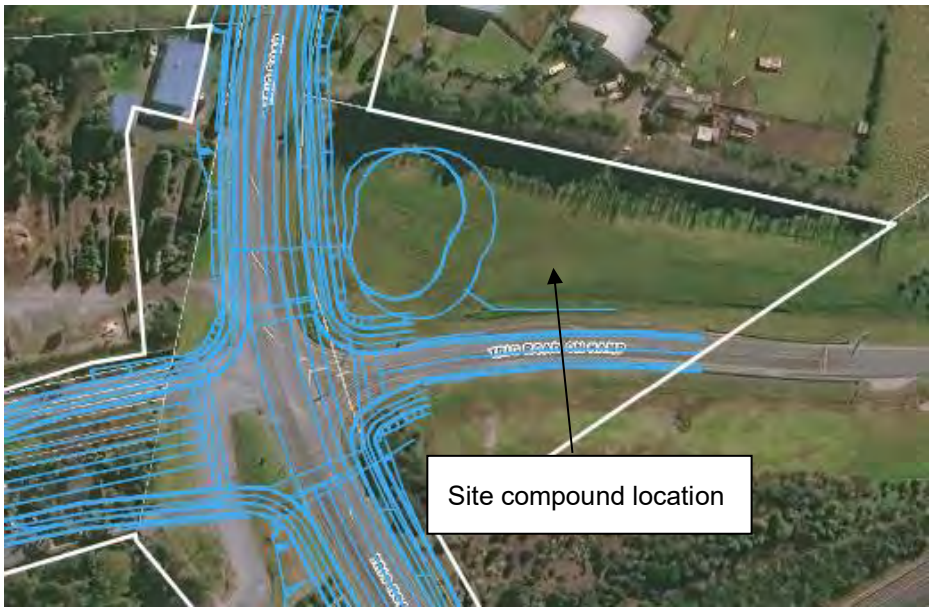
- Improved and/or new opportunities for active modes of transport and the ability to provide improved connectivity to Hobsonville that are projected in the Whenuapai Structure Plan. There is also the potential to create an active mode connection to a proposed Sports Park indicated in the Whenuapai Structure Plan.

7.6.2 Assessment of Construction Effects

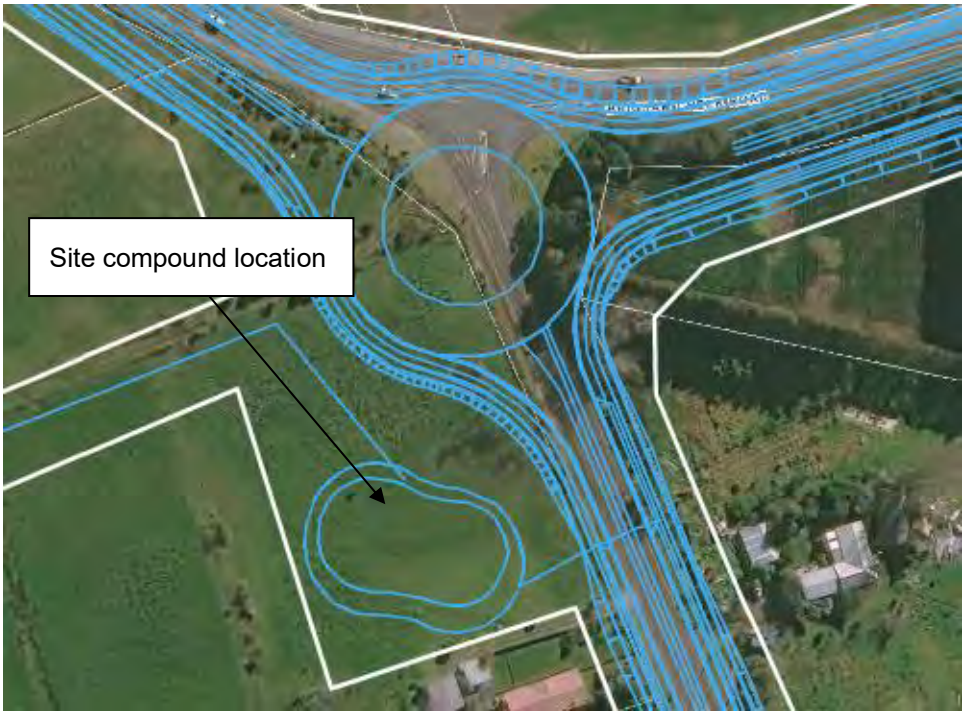
Construction Areas

Site compound and construction areas are to be established at two locations within the Project area. Construction traffic will be heightened at these locations through the construction period of the Project.

- Site compound, stockpile, sediment retention pond and lay-down area for bridge construction is adjacent to the SH18 northbound on ramp (location below).



- Site compound, stockpile, sediment retention pond is located adjacent to the Brigham Creek Road interchange at 96 Trig Road (location below).



The proposed site compounds and construction areas are located within pastoral land that is already somewhat modified by existing rural land use. It is recommended that all areas be grassed (reinstated) at the completion of the construction period.

Without any mitigation it is anticipated that the effects on the landscape would be **low-moderate** adverse to **low** adverse. Assuming that mitigation procedures are provided the adverse physical landscape effects resulting from establishment and use of the construction work areas within the Project area are anticipated to be **low**.

Vegetation Clearance

Broad areas of road side vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes. This consists entirely of trees and shrubs (including some mature native specimen trees) located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, private gardens, exotic stands of trees patches and cropland make up the majority of vegetation to be removed.

With the information available and assuming that the proposed mitigation is undertaken the physical landscape effects likely to arise from vegetation clearance within the Project area is assessed as **low** adverse. Although **low-moderate** adverse effects are expected where a small number of mature specimen trees will be removed. These are not covered by any protections and are detached from a larger contiguous habitat and their removal will be in the context of wider vegetation removal.

Structures and Earthworks

An active mode bridge will be added to the south of the existing bridge over SH18 to accommodate expected additional pedestrian and non-motorised users. This will require additional earthworks within the existing SH18 embankments. This new structure will be seen in the context of the existing road bridge.

It is anticipated that a greater amount of cut than fill earthworks to be undertaken across the project area. Some of these earthworks will occur on land with slopes greater than 10 degrees, overall, the proposed design has relatively even proportions of cut and fill.

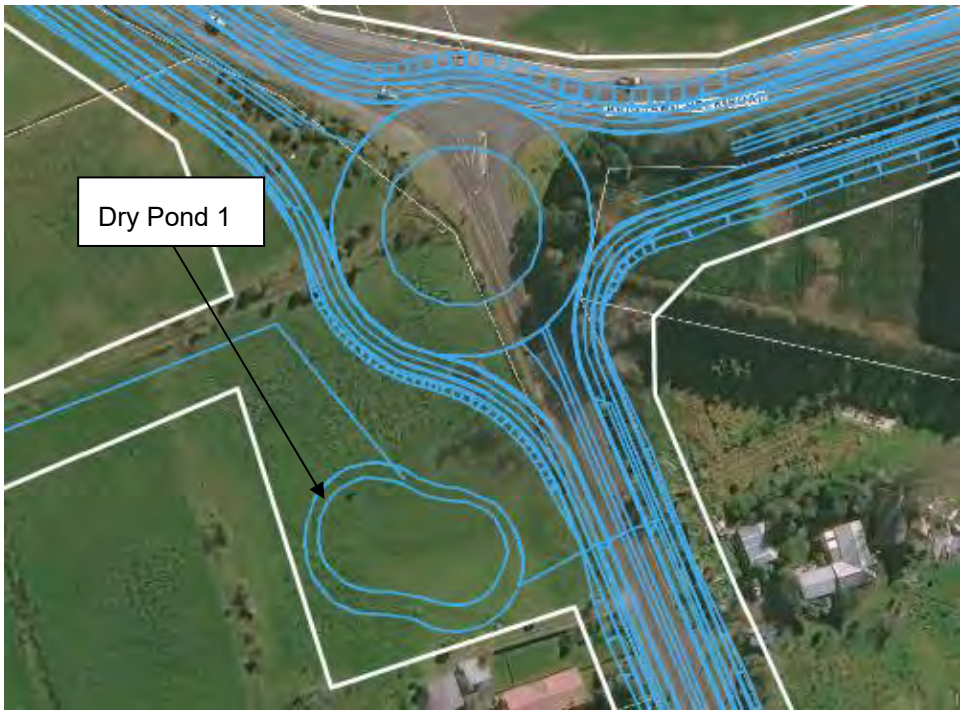
The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 28m wide approximately and will alter the form of the existing marginal pastoral land form.

It is recommended that a condition on the designation is included that promotes the re-use of topsoil from pastoral land impacted by the proposed earthworks[9]

Overall, the earthworks are considered to be of a quantity that is reasonably anticipated with a project of this scope and scale and all cut and fill slopes are expected to be integrated within the existing modified environment. Without mitigation it is anticipated that adverse effects would be **low**. With the information at hand with mitigation these are expected to result in a **very low** adverse level of effects.

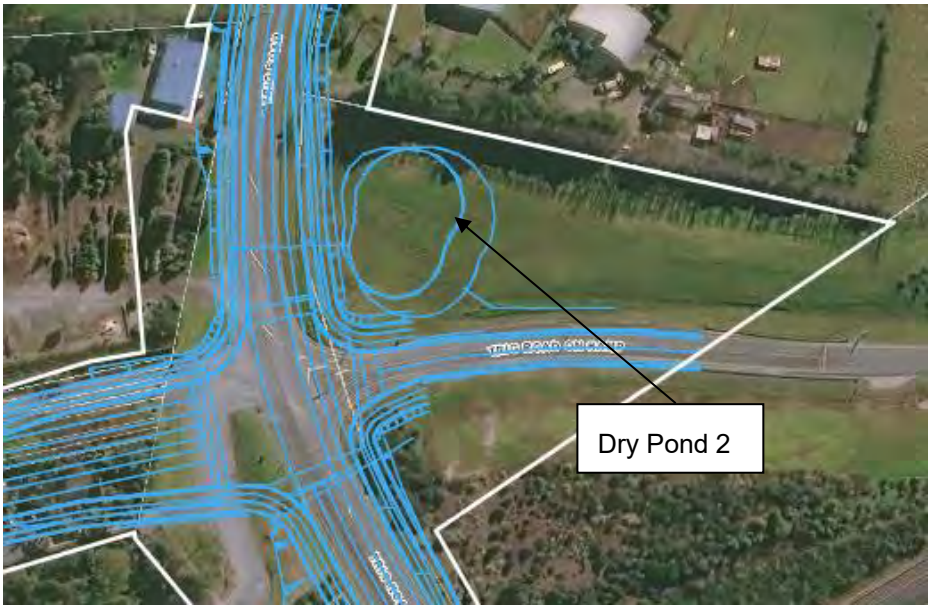
Dry Ponds and features

Two dry ponds are proposed within this Project area. Dry Pond 1 is proposed to the west of the road at the northern extent of the works close to the intersection with Brigham Creek Road at 139 Brigham Creek Road. Dry Pond 1 is set within an open pastoral area outside of existing waterways, within land that is already modified by rural land use.



Dry Pond 2 is proposed near the southern extent of the works on the eastern side of the works. Dry Pond 2 is proposed within the existing road boundary between Trig Road and the north on ramp on to SH18, this land is heavily modified and cleared of vegetation.

[9] Refer to NZTA Landscape Guidelines (September 2014), Section 4.12 Topsoil for additional information regarding best practice guidelines for topsoil management and soil stripping.



The dry ponds will require earthworks to re-shape the land and achieve optimal depths and edge profiles, which will be determined as part of the resource consent phase.

It is anticipated that mitigation will reduce adverse effects. However, due to the expected modification of the landscape and relative scale of the water features we consider adverse effects on the physical landscape to implement the proposed dry ponds to be **low** to **very low** with or without mitigation.

Private Properties

Residential properties within and adjacent to the Project area (including those which are partially designated) will be impacted by the Project in the following ways:

- Surface level changes between private property boundaries and the upgraded road corridor, requiring existing driveways and private accessways to be regraded;
- Encroachment into private yard areas and the removal of private garden plantings and trees, ancillary buildings and boundary fences;
- Potential construction of noise mitigation measures and retaining walls;
- Demolition of existing dwellings and ancillary buildings (required properties)

Approximately 12 existing dwellings are proposed to be impacted by the project works. Landscape mitigation measures are proposed under 6.1.2 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects.

Overall, without mitigation effects for some properties are anticipated be **moderate** adverse. With the implementation of mitigation it is assessed that the adverse effects on the physical landscape on private properties are anticipated to be **low-moderate.**

7.6.2.1 Site Finishing Works

Finishing works are expected to include grassing of exposed earth, lighting, signage, line markings, footpath/cycleway details and reinstatement of private property fences and gardens. Streetscape elements and landscaping, including that required as mitigation will also be implemented. These activities are to be determined by detailed design and will occur within the already modified areas of the Project. Without the implementation of mitigation measures it is anticipated that landscape effects have the potential to be **low** or **low-moderate** adverse. With consideration of the information

available and providing that mitigation measures are implemented, landscape effects are anticipated to be **very low** through this final phase of the construction process.

7.6.2.2 Temporary Visual Effects

The construction of the Project is anticipated to be in two stages along the proposed corridor over a period of approximately 2.5 years. Visual effects are anticipated to occur progressively through the Project area and transient viewing audiences may concurrently experience adverse visual effects from both stages through the construction period.

The consideration of visual effects through the construction phase acknowledges the full range of activities (and their resultant visual impact), required to implement the upgraded road corridor.

It is anticipated that construction activities required to implement the Project will be generally consistent in nature and scale to road works and infrastructure activities commonly anticipated by transient viewing audiences within a main arterial corridor. Another important consideration is that landscape change by way of vegetation removal and land modification (on private rural property), albeit at a lesser scale, forms part of the expected backdrop of the existing environment.

Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects through the construction phase due to the magnitude of vegetation removal and/or earthworks proposed. These areas are outlined below:

- Private properties where physical landscape effects will occur along roadside boundaries.
- Private properties in proximity to the northern site compound at 139 Brigham Creek Road. This is also the location of proposed Dry Pond 1.
- Private properties in proximity to the southern site compound this is also the location of the proposed Dry Pond 2 and the proposed active modes bridge.

The nature and significance of the potential adverse visual effects is considered to be moderated through the Project area by the following:

- Road works and construction activities can generally be expected to occur within arterial roads;
- Trig Road is already a central element within the visual composition of the Project area;
- The existing road corridor landscape has already been modified by previous works required to shape the existing road corridor.
- The construction phase is expected to last approximately 2.5 years and is proposed to be implemented in phases to allow efficient access to the construction zones while maintaining continued access for the intersecting roads and existing private and commercial driveways.

With consideration of the information available and the expected surrounding context. Without mitigation it is anticipated that visual effects for the transient public viewing audience would be low adverse to low-moderate adverse. Provided that mitigation measures are implemented, adverse visual effects for the transient public viewing audience are anticipated to be **low** through the construction phase, taking into account those vantage points listed above where adverse effects are likely to be heightened during the temporary construction period.

Adverse visual effects during the construction phase are likely to be heightened on the basis that private audiences having more direct and prolonged engagement with the construction activities of the Project. This will include the presence of heavy machinery and the visible disturbance of both the road corridor and also individual private interfaces with the road.

With the information at hand and the expected wider context of landscape change and urbanisation and development. It is anticipated that without mitigation it is expected that visual effects for some private audiences have the potential to be **moderate** adverse. Visual effects on private audiences with the implementation of mitigation are anticipated to be **low-moderate** adverse at worst during the construction phase for private viewing audiences, depending on their location, proximity to the works and outlook.

7.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Recommendations are in line with the general recommendations in Section 6.1.2.

7.6.4 Assessment of Operational Effects

7.6.4.1 Natural Character Effects

Within the footprint of the road corridor and the proximate surrounding landscape, there are no existing watercourses or water bodies. As a result there will be no effects on natural character forming elements, features and processes within the Project area.

7.6.4.2 Visual Amenity Effects

Overall, there are likely to be a range of visual amenity effects on public and private viewing audiences relative to their proximity to the corridor. For existing properties set back from the Project area up to approximately 60m, the adverse visual amenity effects will be **very low** adverse without mitigation. However, with mitigation planting that has established some audiences may have no view of the works.

Very low residual adverse visual effects are anticipated for private residents in proximity to dry ponds and site compounds, despite the mitigation works. Residents may experience some level of material change to the visual composition and residential amenity of the road corridor as perceived from their private property.

From some properties directly adjacent to the Project area from which land is required (33, 42, 57, 67, 73, 82, 84, 86, 90, 92 and 139 Trig Road), visual amenity and residential character effects will be heightened as a result of the construction impacts including driveway regrading, potential loss of yard space and by the greater proximity of the carriageway and footpaths/cycleways to private dwellings. It is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property. These mitigation measures should be considered within the ULDMP under the lens of neighbourhood character and as such are discussed further in the following section.

Public viewing audiences will continue to engage with a similar transport environment, within the context of an increasingly urban neighbourhood character resulting in very low adverse effects. Over time, visual effects are anticipated to be positive for the public viewing audience, based on improved visual amenity for users associated with streetscape improvements, maturing street trees, berm planting and accessibility to active modes of transport.

Overall, visual effects are anticipated to be partially or fully mitigated by measures implemented during the finishing phase of the construction period (within the road corridor and private property boundaries), that will mature through the operational phase of the Project to adequately reduce any

potential long-term residual visual effects of the Project. Specific mitigation measures for individual audiences are not anticipated, however this may be required following the detailed design phase.

Based on available information adverse visual effects within the Project area are likely to be **low** to **very low** without the inclusion of mitigation. With mitigation it is anticipated that effects will be **very low** adverse for transient viewers through the operational phase of the Project. For the private viewing audiences, the adverse visual effects following completion of all construction is anticipated to range from **low** to **very low**, reducing over an extended period of time as the landscape planting matures.

7.6.4.3 Landscape Character Effects

The principal elements of the Project will permanently alter the character of the existing Trig Road corridor and adjacent landscape. The existing corridor is currently distinctively rural in character as a result of the limited streetscape features, intermittent vegetation, shelterbelt and hedgerows along field boundaries and existing rural land uses adjacent to the corridor. At the completion of the Project, the upgraded corridor will resemble that of an urban collector road on account of the pedestrianisation, active modes of transport, reduced speed limit, structured street tree planting, integrated stormwater management and engineered roading elements that are inherently urban aesthetic.

Clearance of indigenous vegetation is expected as part of the required works, however these clearance areas will be limited and will not comprise any large areas of protected habitat. The stand of mature Pohutukawa trees within 92 Trig Road are not afforded any protections, however the removal of these trees will diminish the rural landscape character of the existing road. This has the potential to alter the character of these areas by heightening the impression of human modification.

A planting plan is recommended to be included in the ULDMP which will be developed as part of the detailed design of the Project. It is recommended that any planting proposed as mitigation through the regional consents process is integrated with the planting plan as recommended through this assessment under the ULDMP. This will ensure that natural character values are preserved as an outcome of the Project.

The Project is anticipated to enter the operational phase within the context of increased urbanisation as adjacent FUZ land is progressively live-zoned and developed. Although it is not possible to anticipate the exact future urban land use pattern, the Whenuapai Structure Plan suggests that industrial, retail and service buildings will be adjacent to Trig Road and the surrounding area. The Whenuapai Structure Plan indicates that a Proposed Sports Park may be situated close to Trig Road. On that basis we consider that the magnitude and nature of landscape change proposed by the Project is in accordance with that which will occur throughout the localised landscape over time.

Figure 4. Trig Road indicative 24m cross section

The cross section above illustrates the proposed upgrade to the road and the expected future use. Although indicative, there is available space within the road corridor for green infrastructure elements such as street trees and berms where low impact stormwater devices and associated planting can be accommodated These features are expected to improve landscape and urban amenity within the corridor.

As outlined earlier broad areas of vegetation along the existing corridor may not be able to be retained within the new corridor. New street tree planting along the length of the corridor will be an appropriate replacement (from a landscape character perspective) for the vegetation removed, within the context of the anticipated surrounding urban environment.

New street tree plantings, in conjunction with stormwater management and berm plantings, will provide landscape amenity and positively contribute to the landscape character of the Project area within the context of an urban environment. The full impact of the proposed new soft landscape will not by immediate, it is anticipated that adequate establishment will be achieved between 3-5 years.

On the basis of the above without mitigation effects may be as high as **low-moderate** adverse , allowing for future landscape mitigation, adverse landscape character effects are anticipated to be **low**.

7.6.5 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

Recommendations are in line with the general recommendations in Section 6.1.3.

7.7 Conclusions

Overall, it is anticipated that landscape and visual effects, without the implementation of mitigation range from **moderate** adverse to **low** adverse for the construction phase and **low-moderate adverse** to **low** adverse for the operational phase. Adverse landscape and visual effects (with mitigation) range from **very low** to **low-moderate** for the construction phase and **very low** to **low** for the operational phase. Overall, the adverse effects can be mitigated and there are a number of positive landscape and visual effects that can ensue.

8 NoR W2: Māmari Road Upgrade

8.1 Project Corridor Features

Māmari Road is an existing semi-rural road (noting that a section of the corridor is a paper road10) that extends from the intersection of Brigham Creek Road and Totara Road in the north to the intersection with Spedding Road in the south. The proposed Māmari Road FTN upgrade will extend the existing corridor south to connect with Northside Drive. This will provide a north-south connection between the northern parts of Whenuapai and the proposed employment/industrial zoned land to the south.

The key landscape matters addressed for the Māmari Road Upgrade include:

- The nature and extent of impacts on the landscape as a physical resource during the construction period of the Project. A specific focus on the location of construction compounds, extent of vegetation clearance, the scale and location of proposed cut and fill slopes and the likely impacts of bridge construction.
- Consideration of landscape character effects and urban amenity issues in relation to the permanent landscape change, including specific assessment of how this corridor will integrate into the future urban environment;
- Consideration of the potential natural character effects of bridge re-construction within the Sinton and Pikau stream environments. In doing so, acknowledgement of the likely impacts on existing wetland and riparian vegetation (subject to regional consents) and future mitigation thereof.
- Potential natural character effects of the corridor construction and consideration of future opportunities to integrate the proposed wetland areas and associated existing mature vegetation.
- Landscape effects on the RNZAF housing int the SHZ accessed from the northern extents of Māmari Road.
- Consideration of landscape mitigation measures to be included within an Urban and Landscape Design Management Plan (ULDMP) as a condition on the proposed designation to address the potential landscape, natural character and visual effects arising from the operation the Project.

8.2 Existing and Likely Future Environment

8.2.1 Planning context

The northern section of Māmari Road to Spedding Road is an existing road corridor (although a section of the road is a ‘paper road’). The eastern side of this section is predominantly zoned under the AUP:OP as FUZ, with a portion of Residential – Single House Zone. The western side of this section is also predominantly FUZ (see Figure 8-1 below). The Whenuapai Structure Plan indicates that the FUZ land will be re-zoned medium residential to the north (west side of Māmari only) and business to the south.

[10] An unformed legal road (or ‘paper road’) is a legally recognised road that is undeveloped or partly formed, but provides public access to a particular area or feature. Auckland Transport, 2021.

Figure 8-1. View west across Māmari Road towards existing pastoral fields.

Table 8-1 below provides a summary of the North West existing and likely future environment.

Table 8-1: Māmari Road Existing and Likely Future Environment

Environment today	Zoning	Likelihood of Change for the environment[11]	Likely Future Environment[12]
Residential	Residential	Low	Residential
Undeveloped greenfield areas	Future Urban	High	Urban
Timatanga Community School	Special Purpose - School Zone	Low	Urban

Please refer to the AEE for further information on the planning context.

8.2.2 Landscape Environment

8.2.2.1 Baseline Landscape

The Project is situated within the existing northern and southern extents of Māmari Road corridor with a central section of paper road approximately 200m in length. The landform is gently sloping with depressions around the stream corridors and wetland features. Rolling pastoral fields and agricultural

[11] Based on AUP:OP zoning/policy direction
[12] Based on AUP:OP zoning/policy direction

production for the majority of the route. The northern end of the route at the intersection with Brigham Creek Road is boarded to the east by existing residential properties.

The local landscape character of Māmari Road are summarised below;

- Vegetation cover comprising stand alone elements of indigenous vegetation, hedgerows, shelterbelts, trees and shrubs along field boundaries; native riparian vegetation along rivers and wetland areas, exotic pastoral grassland and non-native stand alone trees.
- The Sinton and Pikau streams that cross the route through the middle of the Project
- The landscape is characterised by land modification associated with the surrounding rural agricultural productive land use.
- The landscape character value is low within the context of the existing road reserve. There is the potential to enhance this aspect of the landscape.

Landform and Hydrology

The existing Māmari Road and the central paper road section traverses a gently sloping topography that is slightly elevated to the south, with shallow stream valleys resulting in depressions laterally across the landform. Across the entire Project the proposed route is crossed by wetlands or streams in five locations, most prominently the Sinton Stream and Pikau Stream (refer images below).

Landcover

The landscape east and west of Māmari Road is characterised by elongated geometric fields bound in parts by isolated elements of native vegetation, exotic grassland, hedgerows and amenity planting in proximity to properties. Exotic specimen trees are the predominant landcover on both sides of the road corridor and within the surrounding rural properties. Areas of open pasture are located directly adjacent to the road corridor along the length of the designation on both sides. Indigenous wetland ecosystems within the stream corridors and wetland areas are an important habitat for bird and plant species. Specifically the Sinton Stream has a wide riparian area (see Figure 8-2 below) and identified for enhancement in the Whenuapai Structure Plan.

Stands of mature native trees located within the road reserve and along the roadside boundaries of private properties contribute to the landscape character of the surrounding landscape. The land at Timatanga Community School is surrounded by a mixture of dense mature native and exotic mature vegetation. Rural residential properties along the road tend to have a belt of native and non-native planting the road frontage.

No scheduled notable trees are present within proximity of the Project.

Figure 8-2. View north across the Sinton Stream towards the existing northern portion of Māmari Road.

Land Use

The existing Māmari Road corridor is approximately 20m wide and zoned as 'Road under the AUP:OP.

Land use either side of the existing road reserve is rural and is predominantly pastoral (see Figure 8-3 below) with residential features and a rural school towards the centre of the Project. A small pocket of existing residential properties are concentrated to the north eastern portion of the corridor adjacent to Brigham Creek Road.

Figure 8-3. View north west across overgrown pastoral fields which contains landing signal lights for the RNZAF base.

Scheduled Landscape and Ecological Features

There are no scheduled landscape or ecological features within or proximate to the Project area.

Historical and Cultural Associations

There are no scheduled historical or cultural features within or proximate to the Project area.

8.2.2.2 Likely Future Environment

Overview

The land surrounding the Project will witness a significant change from rural to urban land use character over the next 10 years. It is anticipated that the abiotic features of the landscape will endure, these include the riparian and wetland environments associated with Sinton and Pikau streams and the existing landform.

It is anticipated that some of the defining biotic (land cover) features of the landscape will undergo significant change alongside future development, with the removal of large areas of vegetation to accommodate the proposed development. This will likely involve the implementation of street tree planting, public open space areas and general landscaping within the private yards of future housing development for public amenity.

The quality and natural character values of riparian and wetland environments are generally anticipated to be retained and, in some instances, enhanced as urban development progresses, in accordance with the policy direction of the AUP:OP and Whenuapai Structure Plan which generally seek to protect and enhance these landscape features.

8.2.2.3 Whenuapai Structure Plan

The Whenuapai Structure Plan provides general guidance for how the FUZ land adjacent to the Project area should be developed over time. The structure plan is illustrated in Appendix 1.

Land Use

The Whenuapai Structure Plan indicates that the route to the north of the Sinton Stream will be surrounded by residential development on either side. The east of the route will remain a SHZ for RNZAF housing. To the west the route will abut Medium Density residential development.

To the immediate south of the Sinton Stream is a small area of Mixed Use development adjacent to Timatanga Community School which will remain as a School zoned. Either side of the route further south is intended to be urbanised with a "Business" land use. The plan envisages this Business use to comprise Industrial and Retail and Services. Extensive industrial activities such as manufacturing, transport and storage, logistics, construction and wholesale trade are expected. Retail and services are expected to be required to support the increased amount of housing within the Structure Plan.

8.3 Extent of Visibility and Viewing Audience

The visual catchment is the area of land from which part or all of the Project area is visible. This is largely determined by landform, land cover and built elements, which in combination may obscure or filter views. The extent of visibility of the proposed road corridor is contained by the surrounding built form, in addition to some subtle changes in topography and intervening vegetation. Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects. In summary the viewing audience for the Project includes:

- *Public Views:* Transient public audience (vehicle users). Key roads where views can be obtained from include Spedding Road and Brigham Creek Road. Views include:
  - Travelers (cars, pedestrians and cyclists) along Spedding Road which bisects the corridor (Refer Appendix Site Photo 6);
  - Travelers (cars, pedestrians, and cyclists) to the south of the site along Northside Drive
  - Travelers (cars, pedestrians, and cyclists) to the north of the site along Brigham Creek Road (Refer Appendix Site Photo 7); and
- *Private Views:* The viewing context also includes a relatively small private viewing audience, comprising views from rural residential and lifestyle dwellings as well as from the commercial and agricultural businesses located to the west of the rail corridor. Specifically:
  - Views from the residential properties in an existing urban setting to the north of the corridor with short driveways that immediately front on to the east of Māmari Road (Even numbered properties 2-24) (Refer Appendix Site Photo 8);
  - Views from the residential properties within a rural context along Māmari Road , (5, 7, 11, 15, 28 and 80 (Refer Figure 8-4 below)) (Refer Appendix Site Photo 9);
  - Views from the residential properties accessed from Spedding Road (7 and 9);
  - Views from the residential properties accessed from Northside Drive (70, 72 and 80) and;
  - Occupants of Timatanga Community School at 9 Māmari Road;

Views are well contained within the immediate area surrounding the road corridor due to the relatively flat landscape and intervening vegetation. Over time, the audience is likely to grow to include residents of future urban developments within the FUZ area.

Figure 8-4. Residential property at 7 Māmari road that currently overlooks the Sinton Stream.

8.4 Landscape Values

There are no regionally or nationally significant landscapes (ONLs, ONFs or ONCs) within or proximate to the proposed designation boundary. The nearest ONL is Area 1 – Paremoremo Escarpment, located in the Paremoremo Creek approximately 3.5km to the north of the site.

The gently sloping topography and the mature stands of vegetation contribute to the visual amenity of the landscape. The highly modified landscape has limited natural features, which are restricted to stands of native vegetation, stream and wetland environments and indigenous planting within these stream and wetland habitats.

There is no existing identified open space within the proposed corridor, however there is an existing Neighbourhood Park to the north of the corridor at the corner of Brigham Creek Road and Totara Road.

The Whenuapai Structure Plan indicatively shows an esplanade reserve along the Sinton Stream could be provided as a future open space. It is proposed that this will comprise at least 20 metres in width where the opportunity arises for subdivisions along the coast and waterways.

8.5 Landscape Sensitivity

This corridor is situated within a broader landscape that has been assessed within the AUP:OP as being suitable for urbanisation. The proposed urbanisation of the surrounding landscape as indicated by the Whenuapai Structure Plan will be primarily industrial, retail and service buildings with medium density residential areas at the northern extent of the corridor. Although there are pockets of indigenous vegetation, stream and wetland environments with a moderate level of sensitivity, on balance the Project area is assessed as having a low sensitivity to landscape change.

8.6 Assessment of Landscape Effects and Measures to Avoid, Remedy or Mitigate Actual or Potential Adverse Effects

8.6.1 Positive Effects

Generalised positive effects related to the Project are covered in Section 5 of this report. Additional positive effects related specifically to this Project include:

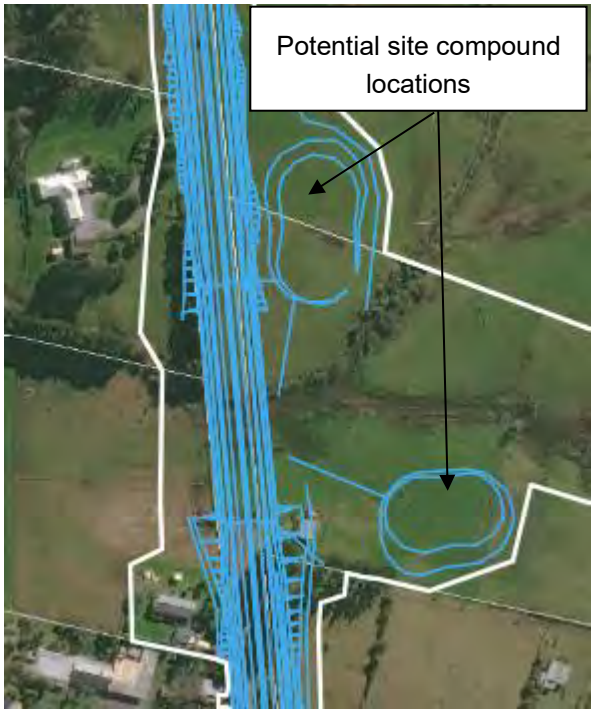
- Improved and/or new opportunities for active modes of transport and the ability to provide improved connectivity to Whenuapai town centre that are projected in the Whenuapai Structure Plan.
- Improvement or enhancement of riparian habitat within the Indicative Esplanades indicated in the Whenuapai Structure Plan.

8.6.2 Assessment of Construction Effects

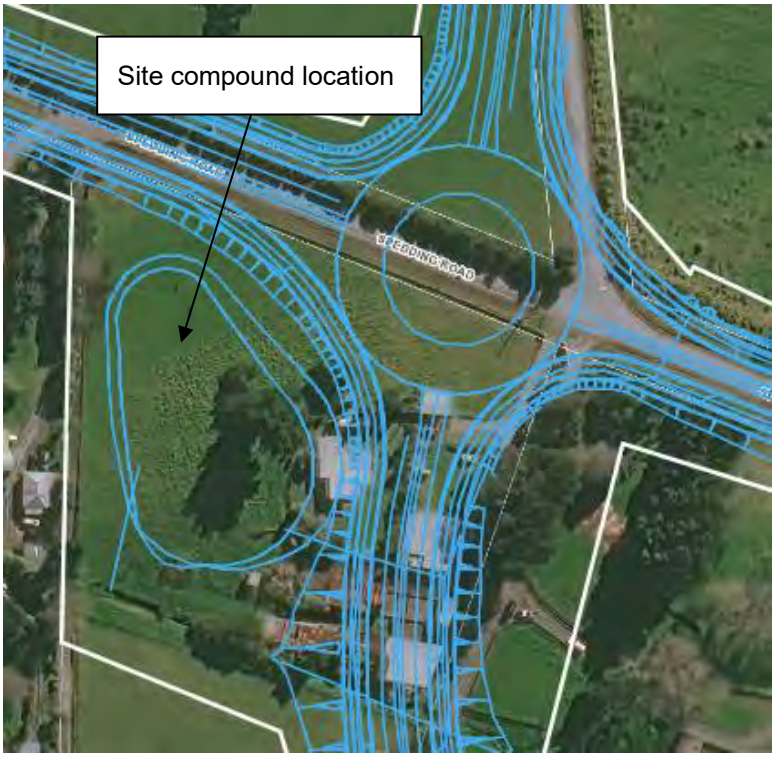
Construction Areas

Site compound and construction areas are to be established at two or three locations within the Project area. Construction traffic will be heightened at these locations through the construction period of the Project.

- Site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located at adjacent to the Sinton Stream at 28A Māmari Road (refer to the image below).



- Site compound, stockpile, sediment retention pond is located in the lot at 10 Spedding Road, adjacent to the north western side of the Spedding Road interchange (refer to the image below).



The proposed site compounds and construction areas are both located within pastoral land that is already somewhat modified by existing rural land use. It is recommended that all areas be grassed (reinstated) at the completion of the construction period.

Without mitigation it is anticipated that physical effects on the landscape will be between **low-moderate** adverse and **low** adverse. With the inclusion of mitigation proposals, the physical landscape effects resulting from establishment and use of the construction work areas within the Project area is assessed to be **low** adverse.

Vegetation Clearance

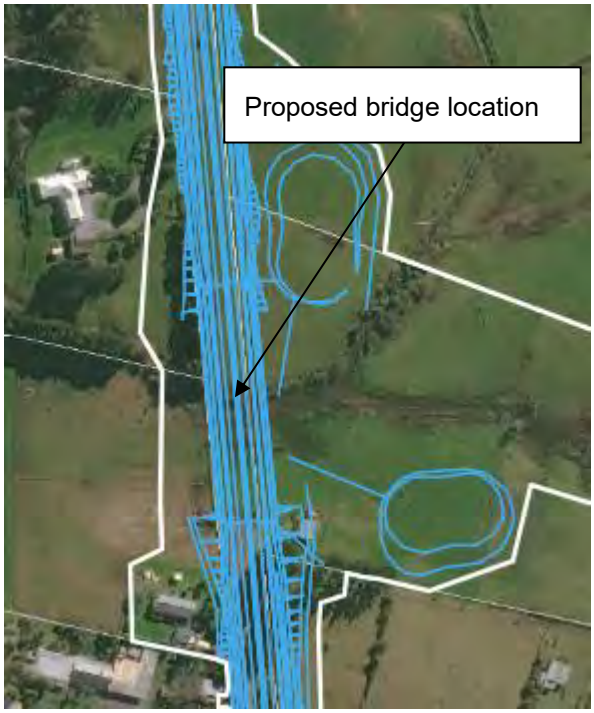
Broad areas of roadside vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes. This consists entirely of trees and shrubs located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, indigenous riparian vegetation, private gardens and exotic stands of trees patches make up the majority of vegetation to be removed.

With the information available regarding the scale of vegetation removal it is expected that adverse visual effects without implementing mitigation will be predominantly **low** adverse with **low-moderate** adverse effects. With the existing information available and provided that the proposed mitigation measure are implemented, the physical landscape effects likely to arise from vegetation clearance within the Project area is assessed as **low** adverse. Although some mature specimen trees will be removed these will be in the context of a landscape that will be urbanised over time.

Structures and Earthworks

A 90m long four lane bridge with footpath / cycle ways on either side is proposed to cross Sinton Stream (refer image below). This bridge is preferred to preserve the stream, wetland and riparian

vegetation along the stream. This will require additional fill earthworks one the north and south Sinton Stream approaches.



The earthworks balance is anticipated to be to be undertaken over the site at a minimum. The majority of the proposed additional fill will comprise brown rock for engineering purposes.

The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform particularly in the wetland areas, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 18m wide and will alter the form of the existing marginal pastoral land form, stream banks and wetlands.

It is recommended that a condition of the designation is included to promote the stockpile and re-use of topsoil from pastoral land impacted by the proposed earthworks[13]

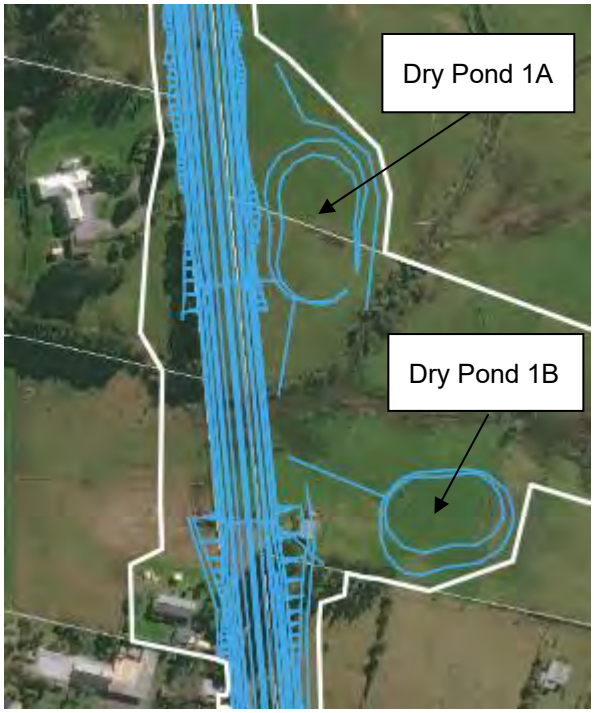
Overall, we consider the earthworks to be of a quantity that is reasonably anticipated with a project of this scope and scale and all cut and fill slopes are expected to be integrated with the existing modified environment. The proposed bridge structure will introduce a new element into the landscape, however this will preserve the connectivity of the stream and indigenous riparian vegetation. Provided that the proposed mitigation measures are undertaken we expect that the adverse effects of the earthworks and bridge structure will be **low**.

Dry Ponds and features

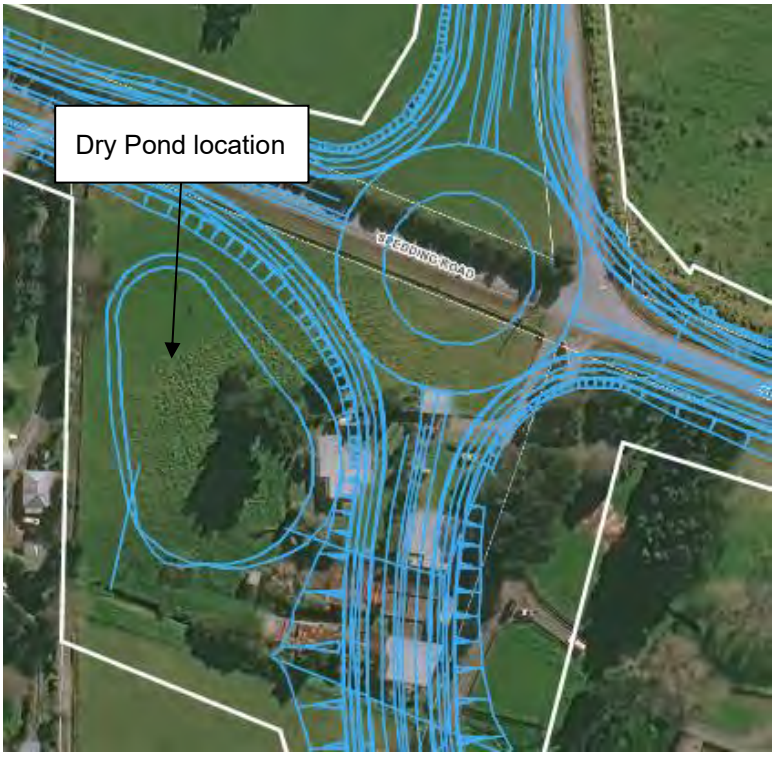
Three dry ponds are proposed within this Project area, one of which is shared with the Spedding Road corridors (refer image below). Dry Pond 1A is proposed to the north of the Sinton stream to the east of the road corridor. Dry Pond 1B, the larger of the two, is positioned to the south of the Sinton

[13] Refer to NZTA Landscape Guidelines (September 2014), Section 4.12 Topsoil for additional information regarding best practice guidelines for topsoil management and soil stripping.

Stream to the east of the road corridor. Both of these ponds will be located within existing pastoral fields.



The third dry pond is located to the south west of the Spedding Road interchange to the north of the Pikau Stream (refer image below).



The dry ponds will require earthworks to re-shape the land and achieve optimal depths and edge profiles, which will be determined as part of the resource consent phase.

It is anticipated that the proposed mitigation will reduce adverse effects as a result of the implementation of the above works. However, due to the existing modified landscape and relative scale of the water features we consider adverse effects on the physical landscape to implement the proposed dry ponds to be **very low** with or without mitigation.

Four branches of the Pikau Stream are required to be culverted (subject to resource consent), to the south of the Spedding Road interchange. Indigenous riparian vegetation within these stream branches is limited to small patches, which reduces their sensitivity to change.

With the information available, it is anticipated that without mitigation it effects on the physical landscape will be **low** adverse. We consider adverse effects on the physical landscape to implement the proposed culverts to be **very low**, provided that proposed mitigation is implemented.

Private Properties

Residential properties within and adjacent to the Project area (including those which are partially designated) will be impacted by the Project in the following ways:

- Surface level changes between private property boundaries and the upgraded road corridor, requiring existing driveways and private accessways to be regraded;
- Encroachment into private yard areas and the removal of private garden plantings and trees, ancillary buildings and boundary fences;
- Potential construction of noise mitigation measures and retaining walls;
- Demolition of existing dwellings and ancillary buildings (required properties).

Approximately 19 existing dwellings will be impacted by the proposed project works. Landscape mitigation measures are proposed under 8.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects below. Without the implementation of these mitigation measures it is anticipated the effects on private properties will range from **moderate** adverse to **low-moderate** adverse. Overall, with the information currently available and the implementation of proposed mitigation measures it is anticipated that the adverse effects of physical landscape effects on private properties is **low-moderate** adverse.

8.6.2.1 Site Finishing Works

Finishing works are expected to include grassing of exposed earth, lighting, signage, line markings, footpath/cycleway details and reinstatement of private property fences and gardens. Streetscape elements and landscaping, including that required as mitigation will also be implemented. These activities are to be determined by detailed design and will occur within the already modified areas of the Project.

Without the implementation of mitigation works physical landscape effects are anticipated to range between **low** adverse and **very low** adverse. With the implementation of mitigation proposals physical landscape effects are expected to be **very low** adverse through this final phase of the construction process.

8.6.2.2 Temporary Visual Effects

The construction of the Project is anticipated to be in three stages along the proposed corridor over a period of approximately 2-3 years. Visual effects are anticipated to occur progressively through the Project area and transient viewing audiences may concurrently experience adverse visual effects from several stages through the construction period.

The consideration of visual effects through the construction phase acknowledges the full range of activities (and their resultant visual impact), required to implement the upgraded road corridor.

It is anticipated that construction activities required to implement the Project will be generally consistent in nature and scale to road works and infrastructure activities commonly anticipated by transient viewing audiences within a main arterial corridor. Another important consideration is that landscape change by way of vegetation removal and land modification (on private rural property), albeit at a lesser scale, forms part of the expected backdrop of the existing environment.

Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects through the construction phase due to the magnitude of vegetation removal, proximity to construction compounds and/or earthworks proposed. These areas are outlined below.

- Private properties where physical landscape effects will occur along roadside boundaries.
- Private properties in proximity to the northern site compound at 5, 7 and 28 Māmari Road, Timatanga Community School and the rear of properties at 7, 8, 9 and 10 Tama Quadrant. This is also the location of proposed Dry Pond 1A and 1B and the proposed active modes bridge.
- Private properties in proximity to the southern site compound at 10 Spedding Road, 15 Māmari Road, 9 and 10 Spedding Road, this is also the location of the proposed Dry Pond 2.

We consider that the nature and significance of the potential adverse visual effects to be moderated through the Project area by the following aspects:

- The northern extent of Māmari Road is already a central element within the visual composition of the Project area;
- The existing road corridor landscape has already been partially modified by previous works required to shape the existing road corridor.
- The construction phase is expected to last approximately 2-3years and is proposed to be implemented in phases. This is expected to allow efficient access to the construction zones while maintaining continued access for the intersecting roads and existing private and commercial driveways.
- A limited number of transient and private viewing audiences will have views over the works.

Overall, without mitigation adverse visual effects for the transient public viewing audience are likely to be **low** adverse. With the anticipation of mitigation proposals being implement visual effects are expected to be **very low** adverse through the construction phase, taking into account those areas listed above where adverse effects are likely to be heightened during the temporary construction period.

Adverse visual effects during the construction phase are likely to be heightened for private viewing audiences directly adjacent to the Project area on the basis of more direct and prolonged engagement with the construction activities of the Project. This will include the presence of heavy machinery and the visible disturbance of both the road corridor and also individual private interfaces with the road.

Without mitigation it is expected that these effects will be **moderate** adverse for the majority of audiences, with audiences with short distance open views of the works as high as **moderate-high** adverse. Therefore, adverse visual effects are likely to range between **low-moderate** to **low** during the construction phase for private viewing audiences.

8.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Recommendations are in line with the general recommendations in Section 6.1.2.

In addition to these measures the following project specific interventions are suggested:

- Wherever possible maintain riparian vegetation within the stream and wetland environment and;
- It is recommended that a vegetation plan is prepared within the UDLMP, to indicate locations to be protected during construction.

8.6.4 Assessment of Operational Effects

8.6.4.1 Natural Character Effects

Natural character forming elements, features and processes within the Project area are limited. Indigenous riparian vegetation is more pronounced in the Sinton Stream than the branches of the Pikau Stream. Therefore, the natural character value in the landscape is comparatively low.

Clearance of indigenous vegetation within the road corridor is expected as part of the required works, however these clearance areas will be limited and will not comprise any large areas of protected habitat. This does have the potential to alter the character of these areas by heightening the impression of human modification. Clearance of indigenous riparian vegetation and habitat will be necessary to facilitate the construction of the Sinton Stream bridge, this will be limited to the areas required for construction.

A planting plan and vegetation protection plan is recommended as part of the ULDMP which will be developed as part of the detailed design of the Project. It is recommended that any planting proposed as mitigation through the regional consents process is integrated with the planting plan as recommended through this assessment under the ULDMP. This will ensure that natural character values are preserved as an outcome of the Project and facilitate the potential future use of the stream corridor as part of an esplanade, as indicated in the Whenuapai Structure Plan.

On the basis of the above without mitigation effects may be as high as **low-moderate** or **moderate**. Allowing for future landscape mitigation adverse natural character effects are anticipated to be **low** adverse.

8.6.4.2 Visual Amenity Effects

Overall, there are likely to be a range of visual amenity effects on public and private viewing audiences relative to proximity to the corridor. For existing properties set back from the Project area, the visual amenity effects will be a reduced incremental increase in existing effects from the introduction of an arterial road.

Private properties which have filtered, screened or distant views towards the works are expected to experience a reduced level of change as a result of the works. Where as residential viewing audiences closer to the proposed corridor will experience more direct material changes to the visual composition and residential amenity of the road corridor as perceived from private property.

For some properties directly adjacent to the Project area (from which land is required), visual amenity and residential character effects will be heightened as a result of the construction impacts including driveway regrading, potential loss of yard space and by the introduction of an urban style carriageway

and footpaths/cycleways to private dwellings. It is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property, unless other arrangements are requested by land owners. These mitigation measures should be considered within the ULDMP under the lens of neighbourhood character and as such are discussed further in the following section.

Very few public viewing audiences have a direct view of the works due to the lack of connectivity and low number Māmari Road users. Over time as the surrounding FUZ land is developed visual effects are anticipated to be reduced for the public viewing audience, based on improved visual amenity for users associated with streetscape improvements, maturing street trees, berm planting and accessibility to active modes of transport.

Overall, some visual effects are anticipated to be partially or fully mitigated by measures implemented during the finishing phase of the construction period (within the road corridor and private property boundaries), that will mature through the operational phase of the Project. These will reduce some of the long-term residual visual effects of the Project, however the 30m wide road will be a noticeable new feature within the landscape, when the project is completed. The road corridor will appear less prominent as the surrounding area is urbanised over time.

Without the implementation of proposed mitigation it is anticipated that visual effects on transient viewers will be **low** adverse to **very low** adverse, effects on private viewing audiences are anticipated to be **moderate** adverse.

With all available information and the implementation of mitigation measures, visual effects within the Project area are likely to be **very low** adverse for transient viewers through the operational phase of the Project. For the private viewing audience, the visual effects are likely to be **low-moderate** adverse to **very low** adverse, reducing over an extended period of time. It is anticipated that mitigation planting is expected to take 3-5 years to become established and most effective.

8.6.4.3 Landscape Character Effects

The principal elements of the Project will permanently alter the character of the existing rural Māmari Road and adjacent landscape. The existing road is currently distinctively rural in character as a primarily unsealed and incomplete road way, characterised by the lack of streetscape features, informal intermittent vegetation, shelterbelt and hedgerows along field boundaries and existing rural land uses adjacent to the corridor. At the completion of the Project, the upgraded corridor will resemble that of an urban arterial road on account of the pedestrianisation, active modes of transport, reduced speed limit, structured street tree planting, integrated stormwater management and engineered roading elements that are inherently an urban aesthetic.

The Project is anticipated to enter the operational phase within the context of increased urbanisation as adjacent FUZ land is progressively live-zoned and urbanised. Although it is not possible to anticipate the exact future urban land use pattern, the Whenuapai Structure Plan suggests that industrial, retail and service buildings will be surrounding the southern portion of Māmari Road and medium density residential development to the north. The Whenuapai Structure Plan also indicates that is desirable to develop the riparian corridor along Sinton Stream into an esplanade reserve.

Based on the above the magnitude and nature of landscape change proposed by the Project are considered to match with the changes that will likely occur throughout the localised landscape over time.

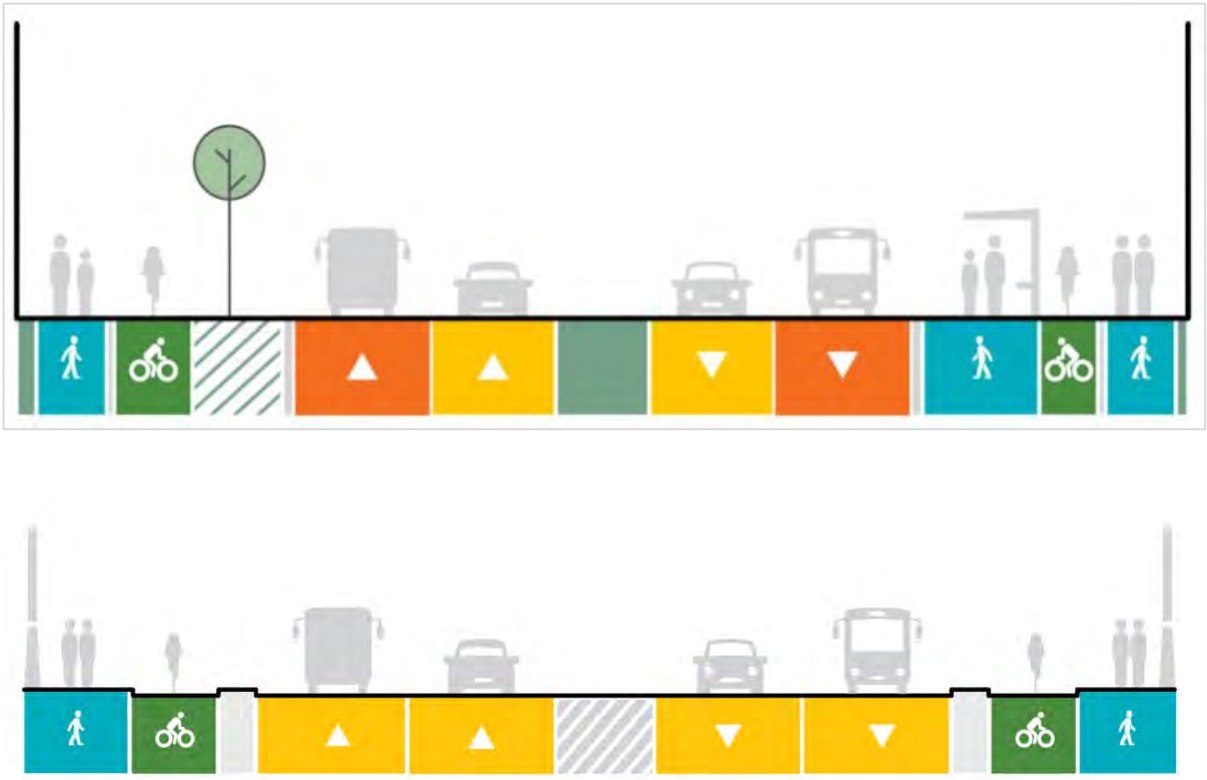


Figure 8-5: Māmari Road Upgrade Typical Cross Section – Corridor and Bridge

The typical cross section above illustrates the proposed upgrade to the road and the expected future use. Although indicative the available space within the road corridor for green infrastructure elements such as street trees and berms where low impact stormwater devices and associated planting can be accommodated These features are expected to improve landscape and urban amenity within the corridor.

As outlined earlier broad areas of vegetation along the existing corridor may not be able to be retained within the new corridor. New street tree planting along the length of the corridor will be an appropriate replacement for the vegetation removed (from a landscape character perspective), within the context of the anticipated surrounding urban environment. It is assessed that the new street tree planting, in conjunction with stormwater management and berm plantings, will provide landscape amenity and positively contribute to the landscape character of the Project area within the context of an urban environment.

On the basis of the above without mitigation effects may be as high as **low-moderate** adverse **,** allowing for future landscape mitigation, adverse landscape character effects are anticipated to be **low**.

8.6.5 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

Recommendations are in line with the general recommendations in Section 6.1.3. In addition to this the following recommendation is suggested:

- Produce a vegetation protection plan as part of the UDLMP to ensure that valued indigenous and riparian vegetation are protected.

8.7 Conclusions

Overall landscape and visual effects without mitigation range from **moderate-high** adverse to **low** adverse for the construction phase and **moderate** adverse to **very low** adverse for the operational phase. With the anticipation of mitigation measures being implement effects are expected to range from **low** to **low-moderate** for the construction phase and **low** to **low-moderate** for the operational phase. Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

9 NoR W3: Brigham Creek Road Upgrade

9.1 Project Corridor Features

Brigham Creek Road is an existing arterial road that extends from the intersection with SH16 in the west to the intersection with Hobsonville Road to the east. The proposed upgrade extends from the eastern side of the existing Totara Creek bridge in the west, to Kauri Road near the existing SH18 Brigham Creek Interchange in the east. This proposed upgrade runs through an existing rural environment at each end, with the middle section being a mix of town centre, industrial and residential environments. The proposed corridor upgrade will provide an east-west connection for all modes within Whenuapai and access SH16, SH18 and local destinations such as Hobsonville and Kumeū-Huapai.

The key landscape matters addressed for the Brigham Creek Road Upgrade include:

- The nature and extent of impacts on the landscape as a physical resource during the construction period of the Project. A specific focus on the location of construction compounds, extent of vegetation clearance, the scale and location of proposed cut and fill slopes and the likely impacts of bridge construction.
- Consideration of landscape character effects and urban amenity issues in relation to the permanent landscape change, including specific assessment of how this corridor will integrate into the future urban environment;
- Consideration of the potential natural character effects of bridge re-construction within the Totara Creek and Waiarohia Stream environments. In doing so, acknowledgement of the likely impacts on existing wetland and riparian vegetation (subject to regional consents) and future mitigation thereof.
- Potential natural character effects of the corridor construction and consideration of future opportunities to integrate the proposed wetland areas and existing mature vegetation.
- Consideration of landscape mitigation measures to be included within an Urban and Landscape Design Management Plan (ULDMP) as a condition on the proposed designation to address the potential landscape, natural character and visual effects arising from the operation the Project.
- Landscape effects on the RNZAF housing int the SHZ accessed to the south of Brigham Creek Road.
- Integration with and potential landscape effects on the Whenuapai 1 and Whenuapai 2 precincts.
- Potential Landscape Effects on the SEAs around the stream environments.
- Integration of the four proposed dry ponds and the expansion of the existing wetland pond.
- Integrating the road corridor within proximity to the RNZAF base.

9.2 Existing and Likely Future Environment

9.2.1 Planning context

The land adjacent to the majority of Brigham Creek Road is zoned under the AUP:OP as FUZ, except within the Whenuapai urban area (which is zoned under the AUP:OP for a range of residential and business zones) and the Whenuapai New Zealand Defence Force (NZDF) airbase.

Table 9-1 below provides a summary of the North West existing and likely future environment.

Table 9-1: Brigham Creek Road Upgrade Existing and Likely Future Environment

Environment today	Zoning	Likelihood of Change for the environment[14]	Likely Future Environment[15]
Business	Business (Light Industrial)	Low	Business (Light Industrial)
	Business (Local centre)	Low	Business (Local centre)
Residential	Residential	Low	Residential
Open Space	Open Space –Informal Recreation Zone	Low	Open Space
Undeveloped greenfield areas (Future Urban Zone)	Future Urban	High	Urban
New Zealand Defence Force Air Base	Special Purpose - Airports and Airfields Zone	Low	Special Purpose – Airports and Airfields Zone

Please refer to the AEE for further information on the planning context.

9.2.2 Landscape Environment

9.2.2.1 Baseline Landscape

The Project is situated within the existing Brigham Creek Road arterial road with rural landscape at both the eastern and western extents of the route and urban development at the centre of the corridor. The corridor has a central high point towards the centre of the route and the landform descends gently towards the Waiarohia Stream to the east and the Totara Creek to the west. Rolling pastoral fields surround the western and eastern extents of the site. The RNZAF base to the north west of the corridor is a substantial feature within the landscape with restrictions which effect the design and management of the landscape. Towards and surrounding the centre of the route are a range of residential and commercial development within the Whenuapai town centre.

The local landscape character of Brigham Creek Road are summarised below;

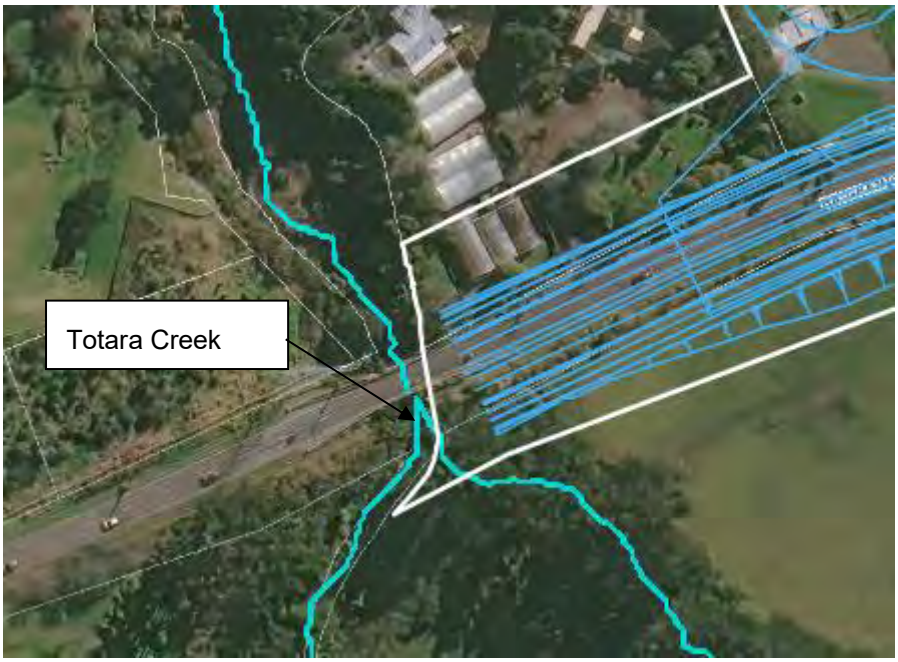
- Vegetation cover comprising stand alone elements of indigenous vegetation, hedgerows, shelterbelts, trees and shrubs along field boundaries; native riparian vegetation along rivers and wetland areas, exotic pastoral grassland and non-native stand-alone trees within the streetscape of the existing urban areas. The RNZAF base and its approaches are devoid of tall vegetation and trees due to air safety standards.
- The Totara Creek and Waiarohia Stream that cross the corridor at the eastern and western ends of the Project
- The landscape is characterised by land modification associated with the surrounding rural agricultural productive land use, urban core within Whenuapai Town and the RNZAF base.

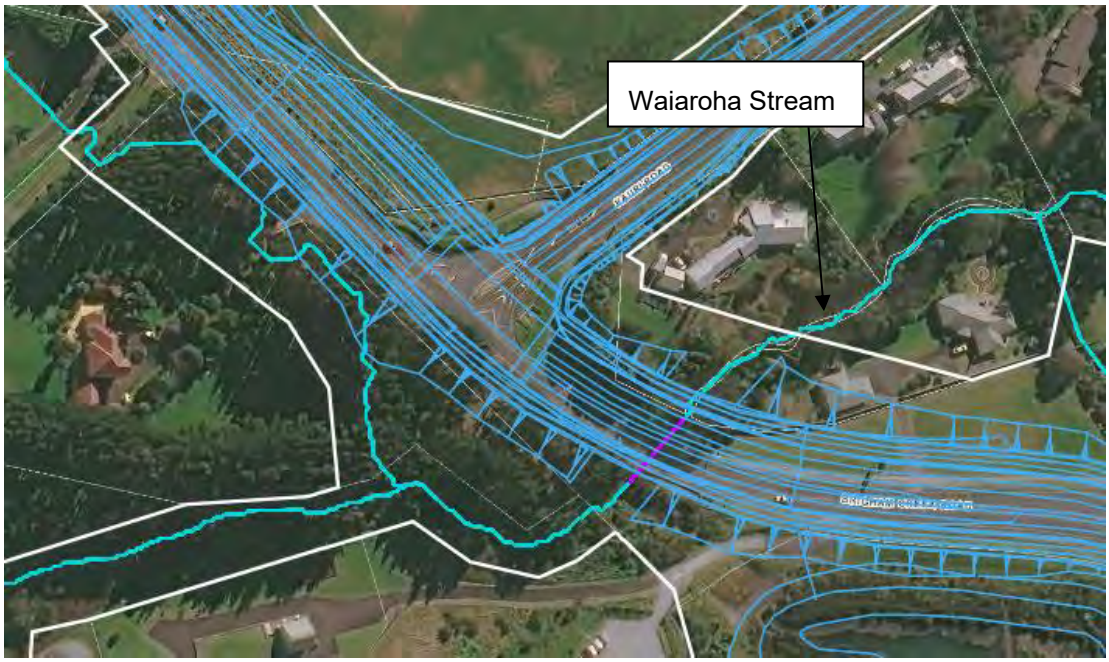
[14] Based on AUP:OP zoning/policy direction
[15] Based on AUP:OP zoning/policy direction

- The landscape character value is low within the context of the existing road reserve and has a moderate value within and in proximity to the SEA. There is the potential to enhance the landscape character of the landscape.

Landform and Hydrology

Brigham Creek Road and the existing arterial road traverses a gently sloping topography that reaches a high point towards the centre of the route. The lowest points of the site are at either end of the site where the land descends towards the Totara Creek to the west and Waiaroha Stream (refer images below). To the south of the corridor between for a stretch of 1.5km there are intermittent wetlands with indigenous riparian vegetation and grassland areas prone to flooding.





Landcover

The landscape to the eastern and western extents of Brigham Creek Road is characterised by elongated geometric fields bound in parts by isolated elements of native vegetation, exotic grassland, hedgerows and small areas of amenity planting in proximity to properties. Stands of mature native trees located within the road reserve and along the roadside boundaries of private properties contribute to the landscape character of the surrounding rural landscape. Rural residential properties along the road tend to have a belt of native and non-native planting the road frontage.

Areas of open pasture are located directly adjacent to the road corridor along the length of the designation on both sides. Indigenous wetland ecosystems within the stream corridors and wetland areas are an important habitat for bird and plant species.

To the north of the corridor near the centre of the scheme is the RNZAF base containing large area of exotic managed grassland. The central portion of the route sits within the rapidly developing Whenuapai Town Centre, with mixed density residential development and mixed commercial and industrial development. Trees within the streetscape are limited, however large mature trees are a focal point within the southern boundary of the Whenuapai Settlement Park (see Figure 9-1 below).

There are no scheduled notable trees are present within proximity of the Project.

Figure 9-1: View north west across the Totara Road, Brigham Creek Road and Māmari Road intersection, towards Whenuapai Settlement Open Space.

Land Use

The existing Brigham Creek Road corridor is approximately 20m wide and zoned as ‘Road’ under the AUP:OP.

Land use either side of the existing road reserve to the eastern and western extent of the corridor is rural and predominantly pastoral with typical residential elements around residential properties. Residential and commercial properties are present towards the centre of the route within Whenuapai Town Centre. To the north of the project, mixed urban housing development within the proximity of the scheme are in Whenuapai 1 precinct and commercial and industrial development are primarily

within the Whenuapai 2 precinct. To the south of the corridor lower density SHZ housing within the RNZAF surrounds a small area of commercial development.

The RNZAF base to the north of the corridor is an influential land use on the character within the surrounding landscape (see Figure 9-2 below).

Figure 9-2: View north west across the Totara Road, Brigham Creek Road and Māmari Road intersection, towards Whenuapai Settlement Open Space.

Scheduled Landscape and Ecological Features

Within approximately 10m of the western extent of the corridor are an open space conservation zone, marine SEA (SEA-M2-57b) and terrestrial SEA (SEA_T_2034) within the Totara Creek and its margins. Within 70m of the eastern extent of the Project corridor an open space conservation zone and terrestrial SEA (SEA_T_4733) lies within the Totara Creek and its margins. These features have a high level of sensitivity to physical changes in the landscape.

Historical and Cultural Associations

There are no scheduled historical or cultural features within or proximate to the Project area.

9.2.2.2 Likely Future Environment

Overview

The land surrounding the Project will witness a significant change from rural to urban land use character over the next 10 years. It is anticipated that the abiotic features of the landscape will endure, these include the riparian and wetland environments associated with Totara Creek and Waiarohia Stream watercourses and the existing landform which will undergo some modification associated with ongoing urban development.

It is anticipated that some of the defining biotic (land cover) features of the landscape will undergo significant change alongside future development, with the removal of large areas of vegetation to accommodate the proposed development. This will likely involve the implementation of street tree

plantings, public open space areas and general landscaping within the private yards of future housing development for public amenity.

The quality and natural character values of riparian and wetland environments are generally to be retained and, in some instances, enhanced as urban development progresses, in accordance with the policy direction of the AUP:OP and Whenuapai Structure Plan which seek to protect and enhance these landscape features.

9.2.2.3 Whenuapai Structure Plan

The Whenuapai Structure Plan provides general guidance for how the FUZ land adjacent to the Project area should be developed over time. The structure plan is illustrated in Appendix 1.

Land Use

The Whenuapai Structure Plan indicates that Totara Creek and Waiarohia Stream at either end of the proposed route link to indicative linear esplanade open space proposed by the Whenuapai Structure Plan. Towards the centre of the site the structure plan proposes a local centre with the potential for a Multi-purpose Community Facility.

The proposed western and eastern ends of the corridor will be developed into Medium Density residential areas. The south central section of the route is intended to be urbanised for a “Business” land use. The plan envisages this Business use to comprise Industrial, and Retail and Services. Extensive industrial activities such as manufacturing, transport and storage, logistics, construction and wholesale trade are expected. Retail and services are expected to be required to support the increased amount of housing within the Structure Plan.

The existing RZNAF base and RZNAF property and housing within the centre of the corridor will remain unchanged.

9.3 Extent of Visibility and Viewing Audience

The visual catchment is the area of land from which part or all of the Project area is visible. This is largely determined by landform, land cover and built elements, which in combination may obscure or filter views. The extent of visibility of the proposed road corridor is contained by the surrounding vegetation and built form, in addition to some subtle changes in topography. Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects. In summary the viewing audience for the Project includes:

- *Public Views:* Transient public audience (vehicle users). Key roads where views can be obtained from include Totara Road, Māmari Road, Trig Road, Kauri Road and Tamatea Road. Views include:
  - Travelers (cars, pedestrians and cyclists) along Totara Road to the north and Trig Road to the south of the site (Refer Appendix 2 Site Photo 10);
  - People within the Whenuapai Settlement Open Space (see Figure 9-3 below) to the north of the site (Refer Appendix 2 Site Photo 11); and
- *Private Views:* The viewing context also includes a concentrated urban residential viewing audiences and a relatively small number of rural properties with private viewing audiences, comprising views from rural residential and lifestyle dwellings as well as from the commercial and agricultural businesses. Specifically:

- Views from the rural residential properties with short driveways that immediately front on to Brigham Creek Road (18, 20, 26, 26A, 28, 31, 39, 145, 159, 162) (Refer Appendix 2 Site Photo 12);
- Views from the urban residential properties that immediately front on to Brigham Creek Road within the SHZ, RZNAF housing, Whenuapai 1 and Whenuapai 2 housing precincts and;
- Occupants of nearby commercial buildings along Brigham Creek Road adjacent the proposed corridor.

Views are well contained within the immediate area surrounding the road corridor and urban built form due to the relatively flat landscape, intervening vegetation and built form.

Over time, the audience is likely to grow to include residents of future urban developments within the FUZ area.

Figure 9-3: View north west into the Whenuapai Settlement Open Space from Brigham Creek Road.

9.4 Landscape Values

There are no regionally or nationally significant landscapes (ONLs, ONFs or ONCs) within or proximate to the proposed designation boundary. The nearest ONL is Area 1 – Paremoremo Escarpment, located in the Paremoremo Creek approximately 3.8km to the north of the site.

The gently sloping topography and the mature stands of vegetation contribute to the visual amenity of the landscape. The highly modified landscape has limited natural features, which are restricted to individual stands of native vegetation, riparian stream vegetation and the Totara Creek (see Figure 9-4 below) and Waiarohia Stream at either end to the corridor. The existing Whenuapai Settlement Park already sits within the context of an existing arterial road corridor there are no views from any open spaces or sports fields towards the proposed corridor from the wider landscape.

Figure 9-4: View west across the Totara Creek Bridge along Brigham Creek Road.

9.5 Landscape Sensitivity

This project corridor is situated within a broader landscape that has been assessed within the AUP:OP as being suitable for urbanisation. The proposed urbanisation of the surrounding landscape as indicated by the Whenuapai Structure Plan will be developed as medium density residential, local centre, industrial, retail and service buildings across the corridor. Although there are pockets of indigenous vegetation, stream and wetland environments with a moderate level of sensitivity and highly sensitive SEA's in proximity to the western and eastern inlets, on balance the Project area is assessed as having a low sensitivity to landscape change.

9.6 Assessment of Landscape Effects and Measures to Avoid, Remedy or Mitigate Actual or Potential Adverse Effects

9.6.1 Positive Effects

Generalised positive effects related to the Project are covered in Section 5 of this report. Additional positive effects related specifically to this Project include:

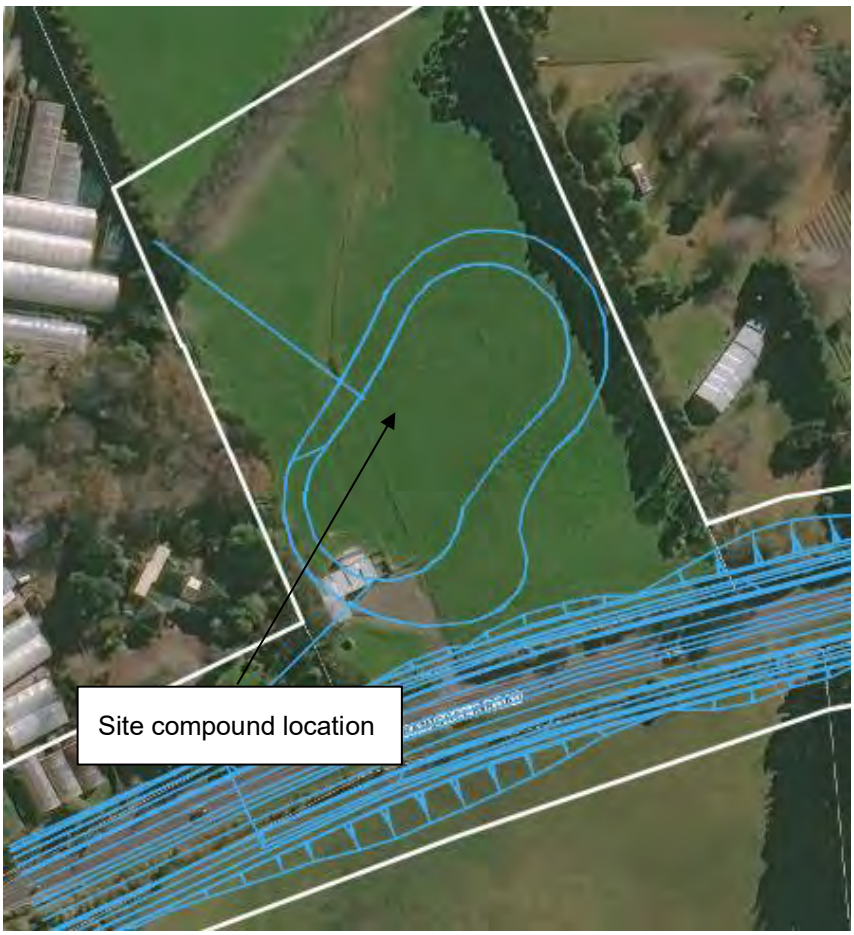
- Improved and/or new opportunities for active modes of transport and the ability to provide improved connectivity to Whenuapai town centre that are projected in the Whenuapai Structure Plan.
- Improvement or enhancement of riparian habitat within the Indicative Esplanades at either end of the project indicated in the Whenuapai Structure Plan;

9.6.2 Assessment of Construction Effects

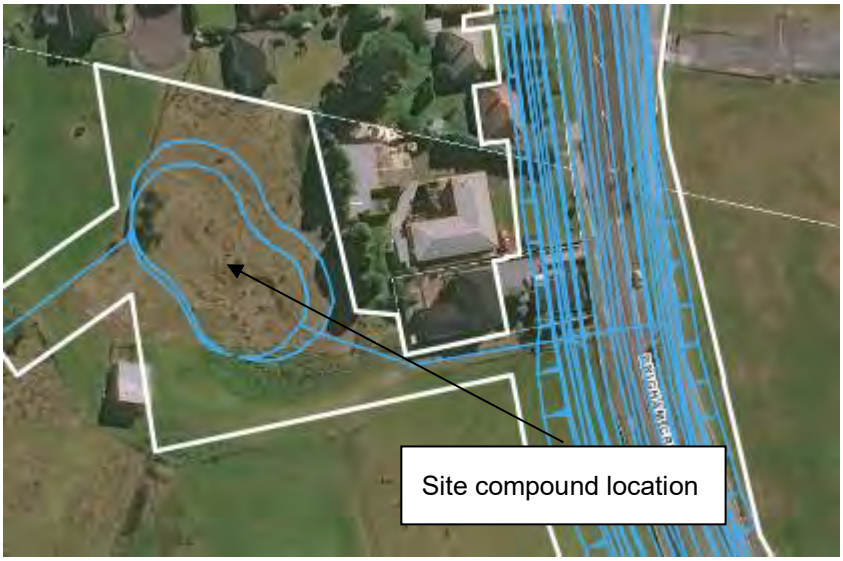
Construction Areas

Site compound and construction areas are to be established at four locations within the Project area. Construction traffic will be heightened at these locations through the construction period of the Project.

- A proposed site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located at 20/22 Brigham Creek Road to the north side of the road corridor. This is located adjacent to the Totara Creek/Inlet and Dry Pond 1 at 20/22 Brigham Creek Road the area.



- A proposed site compound, stockpile, sediment retention pond is located on the south side of the road corridor. The site compound is located adjacent to the residential property at 129 Brigham Creek Road and near the proposed Dry Pond 2.



- The site compound adjacent to the Trig Road interchange is covered in the Trig Road Assessment.

- A proposed site compound, stockpile, sediment retention pond located on the north side of the road corridor. The site compound is located adjacent to the residential development at 1 Sinton Road and Waiarohia Stream, opposite the existing Brigham Creek Road Wetland Pond which will be expanded.

The proposed site compounds and construction areas are all located within pastoral land that is already somewhat modified by existing rural land use or road related works. It is recommended that

measures to provide separation between the site compounds and surrounding wetlands / watercourses and that all areas be grassed (reinstated) at the completion of the construction period.

Effects on the landscape without the inclusion of the proposed mitigation measures are anticipated to be **low-moderate** adverse due to the proximity watercourses. With the information available it is anticipated that with the implementation of proposed mitigation, the physical landscape effects resulting from establishment and use of the construction work areas within the Project area is assessed to be **low** adverse.

Vegetation Clearance

Broad areas of road side vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes. This consists entirely of trees and shrubs located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, indigenous riparian vegetation, private gardens and exotic stands of trees patches make up the majority of vegetation to be removed.

Without mitigation, including the protection of existing large mature trees and it is anticipated that effects on the physical landscape will be **low-moderate** adverse. The removal of the large mature trees to the south of the Whenuapai Settlement Open Space are expected to result in **moderate-high** adverse to **moderate** adverse effects. Provided that the removal of indigenous vegetation is minimised where practicable, to reduce the level of adverse physical landscape, vegetation clearance as a result of the Project area expected to be **low** adverse.

Structures and Earthworks

Earthworks are anticipated to be imbalanced and require fill material to be brought into the project. The majority of the proposed additional fill will comprise brown rock for engineering purposes.

The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform particularly in the wetland areas, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 13m wide and will alter the form of the existing marginal pastoral landform, stream banks and wetlands.

It is recommended that a condition on the designation is included that promotes the re-use of topsoil from pastoral land impacted by the proposed earthworks[16].

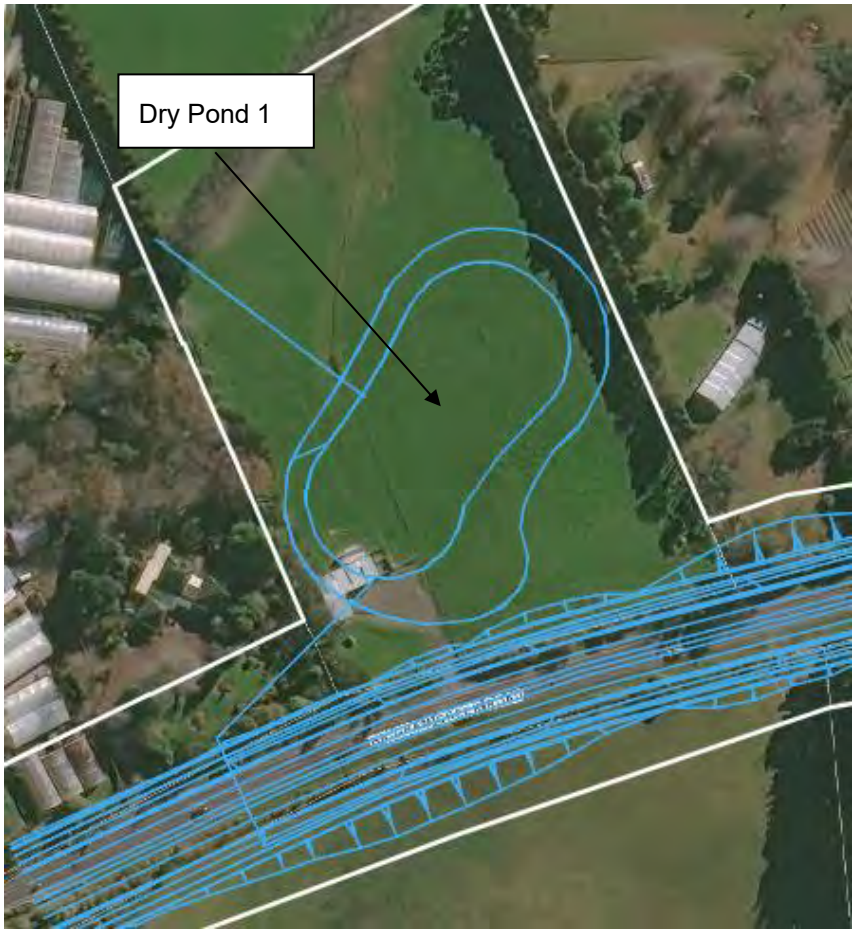
Overall, we consider that the earthworks are of a quantity that is reasonably anticipated with a project of this scope and scale and all cut and fill slopes are expected to be integrated with the existing modified environment. Without the inclusion of proposed mitigation it is anticipated that landscape effects will be **low-moderate** adverse to **low** adverse. Provided that the proposed mitigation measures are undertaken we expect that the adverse effects of the earthworks and bridge structure will be **low**.

Dry Ponds and features

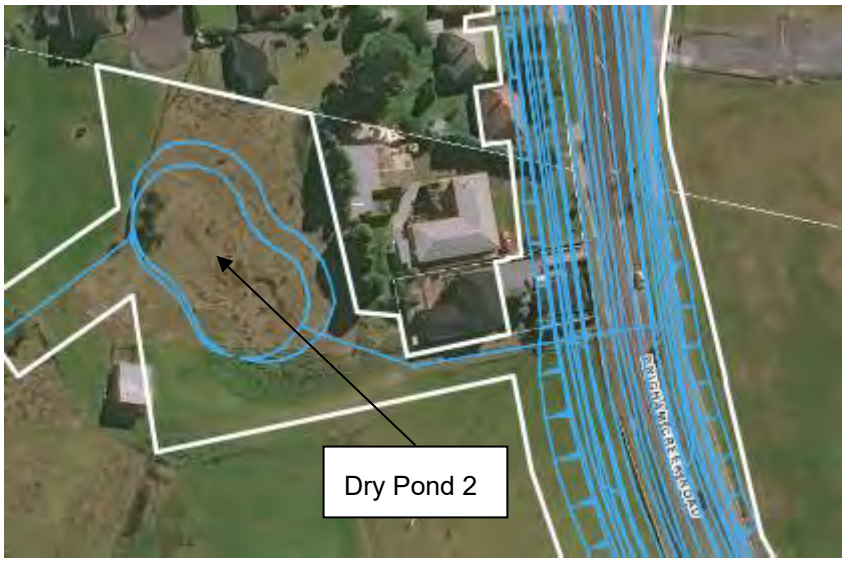
Three dry ponds are proposed within this Project area, one of which is shared with the Spedding Road corridors.

[16] Refer to NZTA Landscape Guidelines (September 2014), Section 4.12 Topsoil for additional information regarding best practice guidelines for topsoil management and soil stripping.

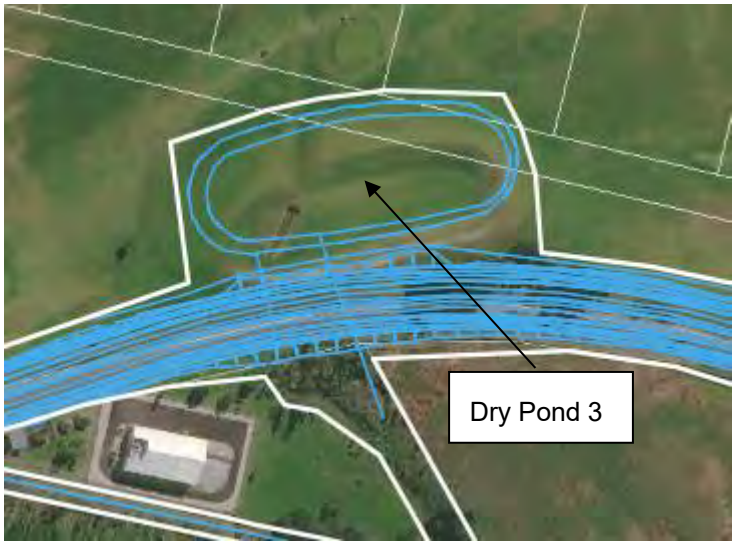
- Dry Pond 1 is proposed to the east of Totara Creek to the north of the corridor at 20/22 Brigham Creek Road.



- Dry Pond 2 is located within the boundary of the RNZAF Whenuapai base to the north of the road;



- Dry Pond 3 located on the south side of the road corridor in a pastoral field between 41 and 45 Brigham Creek Road.



All of these ponds will be located within existing pastoral or amenity grass fields.

The dry ponds will require earthworks to re-shape the land and achieve optimal depths and edge profiles, which will be determined as part of the resource consent phase.

It is anticipated that the proposed mitigation will reduce adverse effects as a result of the implementation of the above works. However, due to the existing modified landscape and relative scale of the water features we consider adverse effects on the physical landscape to implement the proposed dry ponds to be **low** adverse to **very low adverse** with or without mitigation.

Waiarohia Stream and its branches are required to be culverted (subject to resource consent) in four places along Brigham Creek Road between Spark's Southern Cross Network building and Sinton Road. An additional culvert is proposed to be tied into an existing culvert of the Slaughterhouse Stream. Indigenous riparian vegetation within these stream branches is limited to small patches, which reduces their sensitivity to change.

On that basis, we anticipate that without the implementation of mitigation proposals the landscape effects would range from **moderate** adverse to **low-moderate** adverse. Provided that the proposed mitigation measures are implemented, we consider the effects on the physical landscape to implement the proposed culverts to be **low** adverse**.**

Private Properties

Residential properties within and adjacent to the Project area (including those which are partially designated) will be impacted by the Project in the following ways:

- Surface level changes between private property boundaries and the upgraded road corridor, requiring existing driveways and private accessways to be regraded;
- Encroachment into private yard areas and the removal of private garden plantings and trees, ancillary buildings and boundary fences;
- Potential construction of noise mitigation measures and retaining walls;
- Demolition of existing dwellings and ancillary buildings (required properties).

Approximately 70 existing dwellings are proposed to be impacted by the project works, eight of these properties are in a rural setting and 62 are within the existing urban environment. Landscape

mitigation measures are proposed under 9.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects below.

Without the implementation of the proposed mitigation measures it is anticipated that landscape effects will range from **moderate-high** adverse to **moderate** adverse. Overall, provided that mitigation proposals are undertaken we consider that landscape effects on private properties will range between **low** adverse and **low-moderate** adverse.

9.6.2.1 Site Finishing Works

Finishing works are expected to include grassing of exposed earth, lighting, signage, line markings, footpath/cycleway details and reinstatement of private property fences and gardens, unless other arrangements are requested by landowners. Streetscape elements and landscaping, including that required as mitigation will also be implemented. These activities are to be determined by detailed design and will occur within the already modified areas of the Project.

It is anticipated that the proposed mitigation will reduce adverse effects as a result of the implementation of the above works. However, due to the existing road environment and scale of the works we consider landscape effects on the physical landscape to implement final phase of the construction process to be **very low** adverse with or without mitigation.

9.6.2.2 Temporary Visual Effects

The construction of the Project is anticipated to be in three stages along the proposed corridor over a period of approximately 3.5 years. Visual effects are anticipated to occur progressively through the Project area and transient viewing audiences may concurrently experience adverse visual effects from several stages through the construction period.

The consideration of visual effects through the construction phase acknowledges the full range of activities (and their resultant visual impact), required to implement the upgraded road corridor.

It is anticipated that construction activities required to implement the Project will be generally consistent in nature and scale to road works and infrastructure activities commonly anticipated by transient viewing audiences within a main arterial corridor. Another important consideration is that landscape change by way of vegetation removal and land modification (on private rural property), albeit at a lesser scale, forms part of the expected backdrop of the existing environment.

Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects through the construction phase due to the magnitude of vegetation removal, proximity to construction compounds and/or earthworks proposed. These areas are outlined below:

- Private properties where physical landscape effects will occur along roadside boundaries.
- Private properties in proximity to the site compounds at 18, 36-38, 41, 45, 129 and 145 Brigham Creek Road and 1 Sinton Street.

We consider that the nature and significance of the potential adverse visual effects to be moderated through the Project area by the following aspects:

- The northern extent of Brigham Creek Road is already a central element within the visual composition of the Project area;
- The existing road corridor landscape has already been partially modified by previous works required to shape the existing road corridor.

- The construction phase is expected to be approximately 3.5 years. The construction period is proposed to be implemented in phases to allow efficient access to the construction zones while maintaining continued access for the intersecting roads and existing private and commercial driveways.

Adverse visual effects during the construction phase are likely to be heightened for private viewing audiences directly adjacent to the Project area on the basis of more direct and prolonged engagement with the construction activities of the Project. This will include the presence of heavy machinery and the visible disturbance of both the road corridor and also individual private interfaces with the road. On that basis, without the implementation of mitigation proposals it is anticipate that visual effects on private audiences will be between **moderate-high** adverse and **moderate** adverse. With the implementation of proposed mitigation measures it is considered that effects on these private viewing audiences will be **low-moderate** adverse.

Taking into account those areas listed above where adverse effects are likely to be heightened during the construction period. Without mitigation visual effects it is considered that visual effects on transient public audiences to be **low-moderate** adverse. With the implementation of mitigation proposals, we consider that adverse visual effects for the transient public viewing audience will be **low** through the construction phase.

Therefore, visual effects are anticipated to range between **moderate-high** adverse and **low-moderate** adverse without mitigation. With the implementation of mitigation visual effects are anticipated to be from **low-moderate** adverse to **low** adverse during the construction phase for audiences.

9.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Recommendations are in line with the general recommendations in Section 6.1.2.

In addition to these measures the following project specific interventions are suggested:

- Wherever possible maintain riparian vegetation within the stream and wetland environment;
- Ensure that measures are taken to prevent contamination and pollution of watercourses and wetlands within proximity to site compounds; and;
- The production of a vegetation plan is recommended to be provided within the UDLMP, to indicate protection measures and locations to be protected during construction.

9.6.4 Assessment of Operational Effects

9.6.4.1 Natural Character Effects

Natural character forming elements, features and processes within the Project area are limited. Indigenous vegetation is scarce throughout the heavily modified pastoral landscape. Indigenous riparian vegetation is more pronounced at the Totara Creek than the branches of the Waiarohia Stream. Therefore, the natural character value in the streams, wetlands, their margins and adjacent landscape context landscape is comparatively low.

Clearance of indigenous riparian vegetation and habitat will be necessary to facilitate the construction compound adjacent to the Totara Creek, this will be limited to the areas around the edge of the compound.

A planting plan and vegetation protection plan is recommended as part of the ULDMP which will be developed as part of the detailed design of the Project. It is recommended that any planting proposed as mitigation through the regional consents process is integrated with the planting plan as recommended through this assessment under the ULDMP. This will ensure that natural character values are preserved as an outcome of the Project.

On the basis, without mitigation natural character effects may be up to **moderate** adverse. Allowing for future landscape mitigation, natural character effects on the streams and riparian areas are anticipated to be **low** adverse**.**

9.6.4.2 Visual Amenity Effects

Overall, there are likely to be a range of visual amenity effects on public and private viewing audiences relative to proximity to the corridor. For existing properties set back from the Project area, the visual amenity effects will be a reduced incremental increase in existing effects from the introduction of an arterial road.

Private properties which have filtered, screened or distant views towards the works will experience a reduced level of change as a result of the works. Whereas a rural private viewing audiences with open short distance views of the Project will experience a more obvious change to the visual composition and residential amenity of the road corridor. Urban private viewing audiences with existing short distance views over the Brigham Creek Road corridor will experience very little difference between baseline views and views during operation.

For some properties directly adjacent to the Project area (from which land is required), visual amenity and residential character effects will be heightened as a result of the construction impacts including driveway regrading, potential loss of yard space and by the introduction of an urban style carriageway and footpaths/cycleways to private rural dwellings. It is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property. These mitigation measures should be considered within the ULDMP under the lens of neighbourhood character and as such are discussed further in the following section.

Very few rural public viewing audiences in the existing environment have a direct view of the works due to the lack of connectivity to rural roads and publicly accessible land. Over time as the surrounding FUZ land is developed adverse visual effects are anticipated to reduce for the public viewing audience, based on improved visual amenity for users associated with streetscape works, maturing street trees, berm planting and accessibility to active modes of transport. Public viewing audiences within the urban environment are primarily active mode users along the Brigham Creek Road and within the Whenuapai Settlement open space. In the operational stage views for these audiences will be largely the same as the existing views, with the potential for improved views where tree planting is introduced to the road corridor.

Overall, some visual effects are anticipated to be partially or fully mitigated by measures implemented during the finishing phase of the construction period (within the road corridor and private property boundaries), that will mature through the operational phase of the Project. These will reduce some of the long-term residual visual effects of the Project, however the 30m wide road will be a noticeable new feature within the landscape. The road corridor will be less apparent as the surrounding area is urbanised over time.

On that basis, the proposed project without the implementation of proposed mitigation the anticipated effects on transient audiences within the Project Area are **low** adverse. On the assumption that mitigation proposals are implemented as part of the Project works visual effects within the Project

area are likely to be **very low** adverse for transient viewers through the operational phase of the Project.

The anticipated effects on private viewing audiences without mitigation measures are considered to be **moderate** adverse for the majority of audiences. Visual effects anticipated with the inclusion of mitigation measures are considered to range from **low-moderate** adverse to **very low** adverse, depending on proximity and existing screening elements, reducing over an extended period of time. It is anticipated that adequate establishment will be achieved between 3-5 years.

9.6.4.3 Landscape Character Effects

The principal elements of the Project will permanently alter the character of the existing rural sections of Brigham Creek Road and adjacent landscape. The rural sections of the road are characterised by the lack of streetscape features, informal intermittent vegetation, shelterbelt and hedgerows along field boundaries and existing rural land uses adjacent to the corridor. At the completion of the Project, the upgraded corridor will resemble that of an urban arterial road on account of the pedestrianisation, active modes of transport, reduced speed limit, structured street tree planting, integrated stormwater management and engineered roading elements that are inherently an urban aesthetic.

The Project is anticipated to enter the operational phase within the context of increased urbanisation within rural sections as adjacent FUZ land is progressively live-zoned and developed. Although it is not possible to anticipate the exact future urban land use pattern, Whenuapai Structure Plan industrial, retail and service buildings to the south of the route and medium density residential development to the east and west. The Whenuapai Structure Plan also indicates that it would be desirable to develop a new Local Centre and multi-purpose community facility at the centre of Whenuapai.

Based on the above the magnitude and nature of landscape change proposed by the Project we consider will match with the changes that will likely occur throughout the localised landscape over time.

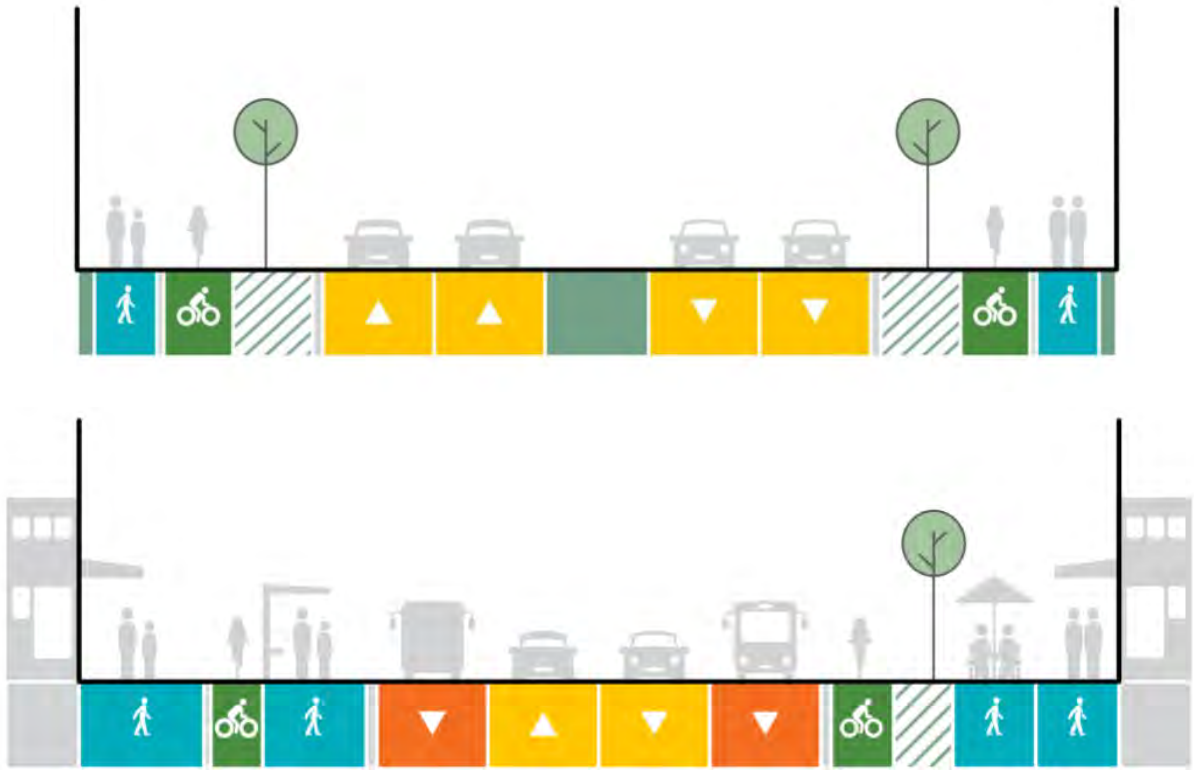


Figure 9-5: Brigham Creek Road Upgrade Typical Cross Section – Urban and Town Centre

The typical cross section above illustrates the proposed upgrade to the road and the expected future use. Although indicative the available space within the road corridor for green infrastructure elements such as street trees and berms where low impact stormwater devices and associated planting can be accommodated These features are expected to improve landscape and urban amenity within the corridor.

As outlined earlier broad areas of vegetation along the existing corridor may not be able to be retained within the new corridor. New street tree planting along the length of the corridor will be an appropriate replacement for the vegetation removed, within the context of the anticipated surrounding urban environment (from a landscape character perspective).

It is assessed that the new street tree plantings, in conjunction with stormwater management and berm plantings, will provide landscape amenity and positively contribute to the landscape character of the Project area within the context of an urban environment.

With the information available, without the implementation of mitigation landscape character effects are anticipated to be **low-moderate** adverse. Allowing for future landscape mitigation, which is expected to take 3-5 years to establish, adverse landscape character effects are anticipated to be **low** adverse.

9.6.5 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

The measures to remedy and mitigate the adverse construction effects of the Project on the natural and urban landscape will be addressed under an Urban and Landscape Design Management Plan (ULDMP), which will lay out the main design themes, principles and outcomes of the Project.

Recommendations are in line with the general recommendations in Section 6.1.3. In addition to this the following recommendation is suggested:

- Produce a vegetation protection plan as part of the UDLMP to ensure that valued indigenous and riparian vegetation are protected.

9.7 Conclusions

Landscape and visual effects as a result of the project, without the implementation of mitigation measures are anticipated to range from **moderate-high** adverse to **low** adverse for the construction phase and **low-moderate** adverse to **low** adverse for the operational phase. Overall, landscape and visual effects with the implementation of mitigation are anticipated to range from **very low** adverse to **low-moderate** adverse for the construction phase and **very low** to **low-moderate** for the operational phase. Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. Existing urban areas have a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

10 NoR W4: Spedding Road

10.1 Project Corridor Features

Spedding Road is an existing arterial road that extends from the intersection with the SH16 in the west to the intersection with Hobsonville Road to the east. The proposed upgrade extends from the eastern side of the existing Totara Creek bridge in the west, to Kauri Road near the existing SH18 Brigham Creek Interchange in the east. This proposed upgrade runs through an existing rural environment at each end, with the middle section being a mix of town centre, industrial and residential environments. The proposed corridor upgrade will provide an east-west connection for all modes within Whenuapai and access SH16, SH18 and local destinations such as Hobsonville and Kumeū-Huapai.

The Spedding Road Project comprises two corridors:

- Spedding Road West: the upgrade of the existing Spedding Road and new extension of Spedding Road to a two-lane arterial with separated active modes.
- Spedding Road East: A new extension of Spedding Road to a two-lane arterial with separated active modes.

The key landscape matters addressed for both corridor upgrades include:

- The nature and extent of impacts on the landscape as a physical resource during the construction period of the Project. A specific focus on the location of the construction compound, extent of vegetation clearance, the scale and location of proposed cut and fill slopes and the likely impacts of bridge construction.
- Consideration of landscape character effects and urban amenity issues in relation to the permanent landscape change, including specific assessment of how this corridor will integrate into the future urban environment;
- Potential natural character effects of the corridor construction and consideration of future opportunities to integrate the proposed wetland areas and existing riparian vegetation.
- Consideration of landscape mitigation measures to be included within an Urban and Landscape Design Management Plan (ULDMP) as a condition on the proposed designation to address the potential landscape, natural character and visual effects arising from the operation the Project.
- Potential Landscape Effects on the SEAs around the stream environments.
- Integration of the four proposed dry ponds and the expansion of the existing wetland pond.
- Introduction of a new arterial road into an undeveloped rural green field site.

Key Landscape matters for Spedding Road (West):

- Consideration of the potential natural character effects of bridge re-construction within the Totara Creek environment and the Pikau Stream near the Māmari Road intersection. In doing so, acknowledgement of the likely impacts on existing wetland and riparian vegetation (subject to regional consents) and future mitigation thereof.
- Introduction of a new bridge crossing over the North Western Motorway SH16.

Key Landscape matters for Spedding Road (East):

- Consideration of the potential natural character effects of bridge re-construction within the Trig Stream and Waiarohia Stream environments. In doing so, acknowledgement of the likely impacts on existing wetland and riparian vegetation (subject to regional consents) and future mitigation thereof.
- Introduction of a new bridge crossing over the Upper Harbour Motorway SH18.

10.2 Existing and Likely Future Environment

10.2.1 Planning context

The land on either side of Spedding Road is zoned under the AUP:OP as FUZ, with Business – Light Industry Zone land at the eastern end of the proposed Spedding Road corridor. Proposed Plan Change 5 (PPC5) proposes to rezone the surrounding FUZ land to Business – Light Industry Zone in the north and Residential - Mixed Housing Urban Zone and Open Space – Informal Recreation zone in the south.

Table 10-1 below provides a summary of the North West existing and likely future environment.

Table 10-1: Spedding Road Existing and Likely Future Environment

Environment today	Zoning	Likelihood of Change for the environment[17]	Likely Future Environment[18]
Business	Business (Light Industrial)	Low	Business (Light Industrial)
Residential	Residential	Low	Residential
Undeveloped greenfield areas (Future Urban Zone)	Future Urban	High	Urban

Please refer to the AEE for further information on the planning context.

10.2.2 Landscape Environment

Spedding Road is currently a primary rural collector connecting two low volume access roads with no exit roads that service several rural lots as well as Timitanga Community School along Māmari Road. The New Spedding Road West extends the existing Spedding Road west from its intersection with Māmari Road to the Redhills North area over SH16 to connect with Hailes Road and Fred Taylor Drive. The New Spedding Road West will upgrade the existing 14m width corridor to a 24m wide two-lane arterial cross section with separated cycle lanes and footpaths on both sides.

This new east-west connection will support active mode and public transport connectivity between residential land use in Redhills, employment land use in Whenuapai and the proposed CC2W rapid transit station (a non-SGA project). Furthermore, given the high degree of urbanisation expected in

[17] Based on AUP:OP zoning/policy direction
[18] Based on AUP:OP zoning/policy direction

this FUZ area, this connection will reduce severance already created by the State Highway network and will provide a non-interchange SH16 crossing location to support local movements for all modes.

The extension of Spedding Road (East) corridor consists of an upgrade of Spedding Road extending from the intersection with Māmari Road to Trig Road in the east, and a green field portion through an existing rural environment from Trig Road over SH18 to tie into Hobsonville Road in the west.

The proposed extension of Spedding Road (East) will consist of a 24m wide two-lane arterial cross section with separated cycle lanes and footpaths on both sides of the corridor. The intersections of Spedding Road with Trig Road and Māmari Road are proposed to be roundabouts. Similar to the proposed extension of Spedding Road (West), the proposed extension of Spedding Road (East) will provide an east-west connection that supports active mode and public transport connectivity between the areas of Whenuapai and Hobsonville.

The local landscape character of the combined Spedding Road area is summarised below;

- Vegetation cover comprising stand alone elements of indigenous vegetation, hedgerows, shelterbelts, trees and shrubs along field boundaries; native riparian vegetation along rivers and wetland areas, exotic pastoral grassland and non-native stand-alone trees.
- The landscape is characterised by land modification associated with the surrounding rural agricultural productive land use.
- The landscape character value is low within the context of the existing road reserve, due to the pastoral fields in the location of the road extension.

The local landscape character features specific to Spedding Road (West) are summarised below

- Totara Creek adjacent to the proposed SH16 bridge, Sinton Stream and the Pikau Stream adjacent to the Māmari Road interchange.

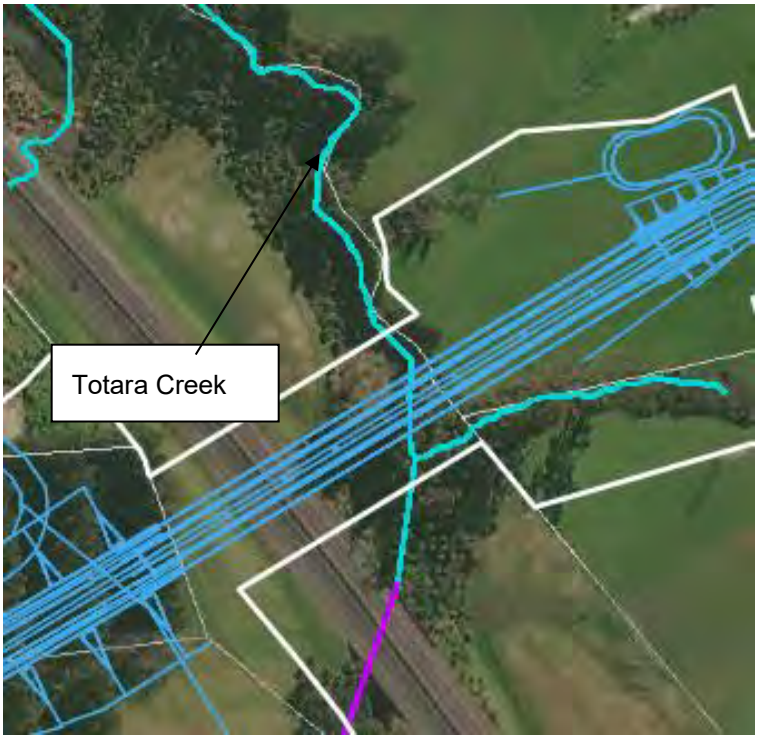
The local landscape character features specific to Spedding Road (East) are summarised below

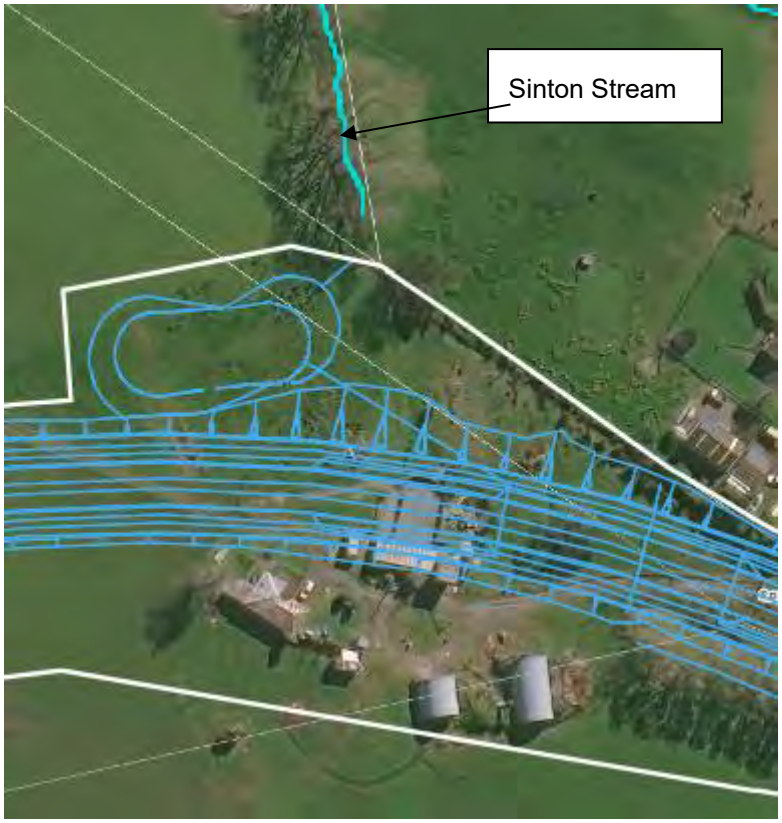
- Trig Stream and Waiarohia Stream that cross the corridor at the eastern and western ends of the Project

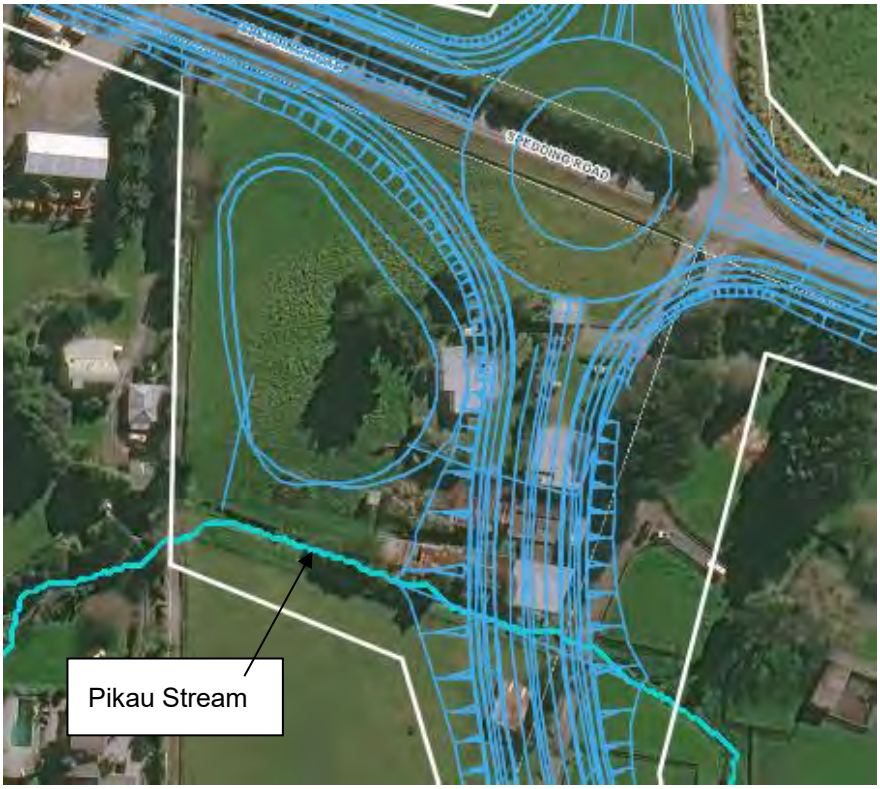
Landform and Hydrology

Spedding Road and the existing rural road traverses a gently sloping topography that reaches a high point towards the centre of the route near the intersection with Māmari Road. The topographically low points of the site are on the approaches and crossing points at SH16 and SH18.

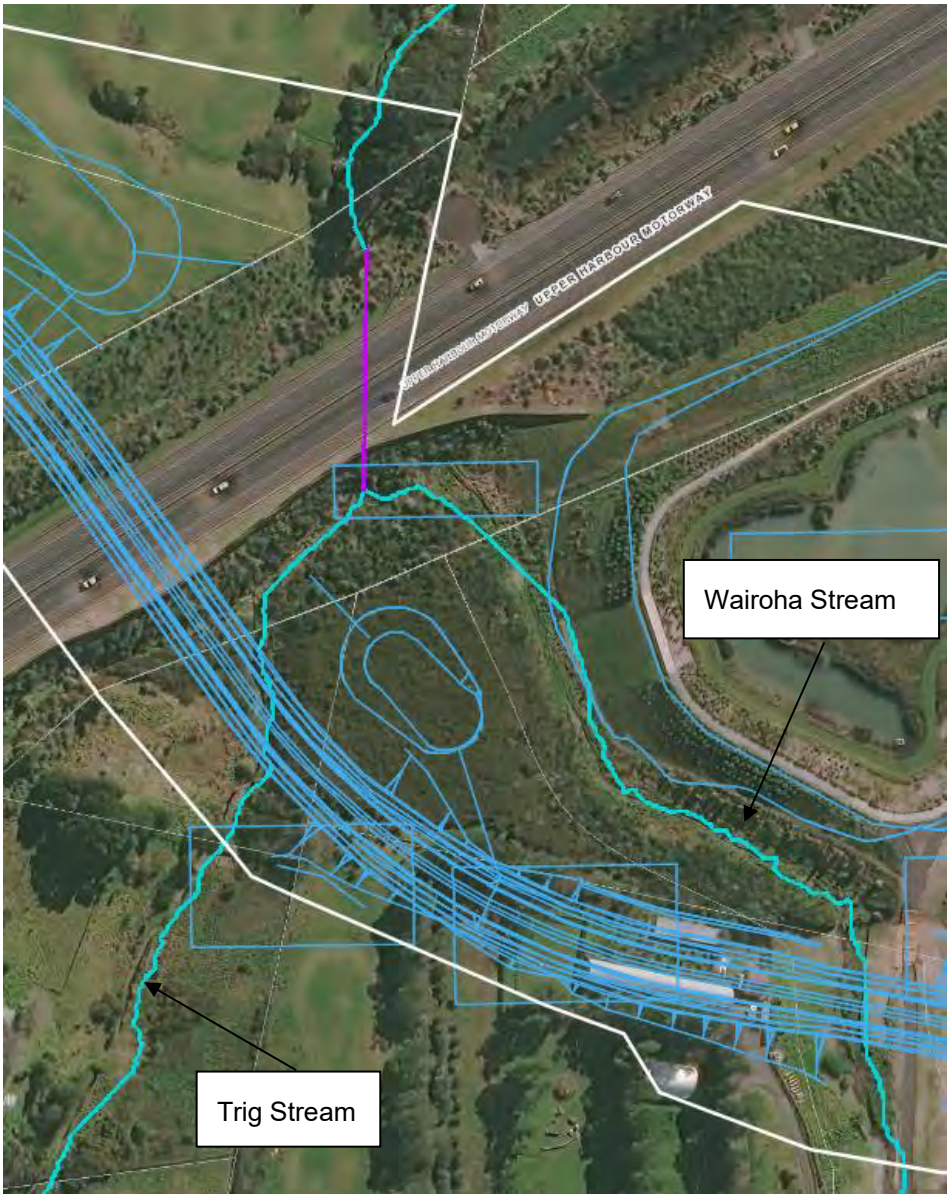
The Spedding Road (West) section has several stream/wetland crossings, Totara Creek, a branch of the Sinton Stream is close to the Wetland 3 and the Pukea Stream in proximity to the Māmari Road intersection (refer images below).


Totara Creek


Sinton Stream



The Spedding Road (East) section has stream/wetland crossings, Trig Stream to the east of the Trig Road intersection, Waiarohia; Trig Stream crosses the road corridor close to the SH18 bridge crossing (refer images below).



Landcover

The landscape across the majority of Spedding Road is characterised by elongated geometric fields bound in parts by isolated elements of native vegetation, exotic grassland, hedgerows and small areas of amenity planting in proximity to properties. Stands of mature native trees located within the road reserve and along the roadside boundaries of private properties contribute to the landscape character of the surrounding rural area. Rural residential properties along the road tend to have a belt of native and non-native planting along the road frontage.

Areas of open pasture are located directly adjacent to the road corridor along the length of the designation on both sides (see Figure 10-1 below). Indigenous wetland ecosystems within the stream corridors and wetland areas are an important habitat for bird and plant species.

There are no scheduled notable trees present within proximity of the Project.

Figure 10-1: View south from Spedding Road across the property located at 13 Spedding Road.

Land Use

The existing Spedding Road corridor is approximately 14m wide and zoned as 'Road under the AUP:OP from the Totara Creek to Trig Road.

Land use either side of the existing road reserve to from the western extents of the route to the SH18 crossing is rural and is predominantly pastoral with some commercial industry, residential elements features around residential properties - this land is zoned under the AUP:OP as FUZ.

Medium and large rural industrial development at 3 and 5A Spedding Road are characteristic of the rural industries within the wider landscape. The western end of the corridor intersects with Fred Taylor Drive where there is a concentration of rural residential properties and rural commercial, pastoral and industrial development (see Figure 10-2 below). The eastern extent of the road towards the proposed intersection with Hobsonville Road is bordered to the north by large commercial and light industrial development.

To the east of SH18 the corridor is primarily surrounded by Business – Light Industry zoned land with a smaller section of undeveloped FUZ land adjacent to the SH18 corridor. Land to the north of the corridor is a mix of industrial and commercial development, in line with the underlying zoning. The southern light industrial area is currently under construction for industrial and commercial development.

The proposed corridor contains a bridge to cross the northern extent of a 43m wide small parcel of Open Space Conservation zoned land along a 255m stretch of the Rawiri Stream. Over the last few years the Rawiri Stream Restoration and Walkway project has sought to maximise the ecological value of the stream and provide landscape amenity along a new recreational trail. This project has received support from Ngāti Whātua o Kaipara, Te Kawerau A Maki and Auckland Council (Healthy Waters and City Transformations)

Figure 10-2: View south from Spedding Road across the pastoral field located at 90 Trig Road.

Scheduled Landscape and Ecological Features

The proposed road corridor on the approach to SH16 passes 95m to the south of the terrestrial SEA (SEA_T_2034) along the eastern banks of Totara Creek, (the designation boundary is 33m to the south). There are no scheduled landscape features within or proximate to the Project area.

Historical and Cultural Associations

There are no scheduled historical or cultural features within or proximate to the Project area. However, due to the investment in the rehabilitation and improvement of the Rawiri Stream by Ngāti Whātua o Kaipara and Te Kawerau A Maki iwi's, there is a cultural association with this landscape feature.

10.2.2.1 Likely Future Environment

Overview

The land surrounding the Project will witness a substantial change from a rural to urban land use character over the next 10 years. It is anticipated that the abiotic features of the landscape will largely endure, these include the riparian and wetland environments associated with Totara Creek and Waiarohia, Trig and Rawiri streams and the existing landform which will undergo some modification.

It is anticipated that some of the defining biotic (land cover) features of the landscape will also undergo substantial change alongside future development, with the removal of large areas of vegetation to accommodate the proposed widened corridor. This will likely involve the implementation of street tree plantings, public open space areas and general landscaping around commercial and industrial development and within private yards of future housing development to the west of SH16.

The quality and natural character values of riparian and wetland environments are generally anticipated to be retained and, in some instances, enhanced as urban development progresses, in accordance with the policy direction of the AUP:OP and Whenuapai Structure Plan which generally seeks to protect and enhance these landscape features.

The future development of the surrounding area is expected to be an extension of the Hobsonsville and Whenuapai urban areas. To the east of SH16 the Hobsonville BLI zone will intersect with the Whenuapai Structure Plan (2016) area, which indicates that medium density housing will be introduced. To the west of SH16 the route will be set within the Whenuapai Stage 3 development. This section of the route is designated to be developed for business uses in the Whenuapai Structure Plan (2016).

10.2.2.2Whenuapai Structure Plan

The Whenuapai Structure Plan provides general guidance for how the FUZ land adjacent to the Project area should be developed over time. The structure plan is illustrated in Appendix 1.

Land Use

The Whenuapai Structure Plan indicates that the Totara Creek, Waiarohia Stream, Trig Stream and Rawiri Stream at either end of the proposed route link to an indicative linear esplanade open space proposed by the Whenuapai Structure Plan.

The proposed western and eastern ends of the corridor are outside of the Whenuapai Structure Plan area. The central section of the Project, between SH16 and SH18 is intended to be urbanised for a "Business" land use. The plan envisages this Business use to comprise Industrial, and Retail and Services. Extensive industrial activities such as manufacturing, transport and storage, logistics, construction and wholesale trade are expected. Retail and services are expected to be required to support the increased amount of housing within the Structure Plan.

10.3 Extent of Visibility and Viewing Audience

The visual catchment is the area of land from which part or all of the Project area is visible. This is largely determined by landform, land cover and built elements, which in combination may obscure or filter views. The extent of visibility of the proposed road corridor is contained by the surrounding vegetation, in addition to some subtle changes in topography. Notwithstanding the above, audiences from some vantage points within the Project area are likely to witness heightened adverse visual effects. In summary the viewing audience for the Project includes:

- *Public Views:* Transient public audience (vehicle users). Key roads where views can be obtained from include Spedding Road, Māmari Road, Trig Road, Hobsonville Road, State Highway 16 and State Highway 18. Views include:
  - Travelers (cars, pedestrians and cyclists) along Māmari Road, Trig Road, SH16, SH18, to the north of the site (Refer Appendix Site Photo 13);
- *Private Views:* The viewing context includes a concentrated urban residential viewing audience and a relatively small number of rural properties with private viewing audiences, comprising views from rural residential and lifestyle dwellings as well as from the commercial and agricultural businesses. Specifically:
  - Views from the rural residential properties with short driveways that immediately front on to Fred Taylor Drive (121, 123 and 125A); Spedding Road (2, 5A, 6, 9, 10, 13, 14, 15, 16,); and; Trig Road (90 and 92) (Refer Appendix Site Photo 14);
  - Views from the urban residential properties that immediately front on to Hobsonville Road (231, 233, 235, 237, 239, 241 and 243); and;
  - Occupants of nearby commercial buildings along Westpoint Drive, Workspace Drive and Rawiri Place adjacent the proposed corridor (Refer Appendix Site Photo 15 and 16).

Views are well contained within the immediate area surrounding the road corridor due to the relatively flat landscape and intervening vegetation and built form.

Over time, the audience is likely to grow to include residents of future urban developments within the FUZ area.

10.4 Landscape Values

There are no regionally or nationally significant landscapes (ONLs, ONFs or ONCs) within or proximate to the proposed designation boundary.

The gently sloping topography and the mature stands of vegetation contribute to the visual amenity of the landscape. The highly modified landscape has limited natural features, which are restricted to individual stands of native vegetation, riparian stream vegetation and the Totara Creek and Waiarohia, Trig and Rawiri streams at either end to the corridor. An Open Space Conservation zone along the Rawiri Stream has been partially restored but is currently inaccessible to the public.

10.5 Landscape Sensitivity

This project corridor is situated within a broader landscape that has been assessed within the AUP:OP as being suitable for urbanisation. The proposed urbanisation of the surrounding landscape as indicated by the Whenuapai Structure Plan will be developed primarily for industrial, retail and service buildings. The Project area is assessed as having a low sensitivity to landscape change, although there are pockets of indigenous vegetation, stream and wetland environments with a moderate level of sensitivity and highly sensitive SEA's in proximity to Totara Creek to the west.

10.6 Assessment of Landscape Effects and Measures to Avoid, Remedy or Mitigate Actual or Potential Adverse Effects

10.6.1 Positive Effects

Generalised positive effects related to the Project are covered in Section 5 of this report. Additional positive effects related specifically to this Project include:

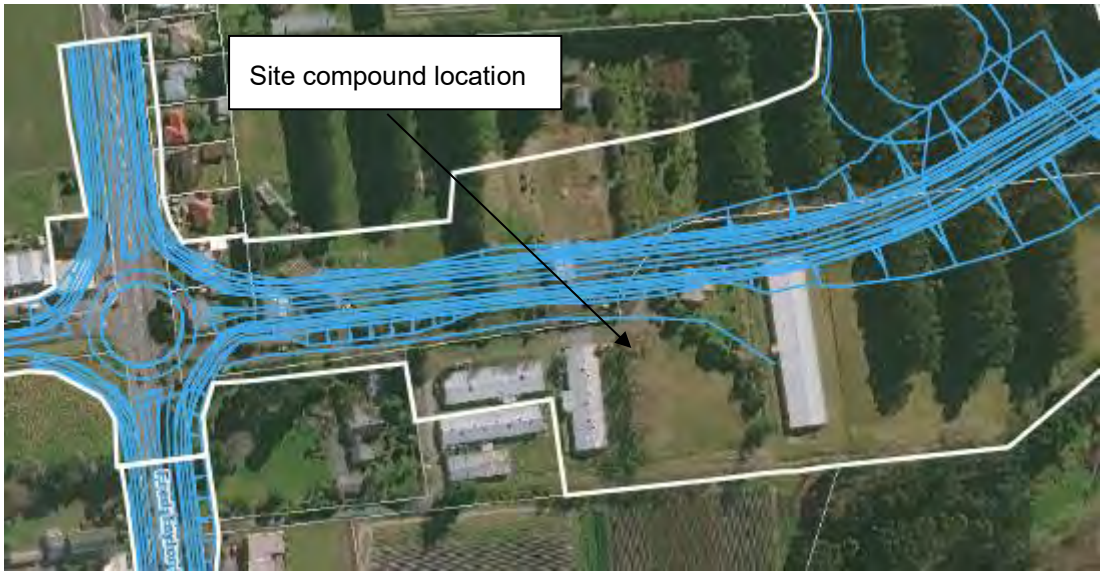
- Improved and/or new opportunities for active modes of transport and the ability to provide improved connectivity between Whenuapai and Hobsonville.
- Improvement or enhancement of riparian habitat within the Indicative Esplanades along Totara Creek and Waiarohia, Trig and Rawiri streams at either end of the project indicated in the Whenuapai Structure Plan;
- The improvement of the existing road which in parts are unsealed.

10.6.2 Assessment of Construction Effects

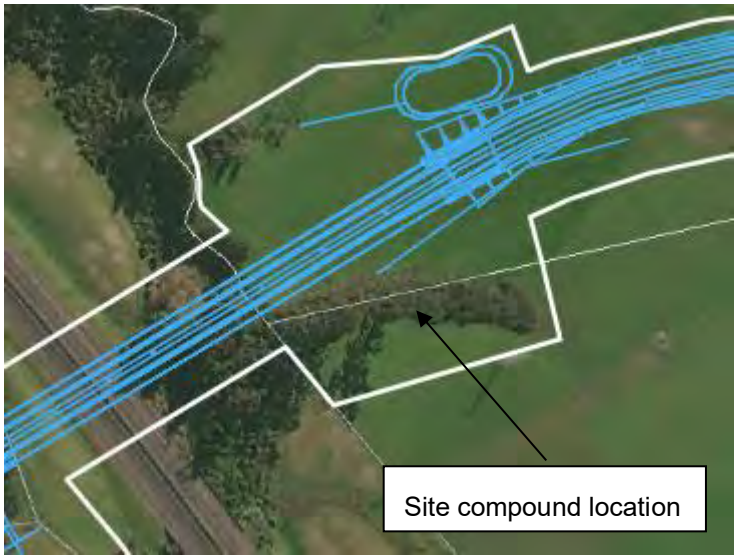
Construction Areas

Site compound and construction areas are to be established at four locations within the Project area with. Construction traffic will be heightened at these locations through the construction period of the Project.

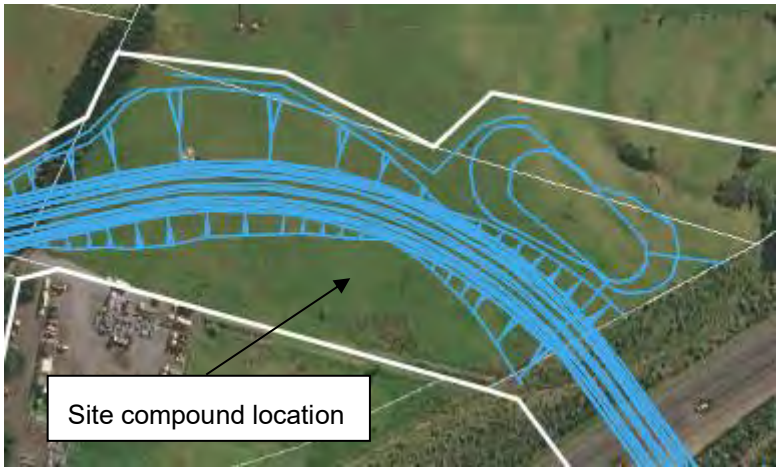
- A proposed site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located to the south side of Spedding Road West section of the corridor adjacent to the Pine Poultry Farm at 119 Fred Taylor Drive. This is set back approximately 176m from Fred Taylor Drive and residential properties that front on to that road.



- A proposed site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located to the south side of the Spedding Road West corridor. This compound is located to the south west of a rural farm property at 16 Spedding Road.



- The site compound adjacent to the Māmari Road interchange is covered in the Māmari Road assessment.
- A proposed site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located to the south side of the Spedding Road East section of the road corridor adjacent to the property at 100 Hobsonville Road. This is set back approximately 435m from Trig Road and residential properties that front on to the road.



- A proposed site compound, stockpile, sediment retention pond and lay-down area for bridge construction is located to the south side of the Spedding Road East outside of the designation to the north west of the highway.

The proposed site compounds and construction areas located within pastoral land or rural production land that is already somewhat modified by existing rural land use or road related works. It is recommended that measures to provide separation between the site compounds and surrounding wetlands / watercourses and that all areas be grassed (reinstated) at the completion of the construction period.

Overall, without the implementation of mitigation measures it is anticipated that the physical landscape effects would be **low-moderate** adverse. The anticipated physical landscape effects resulting from establishment and use of the construction work areas within the Project area, with the application of mitigation measures, are assessed to be **low** adverse.

Vegetation Clearance

Broad areas of roadside vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes. This consists of trees and shrubs located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, indigenous riparian vegetation, private gardens and exotic stands of trees make up the majority of vegetation to be removed.

Riparian vegetation within Totara Creek, Trig Stream, Rawiri Stream and Waiarohia Stream will be bridged as part of the proposed scheme. It is proposed that the removal of indigenous riparian vegetation in these locations will be avoided where possible. Bridge piers should be placed to avoid the disturbance of the watercourses, which may result in the removal of some vegetation.

Without the inclusion of proposed mitigation measures it is anticipated that effects will be primarily **low-moderate** adverse. However, there is the potential for **moderate-high** adverse effects if large areas of indigenous vegetation is removed from within the SEA close to Totara Creek.

Landscape effects likely to arise from vegetation clearance within the Project area are assessed as **low** adverse, provided that mitigation is undertaken for the removal of as little indigenous vegetation as possible.

Structures and Earthworks

Spedding Road West

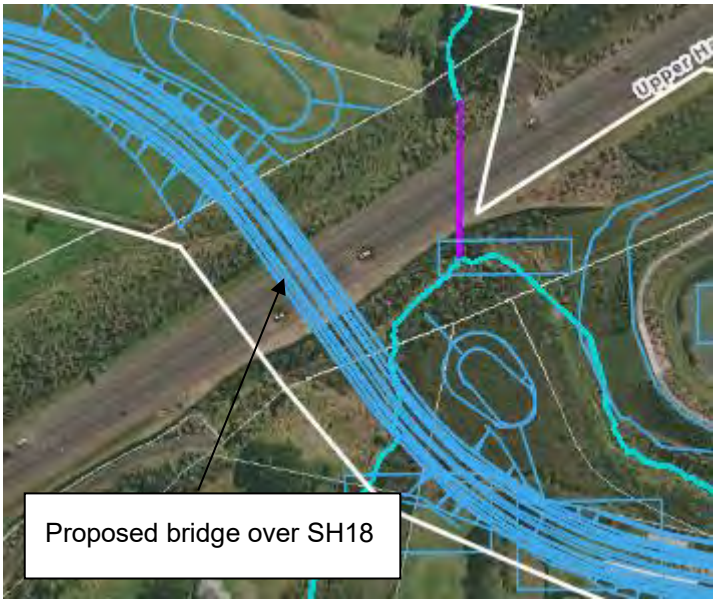
It is estimated that the earthworks of fill earthworks are anticipated to be undertaken over the site at a minimum. The majority of the proposed additional fill will comprise brown rock for engineering purposes.

The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform particularly at the SH16 bridge approaches, watercourse crossings, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 28m wide and will alter the form of the existing marginal pastoral land form, stream banks and wetlands.

Spedding Road East

Approximately 72,000m^3 cut and 108,200m^3 of fill earthworks are anticipated to be undertaken over the site at a minimum. The majority of the proposed additional fill will comprise brown rock for engineering purposes.

The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform particularly at the SH18 bridge approaches, watercourse crossings, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 35m wide and will alter the form of the existing marginal pastoral land form, stream banks and wetlands.



It is recommended that a condition on the designation is included that promotes the re-use of topsoil from pastoral land impacted by the proposed earthworks for both western and eastern sections of the road corridor.[19]

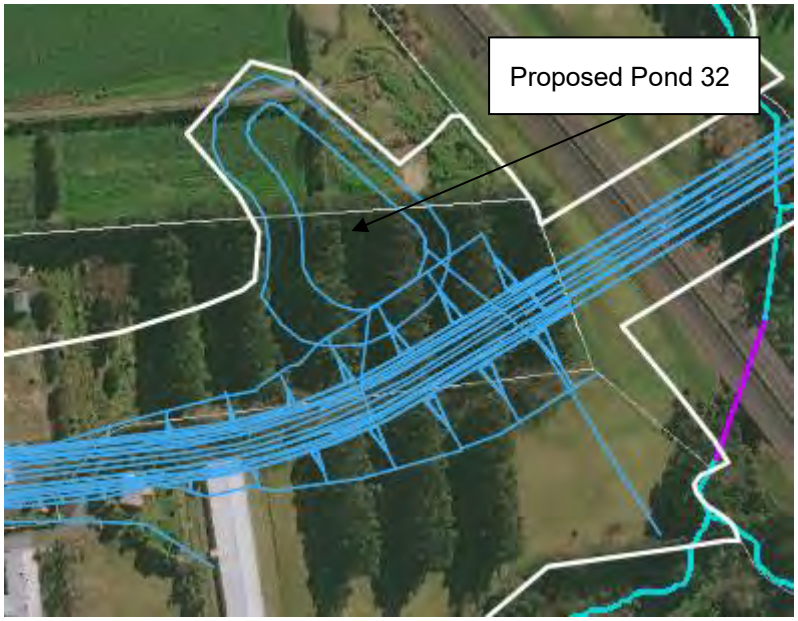
Overall, we consider the earthworks for both sections are to be of a quantity that is reasonably anticipated with a project of this scope and scale and all cut and fill slopes are expected to be integrated with the existing modified environment. Effects experienced without the implementation of proposed mitigation measures are anticipated to be **low-moderate** adverse for the majority of the route, works in proximity to watercourses have the potential to result in **moderate** adverse effects. Provided that the proposed mitigation measures are undertaken we expect that the adverse effects of the earthworks and bridge structure will be **low** adverse.

Dry Ponds and features

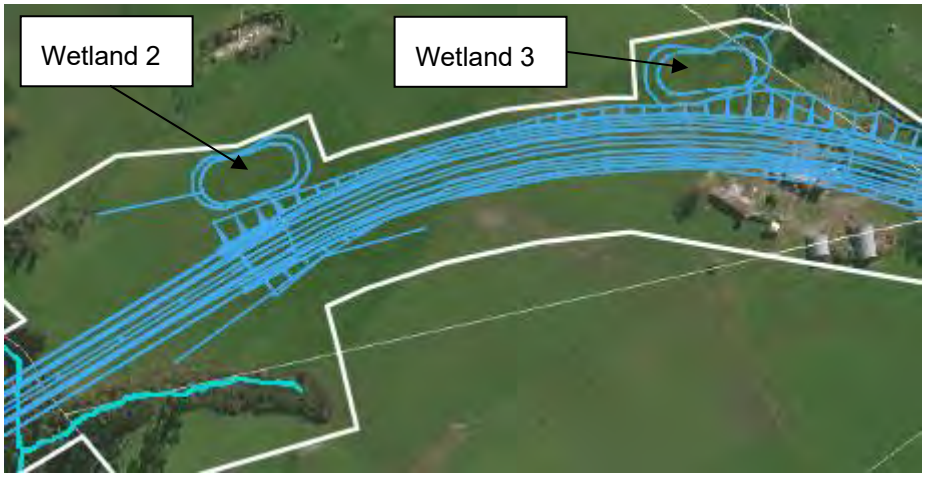
Four dry ponds are proposed within this Project area, one of which is shared with the Spedding Road corridors.

- Pond #32 is proposed to the north of the SH16 and Totara Creek bridge approach of the corridor in 123 Fred Taylor Drive at Spedding Road West ;

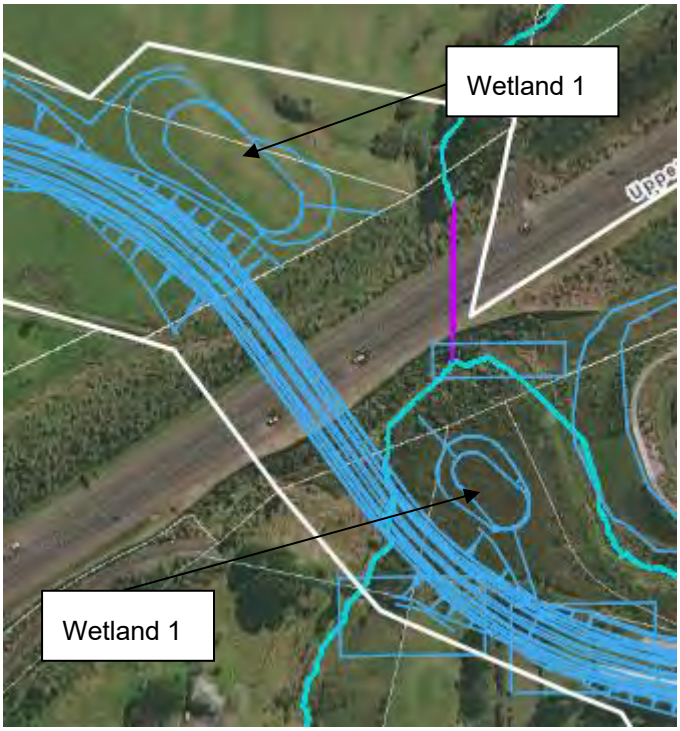
[19] Refer to NZTA Landscape Guidelines (September 2014), Section 4.12 Topsoil for additional information regarding best practice guidelines for topsoil management and soil stripping.



- Wetland 2 and Wetland 3 are proposed to the north of the SH16 and Totara Creek bridge approach of the corridor in 15-19 Spedding Road;



- The pond at the Māmari Road intersection is covered in the Māmari Road assessment;
- Wetland 1 is proposed to the north of the SH18 and Waiarohia Stream bridge approach of the corridor at Spedding Road East;
- Wetland 1 is proposed to the south of the SH18 and Waiarohia Stream bridge approach of the corridor at Spedding Road East;

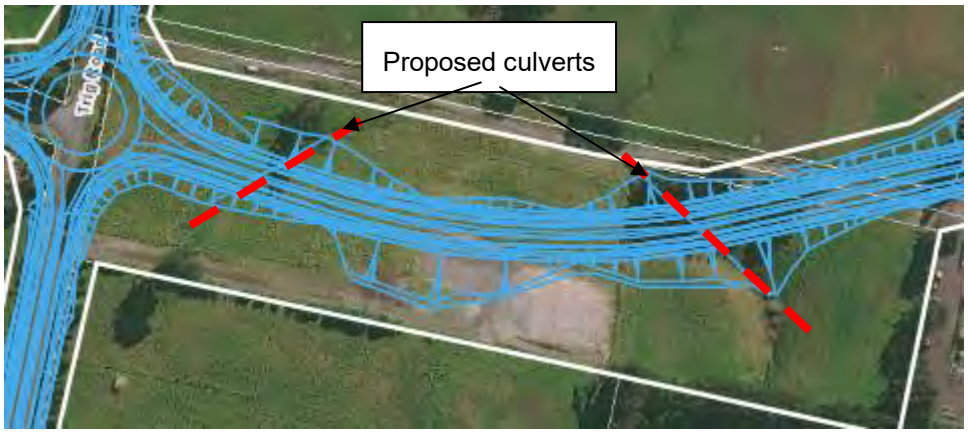


All of these ponds will be located within existing pastoral fields or modified greenfield locations.

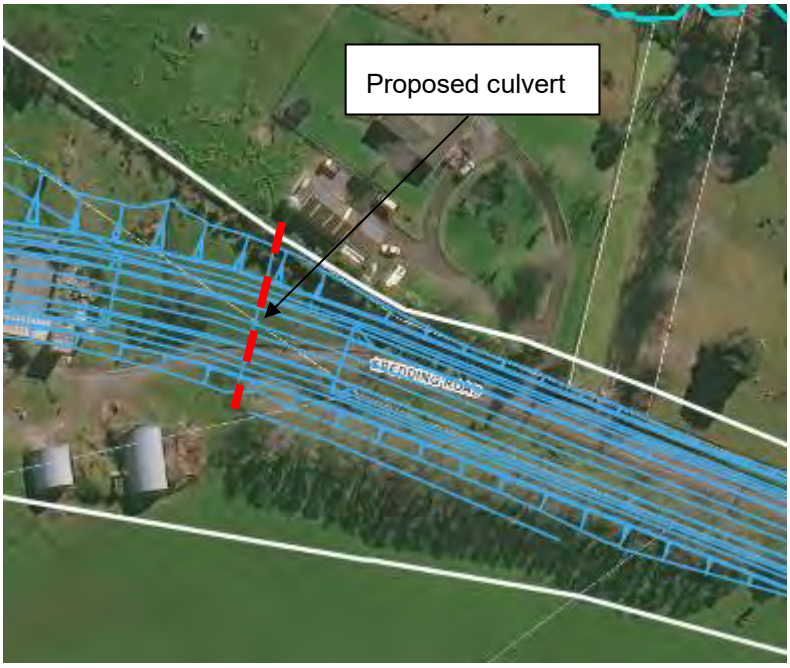
The wetlands will require earthworks to re-shape the land and achieve optimal depths and edge profiles, which will be determined as part of the resource consent phase. Wetland 1 to the south of SH1 is in proximity of the Trig and Rawiri streams which have a heightened sensitivity to change but will not be physically impacted by the works.

Without the implementation of the proposed mitigation measures it is anticipated that physical landscape effects will range from **moderate** adverse to **low-moderate** adverse. Effects on the physical landscape to implement the proposed dry ponds, with the implementation of mitigation measures we consider to be **low** adverse**.**

A Waiarohia Stream branch is required to be culverted (subject to resource consent) in two places within the Spedding Road East section of the corridor.



A culvert is proposed at a branch of the Sinton Stream within the Spedding Road West. Indigenous riparian vegetation within these stream branches is limited to small patches, which reduces their sensitivity to change.



It is anticipated that without the implementation of mitigation measures effects on the physical landscape would be **low** adverse. With mitigation measures implemented as part of the project, effects on the physical landscape to implement the proposed culverts we consider to be **very low** adverse**.**

Private Properties

Residential properties within and adjacent to the Project area (including those which are partially designated) will be impacted by the Project in the following ways:

- Surface level changes between private property boundaries and the upgraded road corridor, requiring existing driveways and private accessways to be regraded;
- Encroachment into private yard areas and the removal of private garden plantings and trees, ancillary buildings and boundary fences;
- Potential construction of noise mitigation measures and retaining walls;
- Demolition of existing dwellings and ancillary buildings (required properties)

Approximately 20 existing retained dwellings are proposed to be impacted by the project works, all of these are within a rural context. Landscape mitigation measures are proposed under 10.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects below.

It is anticipated that without the implementation of mitigation measures, physical landscape effects on private properties to be **moderate** adverse to **low-moderate** adverse. Overall, it is assessed that the magnitude of physical landscape effects on private properties with the implementation of mitigation measures are anticipated to range between **low** adverse and **low-moderate** adverse.

10.6.2.1 Site Finishing Works

Finishing works are expected to include grassing of exposed earth, lighting, signage, line markings, footpath/cycleway details, reinstatement planting and reinstatement of private property fences and gardens. Streetscape elements and landscaping, including that required as mitigation will also be implemented. These activities are to be determined by detailed design and will occur within the already modified areas of the Project. Without the implementation of mitigation measures effects are

anticipated to be **low** adverse. Physical landscape effects are expected to be **very low** through this final phase of the construction process.

10.6.2.2 Temporary Visual Effects

The construction of the Project is anticipated to be in three stages along the proposed corridor over a period of approximately 2-3 years. The construction of the SH16 and SH18 over-bridges are expected to take up a large portion of the construction time. There are only a few audiences in proximity to the bridge works that are expected to be affected.

Visual effects are anticipated to occur progressively through the Project area and transient viewing audiences may concurrently experience adverse visual effects from several stages through the construction period.

The consideration of visual effects through the construction phase acknowledges the full range of activities (and their resultant visual impact), required to implement the upgraded road corridor.

It is anticipated that construction activities required to implement the Project will be generally consistent in nature and scale to road works and infrastructure activities commonly anticipated by transient viewing audiences within a main arterial corridor. Another important consideration is that landscape change by way of vegetation removal and land modification (on private rural property), albeit at a lesser scale, forms part of the expected backdrop of the existing environment.

Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects through the construction phase due to the magnitude of vegetation removal, proximity to construction compounds and/or earthworks proposed. These areas are outlined below:

- Private properties where physical landscape effects will occur along roadside boundaries.
- Private properties in proximity to the site compounds at; 121, 123 and 125A Fred Taylor Drive; 2, 5A, 6, 9, 10, 13, 14, 15, 16, Spedding Road; 90, 92 Trig Road; and; 231, 233, 235, 237, 239, 241 and 243 Hobsonville Road.

The nature and significance of the potential adverse visual effects we consider to be moderated through the Project area by the following:

- The existing road corridor landscape has already been partially modified by previous works required to shape the existing road corridor.
- The construction phase is expected to have a substantial amount of main works being concentrated at the over-bridge construction away from residential audiences.
- The construction period is proposed to be implemented in three stages which is expected to allow efficient access to the construction zones while maintaining continued access for the intersecting roads and existing private and commercial driveways.
- The eastern extent of the works will be overlooked by residential viewing audiences within the context of the busy arterial Hobsonville Road and business and industrial development in the foreground.

Without the implementation of proposed mitigation it is anticipated that visual effects on transient public audience will be **low-moderate** adverse. Overall, adverse visual effects for the transient public viewing audience are likely to be **low** adverse through the construction phase.

Adverse visual effects during the construction phase are likely to be heightened for private viewing audiences directly adjacent to the Project area on the basis of more direct and prolonged engagement with the construction activities of the Project. This will include the presence of heavy machinery and the visible disturbance of both the road corridor and also individual private interfaces with the road.

Without the implementation of mitigation measures, private viewing audiences are anticipated to experience moderate adverse effects. Visual effects are likely to range between **low-moderate** adverse to **low** adverse during the construction phase for private viewing audiences, where mitigation measures have been implemented.

10.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Recommendations are in line with the general recommendations in Section 6.1.2.

In addition to these measures the following project specific interventions are suggested:

- Wherever possible maintain riparian vegetation within the stream and wetland environment;
- Proposed bridge structures should avoid where practicable placing piers within watercourses;
- Ensure that measures are taken to prevent contamination and pollution of watercourses and wetlands within proximity to site compounds; and;
- The production of a vegetation plan is suggested to be provided within the UDLMP, to indicate protection measures and locations to be protected during construction.

10.6.4 Assessment of Operational Effects

10.6.4.1 Visual Amenity Effects

Natural character forming elements, features and processes within the Project area are limited. Indigenous vegetation is limited throughout the heavily modified pastoral landscape. Indigenous riparian vegetation is more pronounced in Totara Creek, Trig Stream, Rawiri Stream and Waiarohia Stream. The proposal will not have an impact on the terrestrial SEA adjacent to the Totara Creek. Overall, the natural character value in the landscape is comparatively low across the entirety of the corridor.

Clearance of indigenous vegetation within the road corridor is expected as part of the required works, however these clearance areas will be limited and will not comprise any large areas of protected habitat. This does have the potential to alter the character of these areas by heightening the impression of human modification. Clearance of indigenous riparian vegetation and habitat will be necessary to facilitate the construction of the SH16, SH18 and Rawiri Stream over-bridges, this will be limited to the areas required for construction.

A planting plan and vegetation protection plan is recommended as part of the ULDMP which will be developed as part of the detailed design of the Project. It is recommended that any planting proposed as mitigation through the regional consents process is integrated with the planting plan as recommended through this assessment under the ULDMP. This will ensure that natural character values are preserved as an outcome of the Project.

Without mitigation natural character effects may vary from **low-moderate** adverse to **moderate** adverse. On the basis of the above (allowing for future landscape mitigation), natural character effects are likely to be **low** adverse**.**

10.6.4.2 Visual Amenity Effects

Overall, there are likely to be a range of visual amenity effects on public and private viewing audiences relative to proximity to the corridor. For existing properties set back from the Project area, the visual amenity effects will be a reduced incremental increase in existing effects from the introduction of an arterial road.

Private properties which have filtered, screened or distant views towards the works are expected to experience a reduced level of change as a result of the works. Whereas residential viewing audiences closer to the proposed corridor people will experience a more direct level of material change to the visual composition and residential amenity of the road corridor as perceived from private property.

For some properties directly adjacent to the Project area (from which land is required), visual amenity and residential character effects will be heightened as a result of the construction impacts including driveway regrading, potential loss of yard space and by the introduction of an urban style carriageway and footpaths/cycleways to private dwellings. It is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property, unless other arrangements are requested by land owners. These mitigation measures should be considered within the ULDMP under the lens of neighbourhood character and as such are discussed further in the following section.

Very few public viewing audiences have a direct view of the works due to the lack of connectivity and low number Māmari Road users. Over time as the surrounding FUZ land is developed visual effects are anticipated to be reduced for the public viewing audience, based on improved visual amenity for users associated with streetscape improvements, maturing street trees, berm planting and accessibility to active modes of transport.

Some visual effects are anticipated to be partially or fully mitigated by measures implemented during the finishing phase of the construction period (within the road corridor and private property boundaries), that will mature through the operational phase of the Project. These will reduce some of the long-term residual visual effects of the Project, however the 30m wide road will be a noticeable new feature within the landscape. The road corridor will be less apparent as the surrounding area is urbanised over time.

Without the implementation of mitigation, it is expected that these effects would range from **moderate** adverse to **low** adverse. On that basis, visual effects within the Project area are likely to be **very low** for transient viewers through the operational phase of the Project. For the private viewing audience, the visual effects are likely to be **low-moderate** to **very low**, reducing over approximately 3-5 years as proposed planting establishes.

10.6.4.3 Landscape Character Effects

The principal elements of the Project will permanently alter the character of the existing rural Spedding Road, the green field site of the extended corridor and the adjacent landscape. The existing road is currently distinctively rural in character as a primarily unsealed and incomplete road way, characterised by the lack of streetscape features, informal intermittent vegetation, shelterbelt and hedgerows along field boundaries and existing rural land uses adjacent to the corridor. At the completion of the Project, the upgraded corridor will resemble that of an urban arterial road on account of the pedestrianisation, active modes of transport, reduced speed limit, structured street tree planting, integrated stormwater management and engineered roading elements that are inherently an urban aesthetic.

The Project is anticipated to enter the operational phase within the context of increased urbanisation as adjacent FUZ land is progressively live-zoned and urbanised. Although it is not possible to anticipate the exact future urban land use pattern, Whenuapai Structure Plan suggests that industrial, retail and service buildings will be surrounding Spedding Road and the AUP zoning to the east.

Based on the above the magnitude and nature of landscape change proposed by the Project, we consider that the proposed changes will match with those which will likely occur throughout the localised landscape over time.

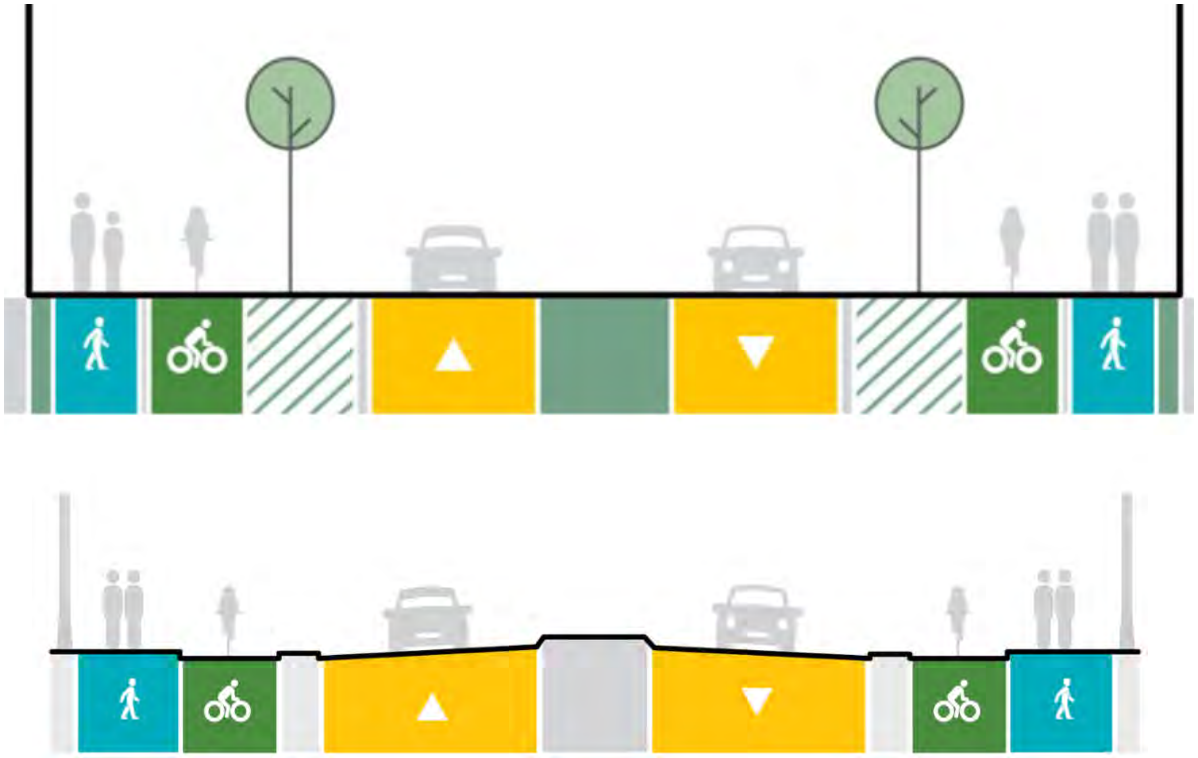


Figure 10-3: Spedding Road Upgrade Typical Cross Section – Corridor and Bridge

The typical cross section above illustrates the proposed upgrade to the road and the expected future use. Although indicative the available space within the road corridor for green infrastructure elements such as street trees and berms where low impact stormwater devices and associated planting can be accommodated These features are expected to improve landscape and urban amenity within the corridor.

As outlined earlier broad areas of vegetation along the existing corridor may not be able to be retained within the new corridor. New street tree planting along the length of the corridor will be an appropriate replacement for the vegetation removed, within the context of the anticipated surrounding urban environment (from a landscape character perspective).

It is assessed that the new street tree plantings, in conjunction with stormwater management and berm plantings, will provide landscape amenity and positively contribute to the landscape character of the Project area within the context of an urban environment.

On the basis of the above without mitigation effects are anticipated to be **low-moderate** adverse**.** Allowing for future landscape mitigation, natural character effects are anticipated to be **low** adverse.

10.6.5 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

The measures to remedy and mitigate the adverse construction effects of the Project on the natural and urban landscape will be addressed under an Urban and Landscape Design Management Plan (ULDMP), which will lay out the main design themes, principles, and outcomes of the Project. It is recommended that the ULDMP also considers additional enhancement and future opportunities.

Recommendations are in line with the general recommendations in Section 6.1.3. In addition to this the following recommendation is suggested:

Specific mitigation measures for individual audiences are not anticipated, however this may be required following the during the detailed design phase. The following mitigation measures are recommended to remedy and mitigate the adverse construction effects of the Spedding Road Project:

- Produce a vegetation protection plan as part of the UDLMP to ensure that valued indigenous and riparian vegetation are protected.

10.7 Conclusions

Overall, it is anticipated that without the implementation of mitigation measures landscape and visual effects range from **moderate-high** adverse to **low** adverse during the construction phase and **moderate adverse** to **low** adverse during the construction phase. Landscape and visual effects with the implementation of mitigation are anticipated to range from **very low** adverse to **low-moderate** adverse for the construction phase and **low** adverse to **low-moderate** adverse for the operational phase. It is considered that the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. Existing urban areas have a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

11 NoR W5: Hobsonville Road FTN Upgrade

11.1 Project Corridor Features

Hobsonville Road is an existing arterial corridor over 4km in length, extending from SH16 in the west to Hobsonville Point Road and Buckley Avenue / Squadron Drive in the east. The project extends from the intersection with Oriel Avenue in the west to the intersection Memorial Park Drive in the east and provides an important east-west connection from Westgate to Hobsonville.

The existing Hobsonville Road traverses land zoned for a range of activities under the AUP:OP (FUZ, Residential, Open Space and Business (including industrial), therefore the recommended form and function of the corridor reflects the adjacent future land use.

The key landscape matters addressed for the Hobsonville Road Upgrade include:

- The nature and extent of impacts on the landscape as a physical resource during the construction period of the Project. A specific focus on the location of construction compounds, extent of vegetation clearance, the scale and location of proposed cut and fill slopes and the likely impacts of bridge construction.
- Consideration of landscape character effects and urban amenity issues in relation to the permanent landscape change, including specific assessment of how this corridor will integrate into the future urban environment.
- Potential natural character effects of the corridor construction and consideration of future opportunities to integrate streams and wetlands.
- Consideration of landscape mitigation measures to be included within an Urban and Landscape Design Management Plan (ULDMP) as a condition on the proposed designation to address the potential landscape, natural character and visual effects arising from the operation the Project.
- Expansion of the existing wetland from a Waiarohia inlet.
- Working around scheduled notable trees within the Hobsonville School grounds.
- Integration of the five wetlands into the surrounding urban landscape.

11.2 Existing and Likely Future Environment

11.2.1 Planning context

The Hobsonville Road corridor runs through an existing rural environment, with the land either side of the Trig Road corridor currently zoned FUZ under the AUP:OP.

Table 11-1 below provides a summary of the North West existing and likely future environment.

Table 11-1: Hobsonville Road FTN Upgrade Existing and Likely Future Environment

Environment today	Zoning	Likelihood of Change for the environment[20]	Likely Future Environment[21]
Business	Business (Light Industrial)	Low	Business (Light Industrial)
	Business (Local centre)	Low	Business (Local centre)
Residential	Residential	Low	Residential
Undeveloped greenfield areas (Future Urban Zone)	Future Urban	High	Urban

Please refer to the AEE for further information on the planning context.

11.2.2 Landscape Environment

11.2.2.1 Baseline Landscape

The Project is situated within the existing Hobsonville Road arterial road which is developed along its length on the eastern side and developed in part on the western side. The eastern side of the Project comprises predominantly residential properties that front on to the road. Development on the western side is residential between Trig Road and Fitzherbert Road, the remaining comprises undeveloped rural fields and mixed commercial and industrial development with the longstanding Hobsonsville school near the centre or the corridor.

The local landscape character of Hobsonville Road are summarised below;

- Vegetation cover comprising stand alone elements of indigenous vegetation; hedgerows and shelterbelts along remnant field boundaries; exotic rank grassland; and non-native stand-alone trees within front gardens and streetscape of the existing urban areas.
- The landscape is characterised by established urban residential development to the east and large for commercial and retail development and remnant rural fields to the west..
- The landscape character value is low within the context of the existing arterial road and emerging commercial and retail development. There is the potential to enhance this aspect of the landscape through the implementation of this Project.

Landform and Hydrology

Hobsonville and the existing arterial road is positioned along a central ridgeline with a moderate slope ascending towards a high point at the Trig Road intersection that then gradually descends towards Hobsonville Point. The lowest point of the Project is at the northern extent of the corridor at the intersection with Memorial Park Lane.

Landcover

The landscape to the west of Hobsonville Road is characterised by mixed size geometric fields bound in parts by isolated native vegetation, hedgerows and exotic grassland (see Figure 11-1 below). Large

[20] Based on AUP:OP zoning/policy direction
[21] Based on AUP:OP zoning/policy direction

lot light industrial and commercial properties are present and under development on the site of remnant fields. Mature trees within the road reserve and front yards of private development contribute to the character of the urban streetscape. Wetland ecosystems are limited to managed areas within the urban landscape, the stream corridors and wetland areas are an important habitat for bird and plant species.

Figure 11-1: View across Hobsonville Road towards open pastoral fields of 4-6 Hobsonville Road.

The landscape to the east of Hobsonville Road the landscape is defined by the one and two storey residential development. Mature trees within the road reserve and front yards of private development contribute to the character of the urban streetscape.

Three scheduled notable trees [1980, Pohutukawa (2), Kauri] are within or proximate to the project boundary, three in or outside of Hobsonville School and one at the intersection of Hobsonville Road and Williams Road (see Figure 11-2 below).

Figure 11-2: View south west across the Hobsonville towards the scheduled notable Pohutukawa trees in proximity to Hobsonville School.

Land Use

The existing Brigham Creek Road corridor is approximately 18m wide and zoned as 'Road under the AUP:OP.

Land use to the west of Hobsonville Road is residential with small open space opposite Ryans Road. West of Hobsonville Road is predominantly zoned as Business – Light Industry Zone between Westpoint Drive and Brigham Creek Road (see Figure 11-3 below). To the south the route is shown as Mixed Housing Urban zoned land and FUZ, the Whenuapai Structure Plan indicates that this will be developed for High Density Residential development in the future. At the northern extent of the western side of the route are a mix of Business Mixed Used and Local Centre zones.

Figure 11-3: Existing and emerging large lot commercial and industrial development to the north of Hobsonville Road.

Scheduled Landscape and Ecological Features

There are tree scheduled notable trees located at 104A/B Hobsonville Road, Hobsonville School. These comprises two Pohutukawa adjacent to the school entrance and a Kauri tree set back further within the school grounds.

Historical and Cultural Associations

There are no scheduled historical or cultural features within or proximate to the Project area.

11.2.2.2Likely Future Environment

Overview

The land to the west of the Project will witness a significant change from rural to urban land use character over the next 10 years. It is anticipated that the abiotic features of the landscape will endure, these are limited to the existing landform and modified wetland features which will undergo some modification. The land on the eastern side of the Project will stay relatively the same into the future.

It is anticipated that some of the defining biotic (land cover) features of the landscape will undergo significant change alongside future development, with the removal of vegetation to accommodate proposed commercial and residential development. This will likely involve the implementation of street tree plantings, public open space areas and general landscaping within the private yards of future housing development for public amenity.

The quality and natural character values of riparian and wetland environments are generally anticipated to be retained and, in some instances, enhanced as urban development progresses, in accordance with the policy direction of the AUP:OP and Whenuapai Structure Plan and Whenuapai Structure Plan which generally seek to protect and enhance these landscape features.

11.2.2.3Whenuapai Structure Plan

The Whenuapai Structure Plan only covers the south western corner of the proposed project and provides general guidance for how the FUZ land adjacent to the Project area should be developed over time. The structure plan is illustrated in Appendix 1.

Land Use

The south western section of the corridor will be developed into Medium and High Density residential areas. The high density residential development is indicated to be introduced adjacent to Hobsonville Road.

11.3 Extent of Visibility and Viewing Audience

The visual catchment is the area of land from which part or all of the Project area is visible. This is largely determined by landform, land cover and built elements, which in combination may obscure or filter views. The extent of visibility of the proposed road corridor is contained by built form and existing vegetation. Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects. In summary the viewing audience for the Project includes:

- *Public Views:* Transient public audience (vehicle users). Key roads where views can be obtained from include; Hobsonville War Memorial Park, Hobsonville School, commercial and light industrial development that front onto Hobsonville Road, Brigham Creek Road, Fitzherbert Road, Westpack Drive and Marina View Drive. Views include:
  - Travelers (cars, pedestrians and cyclists) along Brigham Creek Road, Fitzherbert Road, Westpack Drive and Marina View Drive;
  - People in Hobsonville War Memorial Park (SP22)
- *Private Views:* The viewing context also includes a concentrated urban residential viewing audiences and people within commercial and industrial businesses. A small number of rural properties with private viewing audiences, comprising views from rural residential and lifestyle dwellings. Specifically:
  - Views from the rural residential properties with short driveways that front on to Hobsonville Road (78, 80, 82, 94, 26A, 28, 31, 39, 145, 159, 162) (Refer Appendix 2 Site Photo 16);
  - Views from the urban residential properties that immediately front on to Hobsonville Road (Refer Appendix 2 Site Photo 17, SP18);
  - View from the urban residential properties that have boundaries on to Hobsonville Road (SP19, SP20)
  - Staff and Students of Hobsonville School (104/104A Hobsonville Road) (Refer Appendix 2 Site Photo 21); and;
  - Occupants of nearby commercial buildings along Hobsonville adjacent the proposed corridor.

Views are well contained within the immediate area surrounding the road corridor and urban built form due to the relatively flat landscape and intervening vegetation and built form.

Over time, the audience is likely to grow to include residents of future urban developments within the FUZ area.

11.4 Landscape Values

There are no regionally or nationally significant landscapes (ONLs, ONFs or ONCs) within or proximate to the proposed designation boundary.

The gently sloping topography and small areas of remnant rural mature vegetation contribute to the visual amenity of the landscape. The highly modified landscape has limited natural features, which are restricted to individual isolated stands of mature vegetation, scheduled notable trees and existing managed wetlands. Hobsonville War Memorial Park is within the context of an existing arterial road corridor and urban development, there are no views from any open spaces or sports fields in the wider landscape towards the proposed corridor.

11.5 Landscape Sensitivity

This project corridor is situated between the existing urban residential area and a developing urban landscape. The developing landscape has been assessed within the AUP:OP as being suitable for urbanisation. The proposed urbanisation of the surrounding landscape to the south west as indicated by the Whenuapai Structure Plan will be developed as high and medium density residential. Although there are pockets of indigenous vegetation and wetland environments with a moderate level of sensitivity, on balance the Project area is assessed as having a low sensitivity to landscape change.

11.6 Assessment of Landscape Effects and Measures to Avoid, Remedy or Mitigate Actual or Potential Adverse Effects

11.6.1 Positive Effects

Generalised positive effects related to the Project are covered in Section 5 of this report. Additional (non-landscape related) positive effects include:

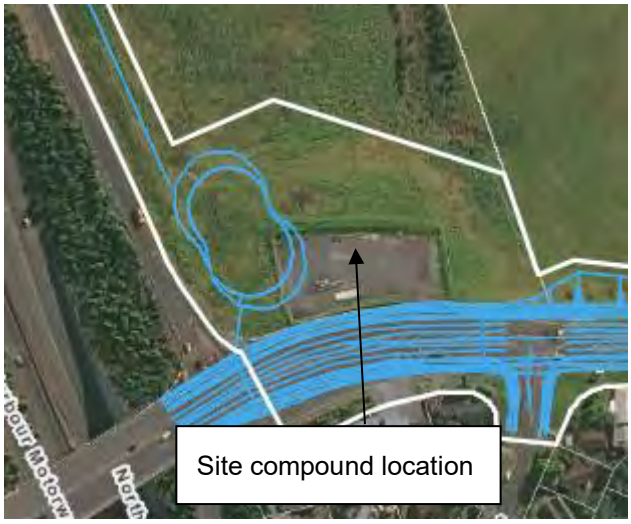
- Improved and/or new opportunities for active modes of transport and the ability to provide improved connectivity along Hobsonville Road.

11.6.2 Assessment of Construction Effects

Construction Areas

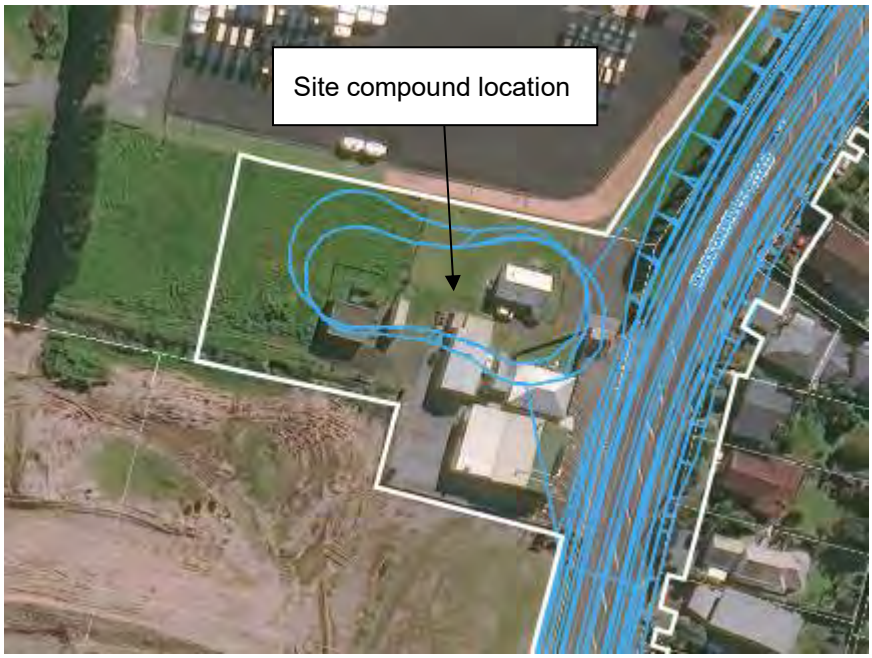
Site compound and construction areas are to be established at four locations within the Project area with one outside of the designation. Construction traffic will be heightened at these locations through the construction period of the Project.

- A proposed site compound, stockpile and sediment retention pond is located on the west of Hobsonville Road corridor in land adjacent to the SH18 off-ramp zoned as Road in the AUP:OP. This compound is adjacent to the proposed Wetland 1 and Opposite the West Harbour Fire Station.

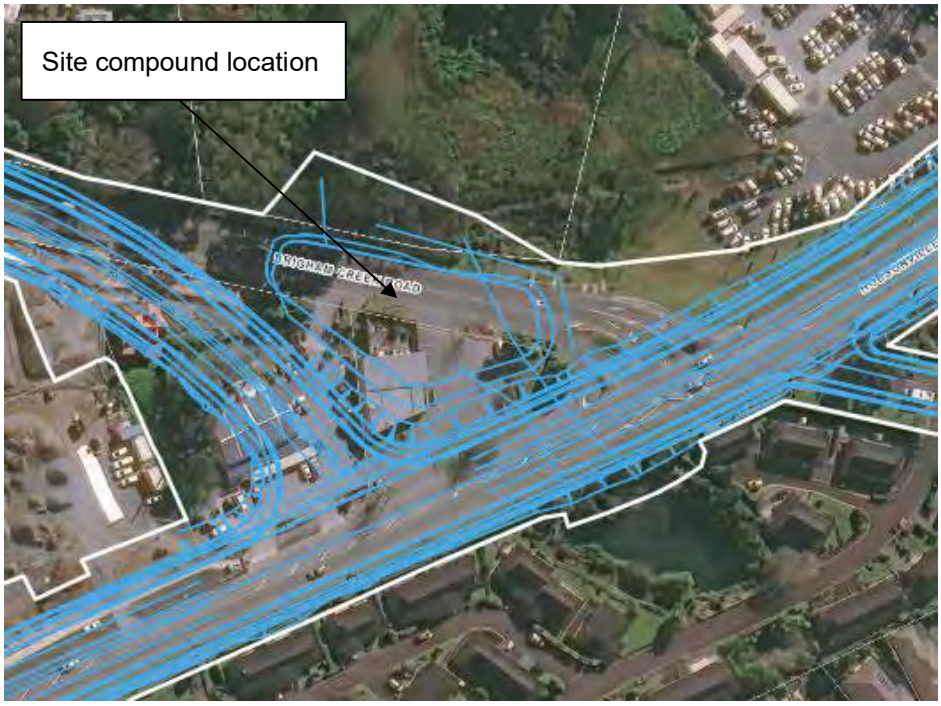


- A proposed site compound, stockpile and sediment retention pond is proposed to the west side of the corridor outside of the designation area - residential properties opposite this compound do not front on to Hobsonville Road.

- A proposed site compound, stockpile, sediment retention pond is located on the west side of the corridor at 92 Hobsonville Road between lots with commercial/retail development currently under construction. The site is opposite residential properties the front on to 195, 197, 199A, 203 Hobsonville Road. The site compound will include proposed Wetland 2.



- A proposed site compound, stockpile, sediment retention pond is located on the west side of the corridor. The site compound is located behind the commercial car lot at 188A Hobsonville Road. The site compound is adjacent to Wetland 4.



- A proposed storm water pond area is proposed away from the main road alignment to the west of Hobsonville School as an upgrade to an established wetland and new proposed wetland.

It is anticipated that without the implementation of mitigation measures the physical landscape effects would be **low-moderate** adverse. The physical landscape effects resulting from establishment and use of the construction work areas within the Project area with the implementation of mitigation measures is anticipated to be **low** adverse.

Vegetation Clearance

Small areas of road side vegetation are proposed to be removed to accommodate the wider road corridors and batter slopes. This consists of trees and shrubs located within the road-side boundaries of private properties, within the Project area. Exotic pasture, trees, shelterbelt plantings, private gardens and exotic stands of trees patches make up the majority of vegetation to be removed. It is assumed that all scheduled notable trees proximate to the Project will be retained.

Without the implementation of mitigation measures it is anticipated that physical landscape effects on average will be **low-moderate** adverse. There is additional sensitivity regarding the scheduled notable trees adjacent to Hobsonville School, the loss of these trees would result in **moderate-high** adverse effects. Provided that an appropriate amount of revegetation mitigation is undertaken for the removal of indigenous vegetation, the physical landscape effects likely to arise from vegetation clearance within the Project area are assessed as **low** adverse.

Structures and Earthworks

Approximately 40,200m^3 cut and 33,000m^3 of fill earthworks are anticipated to be undertaken over the site. The majority of the proposed additional fill will comprise brown rock for engineering purposes.

The impacts and potential landscape effects of the proposed earthworks include the modification of and permanent changes to the underlying landform particularly in the wetland areas, surface level changes in close proximity to private properties. The proposed cut and fill slopes range in scale from 1m to 21m wide and will alter the form of the existing marginal pastoral land form, stream banks,

wetlands and private gardens. Cut and fill slopes within the road corridor are up to 13m wide and predominantly to the west side of the road corridor into the undeveloped pastoral fields. Slopes wider than 13m are located exclusively at the Brigham Creek Road interchange.

It is recommended that a condition on the designation is included that promotes the re-use of topsoil from pastoral land impacted by the proposed earthworks[22] for mitigation planting and landscaping.

Overall, we consider the proposed earthworks to be of a quantity that is reasonably anticipated with a project of this scope and scale and all cut and fill slopes are expected to be integrated with the existing modified environment. The progression from a rural to urban land use within adjacent areas will integrate with the proposed road upgrade.

Without the implementation of mitigation measures it is anticipated that physical landscape effects would be **low-moderate** adverse. Provided that the proposed mitigation measures are undertaken we expect that the effects of the earthworks and bridge structure will be **low** adverse.

Wetlands and features

Four wetlands are proposed within this Project area and one existing wetland will be upgraded as part of the Project.

- Wetland 1 is located to the west of the project corridor at in SH18 land adjacent to the off ramp;

- Wetland 2 is located to the west of the project corridor at 92 Hobsonville Road;

[22] Refer to NZTA Landscape Guidelines (September 2014), Section 4.12 Topsoil for additional information regarding best practice guidelines for topsoil management and soil stripping.

- Wetland 4 is located to the west of the project corridor at 188A Hobsonville Road; and;

- The Wetland 5 upgrade is located to the north of the project corridor to the west of Hobsonville Point Secondary School.

All of these proposed wetlands will be located within green field sites with the exception of Wetland 3 which will require the removal of eight properties, an additional three properties will be required to be removed to facilitate the project. The Wetland 5 upgrade will require the removal of existing riparian vegetation within the existing wetland to expand.

The wetland ponds will require earthworks to re-shape the land and achieve optimal depths and edge profiles, which will be determined as part of the resource consent phase.

On that basis, without the implementation of mitigation measures, it is anticipated that physical landscape effects would be **low-moderate** adverse. We consider the adverse effects on the physical landscape with implementation of mitigation measures will be **low** adverse.

Private Properties

Residential properties within and adjacent to the Project area (including those which are partially designated) will be impacted by the Project in the following ways:

- Surface level changes between private property boundaries and the upgraded road corridor, requiring existing driveways and private accessways to be regraded;
- Encroachment into private yard areas and the removal of private garden plantings and trees, ancillary buildings and boundary fences;
- Potential construction of noise mitigation measures and retaining walls;
- Demolition of existing dwellings and ancillary buildings (required properties)

Approximately 140 existing dwellings are proposed to be impacted by the project works, ten of these properties are set within rural surrounds but face on to an urban area with the remaining within the urban environment. Approximately 40 dwellings will be removed / acquired to accommodate the Project. Landscape mitigation measures are proposed under 9.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects below.

Without the implementation of mitigation measures it is anticipated that physical landscape effects on private properties would range from **moderate** adverse to **low-moderate** adverse. Overall, it is assessed that the magnitude of physical landscape effects on private properties with the implementation of mitigation measures will range between **low** adverse and **low-moderate** adverse.

11.6.2.1 Site Finishing Works

Finishing works are expected to include grassing of exposed earth, lighting, signage, line markings, footpath/cycleway details and reinstatement of private property fences and gardens. Streetscape elements and landscaping, including that required as mitigation will also be implemented. These activities are to be determined by detailed design and will occur within the already modified areas of the Project. Without the implementation of the proposed mitigation measures it is anticipated that the site finishing works will result in **low** adverse to **low-moderate** adverse physical landscape effects. Physical landscape effects are expected to be **very low** adverse through this final phase of the construction process, with the implementation of mitigation measures.

11.6.2.2 Temporary Visual Effects

The construction of the Project is anticipated to be in three stages along the proposed corridor over a period of approximately 3.5 years. Visual effects are anticipated to occur progressively through the Project area and transient viewing audiences may concurrently experience adverse visual effects from several stages through the construction period.

The consideration of visual effects through the construction phase acknowledges the full range of activities (and their resultant visual impact), required to implement the upgraded road corridor.

It is anticipated that construction activities required to implement the Project will be generally consistent in nature and scale to road works and infrastructure activities commonly anticipated by transient viewing audiences within a main arterial corridor. Another important consideration is that landscape change by way of vegetation removal and land modification (on private rural property), albeit at a lesser scale, forms part of the expected backdrop of the existing environment.

Notwithstanding the above, some vantage points within the Project area are likely to witness heightened adverse visual effects through the construction phase due to the magnitude of vegetation removal, proximity to construction compounds and/or earthworks proposed. These areas are outlined below:

- Private properties where physical landscape effects will occur along roadside boundaries to Hobsonville Road.
- Private properties at 149A-F, 147A-E.195, 197 and 203A Hobsonville Road in proximity to site compounds.
- Outdoor space, classrooms and buildings within Hobsonville School which directly overlook the Project.

The nature and significance of the potential adverse visual effects we consider to be moderated through the Project area by the following aspects:

- The Hobsonvillle Road is already a central element within the visual composition of the Project area;
- The existing road corridor landscape has already been partially modified by previous works required to shape the existing road corridor.

- The construction phase is expected to be approximately 3.5 years. The construction period is proposed to be implemented allow efficient access to the construction zones while maintaining continued access for the intersecting roads and existing private and commercial driveways.

Overall, it is anticipated that without the implementation of mitigation measures visual effects for transient audiences are anticipated to be **low-moderate** adverse. Visual effects for the transient public viewing audience are likely to be **low** adverse through the construction phase where mitigation measures are implemented. This takes into account those areas listed above where adverse effects are likely to be heightened during the construction period.

Adverse visual effects during the construction phase are likely to be heightened for private viewing audiences directly adjacent to the Project area on the basis of more direct and prolonged engagement with the construction activities of the Project. This will include the presence of heavy machinery and the visible disturbance of both the road corridor and also individual private interfaces with the road.

It is anticipated that without the inclusion of mitigation measures the visual effects for private viewing audiences are expected to range between **moderate-high** adverse to **moderate** adverse. We consider visual effects are expected to range between **moderate** adverse and **low** adverse during the construction phase for private viewing audiences.

Adverse visual effects on Hobsonville School are likely to be heightened due to the proximity of the school to the project, approximately 1m to the closest building and 10m from the closest outdoor space. Although the schools primary outlook is not towards Hobsonville Road as the main access and egress for the school the works will be a focal point for this viewing audience.

The schools north east outdoor open space used by students during break times will have short distance open views of the works. Without mitigation the effects on the school and residential audiences within proximity to the scheme have the potential to be **moderate-high**. It is considered that adverse visual effects on the school with mitigation will be **moderate** overall.

11.6.3 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Recommendations are in line with the general recommendations in Section 6.1.2.

In addition to these measures the following project specific interventions are suggested:

- Provide hoarding or other screening along the frontage to Hobsonville School to reduce visual effects on user of the outdoor space that look on to Hobsonville Road;
- Ensure that measures are taken to prevent contamination and pollution of groundwater and wetlands within proximity to site compounds; and;
- The production of a tree protection plan is suggested to be provided within the UDLMP, to indicate protection measures and locations to be protected during construction in particular around the scheduled notable trees identified in the AUP:OP.

11.6.4 Assessment of Operational Effects

11.6.4.1 Natural Character Effects

Natural character forming elements, features and processes within the Project area are limited to areas of wetland surrounded by the existing heavily modified landscape. Indigenous riparian

vegetation is only present in the existing man-made wetland that will be upgraded as the works at Wetland 5. Therefore, we consider that, the natural character value in the landscape is **very low**.

Clearance of indigenous riparian vegetation and habitat will be necessary to facilitate the expansion of the existing Wetland 5, this vegetation will be replaced as part to of the Project.

A planting plan and vegetation protection plan is recommended as part of the ULDMP which will be developed as part of the detailed design of the Project. It is recommended that any planting proposed as mitigation through the regional consents process is integrated with the planting plan as recommended through this assessment under the ULDMP. This will ensure that natural character values of the and wetlands are preserved as an outcome of the Project.

On the basis of the above without mitigation there is the potential for landscape effects to be **low** adverse. Allowing for mitigation measures during construction adverse natural character effects are anticipated to be **very low.**

11.6.4.2 Visual Amenity Effects

Overall, there are likely to be a range of visual amenity effects on public and private viewing audiences relative to proximity to the corridor. For existing properties set back from the Project area, the visual amenity effects will be a reduced incremental increase in existing effects from the introduction of an arterial road.

Private properties which have filtered, screened or distant views towards the works are expected to experience a reduced level of change as a result of the works. Whereas residential viewing audiences closer to the proposed corridor will experience more direct levels of material change to the visual composition and residential amenity of the road corridor as perceived from private property. Urban private properties with an existing short distance views over Hobsonville Road particularly those that front on to the corridor will experience very little difference between baseline views and views during operation.

For some properties directly adjacent to the Project area (from which land is required), visual amenity and residential character effects will be heightened as a result of the construction impacts including driveway regrading, potential loss of yard space and by the introduction of an urban style carriageway and footpaths/cycleways to private dwellings. It is recommended that boundary fences and garden plantings (removed through the Project works) are reinstated on completion of the works affecting the property, unless other arrangements are requested by landowners. These mitigation measures should be considered within the ULDMP under the lens of neighbourhood character and as such are discussed further in the following section.

Very few rural public viewing audiences in the existing environment have a direct view of the works due to the lack of connectivity to rural land. Over time as the surrounding FUZ land is developed visual effects are anticipated to be reduced for the public viewing audience, based on improved visual amenity for users associated with streetscape improvements, maturing street trees, berm planting and accessibility to active modes of transport. Public viewing audiences within the urban environment are primarily active mode users along the Hobsonville Road and within the Hobsonville War Memorial Park open space. During operation viewing audiences associated with Hobsonville School will experience views that are largely the same as existing views. In the operational stage views for these audiences will be largely the same as the existing views, with the potential for improved views where tree planting is introduced to the road corridor. Overall, some visual effects are anticipated to be mitigated by measures implemented during the finishing phase of the construction period (within the road corridor and private property boundaries), that will mature through the operational phase of the

Project. These will reduce some of the long-term residual visual effects of the Project, however the 24-30m wide road will be a noticeable feature within the landscape. The road corridor will be less apparent as the surrounding area is urbanised over time.

On that basis, without the inclusion of mitigation measures it is anticipated that visual effects for transient viewers will be **low** adverse. With the inclusion of mitigation measures, visual effects within the Project area are likely to be **very low** adverse for transient viewers through the operational phase of the Project.

For the private viewing audience, without the implementation of mitigation measures visual effects are anticipated to range from **moderate** adverse to **low** adverse. With the implementation of mitigation measures, visual effects on private audiences are anticipated to range from **low-moderate** adverse to **very low** adverse, reducing over an extended period of time. It is expected that landscape mitigation will take 3-5 years to establish, adverse landscape character effects are anticipated to be low adverse.

11.6.4.3 Landscape Character Effects

The principal elements of the Project will permanently alter the character of the existing remnant rural features to the west of the west of Hobsonville Road. The sections of the road to the west are characterised by the lack of streetscape features, informal intermittent vegetation, shelterbelt and hedgerows along field boundaries and existing rural land uses adjacent to the corridor. The existing road corridor does feature urban elements including a segregated cycleway, footpaths and a kerb and channel roadway more prominently to the east. At the completion of the Project, the upgraded corridor will resemble that of an urban arterial road on account of the pedestrianisation, active modes of transport, reduced speed limit, structured street tree planting, integrated stormwater management and engineered roading elements that are inherently urban aesthetic.

The Project is anticipated to enter the operational phase within the context of increased urbanisation within rural sections as adjacent business zoned land, local centre and developed FUZ land is progressively live-zoned and urbanised. Although it is not possible to anticipate the exact future urban land use pattern, Whenuapai Structure Plan suggests that High and Medium density residential development will be introduced into the south western section of the route. The AUP:OP indicates that is desirable to develop the majority of the western portion of the corridor as for business, commercial and industrial uses. A local centre is indicated at the northern extent of the road corridor.

Based on the above the magnitude and nature of landscape change proposed by the Project we consider that the proposed changes will match with those that will likely occur throughout the localised landscape over time.

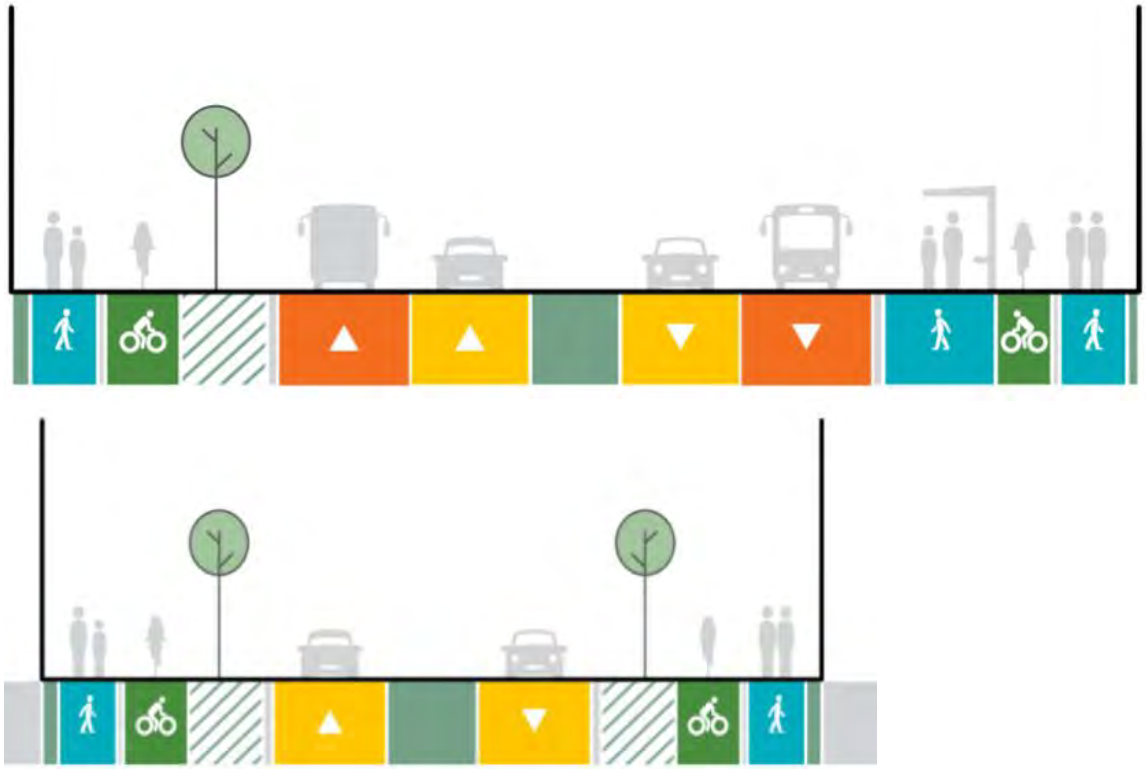


Figure 11-4: Hobsonville Road FTN Upgrade Typical Cross Sections (typical 30m and typical 24m)

The typical cross section above illustrates the proposed upgrade to the road and the expected future use. Although indicative the available space within the road corridor for green infrastructure elements such as street trees and berms where low impact stormwater devices and associated planting can be accommodated These features are expected to improve landscape and urban amenity within the road corridor.

As outlined earlier broad areas of vegetation along the existing corridor may not be able to be retained within the new corridor. New street tree planting along the length of the corridor will be an appropriate replacement for the vegetation removed, within the context of the anticipated surrounding urban environment (from a landscape character perspective).

It is assessed that the new street tree plantings, in conjunction with stormwater management and berm plantings, will provide landscape amenity and positively contribute to the landscape character of the Project area within the context of an urban environment.

On the basis of the above without the implementation of mitigation measures it is anticipated that landscape character effects are anticipated to be **low-moderate** adverse to **low** adverse. Allowing for future landscape mitigation, landscape character effects are anticipated to be **very-low** adverse.

11.6.5 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

The measures to remedy and mitigate the adverse construction effects of the Project on the natural and urban landscape will be addressed under an Urban and Landscape Design Management Plan (ULDMP), which will lay out the main design themes, principles and outcomes of the Project. It is recommended that the ULDMP also considers additional enhancement and future opportunities.

Recommendations are in line with the general recommendations in Section 6.1.3. In addition to this the following recommendation is suggested:

Specific mitigation measures for individual audiences are not anticipated, however this may be required following the during the detailed design phase. The following mitigation measures are recommended to remedy and mitigate the adverse construction effects of the Hobsonville Road Project:

- Produce a vegetation protection plan as part of the UDLMP to ensure that valued indigenous and riparian vegetation are protected; and
- Produce a landscape planting plan for the reinstatement and enhancement of Wetland 5.

11.7 Conclusions

It is anticipated that landscape and visual effects, without implemented mitigation, range from **moderate high** adverse to **low-moderate** adverse for the construction phase and **moderate** adverse to **low** adverse for the operational phase. The highest level of potential effects is related to the potential removal of the scheduled notable Pohutukawa trees located adjacent to Hobsonville School.

Overall landscape and visual effects (with mitigation) range from **low** adverse to **moderate** adverse for the construction phase and **very low** adverse to **low-moderate** adverse for the operational phase. The highest level of effects for the construction phase are in regard to short distance views towards construction works from Hobsonville.

Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. The surrounding landscape context has a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project including the opportunity to formalise the streetscape and amenity provide consistent amenity along the Project.

12 Conclusions

NoR W1 Trig Road North

Overall, it is anticipated that landscape and visual effects, without the implementation of mitigation range from **moderate** adverse to **low** adverse for the construction phase and **low-moderate adverse** to **low** adverse for the operational phase. Adverse landscape and visual effects (with mitigation) range from **very low** to **low-moderate** for the construction phase and **very low** to **low** for the operational phase. Overall, the adverse effects can be mitigated and there are a number of positive landscape and visual effects that can ensue.

NoR W2 Māmari Road

Overall landscape and visual effects without mitigation range from **moderate-high** adverse to **low** adverse for the construction phase and **moderate** adverse to **very low** adverse for the operational phase. With the anticipation of mitigation measures being implement effects are expected to range from **low** to **low-moderate** for the construction phase and **low** to **low-moderate** for the operational phase. Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

NoR W3 Brigham Creek Road

Landscape and visual effects as a result of the project, without the implementation of mitigation measures are anticipated to range from **moderate-high** adverse to **low** adverse for the construction phase and **low-moderate** adverse to **low** adverse for the operational phase. Overall, landscape and visual effects with the implementation of mitigation are anticipated to range from **very low** adverse to **low-moderate** adverse for the construction phase and **very low** to **low-moderate** for the operational phase. Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. Existing urban areas have a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

NoR W4 Spedding Road

Overall, it is anticipated that without the implementation of mitigation measures landscape and visual effects range from **moderate-high** adverse to **low** adverse during the construction phase and **moderate adverse** to **low** adverse during the construction phase. Landscape and visual effects with the implementation of mitigation are anticipated to range from **very low** adverse to **low-moderate** adverse for the construction phase and **low** adverse to **low-moderate** adverse for the operational phase. It is considered that the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. Existing urban areas have a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project, not least the opportunity to create a linkage to the indicative esplanade proposed in the Whenuapai Structure Plan.

NoR W5 Hobsonville Road (alteration to existing designation 1437)

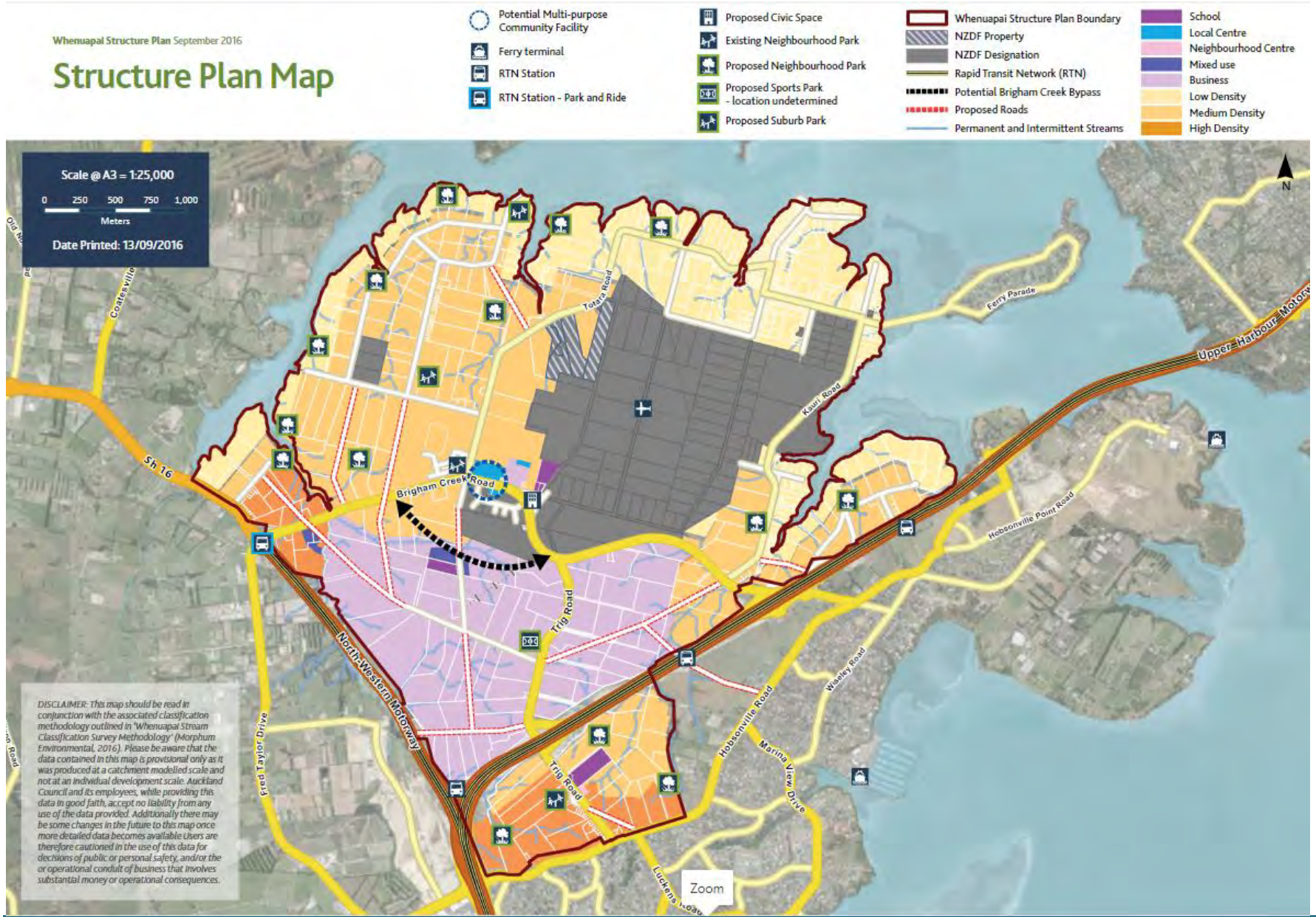
It is anticipated that landscape and visual effects, without implemented mitigation, range from **moderate high** adverse to **low-moderate** adverse for the construction phase and **moderate** adverse

to **low** adverse for the operational phase. The highest level of potential effects are related to the potential removal of the scheduled notable Pohutukawa trees located adjacent to Hobsonville School.

Overall landscape and visual effects (with mitigation) range from **low** adverse to **moderate** adverse for the construction phase and **very low** adverse to **low-moderate** adverse for the operational phase. The highest level of effects for the construction phase are in regard to short distance views towards construction works from Hobsonville.

Overall, the adverse effects can be mitigated and reduced over time in relation to the urbanisation of the surrounding landscape. The surrounding landscape context has a lower level of sensitivity to change due to the existing context of the arterial road. There are a number of positive landscape and visual effects that will result from the project including the opportunity to formalise the streetscape and amenity provide consistent amenity along the Project.

1 Appendix 1: Whenuapai Structure Plan


Whenuapai Structure Plan September 2016
Structure Plan Map
Potential Multi-purpose Community Facility
Ferry terminal
RTN Station
RTN Station - Park and Ride
Proposed Civic Space
Existing Neighbourhood Park
Proposed Neighbourhood Park
Proposed Sports Park - location undetermined
Proposed Suburb Park
Whenuapai Structure Plan Boundary
NZDF Property
NZDF Designation
Rapid Transit Network (RTN)
Potential Brigham Creek Bypass
Proposed Roads
Permanent and Intermittent Streams
School
Local Centre
Neighbourhood Centre
Mixed use
Business
Low Density
Medium Density
High Density
Scale @ A3 = 1:25,000
0 250 500 750 1,000
Meters
Date Printed: 13/09/2016
N
Coatesville
Totara Road
Ferry Parade
Upper Harbour Motorway
Kauri Road
Sh 16
Brigham Creek Road
Hobsonville Point Road
Trig Road
North Western Motorway
Fred Taylor Drive
Wiseley Road
Hobsonville Road
Marina View Drive
Luckens Road
Zoom
DISCLAIMER: This map should be read in conjunction with the associated classification methodology outlined in 'Whenuapai Stream Classification Survey Methodology' (Morphum Environmental, 2016). Please be aware that the data contained in this map is provisional only as it was produced at a catchment modelled scale and not at an individual development scale. Auckland Council and its employees, while providing this data in good faith, accept no liability from any use of the data provided. Additionally there may be some changes in the future to this map once more detailed data becomes available Users are therefore cautioned in the use of this data for decisions of public or personal safety, and/or the or operational conduit of business that involves substantial money or operational consequences.

2 Appendix 2: Graphic Supplement

Boffa Miskell

SUPPORTING GROWTH ALLIANCE

NORTH WEST WHENUAPAI - NOTICE OF REQUIREMENTS

LANDSCAPE AND VISUAL EFFECTS ASSESSMENT APPENDIX 2 GRAPHIC SUPPLEMENT

AUGUST 2022

North West Whenuapai - Notice of Requirements

Contents

Boffa Miskell

www

Viewpoint Details

Date of Photography: 12:55 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W1 TRIG ROAD NORTH

View south east along Spedding Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 1

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:21 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W1 TRIG ROAD NORTH

View south from Brigham Creek Road towards Trig Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 2

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:55 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W1 TRIG ROAD NORTH

View south down outside residential property at 92 Trig Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 3

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:58 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W1 TRIG ROAD NORTH

Residential properties at 84 and 82A Trig Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 4

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:58 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W1 TRIG ROAD NORTH

Residential property at 33 Trig Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 5

Boffa Miskell

www

Viewpoint Details

Date of Photography: 12:57 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W2 MĀMARI ROAD

View west towards Mamari Road from Spedding Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 6

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:21 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W2 MĀMARI ROAD

View south west towards Mamari from Brigham Creek Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 7

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:21 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W2 MĀMARI ROAD

View south along Mamari Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 8

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:11 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W2 MĀMARI ROAD

View north from Mamari Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 9

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:52 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W3 BRIGHAM CREEK ROAD

View north west towards Brigham Creek Road from Trig Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 10

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:31 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W3 BRIGHAM CREEK ROAD

View east along Brigham Creek Road from the south east corner of the Whenuapai Settlement Open Space

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:29 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W3 BRIGHAM CREEK ROAD

View east along Brigham Creek Road from the south east corner of the Whenuapai Settlement Open Space

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 12

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:00 pm 9 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W4 SPEDDING ROAD

View south east from Mamari Road towards Spedding Road

Date: 9 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 13

Boffa Miskell

www

Viewpoint Details

Date of Photography: 3:49 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W4 SPEDDING ROAD

View east from Trig Road towards the Spedding Road eastern extension

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 14

Boffa Miskell

www

Viewpoint Details

Date of Photography: 2:15 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W4 SPEDDING ROAD

View south west from Westpoint Drive towards the Spedding Road eastern extension

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 15

Boffa Miskell

www

Viewpoint Details

Date of Photography: 2:17 pm 8 December 2021 NZST

Horizontal Field of View	: 40°
Vertical Field of View	: 25°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W4 SPEDDING ROAD

View west from Rawiri Place towards the Spedding Road eastern extension

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 16

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:53 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is	50 cm

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View east along Hobsonville Road from outside 78 Hobsonville Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

Existing View

Boffa Miskell

www

Viewpoint Details

Date of Photography: 2:09 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is	50 cm

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View south along Hobsonville Road from outside 185A Hobsonville Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 17

Existing View

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:19 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View east from Hobsonville Road towards the SH16 Overbridge

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

Existing View

Boffa Miskell

www

Viewpoint Details

Date of Photography: 1:31 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View east along Hobsonville Road from outside 75 Hobsonville Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

Boffa Miskell

www

Viewpoint Details

Date of Photography: 2:35 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View south along Hobsonville Road from opposite 311 Hobsonville Road

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 20

Boffa Miskell

www

Viewpoint Details

Date of Photography : 2:25 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View south along Hobsonville Road from outside Hobsonville School

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

Boffa Miskell

www

Viewpoint Details

Date of Photography : 2:55 pm 8 December 2021 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 46°
Projection	: NA
Image Reading Distance @ A3 is 50 cm	

Data Sources: Photography - BML

NOR W5 HOBSONVILLE ROAD (ALTERATION TO EXISTING DESIGNATION 1437)

View south from the corner of Hobsonville War Memorial Park

Date: 8 December 2021 Revision: 0

Plan prepared for Supporting Growth

SP 22

3 Appendix 3: Landscape Effects Methodology

3.1 Overview

This Landscape Effects Assessment (LEA) has been undertaken with reference to Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines[23]. The same methodology applies to the construction and operational stages of the works and for NoRs (W1, W2, W3, W4 and W5).

While natural character, landscape and visual amenity effects assessments are closely related, they form separate procedures. An assessment of the effects on natural character of an activity involves consideration of the proposed changes to the current condition compared to the existing. The assessment of the potential effects on landscape considers effects on physical attributes, landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience.

Visual effects relate to the amenity values of a landscape including the natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

Landscape effects result from natural or induced change in the components, character or quality of the landscape. Usually these are the result of landform or vegetation modification or the introduction of new structures, facilities or activities into the landscape.

Natural character effects are in relation to natural or induced change to any streams, wetlands and their margins as outlined in the NZCPS guidance note[24]. These are usually the result of landform, vegetation or hydrological modification or the introduction of structures into the waterbody or its margin.

The process of change itself, that is the construction process and/or activities associated with the development, also carry with them their own visual effects, however, these are distinct from those generated by a completed development.

The landscape and visual effects generated by any particular proposal can, therefore, be perceived as:

- positive (beneficial), contributing to the visual character and quality of the environment.
- negative (adverse), detracting from existing character and quality of environment; or
- neutral (benign), with essentially no effect on existing character or quality of environment.

The degree to which landscape and visual effects are generated by a development depends on a number of factors, these include:

- The degree to which the proposal contrasts, or is consistent, with the qualities of the surrounding landscape.
- The proportion of the proposal that is visible, determined by the observer's position relative to the objects viewed.
- The distance and foreground context within which the proposal is viewed.
- The area or extent of visual catchment from which the proposal is visible.

[23] 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', [Final Draft subject to final editing, graphic design, illustrations, approved by Tuia Pito Ora/NZILA 5 May 2021]

[24] 'New Zealand Coastal Policy Statement' [issued 4 November 2010]. Accessed online 24.11.2021 *NZCPS 2010 Guidance note Policy 13: Preservation of natural character* (DOC, September 2013). (https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/nz-coastal-policy-statement-2010.pdf)

- The number of viewers, their location and situation (static, or moving) in relation to the view.
- The backdrop and context within which the proposal is viewed.
- The predictable and likely known future character of the locality.
- The quality of the resultant landscape, its aesthetic values and contribution to the wider landscape character to the area.

Change in a landscape and 'visibility' of a proposal does not of itself, constitute an adverse landscape or visual effect. It is the effect on the values of the landscape, positive, adverse or benign that need to be understood and evaluated.

3.2 Scale of Effects

In determining the magnitude of potential and actual landscape and visual effects of the Project, a consistent 7-point rating scale has been used that is based on the recommendations in the Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines. The effects ratings referred to in this assessment are based upon a seven-point scale which ranges from 'very low' to 'very high' and are described in the table below.

7-point rating scale

Effect Rating	*Use and Definition*
Very High:	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character and in views.
High:	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains and a major change in views. Concise Oxford English Dictionary Definition High: adjective- Great in amount, value, size, or intensity.
Moderate-High:	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed and prominent in views.
Moderate:	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent in views but not necessarily uncharacteristic within the receiving landscape. Concise Oxford English Dictionary Definition Moderate: adjective- average in amount, intensity, quality or degree
Low-Moderate:	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent within views or uncharacteristic within the receiving landscape.

Effect Rating	*Use and Definition*
Low:	Little material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic or prominent in views and absorbed within the receiving landscape. Concise Oxford English Dictionary Definition Low: adjective- 1. Below average in amount, extent, or intensity.
Very Low:	Negligible loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation and a negligible change in views.

Mitigation

For effects that are very low or low, mitigation is generally not required. Additional landscape mitigation may be required for landscape effects of a low-moderate to high rating to reduce effects to a lower degree. For effects that are very high, mitigation is unlikely to reduce the level of effect to any discernible degree. Operational effects are assessed after mitigation planting has been established, typically this is between 3-5 years after implementation. While planting establishes it is anticipated that adverse effects will reduce over time.

3.3 Methodology Breakdown

The methodology that forms the basis for the assessment is set out below:

- Identification of relevant statutory provisions and non-statutory guidance relating to landscape;
- Analysis and description of existing landscape elements, features and character of the existing 'Baseline Landscape' within the NoRs and surrounding areas;
- Analysis and description of landscape elements, features and character of the likely future environment within the NoRs and surrounding areas;
- Analysis and description of perceptual, sensory and associative qualities within the Project areas, and the identification of the viewing audience and visual catchment;
- Summary of landscape values within the Project areas, including inputs from other specialists such as ecology, stormwater and historic heritage;
- Evaluation of the sensitivity of the landscape within the Project areas to landscape change arising from transport infrastructure upgrades;
- Analysis and description of the development proposal including construction methodology, timeline and discussion of avoidance and mitigation measures already integrated through the design;
- Identification of the principal elements of the Project (effects generators) likely to result in landscape, natural character and visual effects;
- Identification of temporary (construction) vs permanent (operational) effects of the Projects;
- Identification of general and targeted mitigation measures to reduce the magnitude of likely effects;
- Assessment of effects (adverse, neutral and/or positive) on the bio-physical aspects of the landscape resource, landscape character, natural character and visual amenity, taking account of the proposed mitigation measures; and
- Summary of the overall landscape and visual effects of the Projects and an overall determination of the significance of landscape and visual effects.

3.4 Landscape Values

Considering the absence of any scheduled high value landscape areas (ONLs, ONFs. HNCs or ONCs) at a national, regional or district level within or directly adjacent to the Project areas, a summary is provided of local landscape values within each Project Group. Local values generally considered three broad categories including: biophysical, perceptual and associative values.[25]

3.5 Landscape Sensitivity

The level of sensitivity of the sites and wider rural areas to land use change is influenced by the latest planning direction (AUP:OP and also the Whenuapai Structure Plan) that has placed the sites, local landscape and NoRs into the Future Urban Zone (FUZ) and some live mixed housing urban zoning around Whenuapai Local Centre.

Notwithstanding the above, the interface between the land and water (riparian margins) is particularly sensitive to landscape change and under Part 2 of the RMA (section 6(a)) and relevant policies of the National Policy Statement for Freshwater 2020 (NPS-FM), the values within these areas of the landscape should generally be protected from inappropriate subdivision, use and development.

Other landscape attributes may also be sensitive to the effects of landscape change such as topographical and landform features, vegetation (notable trees or patterns of contiguous land cover), existing sensitivity associated with the built environment and views afforded to landmarks and/or landscape features within the contextual landscape. A notable tree is a tree or group of trees that a community or nation regards as being of special importance. These are listed in the Schedule 10: notable trees schedule in the AUP:OP[26].

3.6 Landscape Effects

Landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced over time. This may in turn affect the perceived value ascribed to the landscape.

Potential landscape effects in this assessment relate to the following landscape attributes:

- Biophysical - Abiotic: Geophysical processes (landform) and drainage patterns.
- Biophysical – Biotic: Vegetation cover, quality and pattern (native and exotic).
- Human attributes: Land uses, active and passive recreation, amenity and built form.

Landscape and visual effects are assessed in two parts as outlined below; firstly, through the construction period of the Projects where the bio-physical and human attributes within the Project area are required to be modified to implement the Project. Landscape and visual effects during the construction phase are generally considered to be temporary and dynamic in nature and may temporarily be heightened by the intervention of heavy machinery, areas of exposed ground and the use of construction service areas. In the second part (the operational phase of the Projects), the overall significance and value of landscape and visual change is explored and ultimately the Project's impact on landscape character, natural character and visual amenity is assessed.

[25] Landscape Guideline: Appendix 1: NZTA Landscape and Visual Assessment Guidelines

[26] AUP:OP Schedule 10: Notable Trees, https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20L%20Schedules/Schedule%2010%20Notable%20Trees%20Schedule.pdf [accessed 5 July 2022]

The two categories of effects are outlined as follows:

- **Temporary Effects** (Construction Effects): Describes the anticipated impacts on the bio-physical elements and features of the landscape resource (landform, vegetation and hydrology) resulting from the construction of the Project. It also includes visual amenity effects for both public and private viewing audiences from construction works. The construction activities required to implement the Project are categorised under the following broad headings:
    - **Site enabling works** - site establishment, demolition and vegetation clearance;
    - **Project formation works** - bulk earthworks, retaining walls, park and ride formation, platform and overhead structures, culvert upgrades, stormwater wetlands construction.

- **Permanent Effects** (Operational Effects): Describes the effects on the landscape of completed works (including integrated landscape mitigation measures), the significance of physical landscape change and ultimately the resulting effects of the Projects on landscape character, natural character and visual amenity for both public and private viewing audiences.
    - **Finishing works** – include lighting, signage, road, footpath/cycleway details and line markings, streetscape elements and landscaping (including trees, mitigation planting and riparian/stormwater device/wetland planting).

3.7 Natural Character Effects

Section 6(a) of the RMA identifies as a matter of national importance to recognise / provide for the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers[27] and their margins, and the protection of them from inappropriate subdivision, use, and development.

Assessing existing natural character is primarily concerned with the degree to which natural processes, natural patterns and natural elements have undergone human modification. Hydrological and ecological survey and assessment for the Project area generally underpin the landscape evaluation of existing natural character values.

The natural character assessment for this Project applies to the existing water bodies and wetlands associated with the Sinton Stream, Pikau Stream, Totara Creek, Waiarohia Stream, Rawiri Stream and Trig Stream.

3.8 Visual Effects

Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity. Visual effects are considered for both temporary (construction effects) and permanent (operational effects) of the Projects.

Potential effects considered in this assessment relate to the following visual amenity attributes:

- Visual quality and composition (legibility, coherence, setting, scenic quality)
- Visibility (extent of visibility to the Project area)

[27] A 'river' is defined in the RMA as a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse.

- Views (viewing audience and views afforded to, from and within the Project area).

The nature and magnitude of the visual effect can be influenced by a number of factors such as:

- The extent to which the Project areas are visible;
- Legibility and whether there are intervening elements in the landscape that restrict views towards the Project area;
- Whether or not aspects of the Project appear 'at odds or integrated' with existing (or anticipated future) landscape character and composition;
- Distance between the viewer and the Project area;
- The nature of the viewing audience, numbers and extent of the visual catchment.

The proposed road corridor NoRs are located within an evolving future urban landscape, which in itself will bring about substantial landscape and visual change. Therefore, the visual composition that exists today is likely to change considerably over the course of the next decade.

Based on the above, the visual assessment for the Projects focuses on the potential visual effects arising (through the construction and operation of the Projects) within the proposed NoR areas, and localised landscape. The focus of the assessment is on the nature and significance of effects within the Project areas and how that translates to effects for immediately adjacent land uses (existing and future, but acknowledging that the existing land uses will change in the future).

Assessment photography was obtained during the project site visit in November 2021 and December 2022. The outlook from viewpoints that were captured onsite were photographed and assessed in variable weather conditions and at standing eye level. The photographs were taken with a digital SLR camera.

3.9 Limitations

This landscape assessment does not specifically address and respond to Mana whenua values from a landscape planning perspective. However, Mana whenua knowledge and associative values of the project landscape has been shared through the separate and parallel engagement between the Project team and Mana whenua who have expressed interest in the Projects. There are several crossovers with related specialties including urban design, hydrology, ecology, arboriculture and historic heritage. This report references the latest data available in respect of these matters at the time of issue.

All site assessments have been undertaken from public land and supported through detailed desktop GIS mapping and aerial photograph information.

3.10 Project Assumptions

The findings of this landscape effects assessment are underpinned by the following assumptions:

- For the FUZ areas, it is likely that construction of the road corridors will occur ahead of, or in parallel to, the urbanisation of these areas. Therefore, the starting assumption is that the roads will be constructed in the existing village and semi-rural environment and operate in an urban environment.
- Enabling work is expected to begin on stage 1 of the roads in 2023. The overall duration for the works is estimated to be approximately five years i.e. completed by 2028. Construction timings are

indicative and further details will be confirmed closer to the time of construction and at the OPW stage.

- Areas that are already urbanised, or are planned to be (as per precinct plans in the AUP:OP), construction and operation of the transport corridors will be within an urban environment.
- The Whenuapai Structure Plan can be relied upon to reasonably anticipate the likely future context of the proposed corridors.
- The proposed designation footprint has sufficient space to enable design changes to occur through the detailed design phase of the Project, in order to integrate the road corridor from a visual and urban design perspective with adjoining land uses.

3.11 Statutory Guidance

3.11.1 Notice of Requirement

This assessment has been prepared to support the NoRs for the projects. The process for consideration of a NOR is set out in section 168 of the RMA. This includes consideration of the actual or potential effects (including positive effects) on the environment of allowing the requirement under the Resource Management Act (RMA).

Part 2, Schedule 6, Clause 33(7)(b) in Part 8 of the RMA, in particular ss 168, 171 and 176 of the RMA. The designation once confirmed authorises the activities relating to the Project or work enabled by the designation that would otherwise require a resource consent for land use activities pursuant to section 9(3) of the RMA. This assessment therefore focuses on the landscape and visual effects of the land use activities that will be authorised by the proposed designations for the Project. Landscape and visual effects arising from activities that require future regional consents will be assessed as part of a future consent process.

3.12 Non-Statutory Guidance

The Whenuapai Structure Plan indicates how the future urban environment may develop over time, subject to future plan change processes. As such, it is possible to describe, in general terms, the likely future urban framework for land within and adjacent to the proposed Trig Road North, Māmari Road, Brigham Creek Road, Hobsonville Road and Spedding Road East corridors.

3.12.1 Whenuapai Structure Plan September 2016

The stated vision for Whenuapai

> *"Whenuapai is a liveable, compact and accessible place with a mix of high quality residential and employment opportunities. It makes the most of its extensive coastline, is well connected to the wider Auckland Region, and respects the cultural and heritage values integral to its distinctive character."*

Seven key objectives are identified, the sixth and seventh relate broadly to landscape as follows:

#6. Enhance the natural environment and protect natural heritage

- freshwater quality throughout the catchment is enhanced over time
- scheduled natural heritage is protected
- the overall biodiversity of the area is improved over time

- environmental constraints, such as coastal erosion and contaminated land, are adequately managed
- sedimentation of the Upper Waitematā Harbour is carefully managed through subdivision and development processes.

#7. The provision of quality open spaces

- a network of high-quality open spaces and recreation areas meet the needs of the growing Whenuapai community
- there are ample opportunities for cycling, sport, passive recreation and social interaction
- stream networks are utilised as recreational routes and connections between open spaces and the coast where practicable
- public access to, and along, the coast is enhanced where practicable.

And two further key outcome that broadly relate to landscape:

- "*2. Quality- built environment*" - the street network enhances Whenuapai's sense of place by favouring pedestrians, cyclists and public transport modes.
- "*3. A well connected Whenuapai*" - dedicated cycle and pedestrian footpaths provide safe, connected and high amenity linkages between areas of activity at a local scale.

Landscape does not feature strongly in the vision and /or the key outcomes for the Whenuapai Structure Plan with 8.2.4 Open Space and Recreation, providing the greatest specific direction. The "indicative esplanade" connections and provisions of Neighbourhood Parks, Sports Parks and Suburb Parks throughout the structure plan area are however referenced.

Land Use

Future development of land within the structure plan area will have a significant shift from rural land use to urban land use. These future land uses include; low / medium / high density residential; Business; Mixed Use (BMU); Local Centre (LCZ); and; Neighbourhood Centre zone (NCZ). The southern portion of the structure plan area is primarily designated for business use with the balance areas for residential uses at a variety of densities. In all cases, there is expected to be a significant shift from rural to urban land use which means that the existing landscape character and visual amenity surrounding the proposed designations is likely to experience substantial change over the next 10-30 years.

The staging proposal of the structure plan outlines two stages. Stage 1 is predominantly to the east of the structure plan area adjacent to the Upper Harbour Motorway and two outlying areas; one to the west of the structure plan and one at the existing Whenuapai town centre. Stage 1 includes areas of residential and business land that will be developed up to 2026. The balance of the Structure plan area in Stage 2 further required investment in new infrastructure between 2017 – 2027.

Whenuapai Structure Plan Natural Character, Landscape and Visual Assessment

A Natural Character, Landscape and Visual Assessment[28] was undertaken during the production of the structure plan to identify any potential landscape effects that may result from future land use activities. The landscape assessment identifies that while there are no areas of high natural character or landscape, the structure plan area retains relatively high levels of amenity because of its largely open rural nature, mature trees, and proximity to the Upper Waitematā Harbour.

[28] 7.9 Natural character, landscape and visual of the Whenuapai Structure Plan.

The assessment acknowledges that there will be a level of adverse effects on the landscape as a result of changing land uses, but that this also presents opportunities to enhance some landscape outcomes. The assessment makes the following recommendations to mitigate likely adverse effects:

- Maintain and enhance areas of high visual amenity, especially around the northern part of the structure plan area with appropriate built form, open space and plantings
- Restore and enhance biodiversity through planting, and weed and pest control
- Connect habitats along coastal and stream networks
- Improve the quality of stormwater entering the upper Waitematā harbour
- Create integrated networks of public open space
- Introduce appropriate plantings in new development
- Provide landscape variety to build on existing characteristics of different parts of the structure plan area.

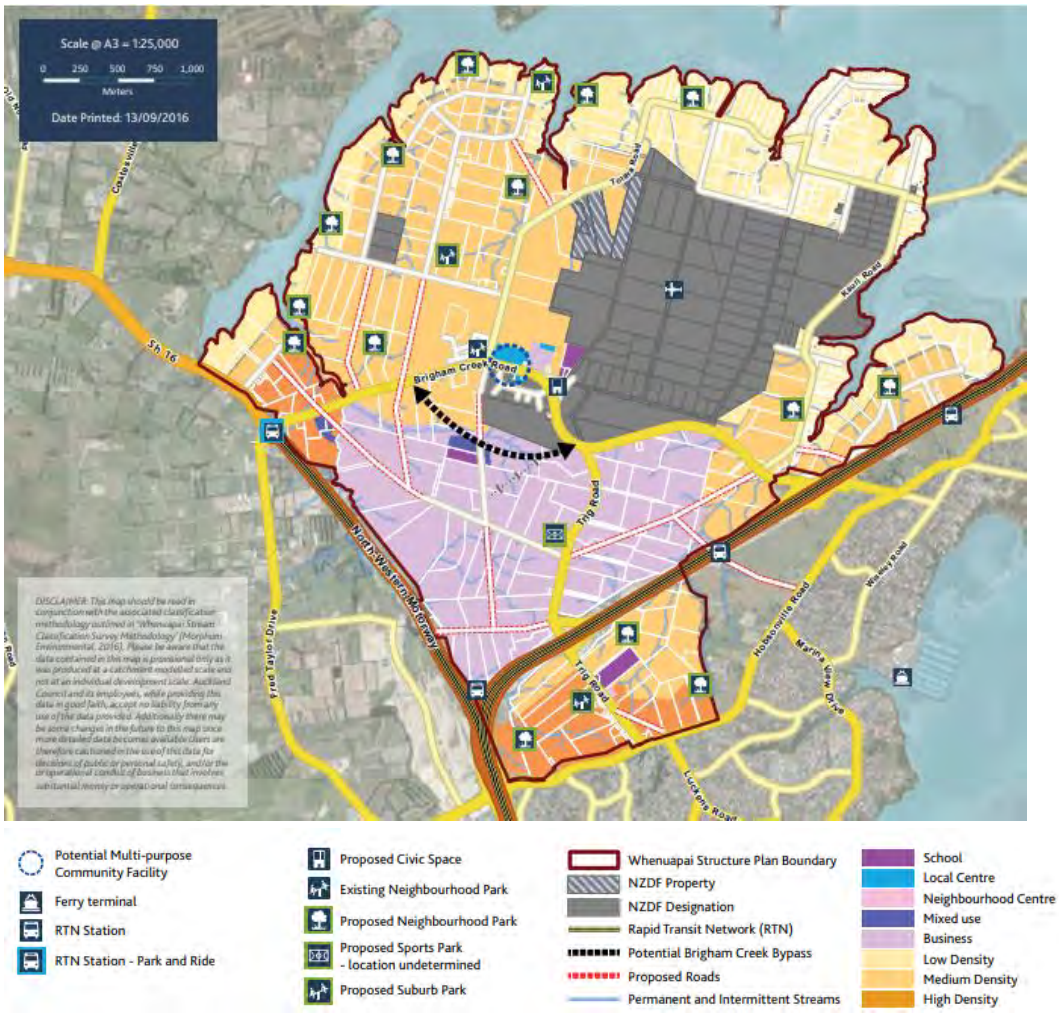


Figure 12-1: Whenuapai Structure Plan Map

3.12.2 National Policy Statement on Urban Development – NPS UD

The National Policy Statement-Urban Development (NPS-UD) came into effect on 20 August 2020 and sets out a list of things that local authorities must do to give effect to the objectives and policies defined within the policy statement. The NPS-UD does not explicitly address or refer to urban design but sets out the characteristics and rationale for "*well-functioning urban environments*" that enable all communities to provide for their social, economic, and cultural well-being and for their health and safety, now and into the future. This includes, amongst other requirements, the enabling of density and development capacity through "up-zoning" and more enabling planning provisions:

- Around centre zones
- In areas with employment opportunities
- In areas that are well serviced by existing or planned public transport or where there is high demand for housing or business
- Along rapid transit stops

In the context of this Project, the NPS-UD Policy 1 defines what constitutes a well-functioning urban environment as one that provides "good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport". The implications of NPS-UD Policy 3 are that development of six storeys or more building heights are more likely within the context of an expanded road corridor.