Eastern Busway
EB2 and EB3 Residential

Natural Character, Landscape and Visual Effects Assessment

Document Number: EB234-1-PL-RP-Z2-000026

Eastern Busway

Quality Information

Drawing Number: EB234-1-PL-RP-Z2-000026

Document History and Status			
Rev	**Date**	**Author**	**Status**
A	12.07.2022	Tom Lines / Chris Bentley	Final

Document Approval					
Rev	**Action**	**Name**	**Position**	**Date**	**Signature**
A	Reviewed by	Chris Bentley	Urban Design / Landscape lead	12.07.2022	On file
1	Approved by	Roger McDonald	Principal Alliance Planner	18.07.2022	On file

Table of Contents

Figures

List of Abbreviations and Definitions

Abbreviation and Definitions	Description
AEE	Assessment of Environmental Effects
AUP(OP)	Auckland Unitary Plan (Operative in part) 2016
BPO	Best practicable option
CMA	Coastal Marine Area
EB1	Eastern Busway 1 (Panmure to Pakuranga)
EB2	Eastern Busway 2 (Pakuranga Town Centre)
EB3 Commercial/ EB3C	Eastern Busway 3 (Pakuranga Creek to Botany)
EB3 Residential/ EB3R	Eastern Busway 3 (SEART to Pakuranga Creek)
EB4	Eastern Busway 4 (link between Ti Rakau Drive and Te Irirangi Drive, Botany Town Centre Station)
EBA	Eastern Busway Alliance
km	Kilometre(s)
m	Metre(s)
m^2	Square Metre(s)
m^3	Cubic Metre(s)
MCA	Multi Criteria Analysis
NES - FW	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
NPS - FM	National Policy Statement for Freshwater Management 2020
NPS - UD	National Policy Statement for Urban Development 2020
NZCPS	New Zealand Coastal Policy Statement 2010
NoR	Notice of Requirement
AUP(OP)	Auckland Unitary Plan (Operative in part) 2016
ONF	Outstanding Natural Feature
ONL	Outstanding Natural Landscape
RTN	Rapid Transit Network
RRF	Reeves Road Flyover
RMA	Resource Management Act 1991
SEA	Significant Ecological Area

Executive Summary

This assessment considers the natural character, landscape and visual effects in relation to the Eastern Busway 2 (EB2) and Eastern Busway 3 (EB3) sections of the Eastern Busway Project (the Project). The assessment has been undertaken in line with the Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines. Prior to undertaking the assessment, a desktop analysis was undertaken followed by multiple site visits along the route of the Project.

EB2

EB2 is focused around the Pakuranga Town Centre within an established urban environment. Key arterial roads surrounding the Pakuranga Town centre and part of EB2 include SEART, Ti Rakau Drive and Pakuranga Road. The area includes a range of commercial properties focused within and around the town centre, with residential properties and open space radiating out.

As works tend to occur along the road corridor, in an environment which is modified, effects are generally contained to the designation or just beyond in the case of viewing audiences. During construction, the greatest landscape effects will be due to the removal of vegetation, being moderate adverse. However, this will be temporary, occurring for a short period prior to replacement mitigation planting. Once replacement planting has established, residual effects on vegetation during operation are considered to be low beneficial.

There will be some effects to the Open Space values within the EB2 area, with the greatest effects being on Paul Place Reserve. Effects are considered to be low during construction and operation due to the loss of the southern portion of the reserve due to the realignment of SEART. Low effects on views along Ti Rakau Drive toward Mount Wellington are expected due to a vista of the maunga present along Ti Rakau Drive. Although there will be some interruption to this view as a result of the Reeves Road Flyover (RRF), once completed and construction machinery removed, some views of the maunga will remain through reduced visual clutter of construction machinery (i.e., cranes). Furthermore, views will remain to the north of the RRF opposite the proposed Pakuranga Town Centre bus station and therefore effects will reduce to very low adverse.

In relation to urban development and land use, it is considered any effects during construction will be low adverse due to the removal of land uses (particularly residential) as a result of the project alignment. Following construction, it is anticipated that any residual space that is suitable for development will in future be developed, in line with the underlying zoning. Overall, it is considered residual effects will be very low neutral. The landscape characteristics of the EB2 area will change however much of the works will occur within the road corridor. The greatest change will be as a result of the construction of the RRF. Overall, effects on landscape character during construction will be moderate, reducing to low once the project is completed.

Natural character effects within the coastal environment will be limited due to the broadly modified and managed nature of the area. Any effects on the natural character values during construction are likely to be no more than low adverse, reducing to very low neutral (i.e., essentially the same condition as currently observed), once the project is complete.

In considering visual effects, the greatest visual effects are anticipated to be on those residential viewing audiences adjacent to the construction of EB2. The effects on these viewing audiences would be up to moderate-high. Such effects may remain for some residents which are proximate to the RRF following construction.

EB3R

EB3R is linear in nature due to the Project's focus along the Ti Rakau Drive road corridor. Residential properties form the majority of the adjoining land uses. Public open space, notably Ti Rakau Park and Riverhills Park occupy northern portions of EB3R, at the western and eastern ends. Limited commercial premises also exist to the west (near the Pakuranga Town Centre), and in a central portion (Edgewater Shops).

The alignment of the Project, closely associated with the existing Ti Rakau Drive road corridor means that effects are broadly contained. Landform effects are considered to be limited due to the modified nature of the receiving environment. Vegetation will be removed as part of the Project, particularly along the road corridor, and from private properties (largely the southern side of Ti Rakau Drive), in addition to some tree removal in the nearby open space. This tree removal will result in adverse effects considered to be low-moderate until replacement tree planting has been established. Once planted and established (5 years) it is considered there will be very low beneficial effects due to the particular focus on indigenous tree species.

Open space will be impacted during construction, and it is considered these effects will be low adverse for Ti Rakau Park and up to moderate adverse in Riverhills Park. These effects will however be temporary and will reduce once the project is completed, following mitigation.

During construction, the landscape features of EB3R are considered to have low-moderate adverse effects as a result of the project impacting areas of open space. Residual effects however are generally considered to be beneficial due to the proposed enhancements to Ti Rakau Park and Riverhills Park as a result of the Project. Effects on the urban development and land use are considered to be low adverse during construction, with low beneficial effects following construction. Effects on landscape character are considered to be low-moderate, reducing to low beneficial following project completion.

In relation to natural character effects, these are considered to be very low adverse during construction, reducing to very low neutral once the project is complete. Visual effects will also be greater during construction, with the highest effects on residential viewing audiences located adjacent to EB3R. Following construction, it is anticipated that any residual effects on these viewing audiences would be low adverse.

1 Introduction

1.1 Overview of the Eastern Busway Project

The Project is a package of works focusing on promoting an integrated, multi-modal transport system to support population and economic growth in southeast Auckland. This involves the provision of a greater number of improved public transport choices and aims to enhance the safety, quality and attractiveness of public transport and walking and cycling environments, and includes:

- 5km of two-lane busway
- New bridge for buses across Pakuranga Creek
- Improved active mode infrastructure (walking and cycling) along the length of the busway
- Three intermediate bus stations
- Two major interchange bus stations.

The Project forms part of the previous Auckland Manukau Eastern Transport Initiative (AMETI) programme (the programme) which includes a dedicated busway and bus stations between Panmure, Pakuranga and Botany town centres. The dedicated busway will provide an efficient rapid transit network (RTN) service between the town centres, while local bus networks will continue to provide more direct local connections within the town centre areas. The Project also includes new walking and cycling facilities, as well as modifications and improvements to the road network.

The programme includes the following works which do not form part of the Eastern Busway Project:

- Panmure Bus and Rail Station and construction of Te Horeta Road (completed)
- Eastern Busway 1 (EB1) – Panmure to Pakuranga (completed).

The Project consists of the following packages:

- Early Works Consents – William Roberts Road (WRR) extension from Reeves Road to Ti Rakau Drive (LUC60401706); and Project Construction Yard at 169 – 173 Pakuranga Road (LUC60403744).
- Eastern Busway 2 (EB2) – Pakuranga Town Centre, including the Reeves Road Flyover (RRF) and Pakuranga Bus Station **(this Assessment)**
- Eastern Busway 3 Residential (EB3R) – Ti Rakau Drive from the South-Eastern Arterial (SEART) to Pakuranga Creek, including Edgewater and Gossamer Intermediate Bus Stations **(this Assessment)**
- Eastern Busway 3 Commercial (EB3 Commercial) – Gossamer Drive to Guys Reserve, including two new bridges, and an offline bus route through Burswood
- Eastern Busway 4 – Guys Reserve to a new bus station in the Botany Town Centre, including a link road through Guys Reserve.

The overall Project is shown in Figure 1 below.

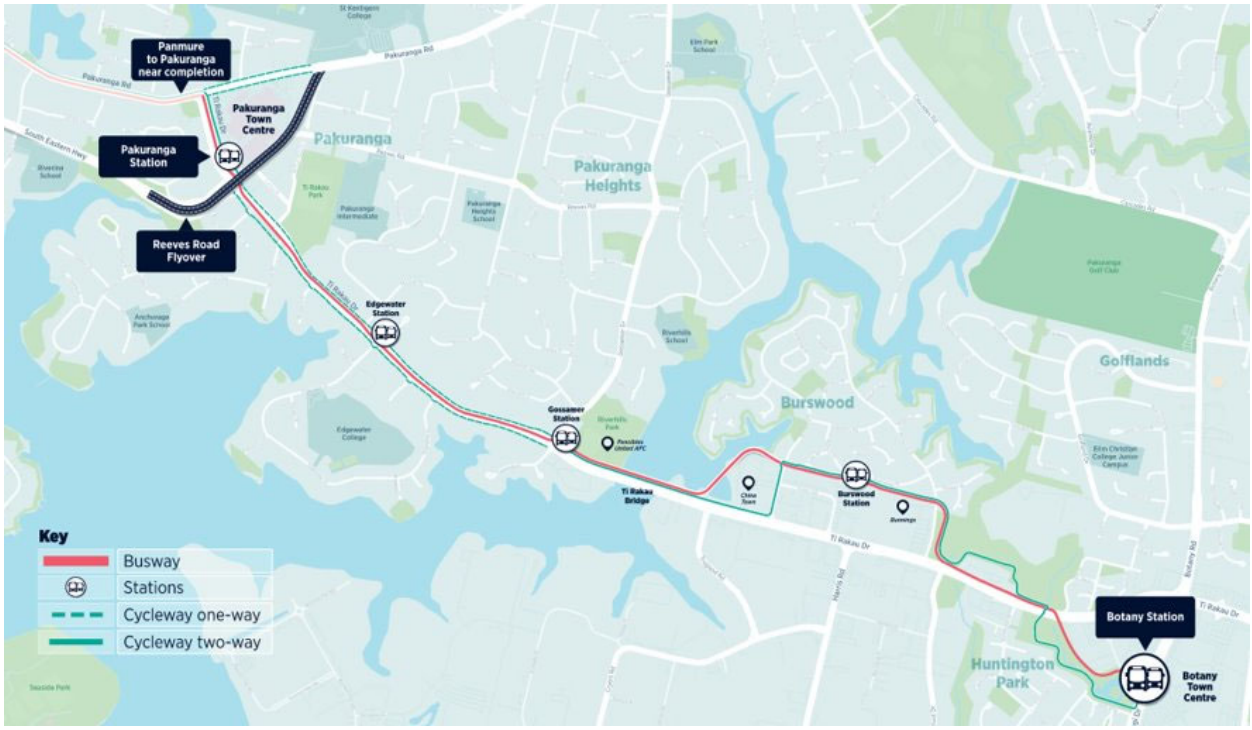


Figure 1. Project alignment

1.2 Project Objectives

The Project objectives are:

1. Provide a multi modal transport corridor that connects Pakuranga and Botany to the wider network and increases access to a choice of transport options
2. Provide transport infrastructure that integrates with existing land use and supports a quality, compact urban form
3. Provide transport infrastructure that improves linkages, journey time and reliability of the public transport network
4. Contribute to accessibility and place shaping by providing better transport connections between, within and to the town centre
5. Provide transport infrastructure that is safe for everyone
6. Safeguard future transport infrastructure required at (or in vicinity of) Botany Town Centre to support the development of a strategic public transport connection to Auckland Airport.

The Project Objectives have been considered in relation to this assessment, with those particularly relevant to the assessment being Objectives 2 and 4.

2 Proposal Description

The below is a summary of the works proposed within the EB2 and EB3R packages. Refer to the AEE for additional detail on the works proposed.

2.1 Eastern Busway 2

The EB2 section of the Project commences from the intersection of Ti Rakau Drive and Pakuranga Road, connecting with EB1, and traverses west along Ti Rakau Drive to the intersection of SEART. The north-south extent of EB2 is between SEART and Pakuranga Road along Reeves Road and William Roberts Road. The main components of EB2 are described below.

2.1.1 Busway and Pakuranga Town Centre Bus Station

A segregated dedicated two-way busway is proposed along Ti Rakau Drive to provide prioritised access for bus services between Pakuranga Town Centre and Botany. From Pakuranga Road to SEART, the busway will run on the northern side of Ti Rakau Drive.

The proposed Pakuranga bus station is a key facility for services running to and from the Panmure Station Interchange, Howick, Highland Park, Eastern Beach, Bucklands Beach and Sunnyhills. The bus station will be located along the northern side of Ti Rakau Drive, on land currently occupied for Pakuranga Plaza and 26 Ti Rakau Drive. The bus station will feature two platforms and will contain a mixture of street furniture and structures, including bus shelters, electronic messaging signage and seating. New proposed pedestrian crossings will provide connections to the bus station and Pakuranga Plaza. Modifications to the Ti Rakau Drive median strip, landscaping, and general traffic lane reconfiguration will enable safe and efficient bus movement for the busway once it becomes operative.

2.1.2 Reeves Road Flyover (RRF)

The RRF will provide two general traffic lanes in each direction connecting SEART to Pakuranga Road, to reduce local traffic congestion along Pakuranga Road and Ti Rakau Drive. The RRF will start opposite Paul Place Reserve, pass over Ti Rakau Drive and Reeves Road, before finishing at a new intersection with Pakuranga Road. Traffic lanes for the RRF will be elevated and run through the centre of SEART, requiring the relocation of the SEART off-ramp to the north of the existing off-ramp.

2.1.3 Walking and Cycling Facilities

EB2 includes improvements to active transport infrastructure and connections. This includes a new cycleway, improved footpaths, and new pedestrian crossings. These works will improve the safety and connectivity of walking and cycling links across Pakuranga Town Centre.

2.1.4 Supporting Works

A range of works will be undertaken in support of the EB2 package. This includes the relocation of network utility services, new street lighting, earthworks, removal of vegetation, landscaping, stormwater upgrades, environmental restoration and mitigation and temporary construction sites.

2.2 Eastern Busway 3 Residential

The EB3R section of the busway is a continuation of EB2 from the intersection of SEART and Ti Rakau Drive, with the proposed dedicated busway proceeding centrally along Ti Rakau Drive towards Gossamer Drive and Riverhills Park in the east. EB3R will largely occur within land vested as road or land currently owned by Auckland Transport. The construction of EB3R will take a staged approach to minimize disruption to the existing road network and its users. The main components of EB3R have been described below.

2.2.1 Edgewater and Gossamer Intermediate Bus Stations

EB3R includes two intermediate bus stations on Ti Rakau Drive, located within the vicinity of Edgewater Drive and Gossamer Drive. Both stations will have separate platforms for eastbound and westbound bus movements. A range of street furniture and structures will also be constructed, such as modular bus shelters pedestrian linkages, electronic messaging signage, seating and cycling storage facilities.

2.2.2 Western Bridge Abutment

EB3R includes construction of the western bridge abutment for a new future bridge across Pakuranga Creek. The abutment will be located within the area that is currently the south-eastern section of Riverhills Park. Only the bridge abutment is included in the EB3R package of works. The remaining parts of the bridge will form part of the EB3C approval package.

2.2.3 Walking and Cycling Facilities

Provision has been made for walking and cycling along the route of EB3R. This includes footpaths and uni-directional cycleways located on either side of Ti Rakau Drive from SEART to Gossamer Drive. Signalised pedestrian crossings will be provided at key intersections along Ti Rakau Drive, including adjacent to the proposed Edgewater bus station.

2.2.4 Associated changes the road network

The proposed changes to the road network include lane arrangement and intersection reconfigurations and changes to the parking arrangement and access to Edgewater Drive Shops. Changes are also proposed to the access arrangements for residential properties along the EB3R alignment. New westbound lanes for general traffic will be established within the land which has been acquired by Auckland Transport and will be vested as road once it becomes operative, as the busway alignment replaces the existing westbound lanes.

2.2.5 Supporting Works

A range of works will be undertaken in support of the EB3R package. This includes the relocation of network utility services, new street lighting, removal of vegetation, earthworks, landscaping, stormwater upgrades, environmental restoration and mitigation and temporary construction sites.

Figure 2 Project Packages

3 Specialist Assessment

Chapter Summary

This assessment considers the natural character, landscape and visual effects in relation to the EB2 and EB3 Sections of the Project.

The assessment includes an outline of the methodology, a description of the receiving environment, an assessment of the natural character, landscape and visual effects in addition to the considered mitigation measures.

The reasons for consent are set out in Section 7 of the EB2 AEE and Section 5 of the EB3R AEE. Many changes within the road environment and removal of buildings are permitted activities, although tree removal requires consent. From a landscape and visual perspective, it is the change of land use to busway and the reconfiguration of the road networks (and associated vegetation clearance and other activities) that informs the assessment below.

3.1 Assessment Content

This report describes the assessment of natural character, landscape and visual effects associated with the operation and construction of EB2 and EB3R sections of the Project.

Its purpose is to inform the AEE relating to the Notice of Requirement, and required regional consents and consents required under National Environment Standards for EB2; and the AEE and district and regional consents applications for EB3R, and identify the ways in which any adverse effects will be mitigated.

This Natural Character, Landscape and Visual Effects assessment involves:

- An outline of the assessment methodology and analysis of natural character, landscape and visual amenity effects
- A description of the receiving environment relevant to this assessment
- An assessment of the natural character, landscape and visual effects of EB2 and EB3R during construction
- An assessment of the natural character, landscape and visual effects of EB2 and EB3R during operation
- A description of the considered mitigation measures relevant to managing adverse natural character, landscape and visual effects.

3.2 Specific Project Elements

The specific elements of the Project that are particularly relevant to this assessment are identified below in relation to the two Project packages.

EB2:

- Laydown areas
- Construction activities in relation to Project works
- Widening of Pakuranga Highway (SEART) and removal of properties along Dale Crescent
- Construction of the RRF

- Changes to Pakuranga Road including isolated realignment in addition to partial widening and narrowing of particular portions
- Changes to William Roberts Road including discontinuing vehicular access from Pakuranga and Reeves Roads in addition to street enhancements
- Street enhancements to the business / light industrial area to the southeast of Pakuranga Town Centre
- Construction of outfalls, discharging into the Tāmaki River

EB3R:

- Removal of properties, in addition to widening and realigning of Ti Rakau Drive to allow for the dedicated busway, cycleways and street enhancement
- Works within Ti Rakau Park and Riverhills Park, including the Gossamer eastbound station
- The western bridge abutment within Riverhills Park for the new Ti Rakau Bridge (the bridge itself to be included within the EB3C package of works)
- Construction of outfalls, discharging into the Tāmaki River

3.3 Reasons for Consent

Consent matters are set out in Section 7 of the EB2 AEE and Section 5 of the EB3R AEE. Consent matters relevant to this assessment relate to vegetation clearance, works associated with the upgrading of existing or the installation of new stormwater outfalls, and the widening of Ti Rakau Drive into land currently zoned as residential (i.e. for EB3R). Earthworks and other construction related activities will result in temporary visual and landscape effects. It is noted that the demolition of residential dwellings is a permitted activity.

4 Methodology and Analysis

Chapter Summary

The below methodology is in line with the Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines (2021). Prior to undertaking the assessment, a desktop analysis was undertaken. This was followed by an on-site analysis involving multiple site visits along the route of the Project.

An assessment of natural character, landscape and visual effects then followed which considers the Project and change in relation to the receiving environment.

This assessment has been undertaken and peer reviewed by NZILA registered landscape architects with reference to the Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines (2021) and Quality Planning Landscape Guidance Note[1] and its signposts to examples of best practice.

4.1 Familiarisation of EB2/EB3R and Existing Environment

4.1.1 Desktop Analysis of the Project and Existing Environment

Prior to conducting the assessment, a desktop study was completed which included a review of the relevant information relating to the landscape and visual aspects of EB2/EB3R. This information included:

- The statutory setting of EB2/EB3R and surrounding context
- base map data (such as contours and aerial photography)
- Terrestrial Ecological Effects Assessment
- Marine Ecological Effects Assessment
- Arboricultural Effects Assessment
- EB2 Reference Design Drawings
- EB3R Reference Design Drawings.

4.1.2 On-Site Analysis of EB2/EB3R and Existing Environment

Following the desktop study, and to further understand both the work area and the surrounding context, a number of site visits have been undertaken. Site visits were undertaken on 01/31/2017, 27/11/2018, 09/04/2021 and 17/12/2021. The site visits focused on gaining an understanding of the natural and built attributes of the EB2 and EB3R area and its locality, visual catchment and viewing audiences, and the physical and spatial impact EB2 and EB3R would have on the existing environment.

4.2 Assessment of Effects

The effects covered in this assessment, include those that can occur in relation to changes to landscape attributes and values, character, and visual amenity (i.e. viewing audiences and their outlook) in addition to natural character effects in relation to the coastal environment as well as freshwater bodies and their margins.

While natural character, landscape and visual effects assessments are closely related, they form separate procedures. Natural character effects consider the characteristics, qualities and associated

[1] https://www.qualityplanning.org.nz/node/802

degree of modification relating specifically to waterbodies and their margins, including the coastal environment. The assessment of the potential effects on landscape considers effects on landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience.

The types of effects can be summarised as follows:

- Natural Character Effects: Change in the characteristics or qualities including the level of natural character
- Landscape Effects: Change in the physical landscape, which may affect its characteristics and/or values
- Visual Effects: Change to views which may affect the visual amenity and values experienced by people

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the first step requires identification of the landscape's character and values including the attributes on which such values depend. This requires that the landscape is first described, including an understanding of relevant physical, sensory and associative landscape dimensions. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with a judgement made on the value or importance of the potentially affected landscape.

5 Existing Environment

Chapter Summary

EB2

EB2 is focused around the Pakuranga Town Centre and sits within an established urban environment. Due to the transport nature of the Project much of EB2 takes place within road reserves. The landform of EB2 decreases in elevation from east to west, where it meets the coastal interface with the Tāmaki River. Hydrologically, there are no identified streams in the EB2 area although the Tāmaki River remains a key hydrological feature.

In terms of open space, Pauls Place Reserve, Bus Stop Reserve and Fairburn Reserve feature within EB2, providing elements of informal recreation. Vegetation is characterised by roadside tree planting and vegetation within adjoining private properties. In terms of landscape features, the most notable are considered to be the reserves, the Coastal Marine Area (CMA) and coastal environment of the Tāmaki River in addition to views of Mount Wellington from the Ti Rakau Drive / Reeves Road intersection.

The urban development and land use of the EB2 area is predominantly heavily influence by the Pakuranga Town Centre, surrounding this community node are commercial and residential land uses in addition to pockets of open space. The proposed visibility of EB2 will primarily be from adjacent properties (including residential and commercial), road users, people within the surrounding reserves (such as Bus Stop Reserve, Ti Rakau Corner Reserve, and Ti Rakau Park) and pupils / staff / visitors at Saint Kentigern College.

EB3R

EB3R is focused along the Ti Rakau Drive road corridor, with the western extent meeting the eastern extent of EB2. The eastern extent of EB3R meets the Ti Rakau Bridge which crosses the Pakuranga Creek. The landform of EB3R is relatively flat, with an approximate 2m level change. Hydrologically, EB3R is located in two stormwater catchments with the most influential being the Pakuranga Creek stormwater catchment.

EB3R contains two key areas of open space which are Ti Rakau Park and Riverhills Park which both provide for formal recreation through the associated sport fields. In relation to vegetation, no scheduled trees exist however a number of trees occupy the road corridor and within the grounds of affected properties and Ti Rakau Park and Riverhills Park. The landscape features of this section are considered to be areas of open space in addition to the esplanade reserves and the interface with Pakuranga Creek / Tāmaki River.

In relation to urban development and land use, the EB3R area is primarily characterised by residential land use consisting of one and two storey residential dwellings. Open space land uses feature at the eastern and western ends, broadly bookending the section of works. A small area of commercial land use occurs west of Ti Rakau Reserve, in addition to the Edgewater Shops. Community facilities also exist in the eastern portion of the EB3R section.

The viewing audiences of this section of the project primality include those viewing audiences that adjoin the Ti Rakau Drive road corridor. This includes residents, road users, visitors to commercial business and community facilities in addition to visitors to Ti Rakau Park and Riverhills Park. The rising landform of Pakuranga Heights (to the north) may mean that some views are afforded beyond those along the road corridor. Glimpse views will also be obtained from viewpoints located east of Pakuranga creek.

5.1 Eastern Busway 2

5.1.1 Site Location

EB2 is located within the east Auckland suburb of Pakuranga and is situated approximately 12 kilometres southeast of the city centre. The surrounding residential suburbs include Pakuranga Heights,

Sunnyhills, Farm Cove and Panmure. To the north, south and west the suburb reaches the eastern banks of the Tāmaki River. To the east, the suburb continues inland towards Pakuranga Heights and more contextually, Highland Park. The specific location of EB2 includes the roads around the Pakuranga Town Centre.

Due to the transport nature of the Project, much of EB2/EB3R area takes place within road reserves, including the carriageways and adjoining footpaths. Key areas include:

- Pakuranga Road
- Ti Rakau Drive
- South-Eastern Arterial (SEART) / Pakuranga Highway
- Reeves Road
- Cortina Place, and William Roberts Road.

5.1.2 Landscape Characteristics and Values

5.1.2.1 Landform

The landform of EB2 area reflects that of the wider context in which the elevation increases from the coastal interface of the Tāmaki River towards Pakuranga Heights. From north to south, along the length of Ti Rakau Drive, the level varies approximately 1m across the site. The topography of the site, from east to west features a greater change in level due to the decreasing elevation toward the Tāmaki River. The northern extent of the site along Pakuranga Road reaches the highest elevation which is approximately RL23.5m. The elevation decreases to sea level where it reaches the Tāmaki River.

Overall, the topography of EB2 area is a modified landscape and although underlying characteristics of the natural topography do remain (such as the sloping elevation along Pakuranga Road), it is considered that the topography has a lower sensitivity to change.

5.1.2.2 Hydrology

The site is located in the Pakuranga – Tāmaki River[2] stormwater catchment. This catchment captures a large area reaching from Edgewater Drive, Udys Road and Glenside Avenue. The catchment then negotiates its way through the suburb of Sunnyhills near Glenmore Road, Butley Drive and Pigeon Mountain Road before capturing the western portion of the Bucklands Beach Peninsular.

There are no identified streams in the EB2 area, although the Tāmaki River remains a key feature. In this respect, an intertidal inlet of the Tāmaki River occupies an area to the south of SEART, which is broadly flanked by residual land to the south of SEART and runs alongside Pandora Place Esplanade Reserve.

5.1.2.3 Open Space and Vegetation

A number of public reserves within the suburbs of Pakuranga and Pakuranga Heights form part of the existing environment. These include Paul Place Reserve, Bus Stop Reserve and Fairburn Reserve (also known as Ti Rakau Corner Reserve). These areas of open space perform a variety of functions, be it informal recreation and pedestrian linkages. Together these areas provide an open space catchment which supports the surrounding residential and commercial community.

[2] Source, Auckland Council GEO Maps website. Unique ID 50049

Paul Place Reserve

Paul Place Reserve is irregular in shape and located along the northern side of SEART which frames its southern edge. Residential properties from Latham Avenue, Paul Place and Dale Crescent border the remaining extents of the reserve. This informal open space supports some clusters of trees along the interface with the residential properties to the north in addition to infrequent groupings along the southern boundary.

Bus Stop Reserve

Bus Stop Reserve adjoins Pakuranga Road to the north of the EB2 area directly opposite Pakuranga Plaza. This reserve is predominantly occupied by open grassed areas and is supported by a number of specimen trees including Phoenix Palms and Willows. It is noted that one of the Phoenix Palms is a scheduled tree (Tree No.1493). The reserve provides a network of pathways which link into a wider pedestrian network called the 'Rotary Walk' which extends around part of the Tāmaki River and Whakaaranga Creek to Farm Cove.

Fairburn Reserve

Located at the south-western corner of the Ti Rakau Drive / Pakuranga Road intersection, Fairburn Reserve occupies approximately 4,000m^2 of public open space. The terrain features small mounds of grass, which are boarded by a collection of trees along the edges of the park. Two trees, Weeping Willows, are listed as scheduled trees in the AUP (Tree No. 1495).

Vegetation

There is a wide variety of vegetation types within and around the site which occupy reserves, roadsides and private properties. These are a combination of native and exotic species and a small number of these are scheduled, as previously outlined.

These are the two notable Weeping Willow trees (No. 1495) existing within Fairburn Reserve and these will not be impacted by the project. One notable Phoenix Palm (No.1493), in addition to 4 other Phoenix Palm's and a Weeping Willow will be removed in Bus Stop Reserve. It is however recognised that Phoenix palms are listed as a formal pest species.

To the north of SEART is an open grass area containing primarily specimen trees, with the predominant species being Pōhutukawa. Also within this location are a number of Pin oak. To the south of SEART similar planting has occurred, with early-mature – mature Pōhutukawa alongside some areas of revegetation planting.

Around the periphery of Pakuranga Town Centre, a mix of exotic and native tree species are present. This tends to include mature specimens located within the road reserve, in grass berms between the footpath and the private property boundaries. The Pakuranga Plaza carpark has a number of pine trees (Norfolk pine and Cooks pine). A row of closely spaced Pōhutukawa also exist along Ti Rakau Drive, in front of the car park and along Reeves Road to the south of The Warehouse. In relation to trees along William Roberts Road, the northern end (beyond Reeves Road), is residential in nature and contains commonly found garden trees and street trees planted within the road reserve, in grass berms between the footpath and the kerb (such as willows). Along the southern portion of William Roberts Road (south of Reeves Road), a mix of mature exotic trees are present, of which the predominant species is Pin oak. An early works consent has been lodged in this area which includes the extension of William Roberts Road (onto Ti Rakau Drive) and includes tree removal along this portion of the road corridor. Additional

planting is proposed as part of this early works package that includes planting throughout Ti Rakau park. The landscape and visual effects associated with this work are not included in this assessment.

5.1.2.4 Landscape Features

Despite the surrounding landscape being predominantly residential and commercial, there are several landscape features within the surrounding context worth noting. These are the adjacent reserves, the CMA and the coastal environment of the Tāmaki River. Another important feature are the views of Maungare / Mount Wellington, particularly on the northern approach to the Ti Rakau / Reeves Road intersection, although it is noted that this is not a protected volcanic viewshaft in the Auckland Unitary Plan (Operative in Part) (AUP(OP)).

5.1.2.5 Urban Development and Land Use

EB2 is primarily focussed along the developed road corridors of Ti Rakau Drive, Reeves Road, Pakuranga Road and SEART. The EB2 area supports a variety of land uses and these predominantly contain a mix of commercial and residential development, as well as pockets of open space. Transpower transmission pylons are a recognisable element within the landscape, and these occupy residential lots and open space within the EB2 area, with the overhead wires intersecting with views of the sky from within the neighbourhood.

Prior to colonisation, Māori had numerous villages, growing areas, portages and other significant sites throughout the area. Upon colonisation, the area was progressively drained and converted to pastoral farming, with farming taking place until the 1950s. In the 1960s the area was developed into a new suburb, and to support this growth, the Fletcher Construction Company developed Pakuranga Town Centre and Ti Rakau Drive.[3] 'Pakuranga Plaza' is broadly centrally located within the Pakuranga Town Centre and was one of the earliest malls in New Zealand having opened in 1965[4]. The Pakuranga Town Centre is located on the corner of Ti Rakau Drive and Pakuranga Road and accommodates over 80 stores including The Warehouse, Farmers and Countdown. Directly to the east of the Pakuranga Plaza (eastern side of Reeves Road) is the Te Tuhi Centre for the Arts and the Pakuranga Leisure Centre. Also present is the Pakuranga Library, abutting the north-east boundary of The Warehouse.

In 2015 the Auckland Council and the Howick Local Board presented the Pakuranga Town Centre Masterplan (the Masterplan), which was a result of community and stakeholder feedback to help shape the future vision for Pakuranga Town Centre. The Howick Local Board sponsored and initiated the process for the Masterplan as a response to the AMETI programme of works, which indicated the possibility of a flyover diverting traffic from Pakuranga Road directly to SEART and the Waipuna Bridge.

In March 2021, resource consent was granted for a mixed-use development with retail, hospitality, hotel and apartments at 26 Ti Rakau Road[5]. The 26 Ti Rakau Drive development would front both Ti Rakau Drive and Reeves Road, occupying a site positioning in the north-eastern corner of the intersection. At the time of writing, the construction of the 26 Ti Rakau Drive development has not begun on the site. The site also intersects with the proposed alignment of a proposed bus station. Therefore, the consented development at 26 Ti Rakau Drive will not be preceding or forming part of the receiving environment because EBA plans to designate part of the property for the Pakuranga Bus

[3] Pakuranga Town Centre Masterplan – July 2015
[4] http://www.pakurangaplaza.co.nz/centre-info/
[5] Resource Consent number LUC60340876

Station. Therefore, effects on the viewing audiences as part of the development can be logically disregarded.

Saint Kentigern College is also located within the EB2 area and fronts Pakuranga Road. Established in 1953, the school is set back from the road corridor and has an established treed frontage, with access attained north of the EB2 area.

5.1.3 Statutory Context

5.1.3.1 The Resource Management Act 1991

Part 2 of the Resource Management Act 1991 ("RMA") sets out the purpose and principles of the Act. Section 5 states that the purpose of the RMA is to promote the sustainable management of natural and physical resources.

Section 6 sets out the matters of importance that must be recognised and provided for in achieving the purpose of the RMA. The preservation of the natural character of the coastal environment (including the coastal marine area), and its protection from inappropriate subdivision, use and development is identified in section 6(a) as a matter of national importance. This is relevant to this assessment as portions of EB2 is located within the coastal environment. Additionally, the protection of outstanding natural features and outstanding natural landscapes from inappropriate subdivision, use and development is identified as a matter of national importance in section 6(b). There are no outstanding natural features or landscapes identified on or adjacent to the proposal site or within the wider landscape context.

Section 7 identifies a range of matters that shall be given particular regard to in achieving the purpose of the RMA. Section 7(c) the maintenance and enhancement of amenity values is particularly relevant to this proposal.

Section 8 states that the principles of the Treaty of Waitangi must be taken into account in achieving the purpose of the RMA.

5.1.3.2 New Zealand Coastal Policy Statement

The purpose of the New Zealand Coastal Policy Statement 2010 (NZCPS) is to state the objectives and policies in order to achieve the purpose of the Act in relation to the coastal environment of New Zealand. The NZCPS therefore includes a number of policies which are relevant to this proposal, given the proposal's location within the coastal environment. The policies which are considered particularly relevant to this assessment are policies 13 and 15, as detailed below:

Policy 13 Preservation of natural character

To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:

- *(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and*
- *(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment…*

Policy 15 Natural features and natural landscapes

To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:

(a) avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and

(b) avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment.

5.1.3.3 Auckland Unitary Plan Operative in Part Zoning

The proposal passes through 8 different AUP(OP) zones. These are:

- Open Space
    - Conservation Zone
    - Sport and Active Recreation Zone
    - Informal Recreation Zone
    - Community Zone
- Residential
    - Terrace Housing and Apartment Buildings Zone
    - Mixed Housing Suburban Zone
- Business
    - Mixed Use Zone
    - Town Centre Zone

5.1.3.4 Notable Trees

There are 3 notable trees that are scheduled under the AUP(OP) located within the EB2 area and immediate surrounds. These are the two Weeping Willow trees (No. 1495) existing within Ti Rakau Corner Reserve, in addition to one notable Phoenix Palm (No.1493) within Bus Stop Reserve.

5.1.3.5 Outstanding Natural Features and Landscapes

There are no outstanding natural features or landscapes located within the EB2 area or in its immediate context. The closest natural feature is the Panmure Basin Volcano (ID150), which is located over 1 kilometre to the northwest.

5.1.3.6 Significant Ecological Areas

There are no Significant Ecological Areas (SEAs) within the EB2 site, but it is noted that a marine (SEA-M1 47) is located just outside of the EB2 area near Bus Stop Reserve.

5.1.3.7 Pakuranga Town Centre Masterplan

The Masterplan was adopted by the Howick Local Board in August 2015. The document sets out the 30-year vision for the future of the Town Centre and acknowledges the Project (formally named AMETI) and its alignment. Its vision and guiding principles are outlined below:

Vision:

"Pakuranga is a vibrant Town Centre destination, well-connected to its coastal walkway and local communities, enhanced by the creation of new civic spaces, green links, live / work opportunities and by its celebration of cultural diversity."

Guiding Principles:

- Maintain 'one vision' for the centre, with on-going input and collaboration from the community, Mana Whenua, landowners and Council to guide any decision making process
- Foster a distinct point of difference for Pakuranga to set it apart from the other sub-regional centres of Botany, Sylvia Park and Panmure
- Encourage the use of sustainable practices aligned with community values through the use of development incentives and tools
- Weave the arts and mana whenua values into the centre's infrastructure, public amenities, buildings and open spaces
- Ensure the delivery of an easy, legible and futureproofed parking system for the whole centre
- Focus taller buildings towards the middle of the centre, north of the proposed flyover to front Aylesbury St, and avoid shading of open spaces
- Take advantage of opportunities provided by new transport infrastructure that is to be delivered through the AMETI Project.

5.1.4 Natural Character of the Coastal Environment

The preservation of the natural character of the coastal environment is a matter of national importance under section 6 of the RMA and through the NZCPS. The following components of natural character have emerged through case law:

- The presence of natural ecological processes
- The presence of natural elements, patterns and processes
- The presence of natural landforms.

Natural character is part of landscape character and varies within each area. It is the result of the combined levels of indigenous nature (i.e. biophysical values) and perceived nature (i.e. sensory values), which are typically defined by the extent to which natural elements, patterns and processes occur and are legible; and the nature and extent of existing human modifications. As such the highest degrees of natural character occur where there is the least modification within an area and its context.

The key abiotic attributes of the EB2 area include the geology, water catchments and landform, formed predominantly by geological and coastal processes. As outlined, the Project sits in a water catchment which is within a well-established developed suburb of southeast Auckland. This means that aspects of the catchment within the coastal environment are modified through roads, reclamation, stormwater piping and culverts. Along the coastal interface, a number of culverts exist and although there no natural steams, the intertidal estuary of the Tāmaki River heavily influences the coastal interface with the natural coastal processes remaining clearly evident. Overall, it is considered the abiotic attributes of the coastal environment are low-moderate.

The biotic attributes of the receiving environment are the living organisms which shape an ecosystem. This aspect in part relies on the surveys undertaken by the Project Ecologist and Arboriculturist, with their findings outlined in their respective assessments. The areas along EB2 within the coastal environment feature a mix of native and exotic vegetation species. Due to the residential nature of the

area, garden escapees exist intermixed with other coastal vegetation. Mangroves heavily feature within the CMA and are part of the marine SEA occupying the Tāmaki River. Overall, it is considered the biotic attributes of the receiving environment are low-moderate, with more elevated, moderate areas featuring in the CMA where mangroves exist.

Experiential attributes comprise the interpretation of human experience of the waterbodies that occur within the EB2 area. As part of a developed suburb, the natural character values beyond the coastal marina area have been modified. This often includes areas at the interface to the coastal edge. Furthermore, whilst biotic attributes such as mangroves exist in addition to coastal processes such as tides are present, these values remain in the context of residential development, and as such human elements such as any experiential natural character values are considered low-moderate.

5.1.5 Visual Catchment and Viewing Audiences

The proposed visibility of EB2 will primarily be from adjacent properties (including residential and commercial), road users, people within the surrounding reserves (such as Bus Stop Reserve, Ti Rakau Corner Reserve, and Ti Rakau Park) and pupils / staff / visitors at Saint Kentigern College. The surrounding landform and vegetated residential environment currently limits most distant views into the EB2 area. Additionally, views from within Pakuranga Plaza and Saint Kentigern College are also restricted due to their internally focused characteristics. However, distant views are afforded from Mount Wellington; although the panorama would be filtered and set within the context of the wider urban environment.

5.2 Eastern Busway 3 Residential

5.2.1 Site Location

The EB3R portion of the Project is focused along Ti Rakau Drive. The western extent of EB3R meets the eastern edge of EB2 near the RRF and the eastern extent meets Ti Rakau Bridge. EB3R broadly follows the Ti Rakau Drive corridor, with the proposed road widening (to accommodate the bus lanes and cycle lanes), primarily extending south and occupying the properties which currently front Ti Rakau Drive. The EB3R extent also includes a portion of Ti Rakau Park and Riverhills Park where it will track along the southern portion of the open space. Minor works are also proposed near the intersections of a number of local roads including Tiraumea Drive, Mattson Road, Roseburn Place, Edgewater Drive, Wheatley Avenue, Freemantle Place and Gossamer Drive.

5.2.2 Landscape Characteristics and Values

5.2.2.1 Landform

The topography of the site between the western extent of EB3R, and the Pakuranga Creek Bridge is relatively flat, varying in level by approximately 2m before reaching sea level in Pakuranga Creek. The landform rises in elevation north of the Ti Rakau Drive corridor with varying levels of steepness including areas of 1:2.

5.2.2.2 Hydrology

EB3R is located within two stormwater catchments, these are the Pakuranga – Tāmaki River[6] stormwater catchment and the Pakuranga Creek[7] stormwater catchment. Both capture a large area of stormwater runoff from the local roads, suburban streets and private properties. The Pakuranga – Tāmaki River catchment is outlined under the EB2 section, but the most influential catchment for EB3R is the Pakuranga Creek stormwater catchment which captures runoff from similar land uses to EB2 which include residential, commercial, open space and road reserves.

5.2.2.3 Open Space and Vegetation

There are three areas of public open space within EB3R which are Ti Rakau Park, Riverhills Park and Fremantle Place Esplanade Reserve. These areas of public space have high landscape values, which either provide facilities and services for the surrounding (primarily) residential community in addition to providing amenity values.

Ti Rakau Park

Ti Rakau Park is located to the east of Ti Rakau Drive, south of a grouping of commercial business in Cortina Place. The park accommodates a small playground and number of sports fields (for cricket and rugby) and supports the Pakuranga Rugby League Club. The park is therefore characterised by open grass fields arranged in a rectangular layout. Mature trees line the extent of the park, meeting the adjacent boundaries of Ti Rakau Drive, William Roberts Road, Pakuranga Intermediate School and various residential properties and commercial business. These community facility's, together with the park and adjacent school, provide a node of community services for the local area.

Riverhills Park

Riverhills Park, located in the eastern portion of EB3R performs a comparable function to Ti Rakau Park (to the west), whereby it supports sporting facilities, in this case, accommodating the Fencibles United AFC (a football club). The park borders the western embankment of Pakuranga Creek, in addition to Ti Rakau Drive (south), Gossamer Drive (west), and residential properties to the north and west. The park features 4 football fields, a car park and a clubhouse. Trees occupy much of the open space's perimeter, providing a visual buffer between the park and neighbouring environment.

The remaining areas of open space are informal and are structured around the streams and tributaries of the Pakuranga Creek (e.g. Fremantle Place Esplanade Reserve). These areas of open space are irregular in their shape and support clusters of trees and riparian planting.

Fremantle Place Esplanade Reserve

Freemantle Place Esplanade Reserve is located south of Ti Rakau Drive and forms the coastal interface with Pakuranga Creek. The reserve begins on the southern side of Ti Rakau Drive where it meets the western abutment of the Ti Rakau Drive bridge. The reserve then extends west along the coastal edge, behind community facilities and residential properties before stopping near Edgewater Drive. The reserve is sinuous in shape as it follows the coastal edge and is broadly characterised by mown grass which meets a narrow strip of riparian planting. Access to the reserve can be obtained from a number of locations along Ti Rakau Drive and Freemantle Place, often along narrow accessways between residential properties.

[6] Source, Auckland Council GEO Maps website. Unique ID 50049
[7] Source, Auckland Council GEO Maps website. Unique ID 50050

Vegetation

In relation to vegetation, the road reserve, which occupies much of EB3R, supports some street tree and berm planting, and a variety of native and exotic species are evident. Planted central medians within Ti Rakau Drive (particularly between Roseburn Place and Gossamer Drive) together with the split-level road, reduce the overall scale of the 4-lane road corridor. A line of *Washingtonia robusta* (Mexican fan palm) also feature within the central median of this section of road, in addition to another occurrence between Roseburn Place and Wheatley Avenue. Box gum also exist in the berms along the Ti Rakau Drive road reserve.

The southern end of Gossamer Drive contains a group of She-oak trees located within the road reserve, which are large specimens providing a reasonably dominant landscape feature.

A large number of trees exist along the southern interface of Riverhills Park with Ti Rakau Drive which include semi-mature and mature species primarily comprising a mix of *Platanus x hispanica* 'Acerifolia' (London plane) *Washingtonia robusta* (and *Podocarpus totara* (totara).

In places the Tāmaki River reaches toward Ti Rakau Drive, forming vegetated figures between coastal residential development to the south of Ti Rakau Drive. These areas contain a mix of native and exotic terrestrial species, which then give way to mangroves in intertidal areas. Mangroves are also prevalent, east of EB3R within Pakuranga Creek itself.

5.2.2.4 Landscape Features

The local landscape features of this section of the Project are considered to be the open space of Ti Rakau Park, Riverhills Park, the open space / esplanade reserves and the interface with Pakuranga Creek and Tāmaki River. The areas of identified open space are considered to have recreational values to the community. Pakuranga Creek, including the intertidal areas which interface with the esplanade reserves, is also considered to have natural character values. Together with the esplanade reserves, this provides an opportunity for a coastal walkway similar to that observed in the suburb of Burswood, to the east.

5.2.2.5 Urban Development and Land Use

The EB3R section of the Project is centralised on the Ti Rakau Drive road corridor and the land use is primarily one to two storey residential dwellings between the western portion of EB3R and Gossamer Drive, to the east. Notwithstanding this, commercial businesses operate along the northern portion of Ti Rakau Drive (between William Roberts Road and Reeves Road), in addition to the Edgewater Shops which are positioned within the stretch of residential development and occupies a corner site at the intersection of Edgewater Drive West and Ti Rakau Drive. Transpower transmission lines are also present between Roseburn Place and Reeves Road. These transmission lines then extend northwest towards Dale Crescent (part of EB2 works).

The land use to the east and south of Gossamer Drive also differs from the predominant residential urban grain and features community facilities including counselling services, the Pakuranga Chinese Baptist Church, as well as the Pakuranga Baptist Church and kindergarten.

5.2.3 Statutory Context

To avoid unnecessary repetition, please refer to section 5.1.3.1 and 5.1.3.2 for the RMA and NZCPS.

5.2.3.1 AUP(OP) Zoning

The proposal passes through 6 different AUP(OP) Zones. These are:

- Open Space
    - Conservation Zone
    - Informal Recreation Zone
- Residential
    - Suburban Zone
    - Terrace Housing and Apartment Buildings Zone
- Business
    - Mixed Use Zone
    - Light Industry Zone
    - Neighbourhood Centre

5.2.3.2 Notable Trees

There are no notable trees within the EB3R section or its immediate context.

5.2.3.3 Outstanding Natural Features and Landscapes

There are no outstanding natural features or landscapes located within the EB3R section or in its immediate context. The closest natural feature is the Panmure Basin Volcano (ID150), which is located over 1.5 kilometres to the northwest.

5.2.3.4 Significant Ecological Areas

Pakuranga Creek is considered to be a SEA (SEA-M1 45a & SEA-M2 45b), and the Marine Ecology and Coastal Avifauna Effects Assessment notes that the mangrove areas of Pakuranga Creek are regarded as the best example of mangrove habitat in the Tāmaki Estuary.

5.2.4 Natural Character of the Site

As outlined in respect of the EB2 area, the key abiotic attributes of the EB3R area of the Project include the geology, water catchments and landform, formed predominantly by geological and coastal processes. The abiotic attributes are similar to that identified in EB2, with EB3R sitting within a managed water catchment that includes modified areas as a result of urbanisation. A number of culverts exist along the coastal interface, similar to EB2, although the tidal process of the Tāmaki River influence the coastline and are a legible attribute. Overall, it is considered that the abiotic attributes of the coastal environment are low-moderate.

Similar to EB2, the coastal environment features a mix of native and exotic vegetation species and is influenced by the neighbouring land uses. Mangroves also heavily feature within the CMA and are part of the Marine SEA occupying the Tāmaki River. Overall, it is considered the biotic attributes of the

receiving environment are low-moderate, with more elevated, moderate areas featuring in the CMA where mangroves exist.

In relation to experiential attributes, these remain impacted by human influences and elements such as dwellings, road embankments, fences and neighbouring playing fields in Riverhills Park, which reduces any experiential natural character values to low-moderate.

5.2.5 Visual Catchment and Viewing Audiences

The proposed visibility of EB3R will capture a number of different viewing audiences. A key viewing audience of EB3R are the residents either side of the EB3R alignment. These in particular include those along the northern side of Ti Rakau Drive, and those residents that will in future adjoin the EB3R road corridor following removal of properties (i.e., in many cases the second row of residential buildings back from Ti Rakau Drive). The other viewing audiences include commercial businesses on the northern side of Ti Rakau Drive to the west of Ti Rakau Park, the Edgewater Shops and a cluster of community facilities opposite Riverhills Park.

Road users and people within Ti Rakau Park and Riverhills Park will also afford views of EB3R. The rising topography of Pakuranga Heights, to the north of Ti Rakau Drive, may allow for some visibility from residents beyond the properties fronting the road corridor. However, the established vegetative framework of these suburbs would reduce the visibility of the site to glimpse views only. Glimpse views may also be attained from viewing audiences along the eastern side of Pakuranga Creek, including Davington Way (in the suburb of Burswood), a small number of industrial zoned businesses off Ti Rakau Drive (near the Pakuranga Creek Bridge, as well as a collection of industrial business on Stonedon Drive[8] and Hailday Place[9]. Glimpse views may also be attained from people utilising the esplanade reserve path adjacent to these businesses, which occupies both Stonedon Drive Esplanade Reserve and 9R Trugood Drive, which leads to Ti Rakau Drive.

[8] 66 and 68 Stonedon Drive
[9] 1 Haliday Place

6 Assessment of Natural Character, Landscape and Visual Effects

Chapter Summary

EB2

The EB2 works involve construction activities that are primarily focused within the road corridors focused around the Pakuranga Town Centre. The key construction activities include the realignment of SEART, construction of the RRF, works along Pakuranga Road, cul-de sac heads along William Roberts Road, widening of Ti Rakau Drive, street enhancements and construction of stormwater outfalls.

Landform effects will principally be as a result of grading to accommodate the proposed road levels and surfaces with much of the earthworks occurring within or alongside the existing road corridors. Some works are proposed along the margins of the Tāmaki River in relation to the proposed stormwater outfalls resulting in localised effects. Overall landform effects during construction are anticipated to be low adverse. During operation, following completion of the project, and considering the permanent (but limited) change to the topographical values, it is considered effects will be very low adverse.

Vegetation effects during construction will involve the removal of 61 protected trees (i.e. trees that require resource consent to be removed) and 177 non-protected trees (i.e. trees that can be removed without resource consent). Prior to mitigation planting, it is considered that effects on vegetation values will be moderate adverse, however such effects will be temporary. Following completion of the project (including implementation and establishment of tree planting), effects will reduce. 351 trees will be planted throughout the corridor in addition to suitable supportive lower planting such as ground covers. The planting palette is focused on indigenous species that relate to the site and coastal environment and once fully established it is considered any residual effects will be low beneficial.

In relation to open space, works will have a slight impact on the edges of Fairburn Reserve, considered to be very low during construction. Works will result in low adverse effects in relation to Bus Stop Reserve principally due to the proposed works in relation to the stormwater outfall. Works will however be temporary, with the areas of open space being reinstated following construction. It is considered that this will result in very low neutral effects following construction. In relation to Paul Place reserve, the project will impact aspects of this reserve due to the realignment of the road corridor in addition to the proposed SEART off ramp. This will result in adverse effects considered low during construction, remaining as low adverse during operation.

In relation to effects on landscape features, it is considered that there will be up to low adverse effects during construction, these would be upon open space, the coastal environment of the Tāmaki River, the vegetated embankments as well as views of Maungarei / Mount Wellington. Following construction, it is considered that residual effects overall would be very low. In considering urban development and land use, any construction effects are anticipated to be low adverse, with change occurring along the edges of the areas. Following construction, effects will be very low neutral with any further change anticipated to be in relation to future redevelopment of areas of land, vacated as part of the project.

Landscape character effects during construction are anticipated to be moderate adverse, reducing to low adverse once the project is completed. Natural character effects will result from works within the coastal interface in relation to the proposed outfalls. The effects are anticipated to be low adverse during construction, reducing to very low neutral once the project is complete during operation.

In considering visual effects, the greatest visual effects are anticipated to be on those residential viewing audiences adjacent to the construction of EB2, in addition to those in the open grass area to the north of the Pakuranga Community Centre. The effects on these viewing audiences would be up to moderate-high. Such effects may remain for some residents (particularly those along William Roberts Road), which are proximate to the RRF following construction.

EB3R

EB3R works are focused along the Ti Rakau Drive road corridor with the key construction activities being the widening of Ti Rakau Drive to allow for a dedicated busway and cycleway, the western Ti Rakau Bridge abutment and street enhancements. Stormwater outfalls will be required which will affect the

CMA and works will also take place within Ti Rakau Park and Riverhills Park. To widen Ti Rakau Drive, a number of residential properties along the southern side of the road corridor will be removed.

During construction, landform effects will largely be a result of grading to accommodate new road levels and surfaces. Some works will be required on the coastal interface in relation to the proposed outfalls. Overall, it is considered that landform effects during construction will be low, reducing to very low adverse during operation.

Effects on vegetation will be as a result of tree removal along the road corridor and within affected residential properties and parks. It is considered that adverse effects during construction will be low-moderate however such effects will be temporary, reducing to very low beneficial effects once new planting, with a particular focus on indigenous tree species, will be established.

Effects on open space during construction will be low adverse for Ti Rakau Park where works affect the southern portion. Works in Riverhills Park will be greater in magnitude and result in moderate adverse effects. Works within Freemantle Place Esplanade Reserve will result in very low adverse effects due to the proposed outfall occurring during construction. Once the project is completed, effects will generally reduce however it is recognised that the removal of open space as a result of the Project will result in residual adverse effects.

During construction, the landscape features of EB3R are considered to have low-moderate adverse effects as a result of the project impacting areas of open space. Residual effects however are generally considered to be beneficial due to the proposed enhancements to Ti Rakau Park and Riverhills Park as a result of the project. Effects on the urban development and land use are considered to be low adverse during construction, with low beneficial effects following construction. Effects on landscape character are considered to be low-moderate, reducing to low following project completion.

In relation to natural character effects, these are considered to be low adverse during construction, reducing to very low neutral once the project is complete. Visual effects will also be greater during construction, with the highest effects on residential viewing audiences located adjacent to EB3R, in particular the properties on the southern side of Ti Rakau Drive that are currently located one section back from the road which will become the new road frontage. Following construction it is anticipated that any residual effects on these viewing audiences would be low adverse.

6.1 Construction

6.1.1 Eastern Busway 2

6.1.1.1 Summary of Construction Activities within the Existing Environment

The anticipated works in this area consist of a number of construction activities to complete major built elements pertinent to the Project. The following points summarise the key construction activities as a result of the EB2 section of the Project.

- Presence of laydown areas within vacated commercial land near Pakuranga Town Centre (William Roberts Road / Pakuranga Road intersection)
- Construction activities relating to the realignment of SEART, involving encroachment into Paul Place Reserve, and removal of dwellings along Seven Oaks Drive and Dale Crescent
    - This will involve demolition of residential buildings, removal of vegetation (including trees within private and council owned land), earthworks, and presence of construction equipment
- Construction of the RRF, originating near the intersection of Ti Rakau Drive / Reeves Road, continuing along Reeves Road before continuing across primarily residential land on the

western side of William Roberts Road. Single lane bus ways will flank the portion of the RRF eastern embankment, connecting buses from Reeves Road to Pakuranga Road
    - This will involve removal of residential properties and vegetation along the western side of William Roberts Road together with earthworks, and presence of construction equipment and activities including nightworks in order to minimise disruption to the public, businesses and traffic
    - This will also involve the erection of a temporary construction footbridge over Ti Rakau Drive. It is proposed that the temporary construction footbridge will be located just north of the Reeves Road / Ti Rakau Drive intersection. The purpose of the bridge is twofold, firstly to allow construction persons to safely cross Reeves Road during construction of the RRF, and secondly, to enable the transfer of bentonite from the plant at Reeves Road to the piling works south of Ti Rakau Drive via a pipe connected to the underside of the bridge. The bridge is expected to be in place for approximately 2.5 years.
- Partial widening of a portion of Pakuranga Road to meet EB1 dedicated bus lanes
    - This will involve demolition of dwellings, removal of vegetation (including trees within private and council owned land), earthworks and presence of construction equipment
- Narrowing of Pakuranga Road, providing street enhancements such as planting and cycleways
    - This will involve, earthworks within the road corridor, and presence of construction equipment
- Isolated realignment of the eastern portion of Pakuranga Road to accommodate RRF intersection with Pakuranga Road
    - This will involve demolition of residential buildings, removal of vegetation (including trees within private and council owned land), earthworks and presence of construction equipment
- Discontinuing vehicular access into the northern section of William Roberts Road from Pakuranga and Reeves Roads. Vehicles would now access William Roberts Road via Ayr Street. Street enhancements such as planting will also take place
    - This will involve demolition of residential buildings, removal of vegetation (including trees within private and council owned land), earthworks, and presence of construction equipment
- Street enhancements to business / light industrial area, southeast of Pakuranga Town Centre
    - This will involve, earthworks within the road corridor, and presence of construction equipment
- Widening and realignment of Ti Rakau Drive to allow for dedicated busway, cycle ways, street enhancements and creation of the Pakuranga Bus Station
    - This will involve demolition of residential and commercial buildings, removal of vegetation (including trees within private and council owned land), earthworks, and presence of construction equipment
- Construction of Stormwater outfalls along the southern edge of SEART and Bus Stop Reserve.

6.1.1.2 Landscape Effects

The potential construction effects on the landscape arise from the physical changes to the receiving environment which may change its characteristics or qualities. When considering the physical change during construction of EB2, changes to the landform, hydrology, vegetation, open space, landscape features and land use are understood. The change in these attributes, in addition to the presence of elements and activities associated with construction (i.e., construction machinery, lay down areas, stockpiles etc.) can also temporarily change the character of an area.

Landform

Changes to the landform will principally be the result of grading to accommodate the proposed road levels and surfaces. Piling and retaining will also be required for the construction of the RRF. Much of the earthworks will occur within or alongside the existing road corridors throughout Pakuranga Town Centre. Road widening and alignment changes will require the modification of landform within residential properties and commercial premises. However, these areas have undergone a level of modification given the established nature of the suburb. Some works will also occur along the margins of the Tāmaki River in relation to the proposed outfalls. This will result in localised effects in these areas which include alongside the southern edge of SEART. With reference to historical aerial imagery (illustrated in Figure 3 below), it is noted that the landform within Pauls Place Reserve is also heavily modified and was potentially formed as a result of the construction of the Waipuna Bridge (and later SEART), which was opened in 1974.

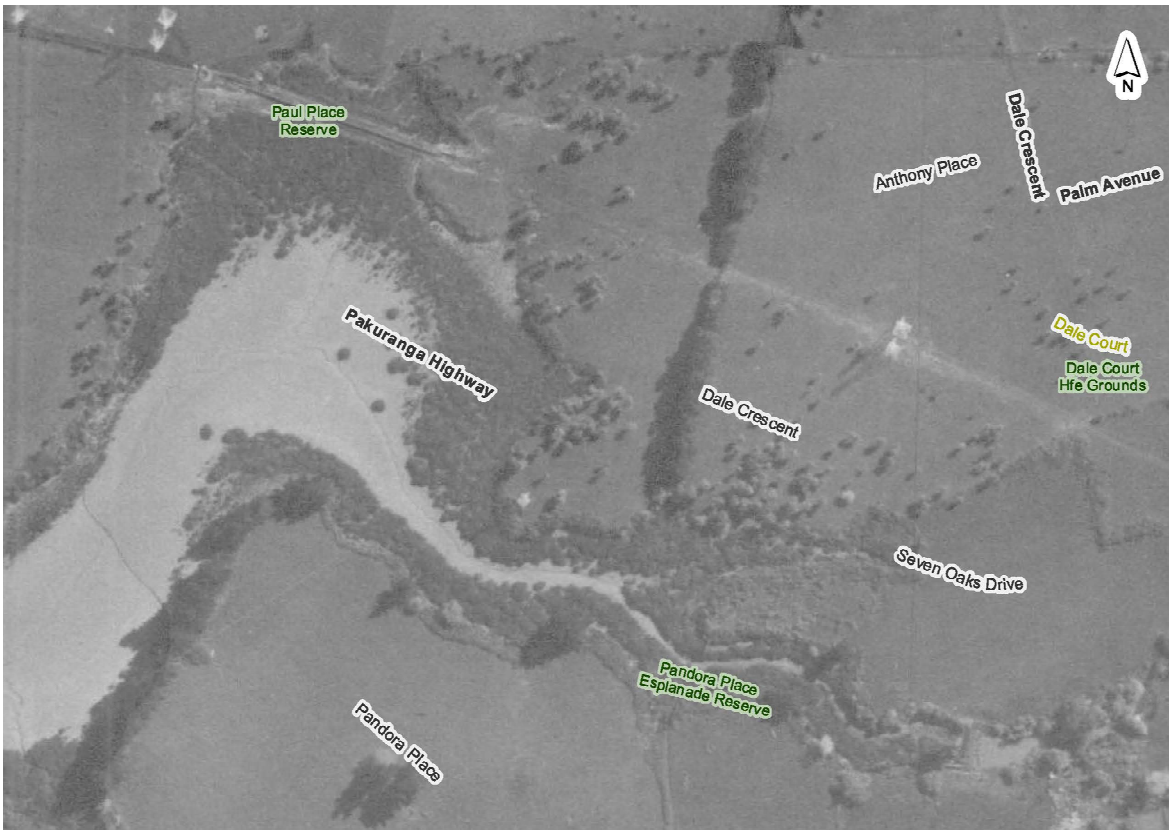


Figure 3 1959 Aerial imagery illustrating Paul Place Reserve, formally as in intertidal area within the Tāmaki Estuary.

With the above in consideration, it is determined that the landform affected by the construction of EB2 is of lower value and sensitivity to change. Although construction effects are considered, the change to this landscape would be permanent and would affect a wide area across the site. Nevertheless, it is not considered that there would be a loss of any landform features within the site or wider context as the topographical characteristics of the landform as it descends towards the Tāmaki River from Pakuranga, will remain largely as it is at present. It is therefore considered that the magnitude of change upon the landform would be low.

In considering the effect rating, in summary, it is considered that the landform has a lower sensitivity to change across areas outside of the coastal interface, and the change during construction would be low. Works in relation to the outfalls where a tidal estuary of the Tāmaki River reach toward Pakuranga

Plaza, south of SEART will affect a higher sensitivity area, particularly at the coastal interface. It is therefore determined that the effects on the landform during construction would be **low** adverse.

Vegetation

The EB2 area includes a variety of vegetation types which are typical of an established urban environment. This includes ornamental planting and small trees within residential properties, as well as a variety of exotic and native trees planted along roadsides and grass berms. A total of 249 protected trees (requiring resource consent to remove) and 344 non-protected trees (that do not require resource consent to be removed) have been identified across the EB2 area.

The construction of EB2 would involve the removal of approximately 61 protected trees (i.e. that would require resource consent to be removed) and 177 non protected trees (i.e. that do not require resource consent to be removed)– many of which occur within road reserve or adjacent to road reserves in both public and private land. 351 trees are proposed to be planted as part of the mitigation for EB2.

A large number of these trees are exotic species, which are considered to have a lower landscape value, in comparison to native trees. During construction, and prior to mitigation / replacement tree planting, it is considered there will be **moderate** adverse effects.

Open Space

The EB2 area, and construction would include works alongside, or in a number of areas of open space within the vicinity. Specifically, these include Fairburn Reserve, Bus Stop Reserve, Paul Place Reserve and Ti Rakau Park.

Fairburn Reserve

Works in relation to the Fairburn Reserve would be limited to the northern and eastern boundaries due to the realignment of the Pakuranga Road / Ti Rakau Drive intersection. Construction would only affect the edges of the reserve and would result in landscape effects which are considered **very low**.

Bus Stop Reserve

Works in relation to the Bus Stop Reserve would be limited to the southern boundary due to the realignment of the Pakuranga Road alignment and works in relation to the stormwater outfall connection. Works will therefore affect a small area alongside the interface of the existing Pakuranga Road corridor. The small area of works in addition to its location alongside the interface with the road corridor will result in landscape effects which are considered **low**.

Paul Place Reserve

Paul Place Reserve, located alongside the SEART would be impacted by the EB2 section of the Project, due to the proposed realignment of the road corridor including the proposed SEART off ramp. This would involve the removal of a linear segment of open space, alongside the southern portion of the reserve, although it is recognised that much of the portion is part of the road corridor grass berm, rather than zoned as open space.

In considering the sensitivity to change for this open space, it is important to consider its landscape value and its contribution to the community it supports. The reserve provides an informal recreation area for the catchment of residential properties between Pakuranga Road and SEART. Other reserves located in the vicinity are the Fairburn Reserve (approximately 280m to the east) and Millen Avenue Reserve (approximately 275m to the west). The reserve also provides a green buffer between the

residential properties and the road corridor, although it is recognised that the SEART, already provides for a grass berm (of at least 10m) between the road corridor and the reserve.

The reserve, by its nature, provides amenity value, due to its open space and opportunity for informal recreational activities. Through site visit observations, it was noted that the reserve does not appear to be a particularly utilised space by the community, most likely in part to its proximity to the SEART, presence of overhead transmission lines, and absence of facilities such as public toilets or playgrounds. The Reserve is also broadly absent of vegetation, apart from some isolated clusters of trees within the southern portion, and loose buffer of trees along the northern edge which meet adjoining residential properties within Latham Avenue. It is therefore considered that the sensitivity to change for Paul Place Reserve is low. The change to the reserve during construction would be focused along the southern edge of the reserve and would avoid impacting much of the main central area of open space, given much of the works will occur within the road reserve. It is therefore considered that the magnitude of change, to this reserve, would be low. Overall, it is considered that there would be **low** adverse effects on Paul Place Reserve.

Landscape Features

The identified landscape features of EB2 are considered to be the areas of open space, the coastal environment of the Tāmaki River, the vegetated embankments, as well as views of Mount Wellington / Maungarei.

With consideration of the effects on the open space, the assessment above concludes up to **low** adverse effects on these landscape features. There will be limited works within the CMA due to the proposed stormwater outlets which will occur alongside SEART. However, it is considered that these works are limited and relatively discreet. There would be a visual intrusion into the view of Maungarei, visible along Ti Rakau Drive as a result of the temporary construction footbridge, and the RRF. It is considered that this sight line is of some local significance. Construction would impact this view towards the Maungarei / Mount Wellington and visually bisect the feature.

Nevertheless, it is acknowledged that views are appreciative and would remain so at alternative points along Ti Rakau Road, both to the north (within EB2), and south (within EB3), within an urbanised environment. Furthermore this visual intrusion is a change to one of a number of opportunities to view the landscape feature. With consideration of the views towards the Maunga, being more or less retained along the route north bound, views under the RRF would frame the Maunga, as it will be visible from the RRF and below it. With the above in mind, it is considered that the magnitude of change during construction would be moderate. It is therefore determined that the effects on the appreciation of this landscape feature during construction would be **low** adverse.

Urban Development and Land Use

As identified in the baseline study, the Project is focused along the established road corridors of the area and supports a variety of land uses, including residential, commercial and recreational open space. Construction activities in regard to EB2 would impact on some of these established zones however it is considered that these areas have a lower sensitivity to the change proposed.

This change would be limited to the existing edges of these land uses, and the removal of residential properties would reveal a new ‘edge’ of development during construction. These revealed properties are similar in their character, visual composition, bulk, scale and land use, as those that would be removed, and it is therefore considered that the magnitude of change would be low. With the above in consideration, it is considered that the level of effect during construction would be **low** adverse.

Landscape Character

The landscape character of the EB2 area is part of an established commercial (Pakuranga Town Centre) and residential suburb, which is supported by a network of significant arterial routes connecting a large portion of the east Auckland suburbs to the wider developed isthmus. Construction works would bring some change to the characteristics of the area. The presence of large areas of earthworks, construction equipment and machinery, the temporary construction footbridge, construction of the RRF as well as realignment and alteration of road widths will result in adverse effects during this period.

However, it is considered that the character evolvement and incremental changes to land use, built form and the modification of the transport corridor can be readily absorbed into the receiving environment. The characteristics are well imprinted into the site, with isolated pockets of change having occurred over the years. The implementation of the Masterplan will also provide change to the areas.

Construction of EB2 will take place over a number of years (i.e., approximately 4.5 years) and effects associated with construction will be related to the stages of the Project, as well as focused in particular areas. It is also considered that construction works move through peaks and troughs in terms of their presence in a landscape. With the above in consideration, it is considered that the character of the area has a lower sensitivity to change, and landscapes such as those occupied by the Project ultimately evolve over time as they respond to the requirements of the area.

When considering the magnitude of change during construction, it is important to recognise that the fundamental attributes which tie the area together, will largely remain. These are the areas of open space and associated connections, residential and commercial land uses, and the lineal characteristics of the road corridors, and that such change during construction would principally be temporary in nature and principally restricted to the road corridors and associated edges. Moreover, it is also important to consider that construction activity in an urban area, within and in the vicinity of road corridors are a familiar characteristic. Moreover, much of the RRF, which takes place in road corridors is a permitted activity, and where works take place outside of the road corridor, they will remain in the local vicinity of these areas. It is therefore considered that the magnitude of change during construction would be moderate.

In determining the effect rating, in summary it is determined that the character of the area would have a moderate sensitivity to change. In combination with the low-moderate magnitude of change, it is considered that the level of effect during construction would be **moderate** adverse.

Natural Character

In relation to effects on the abiotic attributes of the coastal environment, earthworks and dredging will impact areas of the coastal margins and CMA in order to construct the outfalls. Works in these areas will result in localised areas of disturbance. As a whole, they will not impact the natural coastal process beyond the site works. However, tidal process will undoubtably be impacted in order to construct the structures. In considering the magnitude of change it is considered there will be a low level of change due to large areas within the EB2 area remaining intact and overall, any effects during construction will be **low**.

The greatest effect on the biotic values will be the temporary occupation of the CMA which includes mangrove habitat and exotic species. Vegetation removal is anticipated in addition to some loss of habitat however the ecological effects assessment considers effects be low or very low during

construction[10]. In relation to natural character effects on the biotic values of the coastal environment during construction it is considered any effects will be **low**.

As established, the experiential attributes comprise the interpretation of human experience of the waterbodies that occur. It is considered that given the developed context of the area, combined with the relatively localised / discreet level of change during construction, any adverse effects on the experiential natural character values will be **very low**.

6.1.1.3 Visual Effects

The temporary visual amenity effects associated with EB2, would arise from the presence of construction activities, elements and structures during the course of the Project. These temporary effects would affect a range of viewing audiences which are located within, adjacent to, and in the wider vicinity of the site.

Recreational Viewing Audiences

These viewing audiences are located across a wide area and are considered to be those viewing audiences engaged within recreational activities in defined areas. It should be noted that effects for people walking or cycling within transport corridors are not considered under recreational viewing audiences and are instead considered in the traveling viewing audiences section. For this assessment, the recreational viewing audiences are considered to be those located in the areas zoned as "Open Space" under the AUP(OP). These include those viewing audiences which are engaged in informal and formal outdoor recreation.

These areas specifically include Paul Place Reserve, Bus Stop Reserve and Fairburn Reserve. Consideration is also given to effects on those viewing audiences within the Pakuranga Community Centre, including the associated Leisure Centre and Te Tuhi Centre for the Arts.

The sensitivity to visual change differs across these recreational viewing audiences due to the activities they are engaged within. However, it is important to note that the sensitivity of the viewing audiences can be determined by a number of factors, including the context of the environment they are within and the level of awareness that the viewing audience is likely to hold. As such, it is considered that the following sensitivities to visual change apply to the recreational viewing audiences:

- Informal outdoor recreational viewing audiences are considered to have a higher sensitivity to change
- Formal outdoor recreational viewing audiences are considered to have a moderate sensitivity to change
- Informal indoor recreational viewing audiences are considered to have lower sensitivity to change.

Paul Place Reserve

Viewing audiences in Paul Place Reserve would view visual disruption to their appreciation of the reserve due to the presence of construction machinery, earthworks and other such construction activities. However, it is recognised that works would be focused on the southern portion of the park, thereby retaining the other portions of the park for any park users. The receiving environment and its immediate context must be taken into account when considering the temporary magnitude of visual

[10] Marine Ecological Assessment of Effects (page 39)

change for these viewing audiences. The park is located alongside a busy arterial route (SEART) and is bisected by overhead transmission lines. Construction activities located adjacent to and backdropped by the transport corridor will be less visually disruptive, than works blocking fixed views of landscape features of value. It is therefore considered that the magnitude of change during construction, would be low. When considered against the sensitivity to change for this viewing audience (considered to be higher), it is determined that the temporary adverse visual effects would be **low-moderate**.

Bus Stop Reserve and Fairburn Reserve

Viewing audiences within Bus Stop Reserve and Fairburn Reserve would be located in proximate locations to the sources of temporary visual effects, due to the location of the parks in relation to the designation area and established road corridors. Works would be focused along the edges of these areas of open space, and visibility and visual appreciation of the works would not be as extensive as those within Paul Place Reserve due to the extent of works alongside these areas, and degree of visibility. Additionally, the Project would not require such extensive works in these areas given the existing alignment of the established road corridors. Furthermore, visibility of such change, of this scale, can be expected from time to time, within these transport environments. Therefore, it is considered that the magnitude of temporary change would be low. When considering the level of adverse effects, it is considered that **low** adverse effects would be bought upon these viewing audiences.

Pakuranga Community Centre

These viewing audiences would principally undertake their activities within indoor environments, and it is considered that they would have a lower sensitivity to change. However, it is noted that outdoor areas surrounding the buildings do exist and these spaces provide some opportunity for existing viewing audiences to undertake informal recreation activities. As such, it is considered that the sensitivity to visual change would be moderate.

Change to the receiving environment for indoor recreational viewing audiences, would be limited due to the fact that those activities would continue to take place. However, it is acknowledged that the works located along Reeves Road (such as RRF), would be some of the most visually disruptive activities and elements during the construction phases. Additionally, the elevated elements along this road corridor would ultimately bring shade effects on these viewing audiences.

With the above in consideration, it is determined that the indoor viewing audiences would experience low-moderate adverse effects. Viewing audiences within the open space areas around the Pakuranga Community Centre would experience **moderate** adverse effects.

Occupational Viewing Audiences and Visitors to Business Premises

These viewing audiences are focussed within the areas where commercial activities are established within the receiving environment. Specifically, these include those workers and visitors associated with the commercial businesses at 102 Pakuranga Road, Goldfish Pagoda, Barfoot and Thompson, Chow Foo Restaurant, Pakuranga Plaza, and the commercial businesses focussed on Reeves Road, Cortina Place and Ti Rakau Drive. It is considered that due to these activity types and viewing audiences that are engaged within them, their sensitivity to change would be lower.

Visual change during the construction of EB2 for these viewing audiences would be varied, due to the differing locations, outlooks and activities which would occur within their views. However, for the majority of businesses, the temporary construction effects bought about by EB2 would be seen as a substantial infrastructure project, largely taking place in the road corridor. It is therefore considered

that for these viewing audiences, the magnitude of change during construction would be low and as such the adverse visual effects during construction would be **low**.

Travelling Viewing Audiences

These viewing audiences are located along the road corridors and footpaths of the receiving environment, and include those which are travelling in vehicles, on foot, or on alternative modes of transport such as bicycles. It is considered that due to the activities these viewing audiences are engaged within, their sensitivity to change would be lower.

Change for these viewing audiences during construction would be high given the visual interruptions of construction activities and machinery, in addition to the modifications to the road layouts. Notwithstanding this, the broader context, beyond the confines of the road corridor, and the fundamental characteristics of this environment would remain intact. Additionally, these viewing audiences would be transient in nature and experience this change for a short duration of time. It is therefore considered that the magnitude of change would be moderate, given much of the works would be occurring within the road corridor. When considered alongside the lower sensitivity to change, it is determined that the temporary adverse visual effects on these viewing audiences would be **low-moderate**.

Residential Viewing Audiences

Residential viewing audiences are considered to have a higher sensitivity to change as these residents are at home, using rooms normally occupied in waking or daylight hours, and are likely to experience views for longer than those briefly passing through an area.

Residential viewing audiences occupy a large number of areas along the edges of EB2, although a number of these are located on land which is at a similar level to the adjacent road environment. In particular, this includes those residents along the SEART and Ti Rakau Drive, noting that the properties facing Ti Rakau Drive are zoned Business – Mixed Use Zone and some feature non-residential activities. Therefore, the change for these viewing audiences would typically be restricted to those who directly adjoin EB2 or those with viewshafts along roads, such as William Roberts Road, Ayr Road, Dale Crescent, Tiraumea Drive and Bolina Crescent. For those viewing audiences with these views, in proximate locations to EB2, it is considered that during construction, the magnitude of change would be up to moderate-high. Works would typically be visible from one direction within the properties and would retain an association with the road corridor environment, which is already well established, and much of the works will occur within. Conversely, although mature vegetation occurs along the southern edge of SEART between the road corridor and residents along Bolina Crescent and Tiraumea Drive, some residents may obtain partial views of works in relation to the RRF, particularly the abutments. With the above considered, there will be up to **moderate-high** adverse visual effects for residential viewing audiences located adjacent to the construction of EB2.

Viewing audiences further afield, notably those with more elevated views of EB2 would have an opportunity to attain a wider outlook of the site. However, it is noted that these views would be filtered by intervening vegetation and built form. Residents along Carole Crescent and Elizabeth Street would attain some of the most elevated and uninterrupted views of EB2. However, these residents are at least 340m away from works along Reeves Road, where the RRF would be located. Other elevated residents would be those located off Lewis Road and Grassways Avenue to the east. These residents would attain distant views of parts of EB2, but the existing built context would mean that any change in line with that anticipated under EB2 would be low. Therefore, it is considered that **low** adverse effects would be anticipated on those viewing audiences located in more elevated areas within the context of the site.

6.1.2 Eastern Busway 3 Residential

6.1.2.1 Summary of Construction Activities within the Existing Environment

The anticipated works in this area consist of a number of construction activities to complete major built elements pertinent to the Project. The following points summarise the key construction activities as a result of the Project.

- Presence of construction areas within 143 Ti Rakau Drive and 178 Gossamer Drive
- Widening and realigning of Ti Rakau Drive to allow for the dedicated busway, western Ti Rakau Bridge abutment, cycleways and street enhancements
    - This will involve demolition of residential buildings, removal of vegetation (including trees within private and council owned land), earthworks, and presence of construction equipment
- Construction activities relating to the realignment of Ti Rakau Drive's intersections with Roseburn Place, Marriott Road, Chevis Place, Edgewater Drive, Wheatley Ave, Fremantle Place and Gossamer Drive
    - This will involve demolition of residential buildings, removal of vegetation (including trees within private and council owned land), earthworks and presence of construction equipment.
- Construction of Stormwater Outfalls south of Ti Rakau Drive and east of Riverhills Park.

6.1.2.2 Landscape Effects

The potential construction effects on the landscape arise from the physical changes to the receiving environment which may change its characteristics or qualities. When considering the physical change during construction of EB3R, changes to the landform, hydrology, vegetation, open space, landscape features and land use are understood. The change in these attributes, in addition to the presence of elements and activities associated with construction (i.e. construction machinery and laydown areas, stockpiles etc.) can also temporarily change the character of an area.

Landform

Changes to the landform will principally be the result of grading to accommodate the proposed road levels and surfaces. Much of this work will occur within or alongside the existing road corridors. These areas have undergone a level of modification given the established nature of the suburb.

A level of works will occur in relation to the proposed outfall structures in locations to the south of Ti Rakau Drive at the coastal interface including in the southeast edge of Riverhills Park. This will involve some localised disturbance to the embankments / margins of the Tāmaki River. It is considered that this disturbance will be relatively discreet and nearby existing stormwater infrastructure already exists in these areas which service residential properties and/or the Ti Rakau Drive corridor. Works in the south-eastern edge of Riverhills Park will also occur alongside the western abutment of the Ti Rakau Drive Bridge.

With the above in mind, it is considered that the landform affected by the construction of EB3R is of reduced value and has a lower sensitivity to change as it is absent of any ONF or ONLs and is highly modified. Therefore, it is considered that the magnitude of change upon the landform would be low.

Overall, it is considered that the landform has a lower sensitivity to change and the change during construction would be low. As such, it can be determined that the effects on the landform during construction would be **low** adverse.

Vegetation

Similar to EB2, the site includes a variety of vegetation types which are typical of an established urban environment. This includes ornamental planting and small trees within residential properties, a variety of exotic and native trees planted along roadsides, grass berms and trees in the southern portion of Riverhills Park.

The construction of EB3R would involve the removal of 165 protected trees (requiring resource consent to remove) and 198 non protected trees[11]. None of these trees are notable / scheduled. It is considered the removal of these trees within an urban environment will result in **low-moderate** adverse effects during construction, prior to mitigation. 622 trees are proposed to be planted as part of the EB3R project mitigation.

Open Space

Construction works in relation to EB3R would include works alongside, or in a number of areas of open space within the vicinity including Ti Rakau Park, Riverhills Park and limited works within Freemantle Esplanade Reserve.

Ti Rakau Park

The EB3R section of the Project will involve construction within and alongside the southern edge of Ti Rakau Park. Because of the park's requirement to operate as a dedicated sports facility, it is considered that the park has a moderate sensitivity to change as a whole, although it is considered that there is a greater capacity for change along the edges of the park, away from the fundamental facilities. The Project will not impact or extend into any of the sports fields and will only affect the southern edge. Works associated with the separate William Roberts Road early works application are not considered as part of the EB3R section of the Project.

In considering the effect rating, in summary, it is determined that the sensitivity of the open space is either low or moderate, although it is considered that the edges and interfaces of Ti Rakau Park would have a reduced sensitivity to change adjacent to the road environment. During construction of EB3R, it is considered that the magnitude of change bought about would be low. It is therefore concluded that the effects on the open space during construction would be **low** adverse.

Riverhills Park

Riverhills Park will be impacted by the EB3R section of the Project, due to the proposed realignment of the road corridor. Despite this, the park will continue to operate and serve the Fencibles Football Club during this time, albeit at a reduction in area / capacity available. It is considered that this park has a moderate sensitivity to change and that the change within the site would be of a moderate magnitude. It is therefore considered that the adverse effects on this area of open space would be **moderate** adverse during construction.

[11] The "protected" status of these trees is determined by the AUP(OP)'s rules, as well as the regulations of the National Environmental Standard for Freshwater.

Freemantle Place Esplanade Reserve

Located on the southern side of EB3R. The works that will impact on Freemantle Place Esplanade Reserve are limited to upgraded stormwater outfalls, It is considered the relatively discreet level of change during construction will result in **very low** adverse effects.

Landscape Features

The local landscape features of EB3R are considered to be the open space of Ti Rakau Park, Riverhills Park, the open space / esplanade reserves and the interface with Pakuranga Creek.

During construction, there will be an impact on these landscape features of value. Effects on the landscape features, particularly Ti Rakau Park and Riverhills Park will mean facilities will be impacted however will remain operational (at a reduced capacity), throughout the works and therefore the landscape value underpinning these spaces will in part remain. Works within Fremantle Esplanade Reserve will be limited to discreet portions and overall, it is considered that the values of these landscape features will remain broadly intact through construction and overall **low-moderate** adverse effects are anticipated.

Urban Development and Land Use

As established in the baseline study, EB3R is located along the developed road corridor of the area. This road corridor predominantly features various typologies of residential land uses. Also present is the Business - Neighbourhood Centre zoning at Edgewater Shops, as well as Open Space zoned land and a variety of community facilities (e.g. churches and medical clinics).

This change would be limited to the existing edges of these land uses and the removal of current buildings would reveal a new 'edge' of development during construction. These would be the residential and commercial properties that currently sit behind those which are proposed to be removed. These revealed properties are similar in their character, visual composition, bulk, scale and land use, as those that would be removed, and it is therefore considered that the magnitude of change would be low. With the above in consideration, it is considered that the level of effect during construction would be **low adverse**.

Landscape Character

The landscape character of EB3R is part of an established residential suburb, which is anchored to the spine road of Ti Rakau Drive. Construction works would bring some change to the characteristics of the area due to the presence of large areas of earthworks, construction equipment and machinery. However, these works will principally occur within or alongside an established road corridor and roading upgrades are part of a dynamic urban environment.

In a similar sense to EB2, it is considered that the character of a developed area does naturally fluctuate over time through the evolvement and incremental changes to land use, built form and the modification of transport corridors. The construction of EB3R will also take place over a number of years, and any effects associated with construction would be related to the stages of EB3R and focused in particular areas.

With the above in consideration, it is determined that the character of the area has a lower sensitivity to the nature of proposed change in the residential and open space areas.

When considering the magnitude of change during construction, like EB2, it is important to recognise that the fundamental attributes which tie the area together, will largely remain. The effects will be relatively low given the lineal characteristics of the road corridors and that such change during construction would principally be temporary in nature and principally restricted to the road corridors and associated edges. Therefore, it is considered that the magnitude of change during construction would be low-moderate.

In determining the effect rating, in summary it is determined that the character of the areas would have lower sensitivities to change. In combination with the low-moderate magnitude of change, it is considered that the level of effect during construction would be **low-moderate** adverse.

6.1.3 Natural Character

In considering the abiotic effects on the natural character values during construction, the catchment is part of a modified and managed catchment system due to the urbanisation of the area. Construction effects on the abiotic natural character values will predominantly be in relation to the outfalls which largely include proposed connections to existing outfalls (i.e. upgraded). A new outfall is however proposed on the northern side of the existing Ti Rakau Drive bridge. Regardless, these changes will occur where localised modification has already taken place (i.e. the natural character values of these areas has already been reduced and/or impacted through the development of the area). It is considered this localised change during construction will result in **very low** adverse effects on the abiotic natural character values.

The works will impact localised mangrove and exotic species habitats in limited areas within the CMA of adjoining Freemantle Esplanade Reserve and Pakuranga creek. The marine ecological assessment considered up to low adverse effects during construction. In relation to natural character effects, it is also considered that **low** adverse effects on the biotic values will be generated in these localised areas during construction, noting that these effects will be temporary in nature.

In relation to experiential attributes, it is considered that as the experiential values are reduced due to the presence of development and structures (including existing outfalls), the proposed construction and upgrade of outfalls within this modified environment will result in **very low** adverse effects on the experiential natural character attributes.

6.1.3.1 Visual Effects

The temporary visual amenity effects associated with EB3R, are likely to arise from the presence of construction activities, elements and structures during the course of the Project. These temporary effects would affect a range of viewing audiences which are located within, adjacent to, and in the wider vicinity of the EB3R section of the area.

Recreational Viewing Audiences

These viewing audiences are located in various positions along the linear road corridor. These areas specifically include Ti Rakau Park, Riverhills Park and Fremantle Esplanade Reserve. It should also be noted that Pakuranga Baptist Kindergarten and those attending services at Baptist churches are also considered in this viewing audience type.

The sensitivity to visual change differs across these recreational viewing audiences due to the activities they are engaged within, these are summarised below:

- Informal outdoor recreational viewing audiences are considered to have a higher sensitivity to change. (e.g. walkers in Burswood Esplanade Reserve)
- Formal outdoor recreational viewing audiences are considered to have a moderate sensitivity to change. (e.g. People playing sports in Riverhills Park)
- Informal indoor recreational viewing audiences are considered to have lower sensitivity to change. (e.g. People within churches).

Ti Rakau Park

Viewing audiences within Ti Rakau Park would be engaged within formal recreational activities. Spectators would also be focused on such activities occurring within the park. It is considered that these viewing audiences would have a moderate sensitivity to change.

Change to the receiving environment during construction would be principally focused along the southern edge of the park. For viewing audiences, during this time, it is anticipated that this visual change would be limited, given the outlook within the park and broader environment would remain consistent as it is at present. Furthermore, most of these works would occur within the vicinity of the Ti Rakau road corridor and such works within these areas are not considered to be necessarily out of context. It is therefore considered that the magnitude of change during construction would be low, and as such the temporary visual effects for these viewing audiences would be **low** adverse.

Riverhills Park

Viewing audiences within Riverhills Park would be engaged within formal recreational activities. Spectators would also be focused on such activities occurring within the park. It is considered that these viewing audiences would have a moderate sensitivity to change.

Change to the receiving environment during construction would occur in the eastern portion of the park due to this being required as a large laydown area. Access to this area would also be required from Gossamer Road. Works would also occur along the southern edge of the park, at the interface with Ti Rakau Drive. Works in relation to the proposed mitigation response will also generate some level of visual effects. This includes for example rotating / realigning playing fields and installation of footpaths.

For viewing audiences, during this time, it is anticipated that this visual change would be quite extensive, as works would be taking place in most directions around them and may include the use of fences to screen construction activities. Therefore, it is considered that the magnitude of change, during construction would be moderate-high and as such, the temporary visual effects for these viewing audiences would be **moderate** adverse.

Fremantle Esplanade Reserve

Recreational viewing audiences in this area are particularly few in number and any effects will be restricted to small areas in relation to the proposed outfall works where public access is infrequent. Any adverse visual effects during construction are anticipated to be **very low**.

Pakuranga Baptist Kindergarten & Church Facilities

These viewing audiences would principally undertake their activities within indoor environments, and it is therefore considered that they would have a lower sensitivity to change. However, it is noted that outdoor areas surrounding the buildings do exist, and these spaces (i.e., playgrounds associated with

the kindergartens) provide the opportunity for existing viewing audiences to undertake informal recreation activities. As such, it is considered that the sensitivity to visual change would be moderate.

Change to the receiving environment for indoor recreational viewing audiences would be limited due to the fact that those activities would continue to take place. Works outdoors would largely remain in the existing busy road corridor, and it is considered that works can be largely anticipated in these areas from time to time.

With the above in consideration, it is determined that the indoor viewing audiences would experience low-moderate adverse effects. Viewing audiences within the open space areas within the kindergarten facilities, would experience **low-moderate** adverse effects.

Occupational Viewing Audiences and Visitors to Business Premises

Viewing audiences at businesses alongside Ti Rakau Drive and at the Edgewater Shops will undergo a level of disruption as a result of the works. Notwithstanding this, these viewing audiences are considered to have a lower sensitivity to change, due to the activities they are engaged occurring within premises, i.e., business takes place inside buildings, in addition to the short term visits of any patrons. Overall, it is considered that any effects during construction would be **low**.

Travelling Viewing Audiences

It is considered that these viewing audiences are similar in nature to those within EB2. Furthermore, the change in the receiving environment for these viewing audiences would also be comparable.

These viewing audiences would be transient in nature and experience this change for a short duration of time. It is therefore considered that the magnitude of change would be moderate, given much of the works would be occurring within the road corridor. When considered alongside the lower sensitivity to change, it is determined that the temporary adverse visual effects for these viewing audiences would be **low-moderate**.

Residential Viewing Audiences

These viewing audiences are those who are residing in the receiving environment and like EB2 are considered to have a higher sensitivity to change. The removal of buildings along the southern side of Ti Rakau Drive will create a new urban edge until potential future development within residual land is undertaken and completed in front of the remaining residential viewing audiences. Notwithstanding this, viewing audiences along this new edge do not tend to front onto the works and are behind fencing, defining their property boundaries. Given this, direct / unobstructed views of the works will not be readily attainable for most. For those viewing audiences in proximate locations to the site, it is considered that during construction, the magnitude of change would be low-moderate. The reason for this is that residential buildings forming their primary outlook will be removed and where views of the works are attainable, these would typically be visible from one direction and would retain an association with the road corridor environment that is already well established. Therefore, it is considered that **moderate** adverse visual effects would be anticipated for those residential viewing audiences located to the south of Ti Rakau Drive where works occur adjacent to their properties. For those along the northern side of Ti Rakau Drive, it is considered effects during construction will be **low** adverse as works will occur within the established road corridor, and where road widening occurs, construction will take place in the road corridor context and away from these residents.

6.1.4 Cumulative Effects

The EB3R section of the Project will be constructed in stages and effects will occur progressively along the road corridor. Mitigation measures such as tree planting will also occur in stages and portions of the Project as they are completed.

Residential, occupational and visiting viewing audiences will not have the opportunity to view multiple portions of EB2 and EB3R at the same time, apart from a small area of viewing audiences along Ti Rakau Drive near the Ti Rakau Drive / Reeves Road intersection. Any works spanning across these two sections of the Project will essentially be seen as one operation given the similarities in the nature of the works.

Road users / transient viewing audiences would have the opportunity to view larger sections of the Project concurrently however as road users, it is considered the lower level of sensitivity to change combined with the nature of the works, broadly constrained to the road environment, will mean that visual effects will be appropriately managed.

6.2 Operational Effects

6.2.1 Eastern Busway 2

6.2.1.1 Summary of changes to Existing Environment

The following points summarise the key changes to the existing environment as a result of the Project.

- Realignment of the SEART
    - This will include a reduced width of carriageway and new areas of planting, including trees.
- Presence of the RRF, originating near the intersection of Ti Rakau Drive / Reeves Road, and continuing along Reeves Road before returning to street level near William Roberts Road
    - This will include enhancement to the street level section of Reeves Road, providing a pedestrianised environment which includes areas of planting
- Widened portion of Pakuranga Road to meet EB1 dedicated bus lanes
    - This will include new tree planting and landscape treatments along the road. Dedicated, and shared cycle paths would also be present
- Narrowed portion of Pakuranga Road adjacent to the Pakuranga Plaza, providing street enhancements such as cycleways
- Isolated realignment of the eastern portion of Pakuranga Road to accommodate RRF intersection with Pakuranga Road
    - This will include landscape treatments, including planting within the road corridor
- Discontinued vehicular access into the northern section of William Roberts Road from Pakuranga and Reeves Roads
    - This will include street tree planting along the northern side of the road, and additionally at each end where the turning circles are present
- Potential enhancement of open space in areas of Ti Rakau Park[12]
- Street enhancements to the industrial area southeast of Pakuranga Town Centre

[12] It is understood that the alliance is in discussions with Auckland Council Parks regarding suitable mitigation opportunities within Ti Rakau Park.

- Widened, and realigned route on Ti Rakau Drive to allow for the dedicated busway, cycle ways, footpaths, street enhancements and the creation of the Pakuranga Bus Station
- Tree and shrub planting in footpaths, and road berms which reduce the dominance and scale of the increased width of Ti Rakau Drive.

The following assessment also considers mitigation measures (as recommended in Section 7), as having been fully implemented. This includes careful consideration and design of structures such as the RRF, noise walls, bus shelters, outfalls and the like, in addition to the appropriate level of planting to mitigate the removal of vegetation (including trees) and provision of a high-quality amenity environment. The following assessment considers the residual effects once vegetation has become fully established (i.e. 5 years growth), following planting and any plant and tree replacement (in the event of plant failure).

6.2.1.2 Landscape Effects

The potential effects on the landscape arise from the permanent physical changes to the receiving environment which may change its characteristics or qualities. When considering the permanent physical change, changes to the landform, hydrology, vegetation, open space, landscape features and land use need to be understood. The change in these attributes, in addition to the presence of permanent elements and structures will also alter the character of an area.

Landform

Permanent changes to the landform will arise from the result of grading and other such earthworks to accommodate the new road levels and surfaces. It is considered that these effects are sufficiently covered in the construction effects section of this assessment (Section 6.1.1). It is considered that there would not be further change to the landform during operation of the Project. In determining the effect rating, it is considered that the effects would remain consistent with those anticipated under the construction phases. It is therefore determined that the effects on the landform during operation would be **very low adverse**.

Vegetation

Once the EB2 section of the Project is in operation, a substantial number of trees (351) would have been established as a result of the construction works. Although initially these trees would not be of a size and scale comparable to some of the trees removed as part of the Project, it is recognised that the species which are proposed to be planted would be native. In time, these would grow to become established specimens which provide a meaningful reference to the original landscape qualities and vegetation types within the area. It is considered that initially, the effects on the vegetation attributes of the site would be low, as the trees would not be of a height and stature which was removed. Once established, these trees will provide a greater contribution to the area and provide greater presence through the establishment of placemaking identity. Therefore, it is considered that once fully mature these trees would contribute to the vegetated cover of EB2 resulting in **low** beneficial effects.

Open Space

Operational landscape effects would only affect the edges of Bus Stop Reserve and Fairburn Reserve and would not affect any additional areas within these spaces after construction and areas impacted by the works will have been reinstated. It is therefore considered that the landscape effects would be **very low** neutral for Fairburn Reserve and Bus Stop Reserve.

Paul Place Reserve, would permanently lose the southern portion of the reserve, however as indicated in the construction effects section, the adverse effects would be low. This physical change on the

landscape would remain, with the occupation of the Project along this edge. With no further change taking place during operation, it is considered that the effects would remain as **low** adverse.

Landscape Features

With consideration of the effects on landscape features of the open space, the operational effects assessment on these areas above concludes low adverse effects on these landscape features. The inclusion of the RRF within the view of Mount Wellington / Maungarei will only affect a short portion of the views from Ti Rakau Drive corridor. Furthermore, views from this location are not protected via a Volcanic Viewshaft Overlay. Moreover, views for the Maunga remain attainable north of the RRF where viewers would continue their journey towards Pakuranga Road. For the above reasons it is considered that any residual effects will be **very low** adverse.

Urban Development and Land Use

As identified in the baseline study, the site is focused along the developed road corridors of the area and supports a variety of land uses, including residential, commercial and recreational open space.

Permanent change would be principally limited to redeveloped areas of land which would have been originally vacated, in order to construct the EB2 section of the Project. These areas would almost exclusively be located along the southern side of Ti Rakau Drive. These areas will be developed in accordance with the zoning rules, which specifically would be in accordance with the Residential - Terrace Housing and Apartment Buildings Zone. These areas would contribute to and reflect a compact urban form.

Landscape Character

Once construction is completed, the character of the site will fundamentally be the same, given that the established land uses, and road corridors would remain. It is considered that the magnitude of change during operation would be low, given the new elements and structures within established urban road corridors are of a nature which is familiar to this environment.

The northern end of William Roberts Road will experience a change in character from a residential street, albeit one that experiences high volumes of traffic during peak times, to a cul-de-sac fronting a highway onramp. The loss of houses on the western side and presence of the RRF will result in moderate adverse effects.

In determining the effect rating, it is considered that the character of the area would have a moderate sensitivity to change. In combination with the low magnitude of change, it is considered that the level of effect during operation will be **low** adverse. It is recognised that through this change, the Project will bring about positive effects upon the landscape character values of the receiving environment. These include street enhancement through planting (including trees) in addition to the availability of unique public spaces becoming accessible along Reeves Road.

6.2.2 Natural Character

Once the project has been completed, it is considered any residual abiotic, biotic and experiential effects will be very low adverse. There will be some level of change in the form of the outfall structures however such change will remain alongside a developed context. Cleared vegetation, particularly mangroves will recolonise the CMA area. Overall it is considered that the natural elements, patterns and process will occur at a comparable level to that currently observed.

6.2.2.1 Visual Effects

The potential effects on the identified viewing audiences arise from the permanent physical changes to the receiving environment which may change the viewers visual appreciation of the area.

Recreational Viewing Audiences

These viewing audiences are located across a wide area and are considered to be those viewing audiences engaged within recreational activities in defined areas.

Paul Place Reserve

After construction, viewing audiences in Paul Place Reserve, will continue to view some visual disruption to their appreciation of the reserve due to the encroachment of the EB2 section of the Project into the reserve. However, this visual disruption would not be at the same level as that experienced during construction as new landscape planting will have been introduced. Additionally, the outlook towards the south, from the reserve, will remain in keeping with the outlook within the existing environment. Therefore, it is considered that the magnitude of change once the EB2 section of the Project is complete will be very low. When considered against the sensitivity to change for this viewing audience (considered to be higher), it is determined that the residual adverse visual effects will be **low**.

Bus Stop Reserve and Fairburn Reserve

Once the EB2 section of the Project is complete, it is recognised that the visual amenity values and outlook for these viewing audiences will be similar to those currently experienced. This view will include an enhanced road corridor, and for viewing audiences at Fairburn Reserve, the outlook would include additional trees to further define a well-established landscape interface to the road corridor. It is therefore considered that the magnitude of change will be very low for these viewing audiences. When considering the level of adverse effects, it is considered that following reinstatement of the areas of open space, any residual effects would be **very low** neutral.

Pakuranga Community Centre

Change to the receiving environment for indoor recreational viewing audiences, will continue to be limited after construction, although elevated elements along this road corridor, associated with the RRF, will introduce shade effects on these viewing audiences.

With the above in consideration, it is determined that the indoor viewing audiences would experience **low** adverse effects. Viewing audiences within the open space areas around the Pakuranga Community Centre will experience **low-moderate** adverse effects, principally due to the presence of the RRF.

Occupational Viewing Audiences and Visitors to Business Premises

Visual change after the completion of the EB2 section of the Project for these viewing audiences will continue to be varied, due to the differing locations, outlooks and activities which will occur within their views. The viewing audiences will however largely retain an outlook which is similar in nature to that currently experienced, albeit it would be a modernised transport corridor environment. The greatest change for these viewing audiences will be restricted to those within the commercial area to the south

of Reeves Road, as there will be the presence of the RRF within their view. Nevertheless, the degree of the views towards the new structure (within a road corridor), will be partial and largely backdropped by the existing Pakuranga Plaza buildings. With this considered alongside the lower sensitivity to change, it is determined that the adverse visual effects upon these viewing audiences will be **very low**.

Travelling Viewing Audiences

Permanent change for these travelling viewing audiences will arise from the realignment and change in road widths, in addition to the presence of new structures in the road corridor. These changes will however remain in the road corridor, and such change will remain consistent to that expected within this environment. These viewing audiences will remain transient in nature, and therefore move through the site, experiencing the change for a short period of time. When considered alongside an improved amenity experience as a result of streetscape enhancement works it is determined that the permanent visual effects for these viewing audiences would be **very low** beneficial.

Residential Viewing Audiences

Residential viewing audiences adjacent to the EB2 section of the Project will experience the greatest degree of change due to their proximity to the site.

There would remain a large amount of visual change for those residential viewing audiences in close proximity to EB2, particularly the RRF. However, the alignment of this structure sits within the road corridor (zone) and as such the RRF is largely a permitted activity, particularly along SEART and the Reeves Road section. Notwithstanding this, residential viewing audiences near to these areas would experience views of the overhead structure, which would likely form a new element in the skyline. Specifically, these viewing audiences would be those located along the southern portion of Dale Crescent, 17-23 Ti Rakau Drive, 9 Bolina Crescent and 3 to 13 Tiraumea Drive. For those residents along the southern portion of Dale Crescent, the road corridor will also be bought closer to their southern boundary however mitigation planting (i.e., tree and shrub planting), in addition to the fence will assist in screening views of the at grade road corridor. With the above in mind, it is considered that the magnitude of change for these residents would be low-moderate. It is not considered that views of the RRF would occupy their entire outlook and the RRF structure would appear within the context of the road corridor. Given their higher sensitivity to change, it is determined that adverse visual effects on these proximate viewing audiences would be **moderate.**

Residents along William Roberts Road would also experience adverse effects due to their proximity to the RRF present in a location which was occupied by residential housing. It is also considered that such an element is not anticipated within a Town Centre Zone. With the above in mind it is considered any residual effects during operation would be **moderate-high** for these residential viewing audiences.

Change for those other residents adjacent to the site would be restricted to one aspect of their outlook, and the change would remain associated with those anticipated within a road environment. Furthermore, the Project would facilitate a range of streetscape enhancements. For those viewing audiences with these views, it is considered that the magnitude of change would be low. It is therefore considered that **low** adverse visual effects would be anticipated for those residential viewing audiences located adjacent to the EB2 section of the Project.

Viewing audiences further afield, would continue to have the opportunity to attain a wide outlook of the Project, although this outlook would be filtered by intervening built form and vegetation. These residents would attain distant views of parts of EB2, although the built context would mean that any change in line with that anticipated under EB2 would be very low. Therefore, it is considered that **very**

low adverse effects would be anticipated on those viewing audiences located in more elevated areas within the context of the site.

6.2.3 Eastern Busway 3 Residential

6.2.3.1 Summary of Changes to Existing Environment

The following points summarise the key changes to the existing environment as a result of EB3R.

- Realignment of Ti Rakau Drive and intersection's with Roseburn Place, Marriott Road, Chevis Place, Edgewater Drive, Wheatley Ave, Fremantle Place and Gossamer Drive
    - This will include new areas of planting, including trees
- Presence of Busway, two new intermediate bus stations and cycleways
- Tree and shrub planting in road berms which reduce the dominance and scale of the increased width of Ti Rakau Drive
- Presence of stormwater outfalls south of Ti Rakau Drive along the interface with the coast and eastern portion of Riverhills Park
- Completed works within Riverhills Park including footpath, the stormwater swale and planting

The following assessment considers mitigation measures (as recommended in Section 7), as having been fully implemented. This includes careful consideration and design of structures such as noise walls, bus shelters, outfalls and the like, in addition to the appropriate level of planting to mitigate the removal of vegetation (including trees) and provision of a high-quality amenity environment. The following assessment considers the residual effects once vegetation has become fully established (i.e. 5 years growth), following planting and any plant and tree replacement (in the event of plant failure).

6.2.3.2 Landscape Effects

The potential effects on the landscape arise from the permanent physical changes to the receiving environment which may change its characteristics or qualities. When considering the permanent physical change, changes to the landform, hydrology, vegetation, open space, landscape features and land use are understood. The change in these attributes, in addition to the presence of permanent elements and structures will also alter the character of an area.

Landform

Permanent changes to the landform will arise from the result of grading and other such earthworks to accommodate the new road levels and surfaces. It is considered that these effects are sufficiently covered in the construction effects section of this assessment (Section 6.1.2). It is considered that there would not be further change to the landform during operation of the Project. In determining the effect rating, it is considered that the effects would remain consistent with those anticipated under the construction phases. Therefore, it is determined that the effects on the landform during operation will be **very low adverse**.

Vegetation

Once EB3R is in operation, 622 trees and 14,554m^2 of shrubs and ground covers will have been established as a result of the Project. Vegetation will also be provided within the affected areas of vegetation in the CMA. Although initially this vegetation will not be of a size and scale, comparable to some of the vegetation removed as part of the Project, it is recognised that the species which are proposed to be planted will be native, and in time, will grow to become established specimens which

provide a meaningful reference to the original landscape qualities and vegetation types within the area, prior to colonisation.

In the first year of planting, it is considered that the effects on the vegetation attributes of the site will be low, however once established, these trees will provide a greater contribution to the EB3R area. Therefore, it is considered that once fully established these trees will contribute **very low** beneficial effects.

Open Space

Ti Rakau and Riverhills Park will also retain land used for construction purposes once the Project is in operation. However, there would be some loss of open space along the interface with Ti Rakau Drive. Because of this permanent loss of open space, it is considered that the effects during operation would be **low** adverse. This is not to discount the proposed enhancements of Ti Rakau and Riverhills Park as part of this Project. A number of enhancements are proposed and with this holistically considered, there will be **very low** beneficial effects overall.

In relation to Freemantle Place Esplanade Reserve, following construction, the proposed outfall connection upgrades will have a negligible impact on the open space values, and it is therefore considered that any residual effects would be **very low** neutral.

Landscape Features

The identified landscape features of EB3R are considered to be the areas of open space, the coastal environment of the Tāmaki River and the vegetated stream embankments leading to the estuary, as well as views of Mount Wellington / Maungarei.

Following construction, any residual effects on Ti Rakau Park and Riverhills Park will undoubtably be **beneficial** due to the proposed enhancements agreed between AT and Auckland Council Community Facilities. Aspects such as improved playing surfaces, new tree planting and new facilities (including a playground in Ti Rakau Park) will add value to these open space features. Residual effects in Freemantle Esplanade will be **very low** neutral as a result of the proposed outfall structure, providing a slight devaluation of the landscape feature.

Urban Development and Land Use

As identified in the baseline study, the site is focused along the developed road corridors of the area and supports a variety of land uses, including residential, commercial and recreational open space. It is considered that these conclusions would be the same as the EB2 section given that any change, through redevelopment of residual land would be in the form of permitted development and contribute to a compact urban form along this key arterial. Overall, it is considered there will be **low** beneficial effects as a result of the EB3R section of the Project on the urban development and land use of the site.

Landscape Character

The change in the character of the area will remain comparatively consistent with the existing environment, given that the established land uses, and road corridors would remain. Therefore, it is considered that the magnitude of change during operation would be low, and any effects will be **low** adverse

It is recognised that through this change, the EB3R section of the Project will bring about positive effects upon the landscape character values of the receiving environment. These include street enhancement

through planting (including trees) and cycleways in addition to new opportunities for urban development along the interface with Ti Rakau Drive.

6.2.3.3 Natural Character

Once the project has been completed, it is considered any residual abiotic, biotic and experiential effects will be very low adverse. There will be some level of change in the form of the outfall structures however such change will remain alongside a developed context. Cleared vegetation, particularly mangroves will recolonise the CMA area. Overall, it is considered that the natural elements, patterns and process will occur at a comparable level to that currently observed.

6.2.3.4 Visual Effects

The potential effects on the identified viewing audiences arise from the permanent physical changes to the receiving environment which may change the viewers visual appreciation of the area.

Recreational Viewing Audiences

These viewing audiences are located across a wide area and are considered to be those viewing audiences engaged within recreational activities in defined areas.

Ti Rakau Park

Permanent change to the receiving environment will remain focused around the southern edge of Ti Rakau Park. This would bring limited adverse effects for viewing audiences given the street improvements would take place within the immediate vicinity of the Ti Rakau Drive road corridor. Therefore, it is considered that the magnitude of change, would be very low, and as such the permanent visual effects for these viewing audiences would be **low** adverse.

Riverhills Park

Permanent change as a result of the busway / Ti Rakau Drive improvements will remain focused around the southern portion of the park. Completed mitigation measures such as realigned fields and new pathways that are proposed to be undertaken will also have occurred. Overall, this would bring limited adverse effects for viewing audiences given the outlook from the park would remain broadly consistent with that anticipated from their location. Therefore, it is considered that the magnitude of change, during operation would be low, and as such, the temporary visual effects for these viewing audiences would be **very low** adverse.

Fremantle Esplanade Reserve

Permanent change to Freemantle Esplanade Reserve will be limited to the inclusion of the outfall structures. These structures on balance only affect a small portion of the reserve and will be integrated through the use of native planting. Overall, it is considerate that any residual effects will be **very low** neutral.

Pakuranga Baptist Kindergarten & Churches

Change to the receiving environment for indoor recreational viewing audiences would continue to be limited after construction and would therefore experience **very low** adverse effects.

Occupational Viewing Audiences and Visitors to Business Premises

These viewing audiences include the commercial buildings on the northern side of Ti Rakau Drive, west of Ti Rakau Park, and those viewing audiences at the Edgewater Shops. Once construction has been completed, it is considered there will be **very low** adverse visual effects for those at the Edgewater Shops due to the road widening, and in particular the road corridor almost immediately adjoining the premises, slightly reducing the level of amenity. Viewing audiences in commercial business on the northern side of Ti Rakau Drive on the other hand are anticipated to experience **very low/neutral** effects as although there will be a change to the level of amenity, the road widening occurs south of (away from) their premises.

Travelling Viewing Audiences

Permanent change for these viewing audiences would be consistent with those within EB2 and arise from the realignment and change in road widths, albeit with an improved amenity experience as a result of streetscape enhancement works. It is determined that the permanent visual effects for these viewing audiences would be **very low** beneficial.

Residential Viewing Audiences

Residential viewing audiences adjacent to EB3R would continue to experience the greatest degree of change due to the presence of EB3R. Localised effects on adjacent residential properties are also anticipated on residential viewing audiences due to proposed additional car parking to the west of the Edgewater Shops.

However, the main components of EB3R (i.e., the footpaths and carriageway) are more often than not, set away from the residential property boundaries (in many occasions a 20m setback has been retained). Moreover, the predominantly single storey nature of these remaining properties, together with fencing along their boundaries (anticipated to be 1.8m in height, including around the Edgewater Shops car park), and new tree planting along the road corridor, any direct views will remain limited. With the above in mind, it is considered that viewing audiences along the road corridor to the north will experience **very low** adverse effects. Those residents adjoining the southern side of the road corridor (including those adjacent to the new Edgewater Shops car park) will experience **low** adverse visual effects.

In the likely future scenario that the residual land between the residential properties to the south of Ti Rakau Drive and the realigned road corridor is developed, it is acknowledged that any long-term views of EB3R for these existing residents may be partially (or fully screened) from view with the interface becoming developed in line with the underlying AUP zoning.

6.2.4 Cumulative Effects

Once the project is complete, although there will be a number of residual adverse natural character, landscape and visual effects, it is considered important to note that in essence, the Project will provide for a number of enhancements and benefits in relation to landscape and visual effects. This includes the upgrading of the road corridor and provision for a substantial amount of indigenous planting along the berms and central median, in addition to proposed upgrades within Ti Rakau Park and Riverhills Park as part of the mitigation response.

In relation to landscape effects, cumulatively there will be very low adverse effects on the topographical values. Vegetation will cumulatively have greater landscape value once fully established due to the presence of indigenous vegetation (in replace of exotic tree species). It is considered that cumulatively

there will be very low adverse effects on open space, recognising that some areas of open space (although limited) will be removed. There will also be very low adverse effects on the landscape features due to the limited removal of open space, effects within the coastal environment and interrupted views of Maungarei / Mount Wellington. Cumulatively it is considered that there will be low beneficial effects in relation to urban development and land use. Whilst the project will impact the current pattern of urban development, it remains broadly in line with the existing transport corridors and will unlock areas of Terrace Housing and Apartment zoning to the south of Ti Rakau Drive (EB3R) for redevelopment. Key features such as the Pakuranga Town Centre and the Edgewater Shops will remain and be integrated into the Project.

In considering natural character effects, the extent of modification and associated residual effects will be limited and largely take place in a modified environment, it is therefore considered any cumulative effects will be very low neutral.

In considering visual effects, as outlined, enhancements through planting along the corridor will provide some amenity benefits. The key adverse effects will be due to the RRF and overall widening / prominence of the road corridor. However overall, works will broadly remain aligned to the road corridor environment. Overall, it is considered that any cumulative visual effects will be very low on recreational and occupational viewing audiences. Very low beneficial visual effects are considered for those travelling viewing audiences experiencing the entire project length. For residents, most only obtain immediate views of the associated Project sections (either EB2 or EB3R) and as such cumulative effects will not increase. For those that may obtain views of multiple sections of the project, it is considered that the cohesive improvements across the corridor will be realised. It is not considered that that the visual prominence of the road (or indeed the RRF) will compound visual effects on the surrounding residents.

7 Mitigation

Chapter Summary
The implementation of mitigation measures ensures adverse effects as a result of the project are appropriately managed and provides for enhancement opportunities. Mana whenua engagement is a key step in the process and mana whenua should continue to be engaged in in relation to Urban Design and Landscape Design aspects. *A series of Landscape Ecological & Arboricultural mitigation plans have been provided as part of the application which are appended to this assessment (refer Appendix 3: Landscape, Ecological and Arboricultural Mitigation Plans). This series of plans depicts the anticipated level of mitigation planting across the EB2 and EB3R areas and have been taken into account when determining the residual / operational effects.* *An Urban Design and Landscaping Plan (UDLP) will also be prepared to ensure high quality design and environmental outcomes including consideration of above ground structures. Mitigation planting in this plan should reflect the extent of planting illustrated in the aforementioned Landscape Ecological & Arboricultural mitigation plans. During construction, measures should also be in place to limit adverse natural character, landscape and visual amenity effects. This includes, but is not limited to, reducing the extent of works as far as practicable, installing appropriate construction hoarding with interpretive panels and minimising night time lighting with consideration of neighbouring residential properties in particular.*

In considering the nature of the Project and the anticipated change to the receiving environment, there are a number of measures which will help to mitigate the natural character, landscape and visual effects associated with the Project. It is recommended that such measures are included as part of EB2 and EB3R and have been considered in this assessment of mitigating landscape and visual effects.

Mitigation measures for this Project have been developed in two ways:

- Measures that intrinsically comprise part of the design through an iterative process
- Mitigation measures designed to specifically address the remaining (residual) negative (adverse) effects of the final development proposals.

7.1 Mana whenua Engagement

In addition to engaging with mana whenua, it is recommended that a comprehensive Urban Design and Landscape Plan (UDLP) is prepared as part of the Project with input from mana whenua. Mana whenua should also have the opportunity to provide input into the urban design and landscape design of the Project. This includes but is not limited to:

- appropriate use of Te Aranga principles
- treatment of residual open spaces
- the selection and supply of plant species and planting designs
- the potential for enhancement of habitat associated with the kawau (black shag) and other identified areas of customary importance such as the Tāmaki River
- opportunities to enhance cultural values and sites by incorporating cultural recognition elements into features of the project. Cultural recognition elements may include Māori carvings and/or art, pou and/or other cultural features and/or markers to recognise and provide for the cultural relationship of mana whenua with the land directly affected by the project.

7.2 Urban Design and Landscaping Plan (UDLP)

A comprehensive UDLP will be prepared. This includes but is not limited to:

- Urban design details for works
- Landscape design details for works
- Type, number and location of replacement tree planting
- Lighting, signage and street furniture details
- All large specimen trees to be a minimum planter bag size of 160 litre, small trees to be 45 litre, shrubs 2 litre and ground covers 1 litre
- Measures to achieve a safe level of transition for cycling and walking modes, including providing advanced warning and signage to cyclists and pedestrians, and safe and convenient cycling transitions at the ends of the project
- Design features and methods for cultural expression and in order to reflect outcomes agreed through mana whenua engagement
- Design features associated with the management of stormwater, including both hard and soft landscaping
- A maintenance plan and establishment requirements over a three-year period for landscaping and five years for specimen trees following planting.

7.3 Construction Specific Mitigation Measures

The overarching mitigation measures during construction are as follows:

- Limit works area to smallest extent practicable
- Install construction hoarding 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
- Minimise works and native vegetation clearance within reserves and CMA areas, ensuring any vegetation removal is clearly identified prior to occurring to avoid accidental vegetation loss
- Minimise works within the dripline of retained trees
- Earthworks are minimised as far as practicable, particularly within the coastal environment (including CMA)
- Lighting throughout the Project will be minimised as far as practicable, so it meets the permitted standards of the zone. Placement and direction of lights should avoid high points which are visible outside of the Project extent. Light shields should be used where necessary, and all lighting shall be down facing to minimise light spill and glare, particularly on neighbouring residential viewing audiences.

7.4 Design and Implementation Mitigation Measures

7.4.1.1 Road Corridor

- Design the road to be the minimum width and have the minimum number of lanes practicable, particularly at intersections, to reduce the visual and physical severance impacts of the corridor.
- Provide trees and planting along the transport corridor to reinforce the existing planted character, soften the interface with adjoining uses, reduce the apparent width of the corridor, define views towards landmarks and highlight key nodes

7.4.1.2 RRF

- Ensure height of structures is as low as practicable
- Consider visually aesthetic designs or graphics and/or vegetation to make abutments less visually intrusive

- Design the edges and undersides of structures visible at close range to be visually interesting, contribute to a safe walking environment and assist (rather than obscure) wayfinding
- Achieve design consistency between the designs proposed for the RRF using similar treatments for elements such as abutment walls, barriers, under bridge areas, signage and lighting
- Consider Project users experience and perception of its structures, from shared paths, adjacent public spaces, local roads and private properties. Particularly from existing residential areas around both ends of the RRF and from the space under the RRF
- Integrate abstract cultural heritage design and themes able to be appreciated by pedestrians, cyclists and drivers while minimising embellishment and ensure the level of design detail is in accordance with user's distance and speed
- Ensure retaining walls are consistent and reinforce the overall aesthetic of structures of the Project
- Ensure that the overall profile of the RRF is consistent with the specimen design with an integrated shape of structural elements (i.e. piers, crossheads and side barriers) with a simple continuous form and seamless connections between elements
- Preserve Ti Rakau Drive outward views to Mount Wellington with a slender profile and minimal visual prominence of the RRF's elements, particularly piers, crossheads, and beams
- Minimise visual clutter ensuring all structures and associated elements (i.e. barriers, signage, light poles and services) are integrated within the RRF design rather than being an addition
- Use light under the RRF to enhance the quality, safety and night patronage of the space underneath
- Use abstract cultural heritage design and themes able to be appreciated by pedestrians, cyclists and drivers
- Ensure all structure surfaces, associated elements (i.e. signage, light poles, etc) and their surroundings discourage graffiti, are easy to maintain and will not trap litter.

Figure 4 Render of proposed appearance of RRF from Reeves Road (source Warren and Mahoney)

7.4.1.3 Bus Stations

- Design bus stations to reflect high quality design outcomes
- Incorporate planting including trees to signalise bus stations along corridor.

Figure 5 Render of proposed appearance of the bus stations (source Warren and Mahoney)

7.4.1.4 Vegetation

- Consider initiatives from local Iwi to incorporate culturally significant planting or landscaping elements
- Use street tree planting for shade as well as to soften the edges of the transport corridor, creating a pleasant walking and waiting environment
- Use planting to screen off the Project from adjacent private properties where adverse effects will require mitigation and frame orientation views, while increasing the amenity of the Project.

A series of Landscape Ecological & Arboricultural Mitigation plans have been provided and appended to this report and within the AEE which demonstrate the proposed locations of landscape areas (Appendix 3 of this report). The above assessment considers the extent of landscaping and number of trees as part of the mitigation response.

Figure 6 Render of proposed appearance of the Ti Rakau Drive road corridor (source Warren and Mahoney)

7.4.1.5 Noise Walls

- Minimise the use of noise walls.
- Where unavoidable, minimise their visual impact for all viewers through: limiting their height, integrating them with bunds and/or softening with planting; and designing them to be 'two-sided', with the design of each side responding to either the transport or adjacent land use. If required, design patterns on their visible surface should be defined in consultation with Auckland Council's Public Arts team, mana whenua and in consistency with patterns defined for EB1 and Waka Kotahi's "Bridging the Gap" design guidelines for noise walls.

7.4.1.6 Outfalls

- Proposed culverts should be chamfered to match the contour of the surrounding landform.
- Integrate structures with native riparian vegetation.

8 Recommendations and Conclusions

Chapter Summary

In summary, a number of mitigation measures have been recommended to ensure any adverse natural character, landscape or visual amenity effects are appropriately managed. These recommendations will ensure high quality design and environmental outcomes.

The EB2 and EB3R Project's will occur within or alongside an existing road corridor and clearly relate to and signify significant infrastructure upgrades alongside an established transport orientated environment. Effects during construction are often greater than those during operation (once the project is completed), due to construction activities occurring prior to the completion of mitigation measures such as tree planting and the ultimate appearance of above ground structures (e.g. RRF) and therefore construction effects are temporary.

Once the project is completed and the proposed mitigation measures (such as tree planting) have been established, residual / long term effects can be fully appreciated. On the whole, whilst the Project will result in a level of change to the receiving environment, it is considered that the Project will achieve high quality design and environmental outcomes whilst meeting the Project Objectives.

As outlined in Section 7, a number or mitigation measures are proposed to ensure any adverse natural character, landscape and visual amenity effects are appropriately managed. This includes ensuring mana whenua engagement continues through the design process. An UDLP will also be prepared to ensure high quality deign and environmental outcomes including consideration of above ground structures. In relation to soft landscaping (tree, shrub and ground cover planting), it is considered the submitted Landscape Ecological & Arboricultural mitigation plans will assist in mitigating natural character, landscape and visual amenity effects.

EB2

In relation to landscape and visual effects for EB2 during construction, the greatest landscape effects will be due to the removal of vegetation, being moderate adverse. However, this will be temporary, occurring for a short period (during construction) and prior to replacement mitigation planting forming part of this assessment's recommendations. Once replacement planting has established, residual effects on vegetation during operation are considered to be low beneficial.

Effects on Open Space values would be greatest on Paul Place Reserve where effects are considered to be low during construction and operation due to the permanent removal of the southern portion of the reserve. During construction there will be low adverse effects on views along Ti Rakau Drive toward Mount Wellington which are considered to hold landscape value. Once the project is completed and construction machinery is removed, it is considered effects will reduce to very low adverse.

Any effects on urban development and land use will be low adverse during construction reducing to very low neutral once the project is complete. The landscape characteristics of the EB2 area will change, however much of the works will occur within the road corridor, with many aspects being permitted activities in the AUP(OP). Overall, effects on landscape character during construction will be moderate, reducing to low once the project is completed.

In considering natural character effects, these will be limited and any effects on the natural character values during construction are likely to be no more than low adverse, reducing to very low neutral once the project is complete.

The greatest visual effects are anticipated to be on those residential viewing audiences adjacent to the construction of EB2 and adverse effects on these viewing audiences would be up to moderate-high. Such effects may remain for some residents which are proximate to the RRF following construction.

EB3R

Landform effects in EB3R are considered to be limited due to the modified nature of the receiving environment. Vegetation removal will result in adverse effects considered to be low-moderate until recommended replacement tree planting has been established. Any residual effects are however anticipated to be very low beneficial due to the particular focus on replacement trees being indigenous tree species.

Effects on Open Space will be low adverse for Ti Rakau Park and up to moderate adverse in Riverhills Park. These effects will however be temporary and will reduce once the project is completed, following mitigation.

The landscape features of EB3R are considered to have low-moderate adverse effects during construction, particularly as a result of the project impacting areas of open space. Residual effects however are generally considered to be beneficial due to the proposed enhancements to Riverhills Park as a result of the Project.

Urban development and land use effects are considered to be low adverse during construction, with low beneficial effects following construction. Effects on landscape character are considered to be low-moderate, reducing to low beneficial following project completion. It is considered that any natural character effects during construction will be very low adverse during, reducing to very low neutral once the project is complete.

Visual effects will also be greater during construction, with the highest effects on residential viewing audiences located adjacent to EB3R. Following construction, it is anticipated that any residual effects on these viewing audiences would be low adverse.

Appendix 1: Assessment Methodology

Introduction

The Natural Character, Landscape and Visual Effects Assessment (NCLVEA) process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, changes in the existing character or condition of the landscape and the associated experiences of such change. In addition, the landscape assessment method may include (where appropriate) an iterative design development processes, which seeks to avoid, remedy or mitigate adverse effects (see **Figure 1**).

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the **Draft Te Tangi A Te Manu: Aotearoa New Zealand Landscape Assessment Guidelines** and its signposts to examples of best practice, which include the **Quality Planning Landscape Guidance Note**[13] and the **UK guidelines for landscape and visual impact assessment**[14]**.**

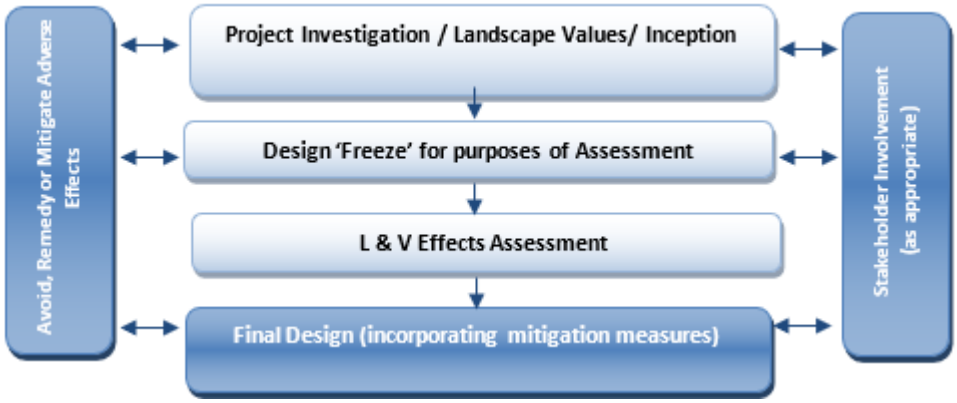


Figure 1: Design feedback loop

When undertaking any landscape assessment, it is important that a **structured and consistent approach** is used to ensure that **findings are clear and objective**. Judgement should be based on skills and experience and be supported by explicit evidence and reasoned argument.

While natural character, landscape and visual effects assessments are closely related, they form separate procedures. Natural character effects consider the characteristics and qualities and associated degree of modification relating specifically to waterbodies and their margins, including the coastal environment. The assessment of the potential effects on landscape considers effects on landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

Natural Character effects: *Change in the characteristics or qualities including the level of naturalness.*

Landscape effects: *Change in the physical landscape, which may affect its characteristics or values*

Visual effects: *Change to views which may affect the visual amenity experienced by people*

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the first step requires identification of the landscape's **character** and **values** including the **attributes** on which such values depend. This requires that the landscape is first **described**, including an understanding of relevant physical, sensory and

[13] http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape

[14] Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

associative landscape dimensions. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with, a judgement made on the value or importance of the potentially affected landscape.

Natural Character Effects

In terms of the RMA, natural character specifically relates to the coastal environment as well as freshwater bodies and their margins. The RMA provides no definition of natural character. RMA, section 6(a) considers natural character as a matter of national importance:

> *…the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.*

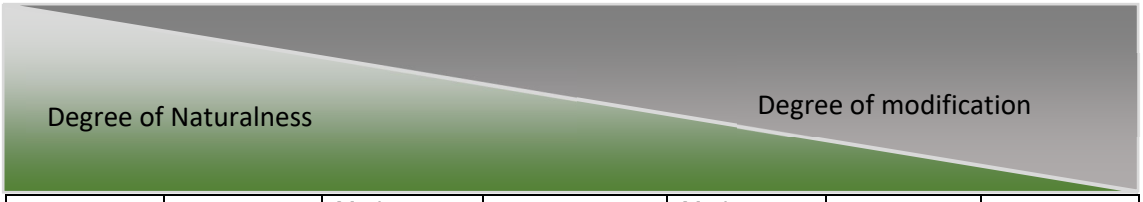
Natural character comprises the natural elements, patterns and processes of the coastal environment, waterbodies and their margins, and how they are perceived and experienced. This assessment interprets natural character as being the degree of naturalness consistent with the following definition:

> *Natural character is a term used to describe the naturalness of waterbodies and their margins. The degree or level of natural character depends on:*
>
> - *The extent to which natural elements, patterns and processes occur;*
> - *The nature and extent of modifications to the ecosystems and landscape / seascape;*
> - *The highest degree of natural character (greatest naturalness) occurs where there is least modification; and*
> - *The effect of different types of modification upon the natural character of an area varies with the context and may be perceived differently by different parts of the community.*

The process to assess natural character involves an understanding of the many systems and attributes that contribute to waterbodies and their margins, including biophysical and experiential factors. This can be supported through the input of technical disciplines such as marine, aquatic and terrestrial ecology, and landscape architecture.

Defining the level of natural character

The level of natural character is assessed in relation to a seven-point scale. The diagram below illustrates the relationship between the degree of naturalness and degree of modification. A high level of natural character means the waterbody is less modified and vice versa.



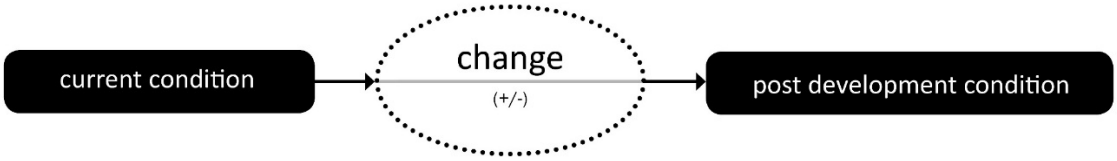
Very High	High	Moderate - High	Moderate	Moderate - Low	Low	Very Low

Scale of assessment

When defining levels of natural character, it is important to clearly identify the spatial scale considered. The scale at which natural character is assessed will typically depend on the study area or likely impacts and nature of a proposed development. Within a district or region-wide study, assessment scales may be divided into broader areas which consider an overall section of coastline or river with similar characteristics, and finer more detailed 'component' scales considering separate more local parts, such as specific bays, reaches or escarpments. The assessment of natural character effects has therefore considered the change to attributes which indicate levels of natural character at a defined scale.

Effects on Natural Character

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. This can be negative or positive.



The natural character effects assessment involves the following steps;

- assessing the existing level of natural character;
- assessing the level of natural character anticipated (post construction); and
- considering the significance of the change

Landscape Effects

Assessing landscape effects requires an understanding of the landscape resource and the magnitude of change which results from a proposed activity to determine the overall level of landscape effects.

Landscape Resource

Assessing the sensitivity of the landscape resource considers the key characteristics and qualities. This involves an understanding of both the ability of an area of landscape to absorb change and the value of the landscape.

Ability of an area to absorb change

This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The scope for mitigation, appropriate to the existing landscape.

The ability of an area of landscape to absorb change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

The value of the Landscape

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Feature or Landscape (ONFL) (RMA s.6(b)) based on important physical, sensory and associative landscape attributes, which have potential to be affected by a proposed development. A landscape can have value even if it is not recognised as being an ONFL.

Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss / change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
Landscape (sensitivity)	**Ability to absorb change**	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change resulting from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and shared and recognised attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or shared and recognised attributes. The landscape is of low or local importance.
Magnitude of Change	**Size or scale**	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

Field work is used to determine the actual extent of visibility of the site, including the selection of representative viewpoints from public areas. This stage is also used to identify the potential 'viewing audience' e.g. residential, visitors, recreation users, and other groups of viewers who can see the site. During fieldwork, photographs are taken to represent views from available viewing audiences.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of theoretical visibility (ZTV)' of the site and proposal.

The Sensitivity of the viewing audience

The sensitivity of the viewing audience is assessed in terms of assessing the likely response of the viewing audience to change and understanding the value attached to views.

Likely response of the viewing audience to change

Appraising the likely response of the viewing audience to change is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and the reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the wider landscape setting.

Value attached to views

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change, which may distinguish between temporary (often associated with construction) and

permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA[15].

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 4** has been prepared to help guide this process:

Contributing Factors		Higher	Lower	Examples
The Viewing Audience (sensitivity)	**Ability to absorb change**	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.	Dwellings, places of work, transport corridors, public tracks
	Value attached to views	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.	Acknowledged viewshafts, Lookouts
Magnitude of Change	**Size or scale**	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of views retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture. Glimpse / no view of the proposed development.	- Higher contrast/ Lower contrast. - Open views, Partial views, Glimpse views (or filtered); No views (or obscured)
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.	- Front or Oblique views. - Near distant, Middle distant and Long distant views
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).	- Permanent (fixed), Transitory (moving)

Table 2: Determining the level of visual effects

Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways; these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by **Table 2** set out below:

Nature of effect	Use and Definition
Adverse (negative):	The activity would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
Neutral (benign):	The activity would be consistent with (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
Beneficial (positive):	The activity would enhance the landscape and / or visual amenity through removal or restoration of existing degraded landscape activities and / or addition of positive elements or features

Table 1: Determining the Nature of Effects

[15] Best Practice Guide: Visual Simulations BPG 10.2, NZILA

Cumulative Effects

This can include effects of the same type of development (e.g. bridges) or the combined effect of all past, present and approved future development[16] of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the Project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the Project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the Project being assessed.

Determining the Overall Level of Effects

The landscape and visual effects assessment conclude with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation. The process can be illustrated in Figure 2:

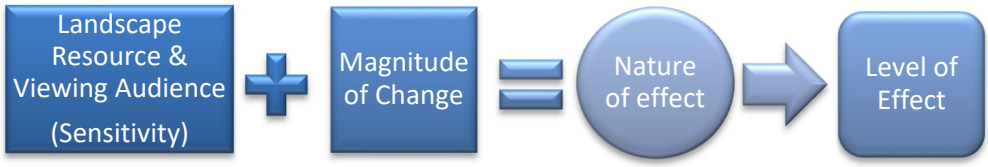


Figure 2: Assessment process

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in **Table 3** below. This table which can be used to guide the level of natural character, landscape and visual effects uses an adapted seven-point scale derived from Te Tangi A Te Manu.

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*

[16] The life of the statutory planning document or unimplemented resource consents.

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.
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.

Table 3: Determining the overall level of landscape and visual effects

Determination of "minor"

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor[17] or an adverse effect on the environment is no more than minor[18]. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D 'gateway test' is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be 'minor' or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape or effects on a person are considered in relation to 'minor'. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor landscape effects. In relation to this assessment, low-moderate level effects would generally equate to 'minor'

The third row highlights the word 'significant'. The term 'significant adverse effects' applies to particular RMA situations, namely as a threshold for the requirement to consider alternative sites, routes, and methods for Notices of Requirement under RMA s171(1)(b), the requirements to consider alternatives in AEEs under s6(1)(a) of the 4th Schedule. It may also be relevant to tests under other statutory documents such as for considering effects on natural character of the coastal environment under the NZ Coastal Policy Statement (NZCPS) Policy 13 (1)(b) and 15(b).

Less than Minor		**Minor**	**More than Minor**			
Very Low	**Low**	**Low-Moderate**	**Moderate**	**Moderate-High**	**High**	**Very High**
					Significant	

Table 4: Determining adverse effects for notification determination, non-complying activities and significance

[17] RMA, Section 95E
[18] RMA Section 95D