NZ TRANSPORT AGENCY
WAKA KOTAHI

TE ARA HAUĀURU
NORTHWEST RAPID TRANSIT
LANDSCAPE AND VISUAL ASSESSMENT

MATTHEW JONES

15 DECEMBER 2025

New Zealand Government

Qualifications and experience of the author

This landscape and visual assessment has been prepared by Matthew Jones.

I am a Principal landscape architect at Isthmus Group Ltd (IGL), based in Tāmaki Makaurau, Auckland. I have 20 years' experience working on a range of design, landscape planning and management, and urban design projects. I have a Bachelor of Landscape Architecture from Unitec, and am a registered landscape architect with Tuia Pito Ora, the New Zealand Institute of Landscape Architects (NZILA). I was a past member of the National NZILA Board and previously held the position as Chair of the Auckland Branch. I am also a member of the Resource Management Law Association and have been an appointed panellist on the Auckland Urban Design Panel (AUDP) since 2017.

My experience includes projects at varying scales that have required documentation to assist resource consent, structure plan and plan change applications, and district plan and policy review. My input has included design, masterplanning, and urban design, landscape and visual assessments. Project types I have been involved with include:

- Transport infrastructure projects, including Notice of Requirement (NoR) designations.
- Energy generation and transmission infrastructure of various scales.
- Town centre spatial plans, masterplanning and rejuvenation projects.
- Subdivision developments, mixed-use and residential apartment buildings and terraced houses.
- Industrial and commercial development.
- Rural residential and urban masterplan designs.
- Plan change applications, and policy and District Plan reviews.
- Projects which include integrated catchment management and ecological enhancement.
- Parks and open spaces.

Although this matter is not before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses as contained in section 9 of the Environment Court Practice Note 2023. I agree to comply with that Code. My qualifications as an expert are set out above. I am satisfied that the matters which are addressed in this report are within my area of expertise, except where I state that I am relying on information provided by another person or expert. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

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Acronyms, definitions and abbreviations

Term	Definition
AEE	Assessment of Environmental Effects
AUDP	Auckland Urban Design Panel
AUP	Auckland Unitary Plan (Operative in Part)
CMA	Coastal Marine Area
FTAA	Fast-track Approvals Act 2024
GIS	Geographic Information System
Indicative Design	The indicative design of the Project within the Project Area as shown on the Indicative Design drawings in Part 6 that will be confirmed during detailed design
Moata	The Project GIS system
NoR	Notice of Requirement
NZILA	New Zealand Institute of Landscape Architects
NZTA	New Zealand Transport Agency Waka Kotahi
ONF	Outstanding Natural Feature
Project	Te Ara Hauāuru Northwest Rapid Transit
Project Area	The Proposed Designation and the extent of the coastal occupation permits sought
Proposed Designation	The area defined by the Proposed Designation boundary as shown on the Proposed Designation Plans in Part 6
SH16	State Highway 16
SH18	State Highway 18
STC	Strategic Transport Corridor
THAB	Terrace Housing and Apartment Building zone

1. Introduction

1.1 Purpose and scope of this report

This technical assessment has been prepared to inform a substantive application for the Northwest Rapid Transit Project (the Project) under the Fast-Track Approvals Act 2024 (FTAA). It forms part of a suite of specialist reports that collectively support the applications for statutory approvals.

The purpose of this report is to evaluate the actual and potential landscape and visual effects of the Project on the environment. This report addresses the following matters:

- Actual and potential effects of the Project on landscape character, visual amenity and natural character.

The assessment considers both the construction and operational phases of the Project, identifying any adverse effects and assessing their significance. I have recommended measures to avoid, remedy, or mitigate identified effects where I consider necessary.

This report should be read alongside the Substantive Application including the Assessment of Environmental Effects (AEE) in Part 4, which contains further details on the context of the Project. The Substantive Application also contains a description of works to be authorised and the typical construction methodologies that will be used to implement this work in Part 2. I have reviewed this and have been considered as part of my assessment of effects. As such, they are not repeated here. Where a description of an activity is necessary to understand the potential effects, it has been included in this report for clarity.

2. Assessment methodology

This assessment is consistent with the concepts, principles, and assessment approaches outlined in 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora New Zealand Institute of Landscape Architects, 2022'. The specific method is tailored to the nature of the Project, landscape setting, and the regulatory context including the FTAA.

The assessment uses the following definition of landscape: "Landscape embodies the relationship between people and place. It is the character of an area, how the area is experienced and perceived, and the meaning associated with it." Professional practice conceptualises landscape as the combination of its overlapping physical, perceptual and associative dimensions.

The landscape in this instance is an urban landscape. While urban landscapes have specific features and considerations, they fall under the same conceptual framework as other landscape types. "*Urban landscapes do not just mean the natural or green parts of cities. Urban landscapes comprise the physical urban environment ((its topography, streets, buildings, open spaces, and their related processes and activities), how people perceive it (its legibility, memorability, aesthetics), and what it means (its identity, history, sense of place)*".[1] The Indicative Design (the indicative design of the Project within the Project Area as shown on the Indicative Design drawings in Part 6 that will be confirmed during detailed design), has been developed to inform the applications for the statutory approvals. The approach taken to assessing effects in this instance is to consider an 'envelope of effects' that would be enabled within the Proposed Designation (the area defined by the Proposed Designation boundary as shown on the Proposed Designation Plans in Part 6). While the Indicative Design indicates the nature of the Project, including its scale and main features, the Proposed Designation will provide flexibility of the finished design, unless constrained by specific conditions.

2.1 Assessment approach

I have identified and assessed the landscape values of the localised and wider context along the Project's alignment, and the Project's potential effects on those values as follows:

- A desktop review of the location and works proposed in the Project Area (the Proposed Designation and the extent of the coastal occupation permits sought), including on the Project Moata Geographic Information System (GIS).

[1] Refer Te Tangi a Te Manu, paragraphs 4.46 – 4.48.

- A desktop review of relevant statutory and non-statutory documents.
- Site visit to publicly accessible locations on 26 June 2025 with the Project team.
- A subsequent site visit to additional sites (not visited during the initial site visit) on 25 July 2025 to further understand the receiving environment to inform the assessment.
- A description of the existing receiving environment and landscape context for the Project, including the existing attributes and land uses within this predominantly urban environment.
- Identification and analysis of the landscape character within the Project Area, and the surrounding landscape context.
- Identification and analysis of the viewing audience and visual amenity values associated with the Project Area and surrounding area.
- Identification and analysis of the natural character values associated with the Project Area.
- An assessment of positive landscape character, visual amenity and natural character effects arising from the Project.
- An assessment of the potential adverse landscape character, visual amenity and natural character effects of the Project during the construction period.
- An assessment of the potential adverse landscape character, visual amenity and natural character effects of the Project post construction during its operation.
- Undertake 'sensitivity testing' and assessment to account for potential changes to the Indicative Design for the Project. In order to enable flexibility for future design refinement an assessment is provided for an 'envelope of effects' based on the Proposed Designation and Indicative Design.
- Provide recommended mitigation measures.
- Provide an overall conclusion for the landscape character, visual amenity and natural character effects of the Project.

Landscape effects (including visual and natural character effects) are effects on landscape values. Change is not an adverse effect in and of itself. Likewise, visibility is not an adverse effect in and of itself. Whether change and visibility are adverse effects depends on context.

Effects are assessed by describing the nature of the effect on landscape values, and describing its degree against the following seven-point scale:

Very Low	Low	Low – Moderate	Moderate	Moderate – High	High	Very High

Engagement undertaken with Iwi/hapū through the course of the Project to date has helped outline the values associated with the Project Area and informed the development of the Indicative Design. Although this assessment does not specifically address potential cultural effects in relation to Iwi/hapū (which is summarised in Part 4 of the Application), it takes into account the design inputs for the Project and the outcomes sought.

2.2 Landscape character effects

The methodology for assessing the effects of an activity or development on landscape character is:

- Analysis of landscape characteristics and identification of landscape values; and
- An assessment of effects of the Project on the identified characteristics and values.

Key matters assessed include the (i) the integration of development patterns (e.g., urban form and patterns, topography) in relation to the Project Area's immediate context and how it integrates into the wider urban environment, (ii) interfaces (e.g., streetscape and boundaries), (iii) stormwater / wetlands and streams, (iv) vegetation clearance, and (v) the formation of the new infrastructure / structures.

2.3 Visual amenity effects

Visual amenity effects relate to changes to the landscape values experienced within a view. Visual values are inherently linked to landscape values. The nature of a view depends on how it is perceived and the extent to which it is valued or not[2].

The visual amenity effects assessment is intended to provide an indication of the level of effect based on the current and anticipated future environment. Photographs captured during the site visits provide visual representation of the current environment (at the time of capture).

The visual amenity effects assessment has been undertaken for public and private locations proximate to the Project Area within the localised environment along road corridors and adjacent sites. The visual audience and catchment vary along the Indicative Design depending on the visibility of the Project and the nature of the view, e.g. the context of views of bridge infrastructure and whether views are impeded by existing buildings, topography and/or vegetation.

Visual amenity effects on the wider context have not specifically been assessed. The Project provides additional transport infrastructure in a modified urban environment, and it will be located parallel and adjacent to the existing State Highway 16 (SH16) transport corridor. Where the Project is visible from the wider context, it will be viewed in the context of this existing transport infrastructure and its predominantly urban setting. Accordingly, I do not consider there will be any adverse visual amenity effects on the wider context requiring assessment.

2.4 Natural character effects

The assessment of natural character for the Project involves providing a description and analysis of the attributes (characteristics and qualities) of the areas where the Project spans through the coastal environment (including the Coastal Marine Area (CMA)), rivers and streams. It also includes landward areas to which the natural character attributes and values are associated.

This report outlines the physical and perceptual elements and qualities which contribute to natural character and identifies the associated values. An assessment has been prepared outlining potential effects on these values during both the construction and operational phases.

3. Receiving environment

3.1 Broader existing environment

The Project extends from Brigham Creek in the west through to Ian McKinnon Drive in the city centre, to the east. It will follow parallel and adjacent to an existing transport corridor that includes the SH16 motorway, an interim busway currently running on the motorway shoulders, and the separated Northwest Shared Path. The Northwest Shared Path is a pedestrian and cycling connection through west Auckland to the city centre parallel to SH16.

The area surrounding the existing transport corridor is an urban landscape (which includes a mix of residential and business land uses) where change is anticipated and provided for. The Project is intended to provide support for growth and the area around the corridor is zoned for intensification. The Project will provide an extension of the existing transport corridor through the area and will connect with existing arterial roads and key intersections.

The properties which share the boundary with the existing SH16 corridor typically have tall fences and landscaping which provides screening and a buffer to the corridor. In addition, existing noise barriers provide a further buffer to the corridor in some places.

The Project Area includes sections which run across a number of streams (e.g. Tōtara Creek and Meola Creek) and across two arms of Te Wai-o-Pareira / Henderson Creek (which have value to Iwi/hapū). There are areas of established vegetation within the Project Area including that along the SH16 berms and

[2] Refer Te Tangi a te Manu, Paragraphs 6.09 (point 2)

embankments, within open spaces, vegetation along Tōtara Creek, Rarawaru Stream and Meola Creek, along the coastal margins, and that associated with stormwater treatment areas (e.g. off Westgate Drive).

There are seven stations included in the Project. The Proposed Designation expands away from the SH16 corridor at each station location to allow for the areas required for their construction and operation. The station locations are generally located proximate to key road junctions and connections into the wider urban areas.

The urban landscape of the Project Area falls into two parts west and east of the Whau River respectively:

- The area west of the Whau River was largely developed in response to the motorway corridor. It is characterised by largely post 1950s development with both residential and industrial land uses in Westgate, Massey and Te Atatū.
- In contrast, the motorway corridor east of the Whau River was constructed through an established existing urban landscape which is characterised by earlier patterns of urban development through Point Chevalier, Western Springs and Grey Lynn.
- The Whau River, which holds value to Iwi/hapū, separates these two areas and is approximately 4km wide including the end of the Rosebank Peninsula. It is a large arm of the Waitematā Harbour divided into two estuaries by the Rosebank Peninsula. It provides wide views of the harbour from the transport corridor and is a distinctive physical and visual break between west Auckland and the Auckland isthmus.

There are three Outstanding Natural Features (ONFs) in the vicinity of the Proposed Designation. These are the Harbour View Pleistocene Terraces (ID ONF40), Meola Creek and Estuary (ID ONF95), and the North-west Motorway lava flow, Western Springs (ID ONF132). ONFs are identified under the Auckland Unitary Plan (Operative in Part) (AUP) for earth science values rather than landscape values and are addressed in Part 4 of the application.

Two Volcanic Viewshafts extend over the Proposed Designation. These are A13 to Mt Albert from near Te Atatū Road and E20 from Newton Road. These viewshafts extend above the Proposed Designation and will not be affected by the Project.

3.2 Existing environment – relating to specific areas

3.2.1 Busway between Brigham Creek and Whau River (Busway West)

For ease of description, the existing environment for the different sections of the busway (between stations) is outlined below, with the existing environment at the individual stations described thereafter.

3.2.1.1 Brigham Creek Rarawaru station to Westgate Te Waiarohia station

The busway in the westernmost extent of the Project Area connects with Brigham Creek Rarawaru station and Park and Ride. The Project Area follows the Strategic Transport Corridor (STC) zone of the AUP boundary, aligning immediately adjacent to SH16 which is characterised by the four-lane carriageway.

The Proposed Designation includes land on both sides of SH16. The southern / western side of SH16 includes established native vegetation, interspersed with areas of managed grass and stormwater ponds, along the Tōtara Creek catchment corridor which flows largely parallel with the Indicative Design. In contrast, the northern / eastern side of SH16 has a grass embankment with areas of low and sparse native vegetation.

Tōtara Creek has a moderate level of natural character attributed to its natural meandering alignment and native vegetation cover, although flowing through a modified part of urban west Auckland.

3.2.1.2 Westgate Te Waiarohia station to Royal Road Mānutewhau station

East / south of Westgate Te Waiarohia station, the Project Area has rising topography up to and across Fred Taylor Drive and Hobsonville Road. The Proposed Designation broadly aligns with the SH16/18 corridor to the east of the Westgate Shopping Centre / Retail Park. The Proposed Designation in this area has predominantly car parking associated with the shopping centre and includes two large scale retail buildings. These buildings and the land adjacent to the SH16 corridor can be seen within Figure 3-1 below.

Within the Proposed Designation and to the north / east of the Indicative Design are two major junctions along SH16. These are the interchanges connecting with State Highway 18 (SH18) and the off-ramp and on-ramps at Fred Taylor Drive and Hobsonville Road. This infrastructure includes the highway carriageways (10-14 lanes width), the Fred Taylor Drive / Hobsonville Road overbridge and SH18 flyover. There is mature native vegetation which is planted within the road berms along SH16.

Figure 3-1: Photo of the western side of SH16 and the interface with the Westgate Shopping Centre looking toward Fred Taylor Drive (M. Jones)

Further to the south, beyond the Westgate Shopping Centre, the Proposed Designation includes the Westgate Pedestrian and Cycle Bridge ('yellow bridge') and its landings, open space and stormwater detention ponds, and areas of planted native vegetation aligned adjacent to recently constructed terraced houses. The Proposed Designation area between SH16 and the terraced houses is shown in Figure 3-2 below. The Westgate Pedestrian and Cycle Bridge provides connection across SH16 and to the Northwest Shared Path.

Figure 3-2: Photo looking south along the western side of SH16 and the location of the Proposed Designation adjacent to the existing terraced houses (accessed off Westgate Drive)(M. Jones)

Leading to Royal Road Mānutewhau station the topography is relatively subdued and Indicative Design runs perpendicular across the low pattern of ridges. The Proposed Designation partially extends into an area of native planting and the edge of the Royal Road School sports field.

3.2.1.3 Royal Road Mānutewhau station to Lincoln Road Wai o Pareira station

At Royal Road, the Proposed Designation extends to the east and west beyond the existing overbridge. It includes areas of existing residential development which is typically characterised by one to two-storey detached dwellings accessed from Landsdale Place, Makora Road and Royal Road. It also extends into the southeastern corner of the Royal Road School fields.

The topography of the area is varied and generally rises from the south and west up toward Royal Road. The topography has been modified to enable the alignment of SH16, the Northwest Shared Path and the Royal Road overbridge and includes planted slopes within the SH16 corridor.

South of Royal Road, the Proposed Designation is located adjacent to SH16 (on its western / southern side) and includes residential properties as the Project extends toward the western arm of Te Wai-o-Pareira / Henderson Creek. The majority of these residential properties are located immediately adjacent to the SH16 corridor, often separated by noise walls with limited vegetation. The Project Area spans across the Rarawaru Stream, adjacent to Triangle Road.

The Project Area crosses the western arm of Te Wai-o-Pareira / Henderson Creek parallel and adjacent to the existing SH16 carriageway. The creek channel is approximately 20m wide and has established mangroves and native vegetation. The Project Area extends to include an elevated area of scrubby vegetation adjacent to SH16 on the western side of the creek.

The natural character values of the Te Wai-o-Pareira/Henderson Creek are low-moderate, attributed to the coastal edge and tidal flow margin, the mangrove and native vegetation cover and also the presence of the adjacent industrial land uses and the existing SH16 motorway bridges and the degraded stream margin. Rarawaru Stream has low levels of natural character due urban encroachment and the extent of weed species along its margins.

3.2.1.4 Lincoln Road Wai o Pareira station to Te Atatū Ōrangihina station

South of the Lincoln Road Wai o Pareira station (south of Lincoln Road) the Project Area extends toward the eastern arm of the Wai-o-Pareira / Henderson Creek and includes industrial land. This area includes a variety of industrial land uses with large-scale buildings situated adjacent to SH16. Industrial land uses accessed off Central Park Drive and Lincoln Road characterise this part of Henderson and extend beyond the Proposed Designation.

The eastern arm of Te Wai-o-Pareira / Henderson Creek is approximately 40m wide and has established mangroves and native vegetation lining the creek corridor.

Beyond Te Wai-o-Pareira / Henderson Creek, on the southern side of SH16 the Project Area includes existing residential properties and Watercare and Vector substation sites along Marewa Street, Paton Avenue, Milich Terrace and McCormick Road, Te Atatū South. Residential development in this area is typically characterised by a mix of one to two-storey detached dwellings, which are separated from SH16 by the Northwest Shared Path and a noise barrier. There is limited native planting along the SH16 edge.

3.2.1.5 Te Atatū Ōrangihina station to the Whau River

At Te Atatū Road the Project Area includes both the northern and southern sides of SH16 and extends into the southern part of the Harbourview Park. This area (north of SH16) is identified as an ONF within the AUP (ID ONF40 Harbour View Pleistocene Terraces). Harbourview Park is characterised by open grass and equestrian land with limited vegetation of note within the Proposed Designation. To the west of Te Atatū Road (north of SH16), the Proposed Designation includes the existing SH16 road reserve, STC and infrastructure.

To the south of SH16 the Proposed Designation extends through residential properties along Bridge Avenue and Alwyn Avenue as the Indicative Design extends toward the Whau River.

3.2.2 Stations between Brigham Creek and Whau River (Busway West)

3.2.2.1 Brigham Creek Rarawaru station and Park and Ride

The Proposed Designation is located between Fred Taylor Drive and the SH16 corridor and contains an existing orchard, number of shelterbelts and limited other vegetation. The land has a gentle slope from west to east. The AUP anticipates the land will be developed in the future.

3.2.2.2 Westgate Te Waiarohia station

A new bus station, Westgate station, is currently under construction at Westgate to service the local area network. The Project will upgrade this station and the busway will adjoin it. The surrounding land use includes the existing SH16 to the east and the NorthWest Shopping Centre on land to the west which has vacant land and large areas of car parking.

Westgate station is on land that is gently rising from north to south with undulation and varied topography to the east due to the SH16 / SH18 interchange. There is also a north-south orientated localised stream catchment to the north of the station site which flows to the stormwater detention basins to the north, connecting with Tōtara Creek.

3.2.2.3 Royal Road Mānutewhau station

The Proposed Designation at the Royal Road station site includes Royal Road, the overbridge and existing residential properties accessed off Royal Road, adjacent to Royal Road School. The site is located at a high point in the area at Royal Road and the topography of the site falls steeply from west to east toward the SH16 carriageway.

Aside from the existing houses, the site contains the Northwest Shared Path, which runs parallel and adjacent to SH16. Either side of the Northwest Shared Path is established planted vegetation located on the steep slopes. The depth of the vegetation is between 15m – 25m. The station site and the existing vegetation can be seen in Figure 3-3 below.

Figure 3-3: Photo looking north from the Royal Road overbridge toward the Royal Road station site on the western side of SH16 (M. Jones)

3.2.2.4 Lincoln Road Wai o Pareira station

The proposed Lincoln Road station site is currently occupied by the southern Radio New Zealand radio mast (with two masts located to the north and south of the Lincoln Road / SH16 junction). The radio mast within

the Proposed Designation is approximately 137m high and is a prominent and highly visible structure within the localised and wider environment. The site is otherwise open grass.

The topography on the site has a high point in its central and southern reaches and gently descends to the north and west, particularly toward Te Wai-o-Pareira / Henderson Creek. There is a mix of native vegetation and mangroves along the boundary with Te Wai-o-Pareira / Henderson Creek and planted native vegetation either side of the SH16 on-ramp and Northwest Shared Path along the northern / eastern boundary. The vegetation along Te Wai-o-Pareira / Henderson Creek can be seen in Figure 3-4.

To the south of the Proposed Designation, across Triangle Road, is existing residential development, with established industrial land uses to the east across Lincoln Road.

Figure 3-4: Photo of the existing radio mast on the Lincoln Road station site in the context of Te Wai-o-Pareira / Henderson Creek (M. Jones)

3.2.2.5 Te Atatū Ōrangihina station

The proposed Te Atatū station site will be located within the McCormick Green open space and adjacent residential properties. The surrounding land use is residential with a concentration of terraced houses immediately west of the Project Area and detached houses across Royal View Road to the southwest.

The topography of the Project Area slopes gently from a high point in the southeastern corner toward the northwest and north toward SH16. Established vegetation is typically located within residential curtilages, with a group of mature Pine trees in the northeastern corner of McCormick Green. There is also a strip of planted native vegetation located along the northern and southern sides of the SH16 on-ramp to the north of the Project Area. Refer to Figure 3-5.

Figure 3-5: Photo looking north from within McCormick Green (proposed Te Atatū station site) across the SH16 corridor (M. Jones)

3.2.3 Busway between Waterview Interchange and Ian McKinnon Drive (Busway East)

3.2.3.1 Waterview Interchange to Point Chevalier station

The westernmost extent of the Proposed Designation is within the existing SH16 corridor, including the off-ramp and on-ramp at Great North Road and the Waterview interchange. The Proposed Designation includes areas of established native planting and the Northwest Shared Path that extends northwest toward the Eric Armishaw Reserve adjacent to the north of the SH16 off-ramp. The area to the north adjoins existing residential development and includes a mix of one to two-storey houses, some of which are elevated and have outlooks toward the Project and existing SH16.

The Proposed Designation extends east along Great North Road to the junction with Carrington Road, aligning with the SH16 corridor.

The Proposed Designation spans through Carrington Road north of the SH16 corridor and includes existing commercial development and a service lane on the southern side of Great North Road (refer to Figure 3-6). This area includes buildings of varying scales fronting both Great North Road and Carrington Road (west), forming part of the Point Chevalier town centre.

The Proposed Designation also extends across SH16 to the south along Carrington Road and includes residential properties which front both Carrington Road and Sutherland Road.

Figure 3-6: Photo looking east along the SH16 corridor along the southern side of the Point Chevalier town centre (Point Chevalier station site) from the existing Carrington Road over bridge (M. Jones)

3.2.3.2 Point Chevalier station to Western Springs station

The Proposed Designation (east of the station location) contains existing commercial development associated with the Point Chevalier town centre including a supermarket. The extent of the Proposed Designation varies here and in some locations extends to the north to Great North Road.

The Proposed Designation spans toward the east, on the northern side and adjacent to the SH16 corridor, through existing residential properties accessed from Great North Road. The residential properties are separated from SH16 by a noise barrier, areas of vegetation and an existing stormwater pond.

Native vegetation flanks the catchment of the Meola Creek tributary, north of SH16. Under the AUP this area is identified as an ONF [ID95 – Meola Creek and Estuary]. The ONF extends to cover an approximately 1.5km length of stream to the north (including beyond the Proposed Designation boundary), and approximately 600m to the south, beyond SH16 and into the Chamberlain Park Golf Course on the southern side of SH16. Within the Project Area, the stream includes two culverts under the SH16 corridor and is contained by residential development to the north and the SH16 corridor to the south.

Meola Creek, where it flows through the Proposed Designation east of the Point Chevalier town centre, has a low-moderate level of natural character. This level is attributed to the vegetation cover along the stream margins and the extent and encroachment of residential urban development and the SH16 corridor immediately adjacent.

Further east, the Project Area includes the Waiōrea Community Recycling Centre, the Western Springs Garden Community Hall and an area of car parking along Great North Road. An established planted corridor of mature Pōhutukawa trees lines Great North Road to the north of the gardens and community hall and extends east toward St Lukes Road (refer to Figure 3-7). St Lukes Road provides an overbridge across SH16. SH16 has six lanes with associated cycle lanes and footpaths.

Figure 3-7: Photo looking west of the existing row of established Pōhutukawa trees which line the southern side of Great North Road (M. Jones)

East of St Lukes Road the Proposed Designation remains south of Great North Road and spans through an area of car parking, an existing service station, the St Lukes Road on- and off-ramps for SH16 and areas of planted native vegetation.

An ONF [ID132 – North-west Motorway lava flow, Western Springs] is located to the north and south of the SH16 corridor, with the northern parts of the ONF overlay located within the Proposed Designation on either side of the St Luke's Road overbridge. Most of the ONF overlay is located adjacent to and along the SH16 off-ramp to St Luke's Road and the shoulder of SH16.

3.2.3.3 Western Springs station to Ian McKinnon Drive

East of the Western Springs station, the Proposed Designation includes residential properties accessed from Ivanhoe Road. These properties are located immediately north of SH16 and are characterised by a mix of single to three-storey detached houses. SH16 is located at a higher elevation relative to the residential development in this area.

Beyond the residential properties to the east is the Arch Hill Scenic Reserve open space which extends between Ivanhoe Road (west) and Niger Street (east). Within the Proposed Designation, the Reserve includes a margin of native vegetation along the SH16 frontage. Outside of the Proposed Designation, but within the Reserve, is an open grass recreation area, playground space (adjacent to Ivanhoe Road) and a network of informal mountain bike trails within the native vegetation on the rising topography to the north up toward Great North Road. The topography rises steeply to the north in this area up to residential development and community facilities (including a church, library and school) within Grey Lynn, elevated above the reserve and SH16. The eastern part of the Arch Hill Scenic Reserve provides a pedestrian and cycling connection to Commercial Road and Cooper Street before crossing below the Bond Street SH16 bridge and connecting to Niger Street.

The Project Area remains on the northern side of SH16 and spans across Niger Street and the southern end of King Street. It includes an area of steep topography currently shroud in native planted vegetation which rises up to the adjacent, elevated residential properties located on the northwestern side of Keppell Street. There is one notable tree adjacent to the boundary at 21 Kirk Street, Grey Lynn where the canopy overhangs the Proposed Designation.

The Proposed Designation extends across two residential properties located off Kirk Street and Partridge Street before crossing over the SH16 corridor (spanning some 10 lanes with slip-roads and shoulders).

The Proposed Designation spans adjacent to the westbound SH16 on-ramp from Newton Road, which is currently lined by native planting within the verge. The Proposed Designation extends to the east to include Suffolk Reserve, a predominantly open grass area with areas of native planting. It also includes connections to the eastern extent of the Northwest Shared Path as it adjoins Ian McKinnon Drive.

3.2.4 Stations between Waterview Interchange and Ian McKinnon Drive (Busway East)

3.2.4.1 Point Chevalier station

The proposed Point Chevalier station site is within a largely flat car parking area and service lane to the rear of commercial properties of the Point Chevalier town centre which front Great North Road. The buildings within the Point Chevalier town centre vary in scale but are generally one or two storeys. The Point Chevalier station site is north of the SH16 carriageway, behind an area of retaining required for the existing highway corridor. The area is largely devoid of vegetation, limited to trees at the car park's entrances and native planting which provides a buffer with SH16.

3.2.4.2 Western Springs station

The proposed Western Springs station site is located between the SH16 east-bound on-ramp and Ivanhoe Road. At the western extent of the station site is a small, existing grass open space area which has a grouping of Pine trees and other larger trees adjacent to the Ivanhoe Road cul-de-sac head. A short pedestrian pathway connects the western end of Ivanhoe Road with Great North Road through a small, informal open space. East of the open space, the Proposed Designation includes residential properties south of Ivanhoe Road which includes single-storey standalone-dwellings and two-storey terraced-housing (refer to Figure 3-8). The Proposed Designation also extends into the street-yard frontages of the residential properties to the north on Ivanhoe Road which have three-storey houses.

The topography of the proposed Western Springs station site is generally flat, with SH16 slightly elevated above the station site. The SH16 verge includes existing planted native vegetation which provides a buffer to the residential properties.

Figure 3-8: Photo looking east along Ivanhoe Road toward the Western Springs station site south of the road (right of image) (M. Jones)

4. Assessment of effects

4.1 Positive effects

The Project will provide new transport infrastructure running parallel and adjacent to SH16 through west Auckland, connecting with central Auckland. In my opinion, the Project will have the following positive landscape effects in addition to its transport benefits:

- The busway will add variety and visual interest to the Project Area, especially for users of the corridor. The stations will add to the urban qualities of the north-west part of Auckland such as their integrated form and connection with the transport corridor, as they do with the Northern Busway;
- The busway will reinforce the existing patterns and character of the urban landscape. It will increase the legibility of the transport corridor.

Further, in my opinion, the Project will avoid or minimise potential adverse landscape effects for the following reasons:

- It will avoid disrupting urban landscape patterns by following an existing transport corridor;
- It will be in keeping with the existing character of the corridor;
- While the Project will increase the width and number of structures within the corridor, potential adverse visual or scale effects will be offset by the added variety and interest along the alignment;
- The largely at grade alignment and its location within a built-up urban setting means that the envelope of potential adverse effects is largely confined to adjoining properties, and where key arterial roads cross SH16. Views from further afield are typically between and beyond foreground buildings and vegetation;
- Effects of the additional bridges on natural character of streams and creeks within the CMA will be minimised by the modified urban setting and co-location with the existing corridor; and
- Landscaping that is conventionally carried out as integral to such large scale transport infrastructure projects will contribute to the amenity values of the corridor and the natural character of adjacent waterbodies.

4.2 Whole of Project

This section of the assessment considers the potential adverse landscape character, visual amenity and natural character effects of the Project within the Project Area during both the construction and post construction (operational) phases. A busway such as the Project will have unavoidable adverse effects. Factors which contribute to potential effects in the Project include the extent of the Proposed Designation, the construction works and the location and scale of a number of the components along the Indicative Alignment.

4.2.1 Assessment of construction effects

A summary of the indicative construction methodology for the Project is provided in Part 2 of the application.

The Project will require site enabling works, station and busway route formation works and site finishing works. These components are broken down as follows (as relevant to landscape assessment):

- Site enabling works:
  - Establishment of a (temporary) site compound, lay-down areas and construction areas;
  - Building demolition; and
  - Vegetation clearance.
- Route formation works:
  - Earthworks (including cut / fill and the formation of levels for the respective components of the Project);

- Construction activity for any stormwater runoff, sediment and erosion control, and treatment / attenuation areas (as necessary);
- Works within and across or adjacent to existing stream corridors and the CMA;
- Construction of physical structures including the busway carriageway, bridges, underpasses, retaining structures and berms; and
- Road construction / formation works.

- Site finishing works:
  - Integration of cut / fill works back into the surrounding environment;
  - Implementation of landscape mitigation measures such as planting; and
  - Establishment of signage, lighting and road painting works.

The construction phase will result in a change to the land use and activities for properties within the Proposed Designation. Construction activity is anticipated within urban environments and for transport infrastructure, but it is the scale of the proposed works in the localised context which is key to the assessment of effects.

A summary of the indicative construction methodology is provided in Part 2 of the application, and outlines that that the majority of works will be undertaken during daylight-hours. Should there be a requirement for any night works (e.g., to time works such as constructing bridges, to minimise disruption to SH16 during the day), construction lighting may be required. In this event, it is anticipated that any lighting would be highly localised (to the areas being worked on at the time) and temporary in duration and would not result in adverse effects.

Landscape character, visual amenity and natural character effects across the Project Area during the construction phase of the Project are outlined below. The assessment is of generic construction effects which covers the whole Project Area, as assessment of specific parts of the Project is not considered necessary.

4.2.1.1 Landscape character

The Project will result in a temporary, transitional change to the land use and character of the Project Area to an active construction site. It will introduce machinery and activity such as demolition, earthworks, vegetation removal and construction works to ‘brown field’ development areas adjacent to the SH16 corridor. Construction works of this nature for new transport infrastructure can be expected adjacent to the SH16 corridor and will not be out of context in this urban environment.

There will be temporary landscape effects on public open spaces / reserves by the introduction of infrastructure or temporary use (i.e. as site yards) during construction within an open space. The potentially affected reserves include:

- The two open space and stormwater reserves adjacent to the Westgate Drive and the Westgate Pedestrian Link (‘Yellow bridge’);
- The Open Space – Conservation zoned land at the banks of the two arms of Te Wai-o-Pareira / Henderson Creek;
- McCormick Green adjacent to Te Atatū Road;
- Harbourview – Ōrangihina Park adjacent to Te Atatū Road;
- The Open Space – Informal Recreation zoned land adjacent to Meola Creek, between SH16 and Great North Road;
- The Arch Hill Scenic Reserve accessed off Ivanhoe Road; and
- Suffolk Reserve, adjacent to Ian McKinnon Drive.

Although construction of the Project will cause some disruption to these open spaces, their natural qualities and amenity values, on balance most of them will remain accessible and usable as public assets for the

community during the construction phase. However, McCormick Green will be removed as a result of the Project.

In my opinion, potential adverse effects on landscape character during the construction phase are assessed to be low-moderate, overall, taking into account the following:

- The temporary nature of the construction works phase;
- The length and scale of the Proposed Designation, overall;
- The context of the existing, emerging and enabled urban landscape patterns within the adjacent properties. The Project will enable the introduction of new transport infrastructure adjacent to the existing SH16 corridor;
- Although a temporary, transitional change to land use and introduction of new activity, the overall existing urban development pattern across the Project Area and in the wider landscape will be retained;
- Earthworks, as a general rule, have a limited footprint and are in locations proximate to SH16 where in many cases there is limited variation in the existing topography. Where greater earthworks are required for elements such as underpasses, stations or bridges potential effects will be localised. Overall, the Project does not present landform modification which is of an inappropriate scale in this landscape for a Project of this type; and
- The management of potential effects resulting from the removal of vegetation, typically which is revegetation planting or regenerating vegetation that has established on the margins of the motorway, within public open spaces or along roads (e.g. the row of mature Pōhutukawa along Great North Road).

4.2.1.2 Visual amenity

Effects on visual amenity values during construction will be caused by such things as demolition, exposed earthworks, vegetation clearance, unfinished structures, and the ad-hoc appearance of worksites, yards, material storage and machinery. Such visual effects are often exacerbated because they occur in conjunction with other effects such as noise and dust. They are likely to be greatest for occupants of adjacent properties.

Effects on overall visual amenity values during construction

Effects on visual amenity values during the construction phase will be moderated by the following characteristics:

- Their temporary nature;
- The transitory nature of the high number of passersby within the existing SH16 corridor and within public locations;
- The extent of the Proposed Designation boundary, e.g. it is localised and does not extend beyond what is reasonably necessary for construction;
- Views being largely restricted to locations near the Project due to intervening buildings, vegetation and topography;
- Civil engineering and road construction works being anticipated within a major transport corridor as part of normal maintenance and upgrades and within the urban environment;
- Earthworks being anticipated within urban environments; and
- People being likely to take an interest in the works and to anticipate the finished busway and stations.

Effects on visual amenity values from neighbouring properties during construction

As noted, adverse visual effects during construction are likely to be greatest for occupants of adjacent properties within the localised context. These include residential and business land uses. These properties will experience construction works near their boundaries, and some properties will lose existing vegetation screening and buffers.

Such effects are likely in many instances to be mitigated by the typical practice of contractors erecting screening elements such as hoardings to screen and secure work sites, and in some instances to control

other effects such as noise. These standard practices are assumed for the purpose of this assessment. Such hoardings normally screen ground level operations and machinery – typically the most visually cluttered works. Taller structures and machines such as cranes will remain visible above.

Effects from open space and reserves during construction

As outlined above, there are areas of open space and reserves within or adjoining the Proposed Designation that will be affected. In some instances, open space will be occupied during construction. Occupation will typically be restricted to only part of the respective open space, with the balance remaining open to public use.

The construction works will detract from the natural qualities and visual amenity of these spaces, and their openness means the works will potentially have greater visibility. In comparison to residential properties though users of such open space are transitory and there will be opportunities to use parts of the open space that provide separation from the construction.

Visual effects on biophysical landscape aspects during construction

Modification of landform will be of little significance for a high proportion of the Proposed Designation as the Project traverses subdued topography and is within a modified urban setting. However, the earthworks required for the underpasses, stations, Park and Ride and bridges will result in a greater level of earthworks and will result in greater localised adverse visual effects.

The Proposed Designation contains extensive vegetation that will be cleared. Most of this is revegetation planting or regenerating vegetation that has established on the margins of the motorway, within public open spaces or along roads. Existing established vegetation enhances the appreciation and level of landscape and visual amenity of localised areas (e.g. the row of mature Pōhutukawa along Great North Road). Therefore, removal and/or modification of this vegetation may reduce the visual amenity values of the area (and also result in temporary adverse effects on landscape character) before replacement / mitigation can be undertaken. There is one notable tree[3] partially within the Proposed Designation at 21 Kirk Steet, Grey Lynn, and one directly adjacent to the Proposed Designation at 30 Potatau Street, Grey Lynn where the canopy overhangs the Proposed Designation. Neither tree will be removed by the Project.

It is assumed that normal practice landscape design responses are carried out as per NZTA guidelines as part of major infrastructure works. This would include contouring of earthworks and spoil, making good around the busway, planting plans to provide screening from adjacent properties where practicable, softening such structures as noise walls, and naturalising the margins of stormwater ponds and natural waterways.

Conclusion on visual amenity construction effects

Although the Project will be visible from the localised environment, in my opinion for the reasons outlined above any adverse effects on visual amenity resulting from the construction phase will be temporary and are assessed to be low-moderate, overall. This rating includes assessment from the more sensitive viewing audiences adjacent to the Proposed Designation, particularly those proximate to the underpasses and bridge locations.

4.2.1.3 Natural character

The Project proposes bridges and associated construction works within the CMA across two arms of Te Wai-o-Pareira / Henderson Creek and their margins, and along the Tōtara Creek (between Brigham Creek and Westgate Stations), Rarawaru Stream and Meola Creek stream margins.

The construction of the bridges will introduce machinery and temporary staging (from both landward ends) into these landscapes to enable construction of the bridges and will affect natural character values. Part 2 of the Application provides a summary of the indicative construction methodology for the Project and outlines there will be a single pier in the CMA at Te Wai-o-Pareira / Henderson Creek, and the other

[3] As identified per the AUP

streams which cross under SH16 in culverts will be extended. It also seeks to minimise disruption to wetlands and watercourses.

It is presumed that soil erosion and sediment discharge to surrounding areas, especially to streams and marine creeks, will be managed during construction. This effect is addressed by Mr Stewart in the Assessment of Construction Stormwater Effects report, but is relevant to natural character assessment.

Overall for these reasons, in my opinion any potential adverse effects on natural character across the Project resulting from the construction phase will be temporary and are assessed as low-moderate.

4.2.2 Assessment of operational effects

Landscape character, visual amenity and natural character effects across the Project Area post construction (during operation) are outlined below. The assessment is of generic effects across the whole Project Area, with assessment of specific parts of the Project also provided below.

The Project will align with and provide an extension of the SH16 transport corridor which interfaces and interacts with existing transport infrastructure in the area including arterial roads, SH16 on-ramps and off-ramps, overbridges and the Northwest Shared Path.

4.2.2.1 Landscape character

The Project will be consistent with the existing character of the transport corridor, and in keeping with the evolving urban landscape of the surrounding area for the following reasons:

- The Project will replace an existing interim busway currently running on the SH16 motorway shoulders and provide a new alignment which sits adjacent to that transport corridor;
- New transport infrastructure in this location can be anticipated and will be consistent with the character of the area along the Project's alignment;
- The new stations will be located at key junctions within the overall urban street pattern and transport network – typically those locations where existing arterial roads cross SH16 (e.g. adjacent to SH16 on-ramps and off-ramps, intersections and overbridge connections). They will form new components along the linear transport corridor and will be consistent with the character of the area;
- The Project will largely be at grade. Structures (bridges or underpasses) to accommodate grade separation will be located where arterial roads currently cross SH16. That is, they will be located in conjunction with existing grade-separation structures. Specific assessment of effects related to these components is provided below; and
- The urban areas surrounding the Proposed Designation are zoned for intensification. Redevelopment with larger buildings will likely increase the scale and urban qualities of surroundings relative to the Project and will further confine the corridor's visibility from further afield. Redevelopment in such areas would coincide with the structures built to accommodate grade separation between the busway and local roads.

Overall, in my opinion, any adverse effects on landscape character across the Project Area during the operation of the Project (post-construction) are assessed to be low. Whilst an overall Project level of effect has been identified, it should not detract from the importance of the individual effects on landscape character identified below for specific components of the Project.

4.2.2.2 Visual amenity

Effects on visual amenity values are largely confined to properties adjacent to the Project Area. Views from further afield are typically either screened by intervening buildings or seen through gaps between foreground buildings. Overall, effects on visual amenity values will be moderated by the following characteristics of the Project:

- The Project will be part of an integrated transport infrastructure corridor, aligned adjacent to and parallel with SH16, consistent with the localised urban environment and transport character;

- The busway alignment (at grade) will form an additional component adjacent to the SH16 corridor and will be barely discernible from many locations. Where it is visible it will be seen in the context of, parallel and complementary to, the existing transport infrastructure of SH16;
- The underpasses[4] will form visually integrated elements in their localised urban context, along the Indicative Design and adjacent to the SH16 corridor;
- Stations and structures such as bridges will be confined to discrete locations where arterial roads cross the motorway. Where they cross SH16 they will present new structures in their localised context, collocated with other structures and will be seen in the context of these elements in the wider road network. In some instances the addition of these elements will result in a 'stacking' effect (when combined with existing) which will result in greater adverse visual amenity effects in the localised context. Individual assessment on this matter is provided related to specific locations below;
- Where bridges span through the CMA they will be at a similar level to the existing SH16 carriageway and will be viewed as visually integrated elements, complementing the existing SH16 bridges and infrastructure;
- Post-construction, views from the properties adjacent to the Project Area will be of new transport infrastructure aligned with SH16. The Project will be consistent with the localised urban transportation context; and
- It is presumed that landscaping will be carried out around the busway as part of normal design and construction methods. It is anticipated that landscaping will make good the areas around the busway, provide screening from adjacent properties, and soften walls and fences (such as those installed to reduce noise).

In my opinion, any adverse effects on visual amenity across the Project Area during the operation of the Project (post-construction) are assessed to be low, overall, noting there are greater effects in relation to specific components of the Indicative Design (which are outlined below). The Project is appropriate in this location providing new complementary transport infrastructure adjacent to SH16.

4.2.2.3 Natural character

In my opinion, post construction, any potential adverse effects on natural character will be low in the long term, overall for the following reasons:

- All of the waterbodies as outlined within Section 3 of this report are located within modified urban catchments. They are assessed to have moderate natural character values or less. Nevertheless, they retain their natural characteristics and qualities, especially those that span through the CMA within the coastal environment and with streams connected with the Waitematā Harbour;
- Adverse effects on natural character are minimised by co-location adjacent to SH16 within the existing transport corridor;
- Crossing the waterways with the greater natural character values with bridges rather than culverts. Namely at Te Wai-o-Pareira / Henderson Creek (refer to Figure 4-1), Tōtara Creek, Rarawaru Stream and Meola Creek. The bridges at these locations will be integrated elements aligned with the SH16 corridor and the Indicative Design has been designed to minimise the disruption to their margins;
- It is presumed through best practice that stormwater runoff will be treated prior to discharge into the waterways;
- It is also presumed that normal practice landscaping will entail restoration of riparian margin vegetation downstream of the busway, and where there is a gap between the busway and motorway; and
- Although introducing additional man-made elements, the bridges will have minimal impact on the CMA and streams in the long term.

[4] Proposed at Fred Taylor Drive, Royal Road, Lincoln Road, Te Atatū Road and Carrington Road

Figure 4-1: Existing SH16 bridge over the Wai-o-Pareira/Henderson Creek adjacent to the Lincoln Road station site (M. Jones)

4.3 Brigham Creek Rarawaru station to Whau River

The busway between the proposed Brigham Creek station and Park and Ride and Whau River includes a number of different components along the Indicative Design including underpasses, bridges and stations. There is variety to the form and alignment of these elements which require differing respective construction works and processes, as assessed below.

4.3.1 Assessment of operational effects

4.3.1.1 Busway between Brigham Creek Rarawaru station and Whau River

Post-construction, the operation of the Indicative Design between Brigham Creek station and Whau River will include the carriageway and a number of different components along the alignment – underpasses and bridges. There is variety to the form of these elements which is assessed separately below.

Busway underpasses

The proposed underpasses under Fred Taylor Drive (refer to Figure 4-2), Royal Road, Huruhuru Road, Lincoln Road and Te Atatū Road will present additional transport infrastructure proximate to the SH16 corridor and will be integrated and consistent with the character of the area. The underpasses will be seen in this context and will have limited visibility as they extend under existing roads. In my opinion, any potential adverse effects on landscape character and visual amenity for the underpasses will be very low.

Figure 4-2: Plan of the extent of the underpass under Fred Taylor Drive (blue dash)

Bridges

New bridges will extend over SH16 at Royal Road and Te Atatū Road, and a short section of an elevated viaduct over the Makora Road off-ramp. The bridges will introduce additional transport infrastructure adjacent to, and across, the existing SH16 corridor which will be highly visible due to their scale. Refer to Figure 4-3 for the proposed layout at Royal Road.

The new bridge over SH16 at Royal Road introduces a new infrastructure element into this location which is not incongruous with the area. It will form an element which is parallel and of a similar scale to the existing Royal Road bridge. The bridge and the carriage way through to Widmore Drive will emphasise the presence of the road connections although increasing the width of the road corridor in this location.

From the east of SH16, the Royal Road bridge will be visible from the existing residential and commercial properties located along Royal Road, Widmore Drive, Moire Road and Landsdale Place. It will be seen within the context of the surrounding roading infrastructure and will not be out of context. In my opinion, any adverse effects on landscape character and visual amenity from the Royal Road bridge will be low. This level of effect is due to its form and alignment, its proximity to the existing bridge, and the visual catchment.

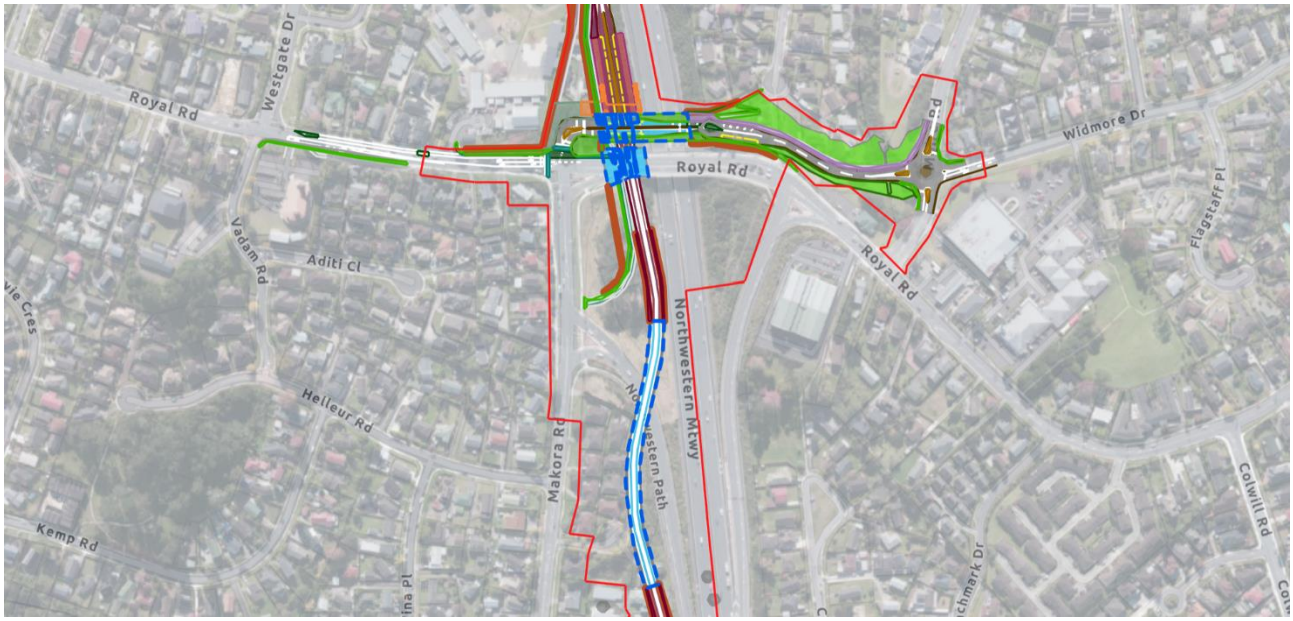

Figure 4-3: Plan of the Royal Road station location, busway carriageway, underpass, new bridge over SH16 and the Makora Road viaduct bridge

The viewing audience of the viaduct over the Makora Road off-ramp includes users of SH16, the off-ramp itself, Royal Road and adjacent residential properties. The most sensitive viewing audiences are the residential properties in close proximity to the west of the bridge accessed from Kasia Close, Marbella Drive, Ginders Drive and Makora Road. From these locations the viaduct be prominent but will form part of the SH16 transport corridor. In my opinion, any adverse effects on landscape character and visual amenity from the viaduct over the Makora Road off-ramp will be low and low-moderate, respectively. Figure 4-4 illustrates the western side of SH16 and the location of the Makora Road off-ramp.

Figure 4-4: Looking south from the Royal Road bridge toward the location of the elevated viaduct over the Makora Road off-ramp (M. Jones)

The Te Atatū Road northern connection will result in a new raised landform within Ōrangihina Harbourview Park in order to gain the levels required for the bridge. Through normal landscape and construction practice the new landform will be integrated back into the surrounding environment which will assist with visual integration and softening. However, the new landform and bridge will introduce new elements of scale into this context and will be visible from users of SH16, Te Atatū Road and from the residential properties which front the Proposed Designation boundary to the north (accessed off Titoki Street and Te Atatū Road), and south (accessed from Royal View Road and Alwyn Avenue). The proposed bridge alignment is logical (albeit perpendicular to Te Atatū Road) to make the connections with the areas to the north and south of SH16 (refer to Figure 4-5). At Te Atatū Road there will be ‘stacking’ of bridges and carriageway elements (when combined with existing) and it will be seen in the context of the existing overhead transmission lines. For the new bridge over Te Atatū Road and the associated landform, in my opinion, potential adverse effects on landscape character and visual amenity from the Te Atatū Road northern connection are assessed to be low-moderate and moderate, respectively.

Figure 4-5: Plan of the Te Atatū station location, proposed new bridge over SH16 and the extent of the Proposed Designation

Stations

The stations will form integrated components along the Project, which are consistent, complementary and connected with the SH16 transport corridor. Many of the effects related to the respective stations (post-construction) have been outlined under the assessment of the 'Whole of Project' above. The key common assessment matters for the stations include:

- The Project will introduce stations adjacent to SH16 which connect with the wider transport network;
- The scale and form of the proposed stations per the Indicative Design will be consistent with the anticipated character and land use along the transport corridor. They will not be out of context or unexpected within this environment; and
- The stations will be visible from SH16, local roads, proximate residential, commercial and industrial properties, and open spaces. They will form expected elements within this urban environment and will be seen as new, complementary transport infrastructure in an area which is characterised by the presence of SH16. They will form part of an integrated transport network. They will also be seen in the context of development associated with the surrounding land uses.

Overall, in my opinion, adverse effects related to landscape character and visual amenity are assessed to be low for the respective stations.

4.4 Waterview Interchange (east of causeway) to Ian McKinnon Drive

4.4.1 Assessment of operational effects

4.4.1.1 Busway between Waterview Interchange and Ian McKinnon Drive

The operation of the Project between the Waterview Interchange and Ian McKinnon Drive includes a number of different components along Indicative Design such as the busway carriageway, an underpass, bridges and two stations. As per previous sections of this report, Section 4.2 above outlines effects related to the Project. Further site-specific effects are outlined below.

Underpass at Carrington Road

The operation of the underpass at Carrington Road will present a new transport element into the localised urban environment which is already characterised by transport infrastructure and the town centre. As such, it will not be out of character with the land use and will be viewed in this context with the carriageway aligning adjacent to SH16. Visibility of the underpass will be limited, restricted to users of SH16 and the residential properties to the south of SH16. In my opinion, any potential adverse effects on landscape character and visual amenity for the underpass at Point Chevalier will be low.

Bridges

New bridges are proposed along Carrington Road across SH16, parallel to Great North Road at Western Springs, over Mountain View Road and over SH16 to connect through to Ian McKinnon Drive. These elements will introduce new transport infrastructure adjacent to, and in some cases across, the existing SH16 corridor. The bridges over SH16 and the viaduct structure will be highly visible due to their scale.

Similar to the new bridge across SH16 at Royal Road, the new bridge over SH16 at Carrington Road will introduce a new infrastructure element into this location. It will span parallel to the existing bridge and will be of a similar scale. The bridge and the carriage way reconfigure the road alignment and connection into the existing road patterns to the north and south and will emphasise the presence of the road connections. It will also increase the width of the road corridor in this location. Refer to Figure 4-6.

From the north of SH16, the Carrington Road bridge will be visible from users of Great North Road and to a lesser extent from the commercial properties within the Point Chevalier town centre. From the south of SH16, it will be visible from the residential properties which align and front the southern side of SH16 accessed from Sutherland Road, from the Unitec site to the southwest and from users of the Northwest Shared Path. Where visible it will be seen in the context of the surrounding roading infrastructure (SH16 and existing bridge) and will not be out of context. In my opinion, any adverse effects on landscape character and visual amenity from the new Carrington Road bridge will be low due to its form and alignment, proximity to the existing bridge, and the visual catchment.

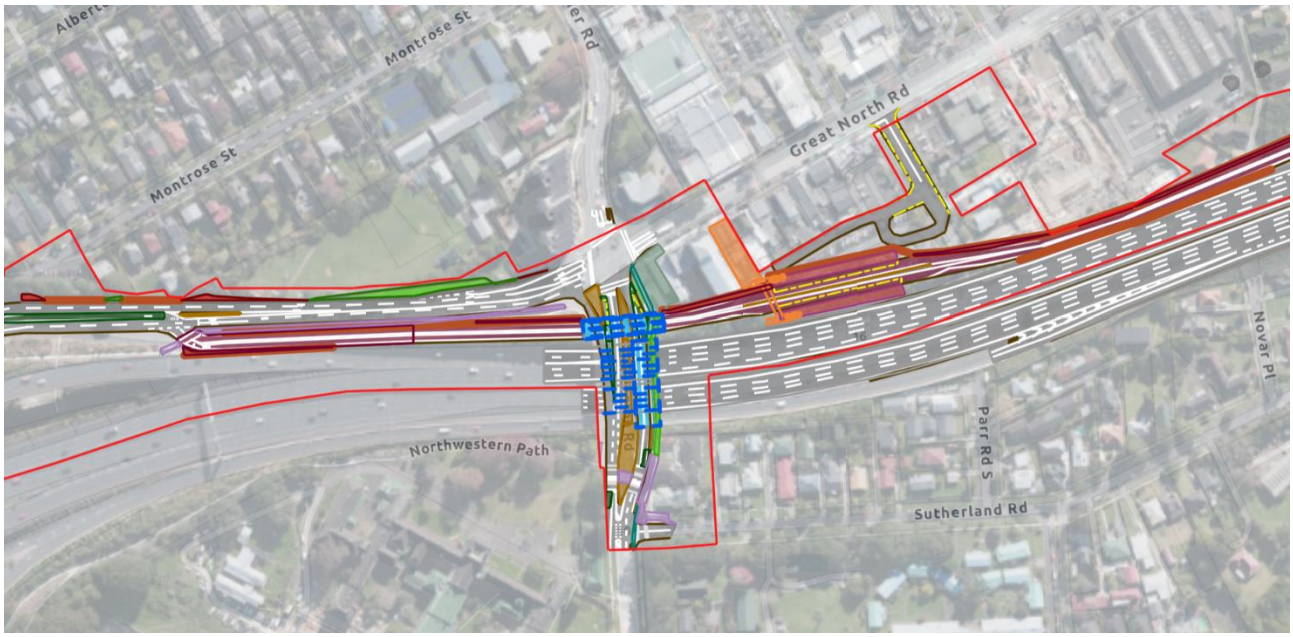

Figure 4-6: Plan of the Point Chevalier station location, busway carriageway, underpass and proposed new bridge over SH16

The proposed new viaduct bridge (refer to Figure 4-7 below) which spans parallel to Great North Road will also introduce a new elevated transport element into this urban environment. From SH16 the new viaduct will be seen as part of the infrastructure of the highway. However, on Great North Road there is a more street-based character, and the scale and form of the bridge will be inconsistent with the area. Viaduct structures are not common elements across Auckland's transport network with limited examples in locations such as Pakūranga, Newmarket, Sylvia Park, motorway interchanges and the North Shore for a short section of the Northern Busway. The alignment of the viaduct is parallel to the SH16 corridor, so it will be broadly in

keeping with the character of existing transport infrastructure. Although the viaduct will be viewed in that context, its scale, form and length will be less consistent with the existing pattern of transport infrastructure and urban development in the area. The addition of a viaduct will result in multiple layers and 'stacking' of bridges, roads and the SH16 carriageway – particularly where it spans over St Lukes Road.

In relation to the urban pattern of the Western Springs area, although there is roading infrastructure present, the new bridge has the potential to result in a visual and physical division of the area. However, the retention of the existing row of trees which includes the established Pōhutukawa trees along front Great North Road will provide visual softening and separation from the viaduct structure. Overall, in my opinion, adverse effects on landscape character and visual amenity for this viaduct bridge element are assessed to be moderate. Should the row of Pōhutukawa trees fronting Great North Road be removed, this would result in a greater level of adverse effects.

Figure 4-7: Plan of the proposed new viaduct bridge (blue) aligned with SH16 and Great North Road, and the Western Springs station (right of image)

The new bridge over Mountain View Road (accessed off Ivanhoe Road) will have a very limited viewing audience, with effects on landscape character and visual amenity in my opinion assessed to be low.

The new bridge over SH16 (to Ian McKinnon Drive) (refer to Figure 4-8) will be a new elevated structure in the localised environment and road corridor spanning on an angle across SH16 and over the Arch Hill footbridge. It will be viewed in the context of existing elements such as the Newton Road overbridge, existing on/off-ramps, overhead gantries and the footbridge. The new bridge and its connection through to Ian McKinnon Drive will be highly visible from users of SH16 (including the on/off-ramps), Newton Road, Te Uru Karaka Newton Central School and the residential properties which front the Proposed Designation and SH16 corridor to the north (accessed from Kirk Street and Partridge Street) and south (accessed from Takau Street, Haslett Street and Bright Street). For this new bridge, in my opinion, potential adverse effects on landscape character and visual amenity are assessed to be low-moderate.

Figure 4-8: Plan of the new bridge (blue) over SH16 which connects through to Ian McKinnon Drive in the context of the existing infrastructure and elements in the localised context

Stations

The stations will form integrated components along the Indicative Design, which is consistent, complementary and connected with the SH16 transport corridor. Effects related to the respective stations (post-construction) have been outlined under the 'Whole of Project' assessment in Section 4.2 and for the previously assessed stations (west of the Whau River) within Section 4.3.1.1 above. Similarly, adverse effects related to landscape character and visual amenity are assessed to be low for the Point Chevalier and Western Springs stations.

4.4.2 Sensitivity testing of Indicative Design

I understand the Indicative Design may move within the Proposed Designation. The Proposed Designation does not allow for large horizontal shifts of the Indicative Design. Vertical shifts are possible. As such, assessment of potential effects relating to the Proposed Designation 'envelope' is required.

Vertical alignment of grade separation (bridges vs underpasses)

There will be greater aesthetic coherence if the busway is consistent with the SH16 alignment where it passes under local roads. Such an approach would be consistent with the at grade alignment of the transport corridor and the normal pattern of local roads passing over the corridor.

There is greater potential for adverse effects on visual amenity values should the busway pass over the local road on a flyover in such instances, because:

- The flyover would appear aesthetically incoherent compared to the motorway;
- The 'stacking' up of multiple levels of grade separation would add to visual clutter compared to a simpler two-level grade separation;
- The more complex arrangement and varied vertical alignment would likely appear incongruous; and
- Such adverse effects would be amplified by the greater visibility of the elevated structures.

Overall, busway overpasses are less likely to have adverse effects on visual amenity values, or aesthetic coherence, where the overpass appears a more natural solution. That may be because the busway is on a different horizontal alignment, or is otherwise differentiated from the motorway.

There are a number of specific areas and components of the Project along the Indicative Design with greater sensitivity to vertical movement, which are assessed below.

Westgate busway underpass or viaduct

Should an elevated busway viaduct over Fred Taylor Drive at Westgate be constructed instead of an underpass, this viaduct would be less consistent with the scale and form of urban development and the existing transport infrastructure in the area. It would span parallel with SH16 and be viewed in this context but would result in multi-layered and 'stacked' infrastructure elements. Although development and urban intensification is anticipated in the Westgate area (noting the Business: Metropolitan zoning), a new bridge would present an additional element, resulting in greater visual and physical division of the area (beyond that of the existing SH16 corridor).

In order to get clearance over Fred Taylor Drive, a viaduct would be 'working against' the rising topography as Fred Taylor Drive is at a localised high point in the area and would result in the viaduct requiring increased length to gain the clearance required. It would also require the existing 'yellow bridge' which spans across SH16 connecting to Westgate (south of Fred Taylor Drive) to be deconstructed and reconstructed as part of the works. Dependent on the future design, an elevated viaduct over Fred Taylor Drive would result in moderate or moderate-high adverse effects on landscape character and visual amenity in the event that the Westgate shopping centre does not develop to the full potential available under the AUP.

Access through Royal Road, Lincoln Road and Te Atatū Road

Should the proposed underpasses at Royal Road, Lincoln Road and Te Atatū Road take the form of bridges/elevated viaducts, for similar reasons to those outlined above they would result in moderate or moderate-high adverse effects on landscape character and visual amenity. This increase in the level of effects is due to the greater level of their visibility and the potential scale, length and form of these elements in their localised context.

Access through Point Chevalier

Should a bridge/elevated viaduct over Carrington Road be constructed instead of an underpass, adverse effects on landscape character and visual amenity would increase to moderate-high. This assessment is due to the increased visibility and the potential scale, length and incongruous form of this element in the localised urban context, adjacent to an established town centre environment. The elevated structure would extend to the west toward the Waterview Interchange and east toward the Terrace Housing and Apartment Building (THAB) zoned properties south of Great North Road.

Western Springs viaduct

The Indicative Design includes an elevated viaduct that avoids the identified ONF (ID132 North-west Motorway lava flow) which is present to the east and west of the St Lukes Road bridge. Should the Indicative Design instead be constructed 'at grade', in my opinion, this would reduce potential adverse effects on both landscape character and visual amenity to low, however the alignment would not allow unimpeded movement through the area due to the requirement to avoid St Lukes Road.

At grade or raised alignment

A high proportion of the Indicative Design has the busway carriageway 'at grade' which although forming an additional element adjacent to the SH16 corridor it will be barely discernible from many locations and where visible will be seen in the context of and consistent and complementary to SH16. However, if the sections of the carriageway in the Indicative Design which are currently 'at grade' were to be raised above the adjacent SH16 carriageway, this would be inconsistent with the form and pattern in the urban landscape and, in my opinion, would result in adverse effects which are up to low-moderate, depending on the specific location.

Bridges over streams/creeks or culverts

The Indicative Design bridges over the respective streams (Tōtara, Rarawaru and Meola), which will minimise any potential adverse effects on the natural character values of these catchments. An alternative to bridging would be proposing culverts under the busway. Culverts would adversely affect the natural character values of these catchments by disrupting the natural water flow, their form and vegetation patterns. In my opinion, the introduction of culverts would increase potential adverse effects on the natural character of the streams to moderate.

Alternative locations of stations

There is little opportunity to change the location of the stations within each of their discrete locations within the designation boundary through the developed / detailed design phase of the Project, due to the limited width of the Proposed Designation. The stations would remain adjacent to SH16 consistent with the Indicative Design. Ideally each station would remain proximate to existing arterial roads (which cross SH16) to provide greater connectivity with the wider urban pattern and transport network. In my opinion, a change to the location of a station(s) would result in low effects on the landscape character and visual amenity values.

Conclusion

Although the assessment of effects ratings for each of these respective design scenarios may vary as a result of the sensitivity testing, this does not alter my recommendations or materially affect my overall conclusions and support for the Project.

5. Recommended measures to avoid, remedy or mitigate effects

I recommend the Project implements landscaping as normally carried out as part of major transport infrastructure works. The landscaping should include contouring of earthworks and spoil, making good around the busway, planting plans to provide screening from adjacent properties where practicable, softening such structures as noise walls, and naturalising the margins of stormwater ponds and natural waterways.

The design of landscape planting and structures should be informed by NZTA guidance as provided in *Bridging the Gap: NZTA Urban Design Guidelines (2013)*, the *Waka Kotahi Bridge Manual (2013)* and *NZTA Landscape Guidelines (2018)* documents (or any subsequent updates).

In relation to construction:

- Fencing and screening around site boundaries is generally implemented as normal practice by contractors on site for health and safety reasons. Noise walls may also be required during the construction phase to assist with the management of construction noise. These elements will assist in providing visual mitigation for adjacent properties during the construction phase of the Project. While screening may introduce a new visual feature adjacent to properties during construction, it will be temporary.
- Similarly, for lighting, should there be a requirement for night works (e.g., to time works such as constructing bridges, to minimise disruption to SH16 during the day), construction lighting following typical practice by contractors will be required and lighting would be confined to highly localised areas (e.g., the areas being worked on at the time).

Specific mitigation

In relation to the trees which front Great North Road (particularly the row of Pōhutukawa trees), I recommend these are retained where practicable during both the construction phase and long term (post construction) as they add to the character of the location and will provide visual softening and separation of the proposed works and viaduct bridge long term.

In relation to the preparation of a landscape plan, as above I recommend the Project implements landscaping as normally carried out as part of major transport infrastructure works. To this end I recommend a condition which incorporates that the Requiring Authority shall prepare landscape plan for each stage of the Project. The landscape plan shall have regard to:

- NZTA Landscape Guidelines 2018 (or any subsequent updates);
- Bridging the Gap: NZTA Urban Design Guidelines 2013 as it relates to landscape treatments; and shall
- Integrate mitigation required by other conditions of the Project designation and resource consents; and
- Any previously completed stage of the Project.

Assuming the above normal practice landscape and construction works measures are implemented and landscape plans are prepared then, in my opinion, there are no other adverse landscape and natural character effects arising from the Project that are assessed as being sufficiently significant such that they would warrant specific mitigation.

6. Conclusion

Overall, from a landscape character, visual amenity and natural character perspective, the Project is appropriate in this location connecting west Auckland with the central city. It will provide new transport infrastructure adjacent to and will complement the existing SH16 corridor.

The Project will result in a number of positive outcomes and effects from a landscape assessment perspective, however with a Project of this scale and the different components proposed along its Indicative Design there will be some unavoidable adverse effects, particularly during the construction phase and for a number of the larger bridging structures. Any adverse effects relating to these matters are localised to the areas proximate to the Project, with construction effects being temporary.

For the reasons outlined, in my opinion the Project can be supported in relation to landscape character, visual amenity and natural character.