

# North

# Assessment of

# Arboricultural Effects

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Version 1.0

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## Glossary

Acronym/Term	Description
<b>A2B</b>	Airport to Botany Rapid Transit Project
<b>AEE</b>	Assessment of Effects on the Environment
<b>AT</b>	Auckland Transport
<b>AUP:OP</b>	Auckland Unitary Plan: Operative in Part
<b>CEMP</b>	Construction Environmental Management Plan
<b>DP</b>	District Plan
<b>FUZ</b>	Future Urban Zone
<b>GIS</b>	Geographic Information System
<b>MDRS</b>	Medium Density Residential Standards
<b>NoR</b>	Notice of Requirement
<b>NoR 1</b>	New Rapid Transit Corridor between Albany and Milldale
<b>NoR 2</b>	New Milldale Station and Associated Facilities
<b>NoR 3</b>	New Pine Valley East Station and Associated Facilities
<b>NoR 4</b>	SH1 Improvements Package
<b>NoR 5</b>	New SH1 crossing at Dairy Stream
<b>NoR 6</b>	New Connection between Milldale and Grand Drive
<b>NoR 7</b>	Upgrade to Pine Valley Road
<b>NoR 8</b>	Upgrade to Dairy Flat Highway between Silverdale and Dairy Flat
<b>NoR 9</b>	Upgrade to Dairy Flat Highway between Dairy Flat and Albany
<b>NoR 10</b>	Upgrade to Wainui Road
<b>NoR 11</b>	New connection between Dairy Flat Highway and Wilks Road
<b>NoR 12</b>	Upgrade and Extension to Bawden Road
<b>NoR 13</b>	Upgrade to East Coast Road between Silverdale and Ō Mahurangi Penlink (Redvale) Interchange
<b>NPS:UD</b>	National Policy Statement on Urban Development 2020
<b>RMA</b>	Resource Management Act 1991
<b>RP</b>	Regional Plan
<b>RTC</b>	Rapid Transit Corridor
<b>SEA</b>	Significant Ecological Areas
<b>SH1</b>	State Highway 1
<b>Te Tupu Ngātahi</b>	Te Tupu Ngātahi Supporting Growth Alliance
<b>The Projects</b>	Te Tupu Ngātahi North Projects

Acronym/Term	Description
<b>THAB</b>	Terrace Housing and Apartment Buildings
<b>TMP</b>	Tree Management Plan
<b>ULDMP</b>	Urban Landscape and Design Management Plan
<b>WK</b>	Waka Kotahi NZ Transport Agency

## Executive Summary

Te Tupu Ngātahi Supporting Growth is undertaking the route protection phase for the North Auckland transport projects (North Projects), on behalf of Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (WK). Te Tupu Ngātahi is now preparing Notices of Requirement (NoRs) under the Resource Management Act 1991 (RMA) for route protection of the North Projects. There are 13 NoRs proposed for the North Projects.

This report comprises an Assessment of Arboricultural Effects for the North Projects.

### Methodology

This Report has been prepared following site visits that were undertaken for the collection of suitable data to inform the Assessment of Arboricultural Effects. The site visits and desktop review involved recording details of all relevant trees (as described further in this Report) within the (NoRs).

Trees were recorded singularly, or in groups where logical groupings could be made based on species, configuration and/or size. Sufficient information was gathered to allow an assessment of the existing environment and consideration of the future environment. Tree details are presented in table and in GIS mapping formats (contained in the each specific section of this Report).

The existing environment for the majority of the Project corridors is primarily rural or Future Urban zoned land (FUZ), with the exception of pockets of residentially zoned land near existing town centres such as Ahutoetoe Road (NoR 1 & 2), Grand Drive (NoR 6) and the northern end of East Coast Road (NoR 13). Tree cover associated with the existing urbanised area typically includes plantings of amenity trees and riparian vegetation.

The future environment is likely to change over the next 10 – 30 years as land is rezoned from rural to urban and intensification occurs along the corridors as a result of recent changes in national policy direction and changes to the RMA. This will likely result in a reduction of trees adjoining the corridor, on business and residentially zoned land, which are not afforded any protection in the Auckland Unitary Plan: Operative in part (AUP:OP).

A summary of the trees or vegetation requiring removal for each NoR where relevant is provided in the table below with future discussion of the affected vegetation outlined in Sections 5 to 18 of this Report:

## Summary of Project wide tree effects

NoR	Number of protected trees/ requiring removal	Protected Mass planted areas/groups of vegetation requiring removal
NoR 1  New Rapid Transit Corridor (RTC) between Albany and Milldale, including new walking and cycling path between Bawden Road and Dairy Flat Highway	0	2
NoR 2  New Milldale Station and associated facilities	0	2  (a portion of the two (2) groups is also within NoR 1)
NoR 3  New Pine Valley East Station and associated facilities	0	0
NoR 4  SH1 Improvements  (alteration to designations 6761, 6760, 6759, 6751)	0	3  (A portion of one (1) of the three groups is also within NoR 1)
NoR 5  New SH1 crossing at Dairy Stream	0	0
NoR 6  New connection between Milldale and Grand Drive	0	0
NoR 7  Upgrade to Pine Valley Road	0	0
NoR 8  Upgrade to Dairy Flat Highway between Silverdale and Dairy Flat	1	2
NoR 9	1	2

NoR	Number of protected trees/ requiring removal	Protected Mass planted areas/groups of vegetation requiring removal
Upgrade to Dairy Flat Highway between Dairy Flat and Albany		
NoR 10 Upgrade to Wainui Road	2	0
NoR 11 New connection between Dairy Flat Highway and Wilks Road	0	0
NoR 12 Upgrade and extension to Bawden Road	0	0
NoR 13 Upgrade to East Coast Road between Silverdale and Ō Mahurangi Penlink (Redvale) Interchange	7	3
Total	11	14

Given that the Projects are to be delivered in 10 – 30 years' time, validation of this assessment at the time of implementation is recommended to ensure the current conditions are still relevant. Any future tree removal, tree planting or mass planted vegetation should be assessed at that time, with this Report intended to provide a baseline survey.

Mitigation measures commensurate with the anticipated effects on the environment from impacts on protected trees have been considered, with the aim of avoiding, remedying and mitigating effects on trees. It is recommended that a Tree Management Plan (TMP) be developed where construction work impacts on trees and groups of trees that are protected under the District Plan provisions (noting trees protected under Regional Plan provisions will be addressed as part of a future resource consent process). Replacement planting protocols are proposed to be developed further as part of the TMP where protected trees are to be removed.

Opportunities for replanting within the berms of the proposed cross sections of the proposed road upgrade projects and RTC station areas will provide significant mitigation of effects arising from tree removal associated with the Projects. The long-term outcome of comprehensive street tree planting will be more trees in the public realm and increased amenity value within the public transport corridors.

Overall, the effects on trees protected by the District Plan will be mitigated by replacement planting within the corridor and on adjacent land within the designation boundaries.

### Summary of Assessment of Effects and Recommendations

Effect	Assessment	Recommendation
<b>Construction</b>		
Removal of trees to enable the Projects	A total of <b>11</b> individual trees and a portion of <b>14</b> tree groups are proposed for removal as part of the Projects.	<p>A validation assessment at the time of implementation is recommended to ensure the current conditions are still relevant. Any future tree removal, tree planting or mass planted vegetation should be added and/or assessed at that time, with this Report intended to provide a baseline survey. Given this, it is recommended that a TMP be prepared.</p> <p>A tree transplant assessment is recommended for any trees considered worthy of relocation as part of the Projects.</p>
Effects on retained vegetation	Works are proposed within the protected root zones of retained vegetation at the edge of the corridor.	It is recommended that a TMP be prepared prior to construction to address future tree removals, plantings and growth of areas of vegetation beyond the scope of this Report.
Replacement of trees lost in order to construct the Projects	Replacement planting is recommended at a minimum of 2:1 for removed individual trees and a minimum of like for like (in m <sup>2</sup> ) of mass vegetation	<p>A detailed landscape plan with replacement planting at a minimum ratio of 2:1 for individual trees and like for like (in m<sup>2</sup>) for mass vegetation is to be prepared as part of the Urban Landscape Design Management Plan (ULDMP) and detailed design.</p> <p>It is recommended that arboricultural input be sought at the detailed design phase.</p>

Effect	Assessment	Recommendation
		<p>The specific tree locations and/or tree species are to be reviewed and input provided in order to achieve the best outcome from a long term perspective.</p>
<p><b>Operation</b></p>		
<p>Tree trimming or alteration</p>	<p>Replacement trees may require maintenance to retain sight lines and the overhead and lateral clearances of general traffic lanes and the high quality walking and cycling facilities</p>	<p>New street trees or mass planted vegetation (trees specifically) are planted no closer to the future general traffic lanes than 1 m.</p>

# 1 Introduction

This arboricultural assessment has been prepared for the Te Tupu Ngātahi Supporting Growth Alliance, North Auckland Projects to support 13 Notices of Requirement (NoRs) for Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (WK) as requiring authorities under the Resource Management Act 1991 (RMA). The notices are to designate land for future strategic transport corridors and two rapid transit corridor stations to enable the future construction, operation and maintenance of transport infrastructure in the North area of Auckland. The North area extends from Albany to Ōrewa and via the growth areas of Dairy Flat, Silverdale West, Wainui East, and Redvale (refer to Figure 1). The North Projects are summarised in Section 2.

This report addresses the arboricultural effects of the North Projects identified in section 5.

Refer to the main Assessment of Effects on the Environment (AEE) for a more detailed project description.

## 1.1 Purpose and Scope of this Report

This arboricultural assessment forms part of the suite of technical reports prepared to support the Assessment of Effects on the Environment (AEE) for the North Projects. Its purpose is to inform the AEE that accompanies the North Network of Notices of Requirement (NoRs) for Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (WK).

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

The key matters addressed in this report are as follows:

1. Identify and describe the protected trees and vegetation context of the North Projects area;
2. Identify and describe the actual and potential arboricultural effects of each Project corridor
3. Recommend measures as appropriate to avoid, remedy or mitigate actual and potential arboricultural effects (including any conditions/management plan required) for each Project corridor; and
4. Present an overall conclusion of the level of actual and potential arboricultural effects for each Project corridor after recommended measures are implemented.

## 1.2 Report Structure

The report is structured as follows:

- a) Project overview with a summary of the North Projects in section 2;
- b) Overview of the methodology used to undertake the assessment and identification of the assessment criteria and any relevant standards or guidelines in section 3;
- c) Identification and description of the existing and likely future arboricultural environment in section 4;
- d) Description of the actual and potential positive effects on trees and vegetation of the Project in section 5.1;

- e) Description of the actual and potential adverse arboricultural effects of construction of the Project, including recommended measures to avoid or mitigate potential adverse effects, in section 5.2 and 5.3;
- f) Description of the actual and potential adverse arboricultural effects of operation of the Project, including recommended measures to avoid or mitigate potential operation adverse effects in section 5.4 and 5.5;
- g) Overall conclusion of the level of potential adverse arboricultural effects of the Project after recommended measures are implemented in section 19.

This report should be read alongside the AEE, which contains further details on the history and context of the Project. The AEE also contains a detailed description of works to be authorised for the North Projects as a whole and each NoR, and likely staging and the typical construction methodologies that will be used to implement this work. These have been reviewed by the author of this report and have been considered as part of this assessment of arboricultural effects. As such, they are not repeated here, unless a description of an activity is necessary to understand the potential effects, then it has been included in this report for clarity.

## 2 Projects overview

An overview of the North Projects is provided in Figure 1 below, with a brief summary of the North Projects provided in Table 2-1.

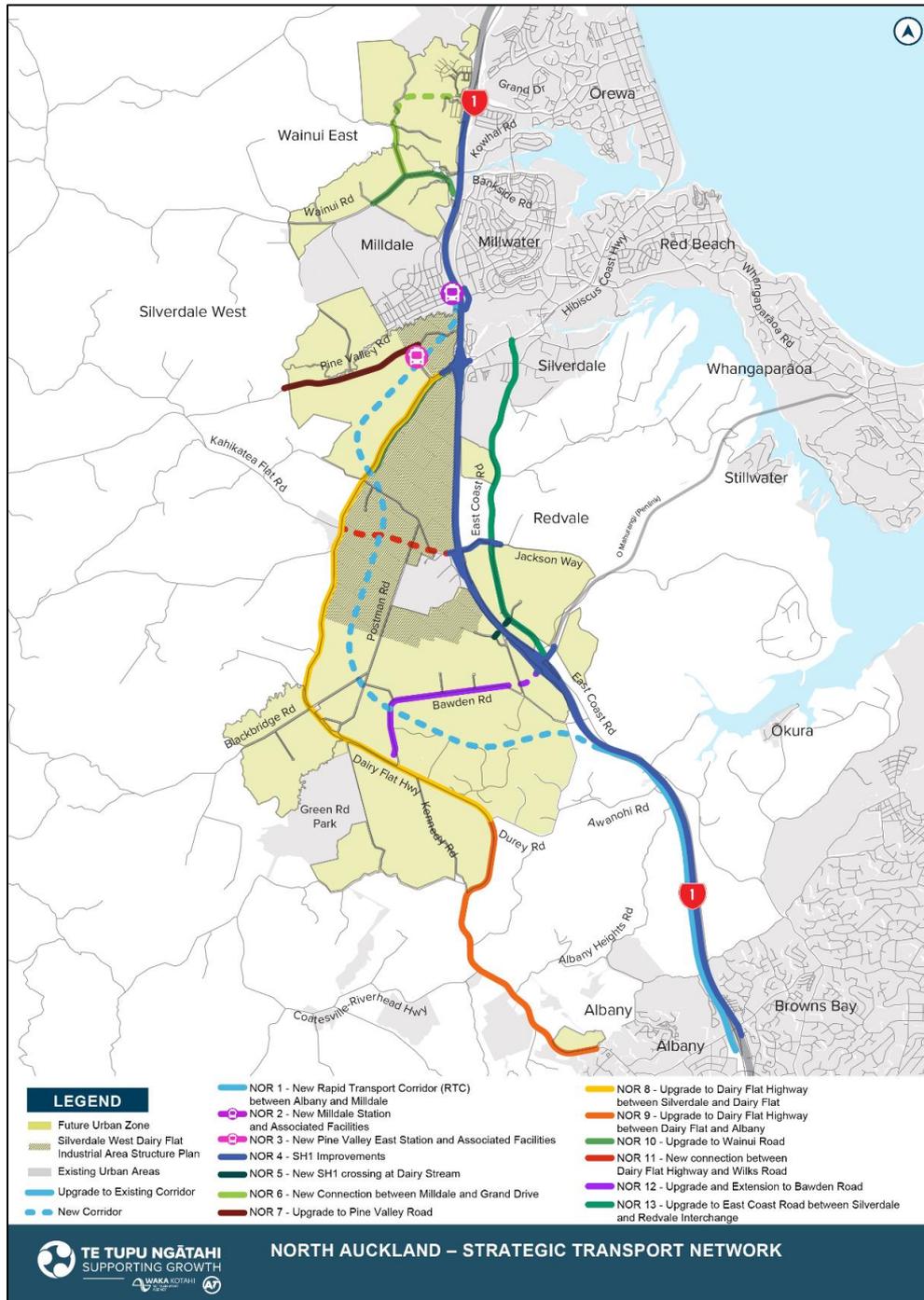


Figure 1 Map showing the location of each Project within the North growth area

Table 2-1 North Project Summary

NoR	Project	Description	Requiring Authority
1	New Rapid Transit Corridor (RTC) between Albany and Milldale, including new walking and cycling path between Bawden Road and Dairy Flat Highway	<ul style="list-style-type: none"> <li>• A 16km-long RTC corridor for public transport and active mode purposes</li> <li>• An 80km/hr operating speed (other than around stations)</li> <li>• Walking and cycling facilities along some of its length from Bawden Road to the point where the RTC crosses Dairy Flat Highway</li> <li>• Grade separated crossings at intersections with other key transport corridors.</li> <li>• The NoR will overlap with the existing motorway designation and SH1 improvements project over some of the length (between Albany and around Bawden Road)</li> </ul>	WK
2	New Milldale Station and Associated Facilities	<ul style="list-style-type: none"> <li>• A new rapid transit station and associated facilities, including:</li> <li>• Station building with associated station facilities</li> <li>• Cycle and shared mobility device parking provision</li> <li>• Local bus layover and stop provision</li> <li>• Taxi and ride share drop-off facilities.</li> </ul>	WK
3	New Pine Valley East Station and Associated Facilities	<ul style="list-style-type: none"> <li>• A new rapid transit station and associated facilities, including</li> <li>• Station building with associated station facilities on structure over New Pine Valley Road with associated stairs and lift towers</li> <li>• Cycle and shared mobility device parking provision</li> <li>• Local bus layover and stop provision</li> <li>• Layover facilities for bus based RTC mode</li> <li>• Taxi and ride share drop-off facilities</li> <li>• Park and ride facility (up to 500 car parking spaces)</li> <li>• Upgrade to Old Pine Valley Road along station frontage</li> </ul>	WK
4	SH1 Improvements (alteration to designations 6761, 6760, 6759, 6751)	<ul style="list-style-type: none"> <li>• Widening the SH1 carriageway from two lanes to three lanes in each direction from the Lonely Track Road overbridge to the Silverdale interchange</li> <li>• Upgraded Ō Mahurangi Penlink (Redvale) Interchange (upgrading this proposed interchange to add north facing ramps)</li> <li>• New Wilks Road interchange (south facing ramps only)</li> <li>• Silverdale interchange upgrade for east-west capacity</li> <li>• New walking and cycling path along SH1 - an approximately 16 km long active mode corridor along one side of SH1 from Albany to Grand Drive (starts on</li> </ul>	WK

NoR	Project	Description	Requiring Authority
		<p>east of SH1 at Oteha Valley Road, crosses to west of SH1 around Bawden Road and then back to east around Silverdale interchange.)</p> <ul style="list-style-type: none"> <li>• Silverdale to Highgate Active mode connection - connection from the strategic active mode corridor at Silverdale to Highgate Parkway</li> <li>• Wainui interchange upgrade for active modes – new bridge for active modes across SH1</li> </ul>	
5	New SH1 crossing at Dairy Stream	<ul style="list-style-type: none"> <li>• A new two-lane urban arterial connection and SH1 motorway overbridge between Top Road and East Coast Road near Huruuru (Dairy Stream)</li> <li>• Active mode facilities on both sides of the carriageway</li> <li>• The overbridge would cross six lanes of motorway, a two-lane link road to the motorway service centre and the new walking and cycling path on SH1 (refer to NoR 4 above)</li> </ul>	AT
6	New Connection between Milldale and Grand Drive	<ul style="list-style-type: none"> <li>• A new two-lane urban arterial with separated walking and cycling facilities on both sides between Wainui Road (Milldale) and the western edge of the Ara Hills development in Ōrewa. This will connect through to Grand Drive at SH1 via a new 30m road corridor to be vested by the Ara Hills developer.</li> </ul>	AT
7	Upgrade to Pine Valley Road	<ul style="list-style-type: none"> <li>• An upgrade to Pine Valley Road (FUZ section) between Poynter Lane and Argent Lane to a two-lane urban arterial with separated walking and cycling facilities on both sides</li> </ul>	AT
8	Upgrade to Dairy Flat Highway between Silverdale and Dairy Flat	<ul style="list-style-type: none"> <li>• An upgrade to a 4-lane urban arterial on sections where FUZ land is located both sides of the road (between Silverdale interchange and Wilks Road and between Richards Road and Durey Road), with separated walking and cycling paths on both sides of the corridor</li> <li>• Upgrade to a 2-lane rural arterial between Wilks Road and Richards Road – with a swale on the west and separated walking and cycling on the east</li> <li>• Upgraded bridge over Huruuru (Dairy Stream)</li> </ul>	AT
9	Upgrade to Dairy Flat Highway between Dairy Flat and Albany	<ul style="list-style-type: none"> <li>• An upgrade to Dairy Flat Highway between Dairy Flat and Albany for active mode and safety improvements including a central wire rope barrier and side barriers.</li> <li>• The widened Road corridor will retain two lanes (one in each direction) and will also retain crawler lanes as currently located</li> </ul>	AT

NoR	Project	Description	Requiring Authority
		<ul style="list-style-type: none"> <li>• Cycle path added on the western side of the carriageway between Durey Road and the Coatesville Riverhead Highway Roundabout and then on the eastern side between the Roundabout and Te Wharau (Albany Village)</li> </ul>	
10	Upgrade to Wainui Road	<ul style="list-style-type: none"> <li>• Upgrade to Wainui Road to a 2-lane urban arterial between Lysnar Road and the new Argent Lane including a widened road corridor to 24 m</li> <li>• Separate, dedicated, walking and cycling facilities on AT both sides of the carriageway</li> <li>• Upgraded bridge over Waterloo Creek (tributary to Ōrewa River)</li> </ul>	AT
11	New connection between Dairy Flat Highway and Wilks Road	<ul style="list-style-type: none"> <li>• Segment 1 (Kahikatea Flat Road to Postman Road Segment) will feature a 2-lane urban arterial (24 m wide corridor) with separated walking and cycling facilities on both sides.</li> <li>• Segment 2 (Postman Road to SH1) features a 4-lane urban arterial (30 m wide corridor) with separated cycling and walking facilities, two lanes of general traffic and two-lanes where priority may given to freight traffic.</li> </ul>	AT
12	Upgrade and Extension to Bawden Road	<ul style="list-style-type: none"> <li>• Upgrade and extension to Bawden Road. This will include a 30m four-lane road corridor with walking and cycling facilities on both sides. Two lanes for general traffic and two lanes for a frequent transit network (likely bus lanes).</li> <li>• Road intersects with the RTC. The road is likely to go under the RTC (grade separated crossing).</li> </ul>	AT
13	Upgrade to East Coast Road between Silverdale and Ō Mahurangi Penlink (Redvale) Interchange	<ul style="list-style-type: none"> <li>• Upgrade to the footpath on the west side and new footpath on east side between Hibiscus Coast Highway and Silverwater Drive.</li> <li>• Segment 1 (from Silverwater Drive to Newman Road) features a two-lane urban arterial upgrade (24 m) with separated walking and cycling facilities on both sides</li> <li>• Segment 2 (from Newman Road to Jackson Way, where one or both sides is rural) has a shared path to the west only, with no works to the existing carriageway and no swales.</li> <li>• Segment 3 (from Jackson Way to the end of the FUZ) features a 24 m wide cross section with walking and cycling facilities on both sides.</li> </ul>	AT

## 3 Assessment methodology and statutory context

### 3.1 Preparation for this Report

This Report has been prepared in accordance with the typical arboricultural assessment process of large-scale infrastructure projects.

We have also drawn on experience gained as part of the Airport to Botany Rapid Transit Project (A2B) and Warkworth Te Tupu Ngātahi Projects to assist with the Projects.

### 3.2 Methodology

The Arboricultural Assessment methodology involved recording details of all trees/vegetation that may be impacted by the construction and operation of the Projects within the proposed designations. Trees in this instance will be any woody plant that is 4 m or greater in height, or that may reach this dimension in the future. In particular, trees that are protected by the AUP:OP, under either the District Plan or Regional Plan provisions were recorded (e.g. if scheduled (i.e. a Notable Tree), within the road reserve, open space zone or located in an AUP:OP overlay).

The protection status of trees was recorded, based on the current District Plan rules only that apply to the tree/s growing location. Those trees protected through District Plan provisions are discussed in this Report in terms of an assessment of effects and potential mitigation measures to address these effects. Those trees protected through Regional Plan provisions are included in this Report to inform the indicative design and the proposed designation boundary. Any regional consent requirements in relation to removal or works proximate to such trees will be assessed through a future resource consent process.

Specifically, this assessment was undertaken using the following methodology:

- A review of the Project corridors. Additional information was requested from the Project Team and this informed the initial survey works;
- A high-level desktop survey of all trees and vegetation affected by the Project corridors was undertaken. A high-level route and works footprint plan set were used to inform the initial survey in order to assess the presence of street trees, large areas of densely planted vegetation or significant individual trees (such as Notable Trees);
- The initial survey information was provided to the Project Team in the form of GIS co-ordinates and an excel table with baseline information. The Project Team then transposed this information onto Te Tupu Ngātahi GIS viewer;
- The exact number of trees, areas of vegetation and Notable Trees affected by the proposed works were then refined. This information was then provided to the Project Team and a discussion was held with other discipline specialists including landscape and visual assessment and ecology on potential mitigation;
- For the purposes of this assessment, groups of vegetation were recorded based on the estimated area to be removed. This was measured using the Auckland Council Unitary Plan GIS viewer measurement tool. It was not considered reasonable or practical to record every tree in each group. Furthermore, it is considered the value of this vegetation type is based on its function in that group as opposed to its value as an individual specimen. A site drive over was undertaken by car to confirm the information was accurate at the time of the desktop survey (March 2023);

- This arboricultural assessment was then prepared to summarise the anticipated arboricultural effects. This Report provides a recommended mitigation strategy, assessment of arboricultural effects in terms of the AUP:OP provisions pertaining to trees and vegetation on roads and open space zoned land and general recommendations from an arboricultural perspective to inform the NoRs and supporting documentation.

For the purposes of this Report, vegetation standing on private property is not assessed in terms of effects unless it is subject to a specific overlay in the AUP:OP and is impacted by the Projects.

## 3.3 Statutory Context

### 3.3.1 Notice of Requirement – district plan requirements

This assessment has been prepared to support the AEE and NoR process. If confirmed, the designations will authorise the District Plan land use components of the Project. Accordingly, when assessing the actual or potential effects on the environment of allowing the requirement in terms of section 171 of the RMA, this assessment has been limited to matters that would trigger a District Plan consent requirement. Where regional consenting requirements are triggered, these will not be authorised by the designation, and will require further regional consents.

In order to demonstrate the split between Regional and District Plan matters, protected trees (under either the Regional or District provisions of the AUP:OP) have been listed in tables and plotted on site plans in the Appendices of this Report. The tables and site plans assist to identify the potential arboricultural effects of the construction of the Project, and whether these are Regional Plan, or District Plan matters under the AUP:OP.

### 3.3.2 Future Regional Resource Consents

No regional resource consents are currently being sought for the Project. These will be sought at a later date, before construction commences. Although regional consents are not being sought at this time, arboricultural effects arising in respect of activities that require regional consents have been considered as part of this assessment to inform design, and the proposed designation footprint. A detailed assessment of Regional Plan matters is not proposed to be undertaken at this NoR phase.

### 3.3.3 Regional Plan and District Plan rules

The following tables set out the relevant rules that apply to tree protection for the Projects under the District Plan jurisdiction of the AUP:OP.

Table 3-1 Summary of Relevant District Plan Rules

AUP:OP jurisdiction	Reference	Rule	Where rule applies	Activity status
DP	E26.4.3 Activity Table	All activities (must) obtain the approval of the Tree Asset Manager	Trees in roads and on open space zones	Mandatory requirement
DP	E26.4.3.1 (A83)	Tree trimming or alteration	Trees in roads and on open space zones	Permitted Activity
DP	E26.4.3.1 (A84)	Tree trimming or alteration that does not comply with Standard E26.4.5.1 (Trees in streets and open space zones) or Standard E.26.4.5.3 (Notable Trees)	Trees in roads and on open space zones	Restricted Discretionary Activity
DP	E26.4.3.1 (A87)	Works within the protected root zone that comply with Standard E26.4.5.2	Trees in roads and on open space zones	Permitted Activity
DP	E26.4.3.1 (A88)	Works within the protected root zone not otherwise provided for	Trees in roads and on open space zones	Restricted Discretionary Activity
DP	E26.4.3.1 (A90)	Tree trimming, alteration or removal on roads adjoining rural zones and on roads adjoining the Future Urban Zone.	Trees in roads	Permitted Activity
DP	E26.4.3.1 (A91)	Tree removal of Notable Trees	Notable Tree overlay	Discretionary
DP	E26.4.3.1 (A91)	Tree alteration or removal of any tree less than 4m in height and/or less than 400mm in girth	Trees in roads and on open space zones	Permitted Activity
DP	E26.4.3.1 (A92)	Tree alteration or removal of any tree greater than 4m in height and/or greater than 400mm in girth (See note 2)	Trees in roads and on open space zones	Restricted Discretionary Activity
DP	E26.4.3.1 (A93)	Tree trimming, alteration or removal not otherwise provided for	Trees in roads and on open space zones	Discretionary Activity
DP	E26.4.3.1	Where land is zoned 'Strategic Transport Corridor', trees are not subject to protection as this land is 'zoned'. An exception would occur	Trees in roads	Permitted Activity

AUP:OP jurisdiction	Reference	Rule	Where rule applies	Activity status
		when trees are protected under rules pertaining an AUP rule on adjacent land (such as Open Space zoned land)		

Note 1:

Standard E26.5.3.2 Vegetation alteration or removal states:

- (1) Must not include trees over 6 m in height, or 600 mm in girth unless their removal is otherwise permitted by a rule in this Plan.*
- (2) Must not result in the removal of more than 20 m<sup>2</sup> of vegetation within a significant ecological area, except within the formation width of the road.*
- (3) Must not result in the removal of more than 50 m<sup>2</sup> of vegetation within a coastal area or riparian area not identified as a significant ecological area.*
- (5) Must not result in the removal of more than 500 m<sup>2</sup> of vegetation within the legal road or the formation width of the road in a rural zone.*
- (6) Must not result in the removal of more than 250 m<sup>2</sup> of vegetation outside the legal road or the formation width of the road in a rural zone.*

## 4 Existing and Future Receiving Environment

It is anticipated the North Projects will be constructed between least 10 – 30+ years from now.

Therefore, assessing arboricultural effects on the environment solely as the environment exists today (i.e. at the time of this assessment) will not provide an accurate reflection of the environment in which the effects of the construction and operation of the transport corridors will be experienced.

The assessment of effects needs to consider both the existing environment, and the likely receiving environment in which such effects will likely occur.

There are existing rural and urban zonings in the study area, as well as large areas of future urban zoning (FUZ) within the North Projects' scope which influence the likely receiving environment for assessment purposes (see Figure 2 & Figure 3 below).

There are currently no significant street tree plantings within those areas to be developed, with the existing environment largely rural. As such, future land intensive land use is likely to provide positive outcomes in terms of the wider public realm.

It is anticipated that street tree planting and the creation of open space zoned recreational parks will occur as part of residential or business activity, improving public street and park tree density throughout the wider area.

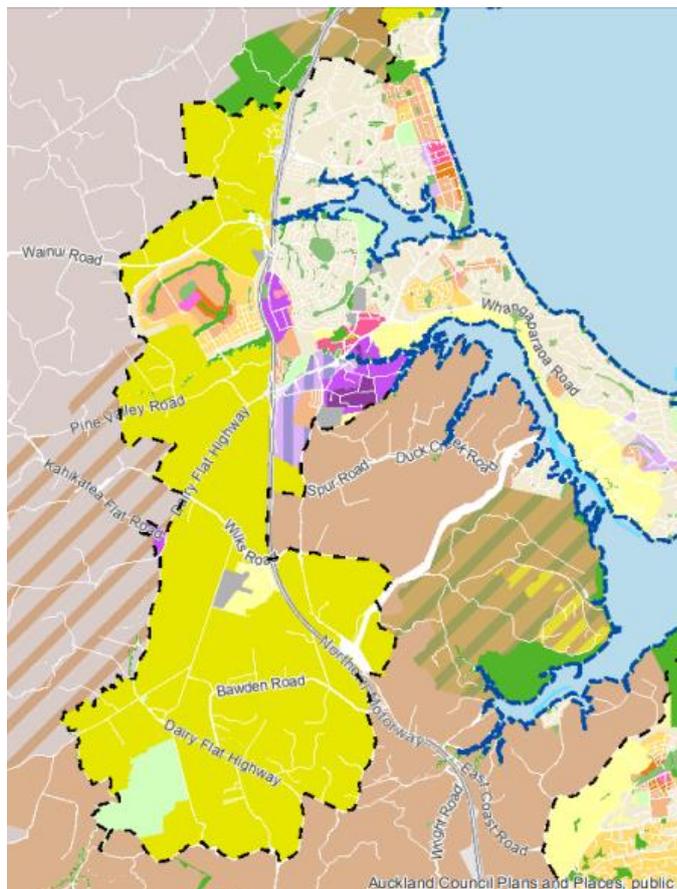
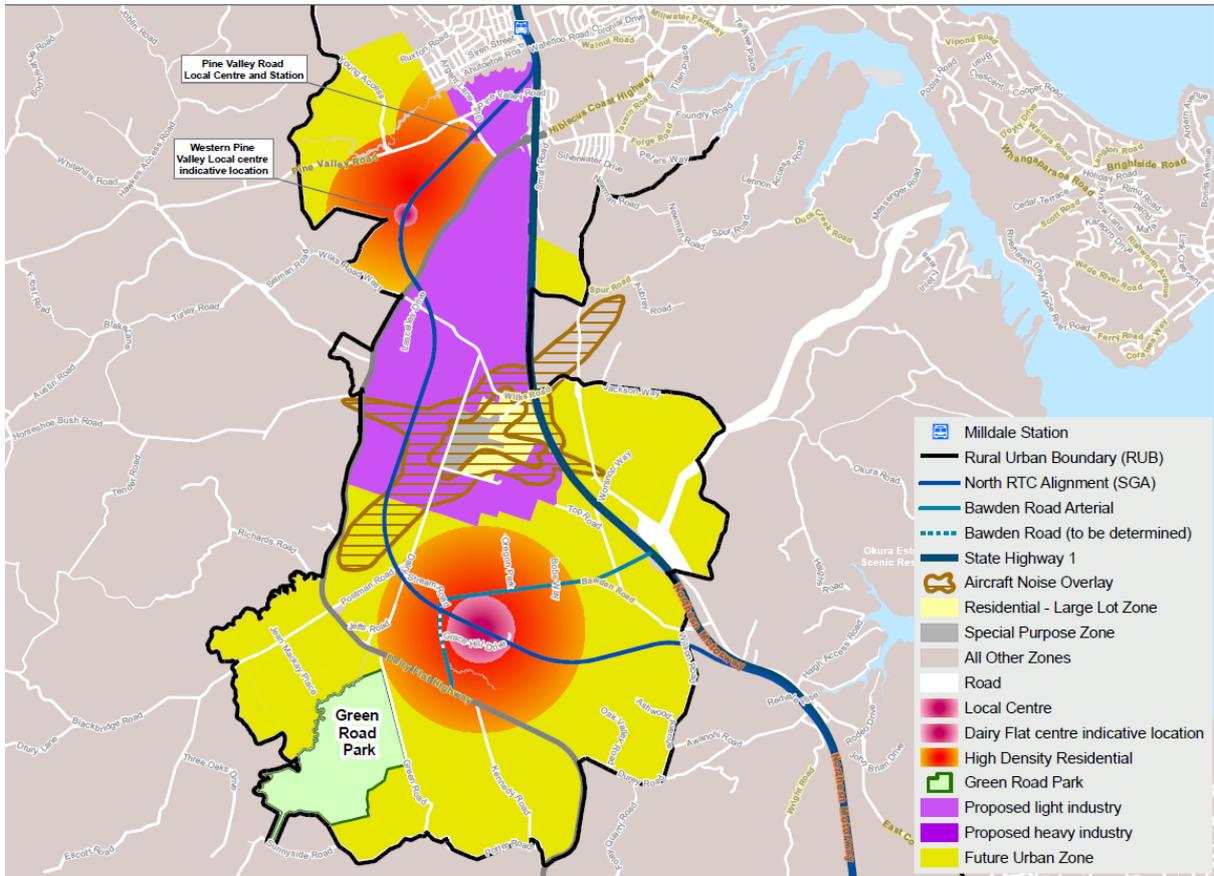


Figure 2 AUP:OP zoning environment for North Projects.

Further detail on land use context for the North is contained within the main AEE.



**Figure 3 Spatial land use strategy Silverdale / Dairy Flat (draft) – this map is draft and not approved by Council’s Planning Committee**

Further details on existing trees in the Projects area are provided in sections 5-18 and Appendix A.

## 5 North NoRs – Overall network

This section assesses common or general arboricultural matters across the overall North Projects i.e. the combination of RTC stations, existing road upgrades and new corridors. This section also recommends measures to avoid, remedy, or mitigate actual or potential adverse effects for the overall network.

### 5.1 Positive arboricultural effects

Positive arboricultural effects will occur within all proposed NoR areas when considering the existing land use. No formal public tree plantings occur within the NoRs with a number of new connections through greenfield rural environments or FUZ zoned land with little tree cover.

For most of the NoRs (excluding the RTC and SH1 improvements), the proposed cross sections include a formal berm on both sides of the new corridor for the majority of each route. This will allow for the replanting of new trees in an environment conducive to good tree growth with suitable setbacks provided from future roading infrastructure.

It is noted that in some cases, such as near intersections, that further planting may not be possible.

The full extent of replacement planting cannot be determined at this stage of the process, due to the likely construction timeline for the final Projects being 10 to 30+ years into the future. However, an initial review of the entire NoR areas has determined that new street and public owned trees could be planted within the berms throughout most of the NoR corridors (excluding the RTC and SH1 improvements).

### 5.2 Assessment of construction effects

Vegetation removal and works within the protected root zones of retained vegetation within the footprint of all future construction works are anticipated. Indicative cut/fill and infrastructure alignments are shown for each NoR as illustrated in the layout plans for each NoR. For the purposes of this assessment, all vegetation standing within the designation is assumed for removal, unless explicitly discussed and/or excluded in the later sections of this report.

### 5.3 Recommended measures to avoid, remedy or mitigate construction effects

#### 5.3.1.1 Tree Removal and Replacement Planting.

A Tree Management Plan (**TMP**) should be developed prior to construction to identify existing trees protected under the District Plan provisions that require removal and detail methods for all work within the root zone of trees that are to be retained. The TMP should include:

- Confirmation that protected trees/groups identified in **Appendix A** still exist;
- Advice on how the design and location of works can avoid, remedy or mitigate effects on the existing trees;
- Recommended planting to replace trees that require removal;
- Establishing tree protection zones and specifying tree protection measures such as protective fencing, ground protection and physical protection of roots, trunks and branches; and

- Detailing methods for all work within the root zone of trees that are to be retained in line with appropriate arboricultural standards.

Replacement planting will be decided through planting details for the Project under the Urban Landscape Design Management Plan (**ULDMP**) which is proposed as a condition on the designations. The ULDMP should also include detail of methodologies to establish new trees within the road reserve or at future public transport stations where practical. The ULDMP shall include the creation of quality below ground environments (such as healthy soil profiles or tree pit devices), correct planting and appropriate maintenance (such plantings are to be excluded for SH1 and the RTC due to corridor constraints).

For the NoRs, the TMP will be limited to the identification of trees protected under the District Plan, as trees protected under Regional Plan provisions will be addressed as part of a future resource consent process. Consideration of tree transplanting should be included in the TMP, where good quality trees in the road reserve are identified for removal. An assessment of the quality of the trees and the feasibility of transplantation should form part of the TMP.

### 5.3.1.2 Mass vegetation removal

In the case of the removal of any indigenous vegetation growing within the project area care must be taken to minimise any construction impacts in terms of the fragmentation of the remaining vegetation beyond the proposed removal areas.

In the case of the replacement planting of mass vegetation, the exact extent of removal should be measured in square metres, with the same square metre amount to be planted as mitigation, at a minimum.

All plantings must include climax species at a minimum ratio of 10:1 so as to emulate and improve the typical species mix. Where possible, the ecological district in terms of planting palette is to be emulated, with the exception being built areas or plantings in hard surface areas where the 'right tree right place' ethos should be considered.

Where practicable, the works clearance area must be kept to a minimum, with retaining walls utilised in place of batters where adjacent to retained vegetation. Edge effects must be managed appropriately in the management of construction machinery required to avoid unnecessary temporary effects.

Specific assessment and recommendations are to be provided as part of the preparation of the TMP. These recommendations must include a tree protection methodology and set out parameters for the management of the ongoing health of any retained trees.

In some cases, it may be possible to transplant/relocate some specimen trees in these areas. A detailed transplant assessment should be prepared at the time of detailed design. The transplant assessment is to include maintenance periods, methodology of transplant and the new location for each relocated tree.

## 5.4 Assessment of operational effects

Operational effects of the Projects are largely limited to tree pruning for the maintenance of sight lines, and the overhead and lateral clearances of the RTC, general traffic lanes and the high-quality walking and cycling facilities. The required clearances will largely be limited to existing retained

vegetation and newly planted vegetation within the proposed berm area and will only require management in the medium term, with little pruning expected in the early establishment period (1-7 years following planting)

## 5.5 Recommended measures to avoid, remedy or mitigate operational effects

It is recommended that any new street trees or mass planted vegetation (trees specifically) are planted no closer to the future general traffic lanes than 1 m to enable unrestricted future growth.

Once the Projects have been constructed, no further effects on trees are anticipated. Ongoing maintenance of street trees and trees retained adjacent to the corridor is a standard operational requirement.

## 5.6 Summary and Conclusions

Table 5-1 Summary of Assessment of Effects of Recommendations - Overall network

Effect	Assessment	Recommendation
<b>Operational</b>		
Tree trimming or alteration	New or replacement trees may require maintenance to retain sight lines and the overhead and lateral clearances of general traffic lanes and the high quality walking and cycling facilities	New street trees or mass planted vegetation (trees specifically) are planted no closer to the future general traffic lanes than 1 m. This is to be addressed in the ULDMP

## 6 NoR 1 – Rapid Transit Corridor (Albany to Milldale)

This section assesses specific arboricultural matters relating to NoR 1 – New Rapid Transit Corridor (RTC) between Albany and Milldale, including a new walking and cycling path between Bawden Road and Dairy Flat Highway.

This NoR involves the construction of a dedicated RTC route which will be constructed along the western side of the SH1 corridor in the south before following a new route through largely rural and FUZ land to the west of SH1, before terminating at the new Milldale Station in the north (NoR 2).

### 6.1 Overview and description of Works

The RTC route begins at the Albany Bus Station and travels north, initially travelling parallel to SH1, before heading west through largely a greenfield environment, before terminating adjacent to SH1 near Milldale. Vegetation removal will be required within three Open Space zoned portions of land: the first a small area of riparian vegetation immediately to the west of Albany Bus Station connection (Group 101); the second just south of the proposed Milldale Station (NoR 2), identified as 161 Ahutoetoe Road, Pine Valley; and the third further north where the NoR 2 designation overlaps with NoR 1 (Groups 105, 106, 107) – refer to Figure 4, Figure 5 & Figure 6 below.

In addition to the works near the Albany Bus Station and Milldale, the RTC will also cross a section of the Ōkura River. A bridge structure is proposed in this location to support the new route and as such vegetation removal will be required to enable the construction works. The vegetation in this area is also implicated by the SH1 improvement works, where structures are also required to support the new traffic lanes. (NoR 4). Further discussion of the vegetation in this location is provided in Section 9.2 of this report. (The affected vegetation is identified as Group 104). The proposed designation area has been tailored to minimise effects on this area, by concentrating the main works where they pass the bulk of the vegetation to a section that is non-vegetated, near to the existing SH1 corridor. However, it is anticipated that some tree removal will occur as part of construction and enabling works.

It is anticipated that fringe effects on the remaining vegetation will also occur as part of the works, with consideration of such effects to be considered as part of the future TMP that is provided for in the proposed conditions.

Refer back to the main AEE for a more detailed description of works to be authorised.

### 6.2 Assessment Features

The vegetation growing within Group 101 is planted riparian type vegetation, with a mixture of pioneer species including Ti Kouka (*Cordyline australis*), Harakeke (*Phormium sp.*) and Kowhai (*Sophora tetraptera*).

It is anticipated that a portion of this vegetation will require removal to facilitate the construction of a future stormwater device which is to be constructed in this area (as per Figure 4 below).

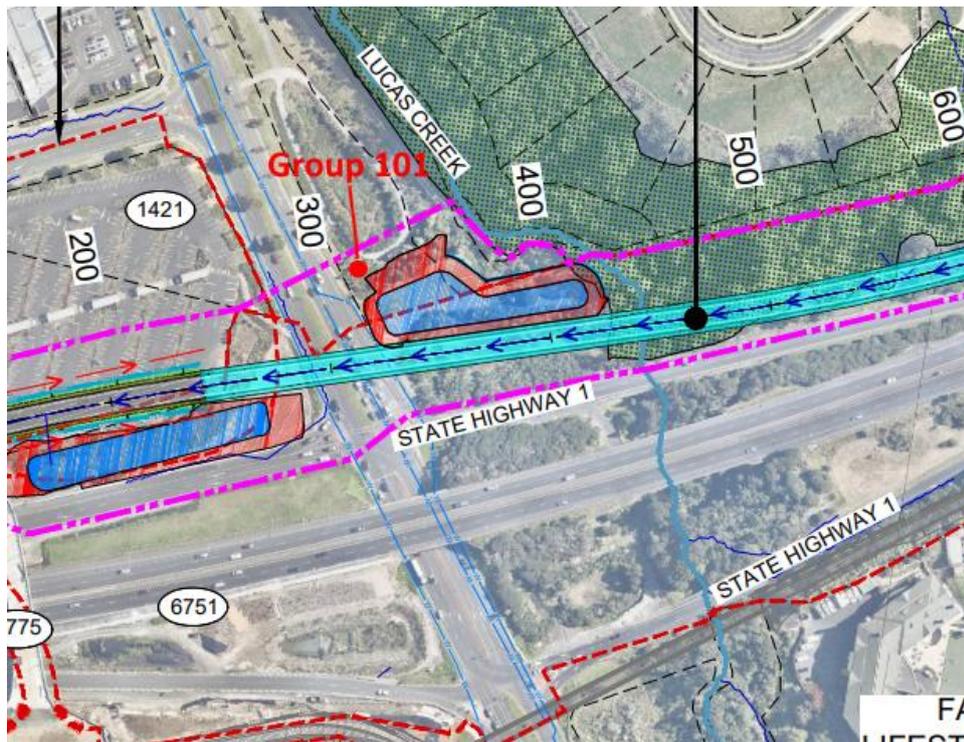


Figure 4 Image showing the general location of Group 101 as per the proposed designation

Group 105 (refer Figure 5 and Figure 6) is typical of mature and established riparian catchments in the wider project area, with a mixture of semi-mature indigenous climax and emergent pioneer species.

The larger, more significant trees, are largely semi-mature Totara (*Podocarpus totara*) and Kahikatea (*Dacrydium dacrydoides*) with Kauri (*Agathus australis*) visible near the outer edges, especially near SH1. Dieback is visible in the canopy of these trees, possibly as a result of Kauri Dieback. However, onsite testing would be required to confirm its presence.



Figure 5 Image showing the main area of indigenous vegetation near the proposed NoR 1 route (eastern edge will be impacted by the proposed RTC layout)

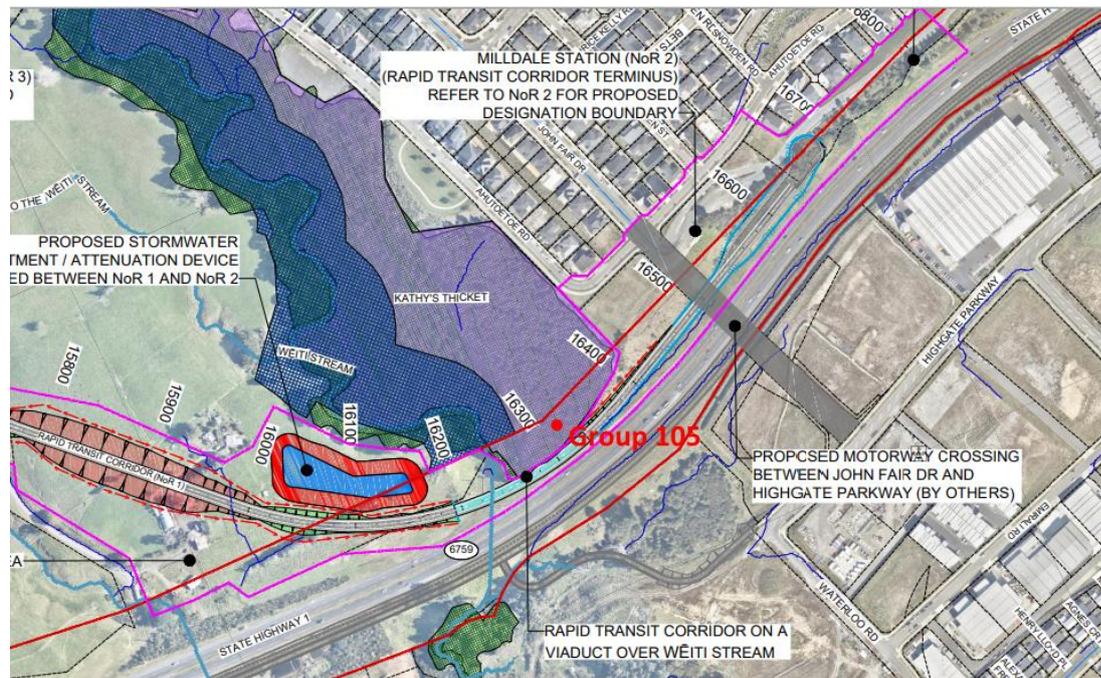


Figure 6 Image showing location of Group 105 in relation to proposed RTC alignment

Group 104 (refer to Figure 7) is described in section 9.2.

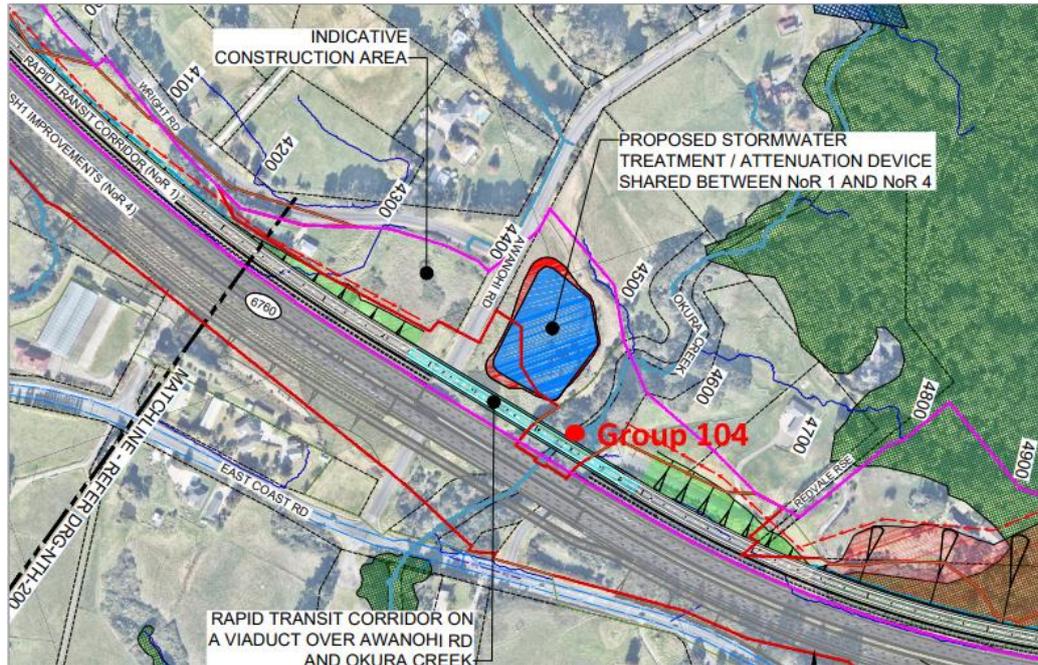


Figure 7 Group 104 affected by both NoR 1 and NoR 4

Groups 106 and 107 are described in section 7.2.

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall North Projects.

## 6.3 Assessment of construction effects

Vegetation removal and works within the protected root zones of retained vegetation within Group 101 & 105 will be required as part of the works for NoR 1.

## 6.4 Recommended measures to avoid, remedy or mitigate construction effects

### 6.4.1.1 Specific construction effects for NoR 1

In the case of the removal of the indigenous vegetation growing within Group 105, care must be taken to minimise any construction impacts in terms of the fragmentation of the remaining vegetation beyond the proposed removal areas.

In the case of the replacement planting of mass vegetation, the exact extent of removal should be measured in square metres, with the same square metre amount to be planted as mitigation, at a minimum.

All plantings must include climax species at a minimum ratio of 10:1 so as to emulate and improve the typical species mix. Where possible, the ecological district in terms of planting palette is to be emulated, with the exception being built areas or plantings in hard surface areas where the 'right tree right place' ethos should be considered.

Where practicable, the works clearance area must be kept to a minimum, with retaining walls utilised in place of batters where adjacent to retained vegetation. Edge effects must be managed appropriately in the management of construction machinery required to avoid unnecessary temporary effects.

Specific assessment and recommendations are to be provided as part of the preparation of the TMP. These recommendations must include a tree protection methodology and set out parameters for the management of the ongoing health of any retained trees.

## 6.5 Assessment of operational effects

Refer to section 5.4 of this Report

## 6.6 Recommended measures to avoid, remedy or mitigate operational effects

Refer to section 5.5 of this Report.

## 6.7 Summary and Conclusions

The works as part of NoR 1 will affect one (2) groups of trees in an open space zoned area (Group 101 & 105). The works are likely to have adverse effects on these trees. Tree removal shall be limited where practical, with all future works to be assessed in accordance with the TMP recommendations provided in Section 5.3 of this assessment.

# 7 NoR 2 – New Milldale Station and associated facilities

The Milldale Station and associated facilities project is a proposed WK designation for a new rapid transit station located between the SH1 corridor and the recently developed/developing Milldale residential area.

## 7.1 Overview and description of Works

The proposed station will be constructed adjacent to two open space zoned areas, being the north-eastern side of Group 105 (as illustrated in Figure 6), a cluster of She Oak trees (Group 107) and a small area of open space to the north, identified as Group 106 (within 97 Ahutoetoe Road).

Group 106 is identified as a diverse cluster of exotic and indigenous species growing adjacent to SH1. Further discussion of Group 106 is provided in the Section below.

Effects on Group 105 are largely limited to cut/fill works at the northern boundary, with tree removal required within 97 Ahutoetoe Road (Group 106 & 107)

Refer back to the main AEE for a more detailed description of works to be authorised.

## 7.2 Assessment Features

As noted in the Section above, three main areas of vegetation will be affected by the proposed works.

This will include a cluster of self-seeded trees being predominantly She Oak (*Casuarina cunninghamiana*) (identified as Group 107, refer Figure 8) growing on the northern side of Group 105 (Group 105 is within NoR 1), with a larger cluster of exotic and indigenous species growing further north parallel to SH1 (Group 106, refer Figure 9).



**Figure 8 Group 107 – A Cluster of She Oak at the northern edge of Group 105 (Nor 1) (within 97 Ahutoetoe Road)**

The trees species within Group 106 (refer Figure 9) include Poplar (*Populus sp.*), mass planted Manuka (*Leptospermum scoparium*), Eucalypt (*Eucalyptus sp.*), Wattle (*Acacia sp.*) and the pioneer species such as Harakeke (*Phormium sp.*) and Tarata (*Pittosporum tenuifolium*). This area appears to be largely un-maintained.



Figure 9 Group 106 growing on the northern side of the proposed NoR 2 development area



Figure 10 AUP maps snip showing boundaries of open space zoning within 97 Ahutoetoe Road (refer to Figure 11 for tree locations).

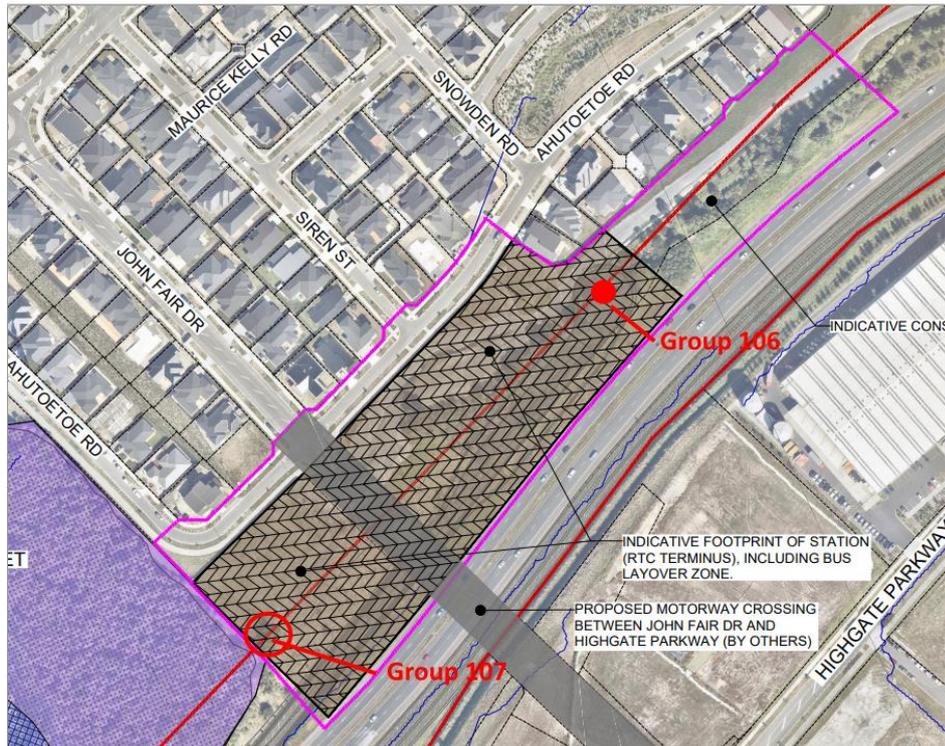


Figure 11 Location of Tree Groups when considering NoR 2 project area

### 7.3 Positive arboricultural effects

It is anticipated that extensive formal landscape plantings will occur in surplus areas within the footprint of the new RTC station as part of localised improvements and general urban and landscape design, with the intent to provide a positive user experience for the wider public transport users.

Options to re-vegetate or enhance the wider treed and landscape environment would be possible in the immediate areas beyond the NoR 2 footprint. Suitable areas would require investigation in the future, at the time of detailed design.

### 7.4 Assessment of construction effects

All vegetation within the footprint of the proposed activities would require removal. Works within the protected root zones of retained vegetation will also be required for remaining vegetation groups 105 & 106.

### 7.5 Recommended measures to avoid, remedy or mitigate construction effects

#### 7.5.1.1 Specific construction effects for NoR 2

As previously noted, the extent of tree removal will be largely limited to a portion of Group 106 and the removal of the cluster of She Oak trees to the north (Group 107).

Care must be taken when designing and considering the earthworks extent adjacent to retained vegetation, especially in the case of Group 105. It will be important to consider existing overland flow and adjacent finished ground levels on tree health and longevity.

Refer to Section 5.3 for a set of standard recommendations for tree removal, the removal of mass planted vegetation and replacement planting.

## 7.6 Summary and Conclusions

The works as part of NoR 2 will affect three (3) groups of trees growing in an open space zoned area. The works are likely to have adverse effects on these trees. Tree removal shall be limited where practical, with all future works to be assessed in accordance with the TMP recommendations provided in Section 5.3 of this assessment.

## 8 NoR 3 - New Pine Valley East Station and associated facilities

This section assesses specific arboricultural matters relating to NoR 3 which includes the Pine Valley East Station and associated facilities for a new rapid transit station located along the RTC corridor adjacent to Pine Valley Road.

No vegetation along this portion of the route is subject to protection under district plan rules. There are no Significant Ecological Areas (SEA) identified within this NoR.

As such, no further assessment of this NoR is provided in this assessment.

## 9 NoR 4 - SH1 improvements

An NoR will be submitted for an alteration to existing WK designations for a widened SH1 carriageway and three interchange projects.

The proposed alterations will include the construction of a number of new bridge structures and earthworks associated within the proposed widening.

### 9.1 Ōkura River (Adjacent to SH1)

An existing bridge structure spans the Ōkura River adjacent to Redvale Rise and parallel to Awanohi Road. As part of NoR 4, new northbound and southbound traffic and active mode lanes are proposed for construction. These new lanes will span the Ōkura River, with vegetation beneath the bridge growing on land zoned as open space. (Identified as Crown Land SO 19310,2476,21563)



Figure 12 Snip showing proposed layout over the Ōkura River (Open space zoned land shown in green) and Groups 103 and 104

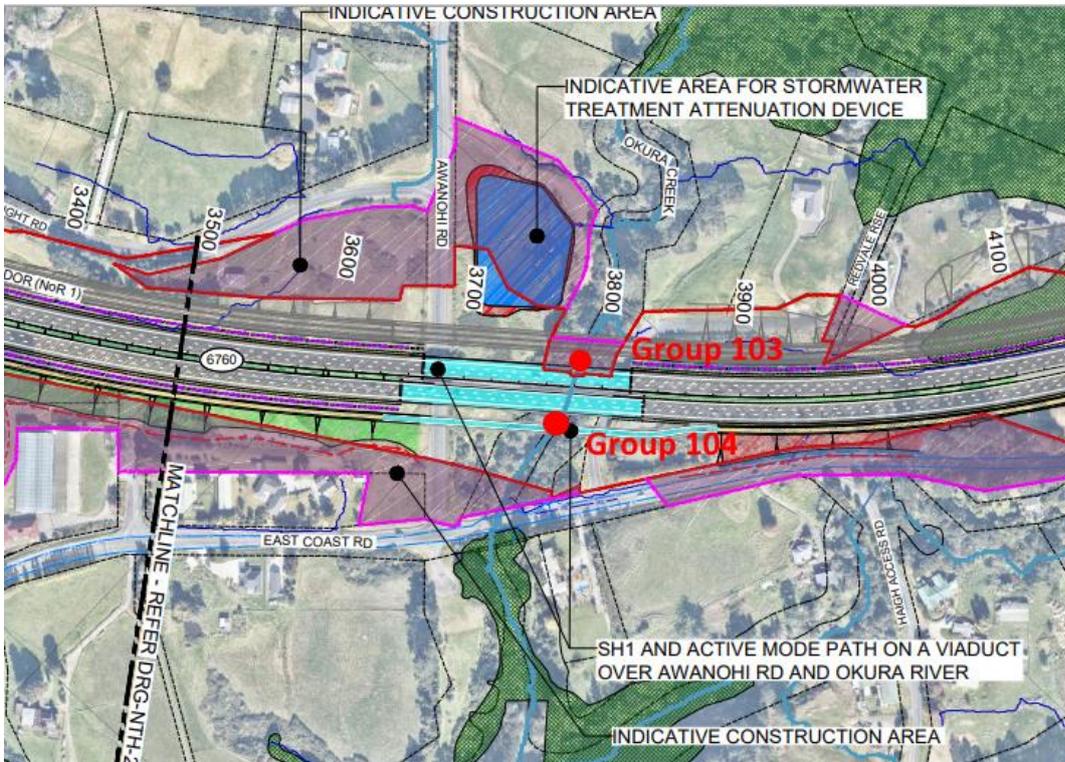


Figure 13 Additional snip showing NoR 4 traffic lanes and active mode bridge (eastern side), and Groups 103 and 104

## 9.2 Assessment Features

Two areas are recorded in in this location, being Groups 103 & 104 (refer to Figure 12-Figure 14). The vegetation in these two groups is continuous and travels from the upstream catchment in the west, eastwards, with the Ōkura River ultimately discharging to the ocean at Karepiro Bay.

The vegetation is dense indigenous pioneer and climax trees typical of a riparian environment, with species including Manuka, Totara (*Podocarpus totara*), Mapou (*Myrsine australis*), Mahoe (*Melicytus ramiflorus*) and Taupata (*Coprosma repens*) dominant in this area. The occasional exotic tree, including wilding Pine (*Pinus sp.*) and pest plant species such as Privet and Taiwan Cherry, are also present.



**Figure 14 Vegetation typical of the Ōkura River open space area. (Groups 103 & 104)**

A new active mode bridge is proposed for construction on the eastern side of Waiokahukura (Lucas creek), adjacent to the existing southbound SH1 off ramp.

A small portion of Waiokahukura (Lucas Creek) to the east is subject to an open space zoning (identified as R 21 Fairview Avenue Fairview Heights 0632). (Group 102, refer Figure 15 and Figure 16).

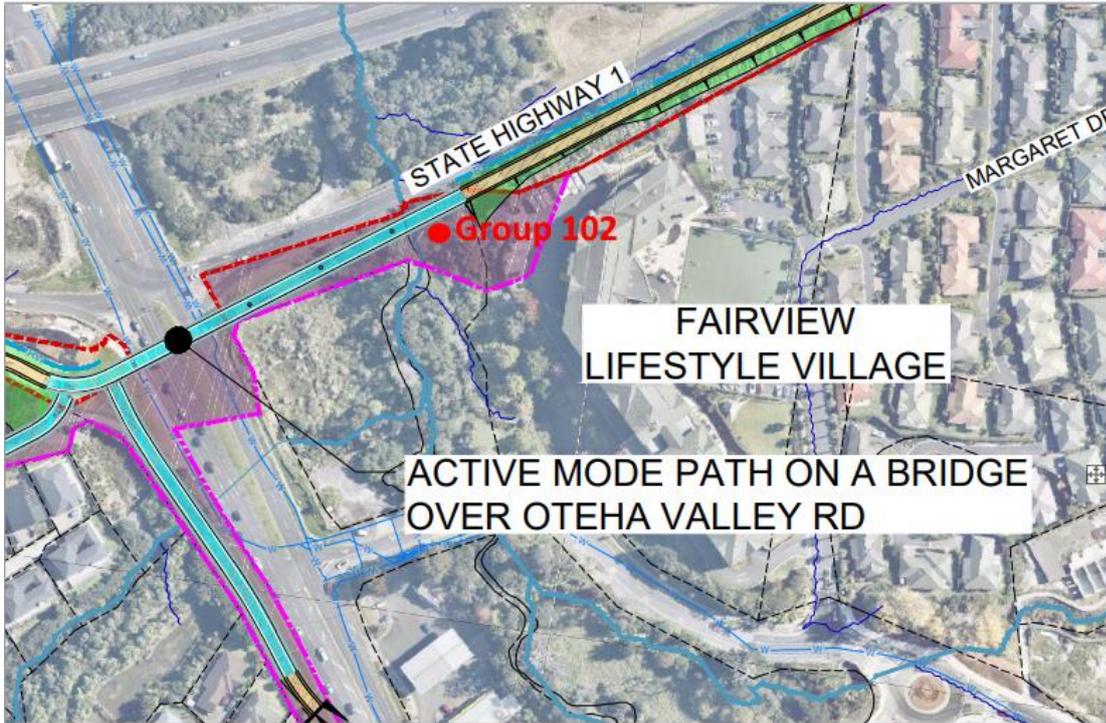


Figure 15 Snip showing proposed layout over Waiokahukura (Lucas creek) with the alignment of the active mode bridge shown in blue and location of Group 102.



Figure 16 Snip showing open space area adjacent to Waiokahukura (Lucas Creek) as per the AUP map viewer (Group 102).

This area of open space zoned land is dense indigenous pioneer and climax trees typical of a riparian environment, with species including Manuka, Mapou, Mahoe, Taupata, Totara and Ponga (*Dicksonia* sp.) dominant in this area. Pest plant species were also identified within this area.



Figure 17 Snip showing open space area adjacent to Waiokahukura (Lucas Creek) to be affected by the new active modes bridge. (Group 102)

## 9.3 Recommended measures to avoid, remedy or mitigate construction effects

### 9.3.1 Specific construction effects for NoR 4

It is anticipated that any tree removal will be largely limited to the bridge piling and enabling works for Ōkura River and for the active mode bridge, future clearances and enabling works for Waiokahukura (Lucas Creek).

Refer to Section 5.3 for a set of standard recommendations for tree removal, the removal of mass planted vegetation and replacement planting.

## 9.4 Summary and Conclusions

The works as part of NoR 4 will affect three (3) groups of trees in an open space zoned area. The works are likely to have adverse effects on these trees. Tree removal shall be limited where practical, with all future works to be assessed in accordance with the TMP recommendations provided in Section 5.3 of this assessment.

## 10 NoR 5 - New Crossing of SH1 at Dairy Stream

An NoR will be submitted for a new AT designation for a new SH1 crossing for all modes connecting Top Road on the west to East Coast Road on the east. The crossing will be located approximately 1.2 km south of Wilks Road.

No vegetation along this portion of the route is subject to protection under district plan rules. There are no Significant Ecological Areas (SEA) identified within this NoR.

As such, no further assessment of this NoR is provided in this assessment.

## 11 NoR 6 - New Connection between Milldale and Grand Drive

NoR 6 will travel from Grand Drive in the north to Wainui Road in the south. The proposed route will follow the existing Upper Ōrewa Road north of Wainui Road, with a new section of Road to be constructed northeast, from a new roundabout at Russell Road.

The route will follow existing road reserve from Wainui Road to Russell Road, with the adjacent land zoned either FUZ or Rural – Rural Production Zone. As such, any vegetation within the road corridor is not subject to protection.

As such, no further assessment of this NoR is provided in this assessment.

## 12 NoR 7 – Upgrade to Pine Valley Road

This section assesses specific arboricultural matters relating to NoR 7 – Upgrade to Pine Valley Road

The upgrade of Pine Valley Road is proposed in response to the anticipated wider FUZ and rural land future re-development. These works will include the formation of a new 24m wide, two lane carriageway with separate walking and cycling facilities on both sides.

The existing rural road reserve environment is largely devoid of significant trees and vegetation, with the exception of an area of SEA vegetation just west of the Pine Valley Road/Youngs Access intersection.

SEA areas are only subject to protection under Regional plan sections of the AUP. As such, no further assessment is provided of this area. Further Resource Consents will be required as part of the detailed design phase for any works adjacent to or impacting the protected vegetation in this location.

Refer back to the main AEE for a more detailed description of works to be authorised.

## 13 NoR 8 - Upgrade to Dairy Flat Highway between Silverdale and Dairy Flat

This section assesses specific arboricultural matters relating to NoR 8 – Upgrade to Dairy Flat Highway between Silverdale and Dairy Flat.

This route is almost entirely FUZ or Rural zoned land, with the exception of the Dairy Flat Hall and Tennis Club (4 Postman Road, Dairy Flat) and the intersection of Kahikatea flat road – zoned

Business. The Dairy Flat Hall/tennis club property is zoned Open Space and as such vegetation occurring within this site is subject to those rules pertaining to vegetation in open space zones outlined in Section E26 of the AUP.

### 13.1 Overview and description of Works

An indicative construction area is shown at 4 Postman Road, with it anticipated that the existing tennis court and adjacent area would be used for construction as part of both the wider NoR works as well as the adjacent roundabout construction.

It is anticipated that all vegetation within the construction footprint would require removal to facilitate the various activities.

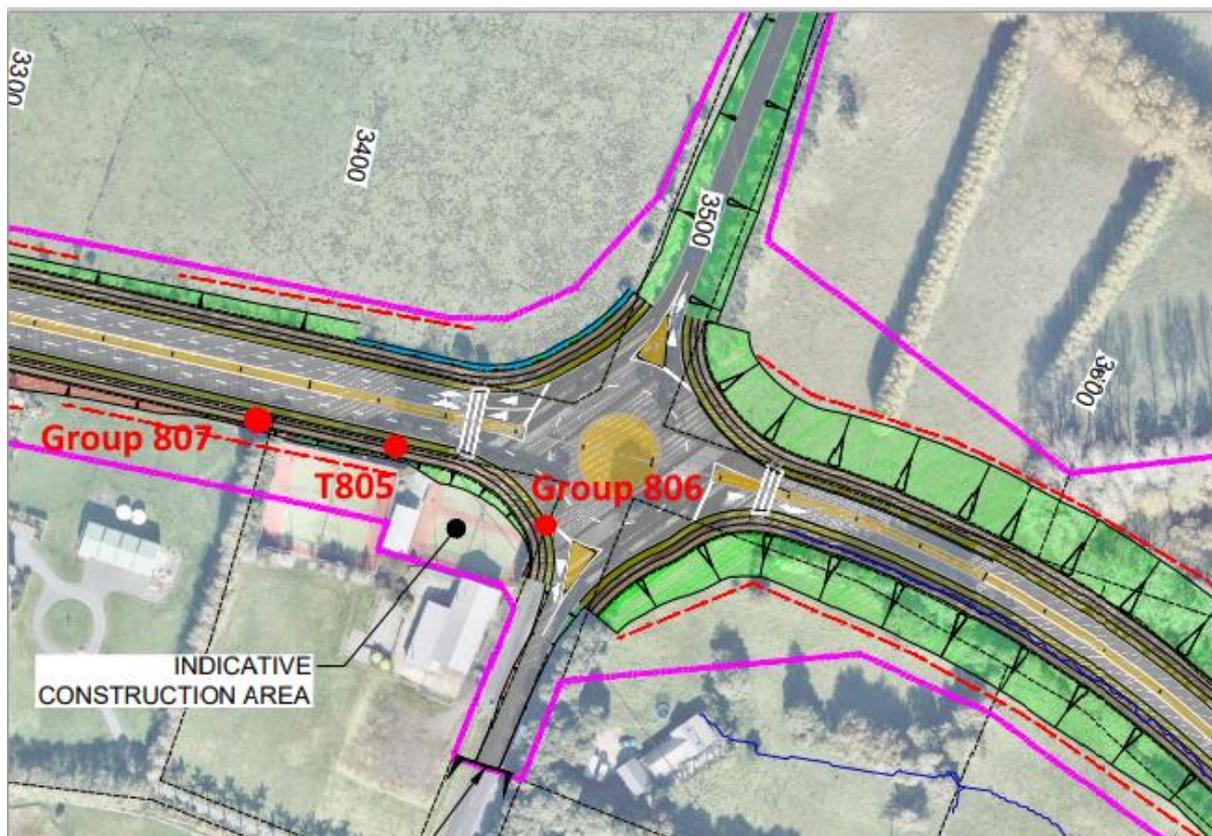


Figure 18 Proposed construction area and road layout at 4 Postman Road showing tree locations.

### 13.2 Assessment Features

As outlined above, the only location where tree protection would apply is 4 Postman Road. This site has scatterings of vegetation, with informal plantings on the Dairy Flat highway boundary, scatterings of hedging on the Postman Road boundary, and a hedge adjacent to the tennis court on the boundary of 12 Postman Road.

The most significant trees/vegetation include a mature Chinese Poplar (*Populus chinensis*) growing halfway along the western boundary and the clipped hedge on Postman Road which includes Titoki (*Alectryon excelsus*), Tarata, Bottlebrush (*Callistemon sp.*) and Oleander. A declining Leyland Cypress (*Cupressus x leylandii*) hedge smothered with moth plant is also growing on the boundary between 4 and 12 Postman Road. (Numbers 805-807)



Figure 19 Poplar tree growing adjacent to 4 Postman Road



Figure 20 Hedge growing on the Postman Road frontage.



Figure 21 Leyland Cypress hedge growing on the boundary between 4 & 12 Postman Road

### 13.3 Assessment of construction effects

It is anticipated that vegetation clearance will be required within the footprint of the construction staging area and within the footprint of the proposed roundabout construction.

### 13.4 Summary and Conclusions

The works as part of NoR 8 will affect one (1) individual tree and two (2) groups of trees in an open space zoned area. The works are likely to have adverse effects on these trees. Tree removal shall be limited where practical, with all future works to be assessed in accordance with the TMP recommendations provided in Section 5.3 of this assessment.

## 14 NoR 9 - Upgrade to Dairy Flat Highway - rural section between Dairy Flat (Durey Road) and Albany

This section assesses specific arboricultural matters relating to NoR 9 – Upgrade to Dairy Flat Highway – rural section between Dairy Flat (Durey Road) and Albany.

The most significant portion where protected trees and vegetation is affected is the Dairy Flat Highway Section between Durey Road and Hobson Road. (Chainage 400 – 1600).

## 14.1 Overview and description of Works

As aforementioned, NoR 9 covers Dairy Flat Highway from Durey Road to Albany Village.

The Project follows the existing road reserve along the Dairy Flat Highway, with the adjacent land zoned largely Rural zoned land with the exception of six (6) distinct open space zoned areas between the Coatesville Riverhead Highway to Albany Village (identified as R17 O'Brien Road, R497 Dairy Flat Highway, 463 Dairy Flat Highway, R357 Dairy Flat Highway and 14 R Agnew Place) – refer Figure 22 and Figure 23.

A Notable Kauri tree (ID 1379) is also growing on the boundary of Dairy Flat Highway adjacent or within 19 Hobson Road.

For the most part, vegetation alteration will be limited to within road reserve where works are proposed near to the open space zoned areas. However, a large batter slope is proposed within 19 Hobson Road where the Notable Kauri tree is growing.

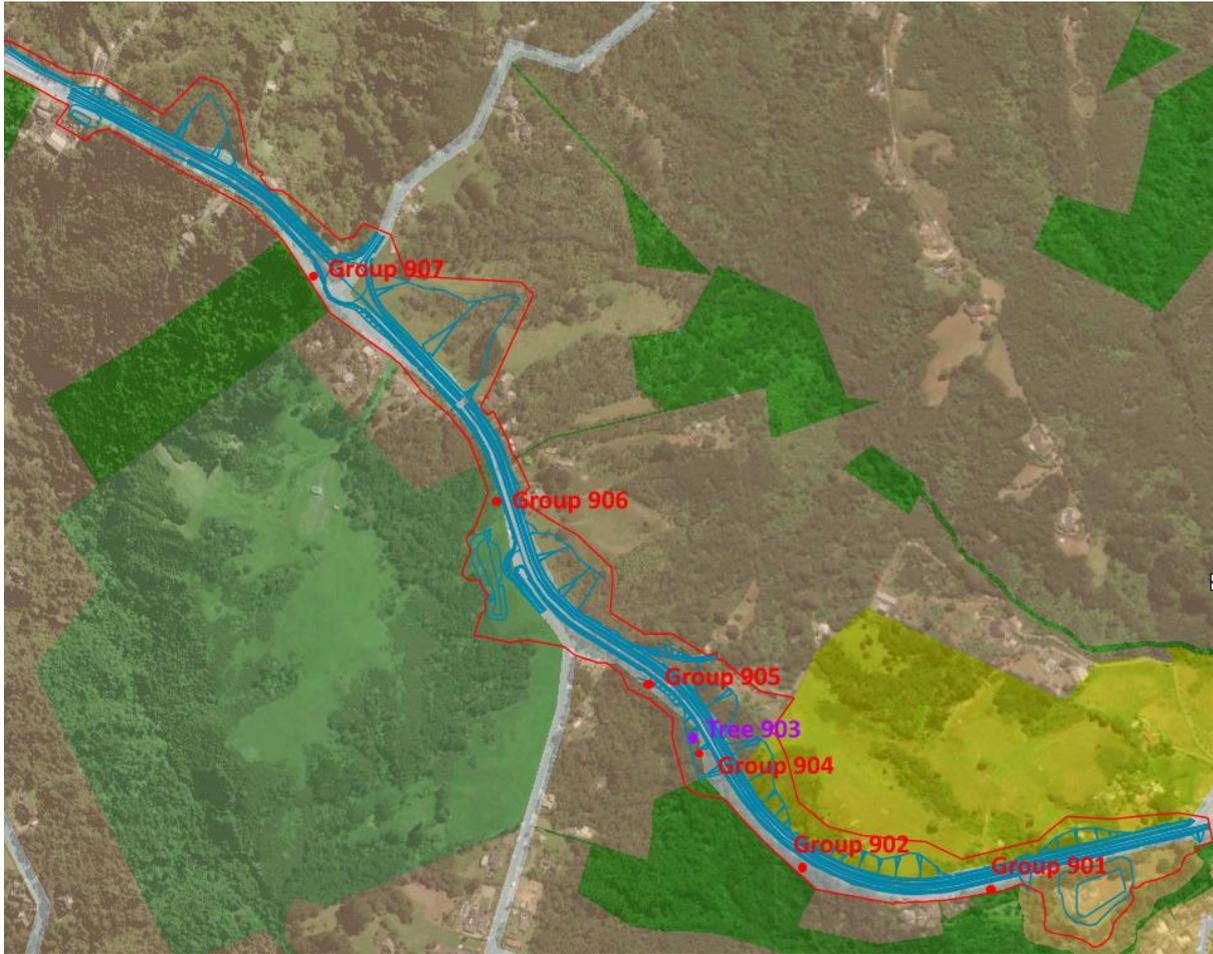


Figure 22 Designation map showing group locations for NoR 9

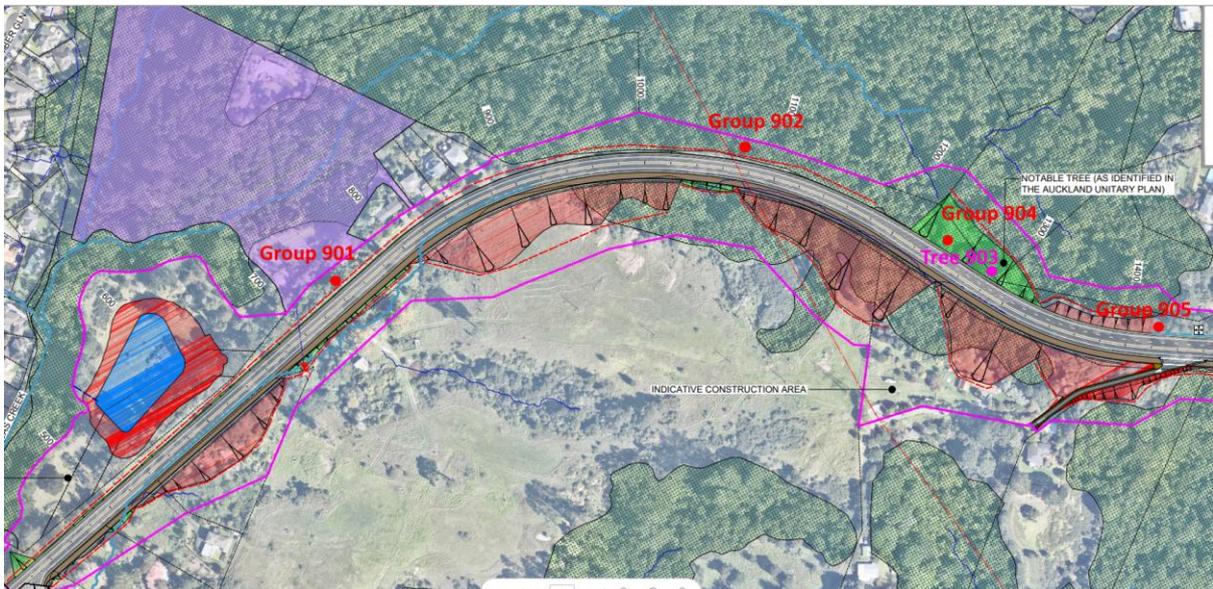


Figure 23 NoR 9 works plan showing cut/fill and extent of disturbance for Groups 901 to 905

## 14.2 Assessment Features

### 14.2.1 Group 901

Group 901 is located adjacent to R335 Dairy Flat Highway within Road Reserve (refer Figure 24). The trees and vegetation in this area are a mixture of Privet, Crack Willow (*Salix fragilis*), Wattle, Ti Kouka (*Cordyline australis*), Taupata, Mahoe, Ponga, Manuka, Puriri (*Vitex lucens*) and other weed and pioneer indigenous species.

It is anticipated that some tree removal (approximately 5.0m from the existing road edge) will be required to construct the new active mode pathway within road reserve in this location.



Figure 24 Portion of Group 901 as seen from Dairy Flat Highway

### 14.2.2 Group 902

Group 902 is identified as a strip of vegetation within road reserve adjacent to R237 Dairy Flat Highway (refer Figure 25). This area is dominated by large Pine trees, including Monterey Pine (*Pinus radiata*), and *Pinus pinaster*. The balance of trees includes a largely continuous stand of Manuka and Kanuka (*Kunzea ericoides*) growing on the upper bank section approximately 3.0-5.0m from the edge of the existing carriageway.

Where significant earthworks are required in the adjacent banked section, it is anticipated tree removal would be required.



Figure 25 Continuous Manuka/Kanuka vegetation within Group 902 (northern end)

### 14.2.3 Tree 903, Group 904 & 905

Tree 903 is identified as a Notable Kauri tree growing on the boundary of 19 Hobson Road (Figure 26). This tree is very close to the existing carriageway and is likely to be in shared ownership with Auckland Transport.

Group 904 is the balance of large indigenous trees in this location (within private property) which include large Kauri, Rimu (*Dacrydium cupressinum*) and other lesser pioneer species typical of a Kauri forest, including Tanekaha (*Phyllocladus trichomanoides*), Manuka, Ponga, Taupata and Mahoe. This vegetation is not subject to protection under the district plan, but forms part of the wider forest ecosystem to which Tree 903 belongs.

Group 905 is just north of Group 904 and consists of large Pinus pinaster and mixed Manuka/Kanuka. This vegetation is on the top of a ridge section.

Extensive earthworks are proposed within the footprint of Group 904, which is remnant bush, including a large batter slope.

It is anticipated that the Notable Kauri tree, along with a large portion of the remnant bush will require removal to facilitate the proposed works in this location.

It is anticipated fringe effects would also occur where trees and vegetation are retained on the periphery of the proposed cut/fill works.



Figure 26 Tree 903 and Group 904 as seen from Dairy Flat Highway

#### 14.2.4 Groups 906 & 907

Group 906 is the extension of an open space bush area adjacent to 436 Dairy Flat Highway. A row of Manuka trees in this location are likely to require pruning and works adjacent as it currently overhangs road reserve. Group 907 stands within R497 Dairy Flat Highway (refer Figure 27). This vegetation is also largely overhanging road reserve from the adjacent open space zone, with a mixture of large Monterey Pine nearest to the Albany Heights intersection and a significant Kauri stand further north.

It is anticipated that works would be undertaken within the protected root zone of some of this vegetation overhanging from the adjacent open space zoned land.



Figure 27 Group 907 as seen from the Albany Heights road intersection

### 14.3 Assessment of construction effects

As noted in Section 14.2, works will be required within road reserve adjacent to and impacting a portion of Groups 901, 902, 906 & 907.

More extensive works are proposed where Tree 903, Group 904 & 905 are located, including extensive cut/fill works and battering.

As previously outlined, it is anticipated that all trees or vegetation within the footprint of this batter works would require removal (refer Figure 28).



**Figure 28** Approximate location of Tree 903 and adjacent large Kauri in proposed batter location

## 14.4 Summary and Conclusions

The works as part of NoR 9 will require the removal of one Notable tree (903) and trees within two protected groups 901,902 as part of the future earthworks. Tree removal shall be limited where practical, with all future works to be assessed in accordance with the TMP recommendations provided in Section 5.3 of this assessment.

Care must be taken when designing and considering the earthworks extent adjacent to retained vegetation, especially in the case of Group 903,905,906 & 907. It will be important to consider existing overland flow and adjacent finished ground levels on tree health and longevity.

Refer to Section 5.3 for a set of standard recommendations for tree removal, the removal of mass planted vegetation and replacement planting.

## 15 NoR 10: Upgrade to Wainui Road

This section assesses specific arboricultural matters relating to NoR 10 – Upgrade to Wainui Road.

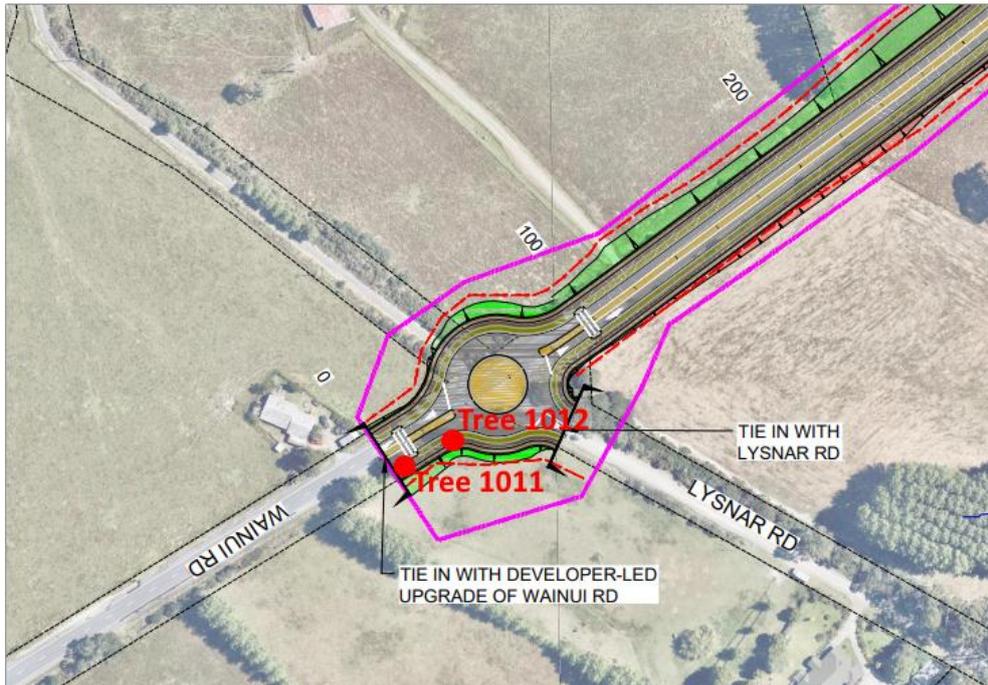


Figure 29 Image showing affected trees and designation at the corner of Wainui and Lysnar Road

## 15.1 Overview and description of Works

NoR 10 will travel from the Wainui Road/Lysnar Road east along Wainui Road to the existing Wainui Road northbound off ramp.

The upgraded corridor follows the existing road reserve along Wainui Road, with the adjacent land zoned largely FUZ land. As such, for the most part, vegetation within the road corridor is not subject to protection.

The parcel of land on the southwest side of the Wainui Road and Lysnar Road intersection is zoned as a future town centre and is subject to business, residential and open space zonings. As such tree protection would apply to those trees on the adjacent road reserve. The trees in this location are discussed further in Section 15.3 below.

The remaining vegetation along this portion of the route is not subject to protection under district plan rules.

## 15.2 Assessment Features

### 15.3 Wainui Road/ Lysnar Road Intersection

Two (2) Poplar trees (Tree 1011 & 1012, Figure 29 and Figure 30) are growing on the southern side of Wainui Road adjacent to 16 Lysnar Road. It is anticipated that these two trees would require removal as part of the intersection upgrade works.



Figure 30 Trees 1011 & 1012 to the west of the proposed intersection works

## 15.4 Positive arboricultural effects

As with the previous sections, the proposed infrastructure upgrades will include the formation of a new formal road corridor. This road corridor includes a provision for a new grass berm to be formally planted with street trees. Considering the largely sporadic nature of vegetation within a rural road setting, formal street tree plantings will improve the overall structure and number of trees planted within this section within the public realm. It is anticipated that, based on the designation boundaries, that the more significant vegetation growing within the SEA areas will be retained and protected as part of the future works.

## 15.5 Assessment of construction effects

It is anticipated that the two Poplar trees would require removal to facilitate the proposed road widening and associated infrastructure.

## 15.6 Summary and Conclusions

The Project works affect two (2) protected trees growing in the road reserve. Refer to Section 5.3 for a set of standard recommendations for tree removal, and replacement planting.

# 16 NoR 11 - New connection between Dairy Flat Highway and Wilks Road

This section assesses specific arboricultural matters relating to NoR 11 – New Connection between Dairy Flat Highway and Wilks Road.

## 16.1 Overview and description of Works

NoR 11 will provide a new connection between Wilks Road and Kahikatea Flat Road. This is a new Greenfields route which largely crosses rural land zoned FUZ.

The route will follow existing road reserve westwards along Wilks Rd before connecting with Kahikatea Flat Road. A new intersection will be formed at the junction of Kahikatea Flat Road, Dairy Flat Highway and the new extended Wilks Road.

The existing Wilks Road reserve stands largely adjacent to FUZ land with no trees located on road reserve adjacent to the Business zoned land on the western side of Dairy Flat Highway.

As such, any vegetation within the road corridor is not subject to protection.

No vegetation along this portion of the route is subject to protection under district plan rules.

As such, no further assessment of this NoR is provided in this assessment.

## 17 NoR 12 - Upgrade and Extension to Bawden Road

This section assesses specific arboricultural matters relating to NoR 12 – Upgrade and Extension to Bawden Road.

### 17.1 Overview and description of Works

NoR 12 will follow existing road reserve eastwards along Bawden Road from Dairy Flat Highway before connecting with the eastern end of Bawden Road where it crosses SH1.

The existing Bawden Road reserve stands entirely adjacent to FUZ land and as such, any vegetation within the road corridor is not subject to protection.

No vegetation along this portion of the route is subject to protection under district plan rules. There are no Significant Ecological Areas (SEA) identified within this NoR.

As such, no further assessment of this NoR is provided in this assessment.

## 18 NoR 13 - East Coast Road Upgrade

This section assesses specific arboricultural matters relating to NoR 13 – East Coast Road Upgrade.

This proposed section largely involves future works adjacent to FUZ or Rural zoned land, with the exception of portions of the section along East Coast Road from Spur Road north to the Hibiscus Coast Highway.

The western side of East Coast Road is a mixture of Residential and Business zoned land from Spur Road northwards.



Figure 31 Image showing affected trees and designation for NoR 13

## 18.1 Overview and description of Works

Cut and Fill works will be required on the western side of East Coast Road adjacent to the Residential and Business zoned land parcels.

These works will require the removal of trees and vegetation within Road Reserve in four locations where tree protection is relevant.

## 18.2 Assessment Features

### 18.2.1 East Coast Road (Spur Road to Tavern Road)

As detailed in Section 18.1, protection in road reserve applies to the majority of vegetation growing on the western side of East Coast Road from Spur Road to Hibiscus Coast Highway.

The trees and vegetation within this area are largely self-seeded exotic tree species and weed species including Gorse, Pine (*Pinus sp.*), She Oak (*Casuarina cunninghamiana*) and the occasional Manuka tree.

Four (4) distinct groups are recorded in this report (Groups 1301, 1309 & 1310, Figure 31) which are discussed in further detail below.

#### 18.2.1.1 Group 1301

Group 1301 (Figure 32) is a strip of vegetation growing on road reserve adjacent to 2118 – 2150 East Coast Road. The grouping predominately consists of a mixture of Gorse, Pine, She Oak and Manuka which is likely self-seeded.

Extensive earthworks are anticipated in this location, with the removal of all vegetation in this location anticipated as part of the works.



**Figure 32 Group 1301 on road reserve adjacent to 2118-2150 East Coast Road**

### **18.2.1.2 Group 1309**

Group 1309 (Figure 33) consists of a row of She Oak growing on the boundary of 2086 East Coast Road. The row includes several trees to the north of road reserve which includes several self-seeded trees.

It is anticipated this row would require removal as part of the future cut/fill works in this location.



Figure 33 Group 1309 on road reserve adjacent to 2118-2150 East Coast Road

### 18.2.1.3 Group 1310

Group 1310 is located further to the south adjacent to 2076 and the southern portion of 2086 East Coast Road. This cluster is largely Gorse, small self-seeded She Oak and other weed species vegetation.

As with Group 1309, removal of this vegetation to facilitate the cut/fill works are anticipated.

### 18.2.1.4 Vegetation near the East Coast Road/Hibiscus Coast Highway Intersection

Formal street tree plantings are identified near the intersection of East Coast Road and Hibiscus Coast Highway. These include four (4) small Manuka trees planted within road reserve on the western side adjacent to 2200 East Coast Road and three (3) Gum trees (*Eucalyptus sp.*) planted within road reserve on the eastern side adjacent to 31 Blanc Road. (Group 1305 & 1306, Figure 34 and Figure 35).

A new active mode facility is proposed for construction on either side of East Coast Road in this location. As such, it is anticipated that these trees would require removal.



Figure 34 Group 1306



Figure 35 Group 1305

## 18.3 Summary and Conclusions

The removal of 7 trees and 3 groups of trees will be required to enable the Project in this section. Refer to Section 5.3 for a set of standard recommendations for tree removal, and replacement planting.

## 19 Overall Conclusions

The existing environment for the majority of the Project corridors is primarily rural or Future Urban, with the exception of isolated portions of residential, open space or business zoned land. Tree cover associated with the existing rural environments typically include plantings of amenity trees, naturally occurring emergent and established indigenous mass planted areas and riparian vegetation within the road reserve and open space zones.

The future environment is likely to change over the next 10 – 30+ years as intensification occurs along the corridors as a result of recent changes in national policy direction and changes to the RMA. This will likely result in a reduction of trees adjoining the corridor, on business and residentially zoned land, which are not afforded any protection in the AUP:OP.

A summary of the trees or vegetation requiring removal for each NoR, which are protected by District Plan provisions in the AUP:OP is provided in the table below:

**Table 19-1 Summary of Trees or vegetation affect Project wide.**

NoR	Number of protected trees/ requiring removal	Protected Mass planted areas/groups of vegetation requiring removal
NoR 1	0	2
NoR 2	0	2 (a portion of the two (2) groups is also within NoR 1)
NoR 3	0	0
NoR 4	0	3 (a portion of one (1) of the three groups is within NoR 1)
NoR 5	0	0
NoR 6	0	0
NoR 7	0	0
NoR 8	1	2
NoR 9	1	2
NoR 10	2	0
NoR 11	0	0

NoR	Number of protected trees/ requiring removal	Protected Mass planted areas/groups of vegetation requiring removal
NoR 12	0	0
NoR 13	7	3
<b>Total</b>	<b>11</b>	<b>14</b>

It is recommended that a TMP be developed where construction work impacts on trees and groups of trees that are protected under the District Plan provisions (trees protected under Regional Plan provisions will be addressed as part of a future resource consent process). Replacement planting protocols are proposed to be developed further as part of the TMP where protected trees or mass vegetation is to be removed.

Opportunities for replanting within the berms of the proposed cross sections for the road upgrade projects provide mitigation of effects arising from tree removal associated with the Projects. The long-term outcome of comprehensive street tree planting will be more trees in the public realm and increased amenity value within the transport corridors, especially in rural FUZ zoned areas where there is no formal public plantings or formal street trees.

Overall, the effects on trees protected by the District Plan by the NoRs for the Projects will be mitigated by replacement with new trees and mass planted vegetation as part of the corridors and, where required, elsewhere within the designation boundaries.

# 1 Appendix A – Tree Information

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
Portion to be removed for new Stormwater Wetland, works within protected root zone of remaining vegetation.	101	1	Indigenous pioneer vegetation	Open Space zoned land	R 259 Oteha Valley Road	Ti Kouka ( <i>Cordyline australis</i> ), Harakeke ( <i>Phormium sp.</i> ), Kowhai ( <i>Sophora tetraptera</i> ) and other pioneer species	Young	Removal of a portion of this vegetation for new stormwater wetland.
Portion likely to be removed for new RTC route (NoR 1 & NoR 2)	105	1	Indigenous mass planted vegetation	Open Space zoned land	161 Ahutoetoe Road, Pine Valley	Totara ( <i>Podocarpus totara</i> ) and Kahikatea ( <i>Dacrydium dacrydoides</i> ), Kauri ( <i>Agathus australis</i> )  Other indigenous pioneer species	Semi - Mature	Some edge tree removal likely. Works near remaining vegetation.
Removal for new Milldale Station (NoR 1 & NoR 2)	106	1&2	Pioneer indigenous and mixed exotic plantings	Open space zoned land	97 Ahutoetoe Road, Pine Valley	Poplar ( <i>Populus sp.</i> ), mass planted Manuka ( <i>Leptospermum scoparium</i> ), Eucalypt ( <i>Eucalyptus sp.</i> ), Wattle ( <i>Acacia sp.</i> ) and the pioneer species such as Harakeke ( <i>Phormium sp.</i> ) and Tarata ( <i>Pittosporum tenuifolium</i> )	Semi - Mature	Portion in the footprint of the new Milldale station.

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
Removal for new Milldale Station (NoR 2)	107	1 & 2	Pioneer indigenous and mixed exotic plantings	Open space zoned land	97 Ahutoetoe Road, Pine Valley	She Oak ( <i>Casuarina cunninghamiana</i> )	Semi - Mature	Portion in the footprint of the new Milldale station.
Removal for new SH1 bridge structures (NoR 4)	103	4	Indigenous and exotic vegetation	Open space zoned land (Ōkura River)	Near Redvale Rise and Parallel to Awanohi Road	Manuka, Totara ( <i>Podocarpus totara</i> ), Mapou ( <i>Myrsine australis</i> ), Mahoe ( <i>Melicytus ramiflorus</i> ), Taupata ( <i>Coprosma repens</i> ), Wilding Pine ( <i>Pinus sp.</i> )  Taiwan Cherry ( <i>Prunus sp.</i> )  Privet ( <i>Ligustrum lucidum</i> )	Semi – Mature to mature	Remove for new bridge structures and enabling works.
Removal for new SH1 bridge structures (NoR 4)	104	1 & 4	Indigenous and exotic vegetation	Open space zoned land (Ōkura River)	Near Redvale Rise and Parallel to Awanohi Road	Manuka, Totara ( <i>Podocarpus totara</i> ), Mapou ( <i>Myrsine australis</i> ), Mahoe ( <i>Melicytus ramiflorus</i> ), Taupata ( <i>Coprosma repens</i> ) area, Wilding Pine ( <i>Pinus sp.</i> )  Taiwan Cherry ( <i>Prunus sp.</i> )	Semi – Mature to mature	Remove for new bridge structures and enabling works.

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
						Privet ( <i>Ligustrum lucidum</i> )		
Removal - likely edge effects and removal of footprint vegetation (Nor 4)	102	4	Indigenous and exotic vegetation	Open Space (Waiokahukura (Lucas Creek))	R21 Fairview Avenue	Manuka ( <i>Leptospermum scorparium</i> ), Mapou ( <i>Myrsine australis</i> ), Mahoe ( <i>Melicytus ramiflorus</i> ), Taupata ( <i>Coprosma robusta</i> ), Totara ( <i>Podocarpus totara</i> ), Ponga ( <i>Dicksonia sp.</i> )	Semi-mature to Mature	Removal of vegetation within the footprint of active modes path
Removal – within construction footprint (NoR 8)	805	8	Single tree	Open Space (4 Postman Road)	4 Postman Road	Chinese Poplar ( <i>Populus chinensis</i> )	Semi-Mature	Remove for roundabout and construction laydown
Removal – within construction footprint (NoR 8)	806	8	Hedge	Open Space (4 Postman Road)	4 Postman Road	Titoki ( <i>Alectryon excelsus</i> ), Tarata ( <i>Pittosporum tenuifolium</i> ), Bottlebrush ( <i>Callistemon sp.</i> ), Oleander	Semi-mature	Remove for roundabout and construction laydown

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
Removal – within construction footprint (NoR 8)	807	8	Hedge	Open Space (4 Postman Road)	4 Postman Road	Leyland Cypress ( <i>Cupressus x leylandii</i> ), weed species	Semi-mature	Portion to be removed for construction laydown
Removal – within construction footprint (NoR 8)	901	9	Row/Group of vegetation	Road Reserve	Adjacent to R335 Dairy Flat Hwy (open space)	Privet, Crack Willow ( <i>Salix fragilis</i> ), Wattle, Ti Kouka ( <i>Cordyline australis</i> ), Taupata, Mahoe, Ponga, Manuka, Puriri ( <i>Vitex lucens</i> ) and other weed and pioneer indigenous species.	Semi-mature	Portion to be removed for lane works and active mode construction
Removal – within construction footprint (NoR 9)	902	9	Mixed indigenous and exotic vegetation	Road Reserve	Adjacent to R357 Dairy Flat Highway (open space)	Monterey Pine ( <i>Pinus radiata</i> ) and <i>Pinus pinaster</i> . The balance of trees includes a largely continuous stand of Manuka and Kanuka ( <i>Kunzea ericoides</i> )	Semi-mature to mature	Remove portion for lane works and active mode construction
Removal – within construction footprint	903	9	Single Tree (Notable tree)	Road Reserve/Private property	Adjacent to 19 Hobson Road/partially on road reserve	Kauri ( <i>Agathus australis</i> )	Mature	Some canopy decline but good healthy regeneration. Remove for batter

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
(NoR 9)				(Notable tree)				slope and earthworks
Removal – within construction footprint (NoR 9)	904	9	Mixed Kauri and remnant indigeous	Private/Road Reserve (not protected under DP)	19 Hobson Road	Kauri ( <i>Agathus australis</i> ) Rimu ( <i>Dacrydium cupressinum</i> ) Tanekaha Manuka ( <i>Leptospermum scoparium</i> ) Kanuka ( <i>Kunzea ericoides</i> ) Taupata ( <i>Coprosma repens</i> )	Semi-mature to Mature	Part of the wider stand that Tree 903 is part of. Remove for new batter slope.
Removal – within construction footprint (NoR 9)	905	9	Manuka & Pine	No protection, adjacent to Rural zone	1 Hobson Road	Manuka ( <i>Leptospermum scoparium</i> ), Kanuka ( <i>Kunzea ericoides</i> ), <i>Pinus radiata</i> , <i>Pinus pinaster</i>	Semi-mature to Mature	North of Group 904 where batter is proposed within private property. No protected by DP rules.
Works within root zone/possible small plant removal	906	9	Manuka row	Road Reserve	Adjacent to Open space zoned land (463 Dairy Flat Highway)	Manuka ( <i>Leptospermum scoparium</i> )	Semi-mature	Works in vicinity of grouping

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
(NoR 9)								
Works within root zone/possible small plant removal (NoR 9)	907	9	Monterey Pine and Kauri	Road Reserve	Adjacent to Open space zoned land (R497 Dairy Flat Highway)	Manuka ( <i>Leptospermum scoparium</i> ), Kauri ( <i>Agathus australis</i> ), Taupata ( <i>Coprosma repens</i> ), <i>Pinus radiata</i> , <i>Pinus pinaster</i>	Semi-mature to mature	Works within PRZ of trees within reserve area
Removal – works footprint (NoR 10)	1011	10	Poplar	Road Reserve (adjacent to open space)	Corner of Wainui Road and Lysnar Road	Hybrid Poplar ( <i>Populus sp.</i> )	Semi-mature	Remove for new widening and associated intersection works
Removal – works footprint (NoR 10)	1012	10	Poplar	Road Reserve (adjacent to open space)	Corner of Wainui Road and Lysnar Road	Hybrid Poplar ( <i>Populus sp.</i> )	Semi-mature	Remove for new widening and associated intersection works
Removal – works footprint (NoR 13)	1301	13	Mixed exotic species /Manuka	Road reserve	(adjacent to 2118-2150 East Coast Road)	Gorse ( <i>Ulex europaeus</i> ) Wilding Pine ( <i>Pinus sp.</i> ), She Oak ( <i>Casuarina cunninghamiana</i> ), Manuka ( <i>Leptospermum scoparium</i> )	Semi-mature	Remove for cut/fill and related earthworks
Removal – works footprint	1309	13	She Oak row	Road reserve	Adjacent to 2086 East Coast Road	She Oak ( <i>Casuarina cunninghamiana</i> )	Semi-mature	Remove for cut/fill and related earthworks

Status	Tree No.	NoR	Vegetation Type	Protection	Location	Species	Age	Comments
(NoR 13)								
Removal – works footprint (NoR 13)	1310	13	She Oak and Gorse	Road reserve	Adjacent to 2076/2086 East Coast Road	She Oak ( <i>Casuarina cunninghamiana</i> ), Gorse ( <i>Ulex europaeus</i> ), other weed species	Semi-mature	Remove for cut/fill and related earthworks
Removal – footprint of active mode path (NoR 13)	1305	13	4x Manuka	Road Reserve	Adjacent to 2200 East Coast Road	Manuka ( <i>Leptospermum scoparium</i> )	Semi-mature	Remove for active mode facility
Removal – footprint of active mode path (NoR 13)	1306	13	3x Gum trees	Road Reserve	Adjacent to 31 Blanc Road	Eucalyptus/ Gum tree ( <i>Eucalyptus sp.</i> )	Semi-mature	Remove for active mode facility