



*NZTA Contract 442PN*

**New Zealand  
Transport Agency  
SH1 Wellington  
Northern Corridor**

**Peka Peka to North Ōtaki Expressway**

**Landscape and Visual Assessment**





*NZTA Contract 442PN*


---

# New Zealand Transport Agency

## SH1 Wellington Northern Corridor

Prepared By   
-----  
David McKenzie, FNZILA  
Principal, Landscape Architecture

Reviewed By Gavin Lister, FNZILA  
Director, Isthmus Group Ltd

Approved for  
Release By   
-----  
Adam Nicholls  
Team Leader

Opus International Consultants Ltd  
Christchurch Environmental Office  
20 Moorhouse Avenue  
PO Box 1482, Christchurch Mail  
Centre, Christchurch 8140  
New Zealand

Telephone: +64 3 363 5400  
Facsimile: +64 3 365 7858

Date: January 2013  
Reference: 5-C1814.72

Status: Final

# Contents

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
1.1	Potential Environmental Effects .....	1
1.2	Assessments Undertaken .....	1
1.3	Assessment Results .....	2
1.4	Suggested Mitigation Approach for Effects Identified .....	3
<b>2</b>	<b>INTRODUCTION .....</b>	<b>5</b>
2.1	Purpose .....	5
2.2	Scope .....	5
<b>3</b>	<b>GENERAL BACKGROUND .....</b>	<b>8</b>
3.1	Definition of ‘Landscape’ .....	8
3.2	Description of Existing Landscape .....	8
<b>4</b>	<b>PROJECT BACKGROUND .....</b>	<b>16</b>
4.1	Project Description .....	16
<b>5</b>	<b>WORK UNDERTAKEN .....</b>	<b>18</b>
5.1	Urban and Landscape Design Framework.....	18
5.2	Scheme Assessment Report Addendum .....	18
5.3	Pare-o-Matangi Reserve Landscape and Visual Assessment .....	19
5.4	Specialist Reports.....	19
5.5	Project Landscape and Visual Assessment .....	20
<b>6</b>	<b>RESULTS.....</b>	<b>22</b>
6.1	Landscape and Visual Effects.....	22
6.2	Section by Section Analysis.....	25
6.3	Natural Character.....	56
6.4	Outstanding Natural Features and Landscapes.....	58
6.5	Construction Effects.....	60
<b>7</b>	<b>SIGNIFICANCE OF EFFECTS .....</b>	<b>62</b>
7.1	Degree of Effects .....	62
7.2	Acceptability of Effects.....	63
<b>8</b>	<b>APPLICABLE STANDARDS .....</b>	<b>65</b>
<b>9</b>	<b>ABILITY TO AVOID/REMEDY/MITIGATE EFFECTS.....</b>	<b>65</b>
<b>10</b>	<b>SUGGESTED CHANGES .....</b>	<b>66</b>
<b>11</b>	<b>CONCLUSION .....</b>	<b>68</b>

**12 REFERENCES ..... 70**

**13 APPENDICES .....**

- Appendix 1 - Photographs .....
- Appendix 2 - Urban and Landscape Design Framework Mitigation Principles .....
- Appendix 3 – For Consenting: Landscape Plans .....
- Appendix 4 - Preparation of Visualisations.....
- Appendix 5 - Visualisations .....
- Appendix 6 – Pare-o-Matangi Reserve Areas .....

NB: Appendices 1, 2, 5 and 6, being A3 documents, are contained in Volume 5 of the AEE

# 1 EXECUTIVE SUMMARY

The purpose of this Landscape and Visual Assessment is to describe the potential effects that may arise from the development of a four lane expressway running from just north of Ōtaki south to just north of Peka Peka Road on the Kāpiti Coast and associated works including realignment of a section of the North Island Main Trunk railway line through Ōtaki.

## 1.1 Potential Environmental Effects

Potential landscape and visual effects of the Project include the following:

- Physical effects of the Expressway construction on existing landforms, landcover, landuses and watercourses;
- Effects of the Project on landscape character and values associated with the landscape;
- Visual effects on views from the Waitohu ‘plateau’ and the Ōtaki Railway Retail Area of Ōtaki township, from Te Horo township, from local roads and other public places, from nearby dwellings and private property and from walking tracks on the banks of the Ōtaki River;
- Effects on the Ōtaki River and various remnant stands of native bush east of the NIMT railway on the Hautere Plains that identified in the Kāpiti Coast District Plan as Outstanding Landscape Areas;
- Cumulative effects of the Project in conjunction with existing road and rail corridors in the Project Area and in particular with the existing ‘river crossing’ section of the Ōtaki River; and
- Temporary landscape and visual effects during construction.

## 1.2 Assessments Undertaken

NZTA commissioned Opus to prepare landscape inputs to an Urban and Landscape Design Framework (October 2012), a Scheme Assessment Report Addendum (September 2011) and subsequently to prepare this Assessment of Landscape and Visual Effects which covers the following matters:

- Assessment of the effects on physical landscape, i.e. ‘landscape effects’ (s7(c) and s7(f) matters);
- Assessment of effects on landscape amenity, i.e. ‘visual effects’ (s7(c) and s7(f) matters), taking into account:
  - ‘fit’ with existing landscape character and patterns;
  - effects on land use;
  - appearance of structures such as bridges;
  - visual effects from dwellings and private property; and
  - photo visualisations from representative viewpoints.

- Assessment of effects on natural character of rivers, streams and their margins (s6(a) matters); and
- An assessment of potential ONF/ONLs in the corridor and effects on the values of such landscapes (s6(b) matters).

The assessment included inspections from the existing State Highway 1 and from adjoining local roads, a ‘walk-over’ of the Project Area<sup>1</sup> with the Project’s specialist team and representatives of local and regional councils and local iwi and the use of recent aerial photography. Representative viewpoints for generating indicative photo visualisations of built elements of the Project were chosen in discussion with NZTA and KCDC.

### 1.3 Assessment Results

The Project Area is appropriate for the Expressway in terms of landscape character and the ability to absorb change in that the designation corridor traverses two distinct overall landscape types, rural and urban; both of which are highly modified. There are, however, scattered areas of native bush to the east and west of the ‘Te Horo straight’ section of the Project and the Expressway also crosses the Ōtaki River, several named watercourses and a number of unnamed, intermittent watercourses.

Various measures have been incorporated into the design of the Project and subsequent measures proposed, so as to align with the purpose and principles of the RMA that includes ‘avoiding, remedying and mitigating’ any adverse effects. The Project’s Urban and Landscape Design Framework sets the scene’ for these design and mitigation measures in providing corridor wide design principles and objectives.

In the section-by-section analysis of the Project’s potential landscape and visual effects at Section 6.2, the nature of the landscape, visual and amenity effects on the ‘parts’ of the local landscape traversed by the Expressway are described and ranked, along with a ranking for overall magnitude of effect. The potential ameliorating factor of the landscape mitigation measures has been included in the ‘equation’ and a ranking of the likely ‘actual effect’ assessed.

In terms of s7(c) and s7(f) matters, there are two relatively short sections of the Project where the overall magnitude of effect is high; being the Ōtaki North to Rahui Road and Ōtaki River to Addington Road sections. With both sections there is scope for landscape mitigation that will result in a degree of actual effect that is moderate to high. For the Ōtaki North to Rahui Road section it is expected that the actual effect would be reduced to moderate if the described ‘like-for-like’ mitigation adjacent to Pare-o-Matangi Reserve is implemented.

For the majority of the landscape sections that have been described for the Project length the overall magnitude of effect is moderate, which is a reflection of the Expressway ‘sitting with’ the existing dual transport corridor that traverses the local landscape. It is also expected that practical levels of landscape mitigation can ameliorate the generally moderate effects and any localised higher effects.

---

<sup>1</sup> For the purposes of this Landscape and Visual Assessment, the Project Area is the broad visual catchment of Expressway and encompasses that which can be seen from the existing SH1 as this is the consistent ‘viewpoint’ from which the Expressway has been considered; refer to Figure 1 – Landscape Unit Map.

There are two landscape sections where the overall actual effect has been ranked as moderate to low and low; being the Waerenga Road to Ōtaki River and north of Te Hapua Road to Kowhai Road sections, respectively.

Following from the discussion on natural character and ONLs at Sections 6.3 and 6.4, the focus of s6(a) and s6(b) matters for the Project is the ‘river crossing’ section of the Ōtaki River; being the area where there are currently two large bridges. There will be a cumulative effect that results from placing another bridge in this section of the river, but the effect on the limited natural character of this section of the Ōtaki River is low due to the highly modified nature of this section of the river and its opposing banks. No ONLs will be affected by the Project.

There will be moderate to high visual construction effects at the various sites of the Expressway’s bridge structures and along the length of the Project as the Expressway formation is formed. Progressive mitigation of exposed cut and fill batters and installation of the long-term landscape mitigation plantings will reduce the relatively short term effect of the Expressway’s construction phase.

In terms of cumulative effect, the focus of this degree of effect will be at the Ōtaki River and the ‘river crossing’ section as described above. Overall, there will be a cumulative effect that results from having further roading elements of the Expressway paralleling the existing SH1 and NIMT railway alignments.

As one might expect from major infrastructure, there will be a range of landscape and visual effects, some of which will be ranked as high in their immediate vicinity. Overall, the landscape and visual effects will be moderate considering the linear extent of the Project Area.

## **1.4 Suggested Mitigation Approach for Effects Identified**

The main measure already incorporated into the project design in order to avoid, remedy or mitigate potential adverse effects is that the Expressway ‘sits’ within or immediately beside the existing dual road and rail corridor through the local landscape. This eliminates many potential adverse landscape effects that would arise if a ‘greenfields’ route had been chosen.

Subsequent landscape mitigation measures have been outlined in the Mitigation of Effects part of the Section by Section analysis of the Project length; refer to Section 6.2 for analysis discussion and Section 3.2 for extent of landscape units and subsequent landscape sections. These mitigation measures arise from the ULDF and are illustrated on the For Consenting: Landscape Plans.

Landscape principles have been incorporated into each phase of the Project starting with the initial draft of the ULDF, through the development of the SARA, in response to the subsequent public consultation phase and then with the refinement of the For Consenting: Landscape Plan, which illustrate the landscape mitigation measures proposed in this assessment.

Extensive landscape mitigation measures are proposed as part of the overall Expressway project so as to limit and ‘make good’ the landscape and visual effects that result from constructing a four lane Expressway and its associated structures and works such as the railway realignment, through a well-established rural and peri-urban landscape. Particular emphasis will be given to providing appropriate mitigation for the losses and changes associated with these effects on the Pare-o-Matangi Reserve.

It is considered that through a sensitive landscape and urban design approach, the actual and potential landscape and visual effects of the Expressway will be successfully minimised and mitigated to an acceptable level by the measures outlined in this report.



## 2 INTRODUCTION

### 2.1 Purpose

The following ‘purpose’ statement is from the Project’s Assessment of Environmental Effects (“AEE”) Part A – Introduction:

*This report and supporting documentation (contained in Volumes 1, 2, 3, 4 and 5) has been prepared in support of the Notices of Requirement for the designations and applications for resource consent which would authorise, under the Resource Management Act 1991 (RMA), the construction, operation and maintenance of the project. This relates to both the NoR by the NZTA for the designation of land in the Kāpiti Coast District Plan for the construction, operation and maintenance of the Peka Peka to Ōtaki section of the Kāpiti Expressway, and the NoR by KiwiRail for the designation of land for the construction, operation and maintenance of a ‘re-aligned’ section of the NIMT railway through Ōtaki.*

*In addition to the NoRs, the NZTA is also lodging applications for the resource consent with the EPA that are needed for the respective components of the project that require consent under the Greater Wellington Regional Council Plans. The NoR and the regional resource consent application forms are provided in Volume 1.*

*This report includes a comprehensive and integrated Assessment of Environmental Effects (AEE) which addresses all aspects relevant to the consideration and determination of the NoRs and resource consent applications. These matters are being lodged with the EPA as a proposal of national significance under section 145(3) of the RMA.*

This technical report covering landscape and visual assessment is one of the supporting documents to the AEE.

### 2.2 Scope

The consenting process that will lead to the Notice of Requirement designation being lodged by the NZTA for the Peka Peka to North Ōtaki Expressway (“Expressway” or the “Project”) section of the State Highway 1 (“SH1”) Wellington Northern Corridor Roads of National Significance (“RONS”) project was progressed in two phases. Both of these phases will support the AEE for the Project.

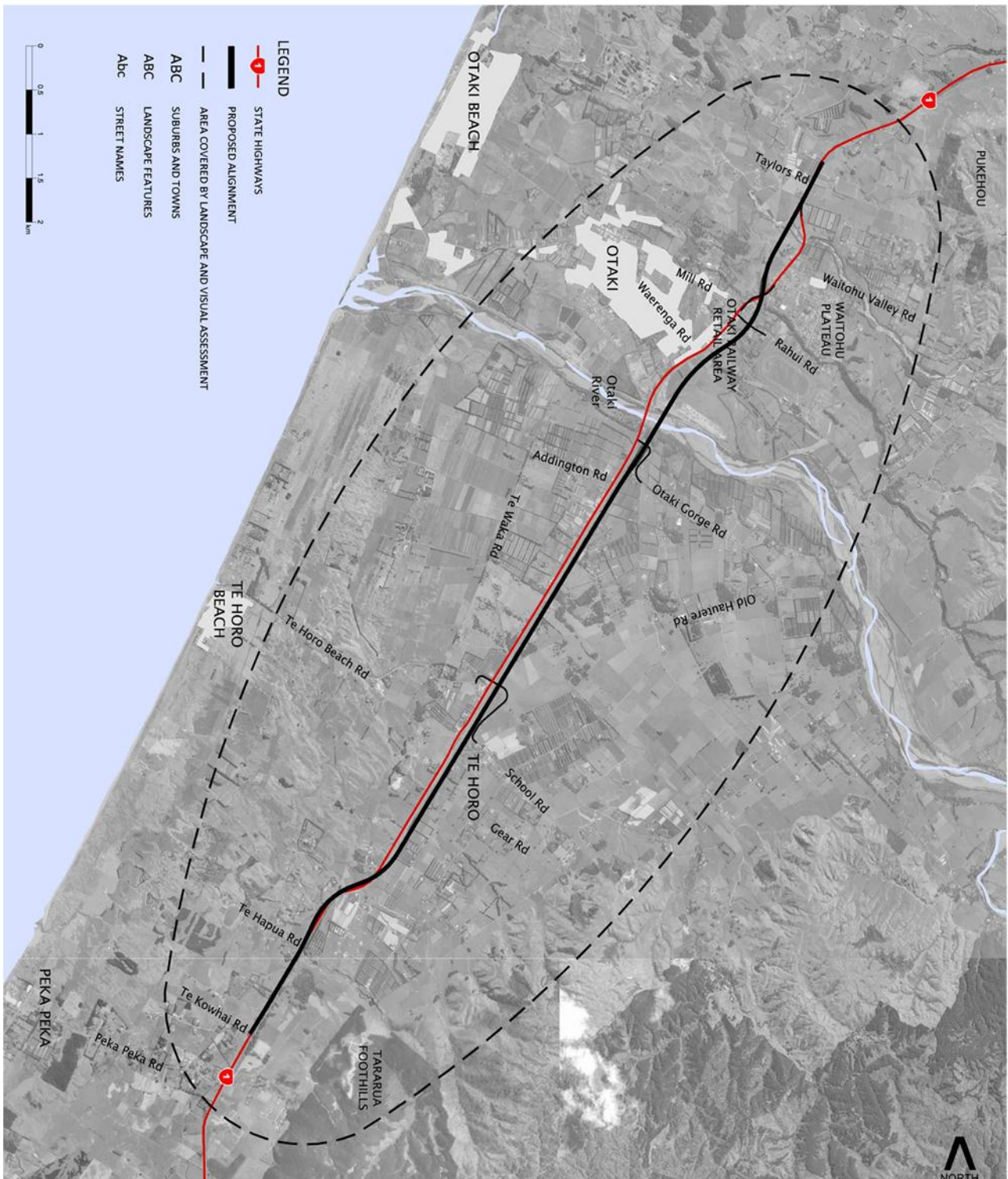
Phase 1 considered various specialists’ inputs to the Scheme Assessment Report Addendum (“SARA”), such as ecology, landscape and archaeology (among others) and focussed on the integration of potential mitigation measures. This consideration was then taken to public consultation.

Phase 2 involved considering the feedback from public consultation and completing specialists’ assessments of the Project, in the form of reports that will comprise the technical appendices to the AEE.

This report addresses the potential landscape and visual effects of the Project and the various measures that have been incorporated into the design of the Project. The report also addresses subsequent measures that have been proposed so as to align with the purpose and principles of the RMA that includes ‘avoiding, remedying and mitigating’ adverse effects.

It is noted that the Project's Urban and Landscape Design Framework ("ULDF") is quoted where appropriate within this assessment. The ULDF has been written to encompass both urban design and landscape aspects of the Project and as such these quotes may refer to the landscape and visual area of expertise and that of urban design.

The general area of the potential landscape and visual effects of the Project, along with various features and localities described in in this assessment are shown in **Figure 1** – Assessment Area.



**Figure 1: Assessment Area**

## 3 GENERAL BACKGROUND

### 3.1 Definition of ‘Landscape’

The definition contained in the NZILA Practice Note<sup>2</sup> is recommended:

**‘Landscape** is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations’.<sup>3</sup>

In describing the landscape relative to the Expressway, it is necessary to highlight those aspects relevant to the Project, and ensure that each of the main aspects contained in the definition above are covered. That is, the description covers natural and cultural aspects, and human perceptions and associations that are all part of the local landscape.

### 3.2 Description of Existing Landscape

The following provides a broad overview of the landscape context of the Project and follows on from the broad description of existing environment and its landscape and urban design context, which is provided in the draft Peka Peka to North Ōtaki Urban and Landscape Design Framework (ULDF)<sup>4</sup>.

#### 3.2.1 Physical and Cultural Aspects

The Project Area is located along the Kāpiti Coast approximately 70km north of Wellington. The route stretches for 12.2 km from Taylors Road in the north to Te Kowhai Road in the south, and bisects the eastern part of Ōtaki Township; refer to **Figure 2** – Landscape Unit Map. The Project Area comprises a mix of land uses including rural, residential, industrial, commercial, and horticultural. The area surrounding Ōtaki township is predominantly rural, with the Ōtaki economy relying largely on the farming communities.

The Expressway passes through two townships, being Ōtaki, a small town of approximately 5,600 and Te Horo, a small rural community of approximately 640 people. Ōtaki is the northernmost urban centre within the Kāpiti Coast District Council (“KCDC”) and the Greater Wellington Regional Council (“GWRC”) territorial areas.

The Kāpiti Coast is currently experiencing high growth and is one of the fastest growing districts in the lower North Island. Planned development in the Ōtaki area will place greater demand on the existing road network, and particularly on SH1 as a commuter route to Wellington. Additionally, there is increasing intensification of rural and horticultural activities.

The Expressway traverses relatively flat terrain, crossing the Waitohu, Mangapouri and Mangaone Streams, the Ōtaki River and the North Island Main Trunk (“NIMT”) railway. State Highway 1 currently has priority over all except one intersection (the Ōtaki roundabout) along the route. This roundabout can cause significant traffic congestion issues, particularly during busy periods.

---

<sup>2</sup> *Best Practice Note 10.1: Landscape Assessment and Sustainable Management*, New Zealand Institute of Landscape Architects, 2 November 2010,

<sup>3</sup> Visual appearance and views are a subset of ‘landscape’. ‘Visual effects’ are a subset of ‘landscape effects’.

<sup>4</sup> *Peka Peka to Ōtaki Urban and Landscape Design Framework*, prepared for NZTA by Opus International Consultants Ltd, October 2012

State Highway 1 and the adjacent NIMT rail corridor sever Ōtaki and Te Horo. This is particularly an issue in Ōtaki as there is only one main east-west connection (Mill Road to Rahui Road) providing access across the regional transport corridor.

### **Landform**

The landform of the Project Area is defined by a number of strong natural features including the coastal edge, the coastal plain, the western foothills, and the local rivers and streams.

The Expressway travels between the western foothills (which reach up to 510 m above sea level) of the Tararua Ranges in the east and the coast which is 3-4 km to the west and follows a route that travels through varying environments (residential, commercial, rural, horticultural, and recreation areas) and topography.

Within the northern two-thirds of the Project Area, the topography is generally flat and drops down to cross the Ōtaki River and floodplain at Ōtaki. Immediately south of Waitohu Stream there is a localised sand dune formation and immediately south of this is the northern terrace of the Ōtaki River floodplain.

South of Te Horo Beach Road and particularly in the Hapua Road area, the Expressway traverses lower lying areas (associated with interdune deposits) and undulating mounds (associated with sand dunes).

### **Geology**

From Taylors Road south to Te Horo Beach Road, the underlying geology includes terrace alluvium and recent alluvium. Between Te Horo Beach Road and Peka Peka Road, there are underlying dune sand and interdune deposits, which are likely to include peat deposits. These different soil types will need to be considered during landscape development and plant choice.

The floodplain around the Ōtaki River predominantly consists of premium flat, fertile soils which foster farming, market gardening and horticulture; all are of economic significance to the area.

Wellington is one of the most seismically active areas within NZ. There are several faults within the vicinity of the Expressway including the Ohariu Fault, the northern Ohariu Fault, the Gibbs Fault, the Ōtaki Forks Fault, and the Wellington Fault.

### **Hydrology<sup>5</sup>**

The existing SH1 crosses four significant watercourses; as will the Expressway.

#### **Waitohu Stream**

The Waitohu Stream and the surrounding flood plain are located at the north end of the Project Area. The majority of properties affected by this waterway and its flood zone are rural properties. The Waitohu Stream is very active in terms of its geomorphology, which results in the stream flow not being set to a stable stream channel. The local water table is high and the ground surrounding the watercourse is very swampy.

---

<sup>5</sup> The various watercourses and wetlands within the Project area are described in detail in the Project's hydrology, stormwater, ecology (land) and ecology (water) specialist reports.

### **Mangapouri Stream**

Mangapouri Stream is located just north of Rahui Road and flows through Pare-o-Matangi reserve adjacent to Mill Road. The stream acts as a natural containment line for development to the north of Ōtaki.

### **Ōtaki River**

The Ōtaki River is the largest waterway in the Project Area, located on the southern side of Ōtaki, acting as a natural containment line to the south for the town's development. The properties along the Ōtaki River banks are generally of a recreational, industrial or rural nature.

There is currently only one vehicle and one railway bridge crossing the Ōtaki River. In terms of route security this poses a significant threat. The most recent stopbank work protecting Ōtaki is the Chrystall Stopbank, which ties into the existing railway embankment and bridge abutments.

### **Mangaone Stream**

The Mangaone Stream is located at Te Horo, and its flood patterns affect mainly rural lifestyle properties and rural land. The floodplain of this area is very flat, so small changes in topography have the potential to divert flooding elsewhere and the existing State highway has a history of flooding in this area.

### **Other Watercourses**

There are a number of lesser streams that cross the route of the Project; some named such as Greenwood Stream immediate south of Taylors Road and others not such as several that relate to existing culverts under the existing SH1 south of Gear Road. All of these lesser watercourses have intermittent flows resulting from seepage losses to the underlying ground.

### **Vegetation**

As a generalisation, intense agriculture has resulted in a relatively open landscape with scattered mature exotic trees, numerous shelterbelts and hedges and bands of willow common to the river and stream banks.

Indigenous vegetation is largely confined to a few small remnants, though these scattered stands of native vegetation are more common and distinctive in the Ōtaki Gorge Road/Old Hautere Road/Te Horo area. The Expressway will pass through the edge of stands of native mature trees and through wetland areas in a few discrete localities along the alignment. Many of these sites are of local significance, such as Cottles Bush. Two areas of swamp forest have also been identified near Mary Crest and the Expressway has been re-designed to avoid both of these areas.

### **Land uses**

#### **Current**

The majority of the Project Area is currently zoned as rural, with urban activities mainly confined to Ōtaki and to a much lesser extent, Te Horo.

There are two zoned retail/ commercial areas within Ōtaki; the Main St Town Centre and the Railway Retail Area. The Main St Town Centre serves the local Ōtaki community, while the Railway Retail Area serves both a local and regional clientele.

Many of Te Horo's community facilities (including Te Horo School) are located on the east side of the State Highway, while the main residential area is on the west side. Therefore, connectivity across the state highway is important for the functionality of the settlement.

### **Future**

Within the Project Area, KCDC has expressed desire for future industrial and residential growth to be based around Ōtaki. Development of the existing industrial zone along Riverbank Road is currently underway as a 'CleanTech' business park. This is intended to be of local and regional significance.

Although severance by the Expressway is more acute at Te Horo, the settlement is small and is likely to remain so as the KCDC District Plan seeks to restrict residential development in this area so as to retain rural character.

### **Communities**

#### **Ōtaki Township**

Ōtaki Township is the northernmost centre of three dominant settlements on the Kāpiti Coast. The urban boundaries of Ōtaki are Waitohu Stream to the north and Ōtaki River to the south. The majority of Ōtaki residents and community amenities are located west of the SH1 corridor with a smaller residential population to the northwest on the Waitohu Plateau. The key connections between the two areas are via the existing SH1 and Rahui Road.

#### **Ōtaki Railway Retail Area**

The Ōtaki Railway Retail Area is located along the existing SH1 in the form of a specialist and outlet retail strip between the roundabout at SH1 and Rahui Road intersection and Waerenga Road. The economic viability of the businesses in this area would be particularly sensitive to the form and legibility of off/on ramps to Ōtaki from the Expressway. The natural centre of the Railway Retail Area is the Arthur Street intersection which acts as a minor east-west axis across SH1.

#### **Te Horo**

Te Horo Township is located toward the southern end of the study area. The urban form is a simple linear development, with the main community functions structured along School Road, and market garden stalls on SH1. These areas are severed by both the existing SH1 and rail corridors.

### **Reserves**

#### **Pare-o-Matangi Reserve**

Pare-o-Matangi Reserve does not hold reserve status under the Reserves Act, but is a green space of importance to the community.

The landscape and visual values of Pare-o-Matangi Reserve are likely to change significantly as a result of the Expressway. However, there are opportunities to mitigate these effects; firstly, the open space of the reserve allows any underpass on Rahui Road to be treated as a landscape element with longer ramps to ensure a high-quality pedestrian environment. Secondly, if the reserve is extended, it can be developed to provide a green space buffer between the Expressway and Ōtaki; refer to Section 6.2.3.

### 3.2.2 Perceptual Aspects

#### Landscape Character Areas

There are seven different landuse types bordering the Expressway's designation corridor; one of which runs the length of the corridor. These landuses, along with relatively subtle changes in landform, inform landscape character areas.

##### Rural

The majority of the Expressway corridor passes through rural land, with the resultant character being dominant from Taylors Road to Waitohu Stream and then from Ōtaki River to Peka Peka (the Hautere Plains).

North of the Project Area is the distinctly undulating farmland of the Horowhenua Plains. Travelling south from Taylors Road, open farmland continues to Waitohu Valley Road on the east and beyond the Waitohu Stream and a localised ridge to the west. Rural landuse continues to the river terrace north of Rahui Road and then is visible again east of the State highway and railway line within the Ōtaki River floodplain.

North of Te Horo and to the east of the State highway and railway line the land flattens out to a localised area of broad plain that drains towards the Ōtaki River. This plain contains further pastoral farming and areas of horticultural production. The latter landuse has a regimented pattern of shelterbelts. There are also several small remnant stands of totara in the area.

The former marine terrace escarpment immediately east of Peka Peka Road intersection defines the southern end of the Project Area. To the west and northward extends the rolling contour of the local duneland topography. This area of pastoral farming is broken by an irregular pattern of conifer shelterbelts.

##### Lifestyle

Directly related to the rural landuse and located within the rural character area are a number of smallholdings. These are more intensively subdivided, contain various houses and outbuildings and a variety of amenity and production tree and shrub plantings. Their intensity and diversity of development is what differentiates these lifestyle blocks character from their immediate rural surroundings.

##### Residential

Within the Project Area the areas of residential character are confined to the Ōtaki township area with a section of residential ribbon development on both sides of the existing State highway immediately north of the northern river terrace and the local railway overbridge and on the west side of the highway just north of the Ōtaki River.

Many of the houses whose sections front onto the State highway have relatively dense plantings of amenity trees and shrubs on their highway frontages. These have been planted as a buffer between the dwelling and the constant flow of highway traffic.

##### Reserve/open space

While quite rural in aspect, the few reserve or public open space areas within the study area are focussed on Ōtaki, being Pare-o-Matangi Reserve, the land between Rahui Road and Ōtaki Railway Station and the rest area on the immediate southern bank of the Ōtaki River. None of these "reserve areas" are reserves subject to the Reserves Act 1997.



## **Industrial**

Currently industrial landuse with proximity to the Expressway is confined to the immediate area of the northern bank of the Ōtaki River. Gravel extraction from the bed of the river for aggregate and concrete making is the main business. The industrial activity is not highly visible from the existing State highway as the bridge structure obscures the view.

## **Commercial/retail**

Predominantly retail landuse forms the focus of the Ōtaki Railway Retail Area. The visual diversity and 'main street' business activity within this retail area is one of the most memorable aspects when travelling through this overall section of State Highway.

While this retail area contains many conflicting activities and visual images and is further degraded by traffic congestion, it is the focus and a vibrant part of the local community.

## **Transportation**

A subsidiary landuse, but common to the whole of the Project Area, is roading paralleled by railway and bisects or forms the edge of a variety of character areas. It is the conduit from which the travelling public observes the local landscape and in turn affects those landscapes.

## **Landscape Character Summary**

The Expressway corridor traverses two distinct overall landscape types - rural and urban - and in so doing it is important to acknowledge the specific landscape character areas and their particular opportunities and constraints during the design process. A particularly important consideration will be to ensure that the built form of the Expressway does not overwhelm the areas of rural landscape.

In rural areas it is important to consider integration or re-establishment of (but not limited to) the existing contours, existing vegetation patterns (such as shelterbelts), and planted noise mitigation bunds rather than noise walls; should specific 'built' noise mitigation measures be required.

## **Landscape Units**

In describing the broad urban design and landscape aspects of the Project within the ULDF, the Project Area was divided into four main sectors based on landform, landuse and urban context; being Ōtaki Railway Retail Area, Ōtaki Township, Te Horo and Mary Crest to Peka Peka as outlined at Figure 3 of the ULDF<sup>6</sup>. Given that the focus of this assessment is landscape matters, in this report the landscape and visual amenity aspects that relate to the Ōtaki Railway Retail Area will be considered as part of the broader Ōtaki sector or landscape unit.

In considering the likely landscape and visual effects of the Project with respect to the various, contiguous sections of the local landscape through which the Expressway will traverse, it is necessary to define landscape units. Based primarily on landform and landuse, these units are:

- Ōtaki (including Taylors Road to Ōtaki South);
- Te Horo (including Ōtaki South to Mary Crest); and

---

<sup>6</sup> It is noted that the Project description and discussion in the ULDF 'runs' from south to north, whereas in the current AEE specialist reports the equivalent input 'runs' from north to south. Consequently information sourced from the ULDF has been 'turned around' to 'run' north to south.

- Mary Crest to Peka Peka.

**Figure 2** - Landscape Unit Map - shows the extent of these landscape units and also of the subsequent landscape sections within the units relative to the linear extent of the Project.

Given that the Project is a ‘corridor’ traversing the local landscape north to south, the focus of the subsequent landscape character and effects description is on the immediate environs of the Project and to a greater distance to the east and west of the Expressway. It is also noted that there is a degree of overlap at the ‘boundaries’ of the three landscape units as the Project does not traverse any ridgelines, catchment boundaries or other natural lines of distinct demarcation.

Representative photographs at **Appendix 1**, contained in Volume 5 of the AEE, show various aspects of the landscape units and their sections, as do the ‘before’ photographs that form part of the Expressway visualisations at **Appendix 5**, also contained in Volume 5 of the AEE. The Viewpoints Map showing the locations of the photographs and visualisations is also included in **Appendix 1**.

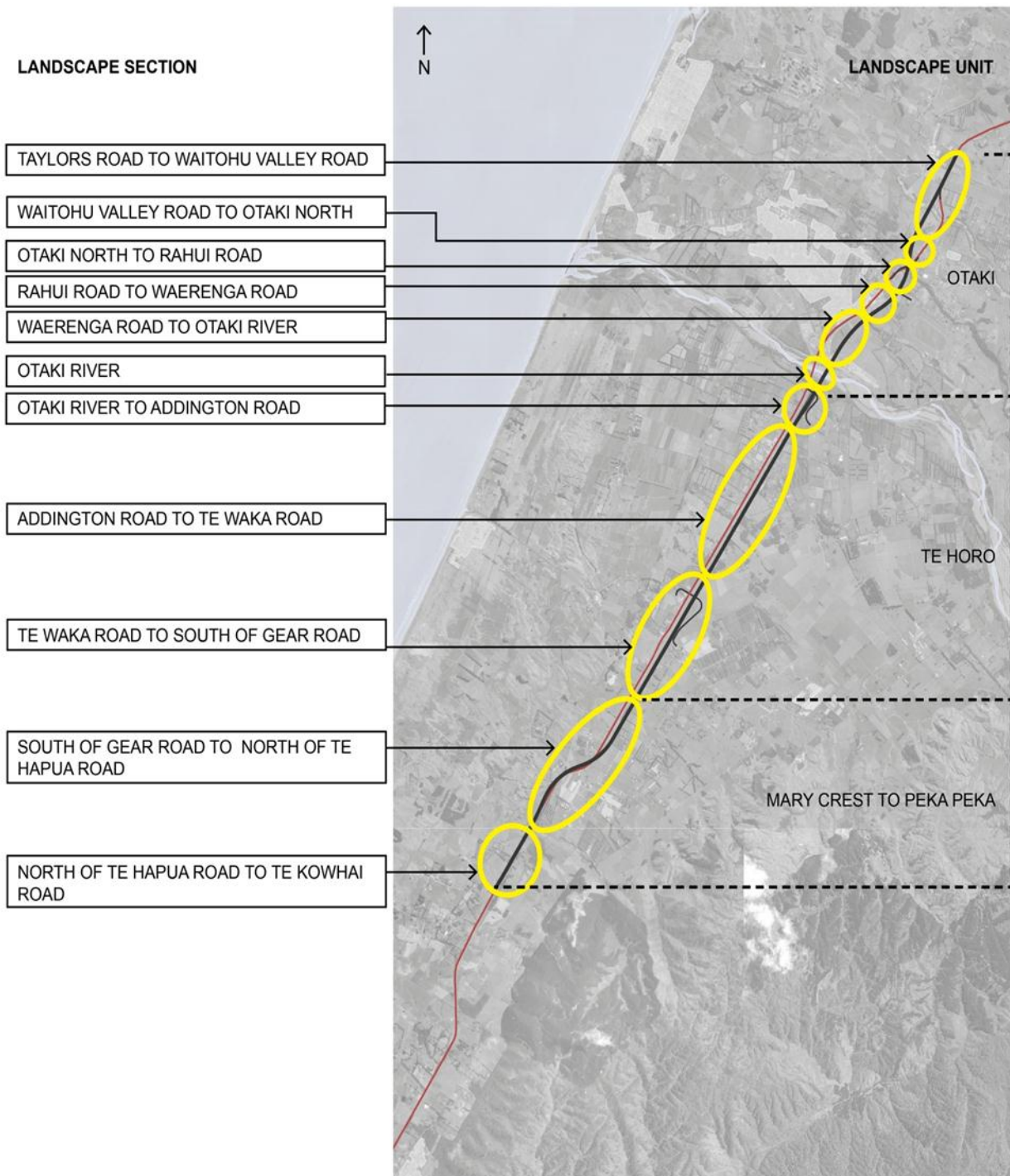
### 3.2.3 Associative Aspects

#### Heritage

The Kāpiti Coast has a rich history, both Maori and European. It is important to understand the diverse cultural heritage of Ōtaki, so that areas of significance are acknowledged and protected. It is also important to understand the cultural values and history of the area, so that the treatment of the corridor can be appropriately designed to represent and celebrate the area and the community.

Input by the Project team’s archaeologists and heritage specialists, in hand with iwi liaison is an integral part of the design process for the Project, to ensure that the Project team is aware of, and considering tāngata whenua when developing the Expressway design. These inputs are documented, in detail, as separate supporting reports to the Project’s AEE.

An overview of the heritage aspects of the Project is provided in the ULDF.



**Figure 2: Landscape Unit Map**

## 4 PROJECT BACKGROUND

### 4.1 Project Description

The planned upgrading of SH1 between Peka Peka and Ōtaki North is “part of the Wellington Northern Corridor Road of National Significance”.

State Highway 1 is the major route in and out of Wellington, linking the centres of Palmerston North, Wanganui and Levin with Wellington. By improving transport networks through the Kāpiti Coast, the Project will contribute to economic growth and productivity.

Currently the Peka Peka to North Ōtaki section of SH1 has a relatively poor and worsening safety record. It also experiences high levels of congestion during peak periods, weekends and holiday periods. This congestion is compounded by a high proportion of local traffic, and an increasing level of shopping-generated parking and pedestrian movements in the Ōtaki urban area. A bypass of Ōtaki, and the provision of a high-standard highway through the area will increase the efficiency of movements between Wellington and the North, will ease local congestion, improve safety, and will facilitate local, regional and national economic development.

The scope of the Project is to construct a high quality four-lane Expressway bypassing the township of Ōtaki and passed the settlement of Te Horo. Together with the MacKays to Peka Peka section to the south, it forms the Kāpiti Expressway and when both sections are completed will provide a superior transport corridor providing much improved, reliable and safer journeys through the Kāpiti Coast.

The Project seeks to safeguard double tracking of the main trunk rail line and also involves the relocation of the track through Ōtaki in order to accommodate the Expressway.

As shown in **Figure 2** – Landscape Unit Map - the Expressway is generally parallel to the existing State highway corridor, which is also generally parallel to the NIMT and will provide an Expressway with two lanes of traffic in each direction. There are connections with local roads provided at half-interchanges located to the north of the Ōtaki Township and just south of the Ōtaki River. Local connections and the construction of new local roads and access roads are provided to and across the Expressway, so as to maintain local connectivity.

The existing SH1 and a new stretch of local road (aside from the Expressway) proposed between north of Mary Crest to Peka Peka will become a local arterial road through a proposed separate State highway revocation process.

The Project includes the following principal design features:

- A four lane median-divided Expressway (two traffic lanes in each direction)
- Ensuring legible access into and out of Ōtaki from the Expressway to support vitality and the “Ōtaki Vision”, while limiting direct access elsewhere along the Expressway. This is achieved by:
  - one two-lane bridge over the Waitohu Stream;
  - a half-interchange north of Ōtaki;
  - a realignment of approximately 1.2 km of the NIMT railway through Ōtaki;
  - two two-lane bridges over the Ōtaki River;
  - a half-interchange south of Ōtaki (southern side of Ōtaki River);
  - grade-separated overbridges to cross some local roads, watercourses, the NIMT and the Expressway;
  - a new section of local arterial road near Mary Crest; and
  - stormwater treatment and attenuation facilities including swales, along the majority of the length of the route.

The fuller description of the various components of the Project is provided in Part D – Project Description of Volume 2 of the Project’s AEE.

## 5 WORK UNDERTAKEN

### 5.1 Urban and Landscape Design Framework

The purpose of the Project's Urban and Landscape Design Framework ("ULDF") is to describe and set out urban and landscape design principles, objectives and high level concepts of the Project. The ULDF is a 'live' document and continues to evolve during the scheme and NOR phases and will inform the development of the overall design for the Project. By providing input throughout the design, NZTA's intent is that measures to avoid or reduce adverse effects, or to enhance positive effects, are incorporated within the design, and that the ULDF is the link between the concept/consenting design team and subsequent implementation.

The ULDF is developed in accordance with NZTA guidance, is a companion document to this landscape and visual assessment and supports the NOR and consent applications. It follows from the SH1 Kāpiti Strategic Study, July 2008, and the Transit NZ Scheme Assessment Report for North Ōtaki to Peka Peka Road, September 2003.

The ULDF seeks to establish a balance between RONS network objectives, the desired future for Ōtaki as outlined in the Ōtaki Vision document 2007 (described in detail in Section 2.1 of the ULDF), and the specific urban and landscape context of the Project corridor. The statutory and non-statutory documents relevant to the Project are referenced in the ULDF at Section 2 - Policy Context and while considered, are not repeated in this assessment.

The general landscape and planting principles from Section 4.2.1 – Landscape and Section 4.2.6 – Planting of the ULDF that outlined at **Appendix 2** of this assessment are the basis to the design process of 'avoiding, remedying and mitigating adverse effects' that is illustrated in the ULDF's supporting landscape plans<sup>7</sup>.

### 5.2 Scheme Assessment Report Addendum

The Specialist Report – Landscape & Visual for inclusion in the Social and Environmental Management Section of the SARA was prepared in September 2011. The purpose of the SARA was to update NZTA's 'route selection' process relative to an earlier scheme assessment that had been completed in 2009-10.

The associated landscape report noted the degree of modification already existing relative to the Expressway corridor and that Project implies a 'doubling' of the landscape and visual effects of the existing transportation corridor by adding the 'footprint' of the Expressway and its local road connections to that of the existing and retained State highway/local arterial and that of the NIMT railway. However, by containing the Expressway within the existing transportation corridor the potential landscape and visual effect on the broader landscape and community is lessened. Further, it was noted that the application of the ULDF's landscape principles and methods would act to avoid, remedy and mitigate adverse effects. The associated Landscape Drawings from the ULDF carry through to become the illustrated form of the SARA's landscape mitigation measures.

---

<sup>7</sup> These drawings have been progressively updated via the SARA and subsequent community consultation to become the current For Consenting: Landscape Plans that are Appendix 3 of this assessment; refer to Volume 5 of the AEE.

### 5.3 Pare-o-Matangi Reserve Landscape and Visual Assessment

As the Project has been considered through the public consultation process, questions have been raised about the likely landscape and visual and general amenity effects (among others, including noise and social effects) of the Project on the triangular area of land that includes the Pare-o-Matangi Reserve, a public open space located on the northern aspect of the Ōtaki Railway Retail Area. Kāpiti Coast District Council, in particular, voiced concern about the loss of some Pare-o-Matangi Reserve land and a potential loss of associated amenity leading through to the Ōtaki Railway Retail Area.

As a response to these concerns, NZTA undertook special investigations with a view to avoiding, remedying or mitigation effects on a sensitive location of particular concern to the community. A ‘stand-alone’ assessment<sup>8</sup> was undertaken to consider the likely landscape, visual, and general amenity effects of the Project on the Pare-o-Matangi Reserve, and to recommend any measures considered necessary to mitigate those effects. The discussion and findings from the ‘stand-alone’ assessment have been incorporated into this report and the overall landscape and visual assessment for the Project.

### 5.4 Specialist Reports

A full range of specialist reports have been commissioned by NZTA for inclusion in the Project’s AEE. The specialist inputs include urban form, landscape and visual, ecology (land), ecology (water), archaeology, stormwater, hydraulics/hydrology (flood), geotechnical, traffic and transportation, noise and vibration, air quality, constructability, contaminated land, resource utilisation assessment, macro-economic effects, business effects, heritage, cultural (iwi), social and community, consultation, statutory planning and environmental management.

Being the ‘design guide’ for the Project, the ULDF has given direction via the overarching principles in Section 4 – Corridor Design to the highway design and the associated environmental design and mitigation aspects. Through an iterative process with the Project’s highway design, bridge design, ecology, acoustic, hydrology, archaeology, heritage, urban design and landscape specialists in particular, a set of corridor-wide design principles have been derived that cover landscape, earthworks, structures, noise mitigation, pedestrian, cycle and bridleway links, road furniture and stormwater aspects of the Project.

With particular regard to the Project’s potential noise effects and the subsequent visual effects that may arise when mitigating traffic noise, there will be no specific visual effect arising as currently the noise mitigation recommended by the Project’s noise specialist is to use OGPA (low noise) road surface at key locations along the Expressway and to investigate modifications to three buildings.

---

<sup>8</sup> *Peka Peka to North Ōtaki Expressway: Ōtaki North to Rahui Road Section – Effects on the Pare-o-Matangi Reserve and Recommended Mitigation Measures*, prepared for NZTA by Opus (David McKenzie), August 2012

## 5.5 Project Landscape and Visual Assessment

### Methodology

The methodology for this assessment is modelled on the draft NZTA Landscape and Visual Assessment (LVA) Guidelines<sup>9</sup> and has been reviewed by the author of the draft LVA guidelines. The LVA has been written to a report format that is specific to this Project and with the format of the other technical specialists’ inputs in support of the Project’s AEE. The LVA is framed in response to RMA matters:

- Assessment of the effects on physical landscape, referred to subsequently as ‘landscape effects’ (s7(c) and s7(f) matters);
- Assessment of effects on landscape amenity, referred to subsequently as ‘visual effects’ (s7(c) and s7(f) matters); taking into account:
  - ‘fit’ with existing landscape character and patterns;
  - effects on land use;
  - appearance of structures such as bridges;
  - visual effects from dwellings and private property; and
  - photo simulations from representative viewpoints.
- Assessment of effects on natural character of rivers, streams and their margins (s6a matters), and
- An Appraisal of potential ONF/ONLs in the corridor, and effects on the values of such landscapes (s6(b) matters).

The following section from the NZTA draft LVA Guidelines provides direction on defining the actual landscape and visual effects of the project:

### Analysing Actual Effects



Based on the environmental and design information available, the precise nature of the potential effect is described. It is noted that change is not an effect per se. By way of example, it is not the quantity of the earthworks that is relevant, rather the effect of the earthworks on (say) visual amenity values or natural character of a stream.

An evaluation of the magnitude of the effect is then provided. Magnitude is influenced by variables<sup>10</sup>, for example the dimensions of a cut batter, distance from a viewpoint, extent of screening. A relative scale is used to rank magnitude and reasons provided to justify the ranking. The following 5 point scale suggested in the NZTA draft LVA Guidelines is utilised. The scale is symmetrical around a ‘moderate’ middle score and uses neutral (‘objective’) descriptors.

<sup>9</sup> NZTA Landscape and Visual Assessment Guidelines; prepared for NZTA by Isthmus Group (Gavin Lister), undated (March 2012)

<sup>10</sup> In other words an assessment of magnitude can be thought of as an assessment of variables.



<i>low</i>	<i>moderate-low</i>	<i>moderate</i>	<i>moderate-high</i>	<i>high</i>
------------	---------------------	-----------------	----------------------	-------------

The mitigation component that is factored in to the above actual effects ‘equation’ is a further development of the measures previously outlined in the ULDF and the SARA text and supporting landscape concept drawings and now shown on the For Consenting: Landscape Plans; refer **Appendix 3**, contained in Volume 5 of the AEE.

## 6 RESULTS

### 6.1 Landscape and Visual Effects

#### 6.1.1 Landscape Effects

In their simplest form, landscape effects arise from changes to the landform, landcover and landuse components of the local landscape. These physical changes to the landscape from the construction and operation of the Expressway typically occur due to:

- the removal of existing structures and vegetation;
- the excavation of cut batters;
- the placement of fill formations;
- the construction/placement of the Expressway surface, bridges, lighting and other structures;
- the realignment of the section of railway, in this case;
- implementation of stormwater and visual mitigation measures; and
- traffic on the completed Expressway.

These changes then equate to varying degrees of change to the landscape character along the route of the Project.

While the physical changes that may result from the Project are focussed on in this part of the assessment, consideration is also given to the perceptual aspects of the landscape. These further aspects are described and discussed in relation to visual effects, along with broader amenity aspects of the Project.

#### 6.1.2 Visual Effects

The visual effects of the Expressway will result from changes to the local landscape and their degree of visibility. The extent of these effects and their acceptability or otherwise will depend on the degree of change to the local landscape character in relation to the amount of change that is currently happening in the area. For instance, in the North Ōtaki to Rahui Road section, the context and extent of change is quite contained and is consistent with other change happening in the local landscape, where there is the commercial and retail development to the south, residential development to the east and west and open space or pastoral land that parallels the NIMT railway. Elsewhere, the landscape is more open and rural and there are no other large built elements other than the existing SH1 and the NIMT railway.

The actual change to the landscape due to the construction of the Expressway results in landscape effects that in turn, will have an effect on the visual amenity and character of the area. There are also broader amenity aspects considered within this part of the assessment such as changes to traffic volume resulting in improved residential amenity.

The following assessment of visual effects is based upon observation of the existing landscape and existing sections of four lane expressway within the NZTA highway network, an understanding of the likely visual effects of “constructing” the Expressway and realigning the railway, and from experience in defining and implementing appropriate measures to mitigate the types of visual effects that arise.

The description and discussion in previous sections about setting, site, Project phases and proposed activities forms the baseline discussion to this assessment.

### **The Project’s Visual Catchment**

The Expressway’s visual catchment will vary relative to its linear extent. In this case the linear extent is quite contained and views are foreshortened. The limits to its visibility relate to the localised screening effect of buildings and vegetation around the margins of the triangular area and also the topographic containment of the area, with setback and distance having a lesser effect. The viewing audience will be the public visiting the northern extent of the adjoining retail area, local residents who can see parts of the Expressway from their houses and properties, pedestrians and cyclists on local paths, railway passengers and motorists using the local roads and the Expressway; along with the users of Pare-o-Matangi Reserve.

### **Visual Simulations**

Following an analysis of where the main components of the Expressway relative to the overall length of the Project are likely to be visible from, a number of visual simulations or visualisations were prepared to assist in assessing the potential visual effects of the Expressway. Simulation viewpoints were chosen from a number of public vantage points in consultation with NZTA and KCDC.

The viewpoints were selected to afford a comprehensive and representative range of views of the Expressway and its associated works. These include salient viewpoints where the public and local residents would gain a view of the various structures such as from County Road or the northern bank of the Ōtaki River or where people commonly meet, such as in the Pare-o-Matangi Reserve.

In a number of cases it was not possible to get a representative photograph from existing ground level that could be used to show the extent of particular elements of the Project relative to a chosen viewpoint. As a number of potential viewpoints were unsafe due to traffic volumes or obscured by surrounding tall vegetation, an aerial ‘platform’ was used; in this case a remote control model helicopter with a digital SLR camera attached.

The visual simulations that have been prepared are photo-visualisations, which involve incorporating, into photographs from the selected viewpoints, elements of the proposal such as the Expressway formation, the realigned railway formation and the associated bridge structures as these will be both large and distinctive relative to the scale of the surrounding landscape. They have been developed in a CAD form that can be incorporated as a 3-D model into the visualisation.

A statement of the methodology used to prepare the photo visualisations is contained in **Appendix 4** of this assessment. The ‘before’ photographs and the ‘after’ visualisations are at **Appendix 5**, contained in Volume 5 of the AEE.

Photo-visualisations, like photographs, can be somewhat limited in their ability to represent some of the subtle details in a landscape, which may ordinarily be seen with the naked eye. Also, variations in atmospheric conditions and light, which are dependent on prevailing weather conditions and the time of day, can affect the visibility and appearance of a large earthworks-type development such as an Expressway. Notwithstanding such constraints, simulations can represent the layout, position, design and extent of the elements of a proposed development including the effects of sun and shade, precisely.

The fact that aspects of the Project will be visible and will change aspects of the character of the existing landscape does not necessarily mean that its effects will be inappropriate or unacceptable. Its visibility, the scale, nature and duration of the effect, the visual complexity and scale of the existing landscape, the visual sensitivity of the viewer and the size of the viewing audience influence the significance of the potential effects. Visual sensitivity is a measure of how critically changes to a landscape will be regarded and depends upon a range of viewer and view characteristics.

The photo visualisations have been used to assist in the assessment of the visibility and landscape and visual effects, including cumulative effects, of the Project. The assessment that follows in Section 6.2 focuses on an objective description of the degree of change to the status quo that a viewer will experience from each particular viewpoint, rather than whether the change represents an adverse or a positive effect.

The visualisations show aspects of the integrated design and mitigation measures that are expected under the RONS guidelines, for instance, shaping and grassing and/or planting of the Expressway batters, as described in the mitigation measures of Section 6.2 of this report.

### **6.1.3 Urban and landscape Design Framework Mitigation Guidelines**

Various measures have been incorporated into the design of the Project and subsequent measures proposed, so as to align with the purpose and principles of the RMA that includes ‘avoiding, remedying and mitigating’ any adverse effects. The Project’s ULDF ‘sets the scene’ for these design and mitigation measures in providing corridor wide design principles and objectives; these are listed at Appendix 2.

### **6.1.4 Mitigation Requirements**

With respect to the purpose and principles of the RMA and the requirement in terms of ‘avoiding, remedying and mitigating’ any adverse effects, the Project does present a number of adverse landscape and visual effects that will require specific mitigation. Aspects of the avoidance of effects will result from the design of the Project, such as ensuring that the ‘footprint’ of the Expressway and railway realignment is the minimum practical and that formation batters are formed to a gentle grade. However, the most effective mitigation is likely to come from subsequent measures, such as the provision of additional reserve space and landscape planting for screening, streambank rehabilitation, amenity and ecological enhancement.

Taking its lead from the Project's ULDF, a set of landscape concept drawings have been developed and progressively refined for the Project. The current 'For Consenting' set of landscape plans<sup>11</sup> at Appendix 3 were updated from the initial ULDF set to become the SARA set. Subsequently, response to feedback from the community consultation and open days, along with incorporating recent roading design changes, has resulted in the 'For Consenting' set of drawings.

## 6.2 Section by Section Analysis

The ULDF provided a broad overview of the urban and rural landscape context of the Project and noted seven character areas based predominately on land use. The following refines the landscape character relative to the three landscape units. Within each landscape unit, there is a further break down into sections<sup>12</sup> to aid in describing more detailed landscape character and likely effects of the Project.

Section 3.2 provided a broad description of the landscape setting of the Project. The following section by section analysis starts a description of the specific section of the local landscape the Expressway would traverse. This is followed by describing the potential landscape, visual and amenity effects of the Project on the particular section of the local landscape, along with the mitigation requirements for each of the landscape sections.

### Ōtaki Landscape Unit

#### 6.2.1 Taylors Road to Waitohu Valley Road Section

##### Description

From Taylors Road at the northern end of the Project through to Waitohu Valley Road, the landscape contains areas of the orchard but is predominantly pastoral, with dairy production being the main landuse. Views from the existing SH1 open to the west towards the north side of Waitohu Stream and towards the NIMT railway.

Immediately south of the Waitohu Stream and west of the existing SH1 there is rolling farmland that has the appearance of a dunal landscape. These dunes create a rolling platform towards the northern aspect of Ōtaki and form a backdrop to housing on the west as the existing SH1 enters Ōtaki.

The rural character of the local area is relatively open, with the pastoral land use allowing views across the paddocks on either side of the existing highway, though these views are contained in places by hedges, shelterbelts and streambank willows. This all contributes to the rural character and the moderate scale of the landscape from Taylors Road to Waitohu Valley Road on the northern edge of Ōtaki. This is further reinforced in that there are only five farm dwellings and their outbuildings that have direct access to the existing SH1 in this section of the Project. It is also noted that the three farm dwellings in the Taylors Road area that will be closest to the Expressway are enclosed by established shelter, amenity and garden plantings.

---

<sup>11</sup> NZTA Peka Peka to North Ōtaki Expressway – For Consenting: Landscape Plan Sheets 1-10; Dwg No. 5/26664/1/6504, August 2012

<sup>12</sup> For consistency, the landscape 'sections' described in this assessment equate to the landscape 'units' described in the *Landscape Assessment of SH1 Ōtaki – Te Horo Expressway*, prepared for NZTA via Meritec by John Hudson Associates, June 2003. In both cases the local landscape has been broken down into smaller parts based on landscape characteristics of landform, landcover and landuse that make the parts unique.

**Photos 1** through to **4** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

The Project implies a moderate to high degree of change to the landform, a moderate to low change to landcover and moderate change to landuse through this section of the local landscape. The landform change entails excavating an approximately 500 m by 100-120 m wide (at the top) open cut through an ancient dune formation. The landcover change involves replacing pasture with road surface, along with grassed and planted cut batters and Expressway margins. Vegetation removal would be limited to sections of hedge on the existing SH1 frontage immediately south of Taylors Road and limited willow removal at the crossing point on Waitohu Stream. The landuse change involves the conversion of a strip of farmland to Expressway and subsequent changes to land management of adjoining residual farmland. A new structure - Waitohu Stream Bridge (Bridge 1) across the Waitohu Stream – will also be created.

The existing character of the area north of Waitohu Stream is open rural land with the existing SH1 affecting the rural amenity. The Project will intensify the roading effects through the creating of a new section of Expressway tapering from two lanes out to four lanes on the northern edge of Ōtaki, along with the proposed Waitohu Stream Bridge (Bridge No.1) across the Waitohu Stream. The existing SH1 alignment will be retained as the northern ‘entrance’ route to the Waitohu Plateau, Ōtaki Railway Retail area and broader Ōtaki Township, further reducing the rural amenity of the area for residents, whilst changing little for road users.

The existing character of the area south of Waitohu Stream is that of a quiet rural open pastoral landscape, broken by variations in landform and separated from the main housing area in northern Ōtaki by this landform. The landscape effect of the Project will be to change this character from quiet rural to one containing a further section of transport corridor. There will be also a distinct effect on the dune ‘ridge’ south of the stream with the Expressway cutting through and along the half of ridge closest to the NIMT railway.

### **Visual Effects**

When travelling south from Levin, the view from the existing SH1 in the Taylors Road to Waitohu Stream area is of open farmland, shelterbelts, hedges and farm houses and buildings. The Project will result in roading becoming a more visible component of this area through the creating of a new section of Expressway that bridges the Waitohu Stream and then enters a large cut through a sand dune ridge.

The first section of the Expressway through to the bridge will be at grade and have a low visual effect. From the bridge through the cutting, the scale and extent of the cutting and its contrast with the surrounding landform would be very obvious from the Expressway.

The Expressway can be accommodated visually within such a landscape with only moderate adverse effects for adjacent landowners due to the open nature of the surrounding land, which prevents the route dominating the local setting, and due to the moderate scale of the setting, which is also sufficiently expansive to accommodate the alignment without domination. The sand dune ridge south of Waitohu Stream provides screening and will allow only a portion of this length of Expressway to be seen from the houses adjoining the existing SH1.

As part of the urban design input to the Project, bold formal planting of specimen trees and/or mass plantings of native shrub species would be used to signal the Projects Northern Gateway Zone, just south of Taylors Road. The purpose of this ‘zone’ will be to indicate the route south-bound traffic should take to access Ōtaki Township and the Ōtaki Railway Retail Area, and will include appropriate NZTA signage clearly defining the off-ramp via the new local arterial road to the township and the Railway Retail Area. The definition of the ‘gateway zone’ may be reinforced through the use of large-scale local artwork or similar. This northern ‘gateway zone’, as with the southern ‘gateway zone’ immediately south of the Ōtaki River, will be one of the two highway interchanges on the Project and as such, will be one of the two locations that has overhead lighting. This lighting will be installed to meet NZTA standards.

### **Mitigation of Effects**

While the ‘northern gateway’ has an urban design focus, it is anticipated that detail design of the associated landscape planting will provide for screening of the Expressway relative to adjacent farm dwellings. Consideration will also be given in the detail design phase to ensure the overhead lighting of the ‘gateway zone’ has a limited effect on the two adjoining farm dwellings. Given the density of the existing tree and amenity plantings around these dwellings and their setback from the Expressway, potential lighting effects on the dwellings would be minimal.

The Waitohu Bridge will have a clean, simple design that allows open views to the area of the stream and the surrounding farmland. Riparian planting will be undertaken where possible around the rock armouring that is placed to protect the bridge abutments and immediate stream banks.

Subject to the geotechnical constraints of maintaining stable cut faces through sand substrate, the cuts through the sand dune ‘ridge’ south of Waitohu Stream will be formed to reflect the natural contour and assist in mitigating the local effect on this feature. The damper, more shaded cut faces on the west side of the Expressway will be planted with hardy, drought tolerant, low-growing native species, whereas the more arid eastern batters will be grassed.

## **6.2.2 Waitohu Valley Road to Ōtaki North Section**

### **Description**

South from Waitohu Valley Road to the existing SH1 railway overbridge, which currently forms the northern ‘entrance’ or ‘gateway’ to the Ōtaki Railway Retail Area, is the most intensively developed area of housing along the entire route of the Expressway with approximately 30 dwellings having direct access to the existing SH1. There is also a variation in topography, with the housing on the east of the existing SH1 being on the higher flat ground of an old river terrace, locally known as Waitohu Plateau. The land on the west of the highway undulates and includes the varied landform created by a number of old sand dunes. The NIMT railway cuts through a local valley between the dunes and at a lower level than the flat terrace to the east. Two houses are located atop a dune immediately to the northwest of the existing SH1 railway overbridge, with views oriented to the west. There are no other dwellings to the west that are in proximity of the Expressway.

The houses to the east provide an urban character, while the open space around the railway line and the land to the west provides a rural character. There is an unkempt aspect that comes from vegetation that has developed along the rail corridor. This comprises a mix of blackberry, gorse and other woody weeds, plus willows and other wetland plants that have grown in a low lying area where drainage is restricted and there is a small, spring-fed wetland adjacent to the railway line. Adjacent houses and smallholdings have developed their properties to take advantage of the slightly elevated to rolling topography and their west-facing aspect that allows open views across the NIMT railway and beyond.

**Photos 5 and 6** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

Within this ‘north edge of Ōtaki’ section, the Project involves a continuation of the moderate to high degree of change to the landform, moderate change to landcover and moderate change to landuse; all within the confines of a short section of the local landscape. The landform change entails a continuation of a cutting by a further 400 m approximately for the Expressway, paralleled in part, by approximately 300 m of open cut for the realignment of the NIMT railway, with a width of approximately 120 m across the two designations between the top of the opposing cut batters. The excavation of the pair of cuttings would cut through a sand dune ‘ridge’ and partially infill a small valley that contains a spring-fed wetland and the existing section of the NIMT railway. The landcover change involves replacing pasture, sections of shelterbelt and unkempt, woody weed vegetation with road surface and grassed and planted cut batters and Expressway margins. The landuse change involves the conversion of various ‘rear sections’ of smallholdings, a section of railway and a wetland area to Expressway and realigned railway. A local road on-ramp will also be created on the dividing ‘ridge’ between the pair of cuttings.

The Expressway will have a moderate to high degree of adverse effect on the rural open space character of the northern end of this section with the introduction of the four lane Expressway and the landform changes this entails. The change of character will have an adverse effect on the landscape amenity values for houses on the west side of the existing SH1, causing them to be located between roading to both the east and west. However, these effects will be localised due to the enclosing topography and small scale of the area. The houses to the immediate east at the south end of this section will be those most affected, due to the close proximity of the Expressway and the significant change in character that will occur.

The open space and dune landform west of the houses facing on to the existing SH1 will change from its rural, unkempt and generally passive character to one of a constructed Expressway and realigned railway. The two houses immediately northwest of the existing SH1 railway overbridge will be removed as will their associated vegetation with the character of the localised setting changing markedly through the introduction of the Expressway, north bound on ramp and realignment of the NIMT railway.

### **Visual Effects**

Progressing south, the Expressway’s cutting through the sand dune ‘ridge’ will extend south into this short landscape section with the cut batters of the realigned NIMT cut batters and the fill batters of the north-bound feeder road also being obvious new visual elements within this confined area.



The change in visual aspect from that of rural open space to that of parallel road and rail will be distinct. The change in visual character will have an adverse effect on the landscape amenity values for houses on the west side of the existing SH1, given that they will be located between roading to both the east and west.

The Expressway will have a high degree of effect on the amenity values of the immediate area, but these effects will be localized due to the enclosing topography and small scale of the area. The houses to the east of the Project will be those most affected, due to the close proximity of the Expressway and the significant change in character that will occur. Another obvious visual change will be the removal of the two houses and their enclosing mature trees and other planting on the west edge of the designation corridor due to the realignment of the NIMT railway.

The road user will experience this portion of the Expressway as confined and incised as it passes between enclosing batters and embankments and the Ōtaki North Underpass at the south end of this landscape section. This will contrast with the road users' more open, rural experience immediately north of this area, and will add interest to the driving experience along the Expressway.

Some improvements in amenity values for properties east of the Expressway are likely to occur with the removal of traffic from the existing SH1. There are also potential amenity benefits to be gained via the landscape and ecological mitigation planting that will take place around the Railway Wetland and this otherwise hidden 'pocket' of wetland becoming visible to south-bound motorists on the Expressway.

### **Mitigation of Effects**

The landscape treatment of the Expressway cut batters will extend south into this short landscape section with planting or grassing also being used on the realigned NIMT cut batters and the north-bound feeder road fill batters as dictated by climatic aspect and soil conditions.

Screen planting of native tree and shrub species would be placed along the top of the eastern Expressway cut batter to provide a buffer for the adjoining properties that face onto the new local arterial road and back onto the Expressway. This planting would also include wetland riparian planting around the Railway Wetland.

## **6.2.3 Ōtaki North to Rahu Road Section**

### **Description**

The existing 'Ōtaki North' SH1 railway overbridge – County Road intersection area through to Rahu Road traverses the change in topography between the higher river terrace of the Waitohu Plateau and the lower Ōtaki River flood plain. The terrace edge is highlighted by vegetation growing along the escarpment, which borders the eastern edge of the Country Road for a short distance.

While the gradient of County Road is relatively gentle, the terraced landform immediately to its east is generally flat, with houses set back from County Road on the upper and lower terraces. The house allotments are larger than normal urban sections, and properties often have open lawns plus generous tree planting, which gives this area a small town rural character. Their set back, section size and planting, the small scale appearance of the narrow winding descent of County Road, the presence of open space to the west and the distance from the highway, contribute to the high amenity value of the County Road area. The movement and noise of the trains is likely to affect this amenity, but the concentrated and intermittent nature of rail transport allows the area to retain a quiet rural character and high amenity values.

The NIMT railway parallels the western edge of County Road as it descends from under the existing SH1 to the at-grade crossing at Rahui Road. Immediately west of this section of the railway are a number of open paddocks and then a local community passive recreational space called Pare-o-Matangi Reserve.

Pare-o-Matangi Reserve is an open space that covers approximately the northwest third of the triangular shaped area that is bounded by SH1 and the Ōtaki North railway overbridge to the west and north, the NIMT railway and County Road to the east and Rahui Road to the south. The north eastern 'third' of the area is open space that is subdivided into horse paddocks. The southern third to half of the area includes the Ōtaki Motel and associated vacant land, a real estate office and 9-10 residences, associated outbuildings and gardens.

The Ōtaki Motel is accessed from SH1 and from Rahui Road. There is a converted residence that now serves as a real estate agency on the SH1 frontage and SH1, Mill Road and Rahui Road roundabout corner and backs onto the motel. East of the Rahui Road entrance to the motel is a single dwelling within a large section that contains a semi-commercial vegetable garden. On the eastern edge of this property is an access lane to the vacant land that separates the motel from the reserve. Immediately east of the private access lane is the long, linear entrance to the reserve, off Rahui Road. This accessway to the reserve has a small gravelled carpark from which a gravel track leads through an avenue of tree planting to a bridge over the Mangapouri Stream and into the reserve proper. The bridge across the stream provides pedestrian and maintenance vehicle access to the reserve. Pedestrian access can also be gained to the reserve from the SH1 margin adjacent to the motel land.

The Mangapouri Stream flows east to west bisecting the triangular area between the highway and railway and is contained within an incised channel. The stream drains from the Ōtaki Racecourse area, which is approximately 1.5 km upstream; it runs through a culvert under the railway into the area and out through another culvert under the highway. An open ditch that drains a spring to the north of the existing SH1 railway overbridge follows the western edge of the railway embankment and flows into Mangapouri Stream. The northern 'point' of the triangular area is somewhat elevated and at the foot of its terrace a lesser drain flows into the drain that parallels the railway embankment. A further open ditch drains from the mid-section of County Road into Mangapouri Stream.

Though called Pare-o-Matangi Reserve, this open space does not have formal reserve status under the Reserves Act 1997. The reserve has three parts; being its Rahui Road entranceway, it's main, flat, open area between Mangapouri Stream and the terrace towards the highway railway overbridge and the flat area above the terrace. A maintenance vehicle track ascends the terrace to the upper area. The main, lower expanse of mown grass contains three pods of planted trees and shrubs and the upper area is also in mown grass, but with a scattered planting of specimen trees.

As noted on a commemorative plaque within the reserve, Pare-o-Matangi Reserve was developed as a late 1990s Millennium project as a community amenity reserve by the Keep Ōtaki Beautiful Group, with input from KCDC. The overall reserve area is approximately 16,200 m<sup>2</sup>.

There are dense plantings of native tree and shrub species that bound and enclose the lower area of Pare-o-Matangi Reserve; this type of planting also extends up the stream banks to the railway behind the house sections. A similar planting of mixed native species also encloses and screens the motel units from the highway and their adjoining vacant land and the reserve beyond. There are numerous mixed exotic and native tree and shrub plantings in and around the margins of the house sections between the stream and Rahui Road. There are willow and privet trees, along with various woody weed species and rank grass, around the margins of the horse paddocks and on railway embankment and particularly on the County Road side of the embankment.

The Project's Cultural Impact Assessment<sup>13</sup> ("CIA") refers to a larger area of land in the North Ōtaki area as the Pare-o-Matangi Block and that:

*This block is severed by the current highway and includes part of the now Pare-o-Matangi Reserve. Although only a small area of this block is required for the expressway, it is not possible to distinguish the cultural significance of this area from the block as a whole.*

While the CIA does not define what part of the Pare-o-Matangi Reserve sits within the larger Pare-o-Matangi Block, it is possible that there is an associated landscape effect relative to the reserve and the Expressway that has cultural significance.

**Photos 7, 8 and 9 at Appendix 2**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

There will be fundamental changes by the Expressway to all three of the landscape components – landform, landcover and landuse; all being high - within the triangular area enclosed by the existing SH1, County Road and Rahui Road. There will also be three new bridges and associated approach embankments created in this localised section of the landscape, though two of the bridges will be incorporated within the one earthworks 'structure'.

In traversing this area from north to south, both Expressway and railway formations descend at a slight, but steady grade from the area of the existing highway railway overbridge and adjoining upper terrace level to the existing level of the railway line at the Ōtaki Railway Station, approximately 200 m south of the Rahui Road. For the most part, both formations will be approximately 3 m above grade at the point where they cross the centre of the triangular area. The local road approaches to the proposed Ōtaki North Underpass (Bridge 2 and Bridge 3<sup>14</sup>) will not be particularly noticeable as both 'step-out' from existing local high points. The proposed Rahui Road Underpass (Bridge 4) approach embankments will be two obvious landform features rising above the Mill Road/SH1/Rahui Road roundabout and above the County Road/Rahui Road intersection respectively.

---

<sup>13</sup> *Cultural Impact Assessment on NZTA Peka Peka to Ōtaki Expressway Option*, prepared for NZTA by Nga Hapu-o-Ōtaki, July 2012

<sup>14</sup> In this LVA Bridge 2 – local road over expressway bridge and Bridge 3 – local road over NIMT railway bridge are collectively referred to as 'Ōtaki North Underpass' as both sit together as the one structure in the landscape

The combined footprint of the Expressway and the railway will also occupy a considerable portion of the triangular area of reserve, open space and residential housing, altering approximately half of the total area. In placing the new formations and their associated drainage and stormwater features, almost all of the existing vegetation east of the midpoint of the reserve and the adjoining vacant motel land will be removed. Placing the Rahui Road underpass approach embankments will require the removal of vegetation on the Rahui Road margins on both sides of the existing railway crossing. Established vegetation on the downstream extent of the streambank within the reserve and on the adjacent SH1 embankment will be able to be retained.

A distinct landscape effect will be that of landuse change with localised areas of housing, pasture and open space being developed as transportation corridor; that is Expressway, railway and local road. All of the residences within the triangular area will be removed; the only built development remaining being the set of motel units, the motelier's house and the real estate agency. Three residences on the eastern part of Rahui Road will also be removed. All of the grazing paddocks east of the reserve, along with approximately half of the Pare-o-Matangi Reserve will be removed.

The landscape effect on this localised area between the existing SH1, County Road, Rahui Road and the Ōtaki Railway Retail Area will be high. This will be due to change of landform from flat, low-lying land to relatively elevated formations for the Expressway, railway and local road bridge formation, the removal of streambank and residential section trees, shrubs and gardens and the much of the area becoming part of a transportation corridor.

### **Visual Effects**

The likely visual effects on the Ōtaki North – Rahui Road section are described relative to the four public viewpoints and associated visualisations.

#### ***Viewpoint 1: View south to Rahui Road***

When travelling south and crossing the existing SH1 railway overbridge before descending into the Ōtaki Railway Retail Area, it is possible to glimpse a view across the Pare-o-Matangi Reserve area down the railway line to Rahui Road and beyond. The panoramic photograph at **Viewpoint 1: Before** was taken from a point on the southern edge of the southern approach ramp to the railway bridge and provides an overview of the triangular area of land south to Rahui Road that is being discussed. Other than from the immediately adjoining parts of this approach embankment and the railway overbridge itself, there are no other public viewpoints that currently provide an overview of the reserve and its surrounds.

There is no footpath on this side of this section of highway edge and it is currently an unsafe place for pedestrians to walk, due to the density of traffic on this section of highway and very limited traffic sightlines. With the construction of the Expressway and its associated Ōtaki North underpass, this viewpoint will be removed, but the view it currently provides will be very similar to what will be seen from the proposed footpath on the south side of the new underpass. The proposed footpath will be at the same elevation and approximately 40 m directly north of the current Viewpoint 1 location.

Through the vegetation on the side of SH1, the foreground of the view is the upper terrace of the Pare-o-Matangi Reserve and its open spaced planting of specimen trees. This upper area is contained on all sides by plantings of native shrub species. To the left through the specimen trees and the shrub planting is a small triangular paddock and the NIMT railway embankment. Beyond this are County Road and its houses and their associated garden and tree plantings.

Behind and below the shrub planting in the lower, midground of the view, the horse paddocks and sections of the lower, more extensive part of the reserve can be glimpsed, along with the planting that bounds the Mangapouri Stream. In the middle left of the view is the former Rahui Milk Treatment Station building. In the central part of the view can be seen several houses that front onto Rahui Road along with various shelterbelts and hedges. To the right of the view is the roofline of the Ōtaki Motel, beyond which can be seen the local BP petrol station and numerous buildings of the Ōtaki Railway Retail Area.

In the distant background are the western foothills of the Tararua Ranges; the western-most extent of these foothills rises from directly above the Peka Peka area. An overall impression from this viewpoint is the extent of open space and associated established vegetation 'within' this part of Ōtaki.

As shown in the visualisation **Viewpoint 1: After**, all of the central portion of the view from this viewpoint will be altered. This would result from the removal of the entire upper portion of the reserve and much of its adjoining open paddock, much of the horse paddocks and part of the reserve below the terrace and all of the houses and their section plantings that front onto Rahui Road. The dual carriageway of the Expressway along with the railway and the strip of land between the two will become the foreground of this view. These will be crossed by the Rahui Road underpass and the support spans of this bridge will become the central focus of the view.

To the left on the eastern flank of the Expressway will be a proposed stormwater basin that will drain to the Mangapouri Stream. To the left of the basin is a remnant section of railway embankment that with associated planting will screen the Expressway from County Road and adjoining residences. Between the Expressway and the realigned railway will be an inaccessible area, which will also contain a stormwater basin that drains to the open section of the stream between the Expressway and railway culverts.

### ***Viewpoint 2: View north from County Road***

Travelling north on County Road from Rahui Road, the NIMT railway embankment and its assorted cover of willow and weed species such as gorse and pampas grass, screens the triangular area from the local road and from a number of the residences that front onto County Road. From its midpoint, County Road rises up to a local curve where the road is level with the railway line as shown in the **Viewpoint 2: Before** photograph. The road continues a short distance north to intersect with the existing SH1.

In the left extent of the 'before' photo are trees and shrubs that appear as one mass of vegetation, but include specimen trees in the northern 'point' of the reserve, native shrub planting on the approach embankment to the SH1 railway overbridge and pine and macrocarpa trees, palm trees and other trees on a residential property on the north side of SH1. In the foreground are the railway line and its associated gorse, pampas grass and rank grass in the rail corridor. Above this can be seen two spans of the existing railway overbridge, with further gorse bushes and then native tree and shrub species between County Road and the highway. Above the local road to the right is a steep bank that has a dense cover of native shrub species.

As shown in the visualisation **Viewpoint 2: After**, much of the existing view from this viewpoint on County Road will be altered with the removal of all the existing SH1 railway overbridge, its southern approach embankment and the associated vegetation on the reserve and the private property beyond, including the residence on that property. In the ‘after’ image, the railway will pass through the underpass on the left; there will be an embankment between the railway and the Expressway that will have the on-ramp for north-bound local traffic accessing the Expressway on its northern aspect. The two spans of the Expressway section of the underpass occupy the central part of the view and the new intersection of County Road with what was the highway is to the right. The existing vegetated, eastern bank above County Road will be untouched.

### ***Viewpoint 3: View east from Pare-o-Matangi Reserve***

As previously noted, Pare-o-Matangi Reserve has a formed access from Rahui Road and there is also informal pedestrian access from the edge of SH1 adjacent to the Mangapouri Stream highway culvert. The reserve currently provides for passive recreation and it is understood that this includes local residents walking for exercise and/or taking the dog for a walk, locals going to the reserve for their lunch break and visitors stopping for a picnic. As it stands, the reserve itself is not particularly visible to the travelling public due to existing screen planting and its location ‘below’ the highway. Having its formal access off Rahui Road also limits its public visibility and its likely potential use. It is understood that one of the main ‘users’ of the reserve are the members of the Keep Ōtaki Beautiful Group, who are involved in maintaining the reserve and who undertake frequent ‘planting bees’ at the reserve. This group has played a key role in making the reserve what it is today.

The photograph **Viewpoint 3: Before** provides a broad view of the reserve as seen from the northern bank of Mangapouri Stream halfway between the reserve’s bridge across the stream and the highway. Beyond the foreground mown grass of the reserve to the left of the photograph, is the planted slope immediately below the highway; this extends across the centre of the view as the planting on the terrace face between the two levels of the reserve. Through the upper levels of this planting it is possible to glimpse trucks and buses as they go past on the highway.

To the right of the centre of the photograph is a section of overhead powerlines and a large macrocarpa tree that bound County Road; it is also possible to make out a short section of County Road and the railway. Immediately to the right of this in the midground is a short line of willow trees that are planted along the fenceline between the reserve and the adjacent, open horse paddocks. As can be seen from this panoramic photography, the reserve is screened from the existing highway and also screened and reasonably distanced from the railway and County Road.

As shown in the visualisation **Viewpoint 3: After**, much of the existing view from within the reserve will be altered with the removal of all the terrace face and eastern boundary planting and the railway embankment will become the immediate eastern edge of the reserve. The latter will have the effect of ‘shrinking’ quite dramatically the area of usable reserve and foreshortening the vista that reserve users previously had to the east.

The existing SH1 railway overbridge will be removed and the part of the upper superstructure and eastern abutment of the Ōtaki North underpass, along with larger vehicles crossing the bridge structure, will be visible, though setback more from the reserve than the existing highway rail overbridge. It may be possible to see the upper extent of larger vehicles such as trucks and buses passing under the underpass on the Expressway. From this viewpoint, the actual Expressway formation will be obscured by the railway embankment as will the majority of the traffic on the Expressway. As indicated in the visualisation, passing trains (though infrequent) will be very obvious from the reserve. The existing vegetated bank above County Road will be visible in the background.

While not directly visible from this viewpoint, all of the open space land between the reserve and County Road, along with the upper terrace of the reserve, will be ‘converted’ to railway and Expressway formation and their associated margins and stormwater treatment areas. The actual area of the reserve that will be ‘under’ the footprint of the two formations and their margins will be in the order of 9,900 m<sup>2</sup>, leaving a residual of 6,300 m<sup>2</sup> of reserve; that is approximately 60% of the current reserve area will be built over. These indicative areas are provided on the plan at **Appendix 6**, contained in Volume 5 of the AEE.

#### ***Viewpoint 4: View east to Rahui Road***

The roundabout at the intersection of SH1, Mill Road and Rahui Road forms the current northern entrance to the Ōtaki Railway Retail Area proper, with this roundabout being a major ‘bottleneck’ for travel north and south through Ōtaki.

As shown in the **Viewpoint 4: Before** photograph, the view to the east from the roundabout includes the corner of the Harveys Real Estate property, Rahui Road and the Ōtaki BP Connect service station. Various trees are visible on the north side of Rahui Road adjoining the Rahui Road entrances to the real estate business, Ōtaki Motel and the residential section on the west side of the Pare-o-Matangi Reserve entrance and carpark are visible. The residences beyond the reserve entrance, however, are obscured by vegetation. In the distance down Rahui Road is the at-grade NIMT railway crossing and to the right of this are the trees on the former Ōtaki dairy factory site. On the south side of the local road are the frontage of the semi-open land that leads through to the Ōtaki Railway Station and then the forecourt of the service station.

As shown in the **Viewpoint 4: After** visualisation, relatively little of the existing view from this viewpoint on the north side of the roundabout will be altered. The main change will be the placement of the western approach embankment for the proposed Rahui Road underpass; being ‘slotted’ into the existing local road reserve. The western extent of the bridge itself will also be visible. In turn, the bridge will obscure the former Rahui Milk Treatment Station building.

#### **Mitigation of Effects**

The mitigation requirements for the Ōtaki North – Rahui Road section are described relative to the four public viewpoints and associated visualisations that have been used to define the Project’s visual effect on this compact landscape section. Specific discussion on mitigation requirements for Pare-o-Matangi Reserve is also provided.

### ***Viewpoint 1: View south to Rahui Road***

As shown in the **Viewpoint 1: After** visualisation, both stormwater attenuation basins – Kennedy Wetland and Taylor Basin - on either side of the Expressway will be extensively planted as part of the landscape and ecological mitigation for the Project. Planting of the new railway embankment facing onto the Pare-o-Matangi Reserve and of the area immediately above and north of the reserve that was part of the highway approach leading to the demolished highway railway overbridge is also proposed. This latter area will be added to the reserve and linked to the lower area of the reserve by a cycle and walkway.

Beyond the stream there is the potential to incorporate the vacant, grass covered land into the reserve, which in turn will link through to Rahui Road via the cycle and walkway. The former house site and section fronting onto Rahui Road is also expected to become part of the reserve.

### ***Viewpoint 2: View north from County Road***

As shown in the **Viewpoint 2: After** visualisation, the redundant railway embankment between County Road and the Expressway will be retained, planted in native plant species and continue to act as a visual screen for the southern extent of the local road and the adjacent residences. The existing local drain between County Road and the railway embankment will be untouched and a new stormwater swale will be created between the Expressway and the remnant railway embankment. This swale will carry water from the existing spring north of the underpass and the stormwater flow from the Expressway to a stormwater detention basin. This basin – Kennedy Wetland - will not be visible from County Road. Treated water will drain to the Mangapouri Stream.

The various Expressway and railway batters, along with the remnant railway embankment, will be re-vegetated in native plant species as shown in the ‘after’ image. This indicative landscape and ecological mitigation planting has been shown in a semi-mature state, at say 3-5 years post-establishment. The planting has been shown in this semi-mature stage so that it is also possible to see the adjoining built aspects of the Expressway proposal. The species choice will include a mix of trees and shrubs that will grow to completely obscure the Expressway from this particular viewpoint. The planting layout will be such that tree species are placed back from the local road so as to not overshadow or excessively shade the road.

### ***Viewpoint 3: View east from Pare-o-Matangi Reserve***

As shown in the **Viewpoint 3: After** image, landscape mitigation planting will be carried out to screen and integrate the near slope of the proposed railway embankment with the reserve. As described relative to Viewpoints 1 and 2, further planting will be undertaken between the railway and the Expressway and between the Expressway and County Road for landscape and ecological mitigation. These plantings will also assist with and integrate the stormwater treatment and the associated basins. With time the range of native tree and shrub species used in these mitigation plantings will mature to provide a greater degree of screening than is currently shown in the ‘After’ images. In the case of the view from the reserve to the railway, it is expected that the railway embankment and the trains using the railway line will become obscured along with the Ōtaki North underpass. Care will be taken with the placement of planted trees in particular, so that mature trees do not overhang or cause issue with the NIMT railway.



A combined cycle and walkway would parallel the reserve edge of the railway formation and link from the path on the southern side of the Ōtaki North underpass through to the path on the northern side of the Rahui Road underpass. These paths provide an important pedestrian connection between the Waitohu plateau residential area and the Ōtaki Railway station and the adjoining retail area.

#### ***Viewpoint 4: View east to Rahui Road***

As previously noted in regard to the **Viewpoint 4: After** visualisation, relatively little of the existing view from this viewpoint on the north side of the roundabout will be altered. This, in turn, limits the need and extent of proposed landscape mitigation planting to just that which can be carried out on the northern batter of the approach embankment.

#### ***Pare-o-Matangi Reserve***

A significant effect to be mitigated in regard to Pare-o-Matangi Reserve is the reduction in the usable area of the reserve. As mentioned previously, the loss of reserve space will be countered to a small degree by incorporating a section of the existing SH1 alignment on the north-western edge of the reserve and incorporating a vacated house section on the Rahui Road aspect of the reserve. However, both of these small areas are disconnected from the main body of the residual reserve and will add little usable reserve space.

An option to mitigate the loss of reserve space would be to acquire and develop existing open space in the general proximity of the Ōtaki North – Rahui Road triangle such as between Rahui Road and the Ōtaki Railway Retail Area. However this potential area will be completely isolated from the Pare-o-Matangi Reserve by the western approach embankment of the Rahui Road underpass. The proposed Taylor Basin area between the realigned railway and the Expressway will be open space, but it is not physically accessible due to its containment between road and rail. The proposed Kennedy Wetland will also be open space, but being a ‘wet’ stormwater attenuation basin; this is not compatible with also being a usable passive reserve area. Both basin areas will be completely isolated from the residual Pare-o-Matangi Reserve.

A solution that would result in a ‘like-with-like’ mitigation for the reserve land ‘lost’ to the Expressway development would be to incorporate the L-shaped block of unoccupied motel land into the reserve. This would create an area of reserve that was approximately 17,700 m<sup>2</sup> or 9-10% larger than the existing reserve. While this would do little to compensate for the loss of the ‘horse paddock’ open space or the established house sections that front onto Rahui Road, it would create a connected passive reserve space that focuses on Mangapouri Stream. In turn, it would create a pleasant amenity backdrop for the Ōtaki Motel and a buffer between the motel and the railway. There would also be the opportunity to create a ready and practical entrance to the redeveloped reserve direct from the reserve’s Main North Road frontage in the area between the motel and Mangapouri Stream.

With particular reference to appropriate mitigation for the reserve land ‘lost’ to the Expressway development, potentially incorporating the L-shaped block of unoccupied motel land into the reserve is considered to be the most appropriate ‘like-for-like’ offset for the adverse effect on the actual area of available, usable reserve land. Having this additional land as part of the re-configured reserve would mean that the passive, contemplative space and scale of the existing reserve can be recreated and is therefore to be preferred to other mitigation options involving land elsewhere. The incorporation of new, vacant land will also provide an avenue for the Keep Beautiful Group to re-focus their considerable efforts in continuing to develop a pleasant, recreational space for their community and visitors alike.

Through the incorporation of the vacant motel land, and the landscape mitigation requirements of the Expressway relative to the reserve, a positive outcome would be the creation of a passive reserve space that focuses on the Mangapouri Stream, but also ‘connects’ more directly to Ōtaki Railway Retail Area than is the current situation. The latter would result from taking the opportunity to create a ready and practical entrance, with parking, for the redeveloped reserve direct from the reserve’s Main North Road frontage in the area between the motel and Mangapouri Stream. As mentioned previously, this, in turn, would create a pleasant amenity backdrop for the Ōtaki Motel and a buffer between the motel and the railway and then the Expressway for the motel and its patrons.

There would also be the opportunity to recreate off-street parking for the reserve off the Main North Road frontage, as well as creating an appropriated designed, street interface for the reserve. Allowing for on-street parking on the Main North Road frontage to the reserve would be dependent on having adequate setback and visibility relative to street corners and property accessways. Currently there is on-street parking and a small, off-street carpark on the Rahui Road frontage to the reserve, but with the placement of the western approach embankment for the Rahui Road underpass on the southern frontage of the reserve, it will not be possible to provide vehicle access and parking on this aspect of the reserve.

The opportunity for advance planting and potential relocation of some existing Pare-o-Matangi Reserve tree and shrub plantings has been raised by the Keep Ōtaki Beautiful Group during consultation. It is likely that this opportunity would become more achievable if the vacant motel land is incorporated with the residual reserve area, as recommended above.

Various landscape planting-related mitigation measures have been outlined relative to the four described viewpoints that also relate to the reserve area. These measures will need to be given specific consideration in the development of the Project’s Landscape Management Plan (“LMP”) during the detail design and construction phases of the Project. This will ensure the redevelopment of Pare-o-Matangi Reserve meets the expectations of KCDC and the local community. It is also recommended that the tangata whenua be involved in future discussions around the finalising of the landscape plans for the reserve.

As previously stated at Section 5.4 of this assessment, it is not anticipated that there will be specific noise mitigation measures utilised in the Project that will require visual mitigation. In the case of the Ōtaki Motel’s rooms and manager’s house noise mitigation will be required relative to the realignment of the NIMT railway and the Expressway.

It is understood that the noise mitigation proposed is for the NZTA to explore modification and treatment of the buildings in question.

## 6.2.4 Rahui Road to Waerenga Road Section

### Description

Progressing south from Pare-o-Matangi Reserve, apart from the BP service station on the highway corner, there are no buildings on the southern side of Rahui Road, between the existing SH1 and the railway. The width of Rahui Road, which is wider than many urban streets, plus the lack of buildings and the views to the open space, contribute to the character of the street as being a quiet, semi developed area. The area immediate south of Rahui Road west of the railway is vegetated, with an area of orchard and an area of larger trees forming a grove adjacent to the railway line. An old home is located on the western side of the orchard, in a quiet small scale setting with rural characteristics which belies its location between the retail area and the railway line. A cycle/walkway parallels the railway and connects through to the Ōtaki Railway Station.

The Project skirts the eastern edge of the Ōtaki Railway Retail Area south through to opposite Waerenga Road, with the former Rahui Milk Treatment Station building, the Ōtaki Railway Station and a rural dwelling east of the railway at the south end of the retail area being the obvious built features.

The former Rahui Milk Treatment Station building and its associated former social hall are located on the southeastern side of the railway on Rahui Road. It is a substantial building which has been re-developed as a function centre and olive press facility. The buildings style now has a Mediterranean theme, with colours and outdoor features to complement this.

The rest of the land to the east of the railway and south of the former milk treatment station building is generally market gardens, screened from the railway by a shelter belt. South of these, there is rural dwelling set within the flat open paddocks and with views across various open paddocks towards the Ōtaki racecourse area. At the eastern end of these paddocks there 8-9 dwellings that front onto Te Roto Road and the racecourse. These Te Roto Road dwellings are contained and in most cases, enclosed by extensive shelter and garden plantings.

Ōtaki Railway Station sits on the western edge of the existing railway line, opposite the end of Station Road. This is an historic part of Ōtaki, and was the centre of activity for the township prior to the development of the existing SH1 as the main thoroughfare for people and goods. A large sealed carpark separates the railway station from the old buildings to the west, which include the Ōtaki Railway Hotel, cafes and other shops on Station Road and the shops that front onto the existing SH1.

The railway station has been restored in relatively recent times and it continues to function as a railway station as part of the early morning and late evening commuter connection to and from Wellington. The well-defined carpark is fully utilised by 'park and go' commuters and local retail customers. However, towards the south the carparking becomes a less defined part of the large, sealed open space between the railway and the back of the retail shops. A service lane provides a southern egress for the railway carpark and links through to the existing SH1 at the south end of the retail area, adjacent to a small, planted park and a further area of carpark between the railway and the existing SH1. Both the grassed park area and the southern highway margin carpark are used for informal weekend market days.

**Photos 10** through to **14** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

Within this 'Ōtaki Railway Station' section of the Ōtaki landscape unit, the Project creates a moderate change to landform, landcover and landuse. The landform change relates to the continuation of the Expressway and the realigned railway formations 'descending' down to close to grade from under the Rahui Road Underpass to just before the railway station. The Expressway formation will continue as a slightly elevated four lane formation. As part of the proposed flood management of the Ōtaki River floodplain immediately to the south of this section, a 350 m long, approximately 1.75 m high secondary flood containment bund would run east towards Te Roto Road from the Expressway formation where the single rural dwelling is located across the railway from the south end of the Railway Retail area. This bund would follow an existing low river terrace that is demarcated by a pine shelterbelt.

The landcover change involves replacing an area of mature trees with railway on the west side of the Project to the south of Rahui Road and the replacement of screen and shelter planting and some pasture with road surface on the east side of the Expressway. The shelterbelt along the low river terrace may also have to be removed to place the secondary flood containment bund.

The landuse change involves the conversion of strips of passive open space and farmland and a section of local, gravel no-exit road to Expressway and railway. A structural change will be the shift along its axis of the railway station and platform relative to the southern 'tying-in' of the realigned section of the NIMT railway. Two houses and possibly two outbuildings on the Expressway route at the very south end of this landscape section will be removed.

Construction of the Expressway will require relocation of the railway to the west in the northern part of the unit. It will also require removal of much of the grove of vegetation in this area, as the path of the new road passes directly through it. This will change the existing character from one of vegetated and undeveloped urban to one of constructed busy Expressway. This will have a high adverse effect on the landscape character and amenity values within the immediate area.

The setting for the former Rahui Milk Treatment Station building and its associated social hall will be altered with the construction of the Project. This will have an enclosing effect on these two heritage buildings, though access and physical separation from the Expressway will be maintained and provided for.

The loss of vegetation in the grove of mature trees south of Rahui Road, plus the relocation of the railway line to the west, will adversely affect the isolated villa adjacent to the vegetated area. The character of its setting will change from small scale quiet rural or undeveloped urban, to a busy and constructed transport corridor. The effects on landscape character and amenity values are likely to be moderate to high.

The proposed 're-positioning' of the Ōtaki Railway Station building will have minimal landscape effect and the adjoining carpark areas are not likely to be affected at all.

The effect on the rural land on the eastern side of the existing railway line, where the current character is market garden and open rural pasture, will change the local area to one dominated by a busy transport corridor. Beyond here the landscape effects of the Expressway are readily mitigated by the scale and open character of the rural setting. The adverse effect on the underlying rural character of the area is assessed as moderate.

### Visual Effects

The Project will have a moderate to high degree of visual effect on the northern part of this landscape section where the Expressway and the realigned NIMT railway are constrained by historic buildings to the east and west. Beyond here the visual effects of the Expressway are quickly mitigated by the scale and open character of the rural setting. The adverse effect on the underlying rural character of the area is assessed as moderate. The potential removal of the pine shelterbelt on the low river terrace would have a limited and localised effect. The potential visual effect on the Te Roto Road dwellings would be low as the Expressway is over 300 m from the dwellings. There are also several sections of evergreen shelterbelt within the intervening paddocks that would screen the potential view to the expressway and views to the north from the dwellings are obscured or partially obscured by their own garden plantings of trees and shrubs.

The Expressway will have a positive community effect on the landscape amenity of Ōtaki Railway Retail Area. This existing section of SH1 carries the entire regional and local highway through traffic past the majority of the area's shops. While this may have benefits in terms of exposure for retailers, it has adverse effects on the streetscape in terms of amenity values.

### Mitigation of Effects

Screen planting, combined with a screen fence, is proposed to mitigate the visual effect of the Expressway on the former Rahui Milk Treatment Station building and the adjoining former social hall. Planting would be placed in distinct blocks south along the eastern Expressway margin so as to integrate the Project with its surroundings and also allow motorists clear views across the local farmland towards the Ōtaki Racecourse. The potential removal of the pine shelterbelt on the low river terrace would further open up this view.

Between the Expressway and NIMT railway formations, dense, mass planting of native species would provide a buffer between road and rail, provide an aesthetic backdrop and screen the Expressway relative to the Ōtaki Railway Station and the Ōtaki Railway Retail Area. The mass planting would also limit the maintenance requirements for this physically isolated strip of land.

West of the Expressway, a reinstated cycle/walkway would link through from Rahui Road to the Ōtaki Railway Station and the amenity of this path and its setting would be enhanced by specimen tree planting and native shrub planting; the placement of which would meet CPTED principles. Reinstatement planting relative to a stream diversion between the path and the adjoining old house would also act to provide a mitigating buffer between the house and the Expressway.

## 6.2.5 Waerenga Road to Ōtaki River Section

### Description

Open pasture extends from opposite Waerenga Road to the Ōtaki River on the eastern side of the NIMT railway. The area is low lying and flat, and forms part of the Ōtaki River flood plain. The open views to the east and the Tararua Ranges and the flat topography contribute to the large scale open rural character of the area. The railway embankment forms a barrier along the western edge of the paddocks and the Winstone Aggregate shingle plant and an associated flooded gravel pit separates the paddocks from the Ōtaki River. An isolated dwelling and farm buildings are located on the plain, close to the railway.

**Photo 15** at **Appendix 1**, contained in Volume 5 of the AEE, provides a view of an aspect of this landscape section.

### **Landscape Effects**

For this 'Ōtaki River flood plain' section of the Ōtaki landscape unit, the Project creates moderate to low degree of change to landform, landcover and landuse. The landform change relates to the continuation of the Expressway as an elevated four lane formation, rising up to 1.5 m above grade at the existing Chrystall Stopbank and up to 5 m above grade between the stopbank and the proposed Ōtaki River Bridge (Bridge 5). This elevation also serves a flood management purpose as the formation links into the existing stopbank and then grades into the northern approach to the Expressway bridge. The landcover change involves replacing a strip of pasture and some market gardening with the road surface of the Expressway, which also equates to the landuse change. There are no built structures of particular note proposed for this landscape section.

The Expressway will fit within the scale of the rural setting, which will remain the dominant character of the area. By placing the Expressway on a raised level, it will have increased prominence and also a long 'wedge' of farmland will become isolated between the Expressway formation and the NIMT railway embankment. The landscape character of the surrounding area will be adversely affected to a moderate to low degree due to the prominence of the Expressway.

### **Visual Effects**

Within this 'Ōtaki River Flood Plain' landscape section, the obvious visual aspect of the Expressway will be the increased prominence it gains from being elevated to the local flood bank level, which will have a moderate adverse visual effect.

The road user will have a positive experience of the landscape when driving along the Expressway. Extensive views eastward will be available from the raised embankment, allowing an appreciation of the surrounding farmland and hills beyond.

The community will benefit from the Expressway through this landscape unit by the removal of traffic from the existing SH1, which accommodates residential properties and market gardens. Several retail outlets may be adversely affected, but local access to Ōtaki Township for northbound traffic will still allow vehicles to access the town along the new local arterial road and provide potential custom for these retailers.

### **Mitigation of Effects**

The Expressway, being elevated through this landscape section so as to prevent inundation during flooding, will have a clear view to its surroundings, the Ōtaki River and the distinct Tararua Ranges. The side batters would be grassed and lower slopes fenced so they can be grazed and reduce maintenance requirements.

## **6.2.6 Ōtaki River Section**

### **Description**

The Ōtaki River follows a braided path from the Tararua Ranges to the coast at Ōtaki Beach and provides a source of material for the shingle plant and pre-stressed concrete plant just north of the existing railway bridge and existing SH1 bridge. The river forms the southern edge to Ōtaki township with the existing SH1 bridge across the river being the current southern 'entrance' or 'gateway' to the Ōtaki Railway Retail Area. These two bridges are located approximately 50m apart, crossing the river in parallel. Together, they contribute to the modified character of this section of the river and constitute a large scale, built element that dominates the local setting. The modified character is reinforced by the exotic vegetation planted in rows along the banks, and the gabions placed along the edges for river protection work. A haul road that is part of the shingle

plant operation runs under the northern abutments of both bridges, along with a riverbank walkway.

**Photos 16** through to **19** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

The Ōtaki River Section of the Ōtaki landscape unit entails the width of the Ōtaki River and its immediate banks and the main landscape element that will affect this section is the proposed Ōtaki River Expressway bridge structure and its associated approach embankments. The immediately parallel pair of two lane bridges will be approximately 320 m long. Based on the bridges have a common, pier and beam-type built form, there will be 11 spans and 10 sets of piers and end abutments will be vertical MSE walls.

The addition of the Expressway bridges approximately 100m upstream from the existing rail bridge will increase the degree of modification already in place in this portion of the river. However, the existing environment is characterised as a developed area, with two bridges and modified embankments. The Expressway bridges will add to the overall degree of modification, but by placing them in close proximity to the existing bridges, the modifying elements will be concentrated into one area. While this has the benefit of confining the extent of modification, it does create a cumulative effect in this area. The scale of the setting and of the braided river is sufficiently large to accept the additional bridges, without this structure dominating the local landscape. The adverse effect on the three landscape elements is likely to be moderate.

### **Visual Effects**

The likely visual effects on the Ōtaki River section are described relative to a public viewpoint and an associated visualisation.

#### ***Viewpoint 5: View south to Ōtaki River***

The walkway along the northern bank of the Ōtaki River upstream from the existing NIMT railway and SH1 bridges allows views upstream and downstream of the river flowing west in its braided, gravel bed and of the immediate sections of both the north and south banks of the river. The Ōtaki River has a history of large and sudden floods, which has resulted in extensive flood protection works such as the building of flood banks and river edge gabions and the planting of willows to modify flood flows and provide bank protection. The river also has a history of gravel extraction, though gravel is no longer taken directly from the bed of the river. The gravel extraction and screening plants are currently located on the north bank of the river upstream and downstream of the existing SH1 so that there is good road access to their markets.

With two existing large bridges crossing the Ōtaki River in close proximity to one another and the flood protection works and gravel extraction works in the immediate area, there is already a high degree of modification in the area where the Expressway bridge would cross the river.

As can be seen in the **Viewpoint 5: Before** photograph, looking southwest across the river, the superstructure and piers of the NIMT railway bridge are fully visible extending from the north bank in the right of the view across to the south bank. Various piers of the existing SH1 bridge are visible through and under the railway bridge. In this view there are no particularly distinctive features on the south bank other than the woody weed cover that is relatively dense upstream of the railway bridge's southern abutment. The tall trees in the centre left of the photo are those in

and around the Bridge Lodge property and the tall, dark trees to the centre right are on the higher river bank downstream of the existing SH1.

As shown in the **Viewpoint 5: After** visualisation, the upstream bridge of the proposed pair of Ōtaki River Expressway bridges will be clearly visible from this viewpoint with the piers of the downstream bridge visible in shadow behind the closer bridge. The indicative bridge type of a standard NZTA ‘Super Tee’ bridge design shown in the visualisation has a higher flood clearance and a greater span length than the two existing bridges. It is also noted that the proposed bridges are crossing a wider part of the river than the two existing bridges and will potentially have more spans than the existing bridges.

The proposed Ōtaki South Underpass bridge (Bridge 6) is also visible in the centre left of the image. This smaller bridge is also shown to be of a similar type and design as the larger Ōtaki River Expressway bridges.

The proposed Ōtaki River Expressway bridges, due to their length of approximately 130 m, will be a large combined built feature relative to this viewpoint and an additional modifying element in the local landscape. There will also be a cumulative effect given that two bridges are being added to a short section of the Ōtaki River where there are already two existing bridges. Given the distance across the river and the southern river bank to the Ōtaki South Underpass, the underpass structure will have a minimal effect on this view.

### **Mitigation of Effects**

The mitigation requirements for the Ōtaki River section are described relative to the public viewpoint and associated visualisation that has been used to define the Project’s visual effect on the river and its banks.

#### ***Viewpoint 5: View south to Ōtaki River***

As shown in the **Viewpoint 5: After** visualisation, the proposed Ōtaki River Expressway bridges have an indicative form and design that will act to limit the overall visual effect of both parallel structures; that is, integration of the structure with its surroundings and therefore mitigation of its likely visual effects is part of the design of the bridges.

The use of modern, efficient design means that a greater span length than the two existing bridges can be utilised to limit the physical and visual extent of the bridge. Coupled with a relatively slim superstructure that has a simple form with few shadow lines and a shallow deck that has an integrated safety barrier, it has a visually ‘light’ form relative to its long length. This simple form also hides the fact there are two parallel bridges. This is reinforced by having both bridges located as a close, parallel, pair of bridges which means that from this viewpoint and other local viewpoints on both sides of the river, the pair of bridges ‘read’ as one bridge.

Both of the proposed Ōtaki South Underpass bridges (Bridge 6 and Bridge 7) have a design that will act to integrate these smaller bridges with the larger Ōtaki River Expressway bridges and make them a unified element within the local landscape. Their slim superstructure also limits their visibility when seen from a distance.

Much of the woody weed species on the southern river bank will be removed as part of the site preparation prior to bridge construction. The cleared area will be re-vegetated with appropriate native species to better integrate the bridge site with its surroundings and to limit the re-growth of weed species, while not conflicting with the future maintenance of the bridge structure.



## Te Horo Landscape Unit

### 6.2.7 Ōtaki River to Addington Road Section

#### Description

The land on the southern side of the Ōtaki River rises sharply from the river bed to become level at Ōtaki Gorge Road, which heads inland to provide access to Ōtaki Gorge and properties along the way. The Ōtaki River forms the northern boundary to the Hautere Plains, which are an extensive flat delta that runs south past Te Horo.

The current landscape in this area is characterised by intensive rural land uses, lifestyle blocks and an accommodation facility. There are limited views due to shelter belts, intensive activities such as orchards and market gardens, and a frequency of houses and buildings associated with a number of the small lots close to Addington Road and Ōtaki Gorge Road.

Bridge Lodge is an accommodation and conference facility that is set amongst large and mainly exotic trees, with a park like setting of high amenity value. It is located above the southern bank of the Ōtaki River immediately to the northeast of the Ōtaki Gorge Road railway overbridge.

There is a rest area accessed from the existing SH1 on the southern river bank between the highway, the railway and the Ōtaki Gorge Road overbridge. There is also another less formal rest area on the west side of the existing SH1 that also provides vehicle access to the southern river bank downstream of the highway bridge and to the walkway along this river bank.

**Photo 20** at **Appendix 1**, contained in Volume 5 of the AEE, provides a view of an aspect of this landscape section

#### Landscape Effects

Within this 'south edge of the Ōtaki River - north edge of Hautere Plains' section of the Te Horo landscape unit, the Project implies a high degree of change to landform, landcover and landuse; all within the confines of a short section of the local landscape. The landform change entails the excavation of a cutting that extends 600m to Addington Road and beyond. The landform change also includes the 400 m long pair of elevated, south-facing feeder road embankments for the Expressway underpass that connects to Ōtaki Gorge Road, along with the curving, local road, eastern approach embankment to the underpass.

The landcover change involves replacing unkempt woody weed vegetation on the southern riverbank, established exotic tree and shrub plantings in various properties, sections of shelterbelt and road edge planting and an area of orchard with road surface and grassed and planted cut and fill batters and Expressway and local road margins. The landuse change involves replacing an accommodation facility and four lifestyle blocks and their houses with Expressway.

There will also be two new bridges - Ōtaki South Underpass (Bridge 6 and Bridge 7<sup>15</sup>) - and associated approach embankments created in this localised section of the landscape, though two of the bridges will be incorporated within the one earthworks 'structure', along with local road connections to the Expressway and the new local road arterial.

---

<sup>15</sup> In this LVA Bridge 6 – local road over expressway bridge and Bridge 7 – local road over NIMT railway bridge are collectively referred to as 'Ōtaki South Underpass' as both sit together as the one structure in the landscape.

The entire Bridge Lodge facility and the four adjoining lifestyle blocks will be removed to construct the Expressway with a significant effect on the small scale, rural-residential character of the area.

The orchards to the south of Ōtaki Gorge Road will also be adversely affected to a major extent by the new roading, which will consist of a combination of Expressway and local access road connecting through to Old Hautere Road. The footprint of this new roading will require removal of approximately 25% of the productive orchard from this allotment, and several rows of shelter belts, including the large external row.

### **Visual Effects**

The likely visual effects on the Ōtaki River to Addington Road section are described relative to a public viewpoint and an associated visualisation.

#### ***Viewpoint 6: View north from Ōtaki Gorge Road***

The extent of the potential view from Viewpoint 6 was not possible to encompass from a ground-based viewpoint such as the existing Ōtaki Gorge Road railway overbridge, due to dense vegetation on north side of both bridge abutments obscuring the view. The base photograph for the following discussion was taken from an aerial viewpoint approximately 20 m above the west abutment of the existing railway overbridge.

As can be seen in the **Viewpoint 6: Before** photograph, looking northeast across the NIMT railway and the southern river bank to the Ōtaki River and beyond, the broad extent of the eastern edge of Ōtaki Township is visible. The existing SH1 bridge forming the southern ‘gateway’ to Ōtaki is visible in the extreme left of the photo. The Ōtaki Railway Retail Area is partially visible beyond the midground trees in the centre left of the photo and the main buildings of Bridge Lodge are in the lower right corner of the photo.

As shown in the **Viewpoint 6: After** visualisation, a small aspect of the Ōtaki South Underpass is shown in the lower right corner of the image. Leading out from under the underpass is the southern approach to the proposed pair of Ōtaki River Expressway bridges that are visible in centre of the image. Beyond the river bridges, the Expressway sweeps towards and past the eastern edge of the Ōtaki Railway Retail Area. In the lower left corner of the image can be seen the new approach to the existing SH1 bridge leading from the proposed roundabout that forms the local arterial road and the extended Ōtaki Gorge Road intersection.

As is also shown in the ‘after’ image, the construction of the Expressway and the southern bridge approaches has removed the Bridge Lodge buildings and much of its associated trees and other vegetation.

From this viewpoint, the proposed Ōtaki River Expressway bridges, due to their length and paired four lane width will be a large combined built feature and an additional modifying element in the local landscape. As with Viewpoint 5, there will also be a cumulative effect given that two bridges are being added to a short section of the Ōtaki River where there are already two existing bridges, though the four bridges appear just as three bridges.

As with the Project’s Northern Gateway Zone, just south of Taylors Road, the Ōtaki South Underpass bridges and the associated roundabout on the new arterial road will form the Project’s Southern Gateway Zone. Likewise, this ‘zone’ will have an urban design focus and to indicate the route north-bound traffic should take to access Ōtaki Township and the Ōtaki Railway Retail Area. There will be new and additional light standards erected in the area of the underpass bridges and

the roundabout to meet NZTA's standards and safety expectations. The overhead lighting will have a night-time visual effect, but will be limited to the southern riverbank area of the Ōtaki River. It is expected that the design of this southern interchange will be such that there is no light spill to the one remaining residence approximately 200 m southwest of the roundabout. The existing boundary shelterbelts on this property will continue to screen the new arterial road from this residence and also the roundabout and its associated night lighting.

### **Mitigation of Effects**

The mitigation requirements for the Ōtaki River to Addington Road section are described relative to the public viewpoint and associated visualisation that has been used to define the Project's visual effect on the southern margin between the Ōtaki River and the Hautere Plains.

### ***Viewpoint 6: View north from Ōtaki Gorge Road***

As shown in the **Viewpoint 6: After** visualisation, the proposed Ōtaki River Expressway bridges and their southern approaches 'sit low' in the landscape as the latter emerge from under the Ōtaki South Underpass and the broad cutting that the underpass crosses. The top or road surface of the pair of Expressway bridges appear as an extension of the Expressway sweeping across the river and on towards the Ōtaki Railway Retail Area. Given that the bridges are large built elements within this local landscape, their indicative form and design will act to limit the overall visual effect of both parallel structures. This, in turn, will act to limit the cumulative effect of having a further two bridges crossing the Ōtaki River in relatively close proximity to the two existing river bridges. The two Expressway bridges being a close, parallel pair of bridges and appearing from this distance as one bridge is a further part of this mitigation by design.

Both of the proposed Ōtaki South Underpass bridges (Bridge 6 and Bridge 7) have a design that will act to integrate these smaller bridges with the larger Ōtaki River Expressway bridges and make them a unified element within the local landscape. They will also appear as an extension of the local road when seen from close proximity such as from Viewpoint 6.

The fill batters of the approach embankments at both ends of the Ōtaki River Bridge will be planted with appropriate native species to better integrate the bridge site with its surroundings, while allowing for views to the river and the surrounding landscape. Similar landscape mitigation planting will be undertaken on the approach batters to the Ōtaki South Underpass and the adjoining Expressway feeder road batters.

As with the Northern Gateway Zone, in the Southern Gateway Zone further bold formal planting of specimen trees and/or mass plantings of native shrub species would be used to signal the Project's Southern Gateway between the Ōtaki River and the northern end of the Hautere Plains. This 'zone' will include appropriate NZTA signage clearly indicating the off-ramp via the proposed Ōtaki South Underpass and the roundabout link to the new local arterial road through to Ōtaki Township and the Ōtaki Railway Retail Area. As with the Northern Gateway, the Southern Gateway Zone may be reinforced through the use of large-scale local artwork or similar with a possible correlation on the design of such a feature between the two gateways.

As with the 'northern gateway', the 'southern gateway' has an urban design focus, however it is anticipated that detail design of the associated landscape planting will integrate 'gateway' area with approach treatment of the adjoining rest area. Consideration will also be given in the detail design phase to ensure the overhead lighting of the 'gateway zone' has no effect on the single residence to the southwest.

## 6.2.8 Addington Road to Te Waka Road Section

### Description

Progressing south from Addington Road to Te Waka Road the Project crosses the Hautere Plains, following a straight path parallel to and immediately east of the NIMT railway. Along the 'Te Horo straight' the land use is generally pastoral, and the land holdings vary in size from smaller lifestyle blocks to larger farming areas. Stands of second growth native trees are scattered across the plains, with totara appearing to be the dominant species, along with some titoki and matai.

The flat open pastoral land and the scattered stands of native trees are a strong characteristic of this area, and extend well beyond the existing SH1 and across the Hautere Plain. The open land, in places, allows extended views from the highway but shelterbelts, which line the highway in places, limit these views and confine the highway views to much more of a linear experience. Those open views that are available to the inland ranges and towards the coast, along with the areas of remnant forest add to the amenity and landscape character of this area, particularly as seen by passing motorists and railway passengers.

Various houses and market garden retail business front onto the existing SH1 south of Addington Road to opposite Old Hautere Road. On the east side of the NIMT railway, several houses are clustered along the adjoining section of Old Hautere Road and to the south opposite Te Waka Road is the property formerly owned by prominent potter, Mirek Smisek. His kiln is still located on this latter property, along with the house and the relocated Te Horo Railway Station building which is now a homestay facility.

**Photo 21** at **Appendix 1**, contained in Volume 5 of the AEE, provides a view of an aspect of this landscape section

### Landscape Effects

Within this 'northern half of the Te Horo Straight' section of the Te Horo landscape unit, the Project implies a moderate change to landform, landcover and landuse, relative to the 2.5 km long section of the local landscape that is traversed. The landform change relates to the continuation of the Expressway in a cutting that rises up to grade, approximately 400 m south of Addington Road and then continues south as a slightly elevated formation to Te Waka Road and beyond. Running south on the eastern margin of the Expressway will be a 2 m high, 2 km long landscape bund, though in its northern extent the extent of the bund will appear greater from the Expressway as the Expressway is in cut rising up to grade as it proceeds south. For much of the extended Old Hautere Road that will run south from Ōtaki Gorge Road, this bund will also be a headlight screen between the local road and the Expressway as well as screening the Expressway from adjoining properties.

The landcover change involves replacing pasture, orchard and marketing garden crop, lengths of shelterbelt and hedge and parts of two stands and one scattered stand of remnant native vegetation with road surface and landscape bund planting. In the wider context, the landscape effect of removing these areas of trees is assessed as moderate, as the underlying character remains unchanged.

The landuse change involves the conversion of west 'ends' of numerous paddocks and orchards to Expressway and Expressway margin. There are no built structures of particular note proposed for this landscape section. Two houses and possibly two outbuildings on the Expressway route at the very south end of this landscape section will be removed and a set of historic kilns in the former Smisek property will be shifted back from the Expressway on the current site.

### Visual Effects

The visual aspect of the Expressway passing through the northern section of the 'Te Horo Straight' that will be most obvious will be the doubling in width of the overall transport corridor. Placing the further four lanes of the Expressway will directly affect the existing landcover and landuse on the east side of the NIMT railway and it is the visual aspects of these changes that will be most noticeable, along with seeing two new 'strips' of sealed carriageway. This will have a major visual effect and also a cumulative effect. This combined effect will be moderated, to a degree, in that the new visual 'lines' of roading can readily be integrated in a flat landscape that already contains two obvious sets of transport 'lines'.

The removal of shelterbelts along the eastern side of the NIMT railway will remove the eastern, enclosing visual 'edge' to the 'Te Horo Straight'. The shelter belts currently provide a cumulative benefit, as each row contributes to wind reduction. The effect of removing the shelter belts will be to cause the land and houses that currently benefit from the shelter to become more exposed to the wind. This will also affect landscape amenity values for the houses, such as those on the corner of Old Hautere Road.

### Mitigation of Effects

Planting of replacement shelterbelts will provide a degree of mitigation to the orchard on the property on the south side of Ōtaki Gorge Road and also separate this property from the adjoining new section of Old Hautere Road and the Expressway beyond. The landscape bund or 'headlight screen' that would extend south along the Expressway's eastern designation boundary would be planted to increase its buffering effect over time and to integrate it with its surroundings.

Further sections of shelterbelt will be reinstated between the extended Old Hautere Road and adjoining horticultural blocks. Landscape and ecological mitigation planting would be undertaken to reinstate the exposed, western edges of the various stands of native vegetation between Old Hautere Road and the former Smisek property.

## 6.2.9 Te Waka Road to south of Gear Road Section

### Description

Te Horo Township is located a short distance to the south of Te Waka Road through to Gear Road. The township is divided into two, with part being located east of the NIMT railway and part west of the existing SH1. The western side has a mix of houses plus facilities including commercial activities that benefit from the passing highway traffic. The noise and speed of the traffic, plus the dominant scale of the highway, characterise the 'main road' portion of the township. Away from the highway along Te Horo Beach Road, this dominance decreases and the smaller scale character of the localised retail area becomes apparent and the amenity values increase accordingly.

By contrast, the township on the eastern side of the railway is primarily residential. It has a small scale character, and relative quietness in comparison to the highway portion of the township. There is a sense of community and quiet rural village informality, contributed to by the school and the hall and features such as the grassed berms along School Road and the low fences on many properties; all contributing to the high amenity values of area.

Residential expansion has been occurring throughout the Te Horo area with subdivision and the creation of life style blocks and there are a number of new houses in near to the township on the eastern side of the railway. The expansion has not been sufficient to alter the underlying character and it is perhaps this underlying character and amenity value that is one of the attractions for new residents to the area.

The land surrounding both aspects of the Te Horo Township is generally flat and pastoral and used for grazing or more intensive horticultural purposes. There is, however, more varied topography to the west, which has developed as a result of dune processes over time. These ancient dunes developed from sand blown inland from the beaches, and provide a contrast to the extensive plain to the north. The varied dune topography is close to the existing SH1 opposite the western ‘railway corner’ of Gear Road. The dunes provide variation, give the landform a smaller scale, and also limit views, all of which is in contrast to the open flat larger scale landscape to the north along the ‘Te Horo Straight’.

**Photos 22** through to **25** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section

### **Landscape Effects**

Within this ‘southern half of the Te Horo Straight’ section of the Te Horo landscape unit, the Project creates a moderate to high degree of change to landform, and a moderate change to landcover and landuse, relative to this further 2.5 km long section of the local landscape that is traversed. The landform change relates to the continuation of the Expressway as a slightly elevated formation south to the end of the ‘straight’ just prior to Mary Crest. Running south on the eastern margin of the Expressway will be a 1.5 m high, 2 km long structural bund that is a flood protection measure. The flood containment bund will be placed from the north end of the property on the north side of the former Smisek property through to the ‘railway bend’ on Gear Road or the sections of extended School Road and extended Gear Road that the bund parallels. It will also be a headlight screen between the local road and the Expressway as well as screening the Expressway from two sections of local road. A further and separate landform will be the set of opposing approach embankments for the Expressway underpass that connects to the extended School Road to Te Horo Beach Road.

The landcover change involves replacing pasture and the gardens and amenity and shelter plantings of 6-7 rural-residential properties and sections of farm shelterbelt with road surface and landscape planting on the west face of the structural bund. In the wider context, the landscape effect of removing these areas of trees is assessed as moderate, as the underlying character remains unchanged.

The landuse change involves the further conversion of the west ‘ends’ of numerous grazed paddocks and also all, or a large portion of up to 7 rural-residential properties, along with a section of local road, to Expressway and its margin. A new structure – Te Horo Underpass (Bridge 8) across the Expressway and the new local arterial road – will also be created. A proposed private accessway providing a link to the extended School Road and through to the five properties to the north will run along the eastern edge of the Expressway designation, subject to finalised property negotiations. Up to 10 buildings including up to 7 houses that front onto the ‘railway’ section of Gear Road will be removed.

### **Visual Effects**

The likely visual effects on the Te Waka Road to south of Gear Road section are described relative to two public viewpoints and associated visualisations.

#### ***Viewpoint 7: View north from proposed Te Horo Underpass***

As the potential view from Viewpoint 7 will be an elevated view from the proposed Te Horo Underpass, the base photograph for the following discussion was taken from an aerial viewpoint

approximately 30 m above the eastern edge of the Expressway to represent what would be seen looking in the direction of Ōtaki Township north from the eastern abutment of the underpass.

As can be seen in the **Viewpoint 7: Before** photograph, looking northeast from the Te Horo Underpass 'east abutment' provides a broad overview of the middle of the Te Horo Straight/Hautere Plains area. In the left of the view is the existing SH1 frontage of an orchard that is located between Te Horo Beach Road and Te Waka Road. The NIMT railway can be seen running parallel to the highway and the former Smisek property and its cover of kanuka and other native vegetation is in the centre of the view across the foreground paddock. The high point of Pukehou is visible in the distant centre right and Rinawhati is the highpoint of the foothills of the Tararua Ranges to the extreme right. The combination of orchard shelterbelts and stands of remnant native vegetation interspersed with open, grazed paddocks means that views from the Te Horo straight are quite enclosed, but with occasional broad views to the ranges to the east.

As shown in the **Viewpoint 7: After** visualisation, a stationary view from the Te Horo Underpass looking north to northeast would open out along the Expressway in the direction of Ōtaki River, but neither the river or Ōtaki Township would be visible from this distance, even though the viewpoint is elevated. A large portion of the former Smisek property and its vegetation would be removed as would the western parts of other stands of native vegetation north towards Old Hautere Road; all relative to the placement of the Expressway formation and its associated landscape and flood containment bunds. A further strip of land, along with vegetation on four properties and buildings on two properties including the former Smisek property would be removed to accommodate the proposed accessway to the five private properties north of the Te Horo Underpass.

In the 'after' visualisation, the Expressway formation is shown as being slightly elevated with the flood containment bund running parallel that then slopes down to the local private property accessway on the Expressway's eastern designation boundary and then to a drainage swale. A similar drainage swale will parallel the western edge of the Expressway formation and both swales will be planted in native shrubs and wetland species. The flood containment bund, being a structural bund, cannot be planted and would have a grass surface and is a design response to the broader flood risk from the Mangaone Stream.

Placing the flood containment bund will allow the Expressway to be approximately 1 m lower than previously envisaged and means the Te Horo Underpass can be lower. This design change equates to a considerable saving in the earthworks volume of the Expressway formation. It also means the visual extent of the Expressway formation and the underpass structure will be less. As the top of the flood protection bund will only be 500-600 mm above the carriageway, motorists will continue to have clear views across the open paddocks to the Tararua Ranges.

The proposed private accessway from the extended School Road that extends north is shown in the 'after' visualisation running along eastern edge of the Expressway designation from the right foreground in the view to the former Smisek property and beyond. The proposed local private property accessway, being at grade and paralleled by the bunds on its west side and the planted drainage swale on its east side would have minimal visual effect.

### ***Viewpoint 8: View north from Te Horo Village***

As shown in the **Viewpoint 8: Before** photograph, the view north to north east from highway midpoint of the western part of Te Horo Township is visually dominated by the existing SH1 and the NIMT railway formation. Looking north along the highway the native vegetation on the former

Smisek property is visible above the railway in the centre left of the photo. Sweeping right, the open paddocks north of School Road and that Mangaone Stream flows through are visible, with the foothills and the Tararua Ranges in the distance.

As shown in the **Viewpoint 8A: After** visualisation, the new local arterial road and the NIMT railway will continue to dominate the view to the north and north east. The Expressway formation can be seen sitting behind and slightly higher than the railway formation and the very top of the flood bank can be seen above the length of the carriageway. To the north, the proposed Te Horo Underpass will be an obvious new built feature rising above and crossing the Expressway, railway and local arterial road. The eastern approach embankment to the underpass appears as a low, rounded, isolated landform, the lower part of which is obscured by the Expressway and flood bank. The western approach embankment to the underpass is visible, but much of its extent is obscured by intervening buildings and vegetation from this viewpoint.

The roading re-design described in the previous Viewpoint 7: After discussion has been applied to the current Viewpoint 8A: After image and the reduced height by 1 m of the Expressway formation is noticeable. Even with the top of the flood bank in the background, there is an overall lessening of visual effect relative to that implied by the previous Viewpoint 8: After image that was shown to the public at the community consultation open days.

The proposed Te Horo Underpass stands out as an elevated structure back-dropped by the sky. However, the remaining portion of the native vegetation on the former Smisek property will still be visible under the bridge. In the Viewpoint 8A: After image, it can also be seen that the underpass is noticeably lower than in the previous Viewpoint 8: After image.

The Expressway and underpass will be obvious features when seen from the western part of Te Horo Township. Given that the linear landscape of the Te Horo Straight is already modified by two 'lines' of transport, the addition of the Expressway will have no more than a moderate effect when seen from the 'straight'. The Te Horo Underpass, due its elevated and singular nature, will have a moderate to high visual effect, but this will be localised. In both instances, setback and/or distance will limit the effect on the viewer.

### **Mitigation of Effects**

The mitigation requirements for the Te Waka to south of Gear Road section are described relative to the two public viewpoints and associated visualisations that have been used to define the Project's visual effect on this middle section of 'Te Horo Straight' and the western part of Te Horo Township.

#### ***Viewpoint 7: View north from proposed Te Horo Underpass***

In the **Viewpoint 7: After** visualisation, planted swales are shown running along the Expressway's western edge providing a degree of visual separation between the Expressway and the NIMT railway. The flood protection bund shown on the eastern flank of the Expressway, while not being able to be planted, will provide low screening relative to the parallel private property access and the properties beyond. The higher landscape bund to the north will provide greater screening and separation given that it will also be planted with native tree and shrub species.

Where the Expressway designation and/or the private property accessway abut areas of remnant native vegetation, native trees and shrubs will be specifically planted as combined landscape and ecologically mitigation to re-establish a protective edge to the stands of native trees on the adjoining private properties.



### **Viewpoint 8: View north from Te Horo Village**

As shown in the **Viewpoint 8A: After** visualisation, the Expressway formation has a grassed batter slope facing the adjoining NIMT railway. The use of occasionally mown grass on the Expressway batters will be consistent with the landscape treatment of the margins of the adjoining railway and new local arterial road. It will reinforce the clean, simple, linear lines of the Expressway formation, allow for clear outward views from the Expressway and also allow for ease of maintenance.

The proposed Te Horo Underpass Bridge, as with the other underpass bridges in the Project, has an indicative form and design that will act to limit the overall visual effect of structure. This will act to integrate the structure with its surroundings; mitigation of its likely visual effects being part of the actual design of the bridge.

The batters on both sets of the underpass approach embankments will be planted in low growing native species; being the consistent landscape treatment for the majority of the steep fill batters within the Project.

South of the eastern approach embankment to the Te Horo Underpass there will be native shrub planting that will form a buffer between School Road and the extended Gear Road south to the ‘railway corner’ on Gear Road. There will also riparian planting associated with a stream diversion near the ‘railway corner’.

## **Mary Crest to Peka Peka Landscape Unit**

### **6.2.10 South of Gear Road to north of Te Hapua Road**

#### **Description**

At the south end of the ‘Te Horo Straight’, the landform becomes more distinctly rolling due to the prevalence of dune formations, limiting extensive views from the interdunal areas and giving the area a smaller scale setting and more complex landscape than Hautere Plain to the north. Pasture is the predominant land cover and dairy production is the main land use in the surrounding area. Smaller allotments, created as a result of lifestyle block subdivision, are located on the dunes to the north of Te Hapua Road. Houses on these dunes are well positioned for views to the west and most are surrounded by well-established, shelter and amenity tree plantings. Houses to the east of the Expressway are enclosed, for the most part, by established trees, shelterbelts, hedges and gardens.

The buildings of the defunct convent at Mary Crest are a distinctive built feature to the immediate west of the existing SH1 at the very southern end of the ‘Te Horo straight’. Two stands of native vegetation lie just to the east and south of the buildings and contain a mix of species, with large trees forming the canopy. The trees are growing in the lower ground between dunes, which is likely to be wetter than the soils found on the open Hautere Plain to the north where totara thrives. Species suiting the wetter interdunal conditions are present, such as titoki, tawa and kahikatea.

In addition to the Mary Crest stands of native vegetation, other smaller remnant stands are also present in the area, along with groups of exotic vegetation are also planted in the area for shelter and around houses. Together, all this vegetation adds to the diversity of the place and contributes to its varied landscape character.

**Photos 26** through to **29** at **Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

The 'Mary Crest Curves' section of the Mary Crest to Peka Peka landscape unit contains Project-related changes to landform that are moderate to high and changes to landcover and landuse that are moderate to low. From just south of Gear Road, the Expressway formation will start to rise up for approximately 800 m on fill to an overbridge that crosses the NIMT railway. It will remain on fill for a further 600 m and then continue at grade to Te Hapua Road and beyond. From just north of Mary Crest, a new local arterial road alignment will be created that parallels the western margin of the Expressway; this new section of local road will be placed on alternate sections of cut and fill. On the east to south side of the Expressway approximately 1.5 km of the existing SH1 alignment will be retained as local road serving properties to the east and above the NIMT railway.

The landcover change involves replacing pasture, lengths of shelterbelt and hedge and stands of mature exotic trees with Expressway and local road surface. In the wider context, the landscape effect of removing the lengths of shelterbelt is assessed as minor, as the underlying character remains unchanged. However, removing the large stand of exotic trees on the 'outside' of the southern 'Mary Crest Curve' would have a greater, but localised effect.

The landuse change involves the further conversion of parts of numerous farms and smallholdings from grazed paddock to Expressway and Expressway margin. A new structure – Mary Crest Rail Bridge (Bridge 9) - across the NIMT railway and a section of new local road – will also be created. A house at the entrance to the Mary Crest land will be removed.

### **Visual Effects**

The likely visual effects on the south of Gear Road to north of Te Hapua Road section are described relative to a public viewpoint and an associated visualisation.

#### ***Viewpoint 9: View south to Mary Crest***

As can be seen in the **Viewpoint 9: Before** photograph, the view south to south west from the southern end of the Te Horo Straight is of the western-most slopes of the Tararua foothills to the left, the NIMT railway embankment and its unkempt vegetation cover, the sweep of the existing SH1 heading south, a small house on a low sand dune ridge above the entrance to the Mary Crest complex, mixed native and exotic vegetation screening most of the Mary Crest buildings and the enclosing sand dune country to the west.

As shown in the **Viewpoint 9: After** visualisation, the proposed Mary Crest Rail Bridge (Bridge 9) will bridge the railway at the southern end of the Straight and the associated fill embankment of the Expressway will sweep to the west across the area of the existing SH1. From this point south, the realigned new local arterial road will parallel the northern toe of the Expressway embankment, requiring the removal of the small Mary Crest house and its sand dune promontory. A local road link that intersects with the new local arterial road in the lower, centre left of the image, connects through the overbridge to the residual section of the existing SH1 on the south side of the Expressway embankment providing access to farms and residences on the adjoining hill slopes.

The proposed Mary Crest Rail Bridge has an open structural portal, which is a design and structural engineering response to having the express bridge and the railway at an acutely skewed angle between two sections of fill. The indicative design solution provides maximum natural light to the underlying railway and local link road, while having a visually interesting, sculptural quality. This visual effect will be clearly seen from the adjoining section of new local arterial road, but will not be particularly obvious as it is below the Expressway carriageway.

The rail bridge will be a new and obvious built feature in this local landscape, as will the Expressway approach embankments to the north and south. These structures will also obscure views to the foothills from this localised section of the new local arterial road. However, a more elevated and broader view of the foothills and local surroundings will be gained from the ‘rail bridge’ section of the Expressway. The majority of the Mary Crest complex and its vegetation and surrounding sand dunes will remain visually intact.

The Mary Crest Rail Bridge and the associated elevated sections of the Expressway will have a moderate to high visual effect, but this will be localised.

### **Mitigation of Effects**

The mitigation requirements for the south of Gear Road to north of Te Hapua section are described relative to the public viewpoint and associated visualisation that has been used to define the Project’s visual effect on the south end of ‘Te Horo Straight’ area. Native shrub plantings on cut batters along the eastern edge of the Expressway designation will provide localised screening relative to adjoining paddocks and more distant houses.

### ***Viewpoint 9: View south to Mary Crest***

As shown in the **Viewpoint 9A: After** visualisation, the design of the proposed Mary Crest Rail Bridge has a visually interesting, sculptural quality. The open pillar and beam aspect of the bridge portal will be a mitigating factor in limiting the visual bulk of the bridge as seen from the adjoining local roads and to a lesser degree when glimpsed from the Expressway passing above the portals.

The Expressway formation has grassed batter slopes that will be occasionally mown grass on the Expressway batters consistent with the landscape treatment of the margins of the adjoining railway and new local arterial road. As with the Expressway batters elsewhere along the Project, this will reinforce the clean, simple, linear lines of the Expressway formation, allow for clear outward views from the Expressway and also allow for ease of maintenance.

Sections of shelterbelt will be reinstated between the eastern edge of the Expressway formation and adjoining farmland from south of Gear Road through to the proposed Mary Crest Rail Bridge. Similarly shelterbelts and amenity tree planting will be reinstated along the tops of new local arterial road cut batters on the west side of the southern ‘Mary Crest Curve’.

## **6.2.11 North of Te Hapua Road to Te Kowhai Road Section**

### **Description**

South of the ‘Mary Crest Curves’, the ‘Peka Peka Straight’ is bound by the NIMT railway and the rising ancient sea cliff escarpment to the east and the rolling dunes of the undulating pastoral land to the west. The existing SH1 follows the low-lying land between the two, which comprises peat lands that have developed as a result of poor drainage in interdunal depressions. These pockets of peat land are common throughout the coastal landscape and most would likely have contained swamps or damp areas with flax or wetland forest.

The broader area is now pastoral and farmed, with groups of trees breaking the view along the length of the low lying area on the western margin of the existing SH1. A band of native and exotic trees cover the escarpment, giving a heavily vegetated appearance to the eastern margin of the NIMT railway. The straight alignment of the underlying escarpment landform, contributes to the simple linear landscape character of the eastern aspect of this section of the Project.

From Te Hapua Road through to Te Kowhai Road, there are a number of houses set back from the existing SH1 on the crest of the various dunes that have westerly outward views and are also sheltered and screened by established tree plantings.

**Photos 30 and 31 at Appendix 1**, contained in Volume 5 of the AEE, provide views of aspects of this landscape section.

### **Landscape Effects**

Within the ‘Peka Peka Straight’ section of the Mary Crest to Peka Peka landscape unit, Project-related changes to landform, landcover and landuse are moderate to low. From Te Hapua Road south, the Expressway formation will be at grade with and utilise the existing SH1 formation as the southbound lanes for the Expressway. The new local arterial road alignment created to parallel the western margin of the Expressway will be on fill passed and south of Te Hapua Road and then in a shallow, sidling cut as it approached Te Kowhai Road.

The landcover change involves replacing pasture, lengths of highway edge plantings, parts of two mature tree and shrub plantings and various scattered trees with Expressway and local road surface. In the wider context, the landscape effect of removing these various trees and plantings is assessed as minor, as the underlying character remains unchanged.

The landuse change involves the further conversion of the east ‘ends’ of numerous grazed paddocks to Expressway and Expressway margin. There are no built structures of particular note proposed for this landscape section. A farm building just south of Te Hapua Road will be removed.

### **Visual Effects**

From Te Hapua Road south, the visual effects of the Expressway formation will be limited as the southbound lanes for the Expressway will utilise the existing SH1 formation. The creation of the northbound lanes and the parallel new local arterial road alignment along the western margin of the Expressway on fill will have a visual effect that results from vegetation removal and earthworks, along with the removal of a farm building. The addition of the Expressway and the new section of local road within the ‘Peka Peka Straight’ mean the inclusion of further linear visual elements that can be readily accepted in a landscape section that is characterised in terms of its simple form and generally simple pastoral land cover.

### **Mitigation of Effects**

Minimal landscape mitigation is proposed or needed in this southern-most landscape section, given that the few dwellings in the area are enclosed by existing, established plantings. However, native shrub planting will be established on the western fill batters of the new local arterial road realignment. This planting will provide a long term cover to the batters and a degree of screening between the Expressway and the land to the west.

## **6.3 Natural Character**

In the broad description of the existing landscape at Section 3.2, there is very little reference to natural elements, as in indigenous or unchanged by human activity. The two distinct overall landscape types - rural and urban – that the Expressway corridor traverses indicate a highly modified environment, though there are scattered areas of native bush and several named watercourses, one of which – Ōtaki River – is large.

The assessments provided by the terrestrial and aquatic ecologists to the Project’s AEE outline the detail and degree of effect on remnant indigenous vegetation, naturally occurring wetlands and the

local watercourses. Both specialists have found little in the way of flora and fauna that is in a natural state or of a scale or extent that is self-sustaining.

Various stands of native bush, wetlands and the river and streams have been described and discussed relative to landscape and visual effects. The following outlines the nature and degree of effect relative to natural character as a s6(a) matter:

### 6.3.1 Vegetation

Areas of indigenous vegetation are largely confined to a few small, scattered stands of native vegetation in the Ōtaki Gorge Road/Old Hautere Road/Te Horo area. The construction of the Expressway will remove the western edge of a number of stands of native mature trees such as totara and kanuka in this area. In several cases the majority of the remnant stand will remain and the visual aspect of the natural character of scattered stands of native trees will remain. The Project's proposed landscape and ecological mitigation will act to provide edge shelter to those stands of trees directly affected. However, the long term preservation of these stands of native trees and their resultant natural character is dependent on the stands being self-sustaining and that is highly unlikely relative to current farming practices.

There are two distinct stands of swamp forest within the dune 'hollows' on the southern aspect of Mary Crest. These stands contain sizable specimens of titoki, tawa and kahikatea. In the initial phase of the Project, the expressway would have required the removal of much if not all of these stands, a re-design of the Expressway alignment means that the stands will not now be affected.

### 6.3.2 Wetlands

There are several small wetlands or wet areas in the Ōtaki North/Pare-o-Matangi Reserve area that will be directly affected by the Project. However these contain little in the way of naturally occurring native vegetation. The creation of the stormwater attenuation measures – Railway Wetland, Taylor Basin and Kennedy Wetland – and the associated landscape and ecological mitigation planting that will be carried out will result in a noticeable degree of natural character enhancement. Likewise, a similar opportunity exists for natural character enhancement for stormwater features associated with existing 'grass' wetlands south of Mary Crest adjacent to the two areas of swamp forest.

### 6.3.3 Watercourses

#### **Waitohu Stream**

The Waitohu Stream and the surrounding flood plain are set within rural properties, a number of which are dairy farms. The Waitohu Stream is very active geomorphologically and carries a high bedload of gravels, which results in regular flooding of adjoining farmland. The stream margins contain stands of willow and pine, along with thorn and other woody weed species and in places, stock can get direct access to the stream channel. Upstream of the existing NIMT railway bridge across the stream, gravel has been extracted from along the stream channel and stockpiled. This stockpiling is close where the stream will be crossed by the Expressway and as a result the stream course currently has limited natural character in this area. There is the potential that riparian planting associated with the Expressway bridge would provide some natural character enhancement to the immediate area of the Waitohu Stream.

#### **Mangapouri Stream**

Mangapouri Stream currently has the appearance of an open ditch running from a culvert under County Road and then in a culvert under the NIMT railway. Where it runs through Pare-o-Matangi Reserve, its banks have been densely planted with native tree and shrub species with the stream then flowing into a culvert under existing SH1. Within the Expressway corridor, the Mangapouri Stream has minimal natural character. While the Project will place more of the stream within a culvert, the combined landscape and ecological mitigation planting associated with the adjoining stormwater attenuation measures will improve the natural character for some short sections of the stream.

### **Ōtaki River**

The Ōtaki River is the largest waterway in the Project Area and being a river with frequent high flood flows and a high bedload of gravel has the natural appearance of a braided river of the type that would more commonly be found in Canterbury. The high flood history of the river has resulted in the GWRC and its predecessors building various flood protection measures such as the Chrystall Stopbank and reinforcing these with regimented plantings of willow and poplar. While these flood measures may have a semi-natural appearance, they provide little in the way of natural character.

The on-going ‘winning’ of gravel from the transient gravel beaches and the existing, long highway and railway bridges crossing the river in close proximity to one another further limits the natural character of the ‘river crossing’ section of the Ōtaki River. The Project will add another two bridges to the ‘river crossing’ though to most viewers beyond the Expressway these close parallel bridges will appear as one bridge. This will result in further decreasing the limited natural character of the immediate Ōtaki township section of the river. However, the new bridges will have little effect on the natural braided flow of the river itself.

### **Mangaone Stream**

The Mangaone Stream east of the NIMT railway has the appearance of an open farm drain, though it has a flooding history that affects many of the surrounding rural lifestyle properties farmland and existing SH1. The Project will not affect the stream’s limited natural character, but landscape mitigation planting associated with the Project may enhance the stream.

### **Other Watercourses**

Greenwood Stream and the other intermittent watercourses, like Mangaone Stream, have the appearance of open farm drains or grassy swales. While being of note from the point of view of hydrology and ecology, they have limited natural character in a landscape context. They do, however, offer the opportunity of riparian enhancement as noted on the landscape plans at Appendix 3.

## **6.4 Outstanding Natural Features and Landscapes**

The Project’s Statutory Assessment<sup>16</sup> notes with respect to KCDC District Plan and outstanding landscapes that:

*The Landscape objective is:*

*Objective C.10.1*

<sup>16</sup> NZTA SH1 Wellington Northern Corridor – Peka Peka to North Ōtaki Expressway: Volume 2: Assessment of Environmental Effects Report; Part 1: Statutory Assessment, Draft, November 2012

*That the District's outstanding landscapes are identified and protected from adverse environmental effects of subdivision, use and development.*

*The four related policies include:*

*Policy 1*

*Ensure new buildings, structures, services and earthworks within outstanding landscapes are located so that they will not be visually dominant (e.g. below the dominant ridgeline where practicable).*

*Policy 2*

*Encourage landowners to design and clad their buildings to blend in with the rural landscape.*

*Policy 3*

*Ensure no dune or landform modification takes place within outstanding landscapes of the open space, rural and residential zones, except to the minimum necessary for roading, access, provision of services, building site and farming purposes.*

*Policy 4*

*Ensure the following outstanding landscapes are protected from inappropriate subdivision, use and development through controls on subdivision and land uses.*

- *The foredune and consolidated sand dunes.*
- *The foothills of the Tararua Ranges including Pukehou hill.*
- *The wavecut escarpments behind Paraparaumu and Paekakariki.*
- *Kapiti Island and associated Islands.*
- *River landscapes of the Ōtaki and Waikanae Rivers.*

*The one 'outstanding landscape' potentially affected by the Project is the landscape of the Ōtaki River (Policy 4). However, the identification applies to the upper reaches of the river (refer Planning Map 22) and not the section that the Expressway bridge crosses. However, and notwithstanding that the section of the Ōtaki River at the point of the bridge crossing is not within the outstanding landscape area, the design approach has been to locate and design the structure so that it sits as low as practicable in the landscape thus reducing its visual impact.*

It is understood the district's OLAs were defined at the time of the writing of the first generation District Plan for Kāpiti Coast, though no reference is made in the District Plan to any district-wide landscape study that provided criteria against which the outstanding landscapes or features of the district might be defined. No identified 'outstanding natural feature' is affected by the Project.

As part of KCDC's current Plan Review process, the district's landscape was recently assessed and no ONF/ONLs were identified in the Expressway's designation corridor. The current district-wide landscape study<sup>17</sup> has, however, defined the Ōtaki River within the area of the Project as a

<sup>17</sup> *Kapiti Coast Landscape Assessment*, prepared for KCDC by Isthmus Group, Wellington, October 2012

‘significant amenity landscape’<sup>18</sup>. The ‘Te Hapua sea cliff’ north of Peka Peka Road is a geological feature that has been identified as a ‘significant amenity feature’, but this feature is to the east of the NIMT railway at the south end of the Project and well beyond any landscape influence the Project may have.

As it stands, the District Plan is operative and remains a relevant reference point. As noted in previous sections of this assessment there will be effects on the landscape, visual and natural character aspects of the Ōtaki River in the area of the Expressway bridges. It is acknowledged that there will be a cumulative effect of having a further pair of long bridges within the current ‘river crossing’ section of the river. However, given the degree of modification that is already in place in this section of the river, the magnitude of the effect is expected to be no more than moderate.

As a follow-on, what constitutes ‘Outstanding’ is not set out in the RMA. Generally a landscape that is classified as being outstanding requires exceptional characteristics or values that are valued by the general public. The operative District Plan, as a document that the local community provided submissions to and now reflects that opinion does not consider any of the local landscape that the Expressway will affect as being outstanding. Within the Plan Review the Ōtaki River in its lower reaches has now been documented as a ‘significant amenity landscape’. This status is considered to be in-keeping with the quality and the use of the landscape at the ‘river crossing’ section of the Ōtaki River.

## 6.5 Construction Effects

It is anticipated construction of the Project will take in the order of 3.5 to 4 years from the time a construction contract is let. During this time there will be visual effects particularly associated with vegetation clearance, earthworks, and construction activity.

The most intensive and longest duration, localised construction activity will most likely be associated with the Ōtaki River Bridge as this is the Projects’ largest built pair of structures. There will be noticeable visual construction effects within the immediate area including approach embankment earthworks, construction activity scaffolding and cranes working above the bed of the river and associated construction yards on both sides of the river. These effects will be directly visible from the existing SH1 bridge and though there will be a degree of negative visual effect, there will also be a high ‘public interest’ factor that potentially balances this. The construction activities associated with the Expressway’s other bridge structures will be also be highly visible for a relatively limited construction period. This temporal aspect and the majority of the structures are spaced out along the Expressway length will limit the actual effect of constructing the bridges.

There will be visual effects associated with construction of the Expressway formation and the realigned section of the NIMT railway, mainly resulting from the earthworks associated with these components. It is expected that conditions requiring earthworks to be rehabilitated promptly following construction of a section of Expressway will limit the duration of adverse effects.

In summary, there will be moderate to high visual construction effects at the various sites of the Expressway’s bridge structures and along the length of the Project as the Expressway formation is

<sup>18</sup> Significant amenity landscapes are:

- (a) important but not clearly exceptional landscape value under one or more of the criteria in an area where natural components dominate; or
- (b) important (including exceptional) landscape value under one or more of the criteria in an area where the influence of human activity on landscape character dominates natural components. GWRC RPS definition



formed. Progressive mitigation of exposed cut and fill batters and installation of the long-term landscape mitigation plantings will reduce the relatively short term effect of the Expressway's construction phase.

## 7 SIGNIFICANCE OF EFFECTS

### 7.1 Degree of Effects

Having considered landscape effects, visual effects and associated amenity effects, this section brings together the degree or magnitude of those effects. The degree of effect on the natural character of the Ōtaki River and other water courses is also considered.

The concluding discussion on ‘avoiding, remedying and mitigating’ any adverse effects is addressed separately in Section 9 of this assessment. However, the management of effects, both positive and negative, by design and subsequent mitigation has been considered in this discussion on ranking the actual degree of potential landscape and visual effects along the length of the Project.

In the section-by-section analysis at Section 6.2 the nature of the landscape, visual and amenity effects on the ‘parts’ of the local landscape traversed by the Expressway were described, along with likely landscape mitigation that would be required. The rankings of these effects have been annotated in the following table – **Table 1: Degree of Effects** - along with a ranking for overall magnitude of effect. The potential ameliorating factor of the landscape mitigation measures has been included in the ‘equation’ and a ranking for the likely ‘actual effect’ assessed. (Refer section 5.5 – Analysing Actual Effects)

#### High Degree of Effect

In terms of s7(c) and 7(f) matters, there are two relatively short sections of the Project where the overall magnitude of effect is high; being the Ōtaki North to Rahui Road and Ōtaki River to Addington Road sections. Given that the Project will impose sizable structures and a high degree of change on the relatively contained landscape of these two sections and these structures and changes will be directly visible to the surrounding areas, the high ranking for these sections is reasonable. With both sections there is scope for landscape mitigation that will result in a degree of actual effect that is moderate to high. For the Ōtaki North to Rahui Road section it is expected that the actual effect would be reduced to moderate if the ability to progress the described ‘like-for-like’ mitigation adjacent to Pare-o-Matangi Reserve.

The degree of actual effect is also likely to be moderate to high for the Waitohu Valley Road to Ōtaki North section, which is a reasonable ranking given the landform changes implied the NIMT railway realignment and the Expressway construction, coupled with the proximity to the dwellings on the adjoining western aspect of the Waitohu ‘plateau’.

#### Moderate Degree of Effect

For the majority of the landscape sections that have been described for the Project length the overall magnitude of effect is moderate, which is a reflection of the Expressway ‘sitting with’ the existing dual transport corridor that traverses the local landscape. It is also expected that practical levels of landscape mitigation can ameliorate the generally moderate effects and any localised higher effects.

## Lower Degree of Effect

There are two landscape sections where the overall actual effect has been ranked as moderate to low and low; being the Waerenga Road to Ōtaki River and north of Te Hapua Road to Kowhai Road sections, respectively. For the former, this is a reflection of the degree of existing modification in the short section of the Ōtaki River flood plain the Expressway will cross, the low visibility of this section and the relatively low visibility of the Expressway. For the latter, it is a reflection of Expressway ‘sitting’ closely with the existing dual transport corridor that traverses the local landscape, the relatively limited effect of landform and landcover

Following from the discussion on natural character and ONLs at Sections 6.3 and 6.4, the focus of s6(a) and 6(b) matters for the Project is the ‘river crossing’ section of the Ōtaki River. There will be a cumulative effect that results from placing another long bridge or in this case a closely spaced, parallel pair of bridges that will appear as one bridge, across the river. Given that the ‘river crossing’ section of the river is highly modified by existing bridge structures and gravel extraction operations, the actual natural character is low. This is compounded by the vegetation cover of the opposing river banks being dominated by flood protection plantings of mature exotic tree species and there also being a dense cover of woody weed species on the southern bank. Overall, the effect on the limited natural character of this section of the Ōtaki River is low due to the highly modified nature of this section of the river and its opposing banks. No ONLs are affected by the Project.

## 7.2 Acceptability of Effects

As one might expect from major infrastructure, there will be a range of landscape and visual effects, some of which will be ranked as high in their immediate vicinity. Overall, though, the effects will be moderate considering the linear extent of the Project Area. The landscape setting is appropriate, taking into account the topographic and landscape character attributes, and the Expressway design has been configured in a way that reduces the potential physical and perceptual effects. Design and subsequent measures are recommended via the ULDF and this report to address the remaining actual and potential landscape effects of the Project.

Table 1: DEGREE OF EFFECTS									
	Landscape effect		Visual effect	Amenity effect	Overall magnitude of effect	Scope for mitigation	Actual effect		
	Landform	Landuse							
<b>Ōtaki Landscape Unit</b>									
Taylor's Road to Waitohu Valley Road Section	Moderate - high	Moderate - low	Moderate	Neutral	Moderate	Moderate - high	Moderate		
Waitohu Valley Road to Ōtaki North Section	Moderate - high	Moderate	High	Moderate - high	Moderate high	Moderate - high	Moderate - high		
Ōtaki North to Rahui Road Section	High	High	High	High	High	moderate-high <sup>1</sup>	Moderate - high or moderate		
Rahui Road to Waerenga Road Section	Moderate	Moderate	Moderate <sup>2</sup>	Moderate	Moderate	Moderate - high	Moderate		
Waerenga Road to Ōtaki River Section	Moderate - low	Moderate - low	Moderate	Moderate - low	Moderate - low	Moderate	Moderate - low		
Ōtaki River Section	Moderate	Moderate	High	Moderate - low	Moderate - low	Moderate	Moderate		
<b>Te Horo Landscape Unit</b>									
Ōtaki River to Addington Road Section	High	High	High	High	High	Moderate - high	Moderate - high		
Addington Road to Te Waka Road Section	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate		
Te Waka Road to south of Gear Road Section	Moderate - high	Moderate	Moderate - high	Moderate	Moderate - high	Moderate - high	Moderate		
<b>Mary Crest to Peka Peka Landscape Unit</b>									
South of Gear Road to north of Te Hapua Road Section	Moderate - high	Moderate - low	Moderate - high	Moderate - high	Moderate	Moderate	Moderate		
North of Te Hapua Road to Kowhai Road Section	Low	Low	Moderate - low	Low	Moderate - low	Moderate	Low		

<sup>1</sup> The scope for mitigation within the Ōtaki North to Rahui Road Section will be moderate-low if adjoining land is not available for 'like-for-like' mitigation and moderate-high if land is available

<sup>2</sup> The degree of visual effect varies within the Rahui Road to Waerenga Road Section, being high at the north end of the section and low at its south end

Table 1: Degree of Effects

## **8 APPLICABLE STANDARDS**

There are no specific standards that are relevant to landscape matters.

## **9 ABILITY TO AVOID/REMEDY/MITIGATE EFFECTS**

The main ‘landscape’ measure incorporated into the Project design to avoid, remedy or mitigate potential adverse effects was to select the current route as the ‘preferred route’ to progress through the SARA and NOR phases of highway planning. Placing the Expressway so that it ‘sits’ within or immediately beside the existing dual road and rail corridor through the local landscape eliminates many potential adverse landscape effects that would arise if a ‘greenfields’ route had been chosen.

Subsequent landscape mitigation measures have been outlined in the Mitigation of Effects part of the Section by Section analysis of the Project length. These mitigation measures arise from the ULDF Mitigation Guidelines and the mitigation aspects illustrated on the For Consenting: Landscape Plans. Landscape matters have been incorporated into each phase of the Project starting with the initial draft of the ULDF, through the development of the SARA, in response to the subsequent public consultation phase and then with the refinement of the For Consenting: Landscape Plan, which illustrate the landscape mitigation measures proposed in this assessment.

The ULDF will guide the Expressway’s detail design phase and will inform what needs to be done in ‘avoiding, remedying and mitigating’ any adverse landscape and associated environmental effects that may arise from the Project. A suggested process for implementing the ULDF is outlined in the latter part of Appendix 2.

## 10 SUGGESTED CHANGES

In the development of the ULDF and its refinement through the subsequent phases of the Project, a number of changes have been made to the planning and design of the Project that have direct and indirect landscape and visual effects and positive outcomes for the Project and the community.

The main suggested 'landscape' change relates to the Pare-o-Matangi Reserve and the proposed 'like-for-like' mitigation via NZTA potentially acquiring adjoining private land that can then be used to re-balance the loss of KCDC reserve that will be required to accommodate the realignment of the NIMT railway and the Expressway between Ōtaki North and Rahui Road. This 'change' also provides the opportunity to enhance the reserve and its connection to the broader Ōtaki township while providing a significant buffer between the Ōtaki Motel and the NIMT railway and the Expressway beyond.

A suggested 'roading' change that will have an indirect positive landscape effect is that proposed for the Te Horo section of the Expressway. With the intention to place a flood bank along the east edge of the Expressway so as to protect the Expressway and downstream land from flooding of the Mangaone Stream; it will also lower the Expressway formation. This means the Te Horo Underpass can be slightly lower than previously proposed. The combination of these two roading design changes will equate to a lesser visual effect than was previously expected.

A suggested 'ecological' change is that two areas of swamp forest on the south side of Mary Crest will be retained. This definitely equates to a positive ecological outcome relative to what was initially going to be the case and it will also be a positive landscape outcome.

This particular positive landscape outcome is highlighted when reflecting on what was expected to be the landscape effect of the Expressway on these stands of swamp forest when referring back to the 2003 SAR Landscape and Visual Assessment:

*The footprint of the proposed Expressway and local road cuts across the eastern stand and the eastern quarter of the western stand of native vegetation at Mary Crest. The proposed designation covers over three quarters of the combined stands. Grazing currently takes place under the vegetation, adversely affecting its undergrowth and regeneration. The species mix, however, is diverse and the stands contain a number of large specimens that form a mixed canopy cover. The stands a valuable contribution to the natural character of the area, and contribute to the landscape character by adding diversity and continuing the theme of native groves characteristic of the Hautere Plains and visible from the proposed Expressway. Losing the eastern stand and the eastern quarter of the western stand is assessed as having a major adverse effect on the landscape character. This also assumes that the local road can be constructed without removal of any than the footprint of vegetation, and that this construction does not have adverse flow on effects, such as drainage, exposure to wind etc, for the remaining trees.*

A further suggested 'roading' change that will have a positive landscape outcome is that to now 'tie-in' with the proposed MacKays to Peka Peka section of the Expressway the Expressway alignment will now be 7m further east at the Peka Peka end of the Project. This implies less land take, which equates to marginal less landscape effect than would previously been the case.

There are various positive landscape outcomes relative to the mitigation requirements that have been outlined in the Section by Section analysis, but these would be considered current or normal expectation for subsequent landscape mitigation on a project of this scale.

## 11 CONCLUSION

The Project Area is appropriate for the Expressway in terms of landscape character and the ability to absorb change in that the designation corridor traverses two distinct overall landscape types, rural and urban; both of which are highly modified. There are, however, scattered areas of native bush to the east and west of the ‘Te Horo straight’ section of the Project and the Expressway also crosses the Ōtaki River and several named watercourses.

Various measures have been incorporated into the design of the Project and subsequent measures proposed, so as to align with the purpose and principles of the RMA that includes ‘avoiding, remedying and mitigating’ any adverse effects. The Project’s Urban and Landscape Design Framework ‘sets the scene’ for these design and mitigation measures in providing corridor wide design principles and objectives.

In the section-by-section analysis of the Project’s potential landscape and visual effects at Section 6.2, the nature of the landscape, visual and amenity effects on the ‘parts’ of the local landscape traversed by the Expressway are described and ranked, along with a ranking for overall magnitude of effect. The potential ameliorating factor of the landscape mitigation measures has been included in the ‘equation’ and a ranking for the likely ‘actual effect’ assessed.

In terms of s7(c) and s7(f) matters, there are two relatively short sections of the Project where the overall magnitude of effect is high; being the Ōtaki North to Rahui Road and Ōtaki River to Addington Road sections. With both sections there is scope for landscape mitigation that will result in a degree of actual effect that is moderate to high. For the Ōtaki North to Rahui Road section it is expected that the actual effect would be reduced to moderate if the described ‘like-for-like’ mitigation adjacent to Pare-o-Matangi Reserve is implemented.

For the majority of the landscape sections that have been described for the Project length the overall magnitude of effect is moderate, which is a reflection of Expressway ‘sitting with’ the existing dual transport corridor that traverses the local landscape. It is also expected that practical levels of landscape mitigation can ameliorate the generally moderate effects and any localised higher effects.

There are two landscape sections where the overall actual effect has been ranked as moderate to low and low; being the Waerenga Road to Ōtaki River and north of Te Hapua Road to Kowhai Road sections, respectively.

Following from the discussion on natural character and ONLs at Sections 6.3 and 6.4, the focus of s6(a) and s6(b) matters for the Project is the ‘river crossing’ section of the Ōtaki River; being the area where there are currently two large bridges. There will be a cumulative effect that results from placing another bridge in this section of the river, but the effect on the limited natural character of this section of the Ōtaki River is low due to the highly modified nature of this section of the river and its opposing banks. No ONLs will be affected by the Project.

There will be moderate to high visual construction effects at the various sites of the Expressway’s bridge structures and along the length of the Project as the Expressway formation is formed. Progressive mitigation of exposed cut and fill batters and installation of the long-term landscape mitigation plantings will reduce the relatively short term effect of the expressway’s construction phase.



As one might expect from major infrastructure, there will be a range of landscape and visual effects, some of which will be ranked as high in their immediate vicinity. Overall, the landscape and visual effects will be moderate considering the linear extent of the Project Area.

Extensive landscape mitigation measures are proposed as part of the overall Expressway project so as to limit and ‘make good’ the landscape and visual effects that result from constructing a four lane Expressway and its associated structures and works such as the railway realignment, through a well-established rural and peri-urban landscape. Particular emphasis will be given to providing appropriate mitigation for the losses and changes associated with these effects on the Pare-o-Matangi Reserve.

It is considered that through a sensitive landscape and urban design approach, the actual and potential landscape and visual effects of the Expressway will be successfully minimised and mitigated by the measures outlined in this report.

## 12 REFERENCES

The following information and references have been considered as part of this assessment:

- Peka Peka to North Ōtaki AEE Project Reference Register, June 2011
- Current Peka Peka to North Ōtaki Expressway reports i.e. Alternative Corridors Technical Feasibility, Urban and Landscape Design Framework and SARA Specialist Report – Landscape & Visual, along with associated scheme drawings
- Previous scheme assessment reports from NZTA PP2O project web site i.e. *Preliminary Landscape Assessment of Te Waka Highway Upgrade Alignment Alternative*, January 2003 and *Landscape Assessment of SH1 Ōtaki – Te Horo Expressway*, prepared for NZTA via Meritec by John Hudson Associates, June 2003
- District and region-wide landscape studies i.e. *Assessment of the Outstanding Landscapes & Natural Features of the Horowhenua District*, August 2009; Wellington Regional Landscape Atlas, May 2009
- Horowhenua and Kāpiti Coast District Plans and maps
- Google Earth