

# Belfast to Pegasus Motorway & Woodend Bypass Pre-implementation and MSQA Professional Services

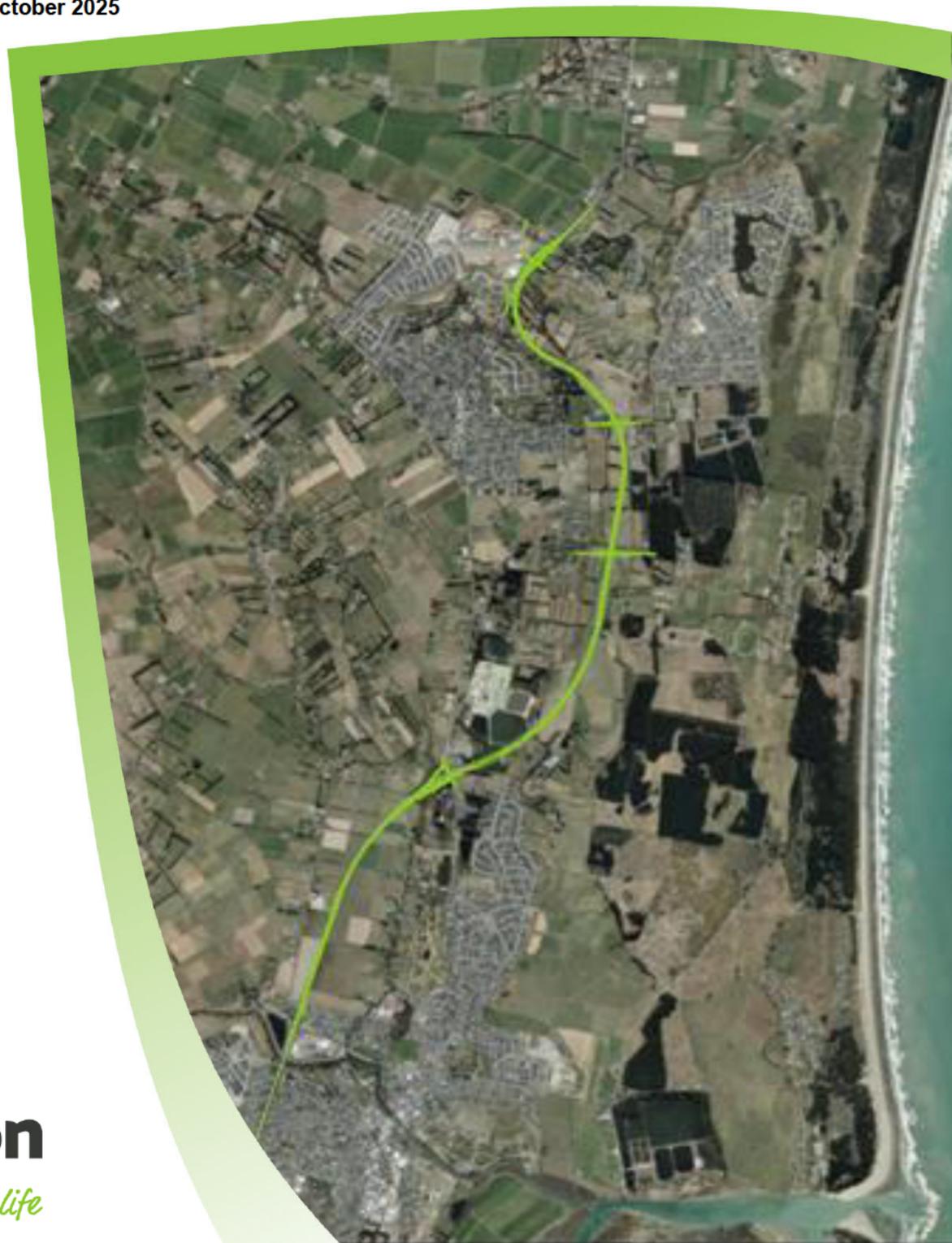
Urban, Landscape and Visual Effects Assessment

**NZ Transport Agency (NZTA)**

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Document prepared by:

## Aurecon New Zealand Limited

Level 2, Iwikau Building  
93 Cambridge Terrace  
Christchurch 8013  
New Zealand

**T** +64 3 366 0821

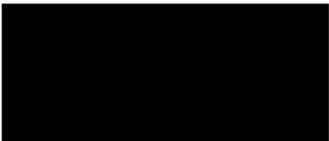
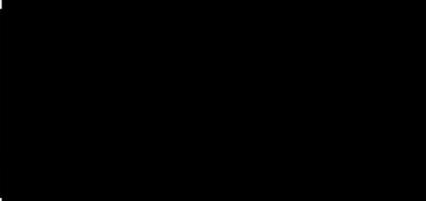
**F** +64 3 379 6955

**E** christchurch@aurecongroup.com

**W** aurecongroup.com

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<b>Author signature</b>		<b>Approver signature</b>	
<b>Name</b>	Natarsha Lamb-Egar	<b>Name</b>	
<b>Title</b>	Lead Integrated Designer	<b>Title</b>	Major Projects Director

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# Executive Summary

The purpose of this report is to provide technical support to the Substantive Application Report (SAR) for applications made by New Zealand Transport Agency Waka Kotahi (NZTA) under the Fast-Track Approvals Act 2024 for the *State Highway 1 North Canterbury – Woodend Bypass Project (Belfast to Pegasus)* (the Project).

This Urban Design, Landscape, and Visual Assessment (UDLVA), prepared in accordance with industry guidelines and the current environmental context, addresses the following applications:

1. **Regional Resource consents** (Environment Canterbury) – assessment focuses on effects to outstanding natural features, landscapes, and natural character in line with Canterbury Regional Policy Statement and Canterbury Land and Water Regional Plan.
2. **Alterations to the existing Project Designation** (Waimakariri District Council) including:
  - a. Evaluating the changes from the 2015 to 2025 designs for:
    - i. Cam River bridge modifications; and
    - ii. Pegasus Interchange redesign.
  - b. Assessment of new elements in the 2025 detailed design which includes:
    - i. Construction Support Area (CSA) at Lees Road, Kaiapoi; and
    - ii. Infilling of the southern remnant lake.

The assessment results will guide the development of the Urban and Landscape Design Management Plan (ULDMP), which will outline strategies to avoid, remedy, or mitigate adverse visual and landscape effects of the project.

## Regional Resource consents

Within the designation, the natural character elements that are relevant for this assessment include views towards Mt Grey, waterway and wetlands that the alignment crosses or alters. There are no Significant Natural Areas (SNAs) within the Study Area and Notable Plants were deemed to have no effects.

The assessment identified minor to less than minor beneficial effects on natural character through the implementation of native revegetation along waterways such as Cam River, Taranaki Stream, and Waihora Stream, enhancing ecological values and biodiversity. Design and mitigation measures key to providing a net positive gain include:

- Protective measures during construction safeguard water quality and minimise adverse effects.
- Wetland offsets and native planting create biodiversity corridors that compensate for permanent wetland loss, resulting in beneficial ecological improvements.
- Removal of exotic pest vegetation and replacement with endemic species improves habitat quality and natural character beneficially.

Overall, the operational phase is expected to yield negligible to minor beneficial effects on natural character and related environmental values due to restoration and improved habitat connectivity.

## Alterations to the designation

The assessment reviews the change in effects, comparing the previous 2013 concept design to the current detailed design included updates to the design and additional components not previously assessed. This UDLVA encompasses an analysis of the receiving environment, regulatory approvals, landscape character, natural features, urban form, and visual effects based on current NZILA guidelines.

## NOT FOR CONSTRUCTION

The report identifies Landscape Character Zones (LCZs) that reflect specific cultural and physical attributes within the study area, indicating no overlays for Significant Natural Areas (SNAs). Notable natural features impacted by the Project (design changes) include the Taranaki Stream, Waihora Stream, Cam River and several wetlands.

The results of the construction, operational, and residual effects (once mitigation measures are established at approximately 10 years post construction) for the Alterations to the Designation are summarised below.

### Construction Effects:

- **Cam River Bridge:** Reduced urban design and land use effects result from retaining the existing bridge, eliminating the need for demolition and decreasing the construction footprint and number of piers; visual effects are also reduced due to bridge retention, while protective measures continue to safeguard water quality and habitat.
- **Pegasus Interchange:** Increased urban design, land use, landscape character, natural features, and visual effects occur due to corridor widening, realignment of Taranaki and Waihora Streams, ground improvement works affecting local amenities like Pegasus resort, and construction activity, causing moderate adverse impacts during construction and increased operational visual effects from new elevated structures.
- **Construction Support Area (Lees Road):** More than minor adverse visual and landscape impacts occur due to industrial activities and site establishment in a rural area, adjacent a residential street. Screening and bunding measures reduce the effect rating to minor adverse effects.
- **Infilling of the southern remnant lake:** The wetland will be constructed as part of construction works, with effects not apparent until the project is operational.

### Operational Effects:

- **Cam River Bridge:** The alteration results in reduced urban design, land use, and visual effects due to retention of the existing bridge and a more efficient footprint within the designation, with no changes to landscape character, natural features, or ULDF objectives.
- **Pegasus Interchange:** While the new grade-separated diamond interchange introduces increased urban design, landscape, and visual effects from corridor widening, stream realignments, and up to 9m high overpass structures causing visual severance, these are partially mitigated by increased planting, improved connectivity, and enhanced pedestrian and cyclist safety, leading to an overall shift from moderate construction disturbance to net beneficial long-term outcomes.
- **Construction Support Area:** No operational effects remain as the site will be restored.
- **Infilling of the southern remnant lake:** Assessment outcomes indicate low magnitude yet beneficial effects across urban form and land use, landscape character, natural features, and visual amenity, noting that the wetland enhances ecological and visual qualities without adversely impacting public viewpoints.

### Residual Effects

There are two visual mitigation measures recommended for the alteration of design at Pegasus Interchange and for the new proposed Construction Support Areas. Effects would be reduced for residential visual receivers on Lees Road, with installation of an earth bund and screen planting to the boundary of the CSA. There is no mitigating the prominence of the new vertical overpass at Pegasus Interchange, however architecture treatments will provide positive improvements to its appearance.

Overall the operational phase indicates a transition toward beneficial outcomes in connectivity, ULDF objectives, and visual amenity. The Project aims to enhance safety, connectivity, and aesthetic value, striving for a balance between urban development and environmental stewardship.

# Acronyms, Terms and Abbreviations

## Works definitions

Acronym/Term	Description
<b>Commencement of Construction Works</b>	The time when Construction Works for the Project (excluding Enabling Works) commence.
<b>Completion of Construction Works</b>	The time when Construction Works for the Project (or the relevant part of the Project) is complete and is available for use.
<b>Construction Works</b>	Those works necessary to construct and establish the Project, including: <ul style="list-style-type: none"> <li>■ bulk earthworks (including cut and fill activities);</li> <li>■ ground improvement works;</li> <li>■ establishment of bridges, culverts, drainage, stormwater treatment and disposal systems, noise mitigation features, and other structures;</li> <li>■ temporary construction yards, buildings, and laydown areas</li> <li>■ temporary haul roads, access points, and traffic management;</li> <li>■ temporary drainage and erosion and sediment control measures;</li> <li>■ landscaping and planting;</li> <li>■ pavements and surfacing;</li> <li>■ road furniture and ancillary works; and</li> <li>■ site reinstatement and rehabilitation activities.</li> </ul>
<b>Early Works</b>	Those works authorised under <a href="#">[consent references]</a>
<b>Enabling Works</b>	Those works preceding and supporting Construction Works, including: <ul style="list-style-type: none"> <li>■ geotechnical investigations;</li> <li>■ land investigations;</li> <li>■ relocation of existing utilities and services;</li> <li>■ temporary haul roads and access;</li> <li>■ establishing mitigation, offset, or compensation measures (such as erosion and sediment control, noise mitigation)</li> </ul>
<b>Operations and Maintenance Activities</b>	Those activities needed to ensure the completed Construction Works function effectively and safely on an ongoing basis.

## NOT FOR CONSTRUCTION

### General

Acronym/Term	Description
CEMP	Construction Environmental Management Plan
CRPS	<a href="#">Canterbury Regional Policy Statement</a> (July 2021 version)
CLWRP	<a href="#">Canterbury Land and Water Regional Plan</a>
ECan	Environment Canterbury (Canterbury Regional Council)
FTA	Fast-Track Approvals Act 2024
km	Kilometre
m	Metre
NPS-UD	National Policy Statement for Urban Development 2020 (Updated May 2022)
NZTA	New Zealand Transport Agency Waka Kotahi
NOR	Notice of Requirement for the Project Designation
OP	Outline Plan prepared in accordance with Section 176A of the RMA and condition 3 of the Project designation
OWDP	Operative Waimakariri District Plan
Project	State Highway 1 North Canterbury – Woodend Bypass Project (Belfast to Pegasus) (the construction, operation, and maintenance thereof)
Project designation	Designation D058A under the OWDP, which came into effect in 2015
Project Site (or Site)	The land contained within the area delineated as “Project Site” in Volume 4C of the SAR.
PWDP	Proposed Waimakariri District Plan
RC	Resource consents
Requiring authority	The NZTA
RMA	Resource Management Act 1991
RoNS	Roads of National Significance
SAR	Substantive Application Report (for the Project)
SH1	State Highway 1
SH71	State Highway 71
UDLVA	Urban Design, Landscape and Visual Assessment
ULDF	Urban and Landscape Design Framework
ULDMP	Urban and Landscape Design Management Plan
WDC	Waimakariri District Council

# 1 Project overview

The NZ Transport Agency Waka Kotahi (NZTA) proposes to construct, operate, and maintain the State Highway 1 North Canterbury – Woodend Bypass Project (Belfast to Pegasus) (the Project).

The Project is an extension of the Christchurch Northern Motorway and will provide four lanes of grade-separated motorway over an approximately 10 kilometre (km) length. The Project Site commences spans from approximately 600 metres (m) south of the Kaiapoi River Bridge and extends to approximately 700 m north of the Pegasus/Ravenwood intersection, including a bypass of Woodend township. Key features of the Project are shown in Figure 1-1.



Figure 1-1 Summary of key Project components

## 1.1 Purpose and content of this technical report

This report provides technical support to the Substantive Application Report (**SAR**) for applications made by the New Zealand Transport Agency Waka Kotahi (**NZTA**) for the Project under the Fast-track Approvals Act 2024 (**FTAA**). We understand and agree that NZTA will submit this report as part of an application under the Fast-Track Approvals Act 2024 and the appointed panel will use this report for the purpose of assessing that application.

The applications address resource consents required from the Canterbury Regional Council and an alteration to the designation from Waimakariri District Council (**WDC**).

This Urban Design, Landscape, and Visual Assessment (UDLVA), prepared in accordance with industry guidelines and the current environmental context, addresses two distinct applications made under the FTAA.

### 1. Resource consents

This assessment addresses relevant objectives and policies under the Canterbury Regional Policy Statement, 2021 (CRPS) and the Canterbury Land and Water Regional Plan (CLWRP), including:

- Identify and assess the effects of the Project on outstanding natural features or landscapes; and
- Identify and assess the effects on “Outstanding natural features and landscapes and natural character”.

The Assessment of Natural Character effects applies to the whole of the Project Site and is included in Section 4.

### 2. Alterations to the existing Project Designation

The Project designation was included in the Waimakariri District Plan (WDP) in 2015 and essentially authorises the urban and landscape effects of the built form of the alignment and structures of the Project, subject to complying with the designation conditions.

The design is currently being refined during the detailed design phase, with several aspects differing from those evaluated at the designation stage. This assessment evaluates the net differences between the 2015 and 2025 designs and assesses the new elements which have not previously been consented.

The assessment of changes from the 2015 to 2025 designs (included in Section 5) include:

1. Cam River bridge modifications - one new bridge proposed, with the existing west bridge to be retained (Cam River Bridge). The original design included three new bridges and demolition of the existing bridge; and
2. Pegasus Interchange and associated realignment of Taranaki Stream - an overbridge and associated ramp proposed, updated from the consented design featuring a roundabout at the interchange.

The assessment of new elements in the 2025 detailed design includes:

3. Construction Support Area at Lees Road, Kaiapoi; and
4. Infilling of the southern remnant lake and creation of a wetland.

The assessment of alteration to the existing Project designation applies only to the above four sites and is included in Section 5.

The findings of this assessment will inform the Urban and Landscape Design Management Plan (ULDMP) required at Outline Plan stage in accordance with the designation conditions, which will detail the design strategies aimed at avoiding, remedying and mitigating the adverse effects of the project.

A more comprehensive background and description of the Project is contained in Volume 2A of the SAR; please refer to the SAR for those details.

## 1.2 Code of Conduct

This report has been authored by Natarsha Toni Lamb-Egar, a registered Landscape Architect (NZILA ID: 1571), with 15 years industry experience.

While this is not a matter before the Environment Court, the author of this report has read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 ('Code'). The author has complied with the Code in the preparation of this report.

The data, information, facts and assumptions the author has considered as part of this report are set out in this report. The reasons for the conclusions of the report are also set out in this report. Unless stated otherwise, this report is within the author's expertise and the author has not omitted to consider material facts known to them that might alter or detract from the opinions expressed.

## 1.3 Expert witness statement

While this is not a matter before the Environment Court, the authors of this report have each read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 ('Code'). The authors have each complied with the Code in the preparation of this report.

The data, information, facts and assumptions the authors have each considered as part of this report are set out in this report. The reasons for the conclusions of the report are also set out in this report. Unless stated otherwise, this report is within each of the authors' expertise and the authors have not omitted to consider material facts known to them that might alter or detract from the opinions expressed.

## 1.4 Applicability statement

We understand and agree that NZTA will submit this report as part of an application under the Fast-Track Approvals Act 2024 and the appointed panel will use this report for the purpose of assessing that application.

## 2 Assessment Methodology

The assessment methodology is based on, and consistent with, the *Te Tangi A Te Manu Aotearoa New Zealand Landscape Assessment Guidelines*, Tuia Pito Ora New Zealand Institute of Landscape Architects, and the NZTA Urban Design Guidelines (Bridging the Gap, 2013).

There are number of guidelines which inform the urban design of transport projects by NZTA, which have been considered in this assessment including:

- NZTA Landscape Guidelines (Final Draft, September 2014)
- RoNS Standardised Design, volume 3 (2024)

The following scope of works was undertaken in this assessment report.

### Regional Resource Consents

- Baseline analysis including:
  - Desktop study to examine and review existing available information pertaining to the study area including but not limited to environmental reports, historical information, aerial photographs and property files
  - Identification of relevant statutory and non-statutory provisions
  - Identification of natural character features within the designation including significant overlays, notable plants and waterways.
- Assessment of natural character based on the detailed design

### Alteration to the Designation

- Baseline analysis including:
  - Desktop study to examine and review existing available information pertaining to the study area including but not limited to environmental reports, historical information, aerial photographs and property files
  - Identify relevant statutory and non-statutory provisions
  - Identification of any significant landscapes, views and sensitive receptors
  - Analysis of existing designation conditions and the designated design
  - Field survey by lead assessor on 4<sup>th</sup> April and 22<sup>nd</sup> May 2025, to ground truth desktop studies and undertake site photography
  - Description of the design alterations including scale, materiality and areas affected.
  - Analysis of design models provided by the design team.
  - Review of previous UDVLA assessment.
- Assessment of urban, landscape and visual effects for the proposed design changes; against the previously consented design.
- Assessment of urban, landscape and visual effects for the new design elements (not previously consented), based on the level of modification against the existing environment.
- Identification of recommended changes to the WDC Designation Conditions, based on the findings of this assessment of effects.

This report provides an assessment of natural character (for resource consents); and urban design, landscape character and natural features, and visual effects of the proposed design changes (for the alteration to the designation).

## 2.1 Relationship to other plans and reports

The Project was designated in 2015. At that time, a number of assessments were conducted based on the Concept Design.

Assessments and plans relevant to this UDLVA include:

- Urban Design, Landscape and Visual Impact Assessment, by Urbanismplus Ltd and Pocock Design Environment Ltd, 2013 (referred to as UDLVA (Pocock 2013))
- Urban and Landscape Design Framework, Pocock 2014 (ULDF 2014)
- Woodend Transport Corridor Cultural Impact Assessment (Assessment Te Ngāi Tūāhuriri Ngāi Tahu and/or Te Ngāi Tūāhuriri Rūnanga and Te Rūnanga o Ngāi Tahu), Joseph Hullen on behalf of Ngāi Tūāhuriri and Ngāi Tahu whānui
- Urban and Landscape Design Management Plan (ULDMP), Aurecon 2025 (in progress)

The UDLVA (Pocock 2013), undertook an assessment of the concept design. That assessment provided recommendations which informed the ULDF 2014 and WDC designation conditions.

## 2.2 Assumptions and Limitations

The assessment is directed by the following assumptions or limitations.

- For those areas that are already urbanised or are planned to be (as per precinct plans in the Waimakariri District Plan), construction and operation of the transport corridor will traverse rural land. For those areas that are in the rural zone and are to remain so, construction and operation of the transport corridors will be within the rural zone. Earthworks will be limited to within the footprint of the designation or the proposed alteration to the designation for Cam River bridge modifications; Pegasus Interchange redesign; Construction Support Area at Lees Road, Kaiapoi; and Infilling of the southern remnant lake.
- This assessment does not specifically address cultural impacts. Areas of cultural sensitivity have been identified and the effects relevant to landscape, natural character and visual amenity have been assessed.
- Site assessment has been undertaken from public land and supported through desktop analysis which included GIS mapping and aerial photography.

## 2.3 Identifying the Study area

The Study Area is determined to constrain the distance in which effects as a result of the Project are likely to be experienced.

### Regional Resource Consents

Assessment of natural character is not determined by distance, but rather the likely modification of natural character features within the Project designation.

### Alteration to the Designation

The Study Area for urban design, landscape character and visual amenity has been determined through the extent of the Project's potentially visible surface area. Views of the Project outside of 500m radius from the

alignment centreline, are unlikely. As the distance increases from any proposed development, the field of view decreases causing the visibility of components to diminish.

An analysis of the existing environment has been conducted within the Study Area, from the four identified elements including:

- 500m from the Cam River Bridge
- 500m from the Pegasus Interchange
- 500m from the Construction Support Area at Lees Road, Kaiapoi
- 500m from the southern remnant lake.

Viewing locations were identified during a desktop study and ground-trothed in a subsequent field visit (conducted 4<sup>th</sup> April and 22<sup>nd</sup> May 2025 by the lead assessor). The field visit confirmed that the Project would not be visible outside of 500m, due to the existing intervening vegetation or built form.

## 2.4 Assessment Criteria

This assessment is prepared recognising the statutory framework of the FTAA in accordance with Schedule 5, clause 7 (b) which seeks that, in any assessment of a proposed activity, consideration is given to landscape and visual effects. The assessment considers both positive and adverse effects.

Landscape or visual effects are a consequence of a change to the landscape value to change as a consequence of changes to the landscapes physical attributes. The magnitude of change is rated through a 7-point scale (as shown in Table 2-1), along with a description of the nature of the effect. If the Project is not apparent from a viewpoint, there is 'nil effect'.

Table 2-1 Magnitude of effects 7-point scale

Very Low	Low	Low – Moderate	Moderate	Moderate – High	High	Very High
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Effects are identified by establishing and describing the changes resulting from the different components of the proposal on individual landscape or visual receptors.

This assessment is used to guide the significance of landscape and visual effects in accordance with the RMA as outlined in Table 2-2.

Table 2-2 Level of effect

Less than Minor		Minor	More than Minor				Significant
Very Low	Low	Low – Moderate	Moderate	Moderate – High	High	Very High	

The level of adverse environmental effects which are considered in continuum as below (*Determining the extent of adverse effects, Ministry for the Environment, 2017*).

- Nil Effects – no effects
- Less than Minor Adverse Effects - Adverse effects that are discernible day-to-day effects, but too small to adversely affect other persons
- Minor Adverse Effects - Adverse effects that are noticeable but will not cause any significant adverse effects.

- More than Minor Adverse Effects - Adverse effects that are noticeable that may cause an adverse impact but could be potentially mitigated or remedied.
- Significant Adverse Effects - An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied.

### **2.4.1 Effects on Natural Character (RC)**

'Natural character' is not a scientific concept. It includes biophysical aspects, and also perceptions of naturalness. Natural Character is assessed under the RMA Part 2 including:

- Section 6 (a) Preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, lakes, rivers and their margins, and the protection of them from inappropriate subdivision, use and development
- Section 6(b) Protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.

With having particular regard to:

- the maintenance and enhancement of amenity values
- the maintenance and enhancement of the quality of the environment.
- any finite characteristics of natural and physical resources.

The key considerations in determining the level of modification to natural character are the same as those for landscape character, outlined in Table 2-3.

Elements of Natural Character are identified in Section 3.2.3.

### **2.4.2 Landscape effects (NoR)**

Landscape character is the distinctive combination of landscape attributes that gives an area its identity, and is derived from a combination of landform, land cover and land use. The effects on landscape character relate to changes in land use (new or different activities); changes to existing patterns and elements in the landscape such as vegetation, waterbodies, landform, and building patterns; and the introduction of new elements and patterns including structures and paving and the various associated processes such as earthworks.

Landscape Receptors are elements or groups of elements that may be directly or indirectly affected by the proposals. These elements include landform, waterways and vegetation, and those physical landscape elements that influence the quality and significance of landscapes such as landscape features identified with regional or local significance.

Landscape Character Zones (LCZs) are defined based on physical characteristics such as topography, vegetation, drainage patterns, geology and land use patterns.

The key considerations in determining the level of modification to landscape character as outlined in Table 2-3 include:

- topographic variation;
- alteration to presence of and patterning of vegetation and density; and
- human modification such as presence of built form and/or extensive clearing resulting in a highly altered landscape.

**Table 2-3 Criteria for determining the magnitude of change for landscape character**

Magnitude of change	Definition
Very High	Dominant or major change to baseline character or condition
High	Very noticeable change to baseline character or condition
Moderate-High	The proposal is noticeable in regard to the size, scale and geographical extent and/or a noticeable compositional change to the existing landscape setting.
Moderate	Clearly noticeable change to baseline character or condition
Low-Moderate	The presents a low-moderate contrast to the existing landscape setting
Low	Small change to baseline character or condition
Very Low	Very small change to baseline character or condition

### 2.4.3 Visual effects (NoR)

The assessment of visual effects is concerned with the effects of change and development on the views available to people and their visual amenity.

Visual modification is not easily predicted objectively, requiring application of interpretation and professional judgment. A clear picture of the modification is determined from a combination of the degree of change to the view due to the Project including the extent of the area over which changes would be visible, the period of exposure to the view and reversibility.

The key considerations in determining the level of visual modification as outlined in Table 2-4 include:

- Size and scale;
  - The scale of the change in the view with respect to the loss or addition of features in the view, and changes to the composition including the proportion of the view occupied by the Project components;
  - The degree of contrast or integration of the Project components in the landscape setting with the existing or remaining elements including form, mass, line, height, colour, texture and materiality; and
  - The nature of the view towards the Project components in terms of duration of the view.
- Geographical extent;
- The angle of the view in relation to sensitive land use;
- The distance of the viewpoint from the Project component(s); and
- The extent of the area over which the changes would be visible.

**Table 2-4 Criteria for determining the magnitude of change for visual amenity**

Magnitude of change	Definition
Very High	Proposal is prominent and a focus of views for a large viewing audience or within close proximity of sensitive receptors
High	Proposal will be a major element of view for a large number of people and/or be a focus of view from key locations
Moderate-High	The proposal is noticeable in regard to the size, scale and geographical extent and/or a noticeable compositional change to the existing view
Moderate	Proposal will form a visible and recognisable new element within the overall scene

## NOT FOR CONSTRUCTION

Magnitude of change	Definition
Low-Moderate	The proposal is barely perceptible, however presents some contrast to the existing landscape setting
Low	Proposal will be a limited component of a wider scene and/or make little difference to the overall scene
Very Low	Proposal will form a very limited component of the wider scene and/or be viewed from a considerable distance

The assessment is based on the 30% detailed design and project descriptions outlined in Section 5.1.1 (Cam River Bridge and 5.2 (Pegasus Interchange)Pegasus interchange

Overview and description of design.

## 3 Receiving environment

### 3.1 Statutory context

This UDLVA has been prepared with consideration of the receiving environment, which is partly informed by the statutory framework of the FTAA. The Project designation is considered part of this environment. The following section outlines the relevant statutory context concerning the design updates that have occurred since the Project designation was confirmed.

When assessing the statutory context for the UDLVA, several key aspects must be considered under FTAA:

- The overall purpose of the FTAA;
- Relevant provisions from national policy statements, national environmental standards, and regional and district plans, as required under Schedule 5 of the FTAA; and
- Any other relevant matters (i.e. non-statutory documents).

#### 3.1.1 Relevant plans and policies

Table 3-1 below details the relevant national policy statements and plan provisions applicable to the UDLVA.

Table 3-1 Summary of relevant statutory provisions applicable to the UDLVA

Type of statutory document	The relevant policy/plan	Relevant provisions
<b>National Policy Statements (NPS)</b>	National Policy Statement on Urban Development 2022 (NPS-UD)	Objective and Policies discussed in Table 3-2 below.
	National Policy Statement of Freshwater Management 2020 (NPS-FM)	Objective and Policies discussed in Table 3-2 below
<b>Regional Policy Statement</b>	Canterbury Regional Policy Statement 2013 (CRPS)	<ul style="list-style-type: none"> <li>■ Chapter 12 – Landscape: functions under the RMA, to recognise and provide for;                             <ul style="list-style-type: none"> <li>– The protection of outstanding natural features and landscapes from inappropriate, subdivision, use and development; and</li> <li>– The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, lakes and rivers and their margins from inappropriate subdivision, use and development.</li> <li>– The RMA also provides for the maintenance and enhancement of amenity values.</li> </ul> </li> </ul> <p>Outstanding natural features and landscapes are identified in Section 3.2.3 and assessed in Section 4.</p> <ul style="list-style-type: none"> <li>■ Chapter 13 – Historic Heritage: recognition that cultural and heritage values are often expressed in a landscape setting and to make provision for the protection of such landscapes from inappropriate subdivision, use and development.</li> </ul>

**NOT FOR CONSTRUCTION**

Type of statutory document	The relevant policy/plan	Relevant provisions
Regional Plan	Canterbury Land and Water Regional Plan (CLWRP)	<ul style="list-style-type: none"> <li>– Objectives 3.19: “Natural character values of freshwater bodies, including braided rivers and their margins, wetlands, hāpua and coastal lagoons, are protected.”</li> </ul> <p><i>Soil Stability</i></p> <ul style="list-style-type: none"> <li>– Policy 4.22: “Sedimentation of water bodies as a result of land clearance, earthworks and cultivation is avoided or minimised by the adoption of control methods and technologies, such as maintaining continuous vegetation cover adjacent to water bodies.. .”</li> </ul> <p><i>Activities in Beds of Lakes and Rivers</i></p> <ul style="list-style-type: none"> <li>– Policy 4.85A: “Indigenous biodiversity, habitats of indigenous fauna and flora, and the natural character of Canterbury’s braided river systems is preserved through: (a) preventing further encroachment of activities onto the beds, banks and margins of lakes, braided rivers and associated wetlands and coastal lagoons; and (b) limiting vegetation clearance and cultivation within the bed, banks and margins of lakes, braided rivers and associated wetlands and coastal lagoons, unless the vegetation clearance or cultivation is for the purpose of pest management, habitat restoration, flood control purposes, the operation, maintenance, upgrade or repair of structures or infrastructure, or maintenance of public access.”</li> <li>– Policy 4.86: “Activities that occur in the beds or margins of lakes, rivers, wetlands, hāpua, coastal lakes and, lagoons are managed or undertaken so that: (a) the character and channel characteristics of rivers including the variable channel characteristics of braided rivers are preserved.. .”</li> <li>– Policy 4.87: “Plant species listed in the Biosecurity NZ Unwanted Organisms Register or the Canterbury Regional Pest Management Plan are not introduced or planted in the beds or margins of lakes, rivers, hāpua, coastal lakes and lagoons, or in wetlands.. .”</li> </ul> <p>See Section 4 for assessment of Natural character</p>
District Plans	Waimakariri Operative District Plan (OWDP)	<p>Identification of landscape and visual objectives for:</p> <ul style="list-style-type: none"> <li>■ Chapter 5 – Outstanding Landscape and Natural Features</li> <li>■ Chapter 13 – Resource Management Framework</li> <li>■ Chapter 14 – Rural Zone</li> <li>■ Chapter 15 – Urban Environment</li> <li>■ Chapter 17 – Residential Zones</li> </ul>
	Waimakariri Proposed District Plan <sup>1</sup> (PWDP)	<ul style="list-style-type: none"> <li>■ NFL - Āhuetanga o te whenua - Natural Features and Landscapes</li> <li>■ EI – Pūngao me te hanganga hāpori - Energy and Infrastructure</li> <li>■ MRZ – Medium Density Residential Zone</li> <li>■ HH – Historic Heritage</li> <li>■ RLZ – Rural Lifestyle Zone</li> </ul>

<sup>1</sup> The Waimakariri Proposed District Plan was notified on 18 September 2021. Hearings were conducted throughout 2024, and a decision on the Proposed District Plan is expected in mid-2025.

Table 3-2 The below summarises the relevant objectives and policies from the planning provisions that pertain to the UDLVA. The table provides a thematic analysis of the design updates in relation to these provisions, organised into the following themes:

- Infrastructure;
- Enabling infrastructure within, or adjacent overlays;
- Enabling infrastructure within, or adjacent freshwater environments;
- Urban form and quality design;
- Historic Heritage;
- Rural zones; and
- Residential zones.

Table 3-2 Thematic summary of the relevant objectives and policies

Theme	Key Objectives and Policies	Summary of comments and analysis of relevance to this UDLVA
<b>Infrastructure</b>	<p><b>CRPS</b> <i>Objective 5.2.1 and Objective 5.2.2 Policy 5.3.1-3, and 5.3.9</i></p> <p><b>OWDP</b> <i>Objective 18.1.1, and Policy 18.1.1.1 and Policy 18.1.1.2</i></p> <p><b>PWDP</b> <i>Objective EI-03 and Policy EI-P5.</i></p>	<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>■ The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>■ The PWDP is more enabling of regionally significant infrastructure, which ensures adverse effects on surrounding environments are avoided, remedied, or mitigated (Objective EI-03). Encouraging new or upgraded infrastructure outside outstanding overlays or minimising any adverse effects on them (Policy EI-P5).</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>■ The PWDP provides a more permissive environment to enable infrastructure, assessing and managing the effects of infrastructure including its impact on amenity values.</li> </ul>
<b>Enabling infrastructure within, or adjacent overlays</b>	<p><b>CRPS</b> <i>Objective 12.2.2 and Policy 12.3.2, and Policy 12.3.3</i></p> <p><b>OWDP</b> <i>Objective 5.1.1, and Policy 5.1.1.1</i></p> <p><b>PWDP</b> <i>Objective NFL-01 to NFL-03 and Policy NFL-P1 and NFL-P4</i></p>	<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>■ The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>■ The PWDP recognises the values of the outstanding natural landscapes and features and take measures to managing adverse effects of use and development mitigating adverse effects through bulk, location and design controls (NFL-P1).</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>■ The Cam River is subject to the Scheduled Natural Character Freshwater Bodies 20m overlay, which is discussed in Table 3-3 below.</li> </ul>
<b>Enabling infrastructure within, or adjacent freshwater</b>	<p><b>NPS-FW</b> <i>Objective 1 and Policy 15</i></p> <p><b>CRPS</b> <i>Objective 5.2.3 and Policy 5.3.9</i></p> <p><b>OWDP</b> <i>Objective 3.2.1 and Policy 3.2.1.1</i></p> <p><b>PWDP</b> <i>Objective NFL-O1 and NE-O1, and</i></p>	<ul style="list-style-type: none"> <li>■ NPS-FW is largely focused on maintain the health of freshwater bodies (streams, wetlands ect.). It also requires consideration of the impact of development on the natural character and cultural value of freshwater bodies (Policy 15).</li> <li>■ The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>■ PWDP adopts the NPS-FW and includes consideration of the managing adverse effects including natural character and visual amenity on freshwater environments having high natural character or value (NFL-O1 and O2). Furthermore, it promotes the uptake of riparian margins to enhance ecological and visual amenity (NE-P2).</li> </ul>

Theme	Key Objectives and Policies	Summary of comments and analysis of relevance to this UDLVA
	<p><i>NFL-P1, NFL-P3, and NE-P2.</i></p>	<p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>The Project works are adjacent and within Cam River / Ruataniwha. Landscape and natural features are discussed in detail in Section 3.2.3 below. The effects of the works on the riparian margin of the Cam River are addressed in Section 5.1.3.</li> </ul>
<p><b>Urban form and quality design</b></p>	<p><b>NPS- UD</b>  <i>Objective 1 and Objective 4, Policy 1, Policy 6</i></p> <p><b>CRPS</b>  <i>Objective 5.2.1 and Policy 5.3.1 and Policy 6.3.2</i></p> <p><b>OWDP</b>  <i>Objective 15.1.1, and Policy 15.1.1.1, and Policy 15.1.1.2</i></p> <p><b>PWDP</b>  <i>Objective UFD-01, and Policy UFD-P1 to Policy UFD-P3</i></p>	<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>The NPS-UD requires planning decisions to contribute to well-functioning urban environments, which include maintaining and enhancing the visual quality of urban areas (Policy 1). Decision-makers must have particular regard to the planned urban built form anticipated by those planning decisions. Including the Medium Density Residential Standards or MDRS (Policy 6).</li> <li>The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>PWDP integrates the requirements of the NPS-UD. It requires development to achieve high-quality urban design outcomes (Policy UFD-P2), and ensure urban development is coordinated (and integrated) with the provision of infrastructure and transport networks (Policy UFD-P3).</li> <li>Where development occurs within urban environments, this must avoid or mitigate adverse effects on, among other factors: The rural setting of the district's towns and settlements, water bodies (i.e. rivers and streams) and the individual character of various settlements (Policy 15.1.1.2).</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>The existing urban environment adjacent the Project works is detailed in Table 3-3 below and discussed in detail in Section 3.2.1.</li> <li>Effects on the urban built form, notably of settlements at Ravenswood and Pegasus are addressed in Section 5.2.2.</li> </ul>
<p><b>Historic Heritage</b></p>	<p><b>CRPS</b>  <i>Objective 13.2.2, and Policy 13.3.1 and Policy 13.3.2</i></p> <p><b>OWDP</b>  <i>Objective 9.1.1, and Policy 9.1.1.4 and 9.1.1.5</i></p> <p><b>PWDP</b>  <i>Objective HH-01 and Policy HH-P7</i></p>	<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation. Notably: <ul style="list-style-type: none"> <li>The OWDP supports maintaining heritage character by retention of the visual and spatial relationship between heritage buildings and their surroundings, including important viewshafts that contribute to their significance (Policy 9.1.1.2).</li> </ul> </li> <li>PWDP accounts for siting of infrastructure that protects the heritage values of historic heritage listed in the PWDP, and protection of the values (including amenity) listed within the schedule (Policy HH-P5).</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>The Project works at Pegasus Interchange are adjacent Heritage Item H086 (proposed text ID. HH070) listed in the OWDP. The visual effects of the Project works in discussed in Section 5.2.4.</li> </ul>
<p><b>Rural Zones (District Only)</b></p>	<p><b>OWDP</b>  <i>Objective 14.1.1 and Policy 14.1.1.3</i></p> <p><b>PWDP</b>  <i>Objective RLZ-01 and RLZ-P1</i></p>	<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>PWDP is largely consistent with the operative plan, it seeks to maintain rural land for primary production activates (Objective RLZ-01).</li> </ul> <p><b>Analysis:</b></p>

Theme	Key Objectives and Policies	Summary of comments and analysis of relevance to this UDLVA
		<ul style="list-style-type: none"> <li>The surrounding land use zones are described in Section 3.1.2 below. Effects on residential areas are outlined in Section 5.2.</li> </ul>
<b>Residential Zones</b> (District Only)	<p><b>OWDP</b> <i>Objective 17.1.1 and Policy 17.1.1.1</i></p> <p><b>PWDP</b> <i>Objective MRZ-O1 and MRZ-P1</i></p>	<ul style="list-style-type: none"> <li>The relevant provisions of CRPS and the OWDP remain aligned with the assessment undertaken for the Project designation.</li> <li>PWDP now provides for activities and structures that support and maintain the character and amenity values anticipated for the zone (MRZ-O1).</li> <li>Furthermore, activities within the zone positively contribute to streetscape character, in particular minimising the adverse effects of nighttime noise and outdoor lighting, limiting signage (MRZ-P1).</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>The surrounding land use zones are described in Section 3.1.2 below. Effects on residential areas are outlined in Section 5.2.</li> </ul>

### 3.1.2 Land Use

This UDLVA provides an overview of the applicable land uses within the Study Area, as defined by the land use zones set out in the Waimakariri District Plan (operative and proposed texts). A map of the land use zones in the PWDP can be found at Appendix A.

Table 3-3 below summarises the different land use zones that form the baseline conditions for evaluating the Project. The Project works are contained within NZTA's Designations, and the zones listed in Table 3-3 also include the 'adjacent' zones within the Study Area.

Table 3-3 Land use zones

Plan	Land use zones	Summary of analysis relevant to the UDLVA
<b>Pegasus Interchange</b>		
<b>OWDP</b>	<ul style="list-style-type: none"> <li><i>Residential Zone – 6</i></li> <li><i>Business Zone – 1</i></li> <li><i>Rural Zone (RU)</i></li> <li><i>Rural Zone (Pegasus)</i></li> </ul>	<ul style="list-style-type: none"> <li>The land use zones adjacent to the Project works south of the Pegasus Interchange are predominantly rural, including the Pegasus structure plan area immediately east of the Project corridor.</li> <li>To the immediate northwest of the Project works is a residential area currently under construction (Ravenswood). This area is zoned Residential Zone – 6, which anticipates low to medium density typically housing includes detached dwellings with larger lot sizes.</li> </ul>
<b>PWDP</b>	<ul style="list-style-type: none"> <li><i>Mixed Residential Zone (Variation 1)</i></li> <li><i>Town Centre Zone</i></li> <li><i>Open Space Zone</i></li> <li><i>Rural Lifestyle Zone</i></li> <li><i>Special Purpose Zone – Pegasus Resort (PR)</i></li> </ul>	<ul style="list-style-type: none"> <li>The PWDP introduces the MDRS under the NPD:UD, which will “up-zone” the aforementioned residential area, enabling medium density development of; up to three dwellings on one site each to a height of (approx.) 11m or three-storeys.</li> <li>The PWDP introduces a Town Centre Zone associated with the Ravenswood Central development just north of the Project works, notably allowing mixed-use development, with a maximum building height of 12m.</li> <li>Small portions of the Ravenswood development are zoned for Open Space. Specifically for this assessment, structures within open space zones must ensure the predominant character, amenity values, role and function of the zone is maintained.</li> </ul>
<b>Cam River Bridge</b>		

Plan	Land use zones	Summary of analysis relevant to the UDLVA
<b>OWDP Zone(s)</b>	<ul style="list-style-type: none"> <li>■ <i>Rural Zone (RU)</i></li> <li>■ <i>Residential Zone – 5</i></li> </ul>	<ul style="list-style-type: none"> <li>■ The Study Area is characterised largely by the rural land uses such as small-scale agriculture that surround the interchange at Williams Street.</li> <li>■ There are small areas of residential land within the Study Area in the, approximately 300m southeast of the Project works. This area is associated with urban development around the Kaiapoi Lakes.</li> </ul>
<b>PWDP Zone(s)</b>	<ul style="list-style-type: none"> <li>■ <i>Special Purpose Zone – Kainga Nohoanga (KN)</i></li> <li>■ <i>Natural Open Space Zone</i></li> <li>■ <i>Rural Lifestyle Zone</i></li> </ul>	<ul style="list-style-type: none"> <li>■ Land to the west of the Cam River / Ruataniwha is predominantly rural, but under the OWDP is covered by the Kainga Nohoanga Special Purpose Zone.</li> <li>■ Sections of the Cam River / Ruataniwha corridor within the Study Area are zoned for Natural Open Space.</li> <li>■ In addition, the OWDP introduces a Natural Character and Freshwater Bodies overlay (NC-SHED 2) to the entire river corridor. This requires a set-back of 20m (for structures) within Rural Zones. Where structures are within or over a freshwater body, the OWDP requires consideration of (NATC-MD5): <ul style="list-style-type: none"> <li>– <i>The extent to which the structure compromises amenity values, ecological, cultural, or recreational values, including any natural character values associated with the surface of water, including minimisation of the footprint, and visual appearance of the structure and whether design features are sympathetic with the surrounding landscape..</i></li> </ul> </li> </ul>

### 3.1.3 Other matters (non-statutory documents)

The Notice of Requirement (NoR) for Woodend Bypass didn't have specific regard to non-statutory documents relevant to this assessment, beyond the Greater Christchurch Urban Development Strategy 2007 (UDS), which outlines key principles that guide the urban development in the Canterbury region. Key principles which remain relevant to this UDLVA, is the integration between partners, plans and processes, and restoration of natural systems.

Other non-statutory documents, which are applicable to this UDLVA include:

- Te Tangi a te Manu – Landscape Assessment Guidelines (NZILA, 2022)
- Landscape and Visual Assessment Guidelines (NZTA, 2018);
- Iwi management plans:
  - Mahaanui Iwi Management Plan 2013; and
  - Ngāi Tūāhuriri Iwi Management Plan.

## 3.2 Environmental setting

The environmental setting of the Project has the following key aspects which will influence the design and construction process, create environmental risks and opportunities, and inform the mitigation approach.

### Topography

The topography is generally flat with the terrain rising gently from the coastline, approximately 2.5 km east, and rising steeply towards the southern alps foothills approximately 70 km west.

Refer to Appendix A: ArcGIS Web mapping of Topography and Hydrology.

## Hydrology

The Project alignment intersects several watercourses, these include permanent and intermittent streams (defined as 'rivers' under the RMA) and/or overland flow paths. Of these, reaches of the Taranaki Stream, Waihora Stream, and Cam River/Ruataniwha are within the alignment. Many of the surface waters within the alignment are spring-fed and this is reflected in the CLWRP overlays which identifies these as either 'Spring-fed Plains' or 'Spring-fed Plains-Urban', respectively.

Most of the streams located within the alignment provide habitat for various native and introduced fish species. Several of which are of high ecological, conservation, cultural, and recreational value.

Several wetlands have identified within, adjacent to or in proximity to the alignment (refer to Environmental Features drawing set Volume 4C of the SAR). Shallow groundwater is expected to flow towards nearby surface waters, of which wetlands will make up a portion. As such wetland or wetland type systems are likely to fall into either wetlands that are hydraulically connected to groundwater or are stream – wetland complexes (e.g. riparian wetlands that border defined stream channels). Of the current known wetland (wetland type systems) the Cam/Ruataniwha River and its riparian margins are classified as a Wetland of Ecological and Representative Importance and are highly valued.

High groundwater table is present within the Project area with potential adaptation/climate risk on the proposed route for the extension. Due to the low elevation of the land, unconfined groundwater is at shallow depth across most of the alignment. Springs and groundwater seepages also occur in the local area of the Project, where breaches in the deeper confined aquifer occur which generate artesian spring flows.

The corridor sits within the Ashley River flood zone and the tsunami zone.

Refer to Appendix A: ArcGIS Web mapping of Topography and Hydrology.

## Vegetation

The Project is situated within the Canterbury Plains Ecological Region and the Low Plains Ecological District (ED). Historically, prior to human settlement, the Low Plains ED was dominated by tussock land and floodplain forest, alongside extensive swamp wetlands lining alluvial valleys. In the wider Project area, historic vegetation likely consisted of a mosaic of flaxland, sedgeland, cabbage tree swamp wetlands, transitioning into back-dune forest and coastal grass/sedgeland habitats. Broadleaved hardwood forests would have been found along riparian margins of major rivers.

Significant modification through farming and urban development has reduced native vegetation in the Low Plains ED to less than 1%, mostly confined to small, scattered fragments. The terrestrial ecosystems along the alignment primarily include low producing and rank grasslands; hedgerows, shelterbelts, and exotic shrubs and trees; as well as riparian vegetation comprising both indigenous and exotic species. These habitats generally provide for common native bird species typical of urban and rural areas. However, in certain locations where wetland or native riparian vegetation occurs, bird species of higher ecological, conservation, and cultural significance may be present. Notably, the rank grassland habitats within the alignment serve as habitat for the Canterbury Grass Skink, a native lizard.

These changes reflect a historic shift from diverse native ecosystems to largely exotic-dominated and fragmented environments, with small-scale restoration efforts underway amid continuing habitat degradation.

## Historic heritage

The Project area traverses an interconnected landscape of both historic and cultural heritage places and areas. In particular the route passes through a multi-layered cultural landscape of mahinga kai (including terrestrial/ lacustrine/palustrine and estuarine zones), ngā māra or gardening places, trade, kāinga, urupā and travel routes with Kaiapoi Pā at its centre. The sites and area are of significance to Te Ngāi Tūāhuriri Rūnanga.

Māori reserve land (MR 873) is located to the east of the Cam River. The reserve was granted to Te Ngāi Tūāhuriri people during the 1840s as part of the Kemps Deed purchase of the South Island. The purpose of

the reserve was for the tangata whenua to have kainga nohanga (a place of residence) and mahinga kai (cultivation and gathering of food) with an emphasis on fresh flowing water. There is also a Māori cemetery (Te Kai a e Atua Urupa), which is located to the west of Williams Road (outside the Project Site).

Other places of heritage significance within the Study Area are listed in the below table.

Table 3-4 Historic places of heritage significance

Historic places and address	Historic features	Distance from Project Site boundary
St. Barnabas Anglican Church and Graveyard, 147 Main North Road Woodend	<ul style="list-style-type: none"> <li>■ Small white concrete church was built in 1934</li> <li>■ The church has a Historic Places Trust category II listing</li> </ul>	On the boundary to Garlick Street extension to Main North Road, and 80m west of Pegasus Interchange (NoR)
HH071 former Thomas Ayers junior house, 128 Main North Road	<ul style="list-style-type: none"> <li>■ Built c. 1877 Colonial vernacular villa</li> <li>■ The former Thomas Ayers junior house has historical significance for its association with Thomas and Elizabeth Ayers junior, their family and, more generally, the colonial development of Woodend.</li> </ul>	180m southwest of Pegasus Interchange (NoR)

### 3.2.1 Urban context (NoR)

The Urban Design assessment is relevant to the Alteration to the Designation and not the regional resource consent. The main areas covered in the Urban Design assessment are as follows:

- Identify the effects of the Project in relation to:
  - Urban form and land use;
  - Connectivity; and
  - The urban design outcomes in relation to the Urban and Landscape Design Framework (ULDF);

The urban design aspects covered in Table 3-5 are considered relevant to the Project, with ‘Visual Amenity’ covered in the Visual assessment. These aspects are considered in regards to the corridor alignment and the surrounding area.

Table 3-5 Baseline urban context

Key UD elements	Corridor alignment	Relevance to design updates
Natural environment	<ul style="list-style-type: none"> <li>■ Kaiapoi River</li> <li>■ Cam River</li> <li>■ McIntosh Drain</li> <li>■ Waihora Stream</li> <li>■ Taranaki Stream</li> <li>■ Views to Mt Grey</li> </ul>	<ul style="list-style-type: none"> <li>■ Cam River Bridge – 1 new bridge (2 new bridges within existing designation) (RC)(NoR)</li> <li>■ Taranaki Stream realignment for Pegasus Interchange overpass (RC)(NoR)</li> <li>■ Change to Waihora Stream culvert (RC)(NoR)</li> <li>■ Potential screening or creation of view lines of Mt Grey (RC)(NoR)</li> </ul>

Key UD elements	Corridor alignment	Relevance to design updates
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>Williams Street intersection connection to locals roads</li> <li>Pegasus Roundabout connection to Ravenswood (west) and Pegasus Resort (east)</li> </ul>	<ul style="list-style-type: none"> <li>Connection to off-road shared use path with existing path (NoR)</li> </ul>
<b>Land use activities</b>	<ul style="list-style-type: none"> <li>Medium density residential at Williams St, Thirlwell St Woodend and in Ravenswood</li> <li>Large lot residential east at Williams St, Fullers Rd Woodend East and Pegasus resort</li> <li>Rural land with patchwork of built form and grazing.</li> </ul>	<ul style="list-style-type: none"> <li>Pegasus Interchange overpass adjacent Pegasus Resort (east) and rural land (west) (NoR)</li> </ul>
<b>Built form</b>	<ul style="list-style-type: none"> <li>Pegasus roundabout</li> <li>Culvert and barriers at Bob Robertson Dr - Taranaki Stream</li> <li>Timber post and wire farm fencing</li> <li>Road signage near intersections</li> </ul>	<ul style="list-style-type: none"> <li>Removal of Pegasus roundabout (NoR)</li> <li>Removal and replacement of barriers at Bob Robertson Drive (NoR)</li> <li>Increase in length and location of culvert for Taranaki Stream (RC)(NoR)</li> </ul>

### 3.2.2 Landscape Character Zones (NoR)

Assessment of landscape character is relevant to the design changes and not the regional consent applications.

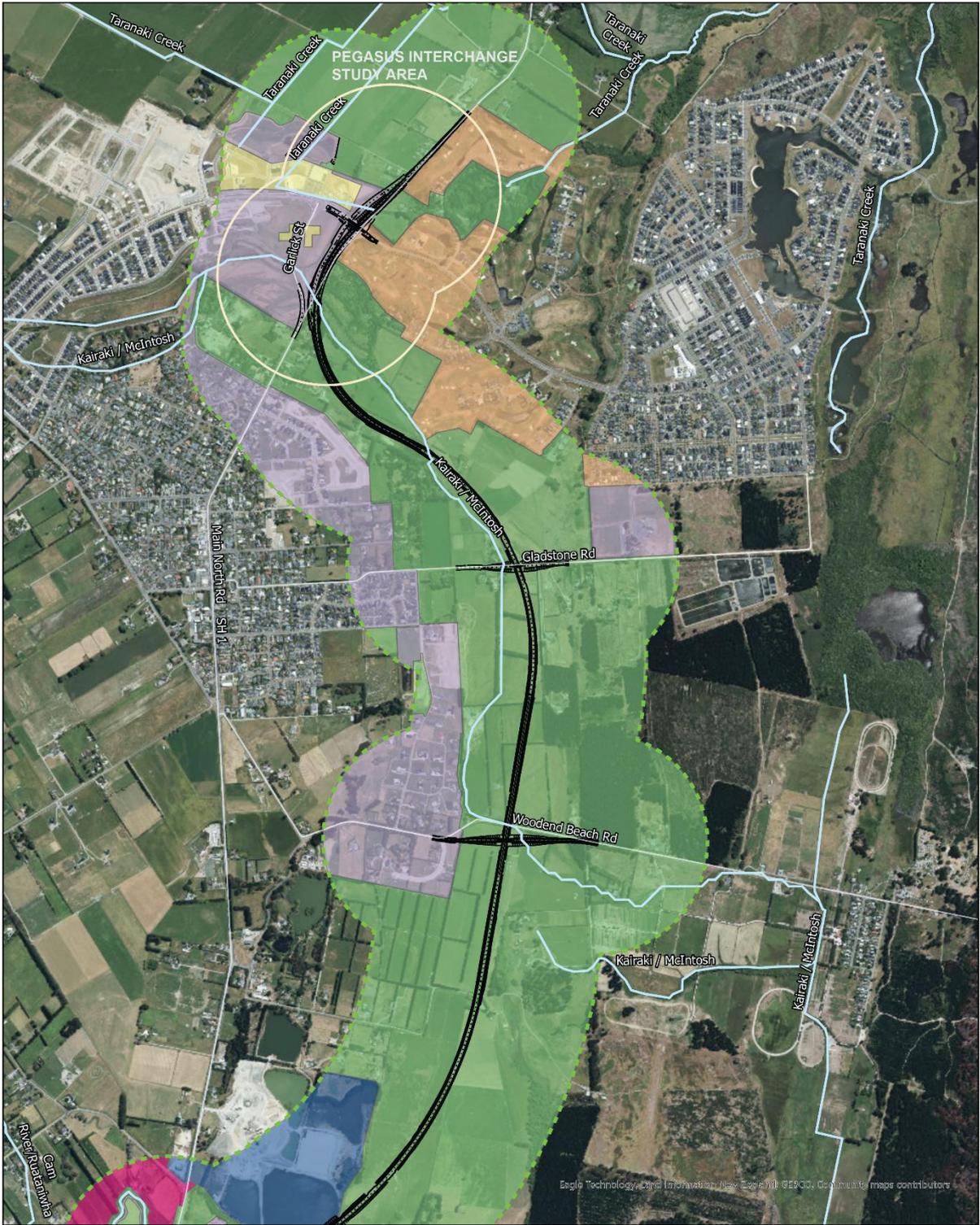
Landscape Character Zones (LCZs) help to identify unifying aspects of the landscape and distinguish why one landscape is visually distinct from another. The LCZs are based on cultural and physical landscape qualities as well as land use, as mapped in Figure 3-1- Figure 3-2, with Table 3-6 identifying the LCZs within the Study Area and providing a description of key characteristics.

Table 3-6 Landscape Character

LCZs	Description and key characteristics	Relevance for design updates
<b>LCZ 1 Rural</b>	<p>Small to medium farm allotments in land zoned rural; typically comprising:</p> <ul style="list-style-type: none"> <li>Fenced paddocks bordered by tall windrows and hedgerows</li> <li>Sheep/cattle grazing</li> <li>Horse agistments</li> <li>Rural residential acreages with mature trees and landscaped gardens</li> <li>Farm sheds and machinery</li> </ul>	<ul style="list-style-type: none"> <li>Pegasus Interchange overpass adjacent rural land to the northeast and northwest</li> <li>Cam River Bridges adjacent rural land</li> </ul>

**NOT FOR CONSTRUCTION**

LCZs	Description and key characteristics	Relevance for design updates
<b>LCZ 2 Residential</b>	<p>Area zoned for residential use including:</p> <ul style="list-style-type: none"> <li>■ Medium density within Ravenswood</li> <li>■ Medium density within Woodend East</li> <li>■ Large lots residential within Woodend Beach Road</li> <li>■ Medium density within Pinewood (Williams St)</li> <li>■ Temporary accommodation within Pinewood</li> </ul> <p>Houses are one-two storey dwellings within landscaped yards. Suburban areas of Ravenswood, Woodend East and Pinewood, have curvilinear streets and cul-de-sacs. Small local reserves are present in these areas.</p>	<ul style="list-style-type: none"> <li>■ Design changes indirect to LCZ</li> </ul>
<b>LCZ 3 Pegasus resort</b>	<p>Golf course surrounded by residential housing, comprising:</p> <ul style="list-style-type: none"> <li>■ Open manicured grassed spaces with ornamental trees</li> <li>■ Paths</li> <li>■ Small lakes</li> <li>■ Single-storey dwellings with open views of golf courses</li> </ul>	<ul style="list-style-type: none"> <li>■ Pegasus Interchange overpass adjacent Pegasus Resort (east) and rural land (west)</li> </ul>
<b>LCZ 4 Commercial</b>	<p>Commercial areas comprising shops at Ravenswood and Williams St north including:</p> <ul style="list-style-type: none"> <li>■ Big-box shopping centres with multiple stores</li> <li>■ Petrol stations</li> <li>■ Fast food restaurants</li> </ul>	<ul style="list-style-type: none"> <li>■ Design changes indirect to LCZ</li> </ul>
<b>LCZ 5 Industrial</b>	<p>Industrial areas include the Quarry and a truck depot comprising:</p> <ul style="list-style-type: none"> <li>■ Large machinery</li> <li>■ Stockpiles of stones</li> <li>■ Quarry lakes</li> <li>■ Equipment/storage sheds</li> </ul>	<ul style="list-style-type: none"> <li>■ Design changes indirect to LCZ</li> </ul>
<b>LCZ 6 Kainga Nohoanga</b>	<p>Landholdings in Special Use Zone (SPZ-KN), Kainga Nohoanga, Maori Reserve (MR- 873). The area comprises:</p> <ul style="list-style-type: none"> <li>■ Rural land comprising grassed paddocks with trees and shrubs</li> <li>■ Cam River – shallow winding waterway with tall trees to low embankments. Potential kaimoana source.</li> <li>■ Some wetlands</li> <li>■ Te Kai a e Atua Urupa (cemetery)</li> <li>■ Rural residential housing</li> </ul>	<ul style="list-style-type: none"> <li>■ Cam River Bridges adjacent MR-873 (NoR)</li> </ul>



- Study Area
- Rivers
- LINZ NZ Roads - Addressing
- Belfast to Pegasus Alignment
- LCZ 1: Rural
- LCZ 2: Residential
- LCZ 3: Pegasus Resort
- LCZ 4: Commercial
- LCZ 5: Industrial
- LCZ 6: Cultural Sensitivity

0 0.5 1 2 Kilometers



Figure 3-1 Land Use Zones / Landscape Character Zones (map 1 of 2)



- Study Area
- Rivers
- LINZ NZ Roads - Addressing
- Belfast to Pegasus Alignment
- LCZ 1: Rural
- LCZ 2: Residential
- LCZ 3: Pegasus Resort
- LCZ 4: Commercial
- LCZ 5: Industrial
- LCZ 6: Cultural Sensitivity



Figure 3-2 Land Use Zones / Landscape Character Zones (map 2 of 2)

### 3.2.3 Natural Character

The following is an analysis of the Natural Character identified within the Study area and the relevance to Regional Resource Consents.

#### Overlays

There are no Natural Features and Landscape, or Significant Natural Area (SNA) overlays within the Study Area. Landscapes that are not considered to be outstanding, but still have other values, are identified in district and regional planning documents and are protected from inappropriate development.

Maukatere/Mt Grey which is located approximately 30 km to the northeast of the Project, is a natural feature within an SNA and of cultural significance to Ngāi Tahu. Views of Mt Grey are visible from open locations within the Study Area.

#### Notable Plants

Notable Plants including large exotic species (Ghost gum, Weeping Elm, Copper Beach and English Oak) and a native tree (Tī kōuka Cabbage tree), all located at either 100 or 110 Parsonage Road in Woodend. These are located outside of the designation boundary, as identified in Table 3-7, with no effects resulting from the Project. These are considered in the assessment of Natural Character elements for Regional Resource Consents.

Table 3-7 Notable Plants near to designation boundary

Site No.	Site Address & Legal Description	Species	Distance from designation boundary
P001	110 Parsonage Road, Woodend Lot 1 DP 3598	Ghost Gum	45m
P002	110 Parsonage Road, Woodend Lot 1 DP 3598	Weeping Elm ( <i>Ulmus glabra pendula</i> )	25m
P004	110 Parsonage Road, Woodend Lot 1 DP 3598	Cabbage Tree ( <i>Cordyline australis</i> )	20-120 m (exact location of tree not shown in database mapping)
P005	110 Parsonage Road, Woodend Lot 1 DP 3598	Copper Beach ( <i>Fagus sylvatica Purpurea</i> )	10m
P017	100 Parsonage Road, Woodend Lot 2 DP 16789	English Oak ( <i>Quercus robur</i> )	10-200 m (exact location of tree not shown in database mapping)

#### Waterways

There are a number of waterways including streams and wetlands within the alignment (refer to Appendix A Figure 5 and Figure 6). Table 3-8 identifies the waterways, environmental values and whether there is relevance to the design updates.

Table 3-8 Waterways crossed by the alignment

Name	Environmental value or other features	Relevance for assessment
Kaipoi River	<ul style="list-style-type: none"> <li>■ Spring-fed Plains-Urban modified river (realigned)</li> <li>■ Tidally influenced</li> <li>■ High habitat value (inanga spawning habitat)</li> </ul>	Nil - Bridge strengthening will include water quality protective measures, with no changes to the river environment.
Cam River	<ul style="list-style-type: none"> <li>■ Water quality</li> <li>■ Kaimoana (food source)</li> <li>■ Wetland of Ecological and Representative Importance</li> </ul>	<ul style="list-style-type: none"> <li>■ Change from 3x single-span bridges, to 2x single-span bridges east of existing retained bridge</li> </ul>
Quarry pond lakes	<ul style="list-style-type: none"> <li>■ None – artificial</li> </ul>	<ul style="list-style-type: none"> <li>■ Ponds infilled to carry road alignment</li> </ul>
McIntosh Drain	<ul style="list-style-type: none"> <li>■ Modified natural stream</li> </ul>	<ul style="list-style-type: none"> <li>■ Upgraded culvert to allow conveyance beneath new alignment</li> </ul>
Waihora Stream	<ul style="list-style-type: none"> <li>■ Water quality (spring-fed)</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase in culvert length (new culvert), to the south of Pegasus Interchange, to allow for footprint of overbridge and ramps.</li> <li>■ Short diversion to align with existing channel</li> </ul>
Taranaki Stream	<ul style="list-style-type: none"> <li>■ Water quality</li> </ul>	<ul style="list-style-type: none"> <li>■ Increasing length of culvert at Bob Robertson Drive to allow for widening of the road corridor and SUP.</li> <li>■ Realignment of stream north of Bob Robertson Drive to meet position of new culvert beneath SH1.</li> <li>■ Increased length of culvert (new culvert) under SH1 to allow for footprint of overbridge and ramps.</li> </ul>
Wetlands – scattered throughout alignment	<ul style="list-style-type: none"> <li>■ Wetland of Ecological and Representative Importance</li> </ul>	<ul style="list-style-type: none"> <li>■ Affected wetlands within the alignment include:                             <ul style="list-style-type: none"> <li>– Northeast of Cam River Bridge is located near to the proposed bridge, with changes commensurate with ICD.</li> <li>– Northeast of infilled Quarry pond – potential earthworks effects.</li> <li>– South of 160 Gladstone Road residence</li> <li>– South of Waihora Stream culvert</li> </ul> </li> </ul>

# 4 Assessment of Natural Character effects for Regional Resource Consent

## 4.1 Landscape and Natural features

### 4.1.1 Overlays

There are no Natural Features and Landscape, or Significant Natural Area (SNA) overlays within the Study Area.

Elevated roads within the alignment, located at Williams Street, Woodend Beach Road, Gladstone Road and Pegasus Interchange, are likely to provide views to the northeast towards Maukatere/Mt Grey. In the existing environment, these views are often screened by intervening trees or buildings. The view towards a natural feature is considered a **LOW BENEFICIAL EFFECT**, experienced in background views.

### 4.1.2 Notable Plants

Notable plants are located outside of the designated boundary. There are **NO EFFECTS** associated with construction or operation of the Project.

### 4.1.3 Waterways and wetlands

The magnitude of change proposed by the design is discussed below under the relevant identified waterways. Stormwater flows from the alignment are not expected to affect the clarity of existing waterways with stormwater treatment captured within the alignment, treated through planted areas and discharged to existing drainage channels.

Table 4-1 Assessment of natural character effects in waterways and wetlands

Name	Construction: Magnitude of change and effect rating	Day 1 of Operation: Magnitude of change and effect rating
Kaiapoi River	NO EFFECT  An additional lane on the Kaiapoi River Bridge and bridge strengthening will include water quality protective measures, with no changes to the river environment.	NO EFFECT
Cam River	MINOR ADVERSE EFFECT (TEMPORARY)  Removal of existing vegetation comprises exotic pest Willow ssp. Though these do provide some amenity, they are not healthy for the waterway and are exotic. The presence of construction works and exposure without trees is temporary low-moderate adverse change.	LESS THAN MINOR BENEFICIAL EFFECT  The new 5-laned bridge over the Cam River (see 5.1.1 for Overview and description of design) is adjacent an existing 2-laned bridge. The bridge within the river embankments presents a low adverse magnitude of change, with overshadowing and built form encroaching the riverbanks in a limited area. However, revegetation of embankments with native vegetation, presents a low beneficial change to natural character.

**NOT FOR CONSTRUCTION**

Name	Construction: Magnitude of change and effect rating	Day 1 of Operation: Magnitude of change and effect rating
Quarry pond lakes	<p><b>MINOR ADVERSE EFFECT</b></p> <p>The ponds which are of low natural character value, will be infilled and a wetland will be created within the southern remnant lake.</p>	<p><b>LESS THAN MINOR BENEFICIAL EFFECT</b></p> <p>Road batters are to be planted with native vegetation and a stormwater treatment basin will be put in place which enhances the natural character.</p> <p>A wetland will be created to the southern remnant lake, including open water and new (immature) native planting and perimeter pest-control fencing.</p> <p>The magnitude of change to the natural character is low beneficial.</p>
McIntosh Drain	<p><b>NO EFFECT</b></p> <p>The existing culvert will be replaced early in the construction of the motorway, with protective measures applied to the waterway.</p>	<p><b>MORE THAN MINOR BENEFICIAL EFFECT</b></p> <p>The upgraded culvert to allow conveyance beneath new alignment has no magnitude of change.</p> <p>Proposed offset planting, incorporating endemic and native species, along McIntosh Drain will enhance the natural character, helping to re-naturalise the waterway and providing native vegetation in place of modified pasture.</p>
Waihora Stream	<p><b>LESS THAN MINOR ADVERSE EFFECT</b></p> <p>Trees removed within the alignment at the location of the culvert, are mainly exotic species though provide some value for avifauna and visual amenity. The magnitude of change is moderate-low, with nearby trees retained.</p>	<p><b>LESS THAN MINOR BENEFICIAL EFFECT</b></p> <p>The increase in culvert length is a negligible adverse change, however revegetation of the short diversion to align with existing channel provides a low beneficial magnitude of change to the natural character.</p> <p>The revegetation using native planting will provide improved cultural and ecological value.</p>
Taranaki Stream	<p><b>MORE THAN MINOR ADVERSE EFFECT (TEMPORARY)</b></p> <p>The realignment of the stream and surrounding works of the Pegasus Interchange will include removal of existing pest plant species within the stream. The old stream will remain in place whilst the new alignment is constructed, avoiding adverse effect to the waterway. The area surrounding stream will be a construction side with the moderate-high magnitude of change.</p>	<p><b>LESS THAN MINOR BENEFICIAL EFFECT</b></p> <p>The level of modification and coverage of the stream within culverts is increased by the alignment.</p> <p>The Stream, north of Bob Robertson Drive has pest plant species present. The realignment will remove pest plants and plant out a wider area with native and endemic plant species. The increased planting along this section of the stream provides a low beneficial magnitude of change.</p>
Wetlands – scattered throughout alignment	<p><b>MORE THAN MINOR ADVERSE EFFECT (PERMANENT)</b></p> <p>The alignment and associated works will destruct the below identified wetlands.</p> <ul style="list-style-type: none"> <li>■ northeast of Cam River Bridge</li> <li>■ northeast of infilled Quarry pond</li> <li>■ south of 160 Gladstone Road residence</li> <li>■ south of Waihora Stream culvert</li> </ul>	<p><b>LESS THAN MINOR BENEFICIAL EFFECT</b></p> <p>Wetlands will be offset within the proposed designation extension, to the southern remnant lake. The proposed new wetland comprise open water of various depths and native planting (in and surrounding waterbody).</p> <p>The creation of the wetland provides a beneficial change and net gain, given that vegetation within existing wetlands comprise exotic plants, pest plants and limited native plants.</p>

#### 4.1.4 Heritage

The magnitude of change proposed by the design is discussed below under the relevant identified areas of heritage significance.

Table 4-2 Assessment of natural character effects in areas of heritage significance

Name	Construction: Magnitude of change and effect rating	Day 1 of Operation: Magnitude of change and effect rating
Maori reserve land (MR 873)	NO EFFECT The alignment has avoided known areas of cultural significance. The new Cam River Bridge is near to the boundary of MR 873, however revegetation to along the river margins using native species, align to cultural values to provide mahinga kai. The Cam River is to be protected during construction, avoiding downstream effects.	NO EFFECT There are no direct changes to Maori reserve land.
St. Barnabas Anglican Church and Graveyard, 147 Main North Road Woodend	NO EFFECT The effects to the property are indirect.	NO EFFECT There is no change to the natural character within the property.
HH071 former Thomas Ayers junior house, 128 Main North Road, Woodend	NO EFFECT The effects to the property are indirect.	NO EFFECT There is no change to the natural character within the property.
Parsonage – 110 Parsonage Road, Woodend	NO EFFECT The effects to the property are indirect.	NO EFFECT There is no change to the natural character within the property.
HH085 NZ Scout Association Memorial – 203 Gladstone Road, Woodend	NO EFFECT The memorial would still be publicly accessible during construction	NO EFFECT There are no changes proposed to the memorial

# 5 Alterations to designation

The Project alignment was designated in 2015 based on a concept design.

The Project is currently undergoing detailed design development, which involves updates and refinement to the design and therefore alterations to the conditions of the designation are required.

This assessment is based on the Detailed Design package for the Project and in conjunction with the development of the ULDMF.

## 5.1 Cam River Bridge

### 5.1.1 Overview and description of design changes

The design change for the Cam River Bridge is a reduction in the number of bridges being built. The existing bridge was previously proposed to be removed and replaced with three separate bridges. The existing bridge will now be retained for northbound traffic to Williams Street/Main North Road and form an off-ramp, and one additional bridge built for on-ramp and SH1 north and south-bound lanes.

The new Cam River Bridge will be located to the east of the existing bridge (SH1 and southbound on ramp) as shown in Figure 5-1 and Figure 5-2, with a description of the design changes outlined in Table 5-1 Table 5-1.

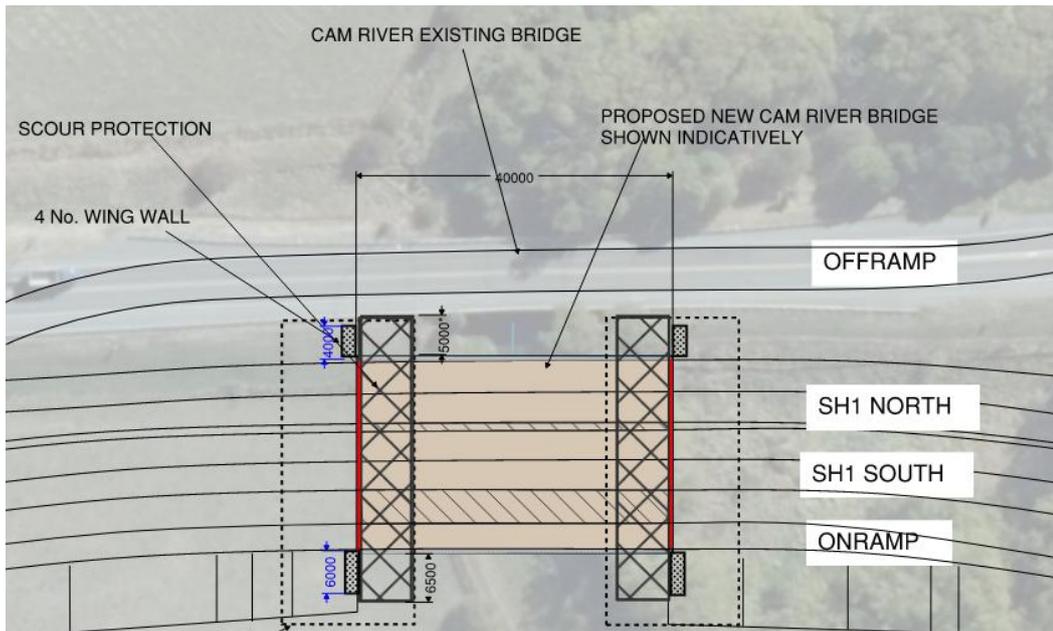


Figure 5-1 Proposed plan of Cam River Bridge (Cam River Crossing Options report, July 2025)

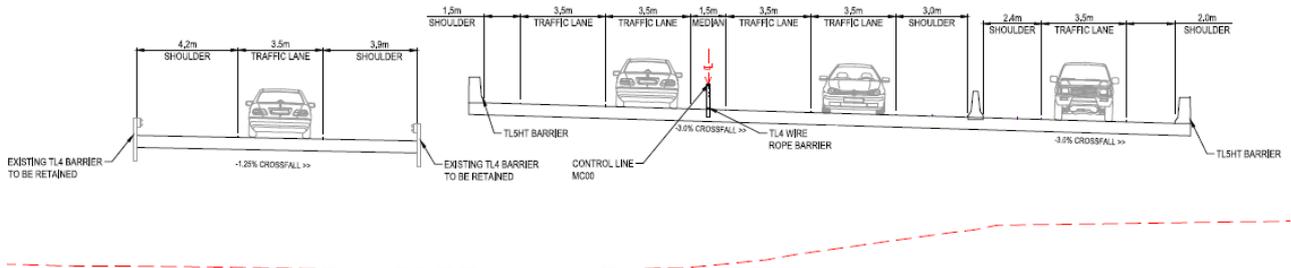


Figure 5-2 Typical Cross Section Mainline – Cam River Bridge (30% Detailed Design, July 2025)

Table 5-1 Overview of Cam River Bridge design changes

Key Features	Designated design	Design changes
Construction activity	<ul style="list-style-type: none"> <li>Removal of existing 2-laned bridge.</li> <li>Removal of trees and vegetation to north side of river (limited vegetation on the south side)</li> <li>Piling either side of the river</li> <li>40m long girder sections transported and dropped into place</li> </ul>	<ul style="list-style-type: none"> <li>Retention of existing bridge</li> <li>Installation of 1 new bridge</li> <li>Reduction in the number of bridge piles required</li> </ul>
Structures	<ul style="list-style-type: none"> <li>Three separate new bridge structures.</li> <li>Scour protection to the riverbanks in front of the piers will be placed to mitigate future scour around the abutment piles</li> </ul>	<ul style="list-style-type: none"> <li>The bridge is a single span steel box girder, with a span length of 40m and 11.6m width (1,120m<sup>2</sup>).</li> </ul>
Cross-section of road above	<ul style="list-style-type: none"> <li>3 x separated bridges including:</li> <li>1x off-ramp</li> <li>1x on-ramp</li> <li>1x SH1 4-laned north and south-bound</li> </ul>	<ul style="list-style-type: none"> <li>4 x 3.5m traffic lanes, 1.5-3.0m shoulders, 1.5m median with wire rope</li> <li>Adjoined on-ramp to east side including 2 x 1.5-2.1m shoulders, 1 x 3.5m traffic lane</li> <li>TL5-HT barriers and separating concrete barrier</li> </ul>
Vertical clearance	<ul style="list-style-type: none"> <li>No provision for SUP</li> </ul>	<ul style="list-style-type: none"> <li>2.3m to below proposed future Arohata te Awa path</li> </ul>
Lighting	<ul style="list-style-type: none"> <li>No lighting on bridge. Lighting columns will be located on the approach ramps to the structure, at each end of the bridge structure</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>
Stormwater Infrastructure	<ul style="list-style-type: none"> <li>Drainage will be captured at the bridge ends through catch pits located to the rear of the abutments, which will drain into the road drainage system.</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>
Landscaping	<ul style="list-style-type: none"> <li>Revegetation to river embankments incorporating native plant species</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

### 5.1.2 Effects to Urban form and land use

This urban design assessment has been prepared in regard to the urban modifications to the existing and future planned environment in accordance with the Waimakariri District Council Planning Scheme. The urban design effects proposed by the alteration to the designation is discussed below under the key urban design effects.

Table 5-2 Urban design change in effects

Urban design/form	Construction: Change of effects	Day 1 of Operation: Change of effects
Connectivity	NO CHANGE	NO CHANGE

Urban design/form	Construction: Change of effects	Day 1 of Operation: Change of effects
Urban form and land use	<p>REDUCED EFFECTS</p> <ul style="list-style-type: none"> <li>The construction footprint including number of bridge piers will be less for one bridge.</li> <li>No demolition required of the existing bridge.</li> </ul>	<p>REDUCED EFFECTS</p> <ul style="list-style-type: none"> <li>Existing bridge is retained and implemented in the design</li> <li>Design of 1 new bridge is more efficient in use of land within the designation</li> </ul>
<p>ULDF objectives:</p> <ul style="list-style-type: none"> <li>Ecological connections should be enhanced and restored through additional planting (P2).</li> </ul>		NO CHANGE

### 5.1.3 Effects to Landscape and natural features

The change in effects proposed by the alteration to the designation is discussed below under the relevant identified landscape character and natural features.

Table 5-3 Landscape character and natural features change in effects

Character zones and natural features	Construction: Change of effects	Day 1 of Operation: Change of effects
LCZ 1 Rural	NO CHANGE	NO CHANGE
LCZ 6 Kainga Nohoanga	NO CHANGE	NO CHANGE
Waterways	NO CHANGE	NO CHANGE
<p>ULDF objectives:</p> <ul style="list-style-type: none"> <li>Landscape elements enhancing biodiversity and integrating culturally significant elements (P8).</li> <li>The aesthetic appeal of roadscape elements should promote a quality road user experience (P9).</li> <li>Allowance of key views from the motorway (P1).</li> <li>The effects of significant earthworks should be minimised through planting (P2).</li> </ul>		NO CHANGE

### 5.1.4 Effects to visual amenity

Views of the new bridge are predominantly viewed from the existing bridge during construction and from the motorway, once built. Views are not considered from the future proposed Arohata te Awa cycle path which would traverse below the bridges, as there is no change experienced by potential users.

Figure 5-3 and Figure 5-4 indicate the existing conditions east and west of the Cam River Bridge. The tall Willow trees to the north side of the river, whilst providing some visual amenity and providing a frame which indicate the river's course, are a pest plant species. There is no change to the extent of tree removal as a result of the design change.

A white card render of the proposed bridge is shown below in Figure 5-8. The proposed bridge when viewed from the side, is commensurate in height and span across the river.



Figure 5-3 Panoramic view looking east to the Cam River Bridge



Figure 5-4 Panoramic view looking west to the Cam River Bridge



Figure 5-5 Panoramic view of Cam River Bridge, looking east

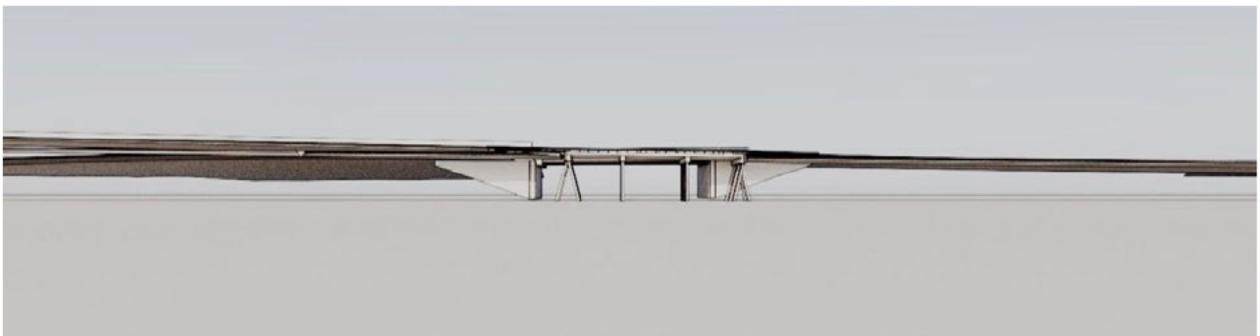


Figure 5-6 White card model of Cam River Bridges, looking east (new bridge behind existing bridge)

The magnitude of visual change during construction and once built, is discussed in Table 5-4 below.

Table 5-4 Cam River Bridge visual effects magnitude of change

Views	Construction: Change of effects	Day 1 of Operation: Change of effects
Views from north and south ■ Motorists on SH1	REDUCED EFFECT ■ Retention of the existing bridge	REDUCED EFFECT ■ Retention of the existing bridge

## 5.2 Pegasus interchange

### 5.2.1 Overview and description of design changes

The alteration to the designation design proposes a grade separated overpass and diamond interchange, from an interchange roundabout.

The Pegasus Interchange design change involves removal of the existing roundabout at the intersection of SH1 / Pegasus Boulevard / Bob Robertson Drive and introduction of a new grade-separated diamond interchange overpass, including traffic signals and local road upgrades. There is an alteration to the designation boundary required at the interchange (as a result of updated design).

Pegasus Interchange Overbridge will be located where the current Pegasus Boulevard, Bob Robertson Drive and State Highway 1 intersect, with the overpass oriented north - south as shown in Figure 5-8 and Figure 5-9. The existing local roads under the bridge are to be modified due to the removal of the roundabout at the location. A description of the design changes are outlined in Table 5-5.



Figure 5-7 Concept design of Pegasus Interchange with roundabout and previous viewpoint locations (Pocock, 2013)

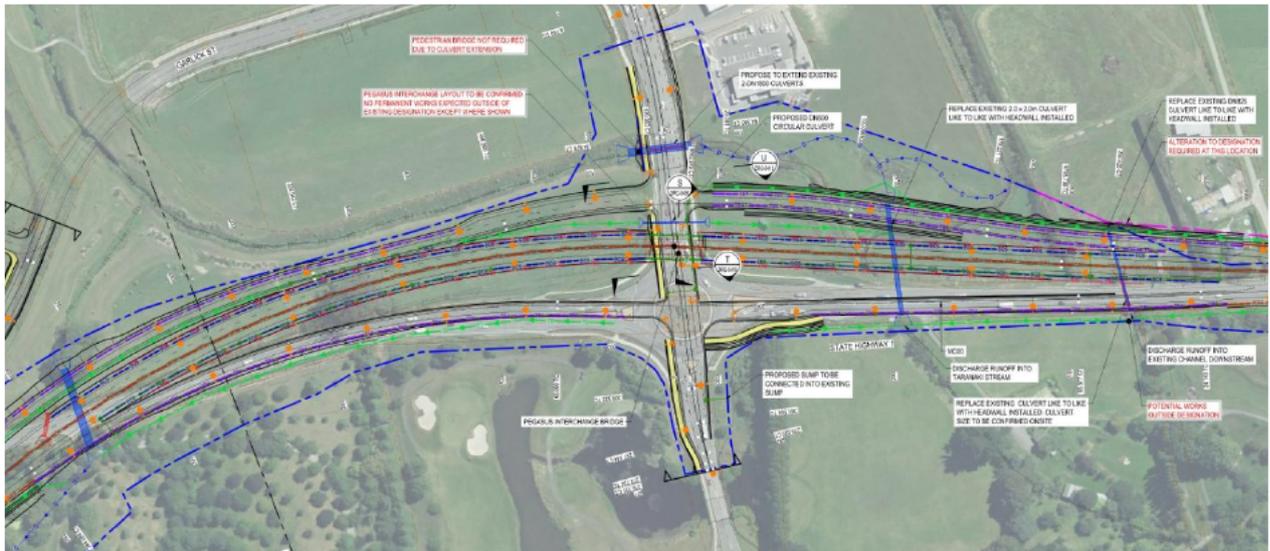


Figure 5-8 Plan of Pegasus Interchange (30% Detailed Design, July 2025)

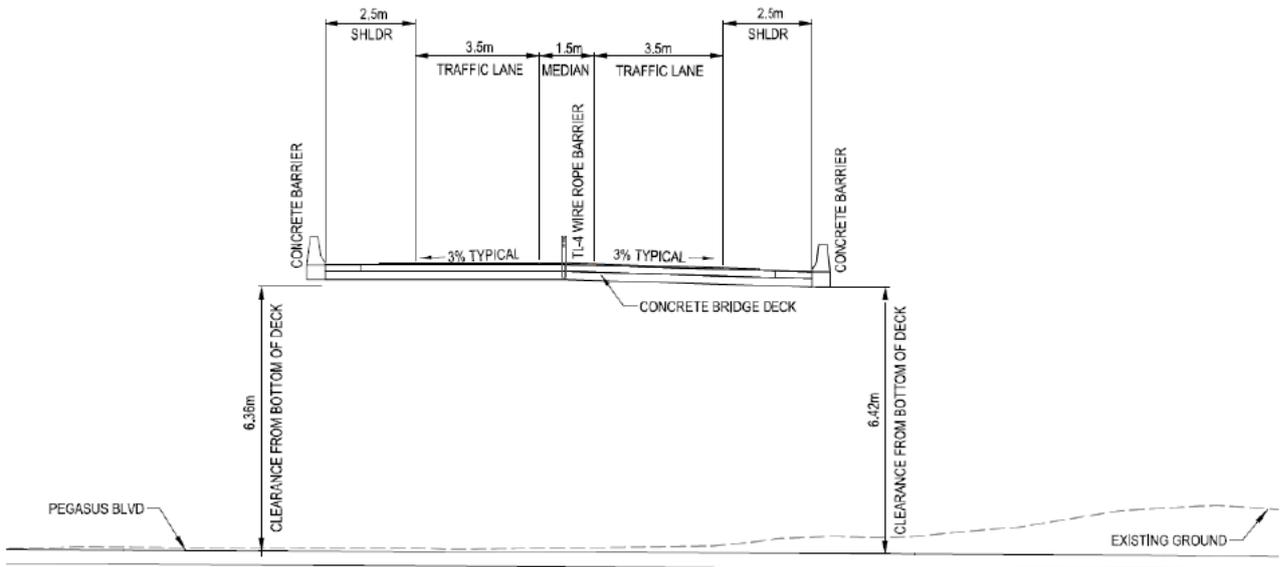


Figure 5-9 Typical Cross Section Mainline - over Pegasus Boulevard (30% Detailed Design, July 2025)

Table 5-5 Overview of the Pegasus Interchange design changes

Key Features	Designated design	Detailed design changes
Construction activity	<ul style="list-style-type: none"> <li>Removal of existing roundabout and road works to widen intersection</li> </ul>	<ul style="list-style-type: none"> <li>Ground improvements will underlie the structure.</li> <li>Realignment of Taranaki Stream, including earthworks to carve out new channel</li> <li>Placement of new, longer culverts for Taranaki and Waihora Streams</li> <li>Widening of Bob Robertson Drive</li> <li>Traffic diversion during construction via Wards Road – Kesteven Place and Garlick Street, with Pegasus Boulevard and Bob Robertson Drive remaining open (with traffic control)</li> <li>Night works for carrying bridge beams / heavy vehicles, installation during the day including cranes</li> </ul>

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Key Features	Designated design	Detailed design changes
Structures	<ul style="list-style-type: none"> <li>■ Road surfaces and edges</li> </ul>	<ul style="list-style-type: none"> <li>■ The bridge is a single span deck and slab bridge, with a span length of approximately 29.5m with no skew.</li> <li>■ Concrete integral abutment beams will be located at each end at the top of MSE abutment walls.</li> <li>■ Each abutment is supported by an MSE wall. These are contained by facing panels and extend from the highway below the bridge up to the bridge abutment. MSE walls will extend transversely a minimum of 1.5m beyond the back edge of the bridge barriers above and then return parallel to the road above.</li> <li>■ MSE retaining walls to the east and west side of the bridge at heights up to 9.5m.</li> </ul>
Cross-section of road above	n/a	<ul style="list-style-type: none"> <li>■ 2 x 2.5m shoulders, 2 x 3.5m traffic lanes, 1.5m median with wire rope</li> <li>■ TL5-HT barriers</li> </ul>
Cross-section of road below	n/a	<ul style="list-style-type: none"> <li>■ 4 x 3.2m traffic lanes, 1 x 3.2m sighting clearance, 2m raised median</li> <li>■ 6.9 clear zone for inclusion of sighting distance and 3m wide Shared Use Path</li> <li>■ a single lane in each direction for off/on ramps to the north and south are at grade</li> </ul>
Vertical and horizontal clearances	n/a	<ul style="list-style-type: none"> <li>■ Vertical clearance from the road is 6.42m, with a maximum structure height of approximately 7.5-9m</li> <li>■ 2.4m minimum roll over clearance from face of barrier to face of MSE wall, with a maximum structure width of 16.5m</li> <li>■ Retaining walls to set back 1.5m from road edge</li> </ul>
Lighting	Intersection street lighting	<ul style="list-style-type: none"> <li>■ Strip lighting above SUP at bridge abutment</li> </ul>
Stormwater Infrastructure		<ul style="list-style-type: none"> <li>■ Drainage will be captured at the bridge ends through catch pits located to the rear of the abutments, which will drain into the road drainage system.</li> <li>■ The proposed Taranaki Stream Culverts run under the proposed Pegasus interchange on and off ramps, to the north of Pegasus interchange bridge. They are located approximately halfway between the ramp divergence from SH1 And Pegasus Drive. <ul style="list-style-type: none"> <li>– The mainline culvert will be approximately 80m in length</li> </ul> </li> <li>■ Realignment of Taranaki Stream and a diversion drain to meet the culvert at a narrower section of the interchange.</li> </ul>
Landscaping		<ul style="list-style-type: none"> <li>■ Mixed multi-storey planting between bridge and off-on ramps, with taller plants against the bridge retaining wall.</li> <li>■ Revegetation of realigned streams</li> </ul>

### 5.2.2 Effects to Urban form and land use

The urban design effects proposed by the alteration to the designation is discussed below under the key urban design effects.

Table 5-6 Urban design change of effects

Types of effects	Construction: Change of effects	Day 1 of Operation: Change of effects
Urban form and land use effects	<p>INCREASED EFFECTS</p> <ul style="list-style-type: none"> <li>Corridor widening</li> <li>Stream realignment</li> </ul>	<p>INCREASED EFFECTS</p> <ul style="list-style-type: none"> <li>Corridor widening</li> <li>New elevated overpass structure</li> </ul>
Connectivity effects	NO CHANGE	<p>REDUCED EFFECTS - BENEFICIAL</p> <ul style="list-style-type: none"> <li>The overpass separates SH1 traffic from the local road, improving local connections and safety for pedestrians and cyclists</li> </ul>
<p>Meeting the ULDF objectives including:</p> <ul style="list-style-type: none"> <li>Pedestrian and cycling connections to be retained while improving traffic safety (P5, P6, P9).</li> <li>Landscape elements should integrate connections and experiences for road users (P9).</li> </ul>	<p>NO CHANGE</p> <p>Objectives are aimed at operational outcomes</p>	<p>REDUCED EFFECTS - BENEFICIAL</p> <ul style="list-style-type: none"> <li>Pedestrian and cycle connections are provided for, improving traffic safety.</li> <li>Landscape planting within medians to screen overbridge retaining walls, softening presence of structures and providing aesthetic amenity for road users.</li> </ul>

### 5.2.3 Effects to landscape and natural features

The change in effects proposed by the new design is discussed below under the relevant identified landscape character and natural features.

Table 5-7 Landscape character and natural effects

Effected areas	Construction: Change of effects	Day 1 of Operation: Change of effects
LCZ 1 Rural	NO CHANGE	NO CHANGE
LCZ 3 Pegasus resort	<p>INCREASED EFFECTS</p> <p>Works are indirect to the golf course, however the ground improvements and duration of construction activity will be a noticeable change and is likely to affect the amenity of golfers near to the works.</p>	NO CHANGE

Effected areas	Construction: Change of effects	Day 1 of Operation: Change of effects
Views of Mt Grey	NO CHANGE	REDUCED EFFECTS - BENEFICIAL <ul style="list-style-type: none"> <li>The overpass will provide partial views for motorists</li> </ul>
Waterways	INCREASED EFFECTS <ul style="list-style-type: none"> <li>Realignment of Taranaki and Waihora Streams</li> </ul>	INCREASED EFFECTS <ul style="list-style-type: none"> <li>Taranaki Stream culvert at 80m in length is an adverse change, however the effects for fish passage will be mitigated through a light vent located in median to the west of the overbridge.</li> </ul>
ULDF objectives: <ul style="list-style-type: none"> <li>Landscape elements enhancing biodiversity and integrating culturally significant elements (P8).</li> <li>The aesthetic appeal of roadscape elements should promote a quality road user experience (P9).</li> <li>Allowance of key views from the motorway (P1).</li> <li>The effects of significant earthworks should be minimised through planting (P2).</li> </ul>	NO EFFECT  Objectives are aimed at operational outcomes	REDUCED EFFECTS <ul style="list-style-type: none"> <li>Increased native planting along realigned streams</li> <li>Taranaki Stream culvert at 80m in length is an adverse change</li> <li>Increased structures, softened by planting in road medians</li> <li>The overbridge provides an elevated view for motorists of the surrounding area.</li> </ul>

### 5.2.4 Effects to visual amenity

An assessment of the change to visual effects as a result of the design change at Pegasus Interchange is provided below. This considers where Pegasus Interchange is likely to be viewed from public and private viewpoints including:

- Public realm:
  - Foreground views across the intersection and intersecting local roads, experienced by motorists, pedestrians and cyclists
  - Informal reserves surrounding Taranaki Stream and Waihora Stream
  - Views from St Barnabas Church and Graveyard
- Private:
  - Pegasus Resort golf course to the east of the intersection
  - Private dwellings within Pegasus Resort north
  - Private dwellings at 1250 Main North Road and 5 Wards Road
  - Wilton Street new residential area, in Ravenswood

There are some existing residential dwellings that are being acquired by NZTA for the project, therefore these are no longer considered within this assessment. For clarity, these properties closest to Pegasus Interchange include:

- North of Pegasus Interchange: 1271-1279 Main North Road
- South of Pegasus Interchange: 130, 130A and 146 Main North Road

The magnitude of visual change during construction and once built, is discussed in Table 5-8 below. This includes site photos taken during site visit 2 April 2025, which identified existing conditions and screening value. It should be noted that although the existing view shows a roundabout, the designated design includes an interchange roundabout which is much larger.

### Changes to visual effects to the north of Pegasus Interchange

Figure 5-11 and Figure 5-12 showing the existing views from the north towards location of the Pegasus Interchange, with a white-card render of the new design shown in Figure 5-12.



Figure 5-10 Existing view from Mapleham Drive, north Pegasus Resort, looking west towards SH1. Dwellings seen to the far left of the photo



Figure 5-11 Looking south towards Pegasus roundabout from SH1



Figure 5-12 Draft render of Pegasus Interchange, looking south from SH1

Table 5-8 Pegasus Interchange change in effect for views from the north

Visual receivers	Construction: Change of effects	Day 1 of Operation: Change of effects
Residential dwellings at 1250 Main North Road (A04), 5 Wards Road and Mapleham Drive (see Figure 5-11)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Realignment of private driveway for 1250 Main North Road and 5 Wards Road</li> <li>Ground improvement works</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Views of overpass ramps at 1250 Main North Road and 5 Wards Road</li> <li>There is no change in the views from residents on Mapleham Drive</li> </ul>
Motorists on SH1 and some cyclists travelling south (refer Figure 5-12)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Corridor widening</li> <li>New elevated overpass structure approximately 600m in length and up to 9.5m height including retaining walls</li> <li>Views of surrounding area will be experienced by motorists on the overpass.</li> </ul>

### Changes to visual effects to the east of Pegasus Interchange

Figure 5-15 and Figure 5-16 showing the existing views from the east towards location of the Pegasus Interchange.



Figure 5-13 Existing view from Pegasus Resort golf course, looking west (120m south of Pegasus roundabout)



Figure 5-14 Existing view from Pegasus Boulevard, looking west (50m south of Pegasus roundabout)

Table 5-9 Pegasus Interchange visual change in effect for views from the east

Visual receivers	Construction: Change of effects	Day 1 of Operation: Change of effects
Pegasus Resort golf course and some residential dwellings (see Figure 5-13)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>New vertical overpass structure in the road corridor</li> <li>Reduced views to the west</li> </ul>
Private dwellings within Pegasus Resort	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Very low adverse magnitude of change to the view ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Very low adverse magnitude of change to private views at distance of approximately 350m, which will include partial views of the elevated overpass</li> <li>Reduced views to the west</li> </ul>
Motorists, pedestrian and cyclists on Pegasus Boulevard (see Figure 5-14)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>New elevated overpass structure up to 9.5m height including retaining walls</li> <li>Reduced views to the west</li> </ul>

**Changes to visual effects to the south of Pegasus Interchange**

Figure 5-15 and Figure 5-16 showing the existing views from the south towards location of the Pegasus Interchange.



Figure 5-15 Existing view from St Barnabas Church, looking north towards interchange



Figure 5-16 Existing view from Derbridge/Wilton Street, looking northeast towards interchange

Table 5-10 Pegasus Interchange visual change in effect for views from the south

Visual receivers	Construction: Change of effects	Day 1 of Operation: Change of effects
St Barnabas Church and Graveyard (see Figure 5-15)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>New vertical overpass structure in the road corridor</li> </ul>

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Visual receivers	Construction: Change of effects	Day 1 of Operation: Change of effects
Wilton Street and Derbridge Street - new residential area (see Figure 5-16)	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Very low adverse magnitude of change to the view ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Very low adverse magnitude of change to the view including partial views of the elevated overpass</li> </ul>
Motorists, cyclists and pedestrians on Main North Road and Garlick Street connection	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works and construction activity</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>New vertical overpass structure in the road corridor</li> </ul>

**Changes to visual effects to the west of Pegasus Interchange**

Figure 5-19 shows the existing views from the west towards location of the Pegasus Interchange, with a white-card render of the new design shown in in Figure 5-18 .



Figure 5-17 Looking east towards Pegasus roundabout from Bob Robertson Drive



Figure 5-18 Draft render of Pegasus Interchange, looking east from Bob Robertson Drive

Table 5-11 Pegasus Interchange visual change in effect for views from the west

Visual receivers	Construction: Change of effects	Day 1 of Operation: Change of effects
Motorist, pedestrian and cyclists on Bob Robertson Drive Visitors to McDonalds on Bob Robertson Drive	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>Ground improvement works and construction activity</li> <li>Taranaki Stream realignment</li> </ul>	<b>INCREASED EFFECTS</b> <ul style="list-style-type: none"> <li>New elevated overpass structure at approximately 600m in length and up to 9.5m height including retaining walls</li> <li>Reduced views to the east</li> </ul>

## 5.3 Construction Support Area

A construction support area (CSA) is proposed at 236-264 Lees Road, to support the construction of the Project, for which a change to the designation boundaries is being sought. The main construction works are planned to begin in the 2026/27 construction season with the CSA operational for the approximate 3 - 4 year construction programme.

The CSA is likely to require the following amenities:

- Project offices (portacom style buildings).
- Employee amenity buildings, adjacent break out areas and car parking, for approximately 80 people
- Weighbridge
- Lockable buildings and/or containers for storage of small tools/equipment and materials
- Secured fenced area

Site establishment and disestablishment includes:

- Site clearance, ground preparation, and establishing erosion and sediment control measures prior to any construction activities occurring.
- Established on compacted fill to provide usable storage and amenity areas.
- Upon completion of the works, the CSAs will be disestablished, and the areas restored to at least their previous condition prior to construction or as mutually agreed between the landowner and the Contractor.

The size of the Project CSA spans an area within existing farmland of approximately 180 m length and 130m width.

Refer to the Construction Methodology Statement (Volume 3A, Aurecon June 2025) for further details.

### 5.3.1 Effects to Urban form and land use

There will be temporary effects to the existing land used for farming, though it is noted that this site is adjacent an existing quarry and ponds. The CSA will be more commensurate in land use and built form with the neighbouring quarry. There is no land use effects experienced to adjacent residential or rural land.

There are **no effects** to urban form or land use.

### 5.3.2 Effects to Landscape and natural features

There will be temporary effects to LCZ 1 Rural. The presence of the CSA will be commensurate with an industrial site, though whilst the quarry and ponds are a short distance away, is screened by the existing windbreak. The grassed site will be covered with compacted fill, to provide a trafficable surface and placement of ancillary buildings and materials. The magnitude of change to the farm paddock, which is of low environmental or agricultural value, is a moderate magnitude of change.

The effect to the landscape character (LCZ 1 Rural) is **More than minor**, prior to any mitigation recommendations.

There are no other natural features within the site.

### 5.3.3 Effects to visual amenity

A detailed assessment of the visual effects as a result of the proposed Construction Support Area, is provided in the below.

Views are likely experienced from residential dwellings (approximately 10) at 265-287 Lees Road. Many of these dwellings have existing screening vegetation to their front boundaries (see Figure 5-20 ), which screen

views outside of the properties. However, there are a few of these properties which have clear views towards the site as shown in Figure 5-19 .

The magnitude of visual change during the 3-4 year construction programme, in which the CSA would be present, are described in the below table.

Table 5-12 CSA visual magnitude for views from Lees Road

Visual receivers	Construction: Magnitude of change and effect rating
1. Residential dwellings at 265-287 Lees Road	<p><b>MORE THAN MINOR ADVERSE EFFECT (TEMPORARY)</b></p> <p>The presence of the CSA will be in foreground views of residents on Lees Road, comprising a secured (fenced) compound with portico-type buildings, machinery, laydown areas and material storage. Though many of the residents have existing screening vegetation along Lees Road, some dwellings will have clear views of the site, which is a moderate-high magnitude of change, altered from the existing view of a grassed paddock with trees.</p>



Figure 5-19 Existing view northwest from 287 Lees Road towards proposed CSA (April 2025)



Figure 5-20 Existing view towards residential dwellings on Lees Road (May 2025)

## 5.4 Infilling of the southern remnant lake

The southern quarry pond (refer to Figure 5-21 ), will be infilled for construction of the new alignment (to be completed as early works and consented separately). This area will be backfilled and a wetland constructed as part of construction works. The filling and creation of a wetland environment addresses concerns about potential stagnation of the remnant waterbody and provides offset for the adverse effects on wetlands across the wider Project. A change to the boundaries of the designation is being sought to accommodate the southern remnant lake.

Relevant to this assessment, the wetland will broadly comprise the following:

- Filling the remnant lake up to about 0.5 m- 1.0m below water level (note water levels vary).
- Approximately 30 percent of the area will remain as shallow open water, the remaining area will be formed as wetland.
- The upper 200-300mm of the land area shall be formed using topsoil either site won or imported.
- Once filled to required levels, wetland construction works will comprise planting out of the area, fencing to protect planting and for predator control.

For the following assessment, it is assumed that construction/earthworks for the wetland are undertaken during Project construction works and thus, operational effects where the wetland has been constructed, are assessed.



Figure 5-21 Southern Remnant Lake wetland development extent (highlighted yellow)

### 5.4.1 Effects to Urban form and land use

The existing pond is within an industrial zone and is not for public use. The alignment has a severance effect on the pondage within an industrial zone.

The creation of a wetland to the south of the alignment has a low beneficial magnitude of change to the land use, with improved ecological amenity provided adjacent rural living and residential zones. This results in a **LESS THAN MINOR BENEFICIAL effect** to urban form or land use.

### 5.4.2 Effects to Landscape and natural features

The existing pond is of low natural character value, due to its use within an industrial site (extractive quarry). The magnitude of change proposed by the design is discussed below under the relevant identified landscape character and natural features.

Table 5-13 Landscape character and natural effects

Effected areas	Day 1 of Operation: Magnitude of change and effect rating
<b>LCZ 5 Industrial</b>	<p>LESS THAN MINOR – BENEFICIAL</p> <p>The creation of a wetland in place of a quarry pondage, is a beneficial change to the character of the area, providing improved ecological and visual amenity.</p> <p>The magnitude of change is low beneficial.</p>
<b>Waterways/wetlands</b>	<p>LESS THAN MINOR – BENEFICIAL</p> <ul style="list-style-type: none"> <li>■ The existing pond is of low environmental value. The creation of a wetland improves the ecological benefit of the waterbody. At day 1, young planting will have little bearing on water quality, habitat creation or amenity.</li> </ul> <p>The magnitude of change is low beneficial.</p>

### 5.4.3 Effects to visual amenity

The existing pond is not visible from public viewpoints including Barkers Road (east) or Lees Road (south). Visibility of the pond is obscured by the low level of the water level adjacent low undulating farmed paddocks, shrubs and the tall Macrocarpa windrow to the southwest of the pond. Therefore there are NO VISUAL EFFECTS resulting from infilling on the quarry pond and creating of a wetland.

At day one of operation the wetland would not be visible from public areas. The windrow of tall Macrocarpa trees is likely to be removed, however this would be a result of works within the corridor and not considered relevant to the value of the wetland.

## 6 Mitigation measures

The designation conditions which include reference to the ULDF, typically address and minimise the potential adverse effects associated with the alteration to the designation. Additionally, many of these measures will be covered by the Construction Environmental Management Plan (CEMP) and ULDMP, both of which will form the Outline Plan.

There are no additional mitigation measures recommended for Natural Character (Section 4), based on either no effects or beneficial effects.

The mitigation measures listed in Table 6-1 are recommended to be implemented during or prior to construction. These are based on the increased adverse effects assessed within this report.

Table 6-1 Construction phase mitigation measures

Mitigation element	ID	Description	Implementation
Visual effects	LC	1. Implement site hoarding surrounding construction zone at Pegasus Interchange, to enable visual screening of the construction works. Site hoarding is to be placed: <ul style="list-style-type: none"> <li>i. To the site boundary facing Pegasus golf course; and</li> <li>ii. Not inhibit public or private access routes.</li> </ul>	Refer to CEMP
	LC	2. Provide a planted earth bund to the south and east of the CSA to provide screening minimise visual effects to adjacent residents on Lees and Barkers Roads. The earth bund should of 2.0 – 2.5 m height, with screen planting up to 5 m height.	New condition

The following mitigation measures (Table 6-2) are recommended to minimise and reduce potential permanent effects of the Project.

Table 6-2 Operational phase mitigation measures

Mitigation element	ID	Description	Implementation
Visual effects	LS	1. Where vertical structures are not able to be screened, materials with aesthetic interest (i.e. texture, colour patterning or artwork) should be used to provide features on elements including bridge barriers, retaining and abutment walls. This will establish a quality road user experience.	Refer to ULDMP for details of mitigation measures

### 6.1 Residual effects

#### 6.1.1 Management of construction effects

The below table summarises the effects resulting from the CSA, which is an alteration to the designation, the recommended mitigation measures (Table 6-1) and the resulting effects.

Table 6-3 Management of construction effects

Types of effect	Effects during construction	Management of construction effects	Visual effect change with implementation of new conditions
<b>Construction Support Area</b>			
Visual amenity	MORE THAN MINOR – ADVERSE (TEMPORARY) Views experienced by residents on Lees and Barkers Roads	LC2: Planted earth bund to CSA boundary would screen views experienced from the ground level, reducing visual effects.	MINOR EFFECT (reduced)

### 6.1.2 Mitigation of permanent effects

The below table summarises the change in effects at day 1 of operation (Section 5) recommended mitigation measures (refer Table 6-2) and the resulting residual effects. The residual effects are estimated at approximately year 10, when vegetation have matured to provide screening and amenity.

Table 6-4 Mitigation of project effects and residual effects

	Effects at day 1 of operation	Mitigation required	Residual effects
<b>Pegasus Interchange</b>			
Visual amenity	<p>INCREASED EFFECTS</p> <ul style="list-style-type: none"> <li>a prominent vertical structure</li> <li>Views from south as the overbridge is noticeable but commensurate with existing building heights to the west and partially screened by vegetation.</li> </ul>	<p>LS1: Use of architectural materials to enhance appearance of structural surfaces.</p> <p>LS2: Planting of trees to a height of 8m, at base of retaining wall where space allows.</p> <p>LS3: Implement wire trellis with climbing plants where there is limited space to provide vegetation screening. Trellis structure is to meeting maintenance and structural requirements.</p>	<p>INCREASED EFFECT</p> <p>There is no mitigating the prominence of the new vertical overpass, however mitigation measures will provide positive improvements to its appearance.</p>

## 6.2 Changes to the designation conditions

The following table outline recommended changes or additions to the existing WDC Designation conditions, based on the new design and assessment of effects undertaken in this report.

Table 6-5 Changes and additions to designation conditions

Changes to conditions relevant to UDLVA		Rationale
34	<del>At any time prior to the Outline Plan being lodged in accordance with condition 3, (The Requiring Authority shall submit an Urban and Landscape Design Management Plan (ULDMP) to the District Council for certification in accordance with conditions 5 to 7. The purpose of the ULDMP is to integrate the Project's permanent works into the surrounding landscape, visual and urban context and to illustrate the urban and landscape design of the Project.</del>	Previous and current assessment reports do not separate out the assessment of Visual effects, therefore the Urban and Landscape Design Management Plan (ULDMP) will incorporate the management of Visual Effects (VEMP). The management and mitigation measures are often the same, as articulated in the landscape and urban design packages.
35	<del>The ULDMP shall be prepared by an independent, experienced and suitably qualified persons, who shall include an urban designer and a landscape architect, and shall:</del> a) Take into account the findings, and implement the recommendations where relevant, of the Urban Design, Landscape and Visual Impact Assessment <del>included in the Notice of Requirement 2013;</del> b) Implement and build onto the design concepts in the Project's Urban and Landscape Design Framework (ULDF); c) Take guidance from the Requiring Authority's Urban Design Guidelines: Bridging the Gap (2013); d) Implement any other relevant document; and e) Take into account the requirements in conditions 24 and 45-46 <del>47.</del>	Plan name change as noted under condition 34.  Minor update to clause (a) for clarity.  Delete reference to specific experts. New condition 4 requires all management plans to be prepared by a SQP (which is defined in the designation definitions).
38	<del>A new 'informal gateway' at the future northern entrance into Woodend shall be created in order to replace the visually significant trees at the current northern entrance into Woodend that currently function as a gateway and that will have to be removed for the Project.</del>  <del>Advice Note: This condition could be achieved at the time the existing State highway 1 status for the road through Woodend is revoked.</del>	Deletion of condition as the informal gateway has already established through placement of Pou and other landscaping features at the Pegasus intersection.

Changes to conditions relevant to UDLVA	Rationale
<p>40 <del>At any point before the Outline Plan is submitted to WDC in accordance with condition 3, the</del> The Requiring Authority shall appoint an SQP <del>independent, experienced and suitably qualified landscape architect and arborist</del> to prepare a Visual Effects Management Plan (VEMP). <del>The VEMP shall provide detail of the design approach to avoid, remedy and mitigate the adverse visual impact of the Project.</del> The VEMP shall:</p> <ul style="list-style-type: none"> <li>a. include the review of the visual effects assessment for all properties included in the 8 August 2014 Evidence of Craig Pocock (Landscape and Visual), prior to the detailed design stage of the Project, in order to take the possible changes in the landscape into consideration;</li> <li>b. take into account the Design Recommendations and Landscape Design Concepts included in Sections 3.1 and 3.3 of the ULDF Report in Appendix G of the <del>2013 Notice of Requirement NoR</del>, to the extent the Design Recommendations and Landscape Design Concepts are not inconsistent with: <u>(1) the outcomes of the review of the visual effects assessments as required by (a), and (2) the review and implementation of design recommendations provided in Volume 3G of the Application;</u></li> <li>c. include the design, methods and timeframes for implementation for the mitigation of the visual impact of the Project, including acoustic barriers, for the following affected properties (Affected Properties) for dwellings existing at the date of notification of the <del>2013</del> Notice of Requirement: <ul style="list-style-type: none"> <li>i. <del>1250 Main North Road</del></li> <li>i. 5 Wards Road (Lot 9 DP 923)</li> <li>ii. 144 Main North Road (Lot 1 DP 13738)</li> <li>iii. <del>146 Main North Road (Lot 1 DP 15192)</del></li> <li>iv. <del>138 Main North Road ((Part RS 757)</del></li> <li>v. <del>130A Main North Road (Lot 1, DP 414079)</del></li> <li>vi. 100 Parsonage Road (Lot 2 DP 16789)</li> <li>vii. 156 Gladstone Road (Lot 2 DP 342658)</li> <li>viii. 183 Gladstone Road (Lot 1 DP 345904)</li> <li>ix. <del>Williams Street (Public realm)</del></li> <li>x. <del>25, 25A and 25B Adderley Terrace (Lot 1 DP 25230, Lot 2 DP 25230 and Lot 1 DP 83640)</del></li> <li>xi. 110 Parsonage Road (Lot 1 DP 3598) (mitigation may include dense evergreen trees no taller than 6 metres to be planted along the northern and eastern boundary of the property, for approximately 30 metres each way, starting from the north-eastern corner of the property boundary)</li> <li>xii. 287 Lees Road (Lot 1 DP 23975)</li> <li>xiii. 565 Williams Street (Lot 2 DP 306454)</li> <li>xiv. 567 Williams Street (Lot 3 DP 306454) (mitigation may include retaining the existing Leylandii hedge where possible or planting a new hedge where necessary)</li> <li>xv. 143A Old North Road (Rakiwhakaputa Maori Reserve 873 222 Block); and</li> <li>xvi. <del>143B Old North Road (Part Rakiwhakaputa Maori Reserve 873 Block 223); and</del></li> <li>xvii. any additional properties as recommended by the SQP. <del>landscape architect and the arborist;</del></li> </ul> </li> </ul>	<p>Accounts for assessment of alterations to the design. The VEMP will be incorporated into the ULDMP.</p>
<p>i. <del>1250 Main North Road</del>  i. 5 Wards Road (Lot 9 DP 923)  ii. 144 Main North Road (Lot 1 DP 13738)  iii. <del>146 Main North Road (Lot 1 DP 15192)</del>  iv. <del>138 Main North Road ((Part RS 757)</del>  v. <del>130A Main North Road (Lot 1, DP 414079)</del>  vi. 100 Parsonage Road (Lot 2 DP 16789)  vii. 156 Gladstone Road (Lot 2 DP 342658)  viii. 183 Gladstone Road (Lot 1 DP 345904)  ix. <del>Williams Street (Public realm)</del>  x. <del>25, 25A and 25B Adderley Terrace (Lot 1 DP 25230, Lot 2 DP 25230 and Lot 1 DP 83640)</del>  xi. 110 Parsonage Road (Lot 1 DP 3598) (mitigation may include dense evergreen trees no taller than 6 metres to be planted along the northern and eastern boundary of the property, for approximately 30 metres each way, starting from the north-eastern corner of the property boundary)  xii. 287 Lees Road (Lot 1 DP 23975)  xiii. 565 Williams Street (Lot 2 DP 306454)  xiv. 567 Williams Street (Lot 3 DP 306454) (mitigation may include retaining the existing Leylandii hedge where possible or planting a new hedge where necessary)  xv. 143A Old North Road (Rakiwhakaputa Maori Reserve 873 222 Block); and  xvi. <del>143B Old North Road (Part Rakiwhakaputa Maori Reserve 873 Block 223); and</del>  xvii. any additional properties as recommended by the SQP. <del>landscape architect and the arborist;</del></p>	<p>Dwellings removed from list where properties are being acquired, or agreements put in place with property owners.  Dwellings added where minor to more than minor effects are identified within this assessment.</p>

**NOT FOR CONSTRUCTION**

Changes to conditions relevant to UDLVA		Rationale
	<p>d. include the design, methods and timeframes for implementation of the mitigation of the visual impact of the NZTA - Waka Kotahi NZ Transport Agency Notified: Williams Street Overpass and its on-ramps for the Lees Road dwellings existing at the date of notification of the Notice of Requirement. Should the existing shelterbelt located on the ReadyMix site be removed, the eastern embankment of the motorway alignment shall be planted between Chainage 6650 and 6200 as illustrated on Figure SB-01 attached to the supplementary evidence of Mr Craig Pocock dated 19 October 2014; and</p> <p>e. include any obligations for monitoring, maintenance and/or replacement of damaged, dead or diseased trees or other vegetation planted in accordance with (c) or (d). These obligations shall commence following planting and continue:</p> <p>i. during construction of the Project; and</p> <p>ii. for two years following the opening on the Project.</p>	
41	<p>In preparing the VEMP, the Requiring Authority:</p> <p>a. shall undertake <del>initial</del> consultation with the land owners of the Affected Properties and property owners identified through condition 40(d) to discuss the design, methods and timeframes for implementation for the mitigation of the visual impact. <del>Records of the consultation and responses shall be included in the ULDMP under condition 34-37. (Initial Consultation). If agreement is reached, the Requiring Authority shall incorporate the agreed visual impact mitigation measures into the VEMP; and</del></p> <p><del>b. If no agreement is reached with land owners on mitigation measures in the Initial Consultation, the Requiring Authority, landscape architect and arborist shall draft one or more options for mitigation for the affected properties (the Mitigation Options), within the landowners property;</del></p> <p><del>c. The Requiring Authority shall provide and consult on the proposed Mitigation Options with the land owner as soon as reasonably practicable, advising that:</del></p> <p><del>i. the land owner has two months within which to decide on one of the Mitigation Options, and if the Requiring Authority has advised the owner that more than one Mitigation Option is available, to advise which of those Mitigation Options the land owner prefers (Preferred Option); and</del></p> <p><del>ii. the Requiring Authority shall incorporate the Preferred Option into the VEMP</del></p>	<p>Condition 41 was originally drafted to address the potential visual effects of the Williams Street Overpass on residents in Lees Road, in the absence of developed mitigation options at that time. The updated UDLVA supplied with the Application (Volume 3G) has concluded these effects will now be mitigated through planting (trees and shrubs) on overpass embankments. The revisions to Condition 41 are in acknowledgement of this updated assessment, however, NZTA undertakes to continue consulting with the affected properties in relation to the option addressed in the UDLVA. Records of this consultation will be provided to WDC in the ULDMP.</p> <p>Note that for the duration of the CSA proposed at Lees Road, additional visual mitigation for residents of Less Road will be implemented in accordance with new condition 39B.</p>
42	<p>Where a land owner does not want mitigation, refuses to consult with the Requiring Authority, or does not choose a Preferred Option within the required timeframe, the Requiring Authority shall not be required to mitigate the visual impact of the Project on this Affected Property.-</p>	<p>Deleted to be consistent with the changes to condition 41 above.</p>

**NOT FOR CONSTRUCTION**

Changes to conditions relevant to UDLVA		Rationale
46	<p><del>A Pplanting plans shall be prepared for around the bridge crossings on the Cam River and Kaiapoi River. The Pplanting Pplans shall include species that are tolerant of low light and dry soil conditions. Additional native riparian planting along the river upstream and downstream of the new bridge and on-ramp, consisting of native canopy trees and understory vegetation should be considered. The planting plan for the Kaiapoi River bridge area shall take into account the presence of the locally rare Blechnum blechnoides fern and should aim to complement this species and allow it to thrive</del></p>	Updated to reflect that ground works are no longer proposed for the Kaiapoi River Bridge.
47	<p><del>The population of the fern Blechnum blechnoides that exists at the Kaiapoi River Bridge shall be defined on site by a qualified botanist and cordoned off prior to commencement of construction of the new bridge, particularly the 9.5m reach on the true right bank. Any plants that are located within the construction footprint shall be uplifted and replanted in suitable sites within the high tide fluctuation outside of the construction zone. These sites shall be selected by a qualified botanist and shall be subject to periodic monitoring following transplanting to gauge survival rates. Some of the transplanted specimens should be transferred to a nursery and held for two years as a contingency in case the transplanted population does not survive</del></p>	Deleted to reflect that ground works are no longer proposed for the Kaiapoi River Bridge.
<b>New conditions</b>		
<u>39A</u>	<p><u>The Requiring Authority must establish planting within the Designation on the western boundary of Lot 210 DP 453895 (Pegasus Resort) to provide visual screening of the future overbridge. The planting shall be capable of reaching a minimum height of 6 m within 5 years of the bridge being operational.</u></p>	Landscape and visual mitigation of the elevated Pegasus Interchange for users of the Pegasus Resort golf course.
<u>39B</u>	<p>a) Prior to the development of the Construction Support Area (CSA) at Lees Road (on the parcel legally described as Lot 2 DP 359788), establish visual screening of the CSA along the southern boundary with Lees Road (except where vehicle access to Lees Road is required). The visual screening shall include:</p> <ul style="list-style-type: none"> <li>i. A grassed or vegetated earth bund with a minimum height of 2 m above existing ground level; and</li> <li>ii. Screen planting across the crest of the earth bund with a minimum height of 0.5 m at establishment and a maximum height of 3m at maturity.</li> </ul> <p>b) The visual screening in clause (a) shall remain in place until such time that the CSA is disestablished and the site rehabilitated.</p>	Mitigation of more than minor adverse visual effects as a result of the CSA.

The new conditions have been included in the assessment of residual effects (Section 6.1), with effects being reduced.

## 7 Conclusion

The purpose of this report is to provide technical support to the Substantive Application made by NZTA under the FTAA. It provides an evaluation of the potential significance of effects on urban form, landscape and visual quality that may arise from the Project in order to respond to either:

- Resource consents sought for the Project including:
  - Assessment of natural character.
- Alteration to the designation sought for the Project, including:
  - Cam River Bridge design update;
  - Pegasus Interchange design update;
  - Provision of a temporary Construction Support Area; and
  - Infilling the southern remnant quarry lake and creation of a wetland.

### Assessment of natural character effects for resource consent

The assessment of natural character effects resulted in the following.

#### Construction phase effects:

The following effects on natural character elements are the result of construction phase works.

- More than minor adverse effects - wetlands scattered throughout the alignment are impacted permanently.
- More than minor adverse effects – realignment of Taranaki Stream.
- Minor to more than minor temporary adverse effects - removal of exotic vegetation along the Cam River and disturbance/vegetation removal along
- Minor adverse effects - infilling and compaction of quarry pond lakes
- Less than minor adverse effects - tree removal, particularly of exotic species that provide some amenity along Waihora Stream
- No effects for Kaiapoi River

#### Operational phase effects:

The following effects on natural character elements are the result of the Project during operation.

- More than Minor Beneficial effects from ecological offset planting around the McIntosh Drain.
- Less than minor beneficial effects to Cam River, infilled southern quarry pond, Waihora Stream and Taranaki Stream, due to an increase in native revegetation.
- Less than minor beneficial effects for wetland offset to the southern remnant lake.
- No effects at the Kaiapoi River.

Overall, the project incorporates offset planting, wetland and habitat areas; as well as revegetation strategies to mitigate and improve natural character values over time.

### Alterations to the designation

#### New design for Cam River Bridge

The design change for the Cam River Bridge is a reduction in the number of bridges being built.

During construction the change in effects include:

- **Reduced urban design and land use effects** – demolition of the existing bridge is not required and the construction footprint including number of bridge piers will be less for one bridge.
- **Reduced visual effects** – due to retention of the existing bridge

Once operational, the change in effects for the new bridge design are:

- **Reduced urban design and land use effects** – Existing bridge is retained and implemented in the design and the new bridge is more efficient in use of land within the designation.
- **Reduced visual effects** – due to retention of the existing bridge.

There are no change in effects to the landscape character, natural features or ULDF objectives.

### New design for Pegasus Interchange

The design change for the Pegasus Interchange is a substantial change with the proposed grade separated overpass and diamond interchange, from an interchange roundabout. There is an alteration to the designation boundary required at the interchange (as a result of updated design).

During construction the change in effects include:

- **Increased effects for urban design and land use** – the design change widens the road corridor and Taranaki Stream is to be realigned
- **Increased effects for landscape character and natural features including:**
  - LCZ 3 Pegasus resort: ground improvement works and duration is likely to affect the amenity of golfers; and
  - realignment of Taranaki and Waihora Streams due to the widening of overpass structures and ramps
- **Increased visual effects** – due to the ground improvement works and construction activity; and obstruction and change to streams which provide visual amenity.

Once operational, the change in effects for the new overpass include:

- **Reduced effects (beneficial) for urban design and land use** including:
  - the overpass separates SH1 traffic from the local road, improving local connections and safety for pedestrians and cyclists
  - increase planting at the interchange to screen tall structures, for stormwater treatment and stream realignment revegetation, providing improved aesthetic amenity for road users.
  - the overpass provides partial views for motorists of natural features (Mt Grey)
- **Increased effects for urban design and land use** – the design change widens the road corridor and introduces a new elevated overpass structure.
- **Increased effects for landscape character and natural features including:**
  - LCZ 3 Pegasus resort: ground improvement works and duration is likely to affect the amenity of golfers; and
  - realignment of Taranaki and Waihora Streams due to the widening of overpass structures and ramps
- **Increased visual effects** – due to the new elevated overpass structure up to 9m height including retaining walls, as experienced by motorists on SH1 and Main North Road, within Pegasus Resort, local road users on Pegasus Boulevard and Bob Roberston Drive, new residential area to the southwest and from St Barnabas church.

Operationally, the new grade-separated diamond interchange and overpass increases urban, landscape and visual effects due to corridor widening and tall structures contrasting with open spaces. However, connectivity improves significantly, enhancing pedestrian and cyclist safety. Landscape planting softens the

built form, integrating the structure visually and ecologically. Visual amenity effects include some permanent visual severance, partially mitigated by planting and design treatments.

There is no mitigating the prominence of the new vertical overpass, however mitigation measures will provide positive improvements to its appearance. Overall, effects move from moderate construction disturbance toward net beneficial long-term outcomes.

### **Construction Support Area**

The Construction Works Area at Lees Road will experience more than minor temporary adverse effects on visual amenity and landscape due to establishment of the construction compound on rural farmland, impacting nearby residents with direct views. This represents a temporary shift from rural to industrial land use and moderate landscape character change. However, mitigation through earth bunds, tree planting (including transplanting mature trees), and retention of existing vegetation will significantly reduce these impacts.

There are no operational phase effects, as the site will be restored post-construction to its previous or agreed rural condition.

### **Infilling the southern remnant quarry lake and creation of a wetland**

The infilling of the southern remnant lake and its conversion into a constructed wetland represents a strategically beneficial environmental and land use initiative within the industrial zone. While the existing quarry pond holds low ecological and visual value, its transformation will enhance the ecological function and aesthetic quality of the area, providing a wetland habitat that addresses stagnation concerns and offers offset for broader wetland impacts associated with the project. The associated effects on urban form and land use are minor yet beneficial, improving ecological amenity adjacent to rural and residential zones. Landscape character and natural features will experience a low beneficial change by replacing a low-value pond with a functional wetland environment.

Although the wetland will remain largely unseen from public vantage points upon completion, its establishment will contribute positively to local environmental outcomes without adversely affecting visual amenity.

## **Summary**

The assessment of natural character effects resulted in more than minor adverse impacts during construction, including permanent wetland loss and stream realignment, alongside minor to less than minor temporary vegetation disturbances, while operational effects were generally beneficial due to ecological offset planting and native revegetation, with no effects observed at the Kaiapoi River.

The Alteration to the Designation resulted in reduced construction and operational urban design and visual effects for the Cam River Bridge due to retaining the existing bridge and minimizing new construction impacts, with no changes to landscape character or natural features.

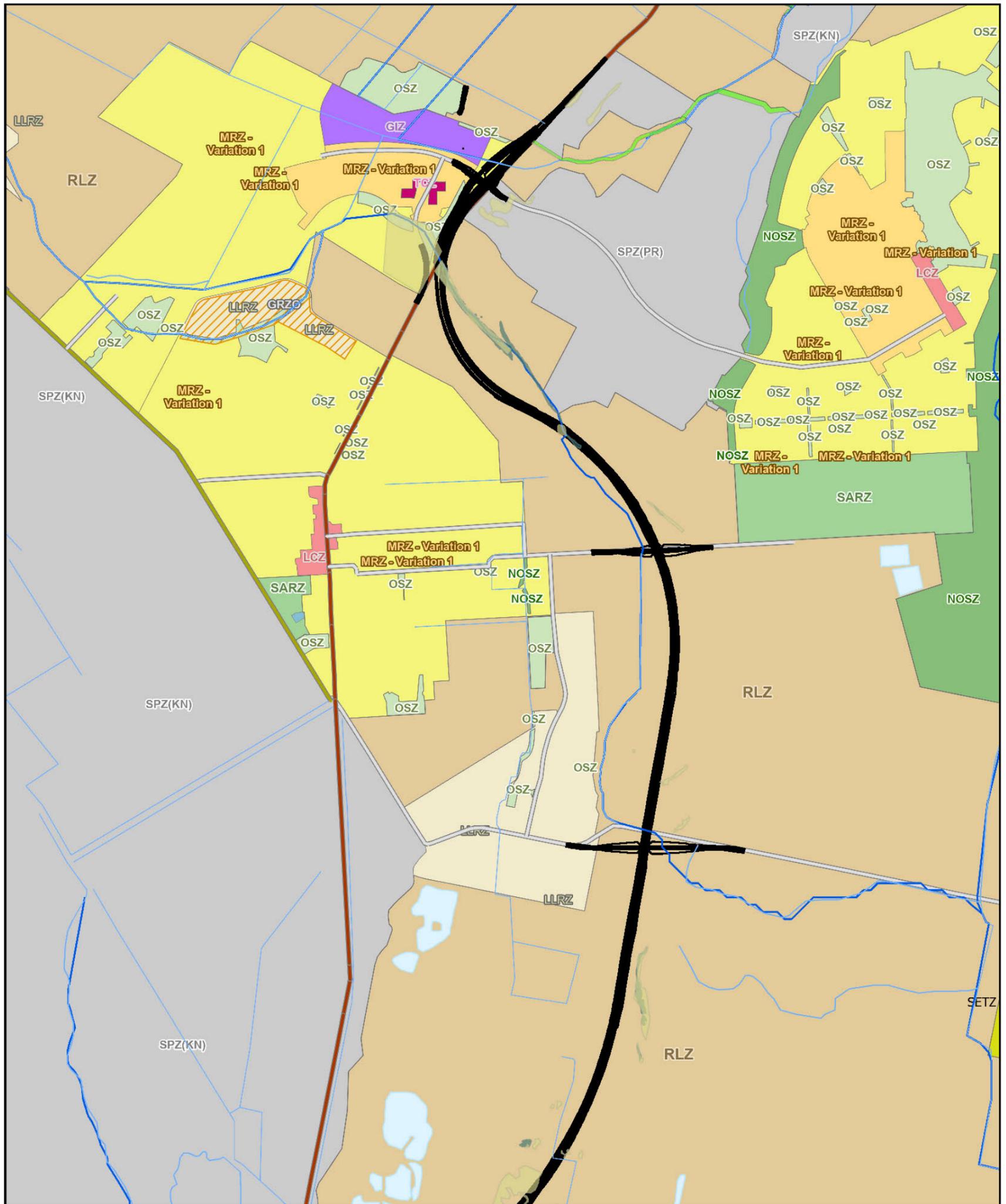
Conversely, the Pegasus Interchange redesign introduced increased construction and operational effects, including widened corridors, stream realignments, and prominent overpass structures causing greater visual, landscape, and urban impacts, though operational benefits include improved traffic separation, pedestrian and cyclist safety, and enhanced planting that partially mitigates visual effects, leading to an overall shift from moderate construction disturbance to net beneficial long-term outcomes.

The new Construction Support Area at Lees Road will cause more than minor temporary adverse visual and landscape effects during construction, that can be mitigated by earth bunds, tree planting and vegetation retention with no lasting operational impacts. The infilling of the southern remnant quarry lake into a constructed wetland will have minor beneficial effects, by enhancing ecological function and landscape character without harming visual amenity.

# Appendices



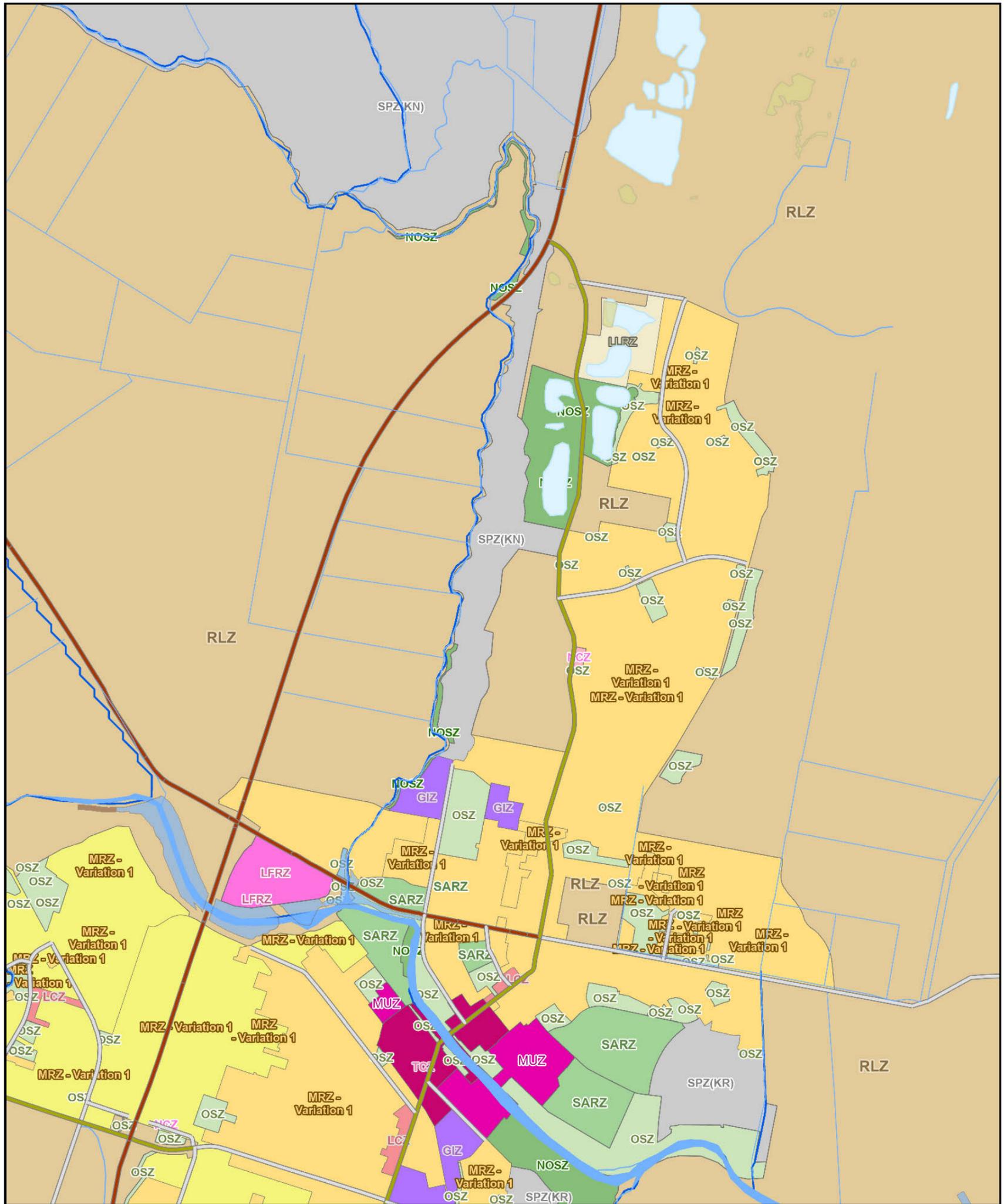
# Appendix A: ArcGIS Web mapping



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<p>Potential</p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Potential</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Confirmed</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Confirmed</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> DOC Public Conservation Land</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Reserve</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Stewardship Area</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> 1:50,000 Topomap Lakes, Ponds and Rivers (poly)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Lakes, Ponds and Reservoirs</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> 1:50,000 Topomap River and Stream Lines</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Rivers and Streams</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> Drains</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> ECan River Network</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> BTP_VMB_FLR_DESIGN_DWG_20241120</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> District Plan Road Hierarchy</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> Strategic</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> Arterial</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> Collector</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> Area Specific Overlays</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid #000; margin-right: 5px;"></span> General Residential Zone Overlay</li> </ul>	<p>Residential Zones</p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Large Lot Residential Zone (LLRZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Settlement Zone (SETZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Medium Density Residential Zone - Variation 1</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Medium Density Residential Zone - Variation 1</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Open Space Zones</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Natural Open Space Zone (NOSZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Open Space Zone (OSZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #fff2cc; border: 1px solid #ccc; margin-right: 5px;"></span> Sport and Active Recreation Zone (SARZ)</li> </ul>	<p>Industrial Zones</p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> General Industrial Zone (GIZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Commercial Zones</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Local Centre Zone (LCZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Town Centre Zone (TCZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Rural Zones</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Rural Lifestyle Zone (RLZ)</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Special Purpose Zones</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Special Purpose Zone Kainga Nohoanga (SPZ(KN))</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Special Purpose Zone Pegasus Resort (SPZ(PR))</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> New Zealand Imagery</li> </ul>	<p>1:15,000</p> <p>0 0.17 0.35 0.7 mi</p> <p>0 0.28 0.55 1.1 km</p> <p>Waimakariri District Council (WDC), Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Environment Canterbury, Waimakariri District Council</p>
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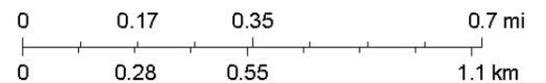
Appendix A - Figure 1 Land Use (map 1 of 2)



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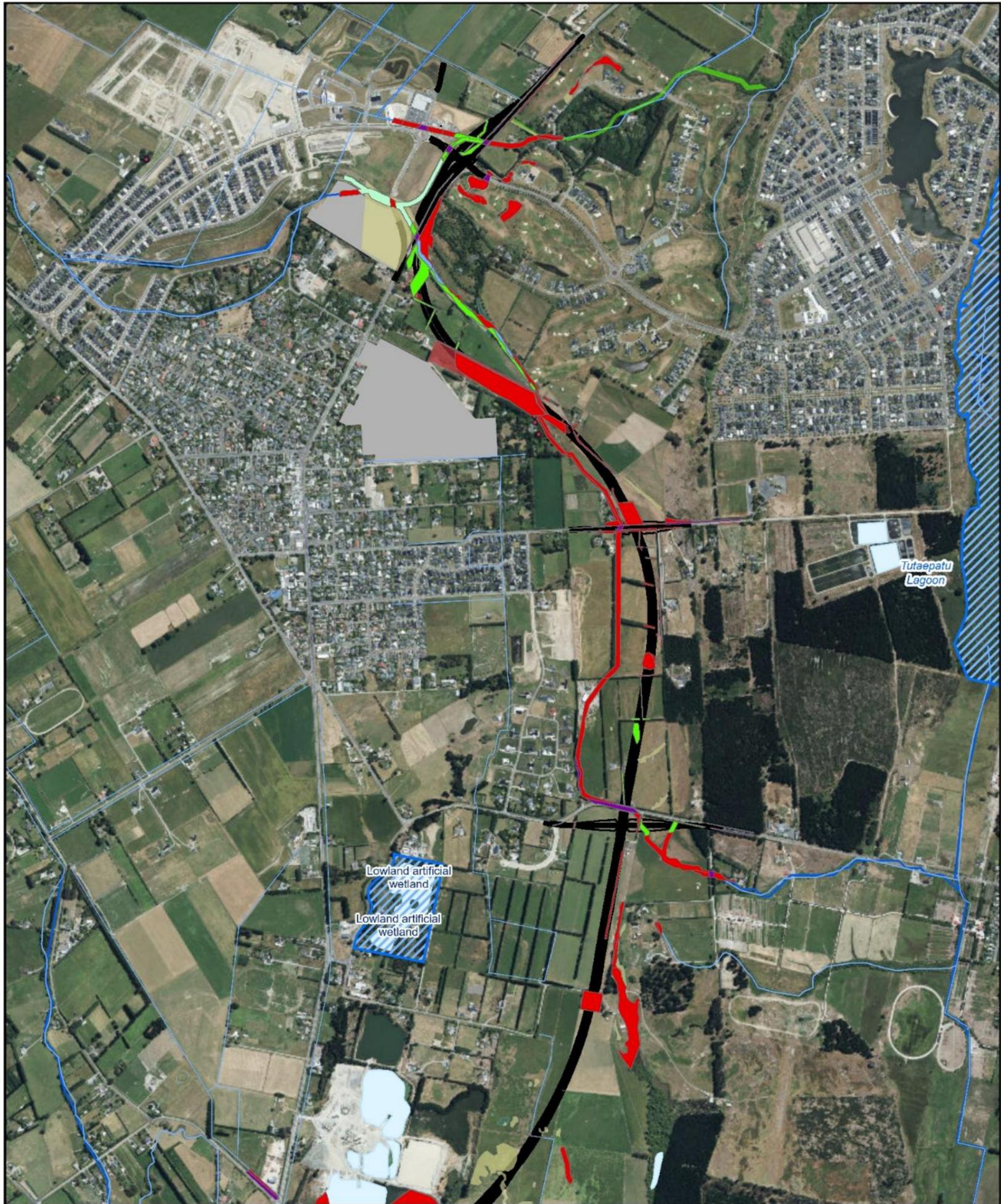
- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>Potential</li> <li>Confirmed</li> <li>DOC Public Conservation Land</li> <li>Reserve</li> <li>Marginal Strip</li> <li>1:50,000 Topomap Lakes, Ponds and Rivers (poly)</li> <li>Rivers and Streams</li> <li>Lakes, Ponds and Reservoirs</li> <li>1:50,000 Topomap River and Stream lines</li> <li>Rivers and Streams</li> <li>Drains</li> <li>E Can River Network</li> </ul> | <ul style="list-style-type: none"> <li>BTP_WB_FLR_DESIGN_DWG_20241120</li> <li>District Plan Road Hierarchy</li> <li>Strategic</li> <li>Arterial</li> <li>Collector</li> <li>Residential Zones</li> <li>Large Lot Residential Zone (LLRZ)</li> <li>Medium Density Residential Zone - Variation 1</li> <li>Medium Density Residential Zone - Variation 1</li> <li>Open Space Zones</li> <li>Natural Open Space Zone (NOSZ)</li> <li>Open Space Zone (OSZ)</li> <li>Sport and Active Recreation Zone (SARZ)</li> </ul> | <ul style="list-style-type: none"> <li>Industrial Zones</li> <li>General Industrial Zone (GIZ)</li> <li>Commercial Zones</li> <li>Local Centre Zone (LCZ)</li> <li>Large Form Retail Zone (LFRZ)</li> <li>Mixed Use Zone (MUZ)</li> <li>Neighbourhood Centre Zone (NCZ)</li> <li>Town Centre Zone (TCZ)</li> <li>Rural Zones</li> <li>Rural Lifestyle Zone (RLZ)</li> <li>Special Purpose Zones</li> <li>Special Purpose Zone Kainga Nohoanga (SPZ KN)</li> <li>Special Purpose Zone Kaipoi Regeneration (SPZ KR)</li> </ul> |
|---|--|--|

1:15,000



Waimakariri District Council (WDC), Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Environment Canterbury, Waimakariri District Council

Appendix A - Figure 2 Land Use (map 2 of 2)



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Lizard Investigation Areas

- Crown
- Hydro Parcel
- Private Owner
- Road Parcel

Freshwater Investigation Areas indicative - Freshwater Investigation Areas (indicative)

- Council
- Crown
- Hydro Parcel
- Private Owner
- Road Parcel

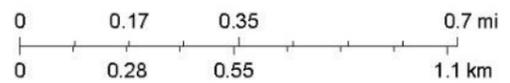
Lizard\_Habitat

- Confirmed
- Potential
- Confirmed
- Notable Tree Points
- DOC Public Conservation Land
- Reserve
- Stewardship Area
- Regional Wetlands Labels
- Regional Wetlands Outline

Regional Wetlands Fill

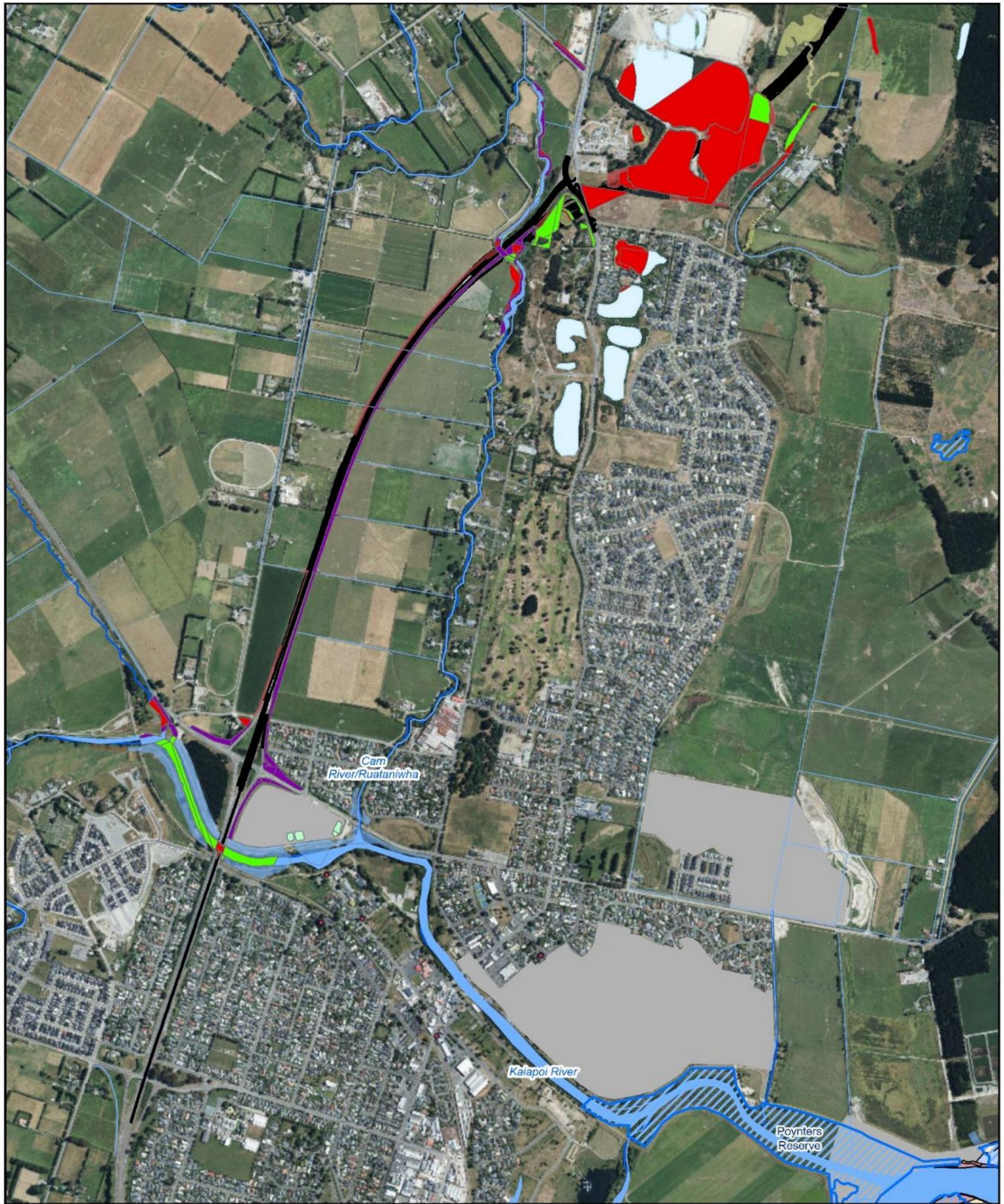
- ▨ Lakes, Ponds & River Labels
- ▨ 1:50,000 Topomap Lakes, Ponds and Rivers (poly)
- ▨ Lakes, Ponds and Reservoirs
- ▨ 1:50,000 Topomap River and Stream Lines
- Rivers and Streams
- Drains
- ECan River Network
- BTP\_WB\_FLR\_DESIGN\_DWG\_20241120
- Flood Exclusion Zone
- New Zealand Imagery

1:15,000

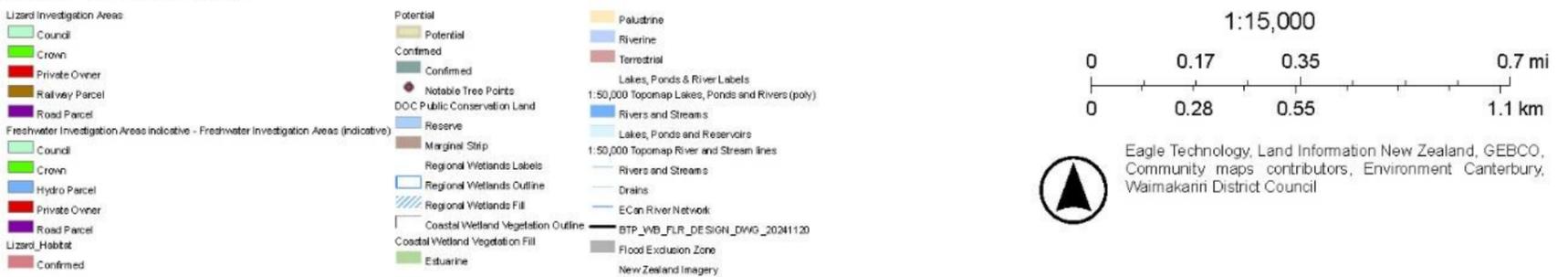


Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Environment Canterbury, Waimakerrī District Council

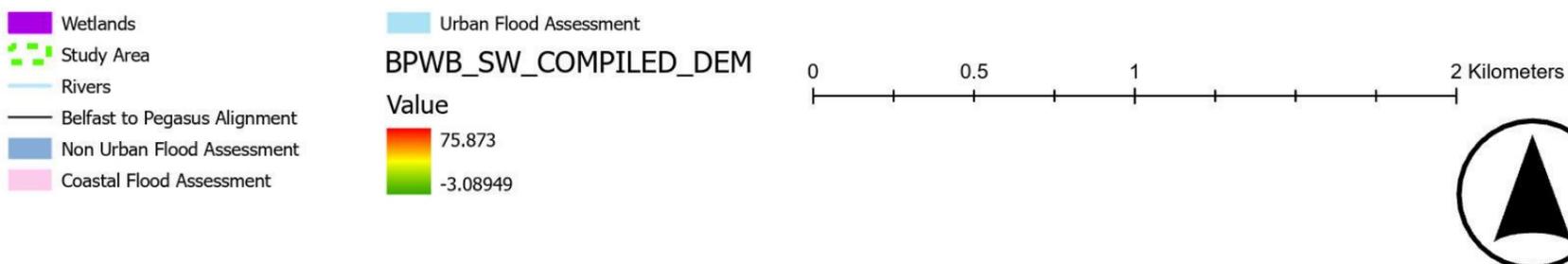
Appendix A - Figure 3 Landscape and Natural Features (map 1 of 2)



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Appendix A - Figure 4 Landscape and Natural Features (map 2 of 2)



Appendix A - Figure 5 Topography and Hydrology (map 1 of 2)



- Wetlands
- Study Area
- Rivers
- Belfast to Pegasus Alignment
- Non Urban Flood Assessment
- Coastal Flood Assessment

Urban Flood Assessment  
**BPWB\_SW\_COMPILED\_DEM**  
 Value  
 75.873  
 -3.08949

0 0.5 1 2 Kilometers



Appendix A - Figure 6 Topography and Hydrology (map 2 of 2)

**Document prepared by**

**Aurecon New Zealand Limited**

Level 2, Iwikau Building  
93 Cambridge Terrace  
Christchurch 8013  
New Zealand

**T** +64 3 366 0821

**F** +64 3 379 6955

**E** [christchurch@aurecongroup.com](mailto:christchurch@aurecongroup.com)

**W** [aurecongroup.com](http://aurecongroup.com)