

Trig Road Corridor Upgrade Addendum to the 2020 Landscape and Visual Effects Assessment

March 2023

Version 0.3

Document Status

Responsibility	Name	Signature
Author	Riyasp Bhandari, NZILA Landscape Architect / WSP New Zealand Ltd	
Reviewer	Catherine Hamilton, NZILA Fellow / WSP New Zealand Ltd	
Approver	Joao Machado, New Zealand Planning Institute (Associate) / WSP New Zealand Ltd Bridget O'Leary, Planning Lead, Te Tupu Ngātahi Supporting Growth Alliance	 

Revision Status

Version	Date	Reason for Issue
0.1	24/02/2023	Draft
0.2	02/03/2023	Final Draft to client
0.3	21/03/2023	Final

Disclaimer

This is a draft document for review by specified persons at Auckland Transport and the New Zealand Transport Agency. This draft will subsequently be updated following consideration of the comments from the persons at Auckland Transport and the New Zealand Transport Agency. This document is therefore still in a draft form and is subject to change. The document should not be disclosed in response to requests under the Official Information Act 1982 or Local Government Official Information and Meetings Act 1987 without seeking legal advice.

Table of Contents

1	Introduction	1
2	Statutory and Non-Statutory Considerations	2
3	Methodology	3
4	Existing Environment	4
5	Future Receiving Environment	5
6	Proposal	6
	6.1 Review of Design Changes	6
7	Assessment of Landscape and Visual Effects of the Design Change	8
	7.1 Assessment of Construction Effects	8
	7.1.1 Demolition and Earthworks	9
	7.1.2 Impact on private properties.....	10
	7.1.3 Visual Effects.....	10
	7.1.4 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects	12
	7.2 Assessment of Operational Effects on Landscape	13
	7.2.1 Landscape Character Effects.....	13
	7.2.2 Visual Effects.....	14
	7.2.3 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects..	15
8	Conclusion	15
9	Appendix 1 – Representative Viewpoints	16

Table of Tables

Table 1 - 7-point scale rating to describe magnitude of landscape effects. Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines

Table 2 - Likelihood and magnitude of land use change

Table 3 - Summary of Landscape Effects during Construction

Table 4 – Summary of Operational Landscape Effects

Table of Figures

Figure 1 – NoR before design change (Original stormwater dry pond location) between chainage 340-440 at 9 Trig Road. Refer Appendix 3 of existing LVA

Figure 2 - NoR after design change (Proposed stormwater dry pond location) between chainage 250-350 at 7 & 9 Trig Road. Refer drawing SGA-DRG-NEW-002-CI-1103, rev B

Glossary of Defined Terms and Acronyms

Acronym/Term	Description
AEE	Assessment of Effects on the Environment report
AT	Auckland Transport
AUP:OIP	Auckland Unitary Plan: Operative in Part
CPTED	Crime Prevention through Environmental Design
LVA	Landscape and Visual Assessment
NoR	Notice of Requirement
NZILA	New Zealand Institute of Landscape Architects
PPC5	Proposal Plan Change 5
RMA	Resource Management Act 1991
SEA	Significant Ecological Area
Te Tangi a te Manu	Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Alliance
TDM	AT's Transport Design Manual: AT Engineering Design Codes – Transport Design Manual
TRCU	Trig Road Corridor Upgrade
ULDMP	Urban Landscape and Design Management Plan
Waka Kotahi	Waka Kotahi New Zealand Transport Agency

1 Introduction

This report is an addendum to the Landscape and Visual Effects Assessment (LVA) for the Trig Road Corridor Upgrade (the Project), dated August 2020. The existing LVA was prepared for Te Tupu Ngātahi Supporting Growth Alliance (Te Tupu Ngātahi) in support of Auckland Transport's (AT) Notice of Requirement (NoR) under the Resource Management Act 1991 (RMA) to designate land for the construction, operation and maintenance of the Project and the application for resource consents for the Project.¹

The Project forms part of the Supporting Growth Programme; a collaboration between Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (Waka Kotahi), to investigate, plan and deliver the transport networks needed to support Auckland's future urban growth areas over the next 10-20 years. The Project consists of the widening and upgrade of Trig Road between the SH18 off-ramps and Hobsonville Road from a current rural standard road corridor into an urban standard road corridor to support the future urban environment on both sides of Trig Road. The widening will allow for the provision of a two-lane arterial standard corridor, as well as a dedicated, bi-directional cycleway on the eastern side of the corridor and new footpaths on either side of the corridor. The Project also includes the signalisation of the intersections at Trig Road and Hobsonville Road, and Luckens Road and Hobsonville Road, as well as the upgrade of Hobsonville Road between these intersections.²

This addendum exclusively addresses the landscape effects that may occur from a design change within the Project. The design change involves a shift in the stormwater dry pond from 9 Trig Road to predominantly sit within the parcel boundary of 7 Trig Road, with an overlap to 9 Trig Road, refer Figure 2. The dry pond was relocated due to the presence of an existing wetland at 9 Trig Road.

Purpose and Scope of this Report

The purpose of this addendum is to assess the landscape and visual effects resulting from the design change, which are described more fully in Section 6. The general premise of the existing LVA assessment still stands, with one amendment made to the shift in location of the stormwater dry pond approximately 90m further south from its original location.

The landscape and visual effects of the design change on the future receiving environment, both during the construction and operational phases of the Project, are covered, as well as recommended measures to avoid, remedy and/or mitigate potential adverse effects.

The addendum forms part of the suite of technical reports prepared to support the AEE for the Project. Consideration has been given to the assessments prepared for ecology and stormwater. This addendum should be read in conjunction with the existing LVA and AEE, which contains further details on the history and context of the Project.

Catherine Hamilton has reviewed the existing LVA and agrees with the methodology, conclusions and recommendations of the report.

¹ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

² Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

2 Statutory and Non-Statutory Considerations

The following statutory documents were assessed in relation to the design change. Any changes in statutory documents since the existing LVA was prepared, are noted below:

Resource Management Act (RMA)

No change recorded and current RMA is consistent with the existing LVA

RMA matters of relevance to landscape have been reviewed in relation to the design change. The following considerations apply:

In relation to Matters of National Importance – (s.6 RMA):

- s.6(a): The site does not fall within the definition of a coastal landscape (including the coastal marine area), wetlands, and lakes and rivers and their margins, and as such s.6(a) does not apply.
- s.6(b): The site is not identified as an Outstanding Natural Landscape or Outstanding Natural Feature

In relation to Other Matters (s.7 RMA):

- s.7(c): The maintenance and enhancement of amenity values applies
- s.7 (f): Maintenance and enhancement of the quality of the environment applies

Auckland Unitary Plan Operative in Part (AUP:OIP)

Proposed Plan Change 5 (PPC5): Whenuapai Plan Change

As outlined in the AEE, PPC5 was a Council-led proposed plan change to the AUP:OIP, with the intent of rezoning the Whenuapai Structure Plan Stage 1 area adjacent Trig Road. PPC5 was withdrawn in June 2022.³

Non-statutory guidance documents:

The following non-statutory documents were referenced in the assessment in relation to the design change area of (the Project), with no changes to guidance noted as part of this addendum:

- **Te Tupu Ngātahi Design Framework – Version 1.0**
- **Whenuapai Structure Plan – September 2016**

As stated in the AEE:

“The Whenuapai Structure Plan was completed in 2016 by the Council and sets out the framework for transforming Whenuapai from a semi-rural environment to an urbanised community over the next 10 to 20 years. The structure plan will be implemented through a statutory plan change process to the AUP:OIP to rezone land within the area from FUZ to different urban zones”.

- **Transport Design Manual – Auckland Transport**
- **Bridging the Gap: Waka Kotahi NZ Transport Agency Urban Design Guidelines (2013)**
- **New Zealand Transport Agency Landscape Guidelines (Final Draft, 2014)**

³ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Trig Road Corridor Upgrade, 2022

3 Methodology

This assessment follows a similar methodology to that used for the existing LVA, but with a specific focus on the design change. The approach further recognises the guidance provided in Te Tangi a te Manu, Landscape Assessment Guidelines (TTatM)⁴ which were published after the preparation of the existing LVA. The Guidelines are now widely accepted as the basis for best practice within a statutory planning context in Aotearoa New Zealand.

In accordance with TTatM guidelines, landscape is recognised as having overlapping dimensions of physical, associative, and perceptual values. Effects on landscape values consider not only the physical environment but also associative values derived from peoples' relationships with the landscape and how it is perceived (including visual values).

TTatM guidelines go further to promote integration of Te Ao Māori – our unique indigenous worldview, as a keystone of Aotearoa landscape assessment practice. It is not however, the role of the Landscape Architect to determine these values unless designated to do so. Accordingly, this addendum does not specifically address Mana Whenua values which are being considered through a separate, parallel process. Refer to the AEE for details.

Natural character, as defined by Te Tangi a te Manu, is the distinct combination of an area's natural characteristics and qualities, including degree of naturalness. Natural character is the outcome of physical environment and perception. Within the RMA (Section 6(a)) natural character only relates to the coastal environment and to waterbodies and their margins, rather than the landscape in its entirety.

The design change does not sit within the RMA (Section 6(a)) definition of Natural Character and as such is considered only in a more general sense of the natural characteristics and qualities of the landscape.

The steps taken to assess the landscape effects of the design change are set out below:

- A desktop analysis of relevant background information was undertaken to review information pertinent to the design change, including the existing LVA, relevant statutory and planning provisions, updated NoR design plans and technical assessments from relevant specialists.
- A site visit was undertaken on 20 February 2023 by Catherine Hamilton and Riyasp Bhandari to evaluate the landscape values and character of the receiving environment and its wider landscape context. The visual catchment and viewing audience were identified, and photographs taken from representative viewpoints.
- Engagement with Te Tupu Ngātahi Planning Lead and AEE Programme Wide Lead to understand project context and details of the design change.
- Discussions with ecologist and stormwater specialists on respective technical assessments pertaining to the design change.

⁴ 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tui Pito Ora New Zealand Institute of Landscape Architects, July 2022

- The design change was evaluated to understand any implications for landscape values and character that depart from the existing LVA.
- An assessment of Landscape and Visual Effects pertaining to the design change was prepared.

Effects Scale

The nature (qualitative) and magnitude (degree/level) of effects change both during construction and following construction once the landscape strategy including mitigation measures have been assessed. The landscape architecture profession promotes a seven-point scale as a universal scale to describe the level of effects as a qualitative measure as described below, between very low and very high rather than concluding the level of effects (less than minor, minor or more than minor) which rests with the planner.

Table 1. 7-point scale rating to describe magnitude of landscape effects. Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines

Very Low (V-L)	Low (L)	Low- Moderate (L-M)	Moderate (M)	Moderate- High (M-H)	High (H)	Very High (V-H)
-------------------	------------	---------------------------	-----------------	----------------------------	-------------	--------------------

Change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways. These changes are both natural and human induced. Within the context of continual landscape change, is the importance of managing human induced change so that significant adverse effects are avoided or sufficiently mitigated to reduce the effects of the change in land use. Furthermore, landscape and visual effects can be temporary or permanent and that also contributes to the significance of landscape and visual effects.

Effects include positive effects. Consideration is given to enhancing positive effects through alignment between mitigation and design, rather than merely minimizing harm which is considered by the landscape profession to be a low baseline.

4 Existing Environment

Physical context

The Project is located along Trig Road and Hobsonville Road in Whenuapai, approximately 13km north-west of Auckland Central Business District. The Project is in a transitional landscape on the edge of the existing built urban environment of northwest Auckland. The surrounding context consists of the established urban environment to the south and east (West Harbour), and a developing urban environment to the west (Westgate).

A full description of the landscape setting and wider context of the design change area is provided in the existing LVA. In summary, the landscape is a transitional peri-urban landscape distinguished by an interplay of grazed pastureland, hedgerows, single amenity trees and associated dwellings and ancillary buildings set within. Lifestyle and suburban development occupies the mid-distant ground, with arterial transport corridors to the north and south-east. A mix of exotic and native vegetation

follow hydrological patterns including stream tributaries and low wetlands. The Project area occupies elevated terrain which falls away across gently to steeply undulating landform towards the gullies of Trig Stream and its tributaries in the north.

Trig stream tributaries are interlaced with the rolling landform and have natural forming wetlands established along the gullies, which offer landscape values at a wider scale. The hydrological features within the Trig Stream catchment have been notably modified as a result of rural land use and agrarian activities, however, are considered to have moderate ecological value.⁵ While the underlying hydrological patterns with interlacing landforms and vegetative corridors are evident in the local and wider landscapes, the landscape values have degraded over time due to modification of rural land use accommodate urban development.

Viewing context

The viewing context is consistent with that described in the existing LVA and mainly consists of private landowners located along Trig Road corridor. The transient viewing audience is comprised of people travelling along Trig Road, who are afforded views of the Project area from openings between hedgerows along the berm.

The shift in the location of the proposed stormwater dry pond further south sits well within the sightlines of the private properties at #16 to #28 Trig Road and #30 to #34 Ryans Road and enables more prominent views of the Project than what was previously assessed in the existing LVA.

Two lifestyle blocks (7 & 9 Trig Road) are located partially within the designation of the design change area and the dwellings on these sites are assumed to be removed.

5 Future Receiving Environment

In the context of the RMA assessment process, the effects of the construction and operation of the design change are considered in terms of the future plan-enabled environment; that is, the anticipated environment at the time the project is likely to be constructed. Therefore, both the existing environment as the baseline, and the likely future receiving environment inform this addendum to the LVA.

The Whenuapai Structure Plan: 2016 sets out the framework for transforming the Future Urban Zone (FUZ) surrounding Trig Road corridor from a semi-rural environment to a highly urbanized zoning over the next 10-20 years. The Whenuapai Structure Plan will be implemented following a statutory plan change process to the AUP:OIP, within the FUZ. The proposed zoning identified in the structure plan amongst the design change area is classified as 'medium-density' and 'high-density'.⁶

The future receiving environment within which the design change area is set will be medium to high density residential housing, mixed with a neighbourhood centre and a school, as documented in the Whenuapai Structure Plan 2016.

Based on the AUP:OIP and Whenuapai Structure Plan 2016, it anticipated that the likelihood of landscape change from rural to urban will be high due to zoning provisions and development

⁵ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

⁶ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Trig Road Corridor Upgrade, 2022

pressure. For this assessment, it is assumed that the Project will be constructed within a transitional landscape environment and will be operated within an urban or rapidly urbanising environment.

The magnitude of effect on the land use change regarding the land use planning context within the design change area has been identified in Table 2 below. This has been used to inform the assumptions made on the likely future environment.

Table 2. Likelihood and magnitude of land use change

Existing environment	Current AUP:OP Zoning	Likelihood of Change for the environment ⁷	Likely Receiving Environment ⁸
Rural	Future Urban Zoning	High ⁹	Urban

6 Proposal

6.1 Review of Design Changes

Within the area of NoR, the original design (Map 05, documented in Appendix 2 of the existing LVA), identifies the stormwater dry pond location largely within 9 Trig Road parcel boundary, between CH340-440 (refer Figure 1). The dry pond was originally situated at a low point, within an existing natural wetland and would likely have adverse effects on the wetland’s ecology. In addition, the original proposal involved high volumes of fill batter slopes within proximity to existing wetlands which would considerably alter the landform and natural flow paths associated with it.

⁷ Based on AUP:OP zoning/policy direction

⁸ Based on AUP:OP zoning/policy direction

⁹ There are areas of existing Residential Zone land that has recently been intensified (i.e. new build developments), as such is unlikely to change in the near future.

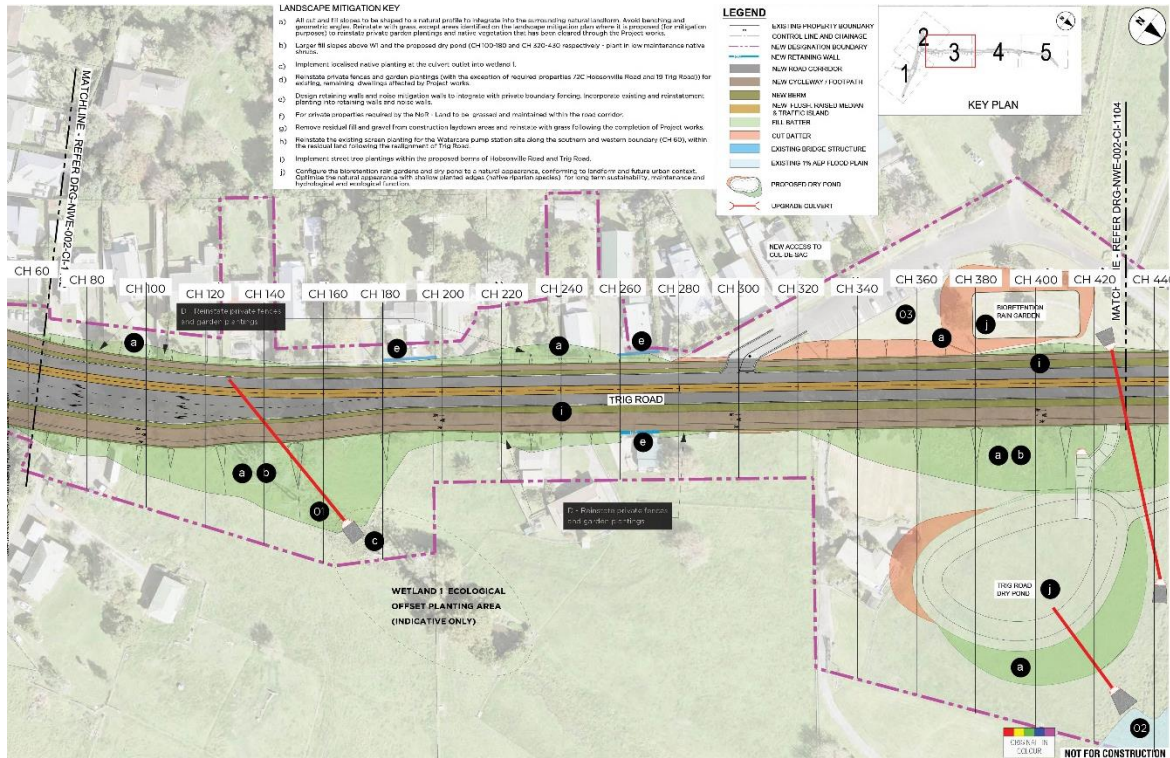


Figure 1: NoR before design change (Original stormwater dry pond location) between chainage 340-440 at 9 Trig Road. Refer Appendix 3 of existing LVA

The design change in this addendum consists of relocating the stormwater dry pond approximately 90m south from the original location (refer Figure 1) to straddle the boundary between 7 & 9 Trig Road (CH280-350). This change proposal is documented in the Trig Road Resource Consent drawing SGA-DRG-NEW-002-CI-1103 (refer Figure 2). Refer Appendix 1 for reference drawings for the Project.

The objective for the change in location of the attenuation pond was to alleviate adverse ecological effects from potential wetland impact and maintain landscape and natural values. The new location reduces wetland reclamation and is still sufficiently close to the topographical low point to function from a stormwater perspective, whilst maintaining existing stream crossings to the rear of 7 & 9 Trig Road. The proposal reduces the amount of fill batter slopes, thus minimising the level of modification to the natural landform.

All existing private properties and structures within the designation boundary are to be demolished and removed, leaving the closest residential properties on the opposite (western) edge of Trig Road corridor.

The existing fixed viewing audience along western Trig Road (between CH150-350) are likely to receive greater adverse landscape and visual effects, due to the shift in the stormwater dry pond. These effects are assessed during the construction and operational phase of the overall project works in Section 7 below.

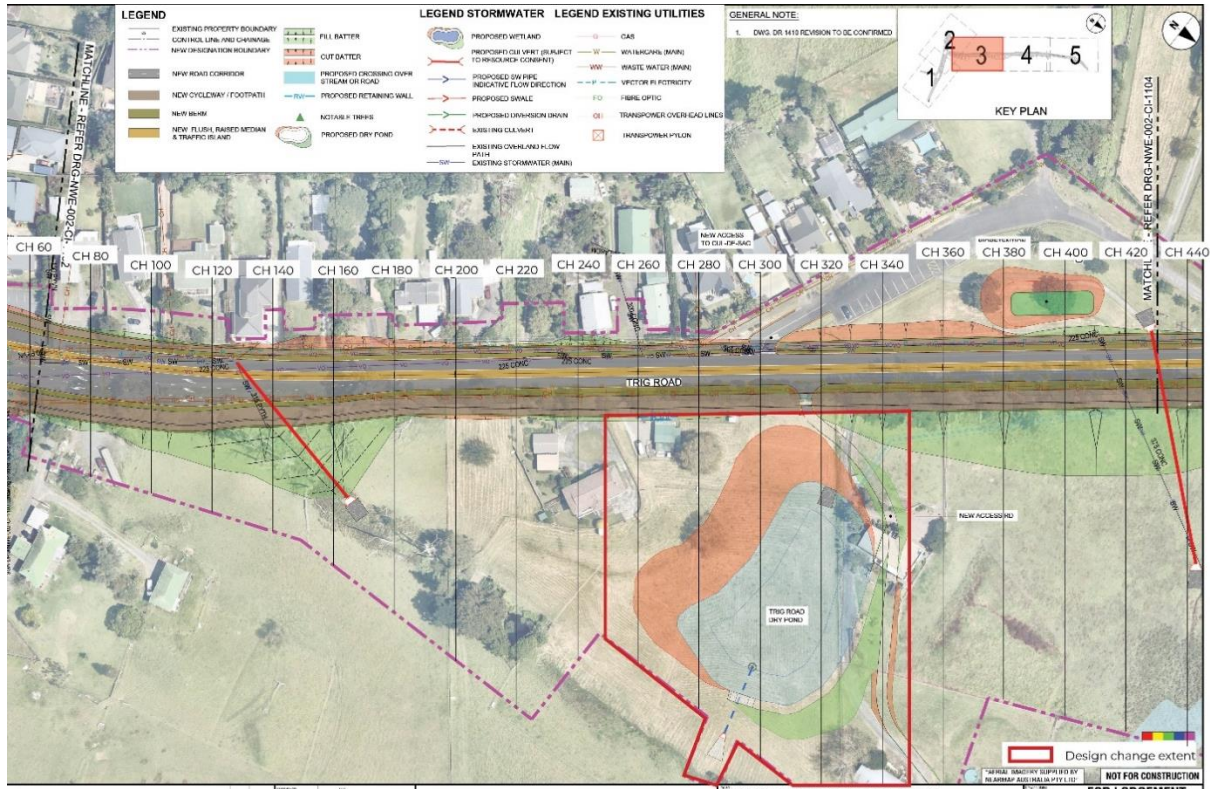


Figure 2: NoR after design change (Proposed stormwater dry pond location) between chainage 250-350 at 7 & 9 Trig Road. Refer drawing SGA-DRG-NEW-002-CI-1103, rev B

7 Assessment of Landscape and Visual Effects of the Design Change

7.1 Assessment of Construction Effects

The assessment of landscape and visual effects associated with the design change during the construction phase are coherent with the conclusions reached in the existing LVA, with the following minor departures.

- Adverse visual effects on the fixed viewing audience along western Trig Road between CH150-CH350 resulting from construction
- Adverse landscape effects resulting from construction relating to increased cut volumes of earthworks around the formation of the proposed stormwater dry pond.

The principal elements of the design change area that give rise to landscape and visual effects are outlined below:

- Physical work, including the construction of the stormwater dry pond undertaken near waterways and wetlands which could cause waterway, riparian and wetland bed disturbance and result in negative impacts on the biophysical values of the landscape. Large construction buffer areas are proposed around wetlands and stream crossings to allow for construction works to be undertaken around sensitive natural features within the Project area.
- Re-alignment and profiling of the landform to accommodate the new stormwater dry pond.
- Clearance of vegetation removal from existing landscape between CH280-350 of the pastureland.
- Proximity to the fixed viewing audience

Overall, the physical landscape effects resulting from the construction phase are assessed as **low adverse**, taking into account mitigation measures. The following sections 7.1.1, 7.1.2 and 7.1.3 provide the reasoning for this conclusion.

Careful management of effects during construction will be required. Management plans are to form part of the construction methodology and a suite of management plans have been outlined in the AEE and will be secured by designation conditions. These management plans will also apply to the design change area of (the Project).

7.1.1 Demolition and Earthworks

7.1.1.1 Formation and Earthworks

The proposed stormwater dry pond location, as shown in Figure 2, will require large volumes of cut and fill to achieve the proposed gradients as illustrated in the stormwater drawings (refer Appendix 2 of the Stormwater Assessment).

Fill batter slope volumes around the proposed dry pond and access road is slightly reduced in comparison to the original design of the dry pond. However, a greater volume of excavation is required around the dry pond to achieve the appropriate grade for pond to function as intended. This will result in modification of the landform, which will likely incur the loss of landscape values associated with perceived naturalness of the landscape. It should, however, be noted that the landscape is already a highly modified landscape which has been altered from its natural state to

enable agrarian activities and as such does not possess a high level of naturalness. Natural Landscape values can potentially be restored through landscape mitigation measures outlined in section 7.2.3.

In addition, a new open channel inlet to the dry pond will need to be excavated for any residual groundwater flow into the pond. It is recommended appropriate levels of controls are in place to avoid sediment flow from entering the wetland (TR-W4) and the proposed stormwater dry pond as set out in the Erosion and Sediment Control Plan prepared in support of the Project.

The nature of landscape effects are considered to be adverse, due to further modification of the landform, resulting in a change in the landscape character. This is also likely to have associated visual effects on transient and fixed viewing audiences at Trig Road from exposed earthworks.

Overall, the formation of the landform and earthworks draws similar conclusions to what was assessed in the existing LVA. Therefore, the construction effects are considered to have **low-moderate adverse** effects on the physical attributes of the landscape, following implementation of mitigation measures outlined in the existing LVA and AEE.

7.1.1.2 Vegetation Clearance

Vegetation removal within the design change area is minimal. Minor singular tree specimens and groupings of exotic mature trees and amenity planting that fall within the parcel boundaries of rural lifestyle blocks (7 & 9 Trig Rd) will need to be removed to accommodate the stormwater dry pond and other stormwater features.

Construction effects relating to vegetation clearance are likely to be negligible due to the minimal landscape values that this vegetation contributes to landscape character. Furthermore, the Project area is not within an SEA and possesses low terrestrial ecological habitat as documented in the ecological assessment.¹⁰

Overall, the construction effects are assessed as **very low adverse** and in line with the assessment of the existing LVA, provided mitigation measures are implemented.

7.1.2 Impact on private properties

The affected residential properties include the rural lifestyle blocks within the designation zones, namely 7 and 9 Trig Road. These dwellings are assumed to be removed, along with existing driveways, private gardens, mature trees and associated fencing. Where private properties and structures are removed within the designation, it is recommended the landform be re-grassed after completion of works, to preserve landscape amenity.

The overall construction impact on neighbouring private properties is expected to be **low-moderate adverse**. These adverse effects can be further reduced with appropriate mitigation measures, refer section 7.1.4.

7.1.3 Visual Effects

Visual effects associated with construction works will include site establishment, demolition, vegetation clearance, bulk earthworks, land formation and construction of site heavy infrastructure.

¹⁰ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Ecological Effects, 2022

These are likely to endure over 16-18 months for the total construction phase. The project works are proposed to occur in 3 stages.¹¹

Visual effects have been assessed in terms of the existing visual quality of the landscape and visibility for fixed and transient audiences in relation to the design change. This information, together with consideration of the likely future receiving environment, are taken into account. Overall, visual effects during construction must be considered against the sensitivity of the future receiving environment which will likely possess high frequency of construction activities and higher density developments enabled within the Whenuapai Structure Plan:2016.

Representative viewpoints were selected from public viewpoints along Trig Road to determine views commonly experienced by transient viewing audiences. Private properties were not entered as part of the assessment as permissions had not been sought and granted, however viewpoints were selected adjacent to the residential properties as a proxy.

Viewing audiences affected by the project works within the design change area between (CH 150-350), will include:

- Private properties along western Trig Road between #16 and #28, and along Ryans Road between #30 and #34
- Transient viewers traversing at 50km/h on Trig Road
- Transient public walking along Trig Road

Construction activities will introduce a significant amount of infrastructure works into a receiving environment that currently possesses a moderate degree of visual amenity derived from the scenic qualities of rural landscape attributes, including glimpsed views to the far horizon. Visual intrusion of construction works will have the greatest effects on residents near the construction works on the western side of Trig Road when assessed in relation to the existing environment. Views will become dominated by construction activity including large machinery and earthworks. This will result in a reduction of visual amenity in relation when assessed against the existing environment.

When considered in the context of the future receiving environment, timing of construction works will have a large bearing on visual effects. Within this assessment, it is assumed that construction associated with the plan-enabled urban development will be prevalent in the visual landscape, and existing scenic qualities will have already been substantially altered from the current peri-urban state to an urban landscape predominantly characterised by buildings and infrastructure.

Irrespective of the extent of urban change in the future receiving environment, it is still considered necessary to afford mitigation to the residential properties on the western side of Trig Road. The level of visual effects is higher for properties at 16-28 Trig Road and 30-34 Ryans Road, than what was assessed in relation to the original design's viewing catchment. While some private properties (as mentioned above) will have natural vegetative screening that will remain in their front yards to protect from visual impact, other properties will be exposed to the physical works and are expected to experience heightened visual effects. Overall, fixed viewing audience are likely to benefit from temporary visual screening, as provided for in the Construction Environmental Management Plan (CEMP) condition, to reduce adverse visual effects.

Public viewing audiences will generally be transient and are likely to experience adverse visual effects in areas where the landscape has been subject to vegetation removal and where construction

¹¹ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2022

activities along Trig Road are evident over the construction period. For these viewers, only fleeting views are afforded and are not considered to have adverse effects overall.

Overall, the visual effects for private properties between CH150-350 is **moderate adverse** due to prolonged viewing of ongoing construction activities within the viewing catchment, reducing to **moderate-low adverse** with mitigation measures.

The temporary visual effects on the existing landscape is expected to be **low adverse** for transient viewing audience.

Table 3. Summary of Landscape Effects during Construction

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
Construction	<p>Landscape effects during construction will result from earthworks, formation of bunds and removal of minor vegetation. When considered in the context of the likely future receiving environment, and taking account of mitigation measures, adverse effects are assessed as low.</p> <p>Visual effects are greatest for residents on the western side of Trig Road at 16-28 Trig Road and 30-34 Ryans Road, due to their close proximity to the Project area. The level of effects will be influenced by the extent to which the Future Receiving Environment is predominantly characterised by urban development at the time of construction, and hence existing rural amenity values have been altered.</p> <p>Taking account of the urbanisation of the future receiving environment, and mitigation measures to screen activities, the visual effects are assessed as moderate-low adverse.</p> <p>Overall, landscape and visual effects relating to construction are assessed as Low adverse.</p>	Low	adverse	7.1.5

7.1.4 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

This addendum considers the measures to avoid remedy or mitigate construction effects described in the existing LVA and AEE are appropriate to the proposed design change area. These measures include the following:

- Cut and fill slopes are proposed to be shaped to a natural slope to integrate with the surrounding landform and reinstated with appropriate landscaping.
- Localised planting is proposed to mitigate physical landscape effects and to assist with integrating the larger fill slopes further into adjacent landscape and ecological mitigation measures along Trig Road.
- Reinstatement of the Project area following the completion of construction, including the removal of residual fill and gravel from construction laydown areas and reinstatement with grass and landscaping.
- Minimise work in and around existing waterways and wetlands where practicable.

In addition, further mitigation measures applicable to the design change area have been proposed below:

- Minimise vegetation loss by restricting the construction footprint as far as practicable, as required by the ULDMP condition.
- Provide temporary screening during construction for adversely affected residential areas, as provided for in the CEMP condition.

7.2 Assessment of Operational Effects on Landscape

The assessment of landscape and visual effects associated with the design change during operational phase is coherent with the conclusions reached in the existing LVA, with the following minor departures:

- Adverse visual effects resulting from the operational phase on the fixed viewing audience along western Trig Road between CH150-350 of the rural landscape.
- Adverse landscape effects resulting from the operational phase relating to increased earthworks around the formation of the proposed stormwater dry pond.
- Positive effects resulting from planting established around stormwater dry pond fill batters which contributes to enhanced visual amenity for fixed and transient viewers.

7.2.1 Landscape Character Effects

The upgrade of Trig Road corridor will become a feature of a future intensively built receiving environment that includes a significant wider transport network. This network will include walking and cycling provisions, public transport links and road user safety in the existing landscape. There are very few landscape values of the existing environment that would be adversely affected by the design change as part of the overall Project.

There is opportunity in to restore landscape and visual amenity values through mitigation measures, which will later be integrated in the future receiving environment. Given the baseline of almost no natural values within the designation and surrounds, this presents a real opportunity for betterment.

Where modification of landform will occur through the introduction of fill slopes and cut embankments, it is recommended to plant these slopes with native species. These vegetated embankments would potentially create a green visual buffer that could tie in with the offset planting around the natural wetlands in order to promote positive effects and enhance landscape values. This will likely form a natural backdrop to the streetscape upgrade in the foreground for transient and fixed viewing audiences. Careful consideration of species selection will be required at a detailed design phase to ensure no terrestrial or aquatic habitat is created to minimise the risk of bird strike.

It is recommended all landscape and urban design considerations within the design change area are to be designed, constructed, and managed in keeping with the Urban & Landscape Design Management Plan (ULDMP).

Based on the above considerations, the operational effects on existing and future anticipated landscape character are assessed as **moderate positive** considering post-mitigation measures, outlined in section 7.2.3.

7.2.2 Visual Effects

Due to the shift in location of the proposed stormwater dry pond, the visual effects will be experienced predominantly by those residents located at 16-28 Trig Road and 30-34 Ryans Road compared to that of the original assessment in the existing LVA. Fixed viewing audience have a higher sensitivity to visual change because of the permanent nature of the change and associations in relation to established views.

The design change constitutes a minor shift in location for what will eventually be a soft landscape/wetland feature that will be generally integrated into the natural landform. When compared with the existing landscape character derived from modified grazed pastureland and scant indigenous vegetation cover, the dry pond and its surrounding vegetation batters will introduce a landscape feature that contributes to enhanced amenity values.

Once operational, it is considered that the design change area will absorb and offer enhanced streetscape appeal within the future receiving environment, along with specimen trees along the edge that would naturally tie in with the mitigation planting on fill batter slopes.

Overall, it is expected that the visual amenity effects associated with the design change area are considered **moderate positive** for private properties and **neutral** for transient viewing audience following mitigation.

Table 4. Summary of Operational Landscape Effects

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
Operational	Landscape effects during operation will be enhanced compared with the current modified grazed pastureland.	Moderate	positive	7.2.4

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
	<p>This is due to the introduction of extensive native vegetation around a soft engineered dry pond that sits close to existing topography. Overall, the effect will be to introduce increased biotic landscape values which will contribute to the naturalness of the existing and anticipated future receiving environment.</p> <p>Visual amenity values for residents on the western side of Trig Road are derived from the scenic qualities of the grazed pastureland. This landscape is in transition to a highly built urban environment and as such, the design change proposals will afford a naturalised landscape feature within the built setting.</p> <p>Overall, landscape and visual effects are assessed as moderate-positive following mitigation.</p>			

7.2.3 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

This addendum considers the measures to avoid remedy or mitigate operational effects described in the existing LVA and AEE are appropriate to the proposed design change area. These measures include the following:

- All cut and fill slopes will be shaped to a natural profile to integrate into the surrounding natural landform and reinstate with grass or planting where practicable.
- Stormwater features will be configured to a natural appearance with appropriate vegetation and integrated into the surrounding urban landscape context, so that any physical landscape effects are ameliorated.
- Residual land parcels acquired through the Project should be grassed and maintained within the road corridor.
- Street tree planting will be provided along Trig Road, which along with indigenous planting within the stormwater features will assist with moderating the shift from rural to urban landscape character.

In addition, further mitigation measures are applicable to the design change area have been proposed below. It is noted where these are addressed by the current resource consent application. The remaining recommendations should be addressed through future outline plan processes:

- Planting plan - The planting plan should incorporate riparian planting for affected wetland zones, as proposed in the draft Wetland Restoration and Enhancement Plan consent conditions. Selected species are to discourage any forming of habitat within the proposed stormwater dry pond area to reduce risk of bird strike.

8 Conclusion

This addendum agrees with the general conclusions of the existing LVA. During construction, it is expected the physical attributes of the landscape will be adversely affected by modification of landform, physical works within proximity of waterways and natural wetlands and removal of remnant vegetation. Adverse visual effects are also likely to be heightened for transient and fixed viewing audiences for whom the construction works will be visible. These landscape effects can be mitigated by implementing appropriate measures and management controls as outlined in the AEE. Furthermore, introduction of indigenous amenity planting to fill batter slopes and around the stormwater dry pond will uplift the landscape values and enhance visual amenity.

The land to the east of Trig Road displays a strong rural landscape character which in itself is a highly modified landscape possessed of low natural landscape attributes. The future anticipated land use is expected to become more densely urbanised in accordance with the Whenuapai Structure Plan, 2016. This zoning framework will alter the landscape character surrounding the proposed stormwater dry pond so that the facility will become a somewhat naturalised feature within a built urban environment.

Due to the unresolved nature of the current structure plan framework, design strategies can be incorporated to further enhance natural landscape values associated with the dry pond and ultimately contribute positively to the landscape amenity of the future urban environment.

In conclusion, with the implementation of the recommended mitigation measures, potential adverse landscape and visual effects of the design change will be avoided, while the permanent outcomes are assessed as contributing positively to landscape character.

Overall, the landscape and visual effects of the design change area during construction are **low adverse**, while effects during operational phase of the Project are **moderate-positive** following mitigation.

Recommendations identified in the existing LVA and AEE that applied to the original design are also considered relevant to the design change area. Further to the mitigation measures outlined in the existing LVA and AEE, this addendum includes additional recommendations to mitigate construction and operational effects. These are described in Sections 7.1.4 & 7.2.3.

9 Appendix 1 – Representative Viewpoints