SUBSTANTIVE APPLICATION FOR APPROVALS

Volume B – Resource Management Act Approvals

NZ Transport Agency Waka Kotahi
Tauriko West | Tupenga

31 JULY 2026

NZ TRANSPORT AGENCY WAKA KOTAHI

Tauriko West Tupenga | Roads of National Significance

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

The glossary of acronyms and abbreviations table in Volume A of the Substantive Application applies to this Volume and should be referred to in addition to the acronyms and abbreviations below.

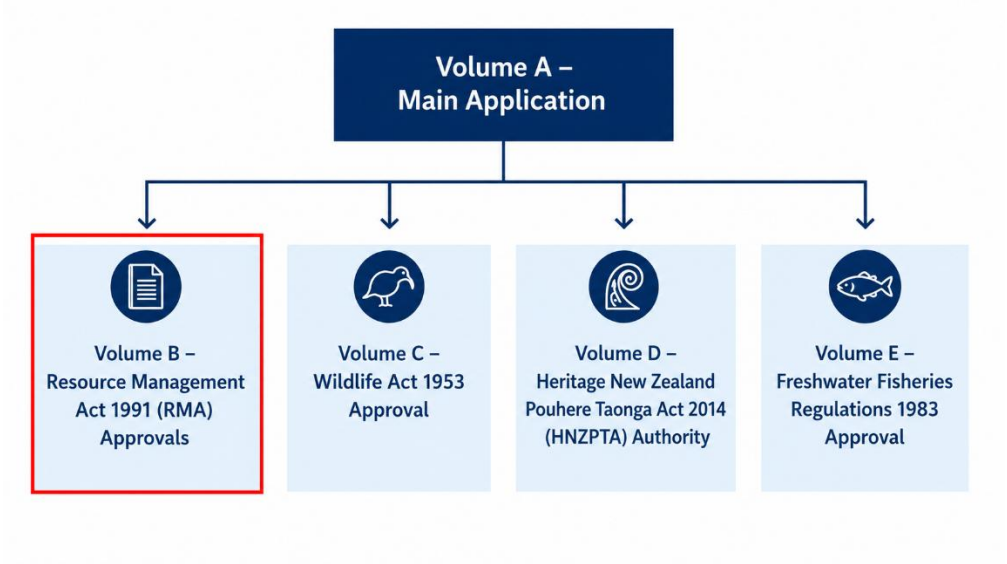
Acronym / Abbreviation	Term
AEP	Annual Exceedance Probability
ARI	Average Recurrence Interval
BCM	Biodiversity Compensation Model
CAQMP	Construction Air Quality Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CSMP	Contaminated Soils Management Plan
CWA	Construction Water Assessment
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
LSCMP	Landscape Mitigation Plan
LUC	Land Use Capability
HEC-RAS	United States Army Corps of Engineers Hydrologic Engineering Centre's River Analysis System.
NESs	National Environmental Standards
NPS-FM	National Policy Statement for Freshwater Management 2020
NPS-HPL	National Policy Statement for Highly Productive Land 2022
NPS-I	National Policy Statement for Infrastructure 2025
NPS-IB	National Policy Statement for Indigenous Biodiversity 2023
NPS-NH	National Policy Statement for Natural Hazards 2025
NPS-UD	National Policy Statement for Urban Development 2020
ONFL	Outstanding Natural Feature and Landscape
PPFs	Protected Premises and Facilities
RAP	Remedial Action Plan
RPS	Bay of Plenty Regional Policy Statement 2014
SEA	Special Ecological Area
SNA	Significant Natural Area
SQP	Suitably Qualified Person
SQEP	Suitably Qualified and Experienced Person
SRP	Stream Realignment Plan
SWWM	United States Environmental Protection Agency Storm Water Management Model
SVP	Site Validation Report
TSP	Transport System Plan
UFTI	Urban Form and Transport Initiative
UGA	Urban Growth Area
WMP	Wetland Management Plan

1 RESOURCE MANAGEMENT ACT APPROVALS

1.1 Overview

This **Volume B** of the Application has been prepared on behalf of the NZ Transport Agency Waka Kotahi (NZTA) in support of the approvals required under the RMA for the Tauriko West – Tupenga Project (the Project). Those approvals comprise Notice of Requirements (NoRs) for the proposed designations and the resource consents required to authorise the construction, operation and maintenance of the Project.

Volume B should be read in conjunction with **Volume A**, which is the main overarching report for the Application and contains general information relevant to all approvals.



1.2 Notice of Requirements

The Application includes NoRs for two new designations: one within the Tauranga City Plan (TCP) and one within the Western Bay of Plenty District Plan (WBOPDP). The purpose of the designations is to authorise the construction, operation and maintenance of the Project.

The Proposed Designation boundaries cover the full extent of the Project, including land required for permanent works, construction activities, access, stormwater infrastructure and other associated infrastructure. The proposed designation boundaries, and affected properties, are shown on the Designation and Directly Affected Landowner Plans contained in the Drawing Package included in **Volume A – Appendix C**.

New designations are sought, rather than alterations to NZTA's existing designations, to clearly define the footprint of the new SH29 and SH29A corridors and associated infrastructure, avoid unnecessary complexity associated with overlapping designations and conditions, and ensure a single, unified set of conditions applies to the Project.

1.2.1 Lapse Period

A 30-year period is sought for the designations to provide for the scale and complexity of the Project. The Project extends across a substantial land area and includes several grade-separated interchanges, major bridge and stream realignment works, and construction within a complex and heavily trafficked environment. Its delivery will be determined by future funding decisions, detailed design and construction sequencing. NZTA has, however, already acquired some of the land required for the Project, including two of the affected properties off Silkwood Way.

The Project may be delivered progressively as funding becomes available across successive funding periods. Flexibility is needed to ensure the timing and sequencing of individual stages can respond to funding decisions, network priorities, construction interfaces and the availability of specialist resources. There may therefore be periods between the completion of one stage and the commencement of another.

The 30-year lapse period is therefore required to ensure that the designations remain available for the delivery of the Project as an integrated whole. A shorter period could require further designation processes for individual parts of the same Project, resulting in unnecessary cost, delay and duplication for NZTA, affected landowners, Councils and the wider community.

The designations will also secure the Project alignment against potentially incompatible development and provide the long-term certainty required to plan and coordinate the urban development of the Tauriko West Urban Growth Area (UGA). Confirming and maintaining the transport corridor will enable land-use development, local infrastructure and the strategic transport network to be planned on a coordinated basis and will reduce the risk that development decisions made in the interim prejudice or increase the cost of delivering the Project.

The lapse period is a maximum timeframe and not an indication that delivery will be deferred. The existing transport pressures within the Western Corridor and the progression of Tauriko West support the timely implementation of the Project, as funding becomes available.

1.3 Resource Consents

Resource consents that would otherwise be applied for under the Resource Management Act 1991 (RMA) are sought under both National Environmental Standards (NESs) and the Bay of Plenty Regional Natural Resources Plan (RNRP) to provide for the construction, operation and maintenance of the Project.

1.3.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011

A Preliminary Site Investigation (PSI) has been prepared for the Project and is included in **Volume B – Appendix L**. The PSI identifies 47 "pieces of land" within the Proposed Designation that warrant further investigation, sampling and analysis.

NZTA seeks resource consent within Tauranga City Council (TCC)'s jurisdiction under the NES-CS for soil disturbance associated with the construction of the Project. The land identified in the PSI as requiring consent under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES-CS) is located only within the TCC portion of the Project.

As a Detailed Site Investigation (DSI) has not yet been undertaken for all confirmed and potentially Hazardous Activities and Industries List (HAIL) sites, resource consent is sought as a Discretionary Activity under Regulation 11 of the NES-CS. The consent will authorise soil disturbance on land identified in the PSI as confirmed or potential HAIL land.

1.3.2 National Environmental Standards for Freshwater 2020

All Project works constitute "construction of specified infrastructure" as defined in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NPS-FM) and therefore Part 3, Subpart 1 of the NES-F applies.[1]

NZTA is seeking the following resource consents for the project under the NES-F:

- Resource consents under the NES-F Regulation 45 (Discretionary Activity) for the purpose of constructing specified infrastructure where it involves vegetation clearance, earthworks or land disturbance, damming, diversion or discharge of water within, or within specified setbacks, of natural inland wetlands; and

- Resource consents under Regulation 47 (Restricted Discretionary Activity) for the maintenance and operation of specified infrastructure involving taking, use, damming, diversion or discharge of water within, or within a 100m setback from, natural inland wetlands; and

- Resource consent under Regulation 57 (Discretionary Activity) for the reclamation of the beds of rivers associated with the Project, including the Kōpūrererua Stream, Nanako Stream and a tributary of the Wairoa River.

[1] Part 3, Subpart 1, clause 45, Construction of specified infrastructure - Discretionary activities; NES-F

Resource consents required under the NES-F for the Project are set out in **Table 1.**

1.3.3 Regional Resource Consents

Table 1 below sets out the relevant regional resource consents required, and sought as part of this Application, for the construction, operation and maintenance of the Project under the RNRP. A detailed assessment of the rules can be found in **Volume B – Appendix A**.

The regional consent requirements are interrelated and, in many cases, relate to the same Project works, construction areas, receiving environments and management measures. It is therefore appropriate for the applications to be considered together and bundled for the purposes of determining overall activity status. Applying the most restrictive activity status, the regional resource consent applications are assessed overall as a discretionary activity.

The consents are nevertheless presented as separate approvals to align with Bay of Plenty Regional Council (BOPRC)'s administrative structure for RNRP and NES-F consents.

Abbreviations used in Table 1

DW Discharge to water
WL Wetlands
WQ Water Quality and Allocation
LM Land Management
BW Beds of Waterbodies

Table 1: Resource consents required under the RNRP & NES-F

	Resource consent	Consent Summary	Purpose	Expiry date	Lapse
Works in Waterbodies – Resource consents for the use of beds of rivers under the RNRP (s13 and s14 RMA) and resource consents under Clauses 45, 47 and 57 of the NES-F					
BC.01	Land use (BW R36[2])	Bridge installation, discharge structure installation, reclamation and erecting structures over the bed of a watercourse.	The purpose of this consent is to authorise the following activities: (a) The use, placement and maintenance of new bridges, abutments and erosion protection infrastructure in, on, under, or over a Watercourse; (b) Excavation, drilling, tunnelling or other disturbance to the bed and banks of a Watercourse associated with the activities in (a). (c) Temporary damming or diversion of Watercourses during instream works; (d) Permanent reclamation of the bed of the Kōpūrererua, Nanako streams and a tributary of the Wairoa River adjacent to Belk Road; (e) Permanent diversion of a Watercourse associated with the Project; and (f) Installation and maintenance of discharge structures for the construction, operation and maintenance of the Project. (g) Vegetation clearance and earthworks or land disturbance within, or within a 10 m setback from, a Natural Wetland associated with the construction, operation or maintenance of specified infrastructure;	35 years	20 years
	Diversion (WQ R21[3])	Surface water damming or diversion.			
	Construction of specified infrastructure (Clause 45(4) NES-F)	Taking, use, damming, diversion, or discharge of water within, or within a 100m setback from, a Natural Wetland for the purpose of constructing specified infrastructure.			
	Construction of specified infrastructure 45(2)	Earthworks or land disturbance within, or within a 10m setback from, a Natural Wetland for the purpose of constructing specified infrastructure.			
	Maintenance/operation of specified infrastructure (Clause 47(3) NES-F)	Taking, use, damming, diversion of water within or within a 100 metre setback from a natural wetland.			
	Reclamation of Rivers (Clause 57 NES-F)	Reclamation of the bed of any river in association with the Project.			

[2] Discretionary – Activity in the Beds of Streams, River and Lakes
[3] Discretionary – Damming or Diversion of Water

Table 1: Resource consents required under the RNRP & NES-F

	Resource consent	Consent Summary	Purpose	Expiry date	Lapse
			(h) Earthworks or land disturbance outside a 10 m setback, but within a 100 m setback, from a natural inland wetland that result, or are likely to result, in the complete or partial drainage of all or part of the Natural Wetland; and (i) The taking, use, damming, diversion or discharge of water within, or within a 100 m setback from, a Natural Wetland associated with the construction, operation or maintenance of specified infrastructure.		
Temporary Discharges – Discharge permits under the RNRP (s15 RMA) and resource consent under Clause 45 of the NES-F					
DC.01	Discharge (DW R8[4])	Discharge of contaminants to land, discharging stormwater to water or to land that may enter water, discharge of chemical flocculants during earthworks, discharge of dewatering fluid, discharge of cement to groundwater during piling.	The purpose of this consent is to authorise the following activities: (a) The temporary discharge of sediment contaminated stormwater and dewatering fluid to land, to water or to land where it may enter water; (b) The discharge of chemical flocculants during earthworks; and (c) The discharge of cement to groundwater during piling, associated with the construction of the Project.	35 years	20 years
	Construction of specified infrastructure (Clause 45(5))	Discharge of water into water within, or into water within, or within a 100m setback from, a natural wetland for the purpose of constructing specified infrastructure, and there is a hydrological connection, the discharge will enter the natural wetland and will or is likely to change the water level range or hydrological function of the natural wetland.			
Contamination – Land use and discharge permit under RNRP (s9 and s15 RMA)					
DC.02	Land use - (DW R25[5])	Contaminated land disturbance and remediation, and associated discharges of contaminants to land or to land that may enter water.	The purpose of this consent is to authorise the following activities: (a) Disturbance and remediation of contaminated land and for the associated discharge of contaminants to land, and to land that may enter water, associated with the construction of the Project; and (b) The disposal of contaminated material within the Project footprint.	35 years	20 years
	Discharge Contaminant to land (DW R8[6])	The disposal of contaminated material within the Project footprint.			

[4] Discretionary – Discharges to Water or Land
[5] Restricted Discretionary - Remediation or Disturbance of Contaminated Land
[6] Discretionary – Discharges to Water of Land

Table 1: Resource consents required under the RNRP & NES-F

	Resource consent	Consent Summary	Purpose	Expiry date	Lapse
Permanent Stormwater – Discharge permits under the RNRP (s15 RMA) and resource consent under Clause 47 of the NES-F.					
DC.03	Discharge (DW R21[7] and DW R23[8])	Discharging stormwater to water or to land that may enter water.	The purpose of this consent is to authorise the permanent discharge of stormwater from the Project to surface water or to land where it may enter surface water, including discharges associated with the operation or maintenance of specified infrastructure.	35 years	20 years
	Maintenance or operation of specified infrastructure (Clause 47(3A))	Maintenance or operation of specified infrastructure involving the discharge of water into water within, or within 100 m of, a hydrologically connected natural inland wetland, where the discharge will enter the wetland, may alter its water-level range or hydrological function, and cannot comply with Regulation 46.			
Earthworks – Land use consent under the RNRP (s9 RMA), resource consent for the use of beds of rivers and land use consents under the RNRP (s9 and s13 RMA), discharge permits under the RNRP (s15 RMA) and resource consent under Clause 45 of the NES-F					
LC.01	Land use (LM R4[9])	Earthworks, overburden disposal	The purpose of this consent is to authorise the following activities: (a) Earthworks and land disturbance; (b) Vegetation clearance; (c) Drilling on land that may intercept water; (d) Wetland modification and activities, within, or within 100m of natural inland wetlands; (e) Discharge of dust to air during earthworks; and (f) Discharge of chemical dust suppressants during earthworks, associated with the construction of the Project.	35 years	20 years
	Land use (LM R10[10])	Vegetation clearance			
	Land use (WL R9[11])	Wetland modification and/or destruction			
	Discharge Air (Rule 16)	Discharge contaminants to air			
	Discharge (DW R8[12])	Discharge temporary dust suppressant chemicals during earthworks			
	Land use (WQ 40A[13])	Drilling on land that may intercept water (piling)			
	Construction of specified infrastructure (Clause 45(1) – NES-F)	Vegetation clearance within, or within a 10m setback from, a natural wetland for the purpose of constructing specified infrastructure			
	Construction of specified infrastructure (Clause 45(2) – NES-F)	Earthworks or land disturbance within, or within a 10m setback from, a natural wetland for the purpose of constructing specified infrastructure			
	Construction of specified infrastructure (Clause 45(3) – NES-F)	Earthworks or land disturbance outside 10m, but within a 100m setback from, a natural inland wetland for the purposes of constructing specified			

[7] Restricted Discretionary – Discharge of Stormwater to Surface Water
[8] Restricted Discretionary – Discharge of Stormwater to Land Soakage
[9] Discretionary – Earthworks and Quarries
[10] Discretionary – Land and Soil Disturbance by Vegetation Clearance
[11] Discretionary – Modification of a Wetland
[12] Discretionary - Discharges to Water or Land
[13] Controlled - Drilling

Table 1: Resource consents required under the RNRP & NES-F

	Resource consent	Consent Summary	Purpose	Expiry date	Lapse
		infrastructure that is likely to result in complete or partial drainage of all or part of a natural wetland.			
Temporary Dewatering – Water permits under the RNRP (s14 RMA) and resource consents under Clause 45 and 47 of the NES-F.					
WT.02	Groundwater take (WQ 43[14])	Temporary take and use of groundwater for dewatering	The purpose of this consent is to take and use groundwater associated with dewatering during the construction of the Project.	35 years	20 years
	Construction of specified infrastructure (Clause 45(4) – NES-F)	Taking, use, damming, diversion, or discharge of water within, or within a 100m setback from, a natural wetland for the purpose of constructing specified infrastructure.			
Water Take – Water permit under the RNRP (s14 RMA)					
WT.03	Groundwater take (WQ 43)	Temporary take and use of groundwater during construction.	The purpose of this consent is to: (a) Take and use 900m³/per day of groundwater for dust suppression associated with earthworks and irrigation of landscape planting associated with the construction of the Project; and (b) That take where it occurs within 100 m of, and is hydrologically connected to, a natural inland wetland and may alter the wetland's water-level range or hydrological function.	35 years	20 years
		Taking groundwater within 100 m of a hydrologically connected natural inland wetland where the take will, or is likely to, change the wetland's water-level range or hydrological function.			

[14] Discretionary – Take and Use of Water

As identified in **Table 1,** the resource consents required for the Project are interrelated and overlapping; therefore, it is appropriate for the applications to be bundled. Applying the most restrictive activity status, the applications are for a discretionary activity.

1.3.4 Permitted Activities

Due to the scale and nature of the Project, the proposed works exceed the thresholds for many of the permitted activities in the RPN and NESs. For instance, in the RNRP, the permitted activity threshold for earthworks is an exposed area of no greater than 1ha and volume no greater than 5,000 m^3 on land with a slope of 0-15 degrees (Rule LM R1).

Relevant permitted activities are set out in **Table 2** below and the rule assessment in **Volume B – Appendix A**. All permitted activities will comply with the requirements, conditions, and permissions for the permitted activity.[15]

Table 2: Permitted Activities Rule Assessment

Regulation	Content	Assessment
NES-AQ – Regulation 13	Compliance with ambient air-quality standards	Construction vehicle and plant emissions are not expected to result in a breach of the applicable ambient air-quality standards. The Project will comply with Regulation 13.
NES-DW – Regulations 6–8	Activities potentially affecting registered drinking-water supplies	The Project will not affect a registered drinking-water supply to which Regulations 7 and 8 apply. No consent is required under the NES-DW.
NES-F – Regulation 38	Natural inland wetland restoration	The Project includes restoration planting and exotic vegetation clearance within retained natural inland wetlands. These works will be undertaken in accordance with a Wetland Management Plan, which will address the applicable Regulation 55 conditions and relevant Schedule 2 matters and will be provided to BOPRC before the works commence.
RNRP – DW R4	Discharge between artificial watercourses	Discrete discharges from an artificial watercourse to another artificial watercourse are permitted where they do not cause persistent erosion or flooding or ponding on another property. To the extent that Project drainage connections meet those conditions, they are permitted under DW R4.
RNRP – DW R22	Discharge of stormwater to land soakage	Stormwater discharges to land soakage are permitted where the discharge rate does not exceed 125 L/s during the specified 10% Annual Exceedance Probability (AEP) event, and all other conditions of DW R22 are met. Project discharges meeting those requirements will be undertaken as permitted activities. Discharges exceeding the threshold are addressed under the permanent stormwater consent (and rule DW R23).

[15] Schedule 5, clause 5(5)(a) FTAA

1.4 Relevant Policy and Planning Documents

This section identifies the national, regional and local policy and planning documents relevant to the assessment of the Project. These documents provide the statutory and strategic framework for assessing the Project, including its consistency with national direction, regional policy outcomes, regional resource management requirements, district plan provisions, and relevant transport and growth strategies.

Table 3 identifies the key documents considered relevant to the Application.

Table 3: Relevant national, regional and local planning documents

Category	Relevant planning documents
National	• National Policy Statement for Infrastructure 2025 (NPS-I) • National Policy Statement on Urban Development (NPS-UD) • National Policy Statement for Freshwater Management 2020 (NPS-FM) • National Policy Statement for Highly Productive Land 2022 (NPS-HPL) • National Policy Statement for Indigenous Biodiversity 2023 (NPS-IB) • National Policy Statement for Natural Hazards 2025 (NPS-NH) • National Policy Statement for Electricity Transmission Networks 2008 (NPS-EN) • Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F) • Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS)
Regional	• Bay of Plenty Regional Policy Statement (October 2014) • Regional Natural Resources Plan (RNRP)
Local	• Tauranga City Plan • Western Bay of Plenty District Plan

An assessment of the Project against the relevant provisions of the above documents is outlined in the sections below[16]. A more detailed assessment of the Project in relation to the relevant objectives and policies of each document is attached in **Volume B – Appendix B**.

1.4.1 National Policy Statement for Infrastructure 2025

The NPS-I provides national direction for the recognition and provision of infrastructure. The NPS-I is relevant to the Project, as the Project involves new and upgraded state highway infrastructure, together with associated infrastructure-supporting activities.

The NPS-I recognises the national, regional and local benefits of infrastructure, the functional and operational needs of infrastructure, the importance of timely and efficient infrastructure delivery, and the need to manage adverse effects in a proportionate way. These matters are relevant to the assessment of the Project and to the grant of the required approvals.

The Project is consistent with the objective and relevant policies of the NPS-I. It forms part of the strategic state highway network and will deliver substantial national, regional and local benefits, including improved freight reliability, enhanced safety outcomes, increased network resilience, and infrastructure capacity necessary to support planned growth in Tauriko West and the wider Western Corridor.

In particular, the Project is expected to improve travel time reliability and road safety. By 2048[17], travel time savings of around 7–11 minutes are anticipated between Ōmanawa Bridge and the Takitimu North Link interchange and 3-8 minutes between Ōmanawa Bridge and Barkes Corner. These savings reflect a more efficient and reliable transport network, reducing delay for people and freight, improving access between housing, employment areas and the wider strategic network, and supporting regional productivity and planned growth. The new median-divided corridors, grade-separated interchanges and reduced traffic on

[16] Section 43(3)(a) and 43(3)(d) and schedule 5, clause 5(1)(h) FTAA
[17] 2048 is the principal future assessment year used in the Transport Assessment

the existing state highways are also expected to significantly reduce the likelihood and severity of deaths and serious injury crashes.

The Project's adverse effects have been assessed in the technical reports supporting this Application. Those effects are proposed to be managed through the Project design and consent conditions. This reflects the NPS-I direction that infrastructure should be enabled while adverse effects are appropriately managed. Overall, the Project is assessed as being consistent with the direction in the NPS-I to enable infrastructure while appropriately managing adverse effects.

1.4.2 National Policy Statement on Urban Development 2020

The NPS-UD provides national direction for urban environments, including the need to enable well-functioning urban environments, provide sufficient development capacity, and integrate land use, infrastructure planning and funding decisions.
The NPS-UD is relevant because the Project is located within the Tauranga urban environment and supports planned urban growth in Tauriko West and the wider Western Corridor. While the NPS-UD is primarily directed at regional policy statements, district plans and local authority planning decisions, its objectives and policies are relevant because of the role the Project plays in supporting urban growth and development capacity.

The Project is consistent with the relevant objectives and policies of the NPS-UD. It will improve the function of Tauranga's urban environment by providing additional transport capacity, improving safety and reliability, and supporting planned growth in Tauriko West UGA and the wider Western Corridor. This is consistent with the NPS-UD direction to enable development capacity and support well-functioning urban environments. Without further transport investment, the ability to accommodate planned growth in this part of Tauranga would be constrained by existing congestion, safety and access issues on SH29 and SH29A.

The Project also supports integration between land use and infrastructure planning. It has been provided for and signalled within the wider growth and transport framework for Tauranga and the western Bay of Plenty sub-region, including SmartGrowth, Urban Form and Transport Initiative (UFTI) and the Transport System Plan/Tauranga Urban Network. Route protection through the Proposed Designation will also provide certainty for development within the Tauriko West UGA by confirming the alignment and land required for the Project.

The Project will result in changes to the existing environment, including changes to amenity values for some properties and communities along the corridor. However, the NPS-UD recognises that urban environments, including their amenity values, develop and change over time in response to the needs of people, communities and future generations.

Overall, the Project is consistent with the NPS-UD because it supports a well-functioning urban environment, enables planned development capacity, and integrates transport infrastructure with long-term urban growth.

1.4.3 National Policy Statement for Freshwater Management 2020

The NPS-FM, as amended, provides national direction for the management of freshwater, including rivers, streams, wetlands and associated catchments. It is relevant because the Project involves works within and near freshwater environments, including Natural Wetlands, streams, floodplains and receiving environments within the Wairoa River, Kōpūrererua Stream and Waimapu Stream catchments.

The NPS-FM is underpinned by Te Mana o te Wai, which prioritises the health and wellbeing of water bodies and freshwater ecosystems, followed by the health needs of people, and then the ability of people and communities to provide for their social, economic and cultural wellbeing. The Project has been assessed against that framework, recognising both the importance of freshwater values and the functional and operational requirements of the Project as linear state highway infrastructure.

Clause 3.22 of the NPS-FM is relevant because the Project will result in the loss and modification of Natural Inland Wetlands. Clause 3.22(1) requires regional plans to include a policy relating to the loss of Natural Inland Wetland extent and values, including where:

"The regional council is satisfied that:

(i) The activity is necessary for the purpose of the construction or upgrade of specified infrastructure; and
(ii) the specified infrastructure will provide significant national or regional benefits; and
(iii) there is a functional need for the specified infrastructure in that location; and
(iv) the effects of the activity are managed through applying the effects management hierarchy."

The NPS-FM defines 'specified infrastructure' as including infrastructure that delivers a service operated by a lifeline utility (as defined in the Civil Defence Emergency Management Act 2002) and regionally significant infrastructure identified as such in a regional policy statement or regional plan.

The Project is specified infrastructure because state highways are operated by NZTA, which is a lifeline utility. It forms part of the state highway network, is a RoNS, and will provide significant national and regional benefits by improving safety, freight efficiency, travel time reliability, network resilience and infrastructure capacity to support planned growth in Tauriko West and the wider Western Corridor. There is also a functional need for the Project to be located within this corridor. The Project must connect fixed points on the state highway and local road network, provide for grade-separated interchanges, integrate with existing and planned urban growth areas, and respond to topography, floodplains, streams, wetlands and existing development.

The Project will involve works within and near freshwater environments, including natural inland wetlands and streams. The associated effects are assessed in the technical assessments and are proposed to be managed through the Project design, erosion and sediment controls, stormwater treatment, fish passage requirements, the detailed design of the stream realignments, planting, management plans and conditions.

While the alignment has been refined through the Detailed Business Case (DBC), Investment Case, route protection optioneering and design development, it is not practicable to avoid all freshwater features and Natural Wetlands, particularly within the Kōpūrererua Valley. The effects management hierarchy in clause 3.21 has therefore been applied. Effects on freshwater values have been avoided where practicable through route and design refinement, including by bridging higher value environments and the proposed approach to realignment of the Kōpūrererua Stream, Nanako Stream and Belk Road watercourse. Where effects cannot be avoided, they will be minimised through design measures and construction methodology and managed through the proposed conditions. Temporary effects are proposed to be remedied where practicable through reinstatement, revegetation and restoration of disturbed areas.

There will be some residual effects, including as a result of the permanent loss of Natural Wetland extent. The Ecological Impact Assessment (EcIA) (**Volume B – Appendix K**) identifies potential permanent loss of low, moderate and high value wetlands. The assessment concludes that full offsetting of wetland loss through like-for-like wetland creation is not practicable because the required creation area would substantially exceed the land available within or close to the Project corridor. Based on the proposed offset ratios, approximately 9.4 ha of new wetland would be required, while even a simple 1:1 replacement of the approximately 4.94 ha lost could not be accommodated. Suitable land is constrained because wetland creation requires appropriate topography and reliable wetland hydrology, generally in gullies, seepage areas and floodplains, and many of the available locations with those characteristics already support existing wetlands. Opportunities to create additional wetland extent are therefore limited to relatively small areas associated with the stream realignments and adjoining low-lying land.

A wetland compensation package is therefore proposed, comprising wetland restoration and wetland creation, to address residual wetland effects and achieve no net loss of wetland values.

The proposed conditions require any loss of Natural Wetland extent or values to be remedied, offset and/or compensated through wetland remediation, creation and/or restoration of existing Natural Wetlands. A Wetland Management Plan (WMP) will be used confirm the wetlands affected, the extent and values of that loss, and the remediation, creation and/or restoration works needed to achieve the no-net-loss outcome. The conditions also require post-construction assessment of wetland hydrology and a review after five years of whether the required outcome has been achieved, with further measures to be implemented if necessary.

Clause 3.24 of the NPS-FM is also relevant because the Project affects streams and other watercourses and proposes to realign three stream reaches: the Kōpūrererua Stream, Nanako Stream and the Belk Road watercourses. These existing reaches have been modified over time and have limited floodplain connection. The approach to these realignments involves proposed channels to improve stream stability and aquatic

habitat values, including by providing additional stream length, meanders, pools, riffles, wetland margins, riparian planting and fish passage. In particular, the Kōpūrererua Stream realignment will increase the relevant stream reach from approximately 728 m to 1004 m, and the Nanako Stream realignment will increase the relevant stream reach from approximately 583 m to 748 m.
The proposed Stream Realignment Plan (SRP) conditions require the final design for each realigned watercourse to be in general accordance with the relevant Stream Realignment Drawings or, where it is not, to be certified by a suitably qualified person as achieving the specified ecological outcomes. The conditions require the Final Design, construction methodology, establishment and maintenance measures, and monitoring programme for each realignment to be documented through the SRP.

Operational stormwater and flooding effects have been considered on a catchment basis. The Project will introduce approximately 21 ha of new impervious surface. Road runoff is proposed to be treated to the relevant BOPRC and/or NZTA standards before discharge to the receiving environment. Stormwater quantity effects are proposed to be managed through attenuation where required, and outfall erosion protection will be provided.

Hapū engagement has informed the development of the Project and the consideration of freshwater values. Cultural values associated with freshwater, including Te Mana o te Wai, mauri, kaitiakitanga and the health of the Wairoa River and associated waterways, have been taken into account.

Overall, while the Project will result in adverse effects on freshwater environments, including the loss of Natural Wetland extent and the modification of watercourses, those effects have been assessed and are proposed to be managed in accordance with the NPS-FM effects management hierarchy. The Project meets the specified infrastructure pathway in clause 3.22 for Natural Inland Wetlands and the functional need pathway in clause 3.24 for rivers. It is therefore assessed as being consistent with the relevant objective and policies of the NPS-FM.

1.4.4 National Policy Statement for Highly Productive Land 2022

The NPS-HPL provides national direction for the protection of highly productive land for use in land-based primary production.

The NPS-HPL is relevant to the Project because parts of the Proposed Designation affect rural zoned land in either the TCP or WBOPDP. This area includes rural-zoned land within WBOPDC jurisdiction, rural land on the eastern side of Redwood Lane, an elevated parcel of land within the Kōpūrererua valley[18], and land associated with properties off Marshall Avenue[19] and Nature Place[20].

The rural land affected by the Project is predominantly lower-class land, being LUC 6 and LUC 7. Only five properties affected by the Project contain LUC 3 land and therefore meet the interim highly productive land criteria under the NPS-HPL. The LUC 3 land is affected by the SH29A alignment and is generally associated with small rural holdings, being 0.5ha to 7.3ha in size. The largest of those properties[21] is also understood to be used, at least in part, for commercial activities.

Clause 3.9 of the NPS-HPL seeks to avoid the inappropriate use or development of highly productive land that is not land-based primary production. However, the NPS-HPL also expressly recognises that not all use or development of highly productive land is inappropriate. In particular, clause 3.9(2) provides for use or development of highly productive land where it is for an activity by a requiring authority in relation to NoRs, it is associated with the development, operation or maintenance of specified infrastructure and there is a functional or operational need for that use or development to be on highly productive land.

The Project falls within that pathway. NZTA is a requiring authority, the land is required for the Proposed Designation, and the Project is specified infrastructure. It is a linear state highway project that must connect fixed points on the transport network. There is therefore a functional and operational need for the Project to affect the land within the Proposed Designation, including the limited areas of LUC 3 land.

The Project is not an urban rezoning or a proposal for general urban development on highly productive land. The loss of highly productive land is limited to parts of five affected properties and arises from the functional and operational requirements of nationally and regionally significant transport infrastructure. The alignment

[18] 610 State Highway 29A
[19] 140 Marshall Ave
[20] 3, 5 and 9 Nature Place
[21] 9 Nature Place

has been refined through the DBC, Investment Case, route protection optioneering and design development to limit the land required to that necessary to provide for the Project and its associated works.

Overall, the Project is assessed to be consistent with the NPS-HPL.

1.4.5 National Policy Statement for Indigenous Biodiversity 2023

The NPS-IB provides national direction for the protection, maintenance and restoration of indigenous biodiversity. The objective of the NPS-IB is to maintain indigenous biodiversity across New Zealand so that there is at least no overall loss in indigenous biodiversity.

The NPS-IB applies to indigenous biodiversity in the terrestrial environment. Freshwater biodiversity, including effects on rivers, streams and Natural Inland Wetlands, is principally addressed through the NPS-FM and NES-F, as discussed in Section 1.4.3 above. To the extent there is any overlap between the NPS-IB and the NPS-FM, the NPS-FM prevails.

The NPS-IB has a particular focus on identifying and protecting Significant Natural Areas (SNAs). The EcIA identifies one Tauranga City Plan Special Ecological Area (SEA) within the Proposed Designation, being SEA 14 associated with the Kōpūrererua Stream Wetland. However, the EcIA (**Volume B – Appendix K**) notes that the part of the SEA within the Proposed Designation and potentially affected by the Project is a vegetated escarpment that does not appear to form part of the large palustrine wetland feature identified by the SEA. The EcIA also records that the part of the Proposed Designation within the Western Bay of Plenty District does not contain identified Ecological Features or Recommended Areas for Protection.

To the extent that any affected area is an SNA or contains significant indigenous biodiversity for the purposes of the NPS-IB, the Project falls within the specified infrastructure pathway in clause 3.11. The Project is specified infrastructure, provides significant national and regional public benefit, and has a functional and operational need to be located within this corridor. There are no practicable alternative locations that would enable the Project to achieve its functional and operational requirements and avoid all areas of indigenous biodiversity.

The Project has been developed having regard to the NPS-IB objective and relevant policies. Effects on indigenous biodiversity have been avoided where practicable through route and design refinement, including by avoiding higher value environments where practicable. Where effects cannot be avoided, they are proposed to be minimised and managed through construction practices and controls, and management plans and conditions that require mitigation.

The EcIA recommends measures to manage effects on terrestrial vegetation and indigenous fauna. The proposed conditions secure those measures.

The NPS-IB also recognises the importance of specified highly mobile fauna. Policy 15 and clause 3.20 seek to identify and manage areas outside SNAs that support specified highly mobile fauna, in order to maintain viable populations of those species across their natural range. The EcIA has considered indigenous fauna that may use the Project corridor and proposes measures to manage potential effects on those species and their habitats.

The Project also includes a wider ecological restoration and compensation package, which will contribute to the maintenance and restoration of indigenous biodiversity values more generally.
Hapū engagement has informed the development of the Project and the consideration of ecological and freshwater values. Cultural values associated with indigenous biodiversity, Te Mana o te Wai, mauri, kaitiakitanga and the health of the Wairoa River, Kōpūrererua Stream and associated habitats have been taken into account during the development of the Project.

Overall, the Project is assessed as being consistent with the relevant objective and policies of the NPS-IB. The Project will affect modified terrestrial and riparian habitats and may affect habitat for indigenous fauna. Those effects have been assessed in the EcIA and are proposed to be managed through the Project design, management plans, and conditions. To the extent the Project affects significant indigenous biodiversity, the Project meets the specified infrastructure pathway in clause 3.11 and any residual adverse effects are proposed to be managed through the effects management hierarchy. The Project also has a clear functional and operational need to be located within this corridor and forms part of nationally and regionally significant transport infrastructure.

1.4.6 National Policy Statement for Natural Hazards 2025

The NPS-NH provides national direction for the management of natural hazard risk associated with subdivision, use and development. It applies to flooding, landslips, coastal erosion, coastal inundation, active faults, liquefaction and tsunami.

The NPS-NH is of limited direct relevance to the Project because clause 1.3(2) states that it does not apply to 'infrastructure', as defined in the RMA. The Project involves the construction and upgrading of the state highway network. On this basis, the NPS-NH does not apply to the Project and is not assessed further. Natural hazard matters relevant to the Project, including flooding, slope stability, settlement and liquefaction, are addressed in the technical assessments supporting this Application.

1.4.7 National Policy Statement for Electricity Networks 2008

The NPS-EN provides national direction for the operation, maintenance, upgrading and development of the National Grid. It recognises the national significance of electricity transmission and seeks to ensure that the Grid can operate safely, efficiently and securely.

The Project is not an electricity transmission project, and no National Grid transmission lines are located within or near the Project. The NPS-ET is therefore not directly relevant. Policy 11 is nevertheless relevant insofar as it requires decision-makers to manage subdivision, land use and development so that the operation, maintenance, upgrading and development of the electricity transmission network are not compromised. Electricity distribution infrastructure is located within and near the Project corridor and may require protection, relocation or modification during construction. NZTA is engaging with the relevant NUOs to identify affected assets and coordinate any necessary works so that the safe, efficient and reliable operation of the electricity network is maintained.

The Project will not compromise the operation, maintenance or future development of the National Grid or other affected electricity infrastructure. It is therefore consistent with the objective and relevant policies of the NPS-EN.

1.4.8 National Environmental Standard Freshwater 2020

NES-F regulate activities that may affect freshwater and freshwater ecosystems. The NES-F is relevant to the Project because the Project involves works within and near Natural Inland Wetlands, streams and other watercourses.

The NES-F is to be read alongside the NPS-FM. As set out in Section 1.4.3 above, the Project meets the specified infrastructure pathway for effects on Natural Inland Wetlands and the functional need pathway for effects on rivers. Overall, the NES-F consents sought as part of this Application will authorise the freshwater activities required to construct, operate and maintain the Project.

1.4.9 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011

NES-CS regulate activities on land where hazardous activities or industries have occurred, or are more likely than not to have occurred, to ensure that risks to human health are appropriately managed.

Overall, the NES-CS consent sought as part of this Application will authorise the soil disturbance and related works required to construct the Project on land that is subject to, or potentially subject to, HAIL activities, while ensuring that risks to human health are appropriately managed.

1.4.10 Regional and district planning framework

The Project has been assessed against the objectives and policies of the Bay of Plenty Regional Policy Statement (RPS), RNRP, TCP and WBOPDP. These documents generally give effect to, or complement, the national direction addressed above.

The regional and district planning documents contain a number of overlapping and complementary provisions. To avoid repeating substantially the same assessment for each document, the principal regional and local planning issues are addressed thematically in **Table 4**. A detailed provision-by-provision assessment is contained in **Volume B – Appendix B**.

Table 4: Summary of the Project's consistency with the regional and district planning framework

Policy Theme	Project response and assessment
Significant infrastructure, transport integration and planned growth	The RPS and district plans support nationally and regionally significant infrastructure, protection of the strategic transport network and the integration of transport with planned growth. The Project will improve the safety, capacity, reliability and resilience of SH29 and SH29A, provide more effective freight connections and support planned residential and employment growth in the Tauriko West UGA, Tauriko Business Estate (TBE) and the wider Western Corridor. The Project is therefore consistent with the infrastructure, transport and urban-growth provisions of the RPS, TCP and WBOPDP.
Functional and operational requirements	The Project must connect fixed parts of the state highway and local road networks and respond to constraints including existing development, floodplains, freshwater environments, cultural and archaeological values and highway-design requirements. The alignment has been refined through alternatives assessment and design development. While complete avoidance of all sensitive environments is not practicable, the selected corridor appropriately balances the Project's functional and operational requirements with the need to avoid and minimise adverse effects, where practicable.
Tangata whenua, cultural values and kaitiakitanga	The RPS, RNRP and district plans recognise tangata whenua values, kaitiakitanga, cultural relationships with ancestral lands and waters, and the mauri of natural resources. NZTA has engaged with Ngāi Tamarāwaho, Ngāti Hangarau and Ngāti Kahu through the Tupenga mana whenua working group, together with wider iwi and hapū engagement. This engagement has included hui, workshops, site visits and technical discussions and has informed the assessment, design and proposed management of the Project. Cultural values associated with the Wairoa River, Kōpūrererua Stream, associated tributaries, wetlands, archaeological sites and the wider landscape have informed the Project response. Direct effects on Puketoromiro Pā have been avoided, while other cultural effects will be managed through ongoing mana whenua involvement, cultural monitoring, management protocols and the implementation of relevant conditions. The Project therefore recognises the relationship of tangata whenua with their ancestral lands, waters, sites and taonga and provides for the ongoing exercise of kaitiakitanga through monitoring, restoration and implementation.
Freshwater, and indigenous biodiversity	The RPS and RNRP seek the integrated management of land and water, protection of water quality and mauri, avoidance of wetland and river loss where practicable, maintenance of fish passage and aquatic habitat, and appropriate management of activities within and near waterbodies. The Project will affect wetlands, watercourses, vegetation and fauna habitat. Higher-value freshwater environments have been avoided where practicable. Effects on watercourses will be managed through the proposed approach to stream realignments and by providing for fish passage, aquatic habitat, riparian planting, construction controls and monitoring.

Table 4: Summary of the Project's consistency with the regional and district planning framework

Policy Theme	Project response and assessment
	Effects on wetlands will be addressed through the proposed wetland management package, including wetland creation, restoration and enhancement of retained wetlands, together with monitoring and ongoing management. Wider biodiversity effects will be managed through planting, habitat restoration and fauna-management measures. Although some residual effects will remain, the proposed avoidance, management, restoration and compensation measures respond appropriately to the relevant freshwater and biodiversity provisions.
Earthworks, discharges and contaminated land	Large-scale earthworks and associated sediment, dust and contaminated-land risks will be managed through detailed design, the use of appropriate erosion and sediment controls and management plans and monitoring as per the consent conditions. The proposed framework is consistent with the relevant land-management and discharge provisions.
Natural hazards, stormwater and resilience	The Project has been assessed on a catchment-wide basis and designed to maintain flood conveyance, floodplain storage and overland-flow functions. Stormwater treatment, attenuation and erosion protection will be provided where required, with allowance for climate change. Subject to detailed design and implementation of the proposed controls, the assessments conclude that the Project will not materially increase natural-hazard risk to property. The Project will also improve the resilience of the strategic transport network and is consistent with the relevant regional and district natural-hazard provisions.
Landscape, amenity, noise and adjoining activities	The Project will change the existing environment and create temporary and permanent landscape, noise and amenity effects. These effects will be managed through alignment and design refinement, planting, screening, low-noise surfacing and construction-management measures. The resulting effects are appropriate in the context of the existing rural, urban and infrastructure environment, planned urban growth and the Project's significant transport benefits. Management plans are proposed to manage noise, vibration and dust during the construction process.
Historic heritage and archaeology	The Project has been informed by archaeological assessments, mana whenua engagement and route refinement. Known and potential archaeological effects will be managed through the relevant archaeological authorities, archaeological management plans, cultural monitoring and accidental-discovery procedures. The Project therefore appropriately recognises historic-heritage and archaeological values and provides a clear framework for managing effects that cannot be avoided.

The regional and district planning framework supports the Project's strategic transport, safety, resilience and growth-enabling benefits. The Project has a clear functional and operational need to connect fixed parts of the state highway and local road networks within the proposed corridor.

The principal areas of policy tension relate to the loss and modification of natural wetlands and watercourses, effects on freshwater and terrestrial ecological values, and effects on cultural, landscape and amenity values. Those effects have been specifically assessed and avoided or minimised where practicable through route selection and design development. Remaining effects will be addressed through the proposed conditions and associated management plans.

Overall, the Project is assessed as being consistent with the relevant objectives and policies of the RPS, RNRP, TCP and WBOPDP.

1.5 Relevant Treaty Settlements and Iwi Management Plans

1.5.1 Treaty Settlements

The Treaty settlements relevant to the Project area and its downstream receiving environments have been reviewed (**Volume B – Appendix C)**. These include the Ngāti Pūkenga Claims Settlement Act 2017, the Ngāi Te Rangi and Ngā Pōtiki Deed of Settlement, the Tauranga Moana Iwi Collective Deed of Settlement and the Ngā Hapū o Ngāti Ranginui Claims Settlement Act 2025.

These settlements recognise the historical, cultural, spiritual and traditional relationships of Tauranga Moana iwi and hapū with their ancestral lands, waterways, coastal environments, Tauranga Moana and associated natural resources. The settlements provide important context for engagement with iwi and hapū whose recognised areas of interest include the Project area or the freshwater and coastal receiving environments to which the Project ultimately drains.

The Project is not located on any cultural redress property identified in the settlements. No settlement provision or statutory acknowledgement has been identified that prevents the Project or imposes a separate approval requirement in relation to the works proposed. The Project is, however, located within the wider Tauranga Moana catchment and affects waterways that ultimately discharge to Tauranga Moana and Te Moana ā Toi. The relationships and interests recognised through the settlements are therefore relevant to the assessment and management of effects on freshwater, ecological and cultural values.

NZTA has recognised those relationships through its engagement with mana whenua and wider iwi authorities, the incorporation of cultural values into the Project design and proposed management framework. The proposed measures relating to freshwater management, wetland restoration, ecological enhancement, cultural monitoring, archaeological processes and ongoing mana whenua participation also respond to the broader cultural and environmental interests recognised through the settlements.

Overall, the Project is not inconsistent with the relevant Treaty settlements and does not directly affect any identified cultural redress property.

1.5.2 Iwi Management Plans

The Project has been assessed against the relevant iwi and hapū management planning documents prepared by Ngāi Te Rangi, Ngāti Pūkenga, Ngāti Kahu, Ngāi Tamarāwaho and Ngāti Hangarau, together with the Tauranga Moana Iwi Management Plan 2016–2026. The documents differ in their geographic focus and level of detail but contain a number of common themes relating to:

- Recognition of mana whenua, rangatiratanga and the exercise of kaitiakitanga;
- Active and ongoing tangata whenua participation in environmental decision-making, design, monitoring and implementation;
- Protection and restoration of the mauri of freshwater, wetlands and receiving environments;
- Recognition of the interconnected relationship between land, waterways, and Tauranga Moana;
- Protection of indigenous biodiversity, aquatic habitat, fish passage, mahinga kai and cultural heritage; and
- Restoration and enhancement of degraded natural and cultural resources.

A detailed assessment is provided in **Volume B – Appendix C**.

These matters are relevant because the Project affects waterways, wetlands, habitats and cultural landscapes recognised in the management planning documents, including the Kōpūrererua Stream, the Wairoa River catchment, associated tributaries and their downstream receiving environments. The documents consistently promote a holistic approach that recognises the connections between land, freshwater, wetlands, ecosystems, people and Tauranga Moana.

The Project response has been informed through engagement with the Tupenga hapū. Hui, workshops and technical discussions have informed the assessment, route and design development, and the proposed cultural and environmental management framework.

The Project has responded to the outcomes sought in the management plans through route and design refinement, avoidance of higher-value environments and sites where practicable and managing effects on matters of significance to mana whenua through mitigation measures, and proposed involvement in monitoring activities.

While some adverse effects on freshwater, ecological and cultural values cannot be entirely avoided, those effects have been appropriately recognised and addressed through a comprehensive package of response measures.

Overall, the Project is assessed as being consistent with the common outcomes sought by the relevant iwi and hapū management planning documents.

1.6 Notice of Requirement

1.6.1 Section 171 requirements

Section 171(1) of the RMA is of relevance to the NoR. The matters set out in section 171(1) are addressed as follows:

- The effects on the environment of allowing the requirement (Section 1.9);
- Part 2 of the RMA (Section 1.8);
- Relevant provisions of national environmental standards, policy statements, regional policy statements, and plans (Section 1.4);
- Consideration of alternative sites, routes or methods for undertaking the work (Section 1.6.3);
- Whether the work and designation are reasonably necessary for achieving the objectives of NZTA (Section 1.6.2); and
- Other matters that a territorial authority would consider reasonably necessary to make a recommendation on the requirement (Section 1.6.4).

1.6.2 Reasonable necessity of the designation

An assessment is required of whether the work and the designation are reasonably necessary for achieving NZTA's objectives.[22] In this context, "reasonably necessary" does not mean that the Project is the only possible way to achieve those objectives, but nor is it enough that the Project is merely convenient or desirable.

NZTA's overarching objectives for the Project are set out in Volume A, Section 1.5. In summary, the Project seeks to improve journey-time reliability between Ōmanawa and the Takitimu North Link, including through access to key economic areas such as the Port of Tauranga; support growth in western Tauranga by increasing capacity on the state highway and local arterial network; and improve safety so as to reduce deaths and serious injuries on the arterial corridor.

The Project works include the construction, operation and maintenance of a new state highway corridor and associated infrastructure, including new and upgraded sections of SH29 and SH29A, interchanges, local road connections, access arrangements, stormwater infrastructure, construction yards, utility works and ancillary infrastructure.

The Project works are reasonably necessary to achieve NZTA's objectives because they will provide the physical infrastructure required to improve journey time reliability, increase network capacity, support planned growth in the Western Corridor, improve safety on the SH29 and SH29A corridors, and provide a more resilient transport network.

The use of the designation mechanism is also reasonably necessary to achieve NZTA's objectives because it:

[22] Schedule 5, clause 12(1)(g) of the FTAA

- Identifies and provides statutory protection of the land required for the Project;
- Prevents land use and development that could compromise or preclude the future construction, operation and maintenance of the Project;
- Manages land use interface risks within and adjacent to the Project corridor;
- Enables the integrated and staged delivery of transport infrastructure required to meet long-term demand;
- Provides certainty for NZTA, councils, landowners, infrastructure providers and the wider community about the location and extent of the Project; and
- Enables a single, unified set of conditions that apply to the Project.

For these reasons, both the Project works and the designation are reasonably necessary to achieve NZTA's objectives.

1.6.3 Consideration of Alternatives

1.6.3.1 Background

NZTA has considered alternative sites, routes and methods for the Project through a staged and iterative process over a number of years. That process builds on earlier strategic planning, engagement and business case work including the Tauriko Network PBC, the Tauriko Network Connections DBC, and the Tauriko West Investment Case (Investment Case), and subsequent route protection optioneering undertaken by the Project Team.

1.6.3.2 Indicative Business Case and Detailed Business Case options considered and recommended option

The DBC considered alternatives and options through an iterative option development process, with evaluation and refinement undertaken between 2017 and 2023. That process built on earlier work undertaken through the PBC and the 2017 Indicative Business Case (IBC) phase and was then progressed through two DBC option investigation phases.

IBC options

The IBC divided the corridor into geographic sections and considered different combinations of highway alignments, intersection forms and local-road connections between Ōmanawa Road and Barkes Corner. Four strategic highway options were shortlisted, each involving substantial improvement or realignment of SH29 and grade separation at key network intersections.

DBC Phase 1

DBC Phase 1 commenced by revisiting the IBC short list. The IBC options had largely assumed offline SH29 works and grade-separated interchanges and had not tested a sufficient range of lower-cost or lower-intervention alternatives. The option set was therefore broadened in accordance with the intervention hierarchy. The corridor was initially considered in two broad sections:

- Ōmanawa Road to Cambridge Road; and
- Cambridge Road to Barkes Corner.

For the western section, both online and offline SH29 corridors were tested, together with alternative cross-corridor connections, interchange locations, posted speeds and arrangements for access between Tauriko West and TBE. For the eastern section, a range of alternatives was considered for the Cambridge Road/Tauriko West connection, the Takitimu Drive interchange and Barkes Corner.

Multiple alternatives were assessed for the Cambridge Road/Tauriko West connection, including online and offline state highway alignments, different local road connections and staged delivery approaches.

Following the 2018 Transport Agency Investment Proposal review, three options were taken forward to Phase 2. They were:

- A lower-cost option based mainly on upgrading SH29 within or close to its existing corridor;
- An online option with greater use of grade-separated interchanges; and
- A more extensive offline SH29 option that provided clearer separation between strategic and local traffic.

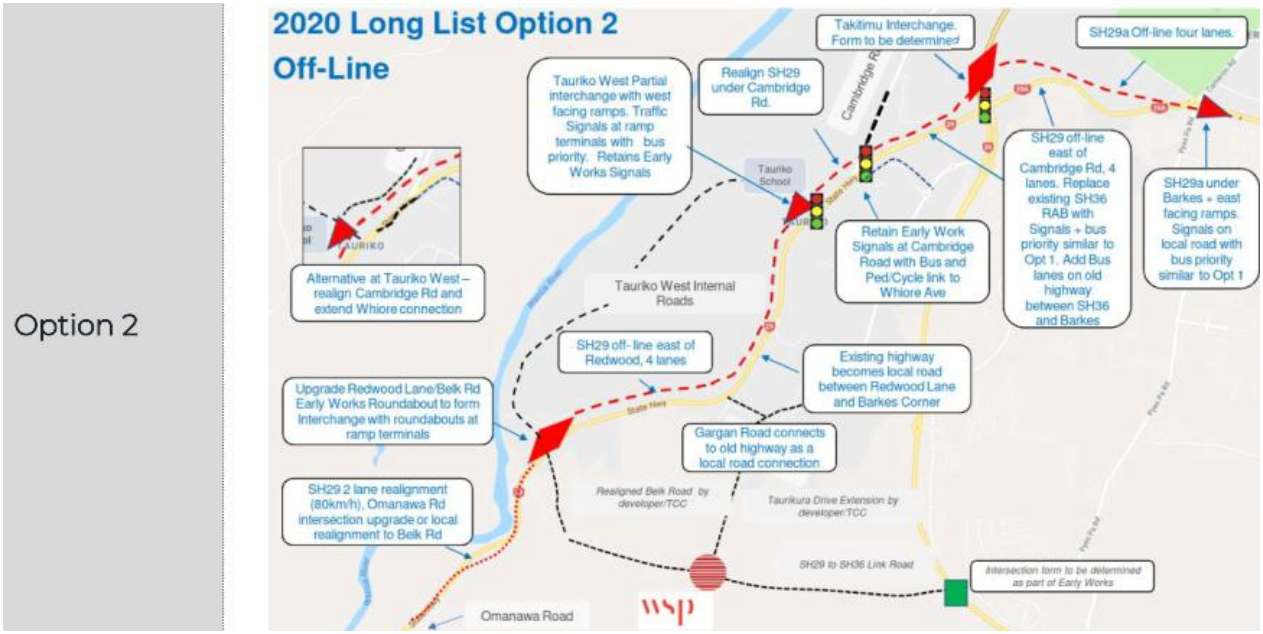
DBC Phase 2

During Phase 2, the three short-list options were revisited and updated in response to UFTI and the Transport System Plan (TSP). A revised long list of six options was developed in 2020. The options represented a spectrum from lower-cost improvements making greater use of the existing corridors, through to substantial offline highway solutions and grade-separated interchanges.

The Phase 2 assessment considered a range of online and offline highway solutions, alternative interchange configurations, local road connections, public transport provision, active transport facilities and staging approaches.

The DBC then moved from the long-list options to a short list of four options which tested different combinations of online and offline SH29 and SH29A improvements, intersection forms, local road connections, public transport priority, walking and cycling connections, and staging. By May 2021, the short-list evaluation identified Option 2[23] as the emerging recommended option. Compared with the other short-listed options, Option 2 performed better overall against the long-term investment objectives, particularly because it provided stronger separation between strategic and local traffic, better freight and network performance, improved safety outcomes and greater support for planned growth (see **Figure 1)**.

Figure 1: Option 2 from Detailed Business Case



Further refinement was then undertaken between 2021 and 2023. This included testing variations to Option 2 to improve network performance, reduce effects and respond to feedback from project partners and the community. These refinements resulted in Option 2 Hybrid being taken forward as the emerging recommended option.

In 2022 and 2023, further value engineering and option refinement was undertaken to respond to the approved Tauriko Enabling Works, updated traffic and safety modelling, community feedback, changes in construction and property costs, and increased emphasis on climate change and emissions.

Further value engineering resulted in two final options (Options 1V and 2V), which were comparatively assessed through updated MCA analysis and sensitivity testing.

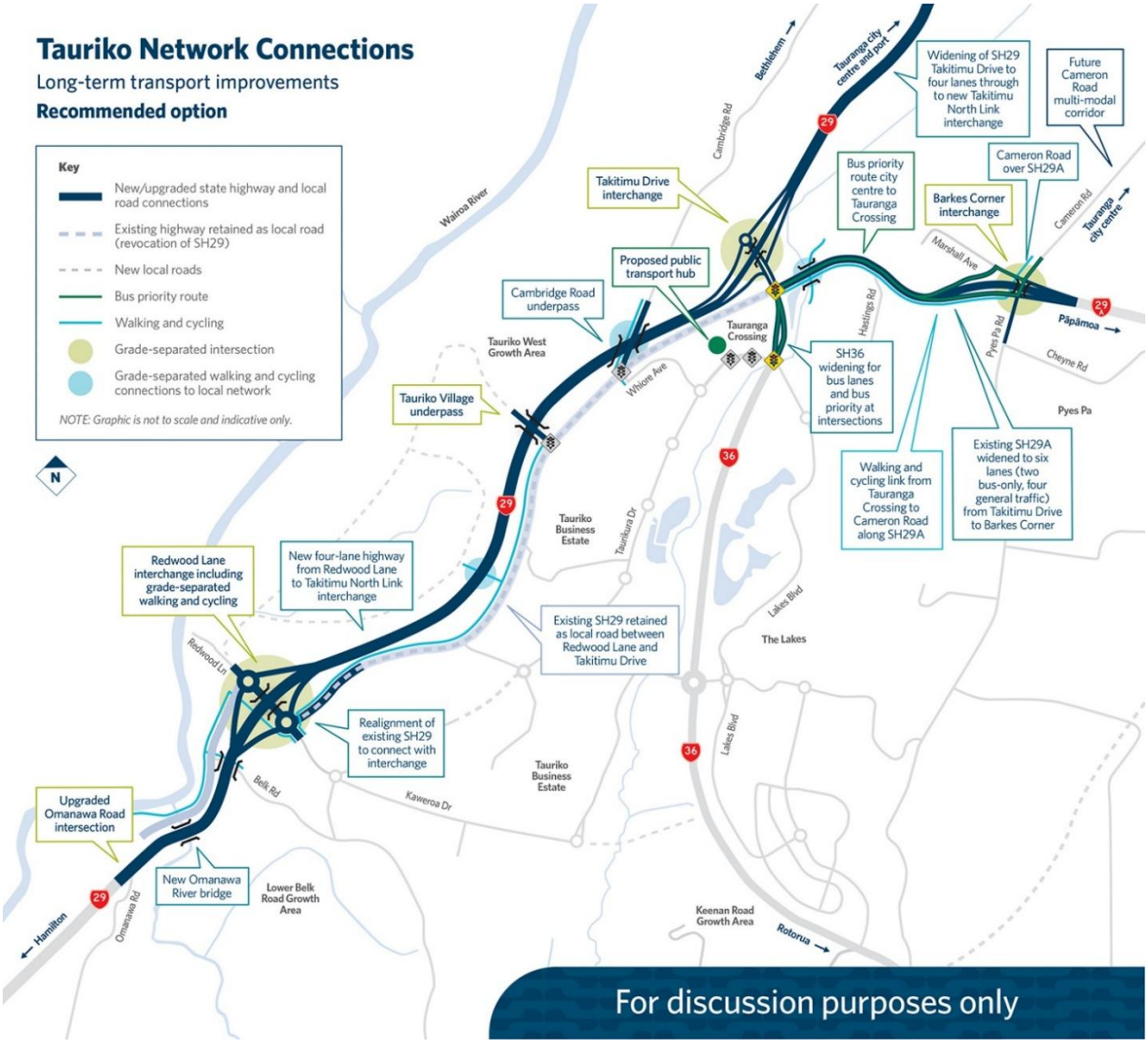
[23] Table 6-8 of Tauriko Network Connections Detailed Business Case, 14 June 2023

The two final options were evaluated through an updated MCA process and sensitivity testing. Option 2V was identified as the highest-ranked option and was selected as the DBC recommended option. Compared with Option 1V, Option 2V provided the better overall balance of long-term transport performance, safety, integration with planned growth, separation of strategic and local traffic, and network resilience, while retaining an acceptable level of cost, property and environmental effects (see **Figure 2)**.

Option 2V (as per **Figure 2**) provided for:

- A new offline SH29 corridor;
- Upgrades to SH29A and SH36;
- Grade-separated interchanges at key network connections; and
- Supporting public transport, walking and cycling infrastructure.

Figure 2: DBC Recommended Option (Option 2V)



1.6.3.3 Investment Case refinement and emerging preferred design

The Tauriko West Investment Case built on the DBC recommended option and refined its scope, staging and design response to better align with the RoNS direction and GPS 2024 priorities, particularly economic growth and productivity, value for money, and delivery certainty.

The key changes from the DBC option were:

- ***Staging:*** SH29 offline was brought forward ahead of SH29A, as it has stronger alignment with the refined investment objectives, particularly freight access, economic growth, productivity and resilience. SH29A remains within the Project scope because it is complementary to SH29 offline and supports movement around the harbour and access to and from the eastern Bay of Plenty.
- ***Design speed:*** the design speed was increased from the DBC assumption of 80km/h on SH29 and SH29A to allow for 110km/h on SH29 and 100km/h on SH29A.
- ***Futureproofing:*** route protection for six lanes on SH29A and SH36, and for a wider corridor at Barkes Corner, was retained to accommodate future growth, while the immediate construction scope for SH29A was refined to four lanes.
- ***Public transport:*** dedicated bus priority lanes on SH29A and SH36 were removed from the RoNS construction scope, with corridor width retained to provide for future transport capacity.
- ***Walking and cycling:*** the walking and cycling scope was value engineered to provide like-for-like replacement of existing facilities where severed by the Project, with other improvements removed where they were not necessary to achieve the Project investment outcomes.

The resulting Investment Case option (see **Figure 3**) comprised a new offline four-lane SH29 corridor between Redwood Lane and the Takitimu Northern Link, upgrading of SH29A to four lanes, key interchange and intersection improvements, revocation of the existing SH29 corridor, replacement walking and cycling connections where required, and route protection on SH29A and SH36 to accommodate future growth. Compared with the DBC option, the Investment Case option provided a more focused and deliverable response to the revised investment objectives. It prioritised the components that provided the greatest freight, productivity, safety and resilience benefits, while retaining route protection and sufficient corridor width to accommodate future network growth.

Figure 3: Investment Case recommended option

1.6.3.4 2025/2026 design optioneering

Following the Investment Case, further option assessment was undertaken to refine the network configuration and alignment for consenting design purposes. This work focused on confirming a corridor that could achieve the Project objectives, while providing sufficient flexibility for detailed design and construction.

A key focus of this phase was the SH29A corridor between the Takitimu Drive Interchange and Barkes Corner. As noted above, the Investment Case had identified upgrades to SH29A as part of the Project scope. The subsequent route protection work considered whether SH29A should remain largely within the existing corridor, with local and state highway traffic sharing the corridor, or whether a more separated arrangement should be adopted.

The options were evaluated using a comparative MCA-style method. The assessment considered how each option performed against the Project objectives, including freight and state highway connections, support for housing growth and safety, as well as constructability, consentability, customer and public outcomes, land transport integration, stormwater and flooding, landscape and visual matters, ecology, archaeology, property impacts, technical complexity, noise and vibration, staging flexibility and relative cost.

The preferred approach is an offline SH29A alignment, with the existing SH29A corridor retained for local road movements. Compared with retaining SH29A substantially within the existing corridor, the offline alignment performed better overall because it better separates inter-regional state highway traffic from local traffic, reduces conflict between different trip purposes, improves network efficiency, and supports the ability to achieve a higher operating speed on SH29A. It also reduces the extent of works required within the existing live traffic corridor, particularly around the existing SH29/SH36 intersection and Barkes Corner and provides greater flexibility for staging and construction.

The 2025/2026 optioneering also informed changes to the Barkes Corner Interchange. Earlier options included a full diamond interchange arrangement. However, further assessment identified that a full diamond arrangement would introduce additional complexity, property impacts and construction disruption, particularly around Marshall Avenue and Cameron Road. A partial diamond arrangement is now preferred, as it better reflects the intended network function, supports separation of local and through traffic, reduces unnecessary interchange movements, and provides a more efficient and constructible outcome than a full diamond alternative.

1.6.3.5 Belk Road and watercourse options

Detailed optioneering has also been undertaken for specific elements of the Project, including the Belk Road crossing and associated watercourse. This work was undertaken because the Project crosses an area of gully deposits where constructability, settlement risk, watercourse management and property access are closely interrelated.

The options considered included retaining the Belk Road connection, removing the Belk Road connection and acquiring severed or landlocked land, culvert-based watercourse options, bridge-based watercourse options, combined Belk Road and watercourse structures, different watercourse alignments, and different ground improvement methods.

The options were assessed, using indicative costings and a risk-based evaluation of constructability, long-term maintenance, programme risk, environmental outcome, cost certainty, earthworks requirements, ground improvement requirements, stream management and property implications.
The structural and watercourse options were then compared by considering both the Belk Road connection and the watercourse crossing separately, and then in combination. When Belk Road was considered in isolation, retaining the road connection by way of a bridge was preferred because the cost and property implications of acquiring landlocked land were not justified. When the watercourse was considered in isolation, a box culvert appeared lower cost, but carried higher risks associated with constructability, cost certainty, programme, environmental outcomes, culvert length and fish passage.

On an overall basis, the combined bridge and watercourse realignment option was preferred. Compared with separate bridge and culvert alternatives, that option provides a single integrated solution for the Belk Road connection and watercourse crossing, avoids severance and property access issues, creates efficiencies by combining the property access and watercourse structure, better avoids areas susceptible to settlement, and provides more flexibility for construction staging around ongoing stream flows.

1.6.3.6 Summary of alternatives assessment

Overall, the alternatives assessment undertaken for the Project demonstrates a robust, iterative, and replicable consideration of alternative sites, routes and methods. The assessment has occurred at several levels, from strategic network planning and business case optioneering, through to Investment Case refinement, route optioneering and design-level assessment of specific Project elements.

In summary:

- The DBC confirmed the need for a substantial network intervention to support growth in the Western Corridor, maintain the strategic freight function of SH29 and SH29A, and improve safety;
- The DBC option was refined through the Investment Case to better align with the RoNS direction and GPS 2024 priorities, including changes to staging, design speed, futureproofing, public transport, walking and cycling, and delivery approach;
- The 2025/2026 route protection and design optioneering further refined the SH29A alignment, resulting in the adoption of an offline SH29A alignment and a partial diamond arrangement at Barkes Corner;
- Further design-level optioneering has informed specific Project elements, including the preferred Belk Road and watercourse solution; and
- The alternatives assessment has considered transport performance, constructability, cost, property impacts, environmental outcomes, staging, resilience and long-term network function.

The selected option has emerged as the preferred solution because it best achieves the Project objectives while appropriately managing environmental, social, property and technical constraints.

1.6.4 Other Matters

There are three third party designations within the Proposed Designation:

- Ministry of Education (MoE) designation for the Tauriko School primary school (ME24).[24]
- WBOPDC designation for their offices/depot and workshop (WB1).[25]
- TCC designation for the widening of Pyes Pa Road (C95).

NZTA will need to obtain written consent from those requiring authorities under section 177 of the RMA given that they have existing designations within the Proposed Designation.

1.7 Resource consents

1.7.1 Section 104

Section 104 of the RMA sets out the matters that must be considered when assessing an application for resource consent.

Under section 104(1)(a), regard must be had to the actual and potential effects on the environment of allowing the activity. The actual and potential effects of the Project have been assessed in Section 1.9 and are addressed in detail within each Technical Assessment.

The Technical Assessments conclude that the relevant effects can be appropriately managed through the Project design, proposed mitigation and conditions. In some areas, particularly freshwater and ecological effects, offsetting and compensation are also proposed where required. Overall, the resource consent effects will be appropriately managed through the proposed consent conditions.

Under s104(1)(ab), regard must be had to any measure proposed or agreed by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for adverse effects. The Project includes a package of mitigation, offsetting and compensation measures, that are secured through the proposed conditions and form part of the overall response to the Project's adverse effects.

Under section 104(1)(b), regard must be had to the relevant provisions of national environmental standards, national policy statements, regional policy statements, regional plans and district plans. These documents have been assessed in Section 6.4 which concludes that the Project is generally consistent with the relevant planning framework.

[24] 7660L State Highway 29
[25] 1484 Cameron Road

Under section 104(1)(c), regard may also be had to any other matter considered relevant and reasonably necessary to determine the application. Relevant other matters include the Project's status as a listed project under the FTAA, its identification as a RoNS, the GPS 2024, the Bay of Plenty Regional Land Transport Plan, and the relevant strategic and spatial documents for Tauranga and the western Bay of Plenty sub-region. These documents are directly relevant because they identify the importance of improving the western transport corridor, supporting growth in Tauriko West, maintaining reliable freight connections to the Port of Tauranga, and improving safety and resilience on SH29 and SH29A.

Overall, the resource consent applications satisfy the relevant s104 matters. While the Project will result in some unavoidable adverse effects, those effects can be appropriately managed through the proposed design, mitigation, offsetting, compensation, management plans and conditions.

1.7.2 Section 105

Section 105 of the RMA requires that, for a discharge permit, the consent authority must also have regard to the nature of the discharge and the sensitivity of the receiving environment to adverse effects, the applicant's reasons for the proposed choice, and any possible alternative methods of discharge, including discharge into other receiving environments.
Details of the proposed discharges are provided in the following Technical Assessments and are discussed briefly against the section 105 matters below:

- Construction Water Assessment (**Volume B – Appendix M**) for stormwater discharges during construction.
- Flood Effects, Stormwater Management, and Streams, Bridges and Culverts (**Volume B – Appendix N**) for operational stormwater discharges.
- Construction Air Discharge Assessment (**Volume B – Appendix Q**) for air discharges during construction.

1.7.2.1 Stormwater discharges during construction

Construction stormwater discharges will primarily comprise treated sediment-laden runoff from earthworks, stream works, access tracks, haul roads, construction yards and other construction areas. These discharges are standard for a project involving large-scale earthworks. There is also the potential for other construction-related contaminants, such as fuels, oils and cement, to enter construction runoff, which will be appropriately managed.
The proposed approach is to manage runoff close to the area of works, treat it through best practice erosion and sediment controls, and discharge it to the relevant receiving environment. This approach reflects standard practice for earthworks projects and avoids transferring runoff between catchments or creating new discharge points in unrelated receiving environments.

Concept Erosion and Sediment Control Plans (ESCPs) have been prepared[26] to demonstrate how erosion and sediment controls can be implemented across the Project, taking into account the nature of the works and the relevant receiving environments. Final ESCPs will be prepared for each stage or area of works and submitted for certification prior to works commencing in that area.

Construction stormwater discharges will be managed through certified ESCPs, using best practice erosion and sediment controls. On this basis, the proposed discharge approach is appropriate having regard to the section 105 matters.

1.7.2.2 Operational stormwater discharges

Operational stormwater discharges will comprise runoff from the new and upgraded road surfaces, including SH29, SH29A, interchanges and associated local road connections. These will be long-term discharges associated with the increase in impervious surfaces created by the Project.

These discharges are also standard for a roading project of this nature. The proposed approach is to capture and treat road runoff before discharging it to the receiving environment in a way that maintains existing catchment drainage patterns and avoids transferring runoff to unrelated receiving environments.

[26] See Appendix B of the Construction Water Assessment (Volume B – Appendix M).

Operational stormwater discharges will be managed through treatment devices, attenuation where required, erosion protection and detailed design. On this basis, the proposed discharge approach is appropriate having regard to the Section 105 matters.

1.7.2.3 Air discharges during construction

Air discharges will primarily be dust from construction activities, areas and materials. There may also be temporary odour from activities such as asphalt placement. The receiving environment varies along the Project corridor and includes rural, industrial, developing urban and established residential areas.

There is no practical alternative receiving environment, as the air discharges are generated by construction activities along the Project corridor. There are also no practicable alternative methods of discharge, as dust and odour discharges are standard for major roading and earthworks projects. These effects are well understood, are temporary and will be managed effectively through standard, best-practice construction controls. On this basis, the proposed approach to construction air discharges is appropriate having regard to the section 105 matters.

1.7.3 Section 107

Section 107 of the RMA restricts the granting of discharge permits where, after reasonable mixing, the discharge is likely to give rise to any of the following effects in the receiving waters:

- The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; or
- Any significant adverse effects on aquatic life.

As set out in the s105 assessment above, construction stormwater discharges will be managed through certified ESCPs, with best practice erosion and sediment controls implemented. Operational stormwater discharges will be managed through treatment devices, attenuation where required, erosion protection and detailed design.

On this basis, the Project is not expected to give rise to the adverse effects listed in section 107 of the RMA.

1.8 Assessment against Part 2

1.8.1 Section 5 – Purpose

The purpose of the RMA is to promote the sustainable management of natural and physical resources and is set out in section 5 of that Act.

The Project is consistent with the purpose of the RMA. It will provide significant transport, safety, resilience, freight efficiency, economic and urban growth benefits at a local, regional and national level. The Project will improve the functioning of the state highway network, support planned urban growth in Tauriko West and the wider Western Corridor and improve the safety and reliability of strategic transport connections.

The Project will also result in potential adverse effects on natural and physical resources, which have been assessed in the technical reports supporting this Application and are addressed in Section 1.9 of Volume B. The Project has been developed to avoid adverse effects where practicable, and to remedy, mitigate, offset or compensate for effects where avoidance is not practicable.

Overall, the Project will enable the use and development of physical resources in a manner that provides for social, economic and cultural wellbeing and health and safety, while appropriately managing adverse effects on the environment. The Project is therefore consistent with section 5 of the RMA.

1.8.2 Section 6 – Matters of national importance

Section 6 of the RMA identifies matters of national importance that must be recognised and provided for. The matters most relevant to the Project are:

a) The preservation of the natural character of rivers, streams, wetlands and their margins, and the protection of them from inappropriate subdivision use and development;
b) The protection of outstanding natural features and landscapes from inappropriate use and development;
c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
d) The maintenance and enhancement of public access to and along rivers and streams;
e) The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga;
f) The protection of historic heritage from inappropriate subdivision, use and development; and
g) The management of significant risks from natural hazards.

The Project will affect rivers, streams, wetlands and their margins, principally through the realignment of the Belk Road watercourse, Kōpūrererua Stream and Nanako Stream, and project works. The affected freshwater environments are already modified to varying degrees. The Landscape Assessment (**Volume B – Appendix J**) identifies that natural character effects will generally be low to low-moderate adverse during construction, reflecting temporary disturbance and modification, but will reduce over time as the proposed naturalised stream realignments, riparian and wetland planting and ecological restoration measures establish. For the Belk Road watercourse, effects are expected to transition from low adverse during construction to positive in the medium to long term. For the Kōpūrererua and Nanako Streams, effects are expected to reduce from low-moderate adverse during construction to low, benign and ultimately positive over time. Overall, natural character effects are assessed as ranging from very low adverse to benign and positive.

The Project intersects the Wairoa River Outstanding Natural Feature and Landscape (ONFL) identified in the WBOPDC near the Ōmanawa Bridge and Wairoa River corridor. The Landscape Assessment concludes that the identified characteristics and values of this area will be maintained and that, with the proposed landform integration and planting, adverse landscape effects will be low. The Project is therefore not considered to constitute inappropriate subdivision, use or development of that outstanding natural feature and landscape.

Ecological effects have also been assessed, including effects on indigenous vegetation, wetlands, streams, avifauna, lizards and aquatic fauna. The Project avoids higher value areas where practicable (i.e. stream realignments) and includes measures to manage residual effects through the proposed conditions.
Existing public access and walking and cycling connections will be maintained or reinstated where affected by the Project. The Project also provides new and improved walking and cycling facilities and retains access through and alongside parts of the Kōpūrererua Valley and associated waterways.

The relationship of Māori with ancestral lands, water, sites, wāhi tapu and other taonga has been recognised through ongoing engagement with mana whenua, including through Tupenga, archaeological management, freshwater design input, cultural protocols and proposed conditions. That engagement has informed the Project design and the measures proposed to manage cultural effects.

Historic heritage and archaeological effects have been assessed, including effects on known and potential archaeological sites and culturally significant landscapes. Archaeological Authorities are sought under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA), and conditions and protocols are proposed to manage archaeological discoveries, monitoring and effects on heritage values.

Flooding and other natural-hazard risks have been considered. The Project has been designed to maintain the conveyance of flood flows and, as far as reasonably practicable, avoid increasing flood risk at existing habitable buildings. The design also provides for the continued functioning of floodplains, overland-flow paths and flood-storage areas where these are affected by the works. Stormwater infrastructure, bridges, culverts and stream realignments will also be designed to safely convey flood flows and avoid creating or exacerbating significant natural-hazard risks.

Overall, the Project recognises and provides for the relevant matters of national importance in Section 6.

1.8.3 Section 7 – Other matters

Section 7 of the RMA identifies other matters to which particular regard must be had. The matters most relevant to the Project include kaitiakitanga, the ethic of stewardship, the efficient use and development of natural and physical resources, the maintenance and enhancement of amenity values, intrinsic values of ecosystems, maintenance and enhancement of the quality of the environment, the finite characteristics of natural and physical resources, and the effects of climate change.

The Project represents an efficient use and development of physical resources. It will provide new and upgraded state highway infrastructure within a corridor identified through a long-term strategic planning and business case process. The Project will improve the efficiency, safety, reliability and resilience of the transport network, while supporting planned urban growth and the movement of people and freight.

The Project has also had regard to amenity values and the quality of the environment. Effects on landscape, visual amenity, noise, air quality, construction traffic, stormwater, flooding, ecology, cultural values and archaeology have been assessed and will be managed through design measures and proposed conditions. While the Project will change the existing environment, particularly for some adjoining landowners and communities, the effects of that change will be appropriately managed and mitigated, particularly relative to the Project's benefits.

Kaitiakitanga and the ethic of stewardship have been recognised through engagement with hapū and the incorporation of cultural, ecological and freshwater outcomes into the Project design and proposed conditions. The intrinsic values of ecosystems have also been considered through the ecological assessments and through the proposed management of effects on terrestrial, wetland and freshwater environments.

The development of the Project has had regard to the effects of climate change, in order to improve the resilience of a strategically important transport corridor.

Overall, the development of the Project has had appropriate regard to the relevant Section 7 matters.

1.9 Assessment of effects on the environment

1.9.1 Overview

This section provides an assessment of the actual and potential effects associated with the construction, operation, use and maintenance of the Project. It draws on the description of the existing environment in **Volume A** and summarises the findings of the supporting Technical Assessments.

The assessment has been prepared on the basis of the Indicative Design, while recognising that the final design may be refined within the Proposed Designations and subject to the proposed conditions. Design work for the Kōpūrererua Stream, Nanako Stream and Belk Road Watercourse realignments has been more detailed. The assessment therefore addresses the potential effects of the above design features, with sensitivity testing to account for potential changes in the final design.

The assessment process has informed the Project layout and the measures proposed to manage effects. Where adverse effects remain, the following sections identify the relevant management and mitigation measures within the proposed conditions that will address those effects.

Each section below includes a summary of:

- Whether the effects are construction-related, operational or permanent;
- The nature and scale of the effects;
- The proposed measures to avoid, remedy, mitigate, offset or compensate for adverse effects, where appropriate; and
- The residual level of effects on the environment (if any).

1.9.2 Summary of effects

A high-level summary of the actual and potential effects of the construction, operation, use and maintenance of the Project is set out in **Table 5**, along with the scale of effects, post-implementation of the mitigation proposed by NZTA.

Table 5: Summary of actual and potential effects

Actual or potential effects / type of effect	Scale of effect (post mitigation proposed by NZTA)
Traffic and Transport	
Potential adverse construction (temporary) effects regarding: • Increased light and heavy vehicle movements; • Operation of site access points and interactions between construction traffic and general traffic; • Temporary traffic management, road layout and speed changes, diversions and disruption or delay; and • Temporary effects on property access, pedestrians and cyclists. Potential positive operational effects regarding: • Increased network capacity and improved corridor performance; • Improved travel-time reliability, freight efficiency and resilience; • Improved road safety; and • Reduced traffic, including heavy vehicles, on the existing SH29 and SH29A corridors and improved local connectivity.	**Less than minor adverse effects (construction)** following implementation of the CTMP and temporary traffic management measures. The CTMP will address construction staging, heavy-vehicle routes and site access points, traffic disruption, road-user safety and access to adjacent landuses. **Substantial positive effects (operational).** Operational effects are positive and do not require mitigation.
Noise and vibration	
Potential adverse construction (temporary) effects regarding: • Construction noise from earthworks, piling, retaining walls, pavement works and construction yards; • Temporary exceedances of construction noise criteria at nearby residential properties; • Localised construction vibration effects, including potential exceedances near buildings and structures; and • Short-term disturbance to nearby residents and other sensitive receivers. Potential adverse operational effects regarding: • Permanent changes in road-traffic noise at existing PPF's; and • Increased traffic noise in some locations, offset by reductions where traffic moves away from existing receivers.	**Less than minor adverse effects (construction)** following implementation of the Construction Noise and Vibration Management Plan (CNVMP), site-specific Schedules where required, monitoring and building condition surveys for potentially affected buildings. **Negligible to low adverse effects (operational)** following implementation of the required low-noise road surfaces and operational noise conditions. No additional noise barriers are required for existing sensitive receivers.
Landscape, visual amenity and natural character	
Potential adverse construction (temporary) effects regarding: • Earthworks, vegetation clearance, construction yards, temporary access and haul roads, and construction machinery;	**Low to low-moderate adverse landscape and visual amenity effects (construction)** following implementation of temporary screening, vegetation protection and staged planting measures. **Low adverse landscape and visual amenity effects (operational)**, with isolated **moderate**

Table 5: Summary of actual and potential effects

Actual or potential effects / type of effect	Scale of effect (post mitigation proposed by NZTA)
• Construction of bridges, interchanges and other large-scale structures; • Temporary visual effects on nearby residential properties and public views; and • Temporary disturbance of stream corridors and other sensitive landscape areas. Potential adverse operational effects regarding: • Introduction of new and widened carriageways, interchanges, bridges, batters, stormwater infrastructure and associated road infrastructure; • Changes to landscape character and visual amenity, particularly near the Redwood Lane and Takitimu Drive interchanges and nearby residential properties; and • Physical modification of streams, wetlands and their margins. Potential positive effects regarding: • Naturalisation of realigned stream corridors; • Riparian, wetland and landscape planting; and • Improved natural character over time as planting and restored stream and wetland margins establish.	**visual** effects in the Cambridge Road/Kōpūrererua Valley catchment, reducing over time as mitigation planting establishes. **Very low adverse to benign natural character effects**, transitioning in some locations to positive effects over time.
Archaeology and heritage	
Potential permanent adverse construction effects relating to: • Modification or destruction of recorded archaeological sites and features; • Modification or destruction of currently unrecorded subsurface archaeological material; and • Potential effects on Puketoromiro Pā from the widening of Takitimu Drive. Potential positive effects relating to: • Investigation, recording and analysis of archaeological material, contributing to understanding of the archaeological landscape of Tauriko and the western Bay of Plenty.	**More than minor adverse effects (construction).** Direct physical effects on Puketoromiro Pā will be avoided through the Project design and proposed designation condition. Effects on other recorded and unrecorded archaeological material will be mitigated through the Archaeological Authorities and implementation of the AMP and Research Strategy, including investigation, recording, agreed tikanga and procedures for unexpected discoveries and kōiwi tangata. The physical loss of archaeological material will be permanent and cannot be fully remedied. No operational archaeological or historic heritage effects will occur. **No operational archaeological or historic heritage effects will occur.**
Ecology	
Avifauna Potential adverse construction and operational effects regarding: • Loss or modification of terrestrial, wetland and freshwater bird habitat; • Disturbance, displacement and potential injury or mortality of nesting birds; and • Operational disturbance and vehicle-strike risk. Potential positive effects regarding:	**Predominantly very low to low adverse effects** following nesting bird surveys, seasonal controls, exclusion zones and habitat restoration. **Positive effects on avifauna habitat are anticipated as restoration planting and wetland habitats establish.**

Table 5: Summary of actual and potential effects

Actual or potential effects / type of effect	Scale of effect (post mitigation proposed by NZTA)
• Wetland restoration and creation; and • Riparian and landscape planting that improves avifauna habitat.	
Freshwater ecology Potential adverse construction, operational and permanent effects regarding: • Stream realignment and instream works; • Temporary effects on aquatic habitat, fish passage and water quality; and • Permanent modification of channel form and riparian margins. Potential positive effects regarding: • Naturalised stream realignments; • Increased stream length and improved aquatic habitat; and • Improved fish passage, riparian condition and ecological connectivity.	**Low to negligible adverse effects** following construction controls, aquatic fauna management, riparian planting and monitoring. **Positive medium to long-term effects** are anticipated from the stream realignments, with a localised low adverse effect at Belk Road.
Wetlands Potential adverse construction, operational and permanent effects regarding: • Permanent and temporary loss or modification of wetland extent and values; • Changes to wetland hydrology; • Sediment and contaminant discharges; and • Habitat fragmentation and edge effects. Potential positive effects regarding: • Wetland remediation, creation and restoration; and • Improved wetland condition, habitat quality and ecological connectivity.	**Very low to low residual adverse effects** following remediation, restoration, hydrological management and implementation of the WMP. The proposed wetland response is expected to achieve **no net loss of wetland values.**
Cultural values	
Potential permanent adverse effects regarding: • Changes to ancestral whenua, waterways, wetlands, floodplains, archaeological material and cultural landscapes; • Effects on mauri, tikanga, cultural identity, cultural relationships and the exercise of kaitiakitanga; and • Changes to access to, and relationships with, culturally significant places and resources. Potential temporary construction effects regarding: • Dust, noise, vibration, lighting, construction traffic and disturbance of culturally sensitive areas; and • Constraints on access and the exercise of tikanga and kaitiakitanga during construction. Potential positive effects regarding: • Stream, wetland, riparian and landscape restoration; • Cultural recognition, design and interpretation; • Hapū participation in detailed design, monitoring and implementation; and	The Project response includes route and design refinement, naturalised stream realignments, wetland remediation and compensation, stormwater treatment, ecological restoration, archaeological management, construction controls, proposed conditions and management plans. Wider arrangements are also being developed with hapū for cultural monitoring, a Kaiārahi role, participation in relevant management planning and environmental monitoring, cultural design and interpretation, and Māori procurement and workforce opportunities. A number of matters remain under discussion. **No overall cultural effects rating is assigned, as it is not for NZTA to determine these effects.**

Table 5: Summary of actual and potential effects

Actual or potential effects / type of effect	Scale of effect (post mitigation proposed by NZTA)
• Māori procurement, workforce and wider legacy opportunities. These effects are experienced differently by Ngāi Tamarāwaho, Ngāti Hangarau and Ngāti Kahu, reflecting their distinct mana whenua relationships with the Project area and affected catchments.	
Land contamination	
Potential adverse construction effects regarding: • Disturbance of contaminated or potentially contaminated soil associated with former horticultural, rural, commercial and industrial activities; • Exposure of workers or others to contaminated soil, dust or vapours; • Mobilisation of contaminants through stormwater, surface water or groundwater; • Disturbance of buried asbestos-cement pipes or coal-tar road materials; and • Inappropriate reuse, handling, transport or disposal of contaminated material.	**Low adverse effects (construction)** following further investigation where required and implementation of the proposed contaminated-land conditions and management measures. These measures will address the handling, reuse, transport, disposal and remediation of contaminated material, including unexpected contamination. No operational effects will occur. Any contaminated material retained within the Project footprint will be managed in accordance with conditions.
Construction water	
Potential adverse construction effects regarding: • Sediment generation from earthworks, vegetation clearance, construction yards, access tracks and haul roads, retaining walls, bridges, stormwater works, culvert works and stream realignments; • Discharge of sediment-laden water to streams, wetlands and downstream receiving environments; • Temporary effects on water quality, freshwater habitat and values of interest to hapū; and • • Increased risk associated with works in or near streams and wetlands.	**Minor adverse effects (construction)** following implementation of the proposed consent conditions, certified ESCPs and best-practice erosion and sediment controls in general accordance with BOPRC Erosion and Sediment Control Guidelines. Effects will be temporary, with no ongoing operational effects once land-disturbing activities cease.
Operational stormwater and flooding	
Stormwater Potential adverse operational effects regarding: • Increased stormwater runoff volumes and peak flows from additional impervious surfaces; • Changes to downstream flood levels and flow regimes; • Erosion and scour at discharge points and within receiving environments; and • Discharge of sediment, heavy metals, hydrocarbons and other road-runoff contaminants to freshwater receiving environments.	**Less than minor adverse effects (operational)** following implementation of the permanent stormwater management system and proposed consent conditions. Measures will include treatment of road runoff, attenuation or extended detention where required, erosion protection, certification of the final design, and ongoing inspection and maintenance.
Flooding Potential adverse operational effects regarding: • Changes to floodplain storage, overland flow paths and flood-flow conveyance; • Localised increases in flood levels and flood extent associated with new embankments, structures and road corridors; and	**Less than minor adverse effects** within the Wairoa River and Waimapu catchments and throughout most of the Kōpūrererua catchment, following implementation of the Project design and proposed designation conditions. Effects at 96, 98, 100 and 108 Marshall Avenue are assessed as **no more than minor**. Detailed design flood modelling will ensure that the required flood-management outcomes are achieved.

Table 5: Summary of actual and potential effects

Actual or potential effects / type of effect	Scale of effect (post mitigation proposed by NZTA)
• Increased flood risk to land, buildings and other property within the Wairoa River, Kōpūrererua and Waimapu catchments.	
Groundwater	
Potential adverse effects regarding: • Groundwater interception during earthworks, piling, bridge and underpass construction and other excavations; • Localised passive dewatering and groundwater drawdown associated with subsoil drainage; • Localised groundwater mounding associated with fill placement; • Changes to groundwater flow paths and stream baseflow; and • Potential effects on neighbouring groundwater users, wetlands and land stability.	**Zero effects** where groundwater is not encountered. **Less than minor adverse effects** are expected from the predicted localised drawdown and mounding, with no net loss of stream baseflow and no adverse effects on neighbouring groundwater users, wetlands or land stability. Any other groundwater effects encountered during construction are assessed as **no more than minor** and will be managed through detailed design, appropriate treatment and discharge, and groundwater monitoring.
Temporary groundwater take	
Potential adverse effects regarding: • Groundwater allocation and availability; • Drawdown and interference with neighbouring groundwater users; • Stream depletion and effects on aquatic habitat; • Changes to wetland hydrology; • Saline intrusion; and • Ground settlement.	**Less than minor adverse effects (construction)** following implementation of abstraction limits, metering, water storage and detailed design controls.
Air quality	
Potential adverse effects regarding nuisance dust, roof-collected water, combustion emissions and temporary odour from construction activities.	**Low adverse effects beyond 50m from active works**, following implementation of the Construction Air Quality Management Plan (CAQMP) and associated dust controls. Potential effects on receptors within 50m will also be managed and are unlikely to be offensive or objectionable beyond the Proposed Designation boundary.

1.9.3 Traffic and Transport

A Transport Assessment has been prepared by Bloxam Burnett & Olliver for the Project (**Volume B – Appendix G**), which addresses construction and operational effects.

1.9.3.1 Construction traffic effects

Construction of the Project will generate temporary transport effects. These effects will arise from construction traffic, site access arrangements, temporary diversions and works affecting existing roads and walking and cycling routes.

While the detailed construction methodology has not yet been confirmed, the general nature and scale of construction traffic effects are well understood for a project of this nature. Construction activities that have the potential to affect the surrounding transport network include:

- Delivery of plant, aggregate and other construction materials by heavy vehicles;
- Movement of bulk earthwork equipment;
- Establishment and use of site access points;
- Temporary traffic diversions; and
- Works on, or tying into, the existing state highway and local road network.

The Transport Assessment identifies that peak construction activity could generate approximately 720 truck movements per day, with construction workforce travel generating approximately 200 light vehicle trips per day. Multiple site access points are also likely to be required from the existing road network to support construction staging, material movements and workforce access.

Construction effects will be temporary, will occur over an extended construction period and will need to be actively managed. The key construction transport effects are expected to relate to increased heavy vehicle movements, the safe and efficient operation of site access points, temporary changes to road layouts and speed environments, temporary diversions, and management of safe routes for pedestrians and cyclists. At Barkes Corner, the existing pedestrian overbridge will be removed during construction, meaning temporary at-grade crossing arrangements will be required for pedestrians and cyclists.
These effects will be managed through the proposed designation conditions, which require a Construction Traffic Management Plan (CTMP) to be prepared prior to the start of Project Works. The CTMP is required to set out the framework for managing potential effects of construction on the transport network, traffic movement and access to adjacent land uses. The CTMP will address the construction programme and staging, main heavy-vehicle access routes and site access points, construction compounds and staff parking areas, estimated major construction traffic movements on non-state-highway routes, measures to manage disruption and delay, the safety of all road users, continued or alternative access to adjacent land uses, and communication with affected road users.

Overall, construction transport effects are expected to generate temporary adverse effects that will be effectively managed under the CTMP and associated temporary traffic management measures required by the proposed designation conditions.

1.9.3.2 Operational transport effects

Operational effects will arise from the permanent changes to the form and function of the transport network, including the new SH29 and SH29A alignments, interchange arrangements, tie-ins with the existing network, local road connections, walking and cycling facilities, and changes to property access.

The assessment of operational transport effects indicates that the Project will improve the safety, efficiency and reliability of the transport network when compared with the Do Minimum scenario. The wider positive effects of the Project are summarised in Section Volume A – section 1.7 and are not repeated in full here.

The operational transport outcomes are summarised as follows:

- ***Traffic volumes:*** The Project will change the distribution of traffic across the state highway and local road network. Traffic volumes on the existing SH29 and SH29A corridors are expected to reduce once the Project is operational, including substantial reductions in heavy commercial vehicle volumes. This reduction will assist the existing corridors to function more appropriately as local roads, with reduced conflict between strategic traffic, freight movements and local access.

- ***Travel times, reliability and safety:*** The Project will improve travel time reliability by providing additional capacity, improved geometry, grade-separated interchanges and greater separation between strategic and local traffic movements. These changes will support more reliable journeys for general traffic and freight, particularly for movements between Tauranga, the Port of Tauranga, the Waikato and the upper North Island. The Project will also improve safety by providing new median-separated state highway corridors, roadside barriers where required, improved tie-ins and grade-separated interchange arrangements. These features will reduce reliance on high-risk at-grade intersections and reduce the interaction between high-speed strategic traffic and local traffic movements.

- ***Interchanges and local connectivity:*** The proposed interchanges at Redwood Lane, Takitimu Drive and Barkes Corner have been assessed as part of the Transport Assessment. These interchanges will provide access between the new state highway corridors and the surrounding road network, while

maintaining the strategic function of the new SH29 and SH29A corridors. Local access will continue to be provided through the existing SH29 and SH29A corridors, supported by local road tie-ins and interchange connections. Walking and cycling connectivity will also be provided where existing routes are affected, or new local connections are required.

- ***Tie-ins:*** The tie-ins have been designed to provide safe and legible transitions between the new corridors and the existing network, including at Ōmanawa Road, Takitimu Drive and east of Barkes Corner.

Overall, the operational transport effects of the Project are considered to be positive, with improvements to safety, network performance, freight efficiency, travel time reliability and local connectivity.

1.9.4 Noise and vibration

A Construction Noise and Vibration Assessment (**Volume B – Appendix H**) and Operational Noise and Vibration Assessment (**Volume B – Appendix I**) have been prepared by Marshall Day Acoustics for the Project, which address construction noise and vibration effects and operational road-traffic noise effects.

1.9.4.1 Construction noise and vibration effects

Construction noise and vibration effects will be temporary and occur during the construction phase of the Project. The construction activities assessed include earthworks, drainage installation, retaining wall construction, bridge foundation and piling works, pavement preparation, compaction and surfacing, and construction yard activities.

As noted above, the existing acoustic environment is heavily influenced by the existing state highway corridors, with ambient noise levels generally dominated by road traffic. Construction activities will introduce temporary additional noise and vibration into this environment, with the level of effect at any receiver depending on the nature and duration of activities, equipment used, distance from the works, ground conditions, duration, and mitigation measures.

The assessment identifies that, without mitigation, high-noise construction activities would likely exceed the relevant daytime construction noise criteria at a number of nearby residential properties, particularly where works are located close to existing residential areas around Dumfries Place, Galloway Crescent and Cameron Road. Most exceedances would be marginal. However, receivers located close to the works, including in the vicinity of Dumfries Place, Galloway Crescent and Cameron Road, may experience higher construction noise levels for short periods.

Construction vibration effects will also be temporary and localised. Some buildings are located within medium and high-risk vibration zones, particularly near the Pyes Pa Road, Cameron Road and SH29A intersection. In those locations, there is potential for construction vibration criteria to be exceeded if works are undertaken close to buildings or structures.

Construction noise and vibration effects will be managed through the proposed designation conditions, including the requirement to prepare and implement a Construction Noise and Vibration Management Plan (CNVMP). The CNVMP will identify how the relevant construction noise and vibration criteria will be achieved, or the Best Practicable Option for managing construction noise and vibration effects where compliance cannot practicably be achieved.

Where construction noise or vibration is predicted or measured to exceed the relevant criteria, a Schedule to the CNVMP will be prepared. The Schedule will identify the affected receivers, the predicted noise and/or vibration levels and duration of the exceedance, the proposed site-specific mitigation measures, consultation undertaken, and any monitoring requirements. Where activities are predicted to exceed the Category B construction vibration limits, pre- and post-construction building condition surveys will be offered to the owners of potentially affected buildings.

The construction noise and vibration effects are temporary and can be effectively managed through mitigation and management measures. With implementation of the proposed CNVMP, Schedules to the CNVMP where required, and the proposed designation conditions, the residual construction noise and vibration effects are expected to be temporary and will be appropriately managed.

1.9.4.2 Operational noise effects

Operational noise effects will be permanent effects associated with traffic using the Project once it is open to the public. These effects have been assessed having regard to NZS 6806:2010 *Acoustics – Road-traffic noise – New and altered roads*, predicted changes in traffic noise levels, and the existing noise environment.

The ambient noise modelling undertaken demonstrates that the existing noise environment is already highly influenced by road traffic from SH29, SH29A and connecting local roads, including regular heavy vehicle movements. Measured noise levels indicate that daytime noise levels typically range between approximately 62–68 dB LAeq(15min) at locations close to the state highways, reducing to around 55–60 dB LAeq (15min) at more distant or partially screened receivers. Night-time noise levels reduce, but remain traffic-dominated, with levels generally in the order of 54–60 dB LAeq (15min) near the existing state highway. This means that receivers closest to the corridor are already exposed to a relatively high transport-dominated noise environment.

The Project will introduce new and altered traffic noise sources into an environment that is already influenced by the existing state highway corridors. As the Project will run generally parallel to, and include works on, parts of the existing state highway network, the existing roads already influence the ambient sound environment in many locations. In some locations, traffic noise levels are also expected to reduce as traffic moves further away from existing protected premises and facilities (PPFs).

NZS 6806 has been used as the baseline for assessing operational traffic noise effects. Most PPFs have been assessed against the “Altered road” criteria, with a small number assessed against the “New road” criteria. The nature and scale of operational noise effects will vary depending on the location of receivers relative to the new and altered road corridors, changes in traffic distribution, traffic volumes, road surface, topography and intervening screening. Overall, given the existing road-traffic noise environment, noise levels are predicted to remain similar or reduce for the majority of PPFs. Where noticeable increases are predicted, noise levels will remain within Category A. With the proposed low-noise road surfaces, the Project is therefore assessed as having negligible operational traffic noise effects at existing PPFs.

Operational noise effects will be managed through the proposed designation conditions, including the requirement to use low-noise road surfaces on the carriageways of the Project. No additional noise barriers are required for existing sensitive receivers. For the new Tauriko School, operational traffic noise mitigation will be addressed by the MoE through the design and construction of the school. Similarly, for the adjoining Tauriko West UGA, including a recently consented subdivision, future dwellings within that subdivision are not currently PPFs for the purpose of NZS 6806, as they have not yet been built and do not yet have building consent. Information on traffic noise levels across that land has therefore been provided as a forward-looking planning input to assist future building design, rather than as mitigation required to be delivered by NZTA for existing PPFs.

With the implementation of the proposed low-noise road surfaces and the operational noise conditions, the residual operational noise effects will be appropriately managed, with negligible to low adverse effects at existing PPFs.

1.9.5 Landscape, visual amenity and natural character

A Landscape Assessment has been prepared by Boffa Miskell Limited for the Project (**Volume B – Appendix J**), which addresses construction and operational landscape, natural character and visual amenity effects.

1.9.5.1 Temporary landscape and visual amenity effects

Temporary landscape and visual amenity effects will arise during the construction phase of the Project. These effects are anticipated given the nature and scale of the Project as a linear transport infrastructure project, and will result from the visibility of construction activities, yards and machinery.

These effects will be experienced within the context of the modified landscape (described in Part 3). Much of the Project is located within or immediately alongside the existing state highway corridors, and parts of the surrounding environment are already influenced by urban growth and associated changes in land use. The temporary construction effects will therefore be viewed against a backdrop of existing transport infrastructure, ongoing development and urbanisation, rather than within an unmodified rural environment.

The nature and scale of these effects will vary along the Project extent, depending on the degree of existing modification, the proximity of works to sensitive viewers, and the extent to which existing landform, buildings or vegetation provide screening. Temporary effects will generally be greatest where construction works are close to residential properties, open public views or stream corridors, or where larger-scale earthworks and structures are required.

Temporary landscape and visual amenity effects will be managed through the proposed designation conditions, including retention, as far as practicable, of existing tree and shrub vegetation within the Proposed Designation adjacent to 33 Silkwood Way during construction, and measures to minimise vegetation clearance and protect retained vegetation where practicable. Permanent landscape mitigation planting is also proposed along the southern interface with 9 and 12 Rosewood Lane, as addressed below.

Temporary visual effects will generally range from very low to low-moderate adverse. Moderate adverse effects are anticipated at 9 and 12 Rosewood Lane during construction, while effects at 33 Silkwood Way could be moderate-high adverse if vegetation is cleared up to the property boundary. The extent of that effect will depend on the construction approach and the amount of existing vegetation that can be retained.

1.9.5.2 Operational landscape and visual amenity effects

Once completed, the Project will change the existing landscape and give rise to landscape and visual effects. These effects may arise from the introduction of road infrastructure and associated facilities.

Having regard to the existing landscape context described above, the nature and scale of operational effects will vary along the Project corridor. Effects will generally be greatest where the Project introduces larger-scale infrastructure into more open or elevated parts of the landscape, such as the Redwood Lane and Takitimu Drive interchanges, or where the completed works are located close to residential properties, including at Silkwood Way and Rosewood Lane. Effects will also be more apparent where the Project interfaces with stream corridors, including the Kōpūrererua Stream, Nanako Stream and Belk Road Watercourses.

Planting is proposed to assist with visual integration and mitigation, having regard to the scale of the completed works and the sensitivity of nearby viewers. It will include increased canopy planting on engineered escarpments at the Redwood Lane and Takitimu Drive interchanges, planting between the existing SH29A and proposed SH29A alignments, and permanent additional planting to the south of 9 and 12 Rosewood Lane to assist with the visual integration of the Takitimu Drive interchange and associated road corridor.

Operational landscape and visual amenity effects will be managed through the Project design and the proposed designation conditions, including the requirement to prepare and implement a Landscape Mitigation Plan (LSCMP). The LSCMP will set out the planting required to integrate the Project into the surrounding landscape, including the planting described above, and to restore or replace planting affected by the Project. It will include planting plans showing the location, extent and type of planting to be undertaken, together with plant species, grades, densities, anticipated growth rates and maintenance requirements.

With implementation of the proposed landscape mitigation planting and designation conditions, the overall adverse landscape and visual effects are assessed as low within Landscape Area A and low-moderate within Landscape Area B. Most properties will experience very low to low-moderate adverse visual effects. Isolated moderate adverse completed visual effects are anticipated at 9 and 12 Rosewood Lane because of their proximity and elevated outlook over the Takitimu Drive Interchange. Over time, the planting will assist in visually integrating the completed road corridor, interchanges, batters and associated infrastructure into the surrounding landscape.

1.9.5.3 Effects on natural character

Natural character effects have the potential to arise where the Project works are carried out within or adjacent to streams, wetlands and their margins. The relevant works include modifications to the Tauriko West lowland wetlands, the realignment of the Kōpūrererua Stream, the realignment of the Nanako Stream, works associated with the Belk Road watercourse, bridges, stormwater infrastructure, earthworks, vegetation clearance and changes to riparian and wetland margins.

The affected stream and wetland environments are already modified. The existing degree of natural character is reduced by surrounding land use, existing transport infrastructure, channel and drainage modification, vegetation clearance, and the condition of existing wetland areas.

The Project will result in physical modification to some stream and wetland margins. However, given the existing modified condition of these environments, the reduced degree of natural character within them, and the proposed approach to stream realignment and naturalisation, riparian and wetland margin planting, and wetland enhancement, the Landscape Assessment concludes that natural character effects will range from very low adverse to benign, with opportunities for positive effects as the naturalised stream corridors, wetlands and planting establish and mature.

Overall, natural character effects are expected to be very low adverse to benign, transitioning in some locations to positive effects over time, with effects on parts of the Kōpūrererua and Nanako Streams reducing initially to low adverse and then to benign or positive as the naturalised stream corridors, riparian planting and associated landscape treatments establish and mature.

1.9.6 Archaeology and heritage

An Archaeological Assessment has been prepared for the Project by CFG Heritage Limited (**Volume D – Appendix A**), which addresses effects on recorded and unrecorded archaeological sites and historic heritage values.

The Archaeological Assessment records that the Tauriko area has a rich archaeological landscape, including evidence of pā, storage pit sites associated with kūmara gardening, and middens. Seventeen recorded archaeological sites are located within the Proposed Designation; 10 of these have been investigated under existing authorities for the Tauriko West Enabling Works, two have been investigated or destroyed through other development works, and five have not been investigated. The assessment also concludes that further archaeological sites and features are very likely to survive beneath the ground surface, particularly on areas of high, level land, despite being obscured by cultivation, orchard contouring and other land modification.

Archaeological effects will be construction-related and permanent. They will arise from earthworks and other ground disturbance that may modify or destroy recorded or unrecorded archaeological sites or features within the Project extent. No operational archaeological effects are anticipated once construction is complete.

The Project has been designed to avoid direct effects on key known heritage features where practicable. In particular, Puketoromiro Pā is located immediately adjacent to the Proposed Designation near Takitimu Drive. The design response in this location has been developed with input from the Project archaeologist, engineers and designers to avoid the pā, including by locally raising the Takitimu Drive carriageway profile rather than widening further into the existing cut batter adjacent to the pā. The Archaeological Assessment concludes that raising the carriageway will have a considerably lesser effect than widening the existing cut and will have only a minor effect on the amenity of the pā. This outcome is secured through a proposed designation condition requiring that the detailed construction of the four-laning of Takitimu Drive does not involve any further cutting, excavation or removal of material from the current benching profile adjacent to Puketoromiro Pā. No height limit is proposed in this location, as the purpose of the condition is to avoid further physical modification of the pā landform, rather than to restrict the final vertical alignment of Takitimu Drive.

Where archaeological effects cannot be avoided, they will be managed through three archaeological authorities sought for the Project, the AMP and the Research Strategy. These measures provide for contractor briefings, archaeological monitoring and investigation, procedures for unexpected discoveries and kōiwi tangata, implementation of agreed tikanga, and archaeological recording, analysis and reporting.

While the physical modification or destruction of archaeological material is a permanent effect, the archaeological authority process will ensure that archaeological values are appropriately investigated, recorded, analysed and reported. The physical loss of archaeological material cannot be fully remedied. However, direct effects on Puketoromiro Pā will be avoided, and effects on recorded and unrecorded subsurface archaeology will be appropriately mitigated through the archaeological authorities, implementation of the AMP and Research Strategy, and the involvement of HNZPT and hapū. Overall, the Project is expected to result in permanent adverse construction effects on archaeology, but no operational archaeological or historic heritage effects are anticipated following completion of construction.

1.9.7 Ecology

An EcIA has been prepared for the Project by Boffa Miskell (**Volume B – Appendix K)** which addresses effects on terrestrial ecology, avifauna, streams and watercourses, wetlands and associated ecological values.

Ecological effects associated with the Project will arise during both construction and operation. Construction effects will primarily relate to vegetation clearance, earthworks, works within and near wetlands and streams, disturbance of fauna, sediment generation, and temporary disturbance of habitats. Potential operational effects include changes to hydrology, stormwater inputs and habitat configuration, together with fragmentation and effects on fauna.

The EcIA has applied an effects management approach that reflects the ecological values present and the nature and scale of the Project's effects. Where effects cannot be avoided, they are proposed to be managed through mitigation measures in the conditions, together with offset or compensation measures where residual adverse effects remain.

The ecological effects of the Project are summarised below.

1.9.7.1 Terrestrial ecology

Construction effects will arise from vegetation clearance, earthworks, temporary occupation of land, construction access and disturbance to fauna habitat. Permanent effects will arise where vegetation and terrestrial habitat are removed or modified to accommodate the Project footprint and associated infrastructure.

The principal terrestrial effects are the loss or modification of predominantly exotic and modified vegetation, together with smaller areas of native amenity planting and restoration planting. The EcIA identifies that the Indicative Design will remove approximately 61.7 ha of low-value exotic vegetation, 6.5 ha of native amenity planting and 1.9 ha of restoration planting. Effects on native lizards may arise from vegetation clearance and habitat disturbance, particularly where structural cover, rank grass, scrub, garden or amenity planting habitat is affected. These effects are addressed through the wildlife approval sought as part of the Application, which is discussed in Part Seven. No bats were recorded during Project-specific surveys, and bat habitat within the Proposed Designation is assessed as low value.

Terrestrial ecology effects will be managed through minimising vegetation clearance where practicable, staged vegetation clearance, pre-clearance checks, ecological supervision during the vegetation clearance where required, fauna management procedures and restoration planting. Specific management of native lizards, including salvage and relocation, will be addressed through the wildlife approval and associated management requirements discussed in **Volume C**. Where Community Type 10 Native Restoration Planting is removed, the proposed conditions require replacement planting at age-based ratios of between 1:1 and 3:1 by area. Other native-dominated landscape, amenity or infrastructure planting will be replaced at a minimum ratio of 1:1 by area.

In relation to bats, the proposed conditions require further survey before works commence in areas where long-tailed bats may be impacted, with SQP input and DOC bat roost felling protocols to apply if bats or potential roost effects are identified. If bats are detected, a SQP must determine whether the works could affect potential roosts and appropriate avoidance or minimisation measures must be implemented, including application of relevant DOC bat roost felling protocols where required.

Following implementation of the proposed measures, residual effects on terrestrial vegetation and habitat are expected to be predominantly very low to low. Residual effects on native lizards and other terrestrial fauna will be appropriately managed through pre-clearance checks, salvage and relocation procedures and any associated habitat management requirements. The proposed restoration, wetland creation and enhancement planting is also expected to result in positive effects for terrestrial vegetation, herpetofauna habitat and avifauna habitat. Overall, the EcIA concludes that terrestrial ecological effects will be very low to low following effects management.

1.9.7.2 Avifauna ecology

Potential construction effects on avifauna may arise from vegetation clearance, wetland and stream works, earthworks, construction noise, disturbance, displacement and potential injury or mortality of nesting birds,

eggs or chicks. Some of the vegetation removal will be reinstated, while permanent habitat loss will occur within the footprint of the road and associated infrastructure. These permanent works will result in potential habitat loss or modification, lighting, traffic-related mortality and changes to habitat connectivity.

The main avifauna effects relate to the loss or modification of vegetation, wetland and freshwater habitat, and disturbance to birds during construction. Effects are expected to be lower for common and adaptable species using modified habitats, and higher where works affect wetland or freshwater habitats used by at-risk or threatened species.

Avifauna effects will be managed through the proposed avifauna conditions, WMP and ecological and restoration planting requirements. These provide for SQP input, timing controls, pre-construction surveys, exclusion zones around active nests or breeding areas, and staging of works where required. The WMP and ecological planting requirements will also support replacement and enhanced wetland bird habitat over time.

With these measures in place, residual effects on common and adaptable bird species are expected to be very low. Residual effects on at-risk or threatened species are expected to be low following implementation of the proposed nesting bird management, wetland compensation and habitat enhancement measures. The proposed restoration, wetland creation and enhancement planting is expected to result in positive effects on avifauna habitat. Overall, the EcIA concludes that avifauna effects can be appropriately managed through the proposed effects management framework.

1.9.7.3 Freshwater ecology – streams and watercourses

Freshwater stream effects will be construction-related, operational and permanent. Construction effects will arise from works in and near watercourses, stream diversions, bridge works, temporary disturbance of stream beds and margins, sediment generation, and potential disturbance or injury to aquatic fauna. Permanent effects will arise from the realignment, bridging or modification of watercourses required for the Project. Categories of potential operational effects are stormwater discharges, changes to hydrology, outfall erosion, or ongoing barriers to fish passage. Each of these effects categories will be carefully managed and appropriately mitigated.

The proposed realignments form part of the Project's freshwater effects management package. The proposed approach to realignment of the Kōpūrererua Stream, Nanako Stream and Belk Road watercourses will provide more naturalised and higher-functioning stream corridors than the existing modified reaches that are being removed or diverted.

Table 6 summarises the stream realignment outcomes for the Project. The table identifies both stream length and the broader functional outcome of the proposed realignments.

Table 6: Summary of stream realignment outcomes

Streams / watercourse	Existing affected length (m)	Proposed replacement / realigned length (m)	Difference (m)	Outcome
Kōpūrererua Stream	728	1004	276	Increased stream length and improved channel complexity, riparian margins, aquatic habitat diversity and ecological connectivity.
Nanako Stream	583	748	165	Increased stream length and improved channel complexity, riparian margins, aquatic habitat diversity and ecological connectivity.
Belk Road watercourses	680	565	-115	Localised length shortfall, but improved open-channel design, daylighting, fish passage, wetland margins, riparian planting and aquatic habitat function.
Project wide	1991	2317	326	Overall increase in stream length and improved freshwater habitat function across the Project.

At a Project-wide level, the proposed realignments will provide an overall increase in stream length of approximately 326 m (based on the Indicative Design) and are expected to result in improvements in stream function and habitat quality. This is particularly the case for the Kōpūrererua Stream and Nanako Stream realignments, where the new alignments increase stream length and provide more complex channel form, riparian margins and aquatic habitat than the existing modified reaches.

At Belk Road, the realignment may result in a localised shortfall in total watercourse length when the unnamed stream, associated modified drain/previous stream length, and stormwater outfall channel are considered together. However, that shortfall needs to be considered in context. The existing Belk Road watercourses are highly modified and include constructed or modified drainage elements. The proposed realignment will improve the main stream reach, include daylighting of existing stream length, provide an open-channel form, enable fish passage, and create a more naturalised and planted stream corridor. Any shortfall would therefore not be a like-for-like loss of high-quality stream habitat. It would be a localised reduction in mapped length within a modified system, accompanied by improved stream function and habitat quality.

The Belk Road alignment has also been selected through design optioneering (discussed in Section 1.6.3.5) as the most appropriate integrated solution for the road crossing, property access and watercourse management constraints in this location. A longer culvert-based solution would have resulted in greater risks for constructability, long-term stream function, culvert length and fish passage. The preferred bridge and realignment option provides a better freshwater outcome because it will avoid a long culvert solution, maintain open-channel habitat, enable fish passage to be provided, and support a more naturalised and planted watercourse corridor.

The proposed regional consent conditions provide the mechanism to secure the freshwater outcomes described above while allowing appropriate flexibility through detailed design. The conditions require a Stream Realignment Plan (SRP) to be prepared before construction of each watercourse realignment commences. The SRP must include the Final Design, construction methodologies, measures to manage construction effects, methods for establishing instream habitat and riparian planting and monitoring requirements.

The Final Design may either be in general accordance with the relevant Stream Realignment Drawings submitted with the Application or adopt an alternative design certified by a suitably qualified person as achieving the outcomes specified in condition[27]. This outcome-focused approach allows the realignment design to respond to refinements to the road corridor, earthworks, structures and other elements of the Project at detailed design, while ensuring that the required freshwater ecological outcomes are maintained.

In achieving the outcomes identified above, the Final Design must, to the extent practicable, provide for diverse instream habitat, varied channel depths, dense riparian vegetation, retention of interfacing natural wetlands where appropriate, minimisation of hard-engineered erosion protection, and vegetated separation between the watercourses and shared paths or maintenance tracks.

Stream effects will also be managed through the proposed Aquatic Fauna Management Plan (AFMP). The AFMP will manage effects on native freshwater fish and kākahi through salvage, relocation, site isolation, timing controls, release site identification, and protocols to minimise accidental harm or mortality.

Construction-phase freshwater monitoring in the Kōpūrererua Stream is provided for in the proposed conditions and will comprise quantitative macroinvertebrate community assessment, including baseline and biannual construction monitoring against trigger levels established by a SQP.

On that basis, while the Project will intentionally result in permanent modification of existing watercourses, the proposed stream realignments are expected to result in a positive ecological effect in the medium to long term. The effects management approach is not based on replacement length alone, but on improving the ecological function, habitat quality, fish passage, riparian condition, connectivity and resilience of the affected stream environments. With the proposed realignments, aquatic fauna management, monitoring, and riparian planting, freshwater effects are expected to be predominantly very low to low, with positive effects anticipated from the stream realignments once the replacement channels and planting have established. Potential localised reduction in watercourse length at Belk Road is assessed as a low adverse effect.

[27] Condition 18.2 of the Earthworks Conditions – Volume B – Appendix E

1.9.7.4 Freshwater ecology – wetlands

Wetland effects will be construction-related, operational and permanent. Construction effects will arise from earthworks, vegetation clearance, construction access, works within or near wetland margins, sediment generation, and temporary disturbance to wetland hydrology. Permanent effects will arise where wetland extent or values are lost or modified by the Project footprint, stream realignments, embankments, drainage changes or associated infrastructure. Operational effects may arise from changes to hydrology, stormwater discharges, habitat fragmentation and edge effects.

The Project has sought to avoid and minimise wetland effects where practicable through design development, particularly for the stream realignments. However, given the scale and alignment of the Project, some effects on wetlands cannot be avoided. These effects include direct wetland loss, modification of wetland vegetation and soils, changes to wetland hydrology, and potential effects on wetland habitat values, including for wetland birds.

The scale and significance of potential wetland effects vary across the Project. Effects on modified, lower-value wetlands are expected to be more limited. Effects on higher-value wetlands, particularly within the Kōpūrererua Valley, require a more substantial effects management response due to their ecological value, hydrological function and habitat values.

Based on the Indicative Design, the Project will result in the permanent loss of approximately 4.948 ha of wetland, comprising approximately 2.056 ha of low-value wetland, 1.182 ha of moderate-value wetland and 1.71 ha of high-value wetland.

The Biodiversity Compensation Model (BCM) has been used because some residual wetland effects will remain after avoidance and minimisation measures have been applied. The model provides a transparent and repeatable way to quantify the wetland values lost and compare them with the values expected to be delivered through the proposed wetland remediation, creation and restoration package. It therefore provides the technical basis for the proposed effects management package.

The BCM has been applied on the basis of the Indicative Design and other design information available for the Project, and assesses a hybrid package of wetland restoration, wetland creation and habitat enhancement. The model groups the affected wetlands by ecological value, being low, moderate and high value wetlands, and compares the impact on those wetland values against the gains expected from restoration of retained wetland areas and wetland creation. The modelled effects management package is targeted at achieving no net loss of wetland values, with the current modelling indicating that this outcome can be achieved.

The BCM outcomes are not based on wetland area alone. They are directed at replacing and improving wetland values, including wetland condition, indigenous vegetation diversity, hydrological function, riparian buffering, habitat quality and wetland bird habitat. The modelled package includes wetland creation associated with the stream realignment areas, together with restoration of retained wetland areas within the Proposed Designation. The restoration component is intended to improve the condition and resilience of existing wetlands through native wetland and riparian planting, pest plant and animal control, and management of hydrology and edge effects.

The EcIA concludes that the BCM applies an ecological gain target, meaning that the modelled compensation package is intended to exceed the wetland values lost rather than merely replacing them on an area-for-area basis. This is important because full replacement of wetland extent through wetland creation alone is not practicable within the Proposed Designation, given spatial, landform and hydrological constraints. The BCM therefore supports a hybrid compensation approach, relying on both wetland creation and restoration of existing wetlands to achieve the required wetland value outcome.

There is greater specificity in relation to the Kōpūrererua Valley outcomes because the Indicative Design for the Kōpūrererua Stream and Nanako Stream realignments has been developed to a more detailed level. This specificity has enabled the stream alignments, wetland interfaces and restoration areas to inform the BCM and the proposed wetland effects management package. The outcomes will be secured through the regional consent conditions, which require the realigned stream designs and wetland remediation, creation and restoration works to be confirmed through the SRP and WMP.

The proposed regional consent conditions provide the mechanism to confirm and secure the wetland effects management outcome[28]. They require any loss of natural wetland extent and values to be remedied, offset and/or compensated through wetland remediation, wetland creation and/or restoration of existing natural wetlands. The effectiveness of the package must be confirmed through ecological assessment and modelling, using the BCM or an agreed equivalent methodology, to demonstrate no net loss of wetland values.

Wetland effects will be managed through the proposed WMP, which will confirm the affected wetlands, the required remediation, creation and/or restoration works, and the monitoring and corrective actions needed to achieve the required outcomes. The WMP will also address wetland hydrology, erosion and sediment control, riparian buffers, planting, maintenance, pest plant and animal control, and habitat values for at-risk and threatened wetland birds. Ecological and restoration planting will support this package through eco-sourced indigenous planting, maintenance and monitoring.

Following implementation of the proposed measures, residual effects on modified, lower-value wetlands are expected to be appropriately managed. Residual effects on higher-value wetland areas will be addressed through the WMP and the required remediation, offsetting and/or compensation package. Overall, the EcIA concludes that wetland effects can be appropriately managed through the proposed effects management framework, with the proposed regional consent conditions securing no net loss of wetland values.

1.9.8 Cultural values

As described in Volume A - Section 4.4, NZTA has engaged extensively with Ngāi Tamarāwaho, Ngāti Hangarau and Ngāti Kahu through Tupenga. The RIAs identified in Section 4.4.1 were also invited to provide their views on the Project but did not respond or provide any reasons for electing not to respond.

The views expressed through engagement with the three hapū have arisen both collectively through Tupenga and at hapū level. While there are common themes, each hapū holds its own mana whenua relationships, values, priorities and decision-making authority. The summary below does not attribute a common position to all three hapū unless that position has been expressed collectively.

The Project is located within an ancestral and cultural landscape that includes whenua, waterways, wetlands, floodplains, pā, archaeological sites, traditional pathways and places associated with occupation, movement, resource use and whakapapa. Hapū have emphasised that these features form part of an interconnected living environment and should not be considered only as separate technical resources or effects topics. Within that broader landscape, each hapū has expressed particular relationships with different parts of the Project area and affected catchments.

In particular, Ngāi Tamarāwaho has described the Kōpūrererua Valley as a mana whenua, cultural, historic, ecological, educational and recreational landscape. The valley and Waikareao Estuary are understood as an interconnected kete kai that historically sustained the hapū through aquatic species, wetland resources and rongoā[29].

Ngāti Hangarau has described Ōmanawa and the wider Wairoa River catchment as part of its mana whenua and ancestral landscape. Its relationships extend across the Ōmanawa River, Mangapapa Stream, the Wairoa River, associated tributaries and the inland Kaimai landscape. Together, these waterways and landforms form an interconnected cultural and ecological system associated with historic occupation and movement, whakapapa, cultural memory, identity and the continuing exercise of kaitiakitanga.

Ngāti Kahu has an enduring mana whenua relationship with the Wairoa River catchment and has identified the river as a defining cultural and environmental feature. Its relationship extends across the river, tributaries and connected receiving environments, with particular emphasis on mauri, indigenous biodiversity, fish passage, mahinga kai and the exercise of kaitiakitanga.

The principal themes expressed through engagement with hapū, together with NZTA's response, are summarised in **Table 7**. The relevant iwi and hapū management planning documents provide additional context for those themes and are assessed separately in Section 5.5 and **Volume B – Appendix C**.

[28] Condition 13.2 of the Earthworks Conditions – Volume B – Appendix E

[29] Te Whenua Rāhui o Kōpūrererua, presented by Kalani Tārawa

Table 7: Cultural values and project response

Theme	Views expressed by hapū	Project Response
Mana whenua, rangatiratanga and partnership	Ngāi Tamarāwaho, Ngāti Hangarau and Ngāti Kahu have emphasised their distinct mana whenua relationships and the need for early, continuing and appropriately resourced involvement in decisions affecting their respective areas and values. Engagement through Tupenga does not replace direct hapū-level engagement where hapū-specific matters arise.	NZTA has engaged through Tupenga and directly with the relevant hapū. Arrangements are being developed (outside of the consent conditions) for hapū participation during detailed design, construction, monitoring and relevant management plans, including a proposed Kaiārahi role, cultural inductions and cultural monitoring.
Te taiao as an interconnected system	Hapū have described whenua, groundwater, waterways, wetlands, floodplains, biodiversity, people and downstream receiving environments as an interconnected system. Waterways and wetlands are regarded as taonga, with particular emphasis on mauri, water quality, sediment, fish passage, riparian condition, mahinga kai and long-term catchment health. Ngāi Tamarāwaho has particularly emphasised the relationship between the Kōpūrererua Stream, its wetlands and floodplain, Waikareao Estuary and the wider cultural landscape.	The Project response includes stormwater treatment, erosion and sediment controls, bridges at key stream crossings, naturalised stream realignments, fish passage, riparian planting, wetland remediation and compensation, aquatic fauna management and groundwater controls. Opportunities for hapū participation in environmental monitoring are also being developed.
Whenua, earthworks and soil movement	Hapū have raised concerns about the disturbance of ancestral whenua, the movement or mixing of soil, the importation of fill, contaminated land and the potential for sediment or contaminants to enter waterways and wetlands.	Proposed conditions and management plans address erosion and sediment control, contaminated land, accidental discoveries and agreed cultural monitoring of earthworks. Further protocols for soil and imported material are being considered, in consultation with hapū.
Archaeology, wāhi tapu and taonga tuku iho	Hapū have emphasised that the Project traverses a rich ancestral and archaeological landscape and that the absence of visible or recorded features does not indicate an absence of cultural values. They have also identified relationships between pā, kāinga, waterways, wetlands, traditional pathways, landforms and other ancestral places.	Direct physical effects on Puketoromiro Pā are avoided through the Project design and proposed designation condition. Archaeological Authorities, the AMP and Research Strategy provide for investigation, monitoring, tikanga, accidental discovery procedures and hapū involvement. Cultural design, naming, interpretation and recognition of ancestral relationships will be considered during detailed design, through partnering arrangements.
Indigenous vegetation, habitats and cultural resources	Hapū have identified the importance of restoring indigenous vegetation and habitat, protecting riparian margins, providing for culturally significant species and supporting resources associated with kai and rongoā. Ngāi Tamarāwaho has also emphasised that the Kōpūrererua Valley is a mosaic of wetlands with differing conditions and restoration potential.	The Project provides for riparian, wetland and landscape planting, together with maintenance, monitoring and pest plant and animal management. Planting species and mixes will be developed through the relevant management plan and detailed-design processes, with opportunities for hapū input on culturally significant species.
Construction effects and cultural wellbeing	Hapū have raised the potential for dust, noise, vibration, lighting, construction traffic and restricted access to affect cultural amenity, hauora, culturally significant	Construction effects will be managed through the proposed air-quality, noise and vibration, traffic, erosion and sediment, and environmental management requirements. These

Table 7: Cultural values and project response

Theme	Views expressed by hapū	Project Response
	places and the exercise of tikanga and kaitiakitanga.	include mitigation, monitoring, communication and complaints processes. Hapū identification of culturally sensitive locations will be important as management measures are developed.
Kaitiaki, legacy and economic participation	Hapū have sought active involvement in construction and environmental monitoring, together with enduring environmental, cultural and economic outcomes. These include restoration, cultural expression and interpretation, Māori business and workforce participation, and benefits for future generations.	NZTA proposes to provide for a Kaiārahi role, cultural inductions, safe site access, cultural monitoring of agreed activities and involvement in relevant environmental monitoring. The scope, resourcing, reporting and implementation arrangements are being developed directly with hapū and will be concluded outside this approvals process.
Restoration, cultural legacy and economic participation	Hapū have sought enduring environmental, cultural and economic outcomes from the Project, including restoration of degraded environments, cultural design and interpretation, participation by Māori businesses and workers, and opportunities for future generations.	The Project includes stream, wetland, riparian and landscape restoration. Any wider commitments relating to cultural design and interpretation, procurement, workforce participation and other legacy outcomes are being developed through the partnering arrangements and future Project procurement requirements.

The views summarised above are also broadly reflected in the relevant iwi and hapū management planning documents assessed in Section 1.5 and **Volume B – Appendix C**. Those documents emphasise mana whenua participation, the interconnected relationship between land, freshwater and receiving environments, protection and restoration of mauri, indigenous biodiversity, mahinga kai, cultural heritage and ongoing monitoring.

As noted in **Table 7**, a number of matters remain under discussion. The above assessment records the views expressed and, NZTA's response but does not make any comment as to whether those responses fully address the cultural values or concerns of any hapū.

1.9.9 Land contamination

A PSI has been prepared for the Project by HAIL Environmental Limited (**Volume B – Appendix L**), which addressed the potential for land contamination within the Proposed Designations and further investigation and management measures required before and during project works.

Potential contaminated land effects will primarily arise during construction. They may occur through, earthworks, excavation, handling, stockpiling, transport, reuse or disposal of soil in areas where contamination is present or suspected. Potential effects include exposure of construction workers or others through direct contact, mobilisation of contaminants through stormwater and inappropriate reuse or disposal of contaminated material.

The PSI identifies a number of HAIL and potential HAIL sites within and adjacent to the Proposed Designation. These are generally associated with former horticultural/orchard land, pre-2000 buildings and structures, former commercial or depot-type activities, fuel storage and potential stockyard or stock dip areas. The PSI also identifies the potential for buried asbestos-cement pipes, coal-tar road materials and migration of contaminants from adjoining land.

Diffuse contamination associated with pastoral and horticultural land is generally expected to be low level and capable of being managed through standard procedures. However, some sites may contain localised contamination hotspots and require further investigation to confirm the nature and extent of contamination and determine the measures required to manage or remediate contamination during Project Works.

Contaminated land effects will be managed through the proposed resource consent conditions under the RNRP and the NES-CS. These conditions reflect the Ministry for the Environment's Contaminated Land Management Guidelines. The management framework will include:

(a) Further investigation, where required, through a Detailed Site Investigation (DSI);
(b) Appropriate procedures for the excavation, handling, reuse, stockpiling, transport and disposal of contaminated soils;
(c) Procedures for managing unexpected contamination, as set out in a Contaminated Site Management Plan (CSMP);
(d) Remediation and validation, where required, through a Remedial Action Plan (RAP) and Site Validation Report (SVR); and
(e) Where contaminated material is retained within the Proposed Designations, a Monitoring and Management Plan (MMP) setting out the measures required to contain, manage and, where necessary, monitor that material.

With the implementation of these measures, contaminated land effects are expected to be temporary, and localised and appropriately managed. Any residual effects associated with contaminated soils remaining within the Project footprint will be managed through containment, capping, encapsulation, monitoring or other ongoing management measures where required. Residual contaminated land effects are assessed as low adverse.

1.9.10 Construction water

A Construction Water Assessment (CWA) has been prepared for the Project by Southern Skies Environmental Limited (**Volume B – Appendix M**), which addresses erosion, sediment and construction water effects associated with the land disturbing activities during construction.

Construction water effects will be temporary and construction-related. They may arise from earthworks, vegetation clearance, construction yards, access tracks and haul roads, retaining wall and bridge construction, stormwater works, stormwater culvert works and stream realignments. Once the Project is operational, land disturbing activities will cease, and no ongoing construction water effects will occur.

The main potential adverse effect is the discharge of sediment-laden water to receiving environments. This discharge has the potential to affect water quality, freshwater habitats and values of interest to hapū if not appropriately managed. The CWA identifies that these effects are well understood for large linear infrastructure projects and can be managed through best practice erosion and sediment control measures consistent with the designed, constructed and maintained in general accordance with the Bay of Plenty Regional Council Erosion and Sediment Control Guidelines for Land Disturbing Activities 2010/01 (TG 2010/01).

The CWA is supported by conceptual ESCPs, which demonstrate that a workable erosion and sediment control solution can be implemented for the Project. The conceptual ESCPs identify the likely location and form of key erosion and sediment control measures, including how clean and dirty water will be separated, how sediment-laden runoff will be treated, and how controls can be staged and adapted as construction progresses. The final ESCPs will be prepared by the Contractor to reflect the detailed construction methodology and staging and will be submitted to BOPRC for certification before the relevant works commence.

Construction water effects will be managed through the proposed resource consent conditions, which require compliance with the Guidelines and the preparation and implementation of ESCPs for the relevant stages of Project Works. The ESCPs will set out the erosion and sediment control measures to be implemented, including measures to minimise exposed areas, manage clean and dirty water, treat sediment-laden runoff, provide chemical treatment, and monitor and maintain erosion and sediment control devices during construction. Chemical treatment will be applied to sediment retention ponds and decanting earth bunds, with the treatment methodology, chemical selection and dose rates informed by bench testing and managed in accordance with the chemical-treatment procedures included in the ESCPs.

Water quality monitoring will also be undertaken, including Trigger Event monitoring, to confirm the effectiveness of the erosion and sediment control measures and to inform any contingency or adaptive management response where required.

Additional controls will be applied for works in or near streams and wetlands, including the timing, staging and sequencing of stream works, temporary culverts, stream realignments and other works within or adjacent to waterbodies.

With implementation of best practice erosion and sediment control, monitoring and the proposed consent conditions, the Project is not expected to result in significant sediment-related adverse effects downstream. Construction water effects are therefore expected to be temporary and minor in nature.

1.9.11 Operational stormwater and flooding

An assessment of operational stormwater and flooding effects has been prepared for the Project (**Volume B – Appendix N**), which addresses operational stormwater quantity and quality effects, downstream erosion and scour, and flooding effects.

1.9.11.1 Operational stormwater

The Project will result in permanent changes to stormwater flows as a result of the changes to and increase in impervious surfaces created by the new and widened road corridors, interchanges and associated infrastructure. The Project will increase impervious area by approximately 21ha, with operational stormwater discharging to receiving environments within the Wairoa River, Kōpūrererua and Waimapu catchments.

The assessment is based on an indicative operational stormwater design that demonstrates one feasible means of achieving the required water-quality and water-quantity outcomes for the Project. The final locations, configurations and dimensions of stormwater management devices will be confirmed through detailed design.

The Project will increase stormwater runoff volumes and peak flows. Without stormwater management, this increase has the potential to increase downstream flood levels, contribute to erosion and scour, and alter flows to downstream receiving environments. Management measures will address stormwater quantity, including collection, conveyance, attenuation where required, extended detention, erosion protection and controlled discharge of stormwater runoff.

The need for attenuation has been considered having regard to the receiving catchment. In the Wairoa River catchment, attenuation is proposed where increased peak discharge to receiving tributaries could reduce the conveyance capacity of the receiving watercourse or result in increased erosion or sour. In the Kōpūrererua catchment, attenuation is generally not proposed, because attenuation facilities within the floodplain could reduce floodplain storage and the effects have been assessed through catchment-scale modelling. Attenuation is proposed for road catchments draining to the Nanako Stream, with extended detention or erosion protection also provided where required. No attenuation is proposed for the Waimapu catchment, where the contributing Project impervious area is small relative to the wider catchment and the downstream receiving environment is tidally influenced.

Stormwater runoff from the road corridor may contain contaminants, including sediment, heavy metals and hydrocarbons. Without treatment, these contaminants have the potential to adversely affect water quality and freshwater receiving environments. Runoff from new impervious road surfaces will therefore be treated before discharge to the receiving environment. The treatment system will be designed to remove sediment and associated contaminants, retain captured sediment and minimise the potential for sediment to be remobilised during flood events. The indicative stormwater design provides for this treatment principally through stormwater treatment swales and stormwater treatment wetlands. Treatment wetlands provide a high level of contaminant removal, while treatment swales provide efficient removal of sediment and associated pollutants. Equivalent treatment devices will be confirmed through detailed design, provided they achieve appropriate water-quality treatment outcomes.

Operational stormwater effects will be managed through the proposed resource consent conditions. These conditions require the final detailed design of the permanent stormwater management system to be certified by a SQP before construction of permanent stormwater infrastructure commences. The final design must demonstrate that stormwater quality treatment, conveyance, attenuation where required, flow management, and erosion and scour protection at outfalls, inlets, outlets and overland flow paths are provided.

The permanent stormwater management system will also be subject to a Stormwater Operation and Maintenance Plan. This will set out the inspection and maintenance requirements necessary to ensure the

system continues to operate in accordance with the certified final detailed design and achieves the required stormwater management outcomes for the duration of the consent.

With implementation of the proposed stormwater management system and resource consent conditions, operational stormwater effects on water quantity, water quality, downstream erosion and receiving environments are expected to be appropriately managed and are assessed as less than minor.

1.9.11.2 Flooding

The completed Project will alter existing overland flow paths and has the potential to cause changes in flooding levels in some locations. Flooding may occur where the Project changes floodplain storage, flood flow conveyance or flood levels, particularly where new embankments, structures or road corridors are located within or near existing floodplain areas. A key design response within the Kōpūrererua Valley has been to cross the main stream corridors with bridge structures rather than relying on embankments or culverts. This approach assists in maintaining flood flow conveyance through the valley and minimising potential flood level and flood extent effects.

The flood effects assessment has considered the Kōpūrererua, Wairoa River and Waimapu catchments. Catchment-specific modelling and assessment methods have been used, including SWMM and HEC-RAS modelling for the Kōpūrererua catchment, the existing TCC TUFLOW Wairoa Catchment model for the Belk Road / Redwood Lane interchange area, and a high-level desktop assessment for the Waimapu catchment.

The assessment has applied BOPRC guidance as a basis for determining the significance of flood level changes. In general, no change in flood level is assessed as having no effect, an increase of less than 15 mm is assessed as less than minor, and increases greater than 15 mm are assessed having regard to whether they directly affect a residence, business or other habitable structure or otherwise result in a material effect on the environment or people.

Within the Kōpūrererua catchment, the Project design includes bridge crossings of the key stream corridors in the Kōpūrererua Valley, including the Kōpūrererua Stream and Nanako Stream. This approach maintains flood conveyance beneath the road corridor and reduces the potential for the Project to obstruct or displace flood flows within the valley. Modelling indicates that the Project will result in increases of up to 8mm in flood levels and no measurable change in flood extent in the upstream urban areas of Tauriko Business Estate, The Lakes and Pyes Pā south of SH29A. Downstream, some small areas are modelled to experience increases greater than 15 mm. These areas are generally within the Proposed Designation, TCC-owned Passive Open Space land, or land subject to a Major Overland Flowpath. The lower portion of 20 Furniss Lane (adjacent to Takitimu Drive) is modelled to experience an increase of up to 20mm, but is located within a Major Overland Flowpath and does not contain any existing structures. Any future structure outside the designation would need to respond to the Major Overland Flowpath and applicable minimum floor-level requirements.

In the floodplain downstream of SH29A near Marshall Avenue, modelling indicates an increase in the 100-year Annual Recurrence Interval (ARI) flood depth of approximately 43mm at 96, 98, 100 and 108 Marshall Avenue. The dwellings at 96, 98 and 100 Marshall Avenue will remain above the modelled 100-year ARI flood level following construction of the Project, including when climate change is accounted for. The detached garage at 98 Marshall Avenue and the dwelling at 108 Marshall Avenue are predicted to remain above the 100-year ARI flood level when climate change is not accounted for, but are predicted to flood in both the pre-Project and post-Project scenarios when climate change is included. The flooding of those buildings is therefore attributable to climate change rather than the comparatively small increase resulting from the Project.

Within the Wairoa River catchment, the Project section near Belk Road and the Redwood Lane interchange passes through the floodplain of an unnamed tributary of the Wairoa River. Modelling indicates an increase in flood depth of less than 15mm in upstream and downstream areas outside the Proposed Designation, with any increases greater than 15mm being limited, small and confined within the Proposed Designation. The overall flood extent upstream and downstream of the Project alignment remains unchanged.

Within the Waimapu catchment, flood level increases downstream are assessed as approximately 1.8mm, with no noticeable change in flood extent. Flood effects within this catchment are therefore assessed as less than minor.

Flooding effects will be managed through detailed design and proposed designation conditions. Specifically, prior to construction of each stage of works, the existing environment flood model will be updated and run using the detailed design for that stage. The updated modelling must demonstrate that the detailed design achieves the specified flood-management outcomes, including limiting increases outside the Proposed Designations, avoiding increased flood hazard at existing habitable buildings, and addressing the specific outcomes required for the Marshall Avenue properties. Where those outcomes would not otherwise be achieved, the detailed design must be amended or mitigation provided.

Overall, through detailed design and updated flood modelling at that design stage, residual flooding effects are expected to be less than minor within the Wairoa River and Waimapu catchments and throughout most of the Kōpūrererua catchment. The effects at the two Marshall Avenue properties are assessed as minor adverse effects.

1.9.12 Groundwater effects

A Preliminary Groundwater Assessment has been prepared by Williamson Water & Land Advisory (WWLA) for the Project (**Volume B – Appendix O**), which addresses groundwater interaction, passive groundwater interception, drawdown, mounding and dewatering requirements.

Groundwater may be encountered during earthworks, piling, bridge construction, underpass construction or other excavations. Once constructed, the Project may also impact groundwater where passive dewatering occurs or fill placement or permanent drainage infrastructure alter local groundwater levels or groundwater flow paths.

The assessment identifies that the majority of proposed cuts will not intersect the regional groundwater table. Prolonged or significant active dewatering is not expected to be required. Some perched groundwater or subsoil drainage may be encountered locally during construction, particularly in winter or following rainfall, but this is expected to be intermittent and manageable through the Project's construction water, erosion and sediment control and drainage systems.

The assessment also identifies that passive dewatering may occur in localised low-lying areas. Subsoil drains will be required beneath the road carriageway to manage groundwater inundation. The groundwater modelling indicates that these effects will be localised, with a maximum drawdown depth of approximately 2.6 m and a maximum drawdown extent of approximately 450 m. Groundwater mounding associated with fill placement is predicted to be more localised, with a maximum increase in groundwater level of approximately 0.5m and an extent of approximately 230m.

The assessment concludes that the predicted groundwater changes will not result in a net loss of stream baseflow, as intercepted groundwater will be discharged to the nearest downgradient surface drainage network. No adverse effects are anticipated on neighbouring groundwater users, wetlands or land stability, and no land settlement is expected. The effects of the predicted localised groundwater drawdown and mounding are therefore assessed as less than minor.

Groundwater-related effects will be managed through detailed design, construction water management, erosion and sediment control measures, appropriate treatment and discharge of intercepted water, and groundwater monitoring where required. While significant groundwater dewatering effects are not expected, a precautionary groundwater consent is being sought to authorise the interception, diversion, taking and discharge of groundwater if encountered during construction or as part of the permanent drainage design. Overall, groundwater-related effects are expected to be zero where groundwater is not encountered, and no more than minor where groundwater is encountered.

1.9.13 Water take effects

A Groundwater Take Assessment has been prepared by Williamson Water & Land Advisory for the Project (**Volume B – Appendix P**). The assessment considers the potential effects of the temporary take and use of groundwater for construction purposes, including effects on groundwater availability, groundwater levels, neighbouring groundwater users, streams, wetlands, saline intrusion and ground settlement.

The proposed groundwater take is a temporary construction-related activity. Resource consent is sought to take up to 900m³/day and 160,000m³/year from up to four bores along the Project route, principally for dust suppression and irrigation of landscape planting.

The take will occur from the Wairoa Lower and Kōpūrererua–Otūmoetai Groundwater Management Zones. The requested volume represents a very small proportion of the groundwater allocation available within those zones. Groundwater modelling predicts drawdown within the deeper production aquifer, but substantially lower drawdown within the shallow groundwater system. Sufficient available drawdown is expected to remain in neighbouring bores, and effects on existing groundwater users are assessed as very low.

The assessment also predicts a small stream-depletion effect, equivalent to approximately 5.2% of the total abstraction under the conservative modelling scenario. Effects on nearby streams and aquatic habitat are assessed as very low. Predicted drawdown at mapped wetlands is also within the range of natural seasonal groundwater fluctuations and is not expected to materially alter wetland hydrology, condition or ecological values. The risks of saline intrusion and ground settlement are assessed as low or very low.

Potential effects will be managed through limits on daily and annual abstraction, metering and recording of each take, regular maintenance of pumping infrastructure, provision of water storage, and confirmation of the final bore locations and construction details through detailed design.

Overall, the effects of the temporary groundwater take on groundwater availability, neighbouring users, streams, wetlands, saline intrusion and ground settlement are assessed as very low and therefore less than minor.

1.9.14 Construction air quality and dust

A Construction Air Discharge Assessment has been prepared by Air Quality Consulting NZ Limited for the Project (**Volume B – Appendix Q**), which addresses nuisance dust, combustion emissions, odour and potential effects on roof-collected water during construction.

Air quality effects will primarily be construction-related. The main potential effect is nuisance dust generated by earthworks, stockpiling, haul roads, construction yards, vehicle movements and stabilisation and rehabilitation of completed areas.

Without mitigation, the potential for nuisance dust effects is assessed as high due to the scale and duration of earthworks, the linear extent of the Project, and the proximity of sensitive receptors to parts of the construction footprint. The highest risk areas are where sensitive receptors are located close to active works, including parts of the SH29A corridor, the Tauriko West UGA and nearby educational facilities.

Air quality effects will be managed through a CAQMP. The CAQMP will set out the procedures and responsibilities for managing dust and other construction air discharges.

The assessment also considers dust effects on roof-collected water, combustion emissions from construction vehicles and machinery, and odour. These effects are expected to be limited. Construction dust is unlikely to result in significant effects on roof-collected water quality where dust controls are implemented. Temporary odour effects may arise from asphalt placement or unexpected odorous material during excavation but are expected to be localised and will be managed through the CAQMP.

With the proposed CAQMP and associated mitigation measures in place, the potential for dust nuisance effects at sensitive receptors is expected to be low. Some residual risk remains; however, the proposed management measures are expected to minimise the likelihood of dust effects being offensive or objectionable beyond the Proposed Designation boundary. Overall, construction air quality effects are expected to be low beyond 50m and appropriately managed at receptors within 50m through the CAQMP.

1.10 Management of potential adverse impacts through proposed conditions

Draft conditions have been developed for the NoRs and resource consents based on the mitigation, management and monitoring measures recommended through the technical assessments. The conditions have been designed to ensure that the actual and potential adverse effects arising from the construction and operation of the Project are appropriately managed.

Key measures include:

a) Advancing detailed design for the stream realignments so that the scale of stream loss, replacement stream length, fish passage outcomes, wetland interfaces and associated ecological mitigation is quantified and addressed. Requiring the Final Design for the Kōpūrererua Stream, Nanako Stream and Belk Road Watercourse realignments to be in general accordance with the indicative Stream Realignment Drawings or, where it departs from those drawings, to be certified by a SQP as achieving the specified freshwater ecological outcomes. This approach is secured through the Stream Realignment Plan.

b) Managing ecological effects through a Wetland Management Plan, an Aquatic Fauna Management Plan, a Lizard Management Plan, freshwater monitoring, species-specific avifauna and bat-management measures, and requirements for native restoration planting. These measures include fauna salvage and relocation, pre-clearance and nesting bird surveys, exclusion zones around active nests, further bat surveys and roost-felling protocols where required, together with wetland remediation, creation and/or restoration measures designed to achieve no net loss of Natural Wetland values.

c) Requiring an Erosion and Sediment Control Plan for each Stage of Works to manage sediment-generating activities, including vegetation removal, bulk earthworks, bridge, culvert and stream works, stockpiling, dewatering and chemical treatment where required. The conditions also require installation certification, regular inspection and maintenance, water-quality monitoring and corrective action where erosion and sediment control measures are not operating effectively, together with specific controls for winter earthworks.

d) Requiring the permanent stormwater management system to be designed and constructed so that runoff from road surfaces is captured and treated before discharge, constructed stormwater wetlands are located offline from Watercourses, and attenuation, extended detention and erosion protection are provided where required.

e) Requiring detailed flood modelling before each relevant Stage of Works to demonstrate that the detailed design achieves the specified flood-management outcomes, including limits on increases in flood levels outside the Designation and the particular outcomes at the habitable buildings at off Marshall Avenue.

f) Managing bridges, temporary culverts and temporary discharge structures through final-design and construction requirements, including fish passage, flow conveyance, erosion and scour protection, treatment of bridge-deck runoff where practicable, offline construction where practicable, and stabilisation of affected Watercourse beds and banks.

g) Protecting Puketoromiro Pā by requiring the detailed design for the four-laning of the Takitimu Drive to avoid any further cutting, excavation or removal of material from the identified existing benching profile adjacent to the pā. Compliance with this requirement must be demonstrated through the relevant Outline Plan.

h) Managing other potential archaeological effects through archaeological authority conditions, including an Archaeological Management Plan, archaeological investigation and recording, contractor briefings, hapū involvement, tikanga protocols, and procedures for kōiwi or unexpected archaeological discoveries.

i) Managing contaminated land effects through Detailed Site Investigations, Contaminated Site Management Plans, Remedial Action Plans where required, and Site Validation Reports to confirm that remediation or management requirements have been achieved.

j) Managing construction effects through a Construction Traffic Management Plan and Construction Noise and Vibration Management Plan, together with conditions addressing noise and vibration exceedances, building condition surveys, dust and odour, drilling, temporary dewatering and discharges, construction water takes, biosecurity, and works within and around watercourses.

k) Managing operational effects through conditions requiring permanent stormwater treatment and maintenance, landscape and visual mitigation planting, flood-management outcomes and low-noise road surfaces where required.

1.11 Conclusion

The Project has been assessed against the relevant requirements for designation and resource consents under the RMA, as applied through the FTAA. The assessment demonstrates that the Project is consistent with the purpose of the RMA and appropriately recognises and provides for the relevant matters in sections 6, 7 and 8.

The Project will give rise to a range of actual and potential effects, all of which have been assessed in the technical assessments supporting this Application (summarised in **Table 5**), and for which appropriate management and mitigation measures are proposed.

The Project will also deliver significant positive effects, including improved safety, travel time reliability, freight efficiency, network resilience, accessibility and support for planned urban growth in Tauriko West and the wider Western Corridor. These benefits are substantial and are consistent with the Project's status as a listed project under the FTAA and as a RoNS.

Adverse effects have been avoided where practicable through route selection, design refinement and the Indicative Design. Where effects cannot be avoided, they will be remedied, mitigated, offset or compensated through the suite of measures summarised in this document and set out in the proposed conditions.

The assessments have not identified any significant adverse effects. Following implementation of the proposed measures and conditions, most residual adverse effects will be low, very low, negligible or less than minor. Construction-water effects are assessed as minor, while localised flooding effects at 96, 98, 100 and 108 Marshall Avenue are assessed as no more than minor. The physical loss of archaeological material will be permanent and is assessed as more than minor, although those effects will be mitigated through the Archaeological Authorities, AMP and Research Strategy. No overall rating has been assigned to cultural effects, as it is not for NZTA to determine whether the proposed responses fully address the cultural values or concerns of the affected hapū.

Overall, the adverse effects of the Project are considered to be appropriately managed and mitigated, and the Project's positive effects are significant. The NoRs and resource consents sought are therefore appropriate and should be granted, subject to the proposed conditions.