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# Construction Environmental Management Plan – Peka Peka to Ōtaki Project

FCCL-EV-MPN-0001

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FINAL C – September 2017

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## REVISION RECORD

Revision	Status	Author	Date	Description
A	Draft	Kylie Eltham	05/02/17	Internal review
B	Draft	Kylie Eltham	28/02/17	For PA review
B.1	Draft	Kylie Eltham	13/03/17	For Council review
B.2	Draft	Ed Breese	09/06/17	Response to Council comments
C	Final	Alice Naylor	29/09/17	For Information

## CONDITIONS – REFERENCE GUIDE

The following table is provided to assist with assessing compliance with Consent Conditions. It is our intention this guide be removed before this Management Plan is lodged for certification with council.

Condition No.	Condition Summary / Requirements	CEMP Section
DC 20 a)	The requiring authority shall submit a CEMP to the Manager for information at least 15 working days prior to the commencement of the works	1.1
DC 20 b) i	The CEMP shall include details of: Staff and contractors responsibilities	2
DC 20 b) ii	Training requirements for employees, sub-contractors and visitors	4
DC 20 b) iii	Environmental incident and emergency management (including the procedures required under Regional Consent G.10)	5
DC 20 b) iv	Communication and interface procedures	6.1
DC 20 b) v	Environmental complaints management (required under these conditions)	6.2
DC 20 b) vi	Compliance monitoring	7.1
DC 20 b) vii	Environmental reporting	7.2, 7.3
DC 20 b) viii	Corrective action	7.5
DC 20 b) ix	Environmental auditing	7.4
DC 20 b) x	CEMP review	7.6

Condition No.	Condition Summary / Requirements	CEMP Section
DC 20 b) xi	SCMP	8
DC 20 c)	Construction methodologies and construction timeframes including staging	1.2, 1.2.2, 1.2.3
DC 21	The CEMP shall be implemented through the period of the Works and updated as required	7.6
DC 22	A copy of the CEMP shall be held at one or more of the site offices at all times	1

## GLOSSARY OF ABBREVIATIONS

Acronym	Definition
ADP	Accidental Discovery Protocol
AEE	Assessment of Environmental Effects
BECLMP	Bulk Earthworks Contaminated Land Management Plan
CAQMP	Construction Air Quality Management Plan
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise Vibration Management Plan
CTMP	Construction Traffic Management Plan
DoC	Department of Conservation
EMP	Ecological Management Plan
ESMP	Environmental and Social Management Plan
ESCP	Erosion & Sediment Control Plan
GWRC	Greater Wellington Regional Council
HNZ	Heritage New Zealand
KCDC	Kāpiti Coast District Council
LMP	Landscape Management Plan



Manager	The Manager, Environmental Regulation, Greater Wellington Regional Council
NIMT	North Island Main Trunk Line
NOR	Notice of Requirement
NUMP	Network Utilities Management Plan
NZTA	New Zealand Transport Agency
RMA	Resource Management Act
SH1	State Highway 1
SSEMP	Site Specific Environmental Management Plan
SCMP	Stakeholder Communications Management Plan
UDLF	Urban Design Landscape Framework

# 1 PROJECT INTRODUCTION

## Preface

This Construction Environmental Management Plan (CEMP) has been prepared to demonstrate how Fletcher Construction as the Contractor will manage the construction effects on the environment for the Peka Peka to Ōtaki (PP2O) project. In addition, it will demonstrate how conditions of consent, designation conditions and policy requirements of NZTA, Kiwirail and Fletcher Construction will be met.

A copy of the CEMP including its appendices will be held at the main site office.

## 1.1 Purpose and Scope

The CEMP and its subsequent implementation will provide guidance for the construction team and will identify the processes for managing the environmental effects and construction nuisance issues associated with the Peka Peka to Ōtaki Expressway project. It will demonstrate how the requirements of the consent and designation conditions along with industry best practice will be implemented.

Condition 20 of the Designation for the Peka Peka to Ōtaki Expressway and conditions G.19 and G.23 – G.27 of the resource consents issued for the project, require the submission of a CEMP at least 15 working days prior to the commencement of the construction works.

In accordance with these conditions, the CEMP shall include:

- Staff and contractor's responsibilities
- Training requirements for employees, subcontractors and visitors
- Environmental incident and emergency management (including the procedures detailed in regional consent condition G.10)
- Communication and interface procedures
- Environmental complaints management
- Compliance monitoring
- Environmental reporting
- Corrective action
- Environmental auditing
- CEMP review
- SCMP
- Construction methodologies
- Construction timeframes including staging

A number of specialist plans are appended to this CEMP in Appendix A – G providing specific detail for construction impacts and will be certified by either Greater Wellington Regional Council (GWRC) or submitted to Kāpiti Coast District Council (KCDC). These requirements are detailed in the table below.

*Table 1 Management Plan Certifiers*

Plan	GWRC	KCDC
Erosion and Sediment Control Plan	✓	
Ecological Management Plan	✓	
Bulk Earthworks Contaminated Land Management Plan	✓	
Construction Air Quality		✓
Construction Noise and Vibration		✓
Construction Traffic		✓
Groundwater Monitoring Plan	✓	

Further information detailing the purpose of the seven plans appended to this CEMP are provided below:

- **Erosion and Sediment Control Plan (ESCP):** describes the methods and practices to be implemented to minimise the effects of sediment generation and yield on the aquatic receiving environment
- **Ecological Management Plan (EMP):** details the ecological management programme that will be implemented to appropriately manage the effects of the construction phase and once the project is operational. It will also document the permanent ecological mitigation measures including the restoration, management and maintenance of these measures
- **Bulk Earthworks Contaminated Land Management Plan (BECLMP):** provides a framework and general procedures for the management of contaminated soil, materials and structures which may potentially be present in the ground which may be disturbed or require removal during the course of construction
- **Construction Air Quality Management Plan (CAQMP):** identifies the methods to be used for limiting dust and odour nuisance and procedures for dealing with complaints

- **Construction Noise and Vibration Management Plan (CNVMP):** provides methods to manage noise and vibration appropriately during the course of construction by outlining the measures, procedures and standards for mitigating the effects of noise and vibration during the construction phase of the project
- **Construction Traffic Management Plan (CTMP):** outlines the proposed standards, procedures and requirements for managing the impact of construction works on local traffic including rail
- **Groundwater Monitoring Plan (GMP):** manages the potential construction effects on groundwater to ensure no significant changes to wetland hydrological conditions and no permanent changes to existing bore owners ability to extract water

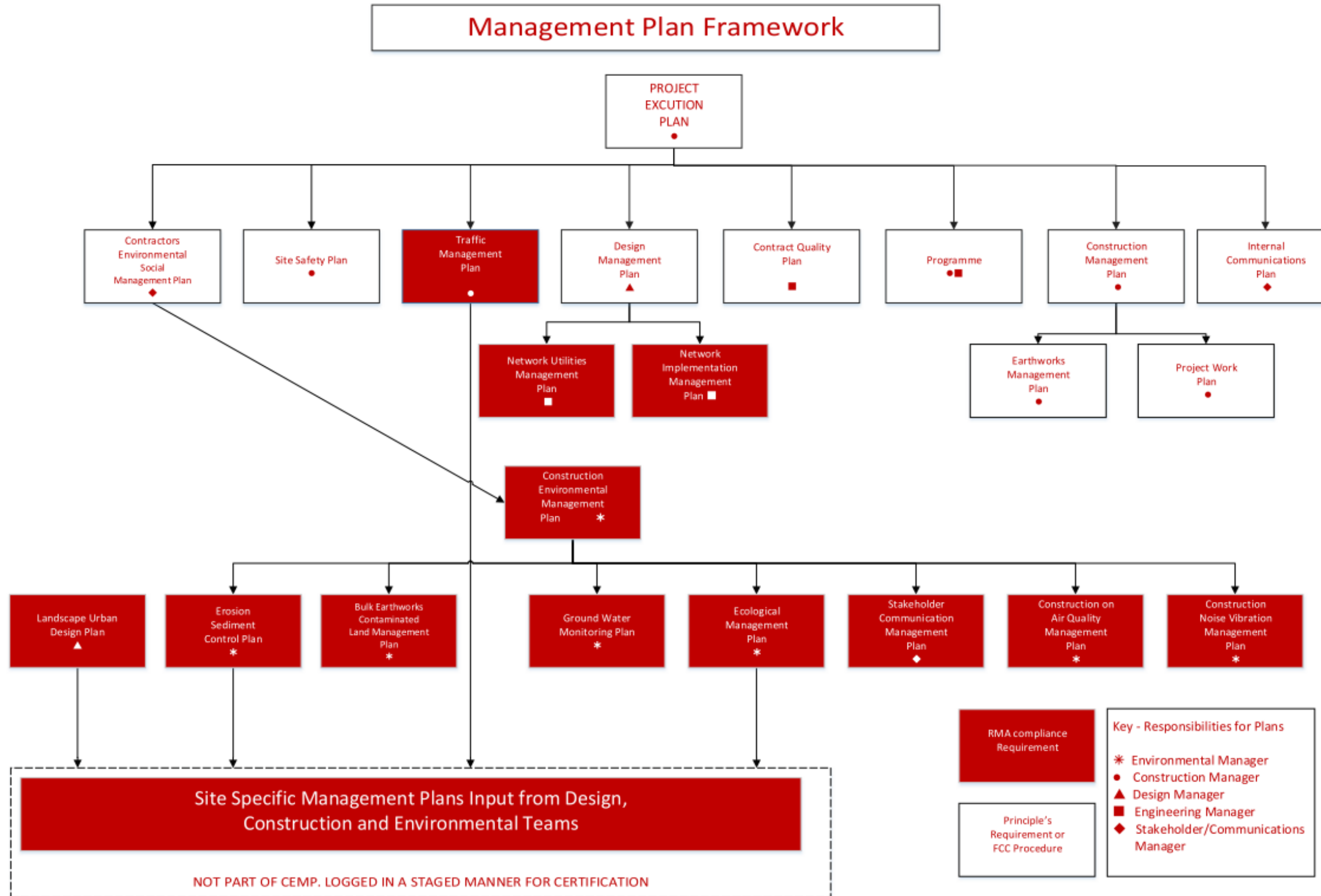
In the preparation of this document reference has been made to the ESMP which contains NZTA's environmental and social policies and any specific Key Result Areas.

This CEMP is a working document and will be updated regularly throughout the course of the project to reflect changes to construction methodology and to ensure environmental effects are addressed appropriately through the course of construction. These changes will preserve or enhance the measures used to address environmental effects and as such will not require additional certification after it has been finalised by the relevant Councils. Updated versions will be uploaded to CS-Vue and provided to the relevant Council for information purposes. A copy of the updated plan will be provided to the Engineer to the Contract. A summary highlighting the changes to the document will be provided at the same time.

In addition to the management plans appended to this document, there are a number of site specific environmental management plans (SSEMPs) required throughout the duration of project construction. These are not part of the CEMP and are designed to integrate the design elements of the specific construction area or aspect with environmental management and monitoring methods.

Figure 1 below identifies the management plan framework and how it will be implemented during construction.

Figure 1: Management Plan Framework



## 1.2 Project Description

### 1.2.1 Overview

The Peka Peka to Ōtaki Expressway is an approximately 12.2 kilometre long, four lane expressway running north from Peka Peka where the M2PP Expressway currently terminates, to join the existing State Highway 1 (SH1) north of Ōtaki, near Taylors Road.

The Project runs through an area of relatively flat to rolling terrain and is located about 1 to 2.5 km west of the foothills of the Tararua Range and 3 to 4 km east of the Te Horo-Ōtaki coastline. The existing geology is summarised below.

- Localised inter-dunal deposits, terrace alluvium, recent alluvium and old beach and dune deposits towards the northern end of the alignment;
- Recent alluvium along the Ōtaki River floodplain and other river or stream locations along the expressway alignment;
- Terrace alluvium from Mary Crest to Ōtaki River; and
- Dune sand, inter-dunal deposits, old beach and dune deposits to the south of Mary Crest.

Three specific waterways are noted along the Project alignment as having special significance. These waterways are the:

- Ōtaki River containing nationally threatened indigenous fish including short jawed Kokopo, giant Kokopo, banded Kokopo and Koaro. The Ōtaki River also contains an important trout habitat and is considered to have important amenity and recreation values
- Waitohu Stream containing nationally threatened indigenous fish including the brown mudfish
- Mangaone Stream containing nationally threatened indigenous fish including the short jawed Kokopo, Koara and banded Kokopu

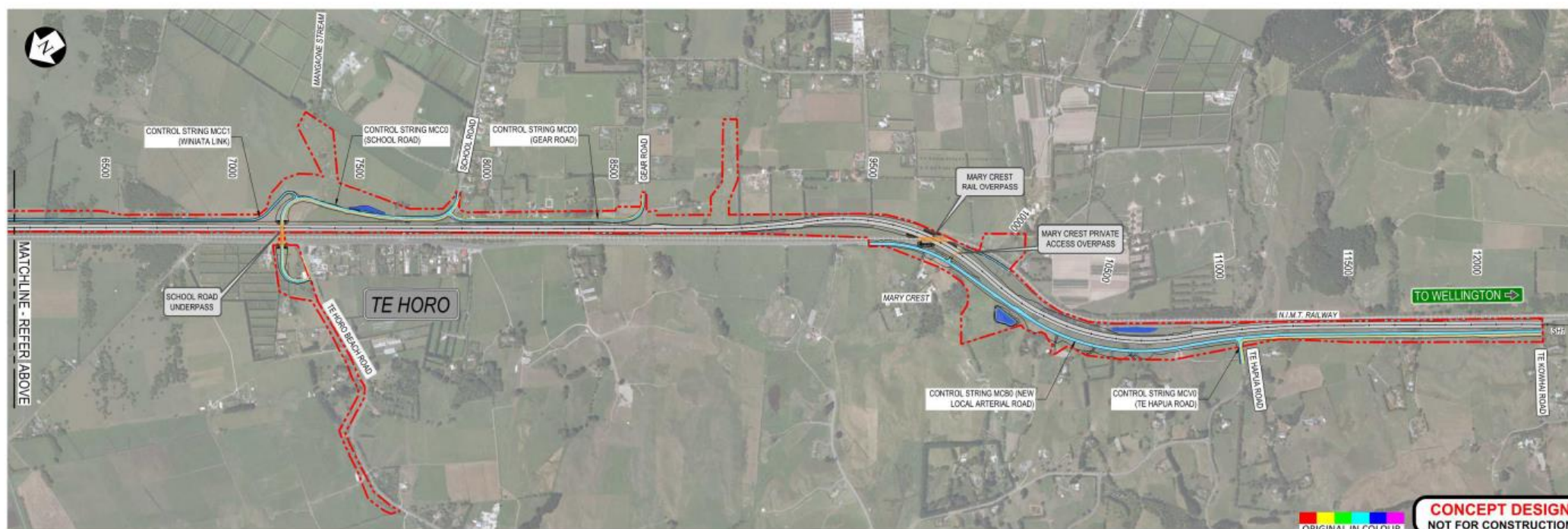
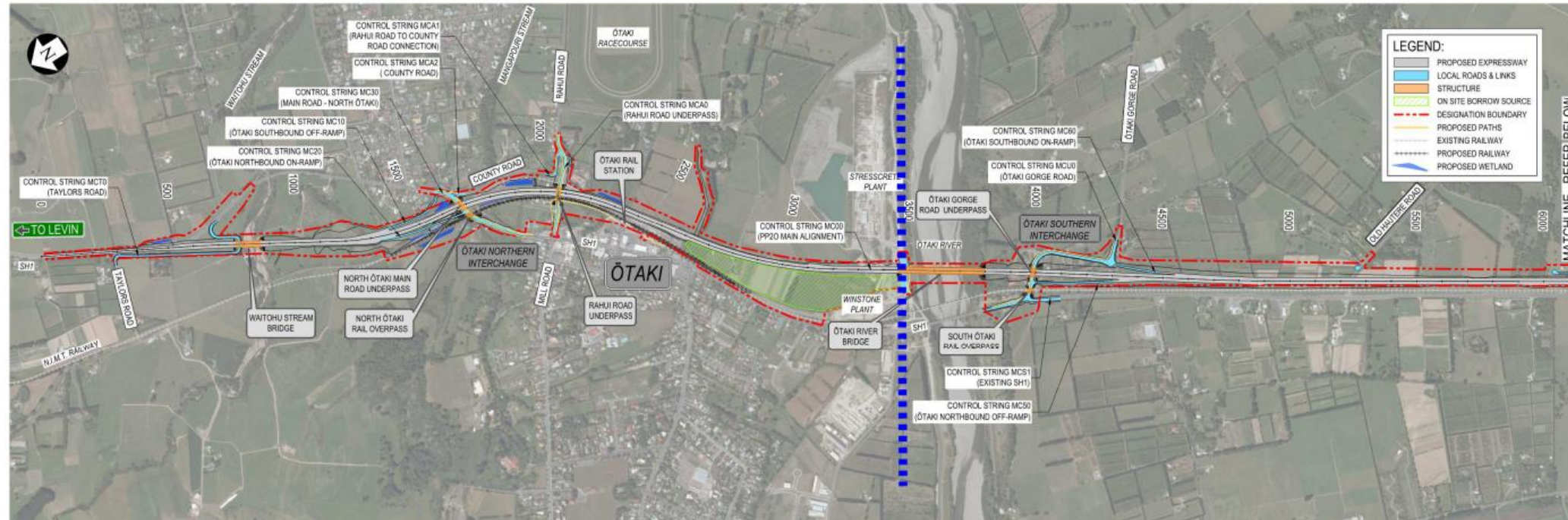
Construction works will consist of:

- 12.2 km of four lane, medium divided Expressway
- 1.4M m<sup>3</sup> earthworks
- 9km local road
- 10 Bridges, including the 330m Ōtaki River Crossing
- Ōtaki Intersection - split
- East-West connections – Ōtaki, Te Horo
- Grade separation – Taylors Road
- 1.6km railway realignment

The works will follow a general programme of enabling works and site establishment, followed by rail realignment and bridge construction and then road construction.

The construction of the project has been divided into two sections being Section 1 – Ōtaki North through to Ōtaki River Bridge and Section 2 – Ōtaki River Bridge through to the tie in at Peka Peka where the MacKays to Peka Peka Expressway currently terminates.

Figure 2: Extent of Zone 1 (Top picture – Taylors Road to Ōtaki River) and Zone 2 (Ōtaki Rver to Peka Peka)





### 1.2.2 Section 1 – Ōtaki North through Ōtaki River Bridge

This section is approximately 3.5 km's long and takes in the area from the northern tie-in (adjacent to Taylors Rd) moving southward to the Ōtaki River. The main elements of work and approximate timings are outlined in the Table 2 below.

Table 2: Section 1 Staging and approximate timeframes

Elements	Description	Approximate Timings		
		Start	Finish	Duration
Bulk Earthworks & Drainage	355,000 m3 of earthworks	May 2018	June 2019	14 months
Utility Relocations	Power, gas, telecom, water relocation works	Oct 2017	Nov 2019	26 months
Structures	Bridge 1 (over Waitohu Stream)	May 2018	Aug 2019	16 months
	Bridge 2 (Local road over expressway)	Jan 2018	Sept 2018	9 months
	Bridge 3 (Local road over railway)	Jan 2018	July 2018	7 months
	Bridge 4 (Local road over expressway)	July 2018	April 2019	10 months
Rail Realignment	Relocation of NIMTR, Ōtaki sidings and platform works	June 2018	March 2019	10 months
Pavements	Local roads and four lane expressway pavements and surfacing	June 2019	March 2020	10 months
Environmental Works	Wetland and planting (landscape & mitigation)	April 2018	June 2019	15 months

### 1.2.3 Section 2 – Ōtaki River Bridge through to Peka Peka

This section is approximately 8.7 km's long and takes in the area from the Ōtaki River south to the southern tie-in at Peka Peka adjacent to Te Kowhai Rd . The main elements of work and approximate timings are outlined in the following table.

Table 3: Section 2 Staging and approximate timeframes

Elements	Description	Approximate Timings		
		Start	Finish	Duration
Bulk Earthworks & Drainage	1,000,000 m3 of earthworks	April 2018	July 2019	16 months
Utility Relocations	Power, gas, telecom, water relocation works	Oct 2017	April 2019	19 months
Structures	Bridge 5 (over Ōtaki River)	Dec 2017	June 2019	19 months
	Bridge 6 (Local road over expressway)	Aug 2018	Feb 2019	7 months
	Bridge 7 (Local road over railway)	Aug 2018	Feb 2019	7 months
	Bridge 8 (Local road over expressway)	June 2018	Sept 2019	16 months
	Bridge 9 (Expressway over railway)	Nov 2018	July 2019	9 months
Pavements	Local roads and four lane expressway pavements and surfacing	Sept 2018	March 2020	19 months
Environmental Works	Wetland and planting (landscape & mitigation)	April 2018	March 2019	12 months

The main project offices will be located at 2 Ake Ake Place in Ōtaki with three satellite construction yards located at:

- Northern – TBC but most likely adjacent to the existing SH1 in the vicinity of Rahui Road and the Pare-O-Matangi Reserve (existing industrial site)
- Central – to service the three bridges at the south Ōtaki interchange, located within the designation footprint between approximate chainage 4000 and 4100
- Southern – to service bridges 8 and 9 and earthworks, located within the designation at approximate chainage 8950.

## 2 RESPONSIBILITIES

Environmental responsibilities for key construction positions are detailed below in Table 4.

Table 4: Environmental Management Roles and Responsibilities

Role	Person	Contact Details	Responsibilities
Contractors Representative	Andrew Goldie	andrewg@fcc.co.nz 0274053615	<ul style="list-style-type: none"> <li>• Demonstrates commitment to the highest standards of environmental management</li> <li>• Ensures all team members comply with specifications, RMA conditions</li> <li>• Reports on environmental performance, incidents and issues to the client</li> <li>• Reviews and approves Construction Environmental Management Plan prior to issue</li> <li>• Ensures adequate resources are provided to staff to enable environmental issues to be appropriately managed</li> <li>• Approves training needs</li> <li>• Maintains contact 24/7 during construction and has the authority to initiate immediate response actions</li> </ul>
Construction Manager	Steve Findlay	stevef@fcc.co.nz 029 770 3128	<ul style="list-style-type: none"> <li>• Ensures there is a system in place so that construction works do not proceed until required environmental sign-offs are completed</li> <li>• Overviews systems and processes to ensure consent requirements are captured for construction works</li> <li>• Ensures adequate resources are provided to ensure environmental issues are appropriately managed</li> <li>• Reviews environmental incidents and complaints with the Environmental Manager and acts to address issues where needed</li> <li>• Overviews the management of erosion and sediment control systems to ensure they are robustly designed, installed and modified as appropriate for each stage of works</li> <li>• Reviews and monitors construction work methods to ensure compliance with RMA conditions</li> </ul>

Engineering Manager	Andy Goldie	andrewgo@fcc.co.nz 027 405 3615	<ul style="list-style-type: none"> <li>• Provides key link between design team and construction team</li> <li>• Has an extensive knowledge and understanding of Designation and Resource Consent conditions</li> <li>• Ensures opportunities for implementing Greenroads aspects into the design are taken advantage of</li> <li>• Ensures all specific design requirements identified in consents are identified for designers</li> </ul>
Design Manager	Bruce Symmans	bsymmans@tonkintaylor.co.nz 021579862	<ul style="list-style-type: none"> <li>• Ensures sustainability concepts including Greenroads aspects are included in final design produced</li> <li>• Provides confirmation that specific design requirements identified in consent conditions have been achieved</li> <li>• Notifies the Environmental Manager of any design issues which may impact on RMA compliance</li> </ul>
Environmental Manager	Alice Naylor	A.Naylor@Higgins.co.nz 027 297 6055	<ul style="list-style-type: none"> <li>• Provides leadership to ensure staff are motivated to achieve environmental standards, and comply with all RMA conditions and environmental management plan requirements</li> <li>• Develops, implements and reviews environmental management systems and environmental management plans and strategies for the project</li> <li>• Overall manager responsible for Erosion and Sediment Control. Soil Conservator for the Project.</li> <li>• Overviews and key construction team point of contact for Heritage New Zealand including obtaining of necessary Archaeological Authorities and associated reporting</li> <li>• Coordinates environmental management interfaces with external agencies and stakeholders in conjunction with the Stakeholder &amp; Communications Manager</li> <li>• Provides a liaison point between site staff, landscape contractors and arborists with respect to scheduled / protected tree removal / relocation works</li> <li>• Manages and co-ordinates environmental monitoring required by RMA conditions and maintains and submits relevant reporting and records</li> </ul>

			<ul style="list-style-type: none"> <li>• Coordinates all environmental auditing functions and ensures relevant records are maintained</li> <li>• Responds to and investigates all environmental complaints, issues or incidents</li> <li>• Investigates all environmental complaints and incidents</li> <li>• Reports on environmental performance, incidents and issues</li> <li>• Notifies Contractors Representative and Regulatory Authorities of any significant non compliances</li> <li>• Coordinates environmental emergency responses</li> <li>• Responsible for resolving issues of environmental non compliances</li> <li>• Extensive knowledge and understanding of RMA conditions</li> <li>• Ensures evidence for CS-Vue Compliance is uploaded regularly</li> </ul>
Environmental Advisor	Sevasti Hartley	sevastih@fcc.co.nz 0278078400	<ul style="list-style-type: none"> <li>• Supports Environmental Manager and provides leadership to ensure all staff comply with environmental management systems, RMA conditions, archaeological authorities, DoC permits and environmental legislation</li> <li>• Coordinates the preparation of Erosion and Sediment Control plans</li> <li>• Undertakes as-builting of environmental controls including coordination of information from surveyors as required</li> <li>• Undertakes regular site inspections and audits to ensure compliance with the CEMP and CESCPS, RMA conditions</li> <li>• Coordinates all site monitoring including but not limited to groundwater, water quality, ecological, dust, noise, and vibration monitoring</li> <li>• Manages maintenance and monitoring of Chemical Treatment Systems (if used)</li> <li>• Ensures spill kits are available and stocked and provides training on equipment use</li> <li>• Coordinates site archaeological protection requirements and provides necessary training and advice to site staff</li> <li>• Conducts regular site inspections of erosion and sediment control devices and co-ordinates maintenance where necessary</li> <li>• Ensures on-site visual dust monitoring is undertaken regularly</li> <li>• Monitors site controls during rain storms</li> <li>• Uploads environmental monitoring results and external audits to CS-VUE</li> </ul>

			<ul style="list-style-type: none"> <li>• Ensures staff on-site are aware of environmental requirements at all times</li> <li>• Trains staff in site specific environmental procedures</li> </ul>
Stakeholder & Communications Manager	Ed Breese	ebreese@tonkintaylor.co.nz 021333726	<ul style="list-style-type: none"> <li>• Organises, co-ordinates and facilitates engagement with affected property holders and community prior to and during construction</li> <li>• Works in partnership with Environmental Manager on engagement and construction activities in accordance with RMA conditions</li> </ul>
Site Superintendent/Supervisors		Simon Filfield 0272092295  Martin Leitner 0274111032	<ul style="list-style-type: none"> <li>• Provides leadership to the site construction team to achieve project environmental objectives and targets to ensure high performance is consistently achieved</li> <li>• Ensures environmental controls including erosion and sediment control works are protected and maintained on a day to day basis</li> <li>• Ensures that the CEMP, ESMP, SSEMPs and Archaeological Authority requirements are implemented appropriately by the construction team</li> <li>• Maintains contactability 24/7 during construction and has authority to initiate immediate response actions</li> <li>• Leads the emergency response crew</li> <li>• Reports all environmental incidents, compliance issues and complaints to the Environmental Manager</li> <li>• Reviews the need to use a water cart or sprinklers to control dust</li> </ul>
Project Engineers		Richard Rakovics 0277064486 RichardR@fcc.co.nz  Craig Service 0278093598 CraigS@fcc.co.nz	<ul style="list-style-type: none"> <li>• Provides leadership to the site construction team to achieve project environmental objectives and targets to ensure a high level of performance is achieved</li> <li>• Responsible for ensuring environmental controls and erosion and sediment control works are installed and modified as appropriate for each stage of construction</li> <li>• Assist in the development, implementation and review of project environmental objectives</li> <li>• Develop, implements and monitors construction methods and environmental protection measures to ensure compliance with the RMA requirements, the CEMP, ESMP, SSEMPs and CESCPS;</li> </ul>

			<ul style="list-style-type: none"> <li>• Demonstrate understanding of major environmental and community issues and environmentally sensitive areas</li> <li>• Coordinate environmental interfaces with subcontractors and suppliers</li> <li>• Reports all environmental incidents, compliance issues and complaints to the Environmental Manager</li> <li>• Ensures staff on-site are aware of environmental requirements and community relation protocols at all times</li> </ul>
Foremen		Dave Morgan DaveM@fcc.co.nz	<ul style="list-style-type: none"> <li>• Manage the construction of critical erosion and sediment control devices, temporary stormwater ponds, stream works including temporary diversions and removal of vegetation</li> <li>• Co-ordinates daily site inspections of environmental controls including erosion and sediment control devices and co-ordinate maintenance where necessary</li> <li>• Undertakes visual dust monitoring three times daily and taking action as necessary</li> <li>• Monitor the site during rainfall events and high wind events</li> <li>• Ensure staff on site are aware of environmental requirements at all times</li> </ul>
All site staff and contractors			<ul style="list-style-type: none"> <li>• Understand RMA conditions and requirements and how they relate to the specific activities being undertaken</li> <li>• Attend and actively participate in toolbox talks and environmental training</li> <li>• Responsible for reporting incidents, defects and other problem areas to senior site staff as they arise</li> <li>• Ensure that required processes and procedures for environmental management are followed</li> <li>• Carry out routine maintenance and emergency work as directed</li> <li>• Care for all environmental works and controls</li> <li>• Ensure the site is kept tidy and all waste is placed in appropriate bins</li> </ul>
Visitors			<ul style="list-style-type: none"> <li>• Understand environmental requirements of the site and how they impact on activities being undertaken. To be covered off in visitor induction and by host on site.</li> </ul>

Iwi	Te Waari Carkeek	TeWaariC@fcc.co.nz	<ul style="list-style-type: none"><li>• Provide input into project documentation such as management plans, design processes, planning documents.</li><li>• Reviews permits to work and coordinates the level of involvement of kaitiaki in site activities</li><li>• Coordinates all aspects of iwi monitoring.</li><li>• Key point of contact for <b>Ngā Hapū o Ōtaki</b>.</li></ul>
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## 3 ENVIRONMENTAL AND SOCIAL IMPACTS

The CEMP is to be read in conjunction with the CESMP and the information provided here in relation to environmental and social impacts focuses on the impacts of the construction activities on the receiving environment and local communities.

### 3.1 Night Works

Night works are defined as between 2000hrs and 0630hrs and will be required occasionally to facilitate the movement of bridge beams, undertake traffic switches and facilitate other construction activities which rely on low traffic numbers for a safe and successful implementation. Night works are only permitted with authorisation from the Engineer (refer Section 1.11 of the Principal's Requirements), and must be carried out in accordance with the requirements outlined in the CNVMP.

Possible locations of night works include:

- NIMT relocation tie ins with existing line
- Bridge beam installs and deck pours at Bridge 3, Bridge 6 (dependent on train movements)
- Bridge 8

During night works, temporary lighting using mobile lighting towers will be erected. Once erected, the site engineer will be responsible for ensuring that no adverse light spill effects are created on adjacent neighbouring properties i.e. lights not directly shining into bedroom windows.

General Traffic Management set up and changes and removal throughout the life of the project may also be undertaken at night to minimise disruption to road users.

Noise associated with night works are addressed in the Construction Noise Vibration Management Plan.

### 3.2 Erosion and Sediment Control

During construction, there is the potential for sediment laden discharges to occur from exposed surfaces. While these discharges can have a negative impact on receiving environments, the proposed controls and management techniques as detailed in the Erosion and Sediment Control Plan (ESCP) attached at Appendix C will avoid, remedy or mitigate these construction effects.

The ESCP provides for an overview of the erosion and sediment management techniques and measures that will be used within the Project and outlines methodologies and management techniques that will apply and will achieve the necessary environmental objectives. Site monitoring and auditing functions are also detailed.

Specific details for erosion and sediment controls will be provided in the Site Specific Environmental Management Plans (SSEMPs) as the project progresses.

The project area is a mix of flat to gently rolling farm lands with an area of sand dunes in the south and alluvial terraces in the vicinity of the Ōtaki River. Consequently, the main priorities will be:

- Erosion control to reduce the sediment loads requiring subsequent treatment
- Exposure of bare land – potential for dust generation
- Receiving environments and their associated values
- Works within and adjacent to watercourses and wetlands (stream diversions, bridge works, culvert placement)
- Stockpiling of materials
- Pumping of sediment laden water from excavations

Key structural measures for sediment control will include diversion bunds, decanting earth bunds, silt fences and sediment retention ponds with chemical treatment where applicable along with progressive stabilisation.

### 3.3 Dust

Dust can create a nuisance effect for local residents by impacting on washing hung out to dry, leaving dust on house roofs, windows and water tanks. In the case of extremely sensitive human receivers, dust can cause a health issue. Dust can also be deposited on paddocks, crops and vegetable gardens leaving the grass or crops less palatable for animals and humans.

Rainfall and wind speed are the two key meteorological conditions which can have the greatest effect on dust mobilisation along with the extent of construction area which is 'open' at any one stage. The spring equinox in September and October traditionally produces strong winds on the Kāpiti Coast and the construction programme will take this into account when addressing this effect.

Key methods for managing and mitigating the effects of dust will include:

- Minimising areas of exposed earthworks and by stabilising completed areas as soon as practicable
- Maintaining stabilised entrance and exit points
- Using compactors and rollers to seal the surface
- Using water carts or sprinklers to apply water to areas generating dust
- Reducing the speed of earthmoving plant in localised areas if appropriate
- Use of commercial dust suppressants if required.

More detailed methods regarding dust control are detailed in the Construction Air Quality Management Plan (CAQMP) attached as Appendix B.

## 3.4 Construction Noise and Vibration

Construction noise and vibration issues can be very emotive issues for stakeholders located close to the project works. The key to managing these two construction nuisance issues is to ensure residents are well informed of what can be expected and to mitigate the effects of construction noise and vibration activities as far as practicable.

Hours of work for the project will typically be conducted between the hours of 0630 and 2000hrs on weekdays and between 0730 and 1800hrs on Saturdays. As far as practicable, works will be scheduled to avoid noisy activities in sensitive areas between 0630 – 0730hrs in the morning, and between 1800 – 2000hrs in the evening to align with noise level criteria specified in NZS 6803:1999.

The project will comply with the criteria specified in NZS 6803:1999 where practicable. However, as outlined in Section 3.1 above, there will be occasions where construction activities will be required outside of normal working hours that will exceed the noise limits. These activities will typically be night works required due to traffic management constraints and may relate to:

- oversized deliveries of plant/equipment, construction materials or structures
- pavement surfacing and tie in works with the existing State Highway or local roads
- barrier installations
- NIMT tie in with existing track other activities on the local road network, which may disrupt traffic flows, such as network utility installations.

Mitigation and procedures for addressing construction noise and vibration issues are detailed in the Construction Noise Vibration Management Plan (CNVMP) attached at Appendix A.

## 3.5 Temporary Stormwater Management

Stormwater generated within the construction footprint will be managed in accordance with the ESCP and SSEMPs. The construction related sediment controls must remain in place until all earthworks in the catchment are stabilised, and permanent stormwater devices are operational. In addition, sign off from the Environmental Manager will be obtained before any controls are removed.

## 3.6 Contaminated Land

With the rural nature of the site, there is the potential for contaminated land to be identified during the course of the earthworks. The most likely scenarios are old farm dumps being uncovered, buried asbestos or asbestos in houses to be removed or the removal of horticulture soils which are considered contaminated due to the use of pesticides and herbicides on crops. Methods for dealing with contaminated land are addressed in the Bulk Earthworks Contaminated Land Management Plan (BECLMP) attached at Appendix D.

Asbestos removal and methamphetamine contamination of houses to be removed will be addressed in accordance with Health and Safety regulations and detailed in work plans and the Job Safety and Environmental Analysis (JSEA) associated with these activities.

### 3.7 Groundwater

Construction of the Expressway may result in temporary changes in groundwater levels locally which may result in the:

- Changes in ground water levels in some wetlands
- Altered groundwater contributions to surface water bodies (rivers and wetlands)
- Possible ground settlement and potential damage to existing structures
- Altered groundwater levels in shallow private bores

Extensive baseline monitoring has been undertaken prior to construction so that any future changes in groundwater levels can be assessed as to whether they are attributable to the Project.

Detailed monitoring and procedures to minimise the impact of construction activities on Groundwater levels are included in the Groundwater Monitoring Plan (GMP) attached as Appendix G.

A groundwater take consent has been issued authorizing the take from water supply bores of 110,000 m<sup>3</sup>/year not exceeding a rate of 300m<sup>3</sup>/day. At this stage there is no intention to utilise this consent.

### 3.8 Settlement

Construction activities on the Expressway may result in settlement effects. Potential settlement sources may include:

- consolidation settlement due to embankment construction
- consolidation settlement due to groundwater drawdown
- mechanical settlement due to vibrations from construction activities

Potentially at risk areas from settlement have been identified for monitoring at the preloads at SH1 and NIMT and south of Mary Crescent and north of Rahui Road. Settlement monitoring locations and procedures will be addressed in the relevant SSEMP.

### 3.9 Archaeology/Heritage

A number of recorded archaeological sites have been identified along the Expressway alignment. In addition, there are a number of heritage features including the Ōtaki Railway Station, Clifden Cottage and the Beehive Kilns. The Archaeological Management Plan prepared by Opus and attached at Appendix F should be referred to for further information.

Archaeological pre-construction monitoring prior to the Contractor starting work, in accordance with Condition 53 of the Designation, is to be undertaken by Opus at the following locations:

- R25/47 and the Mary Crest Dune
- R25/48 – Matenga Moroati’s House
- S25/125 – Clifden Cottage
- Kaingaraki Pa and cultivation area
- S25/122 – Ōtaki Railway Station
- S25/124 – 230 Main Highway Ōtaki
- Pare-O-Matangi block
- North Ōtaki Dunes

During these field investigations, open days will be held to allow the public to appreciate and understand the archaeology and built heritage of the area. An outcome of the project will be the commissioning of a series of mobile interpretive panels and information booklets detailing what was found during the investigations.

An archaeological authority (which is currently under appeal) will cover the site once the appeal has been resolved. Works are not to start on site until the Archaeological Authority is in place. Monitoring of the site is detailed in the Archaeological Management Plan (Appendix F).

As part of the site induction, all staff will view the History in Action DVD which provides an overview of what an archaeological site is, typical indicators and responsibilities associated with finding archaeological sites.

The key actions for site staff uncovering unexpected finds are:

- Stop work
- Tell the boss
- Don’t touch!

The Project Archaeologist will liaise closely with the Construction Team via the Environmental Manager to ensure that the monitoring of earthworks in areas identified in the Archaeological Management Plan are undertaken correctly.

### 3.10 Ecological Management

The receiving environment and the environment in which the Expressway is to be constructed has a wide range of valuable ecological features including streams, wetlands, covenanted native bush and native flora and fauna including the Banded Dotterel and the New Zealand Pipit.

The Ecological Management Plan (EMP) will detail the procedures to be undertaken to minimize the impact of construction on the ecology of the area which will be complimented by the extensive monitoring regime also detailed in the EMP. The EMP is attached as Appendix J.

Details regarding the construction methodology for the Ōtaki River Bridge including access across the river will be addressed in the site specific management plans for that area.

Methodologies regarding vegetation removal including the relocation of any fauna prior to vegetation removal and methods for identifying the vegetation to be removed will be detailed in the site specific management plans.

### 3.11 Hazardous Substances & Spill Management

The Project will involve the use of a variety of construction plant and machinery. The majority of this plant will be motorised and will require a regular supply of fuels and oils. These can become a pollutant if discharged to ground or water.

Other materials used in the construction process including concrete, bonding agents, sealants, flocculants, degreasers and paints can result in environmental impacts if they are not managed carefully and are discharged to the environment in an uncontrolled manner.

Industry best practice will be used for the storage, handling, transport and disposal of hazardous substances during construction as required by guidelines set up under the Hazardous Substances and New Organisms Act. Specifically:

- Spills will be contained within the site boundary as far as practicable
- Fuel for all construction plant will be delivered by mini-tanker and attended refuelling of construction plant will only be carried out in areas separated from environmentally sensitive areas e.g. water courses
- Spill kits will be located throughout the construction site and immediately adjacent to high risk activities. In the event of a spill, procedure ENV-02 Fuel Oil Chemical Spill Procedure will be followed (refer Hydrocarbon Spill Contingency Plan – Appendix E)
- Hydraulic oils, greases and other construction materials including small quantities of fuel required for hand tools and pumps may be stored at the site compound, in a secure, covered and bunded area, away from water courses
- A copy of all relevant Safety Data Sheets will be kept on site, including at specific storage locations
- Specific concrete and grout wash-down areas shall be provided and clearly signed
- Major plant maintenance will not be carried out onsite unless absolutely necessary. Minor repairs will be undertaken away from the edge of watercourses and wetlands

Emergency response procedures and incident management are further discussed in Section 5 of this CEMP.

A Hydrocarbon Spill Contingency Plan is attached as Appendix E.

## 3.12 Resource Efficiency & Waste Management

Opportunities around resource efficiency and waste management will be considered during the design and construction of the project as we work towards a Greenroads bronze certification. A Construction and Demolition Waste Management Plan (CWMP) will be prepared for the project to meet the requirements of PR-9: Waste Management in the Greenroads rating system.

The site will have a variety of waste streams including:

- officer paper
- lunch wastes
- cans and bottles from smoko sheds
- concrete
- wood (treated and untreated)
- steel
- plastics
- packaging
- general waste

With construction and demolition wastes accounting for 30% of all landfill waste, opportunities for re-using and recycling construction materials will be investigated and implemented where practicable. Opportunities for reusing and recycling waste within the local community through the Waste Exchange will also be investigated.

Large skip bins will be located throughout the site to ensure waste materials and recyclable materials are stored and disposed of appropriately. These will clearly identify what materials go in which bins. Skip bins will be located at construction yards where the bulk of construction materials will be delivered to. This will ensure wrapping and packaging can be recycled appropriately prior to materials heading out on site.

Officer paper, cardboard and bottles, cans and plastic will be recycled.

Opportunities for recycling concrete, plastics and wood into other value added products and possible reuse back on site, for example, wood to woodchip for site landscaping and the use of rock crushed on site for the development of sub base material are being further developed during the design phase of the project.

The tidiness of the site will be assessed during weekly site inspections and corrective actions provided to relevant supervisors to ensure all areas of the site are kept in a tidy state. General site tidiness will also be included within the project induction training session.

### 3.13 Traffic Management

Construction of the Expressway will involve increased truck movements for the delivery of materials, transportation of cut to waste materials off site and other associated vehicle movements. While the majority of haulage vehicle movements will be contained within the construction alignment, local roads may be impacted with additional vehicle movements associated with the project.

Additional traffic impacts due to construction may include localised traffic restrictions, temporary road closures, and diversions and reduced speed limits. Prior warning will be given to affected parties and stakeholders prior to temporary restrictions being implemented.

The Construction Traffic Management Plan (CTMP) provides methodologies and procedures for addressing the construction impacts on pedestrians, cyclists, horse riders, residents, businesses, public transport and general traffic. In addition SSTMPs will be prepared for specific stages of construction and provide a much greater level of detail.

### 3.14 Environmental Management

The environmental management of construction activities is governed by a series of plans and procedures. The CEMP and specialist management plans (CAQMP, CNVMP, BECLMP, ESCMP, CTMP and EMP) provide procedures across the whole project site and a choice of tools depending upon the problem. The Site Specific Environmental Management plans (SSEMPs) provide specific guidance for a location or activity. The environmental management requirements are further prescribed in work packages and work plans. To ensure that adequate environmental management measures are in place and adverse effects have been properly addressed a Permit to Work process will be used. Before any earthworks, vegetation removal or pumping is undertaken a permit application will need to be completed and approved.



## 4 TRAINING

### 4.1 Site Induction

A comprehensive environmental induction utilising mixed media including visual slides, short videos and story-telling will be provided to all staff and subcontractors prior to them starting work on site. A short test on completion of the induction will demonstrate the level of competence achieved.

The induction will include information on:

- An overview of the RMA conditions
- The environmental responsibilities for all staff
- SSEMPs and permit process
- Detail on the ecology of the area and an overview of sensitive areas including the relocation of flora and fauna
- Major environmental risks including managing dust discharges and sediment discharges
- Heritage issues including procedures in the case of unexpected archaeological finds
- Spill response and incident reporting procedures
- Greenroads and what it means to our project
- Stakeholder and complaints procedures
- Information on environmental controls such as sediment control devices, noise, vibration and waste management
- Designation boundary locations and how they're identified on site

### 4.2 Environmental Awareness Training

In addition to the environmental induction, all foremen, supervisors and managers (including engineers) responsible for managing earthworks site staff will participate in environmental awareness training to further develop their understanding of the consent and permit requirements and uniqueness of the environment in which we are operating. This training is to be led by the Environmental Manager to help drive a strong environmental culture on site.

The training will include specific packages on erosion and sediment control, dust, management, stream diversions and vegetation clearance with contents of the training packages detailed below. These training packages will be completed at least one working day before any earthworks stage, stage involving stream works or stage involving vegetation clearance or works in and around sites of cultural significance.

#### Noise

- Roles and responsibilities for management of noise and vibration matters
- Project noise and vibration limits

- Information about noise and vibration sources on-site
- Noise and vibration mitigation and management procedures
- Identification of sensitive receivers and operational requirements to achieve compliance at their buildings
- Complaints management procedures

### **Erosion and Sediment Control**

- Design details for the erosion and sediment control measures and associated methodologies including construction
- The performance standard as defined in the ESCP to be achieved by all erosion and sediment controls on site
- The sensitivity of the receiving environment to sediment discharges
- Dust management procedures including watercart application rates

### **Streamworks**

- Construction details of any stream diversions or other in-stream work and works in wetlands
- Briefing on the values of streams and/or wetlands
- The objectives of the stream design including fish passage requirements
- The sensitivity of the receiving environment to sediment discharges

### **Vegetation Clearance**

- A briefing on the values of any significant areas of vegetation that are to be retained
- The methods that shall be used to identify and protect retained vegetation during construction

### **Heritage**

- Briefing on archaeological requirements and to identify the locations of archaeological sites
- Requirements for archaeological and/or kaitiaki monitoring during the works
- Briefing on other heritage sites in the vicinity of the works including beehive kilns and Clifden Cottage

Engineers responsible for writing Work Plans and Job Safety Environmental Analysis (JSEA's) or Permits to Work (PtW) will also be given guidance on how to assess and plan for environmental / heritage issues using the CEMP, CESMP, CESC, SSEMPs and other key management plans as the key reference documents.

## 4.3 Toolbox Talks

Environmental issues will form a part of weekly toolbox meetings to ensure all workers are aware of the key issues. Although toolbox meetings focus on safety and staff welfare issues, they are an excellent vehicle for delivering environmental messages and providing feedback from all disciplines to the team. Toolbox talks are coordinated by the Health and Safety team and foremen with all staff including subcontractors required to attend.

## 4.4 Industry Specific Training

Opportunities will also be made available for selected staff such as foremen, engineers and environmental team members to attend the Greater Wellington Council Muddy Waters industry education programme.

In addition, where it is identified that staff members require specific upskilling in areas such as erosion and sediment control implementation, noise monitoring and spill response, these training courses will be organised and led by the Environmental Manager.

## 4.5 Refresher training

An annual Environmental Awareness Refresher session will be held for all staff when the project returns after the Christmas shutdown period each year.

## 4.6 Other resources

This CEMP is supported by the Fletcher Environmental Toolkit which gives practical advice on typical construction site environmental management. Training resources such as awareness posters support and provide on-going education for site staff in regard to environmental matters. These resources will be used to increase environmental awareness and drive a strong environmental culture amongst all staff.

## 4.7 Training Records

Training records in regard to environmental training will be maintained on site. Records will include:

- Names of the trainees
- Date of training
- Training provider
- General description of training content
- Level of competence achieved by the trainee

## 4.8 Summary of Training

Table 5: Summary of Environmental Training requirements

Training	Management Staff	Project Engineers	Site Engineers	Superintendents / Foremen	Labourers	Designers	Contractors	Support Staff	Visitors	Frequency
Visitor Site Induction (shortened)									x	Each visit
Full Site Induction	x	x	x	x	x	x	x	x		Once
Environmental Awareness Training		x	x	x	x		x			As required
Work plan/JSEA development to address environmental risks		x	x							Once
Toolbox Talks	x	x	x	x	x	x	x	x	x	Weekly
Erosion & Sediment Control Training		x	x	x	x		x			As required
Spill Response Training		x	x	x	x		x			As required
Heritage Training		x	x	x	x		x			As required
Environmental Refresher Training	x	x	x	x	x	x	x	x	x	Annually

## 5 INCIDENT & EMERGENCY MANAGEMENT

### 5.1 Consent Condition Non-Compliance

In the event that non-compliance with consent conditions is identified, the Environmental Manager shall be informed. It is the responsibility of the Environmental Manager to inform the relevant regulatory authority as soon as practicable as well as the Engineer to the Contract. The Environmental Manager shall identify a series of actions to be implemented to resolve the situation and return the site to full compliance.

The timeframe for implementation will depend on the issue but every effort will be made to ensure that the site is returned to full compliance within 24 hours. When contact is made with the relevant regulatory authority, discussion regarding the situation, the response to be undertaken and the timeframe for completing the response will be discussed. An investigation will be undertaken and incident report prepared as detailed below.

The CS-Vue database will also be used as a tool for identifying the status of consent compliance for the project.

### 5.2 Environmental Incident

An environmental incident is an occurrence which has (or potentially could have) a negative or adverse effect on the environment. An adverse effect is something that causes (or could have caused) environmental harm. Environmental incidents include but are not restricted to:

- Fuel, oil or chemical spills to water or land
- Unexpected archaeological discoveries
- Unforeseen impact on areas of high environmental value such as protected flora or fauna
- Construction nuisance issues such as dust, noise or vibration resulting in an impact beyond the site boundary or a valid complaint to the project
- RMA non-compliance

As noted above there are a range of environmental incidents that may occur, some with the **potential** to cause an effect and some which **do** cause an effect. Accordingly the level of response to an incident will vary. The table below details the incident management matrix to be implemented onsite.

Table 6: Environmental incident types

Incident Type	Incident Severity	Response (including notification requirements)
1	Has the <b>potential</b> to cause effect and/or which has no material effect on the environment e.g. minor spills contained within site or an environmental control which has sustained damage	Report to Environmental Manager via Site Report Card. Incident response and close out addressed internally
2	Causes an <b>actual</b> effect on the environment or is an incident detailed in Section 4.2 below	Environmental Manager notified and incident response procedure detailed in Section 4.2 is actioned

Incidents where there is a risk to the environment such as a large spill to land (> 20 litres) or a spill to stormwater or natural waterways (> 5 litres) will be reported to the Wellington Regional Council Pollution Hotline on 0800 496 734.

All incident reports (regardless of whether they are type 1 or type 2) will be closed out and filed on site. An incident register will be maintained by the Environmental Manager.

## 5.3 Consent Condition G.10 requirements

Resource consent condition G.10 provides clear direction as to how environmental incidents are to be addressed.

The Environmental Manager via the clients representative is to inform the Manager and KCDC (if appropriate) as soon as practicable within one working day after identifying that any contaminants (including sediment) have been released during the construction of the project and entered any water body due to the following:

- Discharges from non-stabilised areas that are not treated by erosion and sediment control measures as required under consent requirements
- Failure of any erosion and sediment control measures
- Discharge of a hazardous substances, including cement, to a water body
- Failure of any temporary stream diversion
- Unconsented removal, loss or damage to vegetation or other habitats
- Any other incident which either directly or indirectly causes, or is likely to cause, adverse ecological effects in any water body which is not authorised by a resource consent held by the Consent Holder

Water body is defined as fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, which is not located within the coastal marine area.

The Environmental Manager or delegate will inform the Manager at GWRC and KDCDC (as appropriate), and the clients representative, within 1 working day by either phone or email, after identifying any contaminants (including sediment) or materials that have been released during the construction works and have entered into any water body as a result of the incident.

In the event of a spill which results in an unauthorised discharge to the environment (land or water), immediate action will be taken to stabilise the situation e.g. upright spilled drum, deploy spill equipment, turn off pump, stop discharge, or establish additional control measures. Spill response and recovery shall be enacted in accordance with the Hydrocarbon Spill Contingency Plan.

For other incidents resulting in an unauthorised discharge to the environment such as noise, vibration or dust nuisances, works in the immediate vicinity will be ceased until appropriate response measures have been agreed upon between the engineer responsible for the works, the Construction Manager and the Environmental Manager.

Once the situation has been controlled and cleaned up, an environmental incident report will be completed by the engineer responsible for the works. Additional investigation and reporting will be coordinated by the Environmental Manager depending on the extent of the incident.

All initial incident reports are to be forwarded to the Environmental Manager on the day of the incident. The Environmental Manager will liaise with the Manager to establish what remediation or rehabilitation is required as a result of a type 2 incident and whether any such remediation is practical to implement. Once agreed on, the remediation is to be implemented within agreed timeframes and to the satisfaction of the Manager. Finalised investigation reports are to be completed and closed out by way of establishing learnings and remedial actions as soon as practicable following the incident. These will be fed back to the wider team at site tool boxes, and via environmental notifications. The timeframe for this will vary depending on the level of investigation undertaken.

A copy of the incident report (Appendix H) will include the following details:

- Description and location of incident including date and time
- Description of work being carried out at the time of the incident and how the incident occurred
- Corrective actions taken to rectify the situation and mitigation measures to be taken to minimise the adverse effects on the environment
- Causes of the incident
- Environmental controls in place at the time of the incident
- Preventative actions to prevent a repeat of the situation including actions to report findings back to the wider workforce

## 5.4 Environmental Risk Register

An Environmental Risk Register has been prepared for the project. The Risk Register is a live document which will be referred to by staff in the preparation of work plans and Job Safety Environment Analysis (JSEA). As construction progresses the risk register will be reviewed and updated appropriately. In addition, following significant environmental incidents, the risk register will be reviewed and updated accordingly, as well as routinely as a part of the monthly external audit process outlined in Section 7.4.



## 6 COMMUNICATION & INTERFACE PROCEDURES

### 6.1 Phone Contact

An 0800 phone line (0800 7726 4636), which will be manned 24 hours a day, will be available for all stakeholders to communicate complaints and enquiries to the project. During the day, this phone will be manned by the Stakeholder and Communications Team and after hours will be rotated amongst senior managers on the project.

In addition, an email address ([info@pp2o.co.nz](mailto:info@pp2o.co.nz)) and project website will permit communications with the project. Further detail on this can be found in the Stakeholder and Communication Plan which is the document managing communications.

Affected landowners and local residents will be kept up to date on any temporary access restrictions through regular email updates, website updates and project signage. Public health and safety will be maintained through the use of signage identifying areas off limits, potential hazards and any reduced speed limits on public roads to facilitate construction. Additional information can be found in the Traffic Management Plan and the Stakeholder and Communication Management Plan.

### 6.2 Environmental Complaints

A complaints register is to be maintained by the Stakeholder & Communications Manager and updated regularly as new complaints are received. A summary of complaints will be provided to KDCDC on a monthly basis in accordance with DC.10. The complaints register will be made available at all times to KDCDC upon request.

Complaints may be received by the a number of methods these include:

- Online onto the projects website which will have both a contact us a tab and a complaint tab or addressed to [pp2o@nzta.govt.nz](mailto:pp2o@nzta.govt.nz)
- Calls on the 0800 line or recorded messages if out of manned hours for the phone
- In person to project staff, or
- In writing.

All complaints are to be entered onto a Complaint Record by the team member who had the initial contact with the complainant.

Information which is to be sought at the initial interaction with the complainant will include:

- Name, address and contact details of the complainant (if provided)
- The nature of the complaint

- Location, date, and time of the complaint and the alleged event
- Weather conditions at the time of the complaint including wind direction and approximate wind speed if the complaint relates to dust or noise issues

Any complaints relating to environmental issues or impacts will then be forwarded to the Environmental Manager within one hour of receiving it (during working hours) and as soon as practicable if received after hours. The Environmental Manager will then coordinate an investigation into the complaint. The investigation will include consideration of other activities such as outdoor burning or unusually dusty conditions which may be occurring in the vicinity which are not project related but may have contributed to the complaint.

Measures taken to respond and close out the complaint will be reported back to the complainant and recorded on the complaint record form prior to close out.

An initial response to the complainant will be made within 48 hours of the complaint being received, except where urgency is indicated. In this case, the project will endeavour to respond within 2 hours. This initial response will detail the immediate investigations and measures taken to resolve the issue.

## 7 MONITORING & REPORTING

### 7.1 Compliance Monitoring

Regular internal inspections of the project will be undertaken by the Environmental Team focussing on the compliance of consent and designation conditions associated with erosion and sediment controls, dust, noise, vibration, water quality and general construction methods. These internal inspections will be in addition to the weekly inspections from GWRC Erosion and Sediment Control Inspector and regular compliance inspections from KCDC.

The consent and designation conditions require a variety of monitoring to be undertaken before construction, during construction and post construction. These are detailed in Section 2.2.1 of the CESMP and in the specific management plans prepared to manage the environmental effects of the project. An overview of the monitoring to be undertaken on the project includes (but is not limited to):

- Construction noise and vibration monitoring
- Settlement monitoring
- Archaeological pre-construction monitoring/investigation at identified high risk areas
- Air quality monitoring during construction including TSP and visual dust monitoring
- Baseline ecological monitoring including freshwater turbidity
- Post construction monitoring of ecological measures implemented
- Triggered turbidity monitoring
- Monitoring of the effects of construction on waterways

The CS-Vue™ system will be used by the client to manage and track environmental statutory requirements including Heritage New Zealand authorisations and any additional permits such as Wildlife Permits issued by the Department of Conservation. CS-Vue™ is a secure database which matches each consent (or other legal obligation) with a consent manager and condition manager and automatically sends an email notifying them of compliance requirements. All entries on CS-VUE are annotated with the person's name and date who undertook the changes.

### 7.2 Environmental Reporting

An annual monitoring report shall be prepared for the Manager (GWRC) by 30<sup>th</sup> June each year. This report will provide an overview of the monitoring undertaken over the course of the year, including results and the subsequent identification of any environmental issues which have arisen during construction.

Also included in the report will be the results of all monitoring data, the reasons for non-compliance or difficulty in achieving compliance with the conditions, work undertaken to improve environmental performance (as required) and any recommendations on altering the monitoring required.

The NZTA is to review and approve this report prior to disseminating it.

## 7.3 Regular compliance meetings

Regular compliance meetings (monthly) will be held with the client's representative, GWRC and KCDC. This will be an opportunity to provide a 'round table review' of ESC scores, any complaints arising from construction nuisance issues and actions being implemented to address them. The meetings will also provide an opportunity for the Environmental Manager to provide a look ahead as to the highest risk areas from a construction and compliance perspective in the coming months and how the project proposes to minimize these risks.

## 7.4 Environmental Auditing

Monthly project environmental audits are required to:

- Determine conformance with the project Environmental Management System
- Ensure the EMS is properly implemented and maintained
- Determine the extent to which the requirements defined in project RMA requirements, management plans and environmental procedures have been met

These audits will be undertaken by a Fletcher Construction Environmental Manager not associated with the project. This will allow a 'new pair of eyes' to view the Project and identify issues which may be overlooked by those who are working on the Project on a daily basis.

Internal audits will be undertaken by the Environmental Team on a weekly basis. These audits will focus on site and task specific activities such as erosion and sediment controls, refuelling procedures and high risk construction activities to ensure all controls and methodologies are being implemented as detailed in the CEMP and CESMP.

External audits will predominantly be undertaken by GWRC and KCDC to confirm compliance with RMA conditions relevant to their jurisdictions. The Environmental Manager along with the Site Supervisors, Zone Managers, Project Engineers and/or Site Engineers will attend these compliance visits as required.

The Environmental Manager will be responsible for ensuring that all non-conformances identified in an audit are closed out in a timely fashion as per the auditor's recommendations.

Results of the audits will be reported back to the Project team through a variety of mechanisms including site toolbox meetings, construction meetings, Management Team and Board meetings.

The outcomes of these project environmental audit reports will be summarised in the monthly report to the Engineer to the Contract.

## 7.5 Corrective Action

Corrective actions are required as a result of audit findings, environmental incidents, complaints or RMA non-compliance and will be undertaken in a timely manner. Time frames for close out will vary depending on the situation and will be based on risk. Timeframes for addressing corrective actions in regard to erosion and sediment control are detailed in the ESCP and timeframes for responding to complaints are addressed in Section 6.2 of this plan.

Actions to address the issue will be identified and closed out. Incidents, complaints and non-compliance will be closed out via completed incident forms. Audit findings will be closed out and noted against the audit.

The Environmental Manager will be responsible for ensuring the close out of all corrective actions relating to environmental and resource consent compliance matters.

## 7.6 CEMP Review

The CEMP is a living document and will be reviewed every three months throughout the course of the project. Key aspects to be considered in the review process will include:

- Changes in construction methodology and subsequent environmental effects
- Changes in mitigation measures for construction nuisance issues following changes in construction methodology or changes in mitigation measures
- Issues of non-compliance and process changes required to address these issues.
- Quality procedures to be followed when updating plans
- Record of who is notified of updated plan

Reasons for making changes to the CEMP will be documented. A copy of the original CEMP document and subsequent versions will be kept for the Project records, and marked as obsolete. Each updated version of the CEMP documentation will be issued with a version number and date to eliminate obsolete CEMP documentation being used. Subsequent versions of the CEMP will be issued to Council for their information within 5 working days of the revision as per resource consent condition G.27. Revisions will also be uploaded to CS-Vue with a physical copy given to the Engineer to the Contract.

## 8 STAKEHOLDER COMMUNICATIONS MANAGEMENT PLAN

The Stakeholder Communications Management Plan is required by Designation Condition 7. The SCMP identifies how the public and stakeholders will be communicated with throughout the course of the project and is provided as a separate document to this CEMP.

# APPENDIX A – CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

Refer to FCCL-EV-MPN-0006

# APPENDIX B – CONSTRUCTION AIR QUALITY MANAGEMENT PLAN

Refer to FCCL-EV-MPN-0003



# APPENDIX C – EROSION AND SEDIMENT CONTROL PLAN

Refer to FCCL-EV-MPN-0007

# APPENDIX D – BULK EARTHWORKS CONTAMINATED LAND MANAGEMENT PLAN

Refer to FCCL-EV-MPN-0005

# APPENDIX E – HYDROCARBON SPILL CONTINGENCY PLAN

Refer to FCCL-EV-MPN-0002

# APPENDIX F – ARCHAEOLOGICAL MANAGEMENT PLAN



*Prepared for the New Zealand Transport Agency*

# **Archaeological Site Management Plan: Peka Peka to Ōtaki**

**The Kapiti Coast Expressway**





*Prepared for the New Zealand Transport Agency*

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# **Archaeological Site Management Plan: Peka Peka to Ōtaki The Kapiti Coast Expressway**

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# 1 Introduction

## 1.1 Purpose

This is the Archaeological Site Management Plan (ASMP) for the construction phase of the Peka Peka to Ōtaki Expressway Section of the Wellington Northern Corridor (the Expressway). It has been commissioned by the New Zealand Transport Agency (The Transport Agency).

There are currently five recorded archaeological sites within the footprint of the Project, and four areas where there is considered to be a risk of encountering archaeology. This ASMP details the management of the areas outside of the recorded sites and high risk zones. The recorded sites and risk areas will be investigated in advance of contractor works. The Archaeological Research Strategy (ARS) details this work.

Because all of the known archaeological sites will be investigated in advance (as detailed in the ARS), this ASMP does not provide details regarding the management of any archaeological risks in the majority of known archaeological areas.

This ASMP will be updated, with the necessary approval, throughout the course of the Expressway in order to reflect changes associated with modification or changes to construction techniques or the natural environment as well as any archaeological issues that may arise. Any changes to this ASMP will be discussed with tangata whenua, the Transport Agency, and HNZPT.

## 1.2 Project Scope

The scope of this ASMP is defined as the whole designation area covered by the Peka Peka to Ōtaki section of the Wellington Northern Corridor.

The Expressway comprises just over 12 km of proposed new road, linking the McKays to Peka Peka section in the south with the Ōtaki to Levin section in the north. Within the current designation the specimen design includes the following components:

- Four-lane dual 100 km/h speed, grade-separated and median divided arterial expressway route.
- New expressway structures include:
  - Waitohu Stream Bridge
  - Ōtaki Floodway Bridge
  - Ōtaki River Bridge
  - Mary Crest Overpass.
- Road Underpasses and Rail Overpasses include:
  - Ōtaki North Expressway Underpass
  - Ōtaki North Rail Overpass

- Rahui Road Underpass
- Ōtaki South Rail Overpass
- Ōtaki South Expressway Underpass
- Te Horo Underpass
- 18 Culvert Structures

The ASMP shall cover all sites within the Expressway footprint (within the confirmed designated land for the Peka Peka to Ōtaki section) including borrow sites, construction areas, construction yards and stormwater treatment areas.

A design and construct contract is expected to be awarded in mid-2016, and following this, changes to the specimen design are likely. This ASMP will be updated as required to take into account any substantial changes to the specimen design.

## 2 Legislative and Other Requirements

The following legislative standards and other requirements have been identified as relevant to the management of archaeology for the Expressway. The applicable legislative requirements are:

- Heritage NZ Pouhere Taonga Act 2014 (HNZPTA)
- The Protected Objects Act 1975
- Relevant conditions of the consents granted for the Expressway
- The Transport Agency Environmental Plan
- The Kapiti Coast District Council District Plan

An archaeological site is defined in the HNZPTA as:

“any place in New Zealand that –

(a) Either –

- i. was associated with human activity that occurred before 1900; or
- ii. Is the site of the wreck of any vessel where that wreck occurred before 1900; and

(b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.”

All archaeological sites, whether recorded or not, are protected under the HNZPT Act, and sites may not be damaged or destroyed unless an Authority has first been obtained from HNZPT.

An authority to modify the archaeological sites within the land currently owned by the Transport Agency has been applied for, and additional authority applications will be submitted for the

remaining land parcels as they are acquired. Together, these authorities will cover the length of the Expressway, including associated construction yards/ borrow sites.

The management of effects on archaeological sites during the Expressway construction shall be undertaken in accordance with the minimum requirements specified below:

- To minimise any potential adverse environmental effects on archaeological sites.
- To protect sites in close proximity to construction works from accidental damage by heavy machinery.
- To make and preserve a permanent record of all archaeological sites affected by the Expressway.

Consultation with the relevant tangata whenua groups and an assessment of effects on Maori cultural values is required as part of the Authority application. Consultation with iwi has been carried out from the early stages of the project and is considered to be an on-going requirement throughout the project.

### 3 Management of High-Risk Areas

There are five recorded archaeological sites, and four high archaeological risk areas located within the Expressway footprint (see Figures 1-8 below). **These will all be investigated in advance of the contractors starting works at the site.** The methodology for the investigation of these sites is provided in the ARS.

The eight areas which will be investigated prior to contractors taking over the site are:

- R25/47 and the Mary Crest Dunes (see Figure 1).
- R25/48 – Matenga Moroati’s House (Figure 2).
- S25/125 – Clifden Cottage (see Figure 3).
- Kaingaraki Pa and Cultivation Area (see Figure 4).
- S25/122 – Ōtaki Railway Station (see Figure 5).
- S25/124 – 230 Main Road, Ōtaki (see Figure 6).
- Pare-o-Matangi Block (see Figure 7).
- North Ōtaki Dunes (see Figure 8).

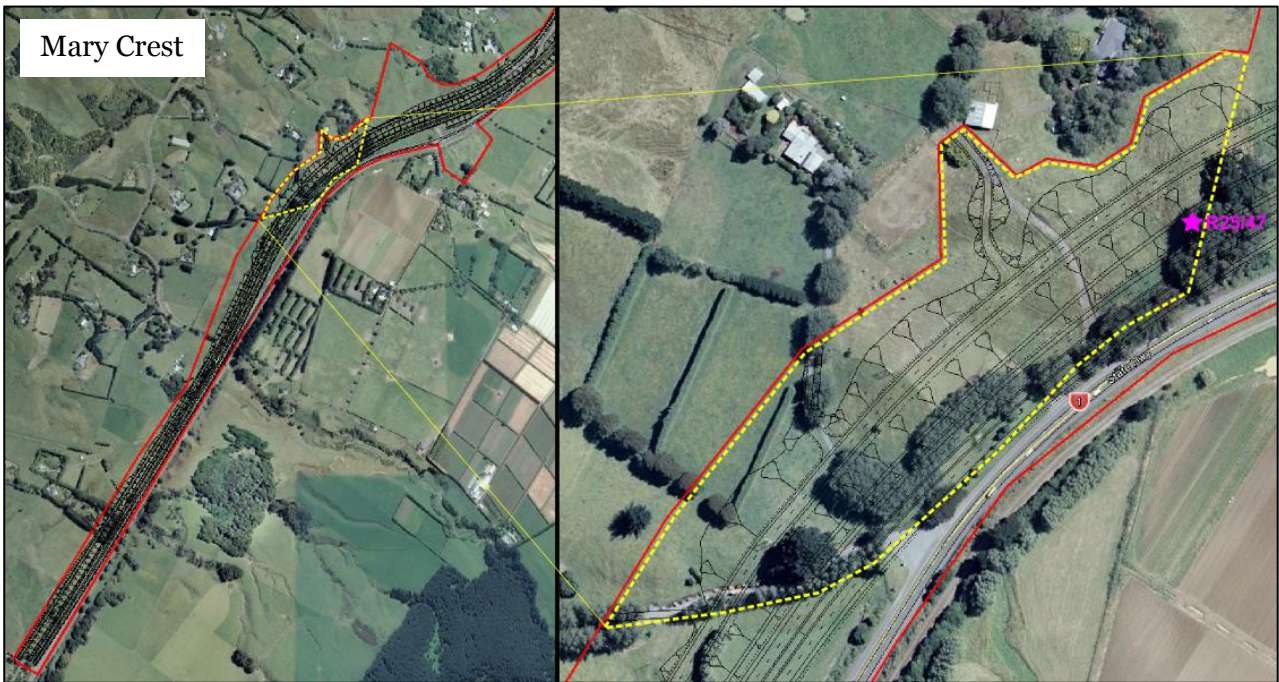


Figure 1: Area of pre-construction investigation (outlined in yellow) at the Mary Crest dunes, showing the location of recorded site R25/47 (in pink).

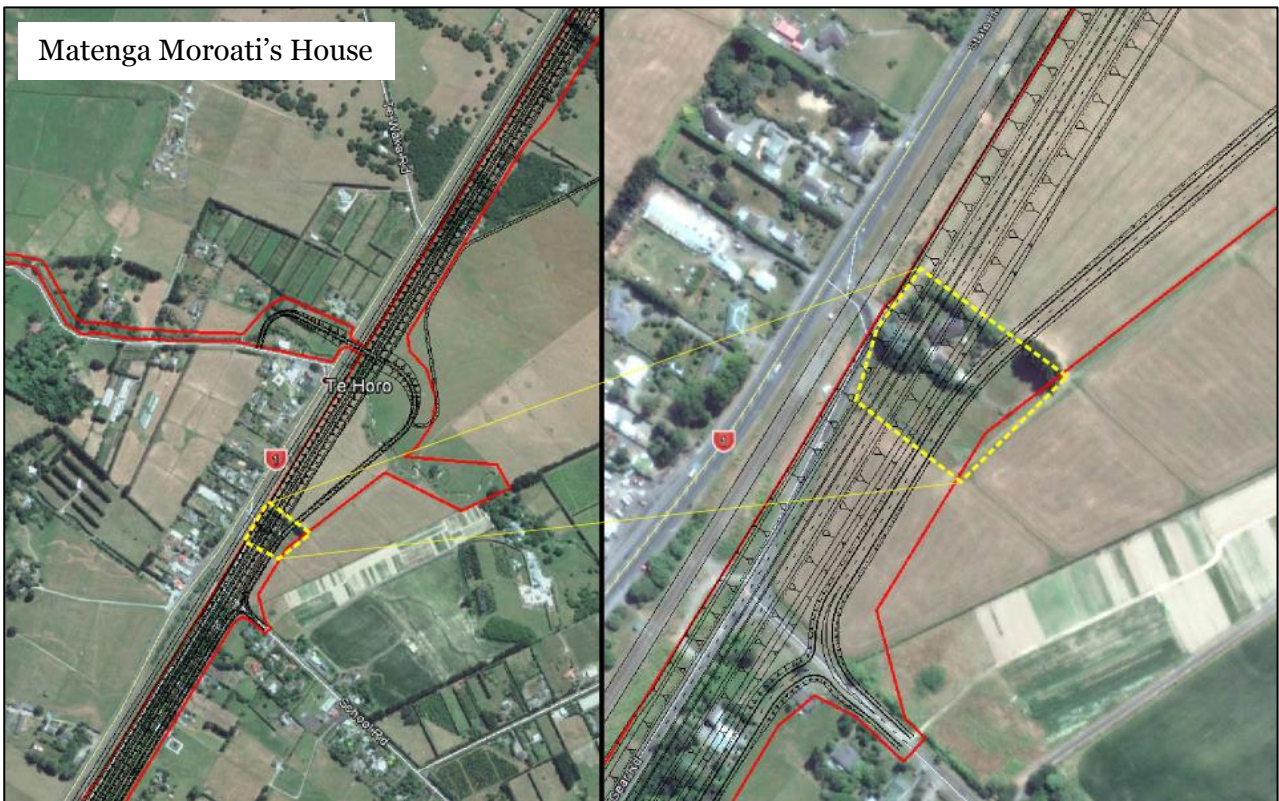


Figure 2: Area of pre-construction investigation (outlined in yellow) at Matenga Moroati's House.

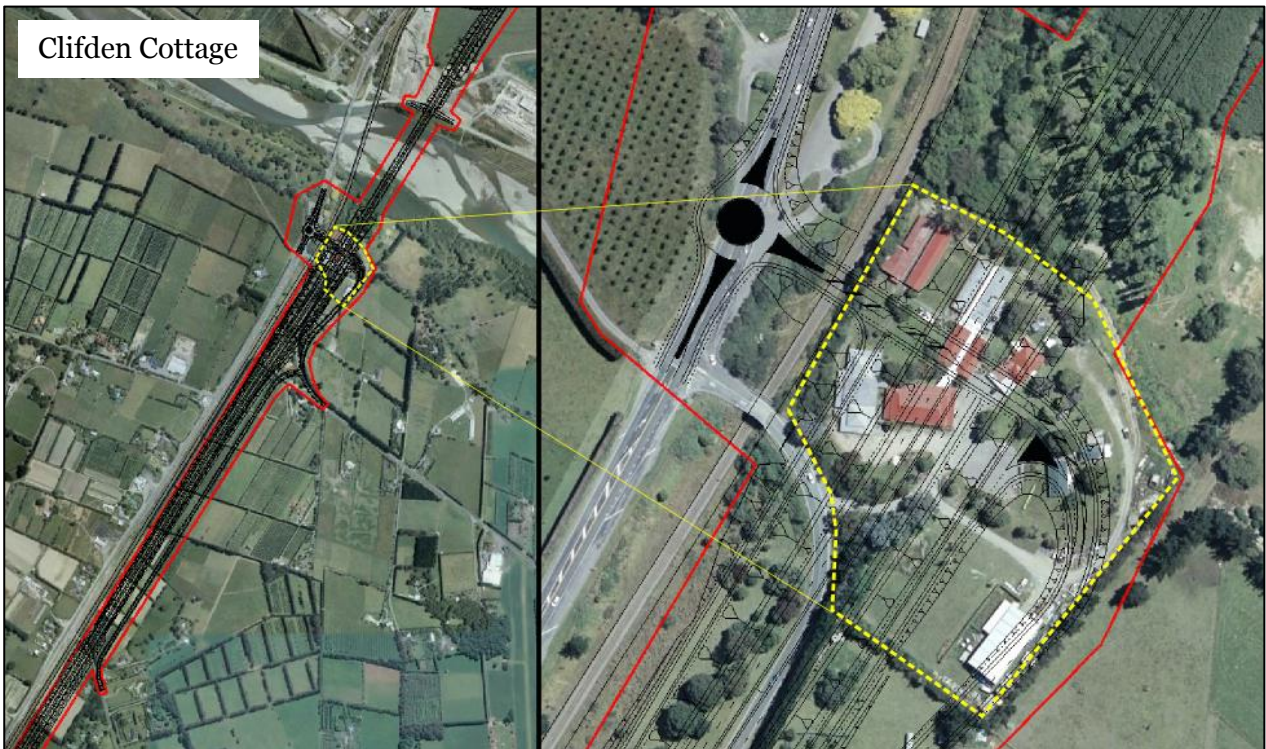


Figure 3: The original Clifden Cottage property (outlined in yellow) which will undergo pre-construction investigation.

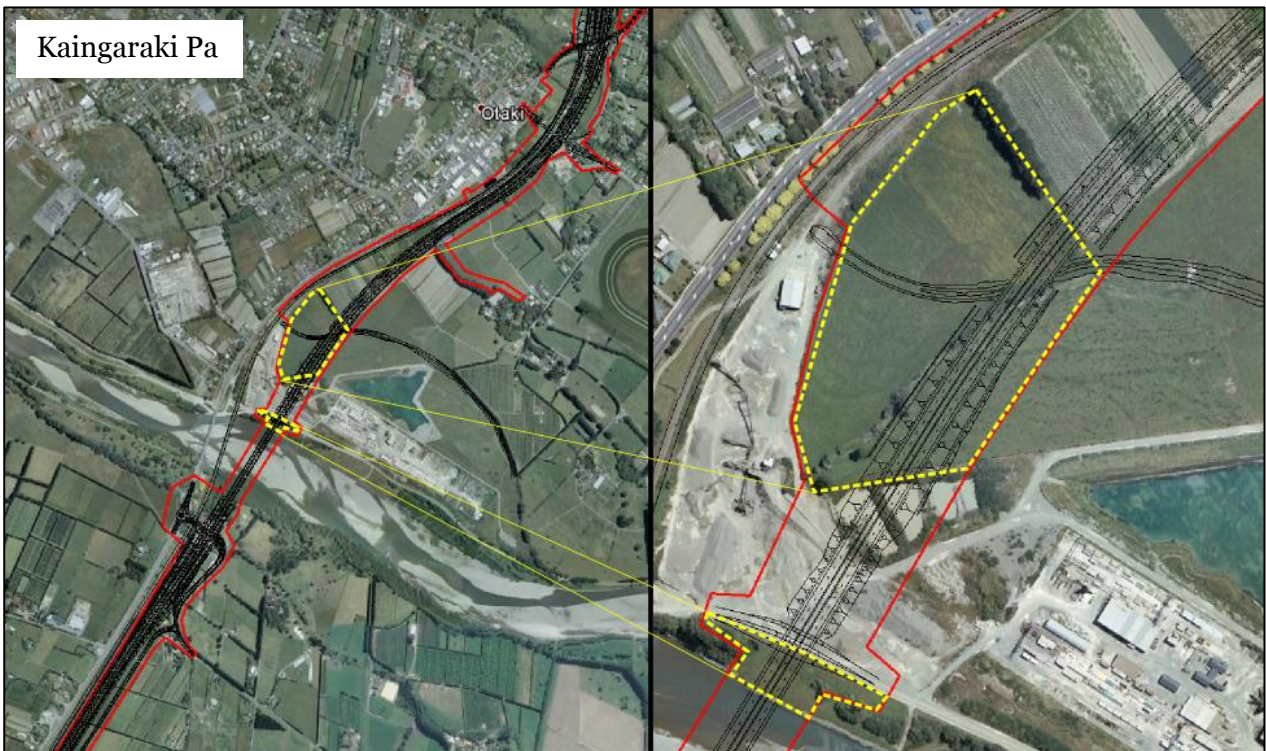


Figure 4: Kaingaraki Pa and Cultivation area (outlined in yellow), which will undergo pre-construction investigation.

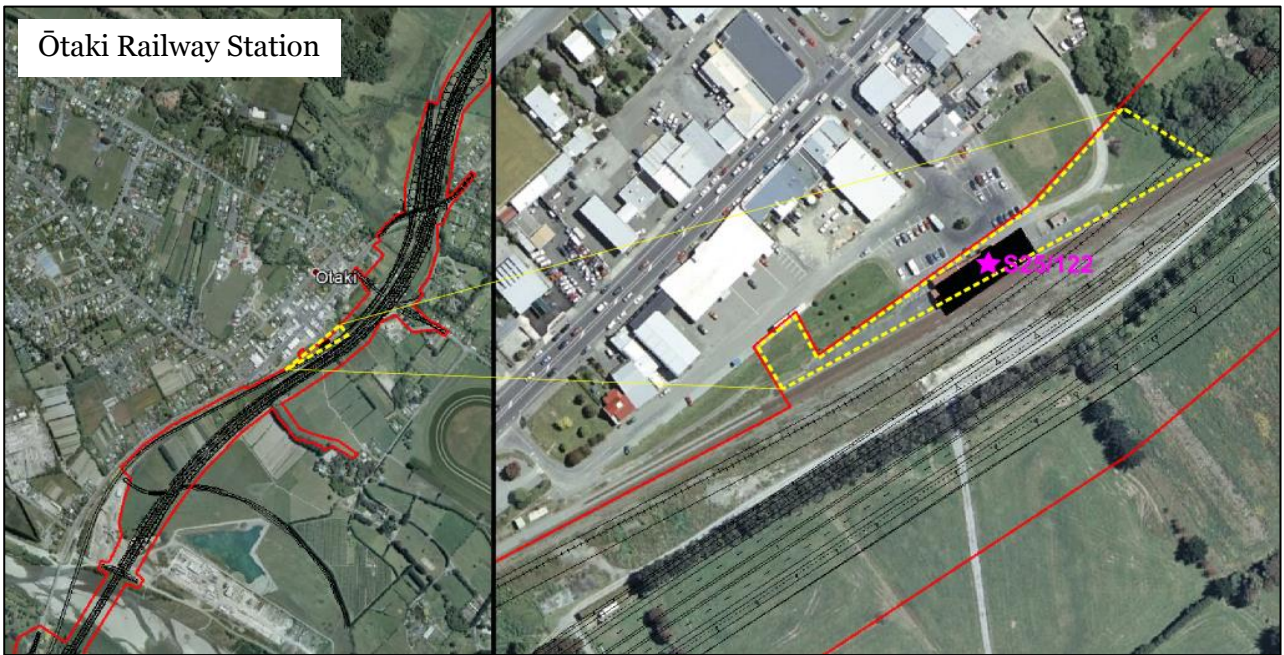


Figure 5: Ōtaki Railway Station (S25/122), showing the area for pre-construction investigation (outlined in yellow).

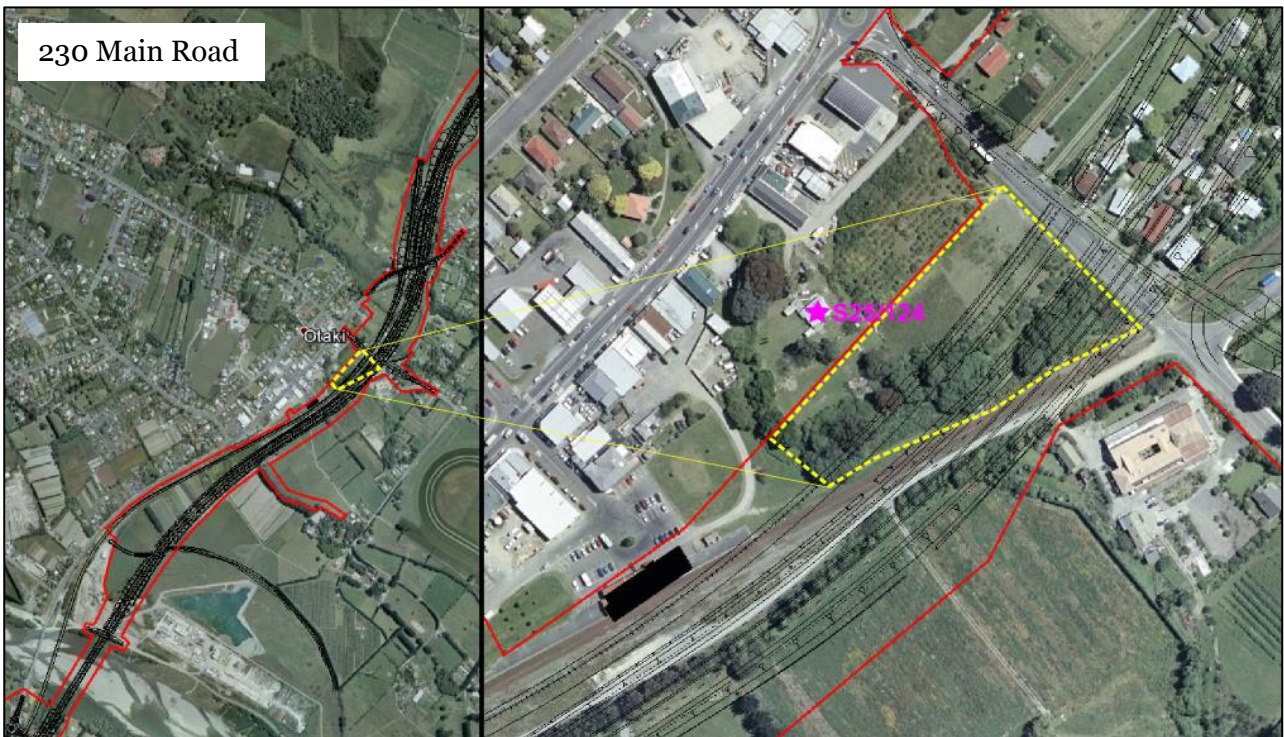


Figure 6: 230 Main Road (S25/124), showing the area for pre-construction investigation (outlined in yellow).

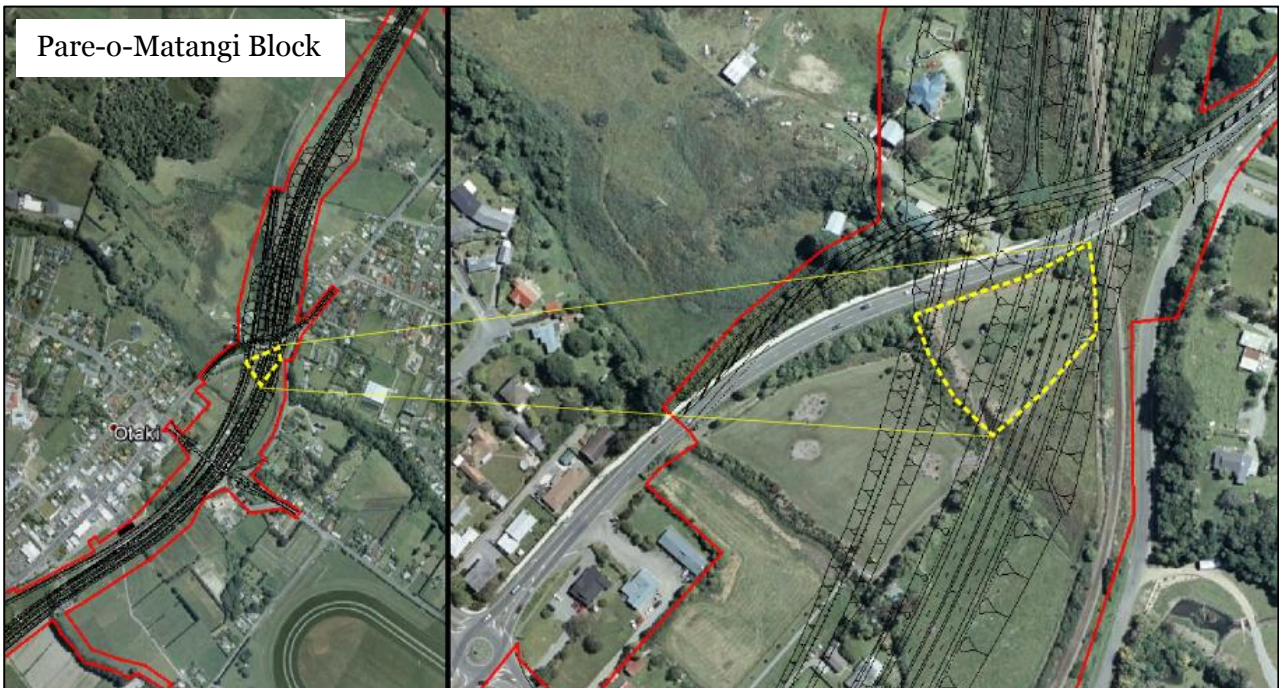


Figure 7: Area of pre-construction investigation within the Pare-o-Matangi Block (outlined in yellow).



Figure 8: Area of pre-construction investigation at the North Ōtaki Dunes (outlined in yellow).

## 4 Management of Moderate Risk Areas: Monitoring

This section provides details on the management of the ‘moderate risk’ areas of land. These sections of land are outside of the known risk areas (as detailed in Section 3) and have no known archaeological values. However, they are areas of low relict sand dunes, and thus it is considered that there is a moderate risk that archaeological material will be encountered during earthworks in these areas.

Archaeological features and remains can take a range of forms, for example, shell middens, burnt and fire-cracked stones, charcoal, nineteenth century rubbish pits (glass, crockery, metal), ditches, banks, old building foundations, artefacts of Maori and early European origin, and human burials. Within this Expressway two of the main archaeological feature types are likely to be pre-European middens, and nineteenth century domestic features (such as rubbish pits).

### Moderate risk areas include:

- Te Kowhai Road to Old Coach Road at the Mary Crest curve,
- The Ngakororo 2F Reserve

### 4.1 Areas to be Monitored

#### 4.1.1 Te Kowhai Road to Old Coach Road, Mary Crest

The area between Te Kowhai Road at the southern end of the designation and Old Coach Road at Mary Crest is an area of low undulating relict sand dunes, and is within the vicinity of recorded midden sites situated within the same dune environment (Figure 9). As the dunes south of the Old Coach Road are relatively low-lying, there is considered to be a moderate risk of encountering unrecorded archaeological sites.

For the purposes of managing this risk the following actions will be undertaken:

1. Site visits to monitor the topsoil stripping on the raised dune surfaces during the construction phase in the areas between Te Kowhai Road and Old Coach Road (see Figure 9).
2. Implementation of the On-call Protocol in the areas outside the risk.



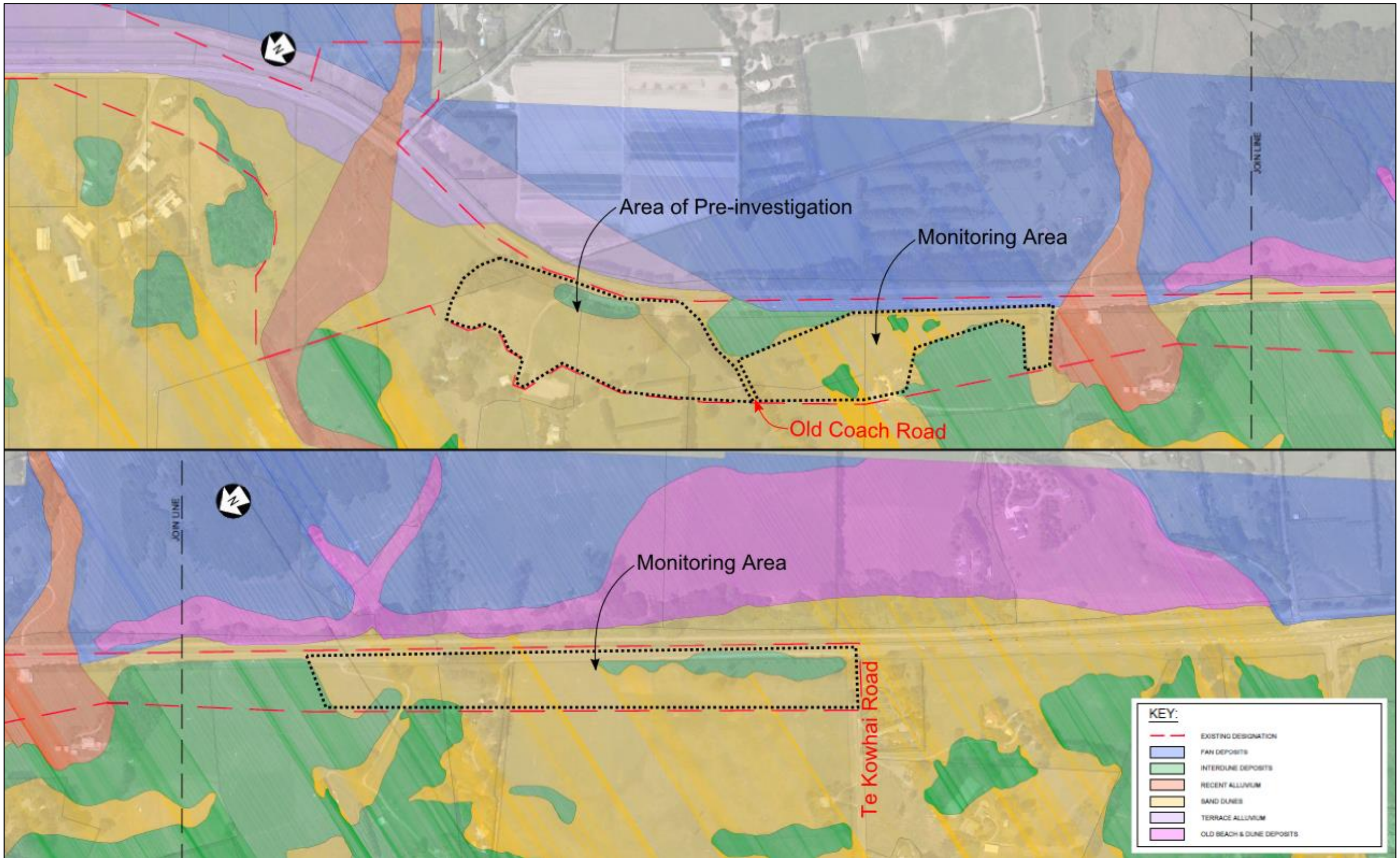


Figure 9: Areas of pre-investigation and monitoring based on underlying geological deposits in the section between Te Kowhai Road and Mary Crest curve.

### 4.1.2 The Ngakororo 2F Reserve

The area identified as the Ngakororo 2F Reserve within the designation at the Mary Crest curve is an area of low sand dunes and recent alluvium deposits. The area is between Te Horo Pa site in the south and Makahuri (also a pa) in the north, as well as being adjacent to recorded archaeological midden sites in the dunes to the west. There is potential for settlement evidence to be encountered in this area. Additionally there is an oral tradition of the area being a burial ground, thus there is potential for koiwi.

For the purposes of managing this risk the following actions will be undertaken:

1. Site visits to monitor the topsoil stripping on the raised dune surfaces in the area shown in Figure 10 below.
2. Implementation of the On-call Protocol in the areas outside the risk.

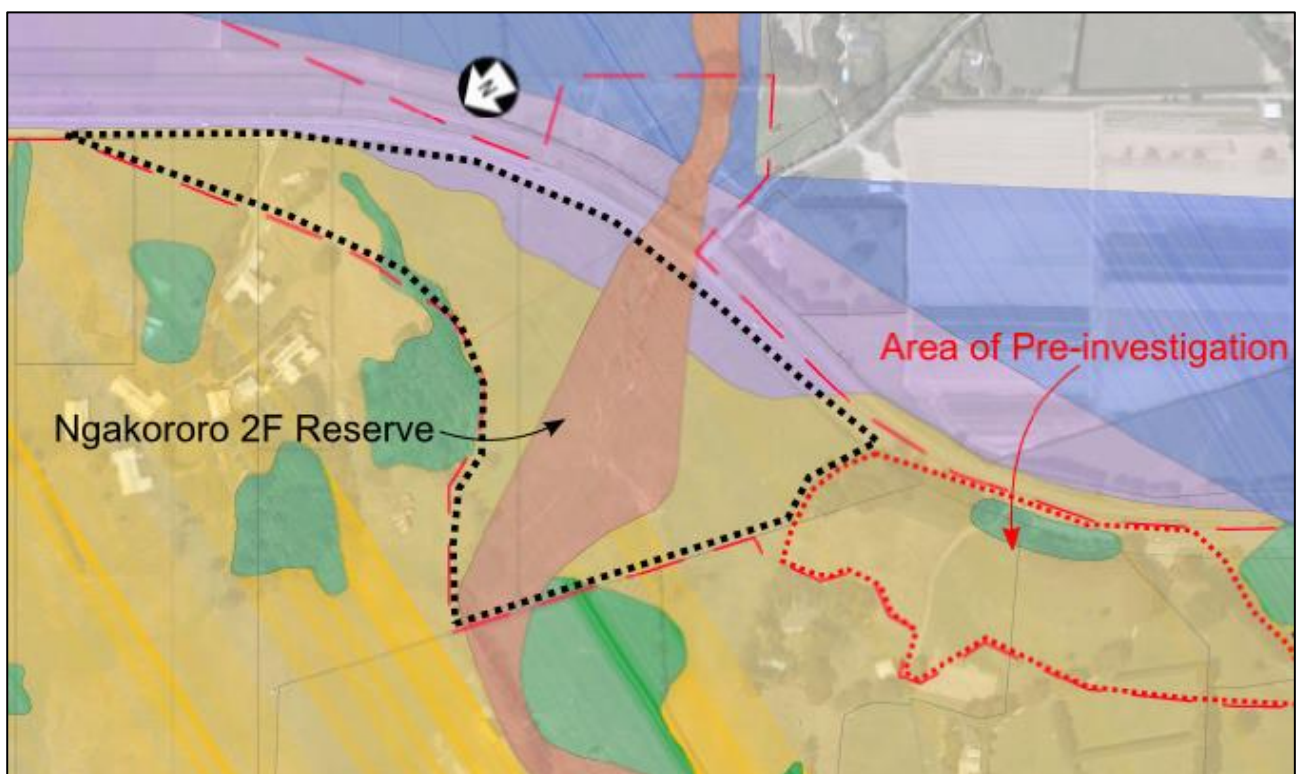


Figure 10: The Ngakororo 2F Reserve risk area proposed for archaeological monitoring.

### 4.1.3 Procedures

The following procedures will be followed during archaeological monitoring:

1. Within the areas between Te Kowhai Road and Old Coach Road at Mary Crest (as shown in Figure 9), and the Ngakororo 2F Reserve (as shown in Figure 10) the Project Archaeologist, or their assistant, will be on site to monitor topsoil stripping to establish whether archaeological sites, features or deposits are present – excluding areas that have clearly been modified to the extent that any archaeological remains will have been destroyed.

2. If *in situ* archaeological features or deposits are identified during either monitoring or the site visits, the archaeologist will stop the work immediately within that area and notify the site foreman. The archaeological site will be clearly marked off to ensure that it remains undisturbed and meets health and safety requirements.
3. The archaeological site will be investigated, sampled and recorded in accordance with accepted best practice and in line with the legal conditions of any authority granted by HNZPT.
4. If koiwi tangata (human bone) or taonga are unearthed the protocols outlined in Sections 5.3 and 5.4 will be followed.

## 5 Management of Low Risk Areas: On-Call Protocol

The remainder of land will be covered by an On-Call Protocol. This protocol will follow a similar direction to an Accidental Discovery Protocol, however considering the works will be undertaken under an authority/s from HNZPT, the protocol will be more directive.

### Low risk areas include:

- The Te Horo straight, between Mary Crest and Clifden Cottage (excluding Matenga Moroati's house site),
- West Ōtaki between Kaingaraki Pa and the Ōtaki Railway Station/230 Main Road,
- Between 230 Main Road and Pare-o-Matangi Block,
- Between Pare-o-Matangi Block and the North Ōtaki Dune, and
- Between the North Ōtaki Dune and the northern end of the designation.

#### 5.1.1 Purpose

The on-call protocols set out below will be followed if subsurface archaeological remains, koiwi tangata (human remains) or taonga are exposed during construction in areas that are not being monitored by an archaeologist or when archaeologists are not present on site.

Information provided below outlines procedures to be followed in the case of suspected unrecorded archaeological sites being located during the course of work.

Tangata whenua should be consulted regarding these protocols and given the opportunity to discuss amendments where appropriate.

### 5.2 Discovery of Archaeological Features or Deposits

If suspected archaeological remains are exposed in the course of works, the following procedure will be implemented:

1. Contractors shall cease all work in the immediate vicinity of the suspected archaeological site, and immediately notify the Project Manager.
2. The area of the suspected archaeological deposit or feature is to be made secure, ensuring that the area (and any objects contained within) remains undisturbed and meets health and safety requirements.
3. The Project Manager will arrange for the Project Archaeologist to visit the site, to confirm the nature of the archaeological site, and to define the extent of the deposit or feature.
4. Following confirmation of the site as archaeological, the Project Manager will notify the Regional Archaeologist HNZPT, The Transport Agency, tangata whenua representatives and if appropriate district and city council representatives.
5. The archaeological remains will be investigated and recorded in accordance with archaeological best practice, and in line with the legal conditions of any authority granted by HNZPT.
6. Works can resume once the Project Archaeologist confirms that the required investigation and recording are complete and tangata whenua and HNZPT give their agreement.

### **5.3 Discovery of Koiwi Tangata (Human Remains)**

If suspected human remains are identified, the following protocol will be adopted:

1. Earthworks shall cease in the immediate vicinity while an appropriately qualified archaeologist is consulted to establish whether the bone is human.
2. The area of the site containing koiwi will be secured, ensuring that the area (and any objects contained within) remains undisturbed and meets health and safety requirements.
3. If it is determined that bone is human, earthworks will not resume in the immediate vicinity (as determined by the Project Archaeologist) until HNZPT, tangata whenua representatives, the New Zealand Police and district council representatives have been notified.
4. Tangata whenua kaumatua will be given the opportunity to conduct karakia in association with appropriate tikanga Māori prior to the removal of koiwi for reburial.
5. If kaumatua so request, or as may have been agreed prior to the Expressway construction commencing, koiwi may be further analysed by a specialist osteo-archaeologist prior to reburial.
6. Work within the area can recommence as soon as the bones have been removed from site, and with the agreement of all relevant agencies.

### **5.4 Discovery of Taonga**

Maori artefacts such as carvings, stone adzes, and greenstone are considered to be taonga (treasures). These objects are identified as taonga tuturu in the Protected Objects Act 1975. Taonga may be discovered in isolated contexts, but are generally found within archaeological sites, modification of which is subject to the provisions of the HNZPT Act.

If taonga are discovered, the procedure established for the discovery of archaeological sites (as detailed above) must be followed, and the following procedure will apply to the taonga itself:

1. The area of the site containing the taonga will be secured in such a way that protects the taonga from further disturbance or damage.
2. The archaeologist will inform HNZPT and tangata whenua representatives so that appropriate actions can be determined.
3. If the object is identified as taonga tuturu the Project Archaeologist will notify the Ministry for Culture and Heritage of the finding, as required under the Protected Objects Act 1975.
4. The Ministry for Culture and Heritage, in consultation with tangata whenua, will decide on custodianship of the taonga. If the taonga requires conservation treatment this can be carried out by the Archaeological Conservation Laboratory, University of Auckland (ph: 09 373 7999).

## 6 Implementation and Operations

### 6.1 Roles and Responsibilities

The Project Archaeologist will be responsible for carrying out the following tasks, or ensuring that they are carried out by other suitably qualified archaeologists:

- Providing training for contractors in the archaeological requirements of the project,
- Archaeological monitoring, investigations and recording,
- Providing advice on any suspected archaeological finds,
- Coordinating the recovery/ protection of any archaeological finds in conjunction with iwi advisors,
- Reporting on the archaeological work, and
- Meeting all HNZPT Act authority conditions for the project.

All archaeological work should be undertaken in conformity with the conditions of any authorities issued by HNZPT, and tikanga Maori protocols agreed to between iwi and the Transport Agency.

### 6.2 Training

Environmental training for all staff will be undertaken as part of the site induction programme. All new staff will go through an induction training session when they commence work and then regular (annual) refresher courses.

Environmental induction will include heritage information on the following aspects of this ASMP:

- Information about the activities and stages of construction that have the potential to impact on the locations of a number of recorded archaeological sites,

- What archaeological remains may be expected during earthworks, and the process to be followed,
- Archaeological requirements under the HNZPT Act and the project-specific accidental discovery protocol,
- Consent requirements,
- Archaeological monitoring, investigations and recording procedures to be carried out.

## 7 Tāngata Whenua Involvement

Consultation and engagement with tāngata whenua has been ongoing throughout the planning of the Project and the development of this document. The archaeological work will be undertaken in conformity with any tikanga Māori protocols agreed to by tāngata whenua and The Transport Agency.

## 8 Operating Procedures

The Transport Agency must comply with a number of legal conditions in relation to archaeological sites. These comprise both designation conditions as well as conditions imposed in any authorities granted by HNZPT granted for the project. These legal requirements are as follows:

1. Archaeological sites and risk areas R25/47 and the Mary Crest Dunes, R25/48, S25/125, Kaingaraki Pa, S25/122, S25/124, Pare-o-Matangi and the North Ōtaki Dunes will be archaeologically investigated prior to construction works.
2. The southern end of the designation between Te Kowhai Road and the Mary Crest Dunes will be archaeologically monitored during construction or inspected following topsoil stripping to identify if there are any archaeological sites within this area (See Section 4).
3. The areas outside of the identified sites and risk zones mentioned above will be managed under the provisions of an On-Call Protocol (see Section 5).
4. Any archaeological features or deposits that are exposed in the course of works will be recorded and sampled in accordance with accepted archaeological best practice, and in line with any conditions in authorities to modify the sites that have previously obtained from HNZPT.
5. HNZPT will be informed of any archaeological features or deposits that are exposed during works, and if they are considered to have potential, through detailed archaeological investigation, to provide significant information relating to the history of the Kapiti Coast, and New Zealand.
6. The Transport Agency, in partnership with tangata whenua, will ensure that the correct processes are followed (e.g. The Protected Objects Act, landowner notification), and that the appropriate owner/custodian of any archaeological material found during the excavations will be informed as required.

## 9 Stand-Down Periods

Depending on the nature of the feature or deposits revealed during archaeological monitoring or as part of the on-call protocol, stand-down periods to allow the archaeological work to be carried out or for consultation with the appropriate parties may be required. Stand-down will require construction work to cease only in the immediate vicinity of the find or feature. This area will be defined by the archaeologist. Work may proceed in other areas of the Expressway while the archaeological site is investigated, sampled and recorded.

The maximum stand-down periods contained in the table below will apply in relation to the Expressway, but it is noted that work may be resumed earlier, if the required archaeological work has been completed. It is noted that in relation to general authorities HNZPT is frequently involved in the decision making when archaeological remains are exposed.

TRIGGER	STAND-DOWN PERIOD	REQUIREMENTS <sup>1</sup>	RELEASE POINT
Archaeological features, deposits or artefacts identified and require detailed investigation.	Up to 3 days for a response from HNZPT.	Investigation and / or recording of the material in accordance with standard archaeological techniques.	Work resumes when the Project Archaeologist advises site foreman / Project Manager that archaeological work is complete and HNZPT and tangata whenua give their approval.
Koiwi tangata (human remains) identified	Up to 3 days (or a period agreed between Project Manager and tangata whenua).	HNZPT and NZ Police to be satisfied that identification of koiwi correct. The authority holder to consult with tangata whenua and HNZPT to ensure appropriate actions are taken. Tangata whenua representative to organise appropriate protocols and procedures for the removal of koiwi from site for reburial.	Work resumes following removal of koiwi from site.

<sup>1</sup> Information provided in table are general requirements based on expected authority conditions. All work carried out will be guided by the legal conditions of the authority

Isolated taonga or archaeological remains identified	Up to 3 days	HNZPT and tangata whenua (in the case of taonga tuturu) and Ministry for Culture & Heritage notified and consulted on appropriate actions. Archaeological recording as required.	Work resumes when the archaeologist, Project Manager or HNZPT advises site foreman that archaeological work is complete.
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## 10 Dispute Resolution

The most common cause of disputes in relation to archaeological sites and work within a project is usually poor communication between parties. This can generally be resolved by ensuring that sufficient detail on the archaeological issues and responsibilities is outlined in management plan documents associated with the Expressway, and ensuring that contractors have received appropriate training in regard to the archaeological requirements of the project.

The inclusion of identified stand down periods to allow for archaeological work to be completed is a mechanism by which possible disputes can be avoided.

In the event of a dispute relating to the HNZPT authority investigation and recording, the following procedure should be followed:

1. If the dispute relates to archaeological issues a meeting between the authority holder (The Transport Agency) or designated representative, contractor and/ or subcontractor, and Project Archaeologist should be convened as soon as possible in an attempt to resolve the dispute.
2. If the dispute relates to cultural sites, a meeting between the authority holder (The Transport Agency) or designated representative, contractor and/ or subcontractor, tangata whenua representatives, and archaeologist should be convened as soon as possible in an attempt to resolve the dispute.
3. If the dispute cannot be resolved a further meeting of all parties with representatives of HNZPT will be arranged within 1 working day to resolve the dispute.

## 11 Reporting

It will be a condition of any authority(s) issued by HNZPT in association with this Expressway that a brief interim report is provided to HNZPT within 20 working days of the completion of the investigations and earthworks monitoring phase. For larger projects spread over several years, monthly or annual progress reports may be required.

Archaeological progress reports outlining the monitoring undertaken for the Expressway and the preliminary results will also be provided to The Transport Agency and HNZPT by the Project Archaeologist at 6 monthly intervals for the duration of the project.

The authority will also require that a full archaeological monitoring report is completed within a given timeframe from of the end of the archaeological investigations and earthworks monitoring



phase and provided to HNZPT. This must include a detailed presentation of the result of the archaeological monitoring (with plans, sections, photographs, analysis of archaeological materials, radiocarbon dating, etc.) and discussion and interpretation of the results.

The reports will be finalised by the Project Archaeologist, and it is the responsibility of the authority holder (The Transport Agency) to ensure that they are completed.

## 12 Archaeological Site Management Plan Review

This Archaeological Site Management Plan (ASMP) will be reviewed and updated at regular intervals throughout the project, with the necessary approvals, to reflect any changes associated with constructions techniques and the natural environment. Input from HNZPT, and tangata whenua will be sought for any revisions within this Archaeological Management Plan.

A management review of the ASMP will be undertaken at least annually by the Project Management team and The Transport Agency Heritage Advisor. This review will be organised by the Environmental Manager, and the Project Management team will be informed of any changes to this plan through the regular project communications processes. The review will take in to consideration:

- Any significant changes to the construction activities or methods;
- Key changes to roles and responsibilities within the project;
- Changes in industry best practice standards;
- Changes in legal or other requirements (social and environmental, corrective actions, internal or external assessments); and
- Public complaints.

The reasons for making any changes to the ASMP will be clearly documented. The original and any subsequent versions of the ASMP will be kept for the project records, and as appropriate will be marked as obsolete. Each new or updated version of the ASMP will be issued with a version number and date in order to eliminate obsolete versions of the document being used.

## 13 Mitigation

As per the designation conditions, a number of mitigation measures are required to be undertaken by The Transport Agency.

1. During archaeological field investigations, the requiring authority shall hold a series of open days associated with those investigations.
2. Following completion of the construction of the Expressway, the Requiring Authority shall, in consultation with tangata whenua, KCDC, and HNZPT, and for the purpose of public information and education:
  - i) Prepare a series of fixed interpretive signs and place those signs at culturally and/or archaeologically significant or strategic locations;

- ii) Prepare a complimentary set of portable interpretive panels to be supplied by KCDC for use and distribution, based on information obtained as part of any investigations undertaken in accordance with any archaeological authorities granted under the HNZPT Act 2014; and
- iii) Prepare and publish material (for example a booklet or series of booklets, or publication in an academic journal).

## 14 Contact Details

Organisation	Role	Representative	Contact Information
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	Project Archaeologist	Emily Cunliffe	Ph: 021 466 895 Email: Emily.Cunliffe@opus.co.nz
Heritage New Zealand Pouhere Taonga	Regional Archaeologist	Kathryn Hurren	Ph: 027 293 7163 Email: Archaeologist2CR@heritage.co.nz
Ngā Hapū o Ōtaki	Representative	Rupene Waaka	Ph: 027 210 8860 Email: Rupene.Waaka@twor-otaki.ac.nz
	Representative	Caleb Royal	Ph: 027 311 1229 Email: Caleb.Royal@twor.ac.nz
Muaupoko Tribal Authority	Representative	Di Rump	Ph: 021 021 61043 Email: ceo@muaupoko.iwi.nz
Contractor		TBC	



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# APPENDIX G – GROUNDWATER MONITORING PLAN

Refer to FCCL-EV-MPN-0008

# APPENDIX H – INCIDENT REPORT TEMPLATE

# Incident Field Report



Project Name:

Contract No:

Project			
Names of person/s involved in incident/accident			
Date		Time ( am / pm )	
Plant/Equipment involved			
Location			

- Environmental       Safety       Quality       Other

**Incident Description**

**Immediate Incident Causes**

<b>List the hazards</b>	<b>What were the possible causes? (stick to the facts, don't assign blame)</b>

**What did we do right?**

**What could we have done better?  
(what do you think we can do to prevent a similar incident/accident from happening again?)**

# Incident Field Report



Project Name:

Contract No:

Record personal details and mark position on body of any injury, even first aid.

Age		
Sex		
Address		
Phone		
Employer		
Job Title		
Length of employment		
Hours worked prior to incident		
Shift	<input type="radio"/> Day	
	<input type="radio"/> Afternoon	
	<input type="radio"/> Night	
Injury type (cut/internal/sprain)		

Ensure completed forms are handed to site office by end of the day. Serious injuries must be reported to manager immediately.

For minor incidents, the following corrective actions were carried out:

Manager to Complete

Report Serious Harm incidents, serious near miss and crane incidents to Head office immediately, all others within 24 hours.

Field report no.	
Investigation by	
Was a significant hazard involved	<input type="radio"/> Yes <input type="radio"/> No
Initial classification (circle)	<input type="radio"/> LTI <input type="radio"/> MTI
	<input type="radio"/> FA <input type="radio"/> SNM
	<input type="radio"/> NM <input type="radio"/> PD
	<input type="radio"/> Minor <input type="radio"/> Enviro

Completed by

Name	
Signature	
Date	
Position	
Employer	

# APPENDIX I – RISK REGISTER



# PP20 Environmental Risk Register

Severity					
Likelihood	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Medium (8)	High (13)	Very High (20)	Very High (23)	Very High (25)
Likely	Low (6)	Medium (11)	High (17)	Very High (21)	Very High (24)
Possible	Low (4)	Medium (9)	High (12)	Very High (18)	Very High (22)
Unlikely	Low (2)	Low (5)	Medium (10)	High (15)	Very High (19)
Rare	Low (1)	Low (3)	Low (7)	High (14)	High (16)

Estimating Likelihood		
Category	Chance of event	Frequency of event (includes Near Misses)
Almost certain	Is expected to occur in most circumstances	Occurred at least once in the last month within the BU
Likely	Will probably occur in most circumstances	Occurred at least once in the last 3 months within Fletcher Building
Possible	Might occur at some time	Occurred at least once in the last year within Fletcher Building
Unlikely	Could occur at some time	Occurred less than once within your industry
Rare	May occur only in exceptional circumstances	No known experience within your industry

Estimating Severity			
Category	Health & Safety	Environment	Financial Cost
Insignificant	Non-treatment Injury Pain & discomfort	Onsite/Offsite release contained in controls	Less than \$1,000
Minor	First Aid Treatment	Onsite/Offsite release cleaned up with internal resources	More than \$1,000 and less than \$10,000
Moderate	Medical Treatment Injury (MTI) Lost Time Injury (LTI)	Onsite/Offsite release cleaned up with specialist assistance Damage to items of ecological or culture significance	More than \$10,000 and less than \$100,000 Major enforcement against the company
Major	FB Serious Injury (refer FB Managing EHS Incidents Standard for definition)	Onsite/Offsite release with Major short term negative effects Major damage to items of ecological or culture significance	More than \$100,000 and less than \$500,000 Prosecution against the company Negative local publicity
Catastrophic	Fatality	Onsite/Offsite toxic release with detrimental long term effects	More than \$500,000 Prosecution or significant restriction on operational activities against the company Negative National publicity

Issue	Likelihood	Severity	Risk	Controls	Residual		
					Likelihood	Severity	Risk
Lack of environmental awareness demonstrated by workers	Possible	Minor	Medium	Workers participate in inductions, environmental awareness training, toolbox talks, work plan procedures	Unlikely	Minor	Low
Untreated sediment discharge to water	Possible	Moderate	High	Erosion and sediment controls implemented and checked regularly. Refer to CESC and SSEMPs. Environmental Management Team undertake regular inspections. Formen inspect controls regularly. Checks undertaken prior to forecast heavy rain.	Unlikely	Moderate	Medium
Sediment tracked onto roadways	Likely	Minor	Medium	Stabilised accessways, wheel wash in place as required. Haul Road maintained. Monitoring of exit points and sweeping if necessary.	Possible	Minor	Medium
Cement/lime contamination of waterways during soil conditioning or paving works	Possible	Major	Very high	Best practice used. Only undertaken in dry, calm weather. Skirt on truck to be used at all times. Decants raised to prevent discharge. Ponds, streams monitored for pH. If spill occurs, spill response plan to be implemented.	Unlikely	Major	High
Previously unidentified contaminated land disturbed	Unlikely	Moderate	Medium	Follow procedures in CAQMP and BECLMP. Dispose of material offsite at appropriate, approved locations.	Unlikely	Moderate	Medium
Previously unidentified archaeological site disturbance	Possible	Moderate	High	Site inductions, accidental discovery protocol implemented	Possible	Minor	Medium
Non compliant construction noise levels	Possible	Moderate	High	Follow procedures in CNVMP. Implement mitigation measures. Keep residents informed. Undertake noise monitoring. Seek additional advice from external specialists.	Possible	Moderate	High
Non compliant construction vibration levels	Possible	Major	Very High	Follow procedures in CNVMP. Implement mitigation measures. Keep residents informed. Undertake vibration monitoring. Seek additional advice from external specialists.	Possible	Moderate	High
Construction waste, general waste discharged off site	Possible	Minor	Medium	Use waste separation facilities, recycling wherever possible. Keep site tidy.	Unlikely	Minor	Low
Dust discharged beyond the boundary which is deemed to be offensive or objectionable	Likely	Moderate	High	Follow procedures in CAQMP. Monitor wind direction and strength. Utilise water carts and sprinklers. Extra vigilance taken near sensitive receptors. Keep residents informed.	Possible	Moderate	High
Odour discharged beyond the boundary which is deemed to be offensive or objectionable	Possible	Minor	Medium	Follow procedures in CAQMP. Monitor wind direction and strength particularly around high risk activities. Implement mitigation as required. Keep residents informed.	Unlikely	Minor	Low

Oil spill from hydraulic hose burst	Possible	Moderate	High	Maintain equipment regularly. Implement spill plan. Ensure personnel are trained in oil spill response.	Possible	Moderate	High
Spill as a result of refuelling	Possible	Moderate	High	Do not leave vehicle unattended while refuelling. Refuel at least 10m away from waterways. Know where spill kit is and how to use it.	Unlikely	Moderate	Medium
Spill of other hazardous substance to land or water	Possible	Moderate	High	Implement spill response plan. Ensure personnel are trained in spill response. Know where spill kits are located.	Possible	Moderate	High
Sediment discharge during dewatering	Possible	Moderate	High	Ensure permit to work (pumping) is in place. Pump to approved control. Check regularly.	Possible	Moderate	High
Fish trapped following flooding of stream diversion	Unlikely	Moderate	Medium	Ensure diversions are sized and constructed correctly. Check diversions after major rain events	Unlikely	Moderate	Medium
Groundwater impacts to adjacent properties	Possible	Moderate	High	Follow monitoring procedures in GMP(?), maintain communication with residents, engage expert as required.	Possible	Moderate	High
Settlement impacts to adjacent properties	Possible	Moderate	High	Follow monitoring procedures, maintain communication with residents, engage expert as required.	Possible	Moderate	High
Iron discharge to water during groundwater dewatering	Possible	Moderate	High	Identify iron levels prior to works, treatment if required, follow monitoring procedures in SSMPs.	Possible	Minor	Medium

# APPENDIX J – ECOLOGICAL MANAGEMENT PLAN

Refer to FCCL-EV-MPN-0009