CEMP

# Construction Environmental Management Plan

NZ TRANSPORT AGENCY
WAKA KOTAHI

1 MacKays to Peka Peka Expressway

## Revision History

| Revision Nº | Prepared By | Description | Date |
|---|---|---|---|
| A | Emily Sadlier | | |
| B | Kate Jackson | Draft for Legal Review | 17 October 2011 |
| C | Kate Jackson | Draft for EPA Review | 16 December 2011 |
| D | Kate Jackson | Draft for second EPA Review | 26 March 2012 |
| | | | |

## Document Acceptance

| Action | Name | Signed | Date |
|---|---|---|---|
| Prepared by | Emily Sadlier/Kate Jackson |  | 26 March 2012 |
| Reviewed by | Hugh Leersnyder |  | 26 March 2012 |
| Approved by | Hugh Leersnyder |  | 26 March 2012 |
| on behalf of | Beca Infrastructure Ltd | | |

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## Appendices

# 1. Background

## 1.1 Introduction

This Construction Environmental Management Plan (CEMP) details the principles, practices and procedures to be implemented by the MacKays to Peka Peka Expressway ('the Expressway') Alliance (the Alliance) to manage, remedy and mitigate potential adverse environmental effects during construction of the Expressway. These principles, practices and procedures meet resource consents and designation conditions, relevant legislation and the environmental objectives of the NZ Transport Agency (NZTA).

## 1.2 Purpose and Application

The purpose of this CEMP is to describe the environmental management and monitoring procedures to be implemented during the Project's construction phase. The CEMP will ensure that appropriate environmental management practices are followed during the Project's construction phase.

The CEMP will enable the Project team[1] to construct the Expressway with the least adverse environmental effect. Overall, implementation of this CEMP will ensure:

- Compliance with the conditions of resource consents and designations (Appendix A).
- Compliance with environmental legislation.
- Adherence to the Alliance's environmental objectives.
- Environmental risks associated with the Project are properly managed.

The CEMP defines details of who, what, where and when environmental management and mitigation measures are to be implemented. The CEMP covers all anticipated construction elements and presents a framework of principles, environmental policy, objectives and performance standards as well as processes for implementing good environmental management. This CEMP establishes the relationship with the related environmental sub-management plans (sub-plans).

The CEMP sits alongside the Stakeholder and Communication Management Plan (SCMP; Appendix S of the CEMP, Volume 4). The SCMP identifies the key stakeholder groups and methods for engaging with them as well as individual members of the public throughout the construction phase of the Project.

## 1.3 Scope

This CEMP relates to the environmental effects associated with the construction of the MacKays to Peka Peka Expressway which spans a length of approximately 16km from just south of Poplar Ave in Raumati to just north of Peka Peka Road in Peka Peka on the Kāpiti Coast as shown on Figure 1-1.

[1] This Plan refers to the Project team as carrying out works on behalf of and as contracted by the NZTA. The NZTA is the requiring authority and the consent holder.

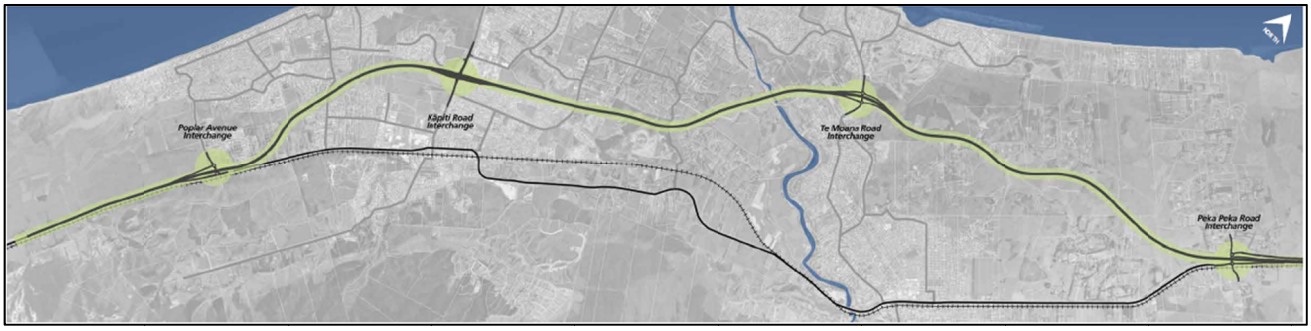



**Figure 1-1 Construction Environmental Management Framework**

The principles and general approach to managing the environmental effects are set out in the main body of the document. The management of specific effects (e.g. construction air quality, noise, vibration etc.) are detailed more particularly within a suite of environmental management plans (sub-plans) that form the appendices to the CEMP. This suite of management plans is:

- Construction Noise and Vibration Management Plan
- Construction Air Quality Management Plan
- Erosion and Sediment Control Plan
- Groundwater (Level) Management Plan
- Settlement Monitoring Management Plan
- Contaminated Soils and Groundwater Management Plan
- Hazardous Substances Management Plan
- Resource Efficiency and Waste Management Plan
- Ecological Management Plan
- Landscape Management Plan
- Construction Traffic Management Plan

Matters that have been addressed within each of these plans are identified in the subsequent sections of this CEMP. The relationship between the designation and resource consent conditions, the CEMP and the sub-plans is shown in Figure 1-2.

Beyond the construction phase, the NZTA will utilise an Asset Owner's Manual in accordance with NZTA's Minimum Standard Z/15 to manage environmental aspects of the operation and maintenance of the asset.

This CEMP and the various environmental sub-plans may require review and amendment during the life of the Project to reflect changes to activities, risks, mitigation measures, responsibilities and management processes. The ability to make changes to the CEMP is an important aspect of continually improving the effectiveness of the CEMP. Modification may be required once the consents and designation s are obtained and detailed design and construction methods finalised.

The Project team will be required to undertake all construction activities on site in accordance with the provisions of the relevant management plans and resource consent and designation conditions.

## 1.4 Structure

This document meets the requirements of the NZTA Minimum Standard Z/4 – Contractor's Social and Environmental Management Plan.

Section 1 of this CEMP details the purpose and scope of the CEMP and outlines NZTA's environmental policy, and environmental objectives. The minimum environmental management standards and specifications for managing the significant environmental aspects of the construction phase are discussed. The section also identifies the key legislative requirements applicable to the environmental aspects of the Project.

Section 2 presents the social and environmental management context of the Project. This section details the main construction activities and methodologies of the Project and the associated receiving environments. It also presents the first draft of the Environmental Risk Register to be populated and maintained by the Project team to identify significant environmental aspects and risks associated with these activities.

Section 3 outlines the implementation and operation of the CEMP. This section details the CEMP roles and responsibilities and the related training requirements for the construction phase of the Project. Further descriptions of the related sub-plans and the operating procedures (including measures to mitigate the potential adverse environmental effects, which will tie in with the conditions of consent and designations) are provided. This section details the management of emergencies and incidents, complaints and the guidelines for internal and external communications and interface.

Section 4 details the tools for the implementation of good environmental management including monitoring and review requirements of the CEMP, auditing procedures, corrective actions and management reviews of the CEMP.

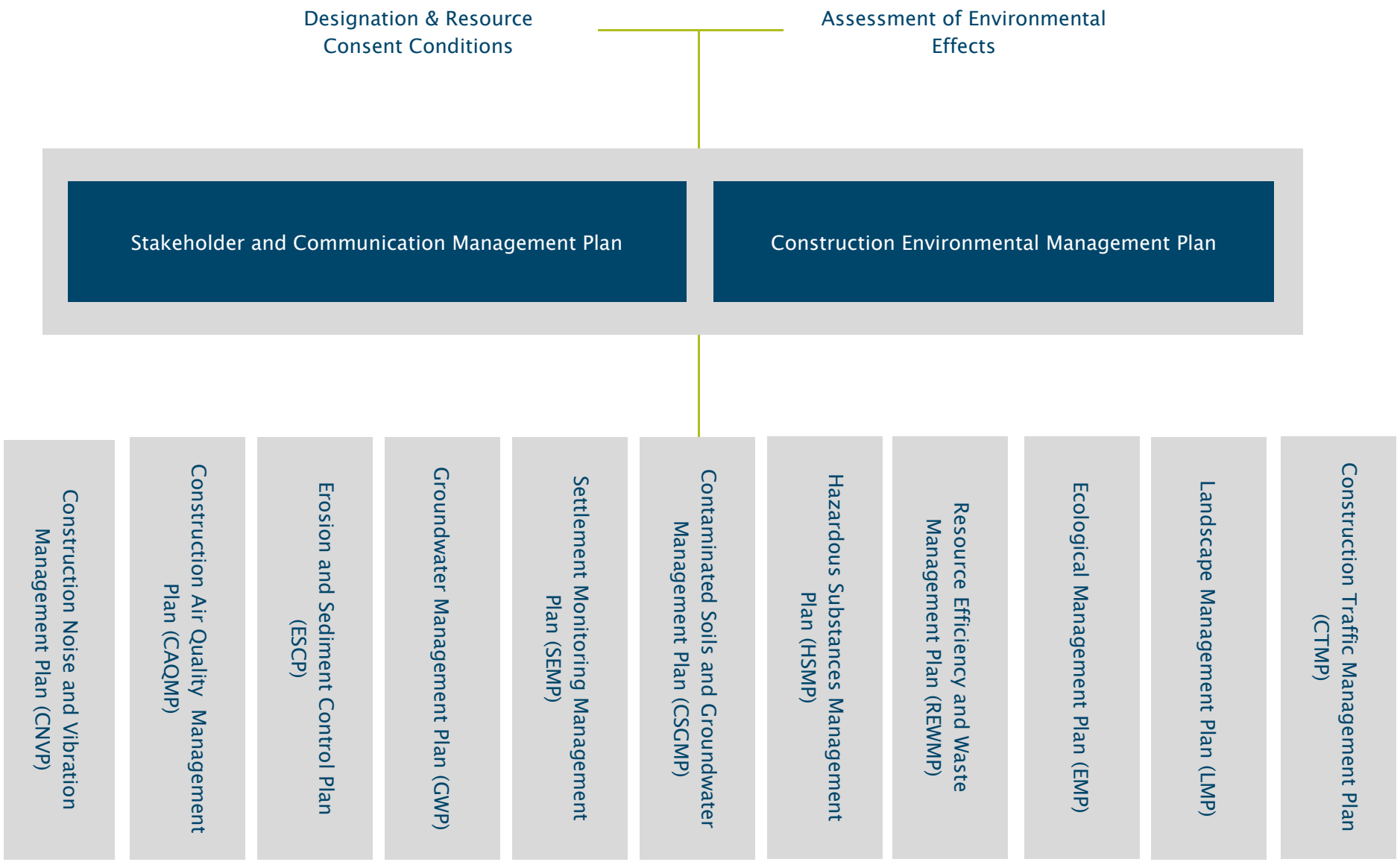



**Figure 1-2 Construction Environmental Management Framework**

## 1.5 Project Description

The Designation for the Project is proposed to generally follow the existing WLR designation, and span a length of approximately 16km from just south of Poplar Ave (chainage 1,900m) to just north of Peka Peka Road (chainage 18,050m).

The Expressway will provide for two lanes of traffic in each direction, connections with local roads at four interchanges, construction of new local roads and access roads to maintain local connectivity and an additional crossing of the Waikanae River.

Once completed, the Expressway will become part of SH1. The existing SH1 between MacKays Crossing and Peka Peka is likely to become a local arterial road.

The Project will be designed in accordance with the RoNS Design Standards and Guidelines and will result in the following principal design features:

- A four lane median divided Expressway (two traffic lanes in each direction);
- Partial interchange at Poplar Avenue;
- Full interchange at Kāpiti Road;
- Four lane bridge over the Waikanae River;
- Full interchange at Te Moana Road;
- Partial interchange at Peka Peka Road;
- Grade separated overbridges and underbridges to cross local roads, watercourses and the Expressway;
- Stormwater treatment and attenuation facilities;
- Provision of a shared cycleway/walkway separated from the shoulder of the Expressway; and
- Provision of a bridleway over sections of the corridor.

A full Project description is provided in Part D, Chapters 7 and 8, Volume 2 of the AEE.

### 1.5.1 Assessment of Environmental Effects

This CEMP and its sub-plans are consistent with and complement the MacKays to Peka Peka Assessment of Environmental Effects (AEE). The AEE contains a number of technical assessment reports which inform the specific environmental management, monitoring and mitigation measures to be implemented by the Project team to manage actual and potential environmental effects during construction. Table 1.1 identifies the technical assessment reports that relate to each sub-plan appended to this CEMP.

Table 1.1 AEE Technical Assessment Reports that informs each sub-plan

| Sub-Plan | Technical Assessment Report |
|---|---|
| Construction Noise and Vibration Management Plan (Appendix F of the CEMP, Volume 4) | Assessment of Construction Noise Effects (Technical Report 16, Volume 3)<br>Assessment of Vibration Effects (Technical Report 18, Volume 3) |
| Construction Air Quality Management Plan (Appendix G of the CEMP, Volume 4) | Assessment of Construction Air Quality Effects (Technical Report 14, Volume 3) |
| Ecological Management Plan (Appendix M of the CEMP, Volume 4) | Ecological Impact Assessment<br>▪ Technical Report 1: Terrestrial Vegetation & Habitats (including wetlands): Description and Values<br>▪ Technical Report 2: Herpetofauna: Description and Values<br>▪ Technical Report 3: Avifauna: Description and Values<br>▪ Technical Report 4: Freshwater Habitat & Species: Description and Values.<br>▪ Technical Report 5: Marine Habitat & Species: Description and Values<br>(Technical Reports 26, 27, 28, 29, 30 and 31, Volume 3)<br>Assessment of Landscape and Visual Effects (Technical Report 7, Volume 3) |
| Groundwater (Level) Management Plan (Appendix I of the CEMP, Volume 4) | Assessment of Groundwater Effects (Technical Report 21, Volume 3) |
| Settlement Monitoring Management Plan (Appendix J of the CEMP, Volume 4) | Assessment of Ground Settlement Effects (Technical Report 35, Volume 3) |
| Contaminated Soils and Groundwater Management Plan (Appendix K of the CEMP, Volume 4) | Assessment of Land and Groundwater Contamination (Technical Report 23, Volume 3) |
| Construction Traffic Management Plan (Appendix O of the CEMP, Volume 4) | Assessment of Temporary Traffic Effects (Technical Report 33, Volume 3) |
| Landscape Management Plan (Appendix T of the CEMP, Volume 4) | Assessment of Landscape and Visual Effects (Technical Report 7, Volume 3) |

## 1.6 Environmental Policy

To ensure effective environmental management during the construction phase of the Project, the NZTA's policy framework for environmental management on projects needs to be understood. This section outlines the key environmental policy, objectives, key performance indicators and environmental management approach underpinning the Project.

Key Performance Indicators (KPIs) will be developed by the Alliance prior to construction.

### 1.6.1 The NZTA Environmental Policy

NZTA's Environmental and Social Responsibility Policy is set out in the Statement of Intent 2011 – 2014:

"We are committed to: protecting and enhancing the natural, cultural and built environment, enhancing the quality of life for New Zealanders by improving community liveability including land transport safety, taking appropriate account of the principles of the Treaty of Waitangi, providing meaningful and transparent engagement with stakeholders, customers and the general public and providing customer focused services that are fair, trusted and efficient.

To implement our policy we will:

- promote the safe and efficient movement of goods and people in a manner that avoids, to the extent reasonable in the circumstances, adverse environmental and social impacts
- continuously improve performance in the management of environmental and social impacts
- integrate good urban design into all our activities
- work to improve our knowledge and understanding of the extent and condition of New Zealand's environmental and cultural heritage assets
- maintain and improve opportunities for Māori to contribute to our decision-making processes
- actively and meaningfully engage with affected and interested persons and organisations
- identify and comply with all relevant environmental and social legislation and regulations
- seek whole-of-life value for money by taking into account environmental and social costs and benefits when procuring goods and services
- provide our employees with the skills, awareness and leadership to achieve environmental and social objectives".

### 1.6.2 The NZTA's Environmental Objectives and Key Performance Indicators

In addition to its statutory objectives, the NZTA has developed a number of specific environmental objectives in order to improve its environmental performance. These objectives are set out within the NZTA's *Environmental Plan: Improving Environmental Sustainability and Public Health in New*

*Zealand*[2]. Objectives and key performance indicators are provided in the NZTA Environmental Plan for each environmental aspect including noise, air quality, water resources, erosion and sediment control, social responsibility, culture and heritage, ecological resources, spill response and contamination, resource efficiency, climate change, visual quality and vibration.

Environmental management methods set out in this CEMP will remain consistent with the NZTA's overall objective, as well as the objectives and policies in the NZTA's Environmental Plan. The applicable NZTA objectives are outlined in Section 3.5, and included as Appendix B.

## 1.7 Legislative and Other Requirements

A full statutory assessment and overview of statutory requirements of the potential effects upon the environment are contained within the Assessment of Environmental Effects, Volume 2.

### 1.7.1 National Legal Requirements and Policies

Construction of the Project must comply with a range of national legislation, regulations, strategies and policies in order to provide for the management of environmental effects. Key documents, national environmental legislation and regulations relevant to the NZTA and the Project are outlined in Table 1.2.

**Table 1.2 Key national legislation, regulations and standards**

| National legislation, regulations, strategies and policies |
|---|
| Resource Management Act, 1991; |
| Land Transport Management Act, 2003; |
| Hazardous Substances and New Organisms Act, 1996; |
| Dangerous Goods Act, 1974 and Regulations; |
| Protected Objects Act 1975 for the relevant archaeological and heritage standards/practices; |
| Historic Places Act, 1993; |
| New Zealand Coastal Policy Statement 2010 |
| Government Policy Statement on Land Transport Funding 2009/10 – 2018/19 (GPS); |
| National Environmental Standard – Air Quality 2004 (NES: AQ); |
| Reserves Act 1977; |
| Public Works Act 1981; |

[2] NZ Transport Agency New Zealand Environmental Plan: Improving Environmental Sustainability and Public Health in New Zealand, Version 2, June 2008.

| |
|---|
| Wildlife Act 1953; |
| Freshwater Fisheries Regulations, 1997 |
| National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (effective from 1 January 2012). |
| National Policy Statement for Freshwater Management, 2011 |

### 1.7.2 Project Approval Process

Applications for resource consents and designations for the Project have been lodged with the Environmental Protection Authority (EPA), requesting that the Minister for the Environment defines the Project as a Proposal of National Significance. The Project has activities which are permitted in a regional or district plan, designations under Kāpiti Coast District Plan and resource consents under the relevant Greater Wellington Council's Regional Plans.

The provisions within this CEMP comply with conditions of the designations and resource consents. The finalised conditions form part of the CEMP. The Project team is responsible for maintaining compliance with the conditions of consent and designation and this will be tracked by the NZTA through the web based CS-VUE Compliance Database explained below.

If required, the Project team is responsible for obtaining new or altered consents and designations required during construction and for obtaining approvals to renew expiring consents. Alterations of consents and designations will be associated with changes to construction techniques or natural environmental changes. To facilitate this, an internal review and approval process is to take place between the Alliance and the NZTA.

### 1.7.3 The NZTA Consent Compliance Management System

CS-Vue™ is a legal compliance system adopted by the NZTA to manage environmental statutory requirements. It is the NZTA's contractual requirement for the Project team to track and record compliance with legal obligations such as resource consents, designation conditions, Department of Conservation concessions, Historic Places Trust authorities and any other agreements or obligations with compliance conditions in CS-VUE™.

CS-Vue™ is a secure database which matches each consent (or other legal obligation) with a consent manager and condition manger and automatically sends an email notifying them of compliance requirements. All entries/changes on CS-VUE are annotated with the person's name and date who undertook the changes.

During construction, the Alliance Environmental Manager will be responsible for liaising with the NZTA Regional CS-Vue Manager to ensure that CS-VUE is kept up to date as the Project progresses. This will include ensuring that any monitoring reports, evidence of minor and major non-compliances and any

environmental complaints are uploaded, as well as evidence of compliance with consent with legal obligations.

# 2. Construction Activities and Effects

## 2.1 Overview

This CEMP addresses both the actual and potential effects on the environment that may be generated by the Project. These effects have been assessed based on the activities authorised by regional and district plans, resource consents and the Designation. The NZTA does not anticipate effects beyond these authorised activities.

Section 2.2 provides a summary of the construction activities and related environmental aspects of the Project including the location of these activities.

Section 2.3 details the use of an 'Environmental Risk Register'; a tool for the Project team to assess how these effects are best avoided and minimised during the construction phases of the Project. The Environmental Risk Register can be used by the NZTA, the Greater Wellington Regional Council and the Project team as a reference to activity type, location, potential effect and impact, risk rating, mitigation options and relevant management plans for a particular environmental aspect. Section 3.5 and the associated sub-plans provide a description of the potential mitigation of environmental effects likely to be required and likely to be entered into the Register by the Project team.

## 2.2 Construction Activities and Environmental Aspects

### 2.2.1 Construction Duration

The Project is anticipated to take approximately 4 - 5 years to construct. It will able to be undertaken on a number of fronts or work faces, such that many elements of the Project will be undertaken concurrently. Figure 2.1 shows an outline of the proposed Project programme.


Figure 2-1 Summary of Work Programme

### 2.2.2 Night Time Works

Night time works will be required at times throughout the construction phase. Works are required at night to minimise disruption to traffic on existing roads. Activities requiring night time works are outlined in detail in the Construction Methodology Report (Technical Report 4, Volume 3) and include:

- Erection of bridges at:
  - Raumati Road
  - Kāpiti Road
  - Mazengarb Road
  - Otaihanga Road
  - Te Moana Road
  - Ngarara Road
- East and West ends of Kāpiti Road Intersection
- General Traffic Management set up and changes and removal throughout the life of the contract (all Sectors)

At these locations, the site and adjacent construction yard will require full illumination during the night to complete the required operations. Mobile lighting towers will be erected on a temporary basis for night works.

### 2.2.3 Construction Effects

Table 2.1 summarise key environmental issues and effects associated with construction. A number of sensitive receptors[3] and receiving environments are near or within the vicinity of the construction footprint as shown in maps included in Appendix C. Construction activities have the potential to affect human health, cause nuisance to people and to adversely affect the aquatic and terrestrial receiving environments. Sub-plans outlining practices to minimise these effects are detailed in Figures 2-2, 2-3 and 2-4 below.

The following documents can be referenced for further information regarding construction activities:

- Assessment of Environmental Effects – Part D, Chapter 8, Volume 2 – Project Description – Construction.
- Assessment of Environmental Effects – Part G, Volume 2 – Assessment of Effects on the Environment.

[3] A sensitive receptor is a property/feature/location that is potentially more susceptible to the construction activities of the Project. Susceptible properties are those more likely to experience human health or nuisance effects. Susceptible features/locations are those values by humans such as ecologically areas or archaeological sites.

**Table 2.1 Environmental Issues and Effects associated with construction.**

| Social and Environmental Screen | | | Social and Environmental Assessment | |
|---|---|---|---|---|
| Issue | Effects | Degree of Effect | Requirements | Addressing effects |
| Noise and Air Quality | The risk of the Project impacting on human health and causing nuisance to humans applies across the entire Project footprint. This risk is higher where construction activities take place near sensitive receptors including residents and hospitals.<br><br>These effects include construction noise, dust generation and emissions from construction vehicles.<br><br>Mitigating the risk of potential effects on human health and nuisance from construction activities is to take place through the implementation of this CEMP and its sub-plans. This is summarised in Figure 2-2 overleaf. | Sensitive Receiving Environments<br><br>Sector 1:<br>▪ Raumati residents<br><br>Sector 2:<br>▪ Raumati and Paraparaumu residents<br>▪ Metlifecare Kāpiti Retirement Village residents<br><br>Sector 3:<br>▪ Otaihanga and Waikanae residents<br>▪ El Rancho Camp, Waikanae<br><br>Sector 4:<br>▪ Waikanae residents and Peka Peka residents<br><br>Refer to the Environmental Maps in Appendix C for further information. | To be completed. | |

| | | | |
|---|---|---|---|
| Vibration | A significant amount of high-vibration generating equipment will be operating in relatively close proximity to vibration sensitive receptors.<br><br>Mitigating the risk of potential effects on human health from construction activities is<br><br>to take place through the implementation of this CEMP and its sub-plans. This is summarised in Figure 2-2 overleaf. | Refer to the Environmental Maps in Appendix C. | |
| Water Resources | A number of freshwater and marine aquatic receiving environments exist across the sectors.<br><br>These aquatic environs are potentially susceptible to adjustments in water quantity from a decrease in stream baseflows and stormwater attenuation and water quality from discharges of sediment, contaminants and contaminated groundwater generated by the construction activities. Mitigation of these potential effects on the aquatic receiving environment will be implemented through this CEMP and its sub-plans as summarised in Figure 2-3. | Sensitive Receiving Environments<br><br>Sector 1:<br>■ Whareroa Stream<br>■ Whareroa Estuary<br>Sector 2:<br>■ Wharemauku Stream<br>■ Wharemauku Estuary<br>■ Mazengarb Stream<br>■ Muaupoko Stream<br>Sector 3:<br>■ Waikanae River | |

| | | | |
|---|---|---|---|
| | | ▪ Waimeha Stream<br>▪ Waimeha Estuary<br>Sector 4:<br>▪ Kakariki Stream<br>▪ Ngarara Stream<br>▪ Paetawa Stream<br>▪ Te Harakeke / Kawakahia Wetland<br>Refer to the Environmental Maps in Appendix C for further information. | |
| Erosion and Sediment Discharges | During construction, there is potential for sediment laden discharges to occur from bare earth surfaces. These discharges can have a negative impact on sensitive receiving environments. Dust can affect human health and plant life along the Alignment and provide a nuisance to the surrounding public.<br>Mitigating the risk of sediment and dust generated by construction activities is to take place through the implementation of this CEMP and its sub-plans. This is summarised in Figure 2-2 overleaf. | All Sectors. | |
| Construction | During construction, temporary lighting will be | All sectors | |

| | | | |
|---|---|---|---|
| Lighting | required in the main construction areas if any work is carried out during the hours of darkness. Spill lighting may cause a low to moderate nuisance to surrounding residents and glare from temporary light has the potential to cause a disabling effect to vehicles.<br><br>Mitigation of these effects is discussed in Assessment of Lighting Effects (Technical Report 8, Volume 3). | | |
| Culture and Heritage | The construction activities associated with the Project will impact on the locations of a number of recorded archaeological sites. An Archaeological Scoping Report (Technical Report 9, Volume 3) has been prepared to describe how to mitigate these effects. | Known sites in all Sectors.<br><br>Potential for discovery of unrecorded subsurface sites and features.<br><br>Refer to the Environmental Maps in Appendix C. | |
| Ecological Resources | Refer to the Environmental Maps in Appendix C. | | |

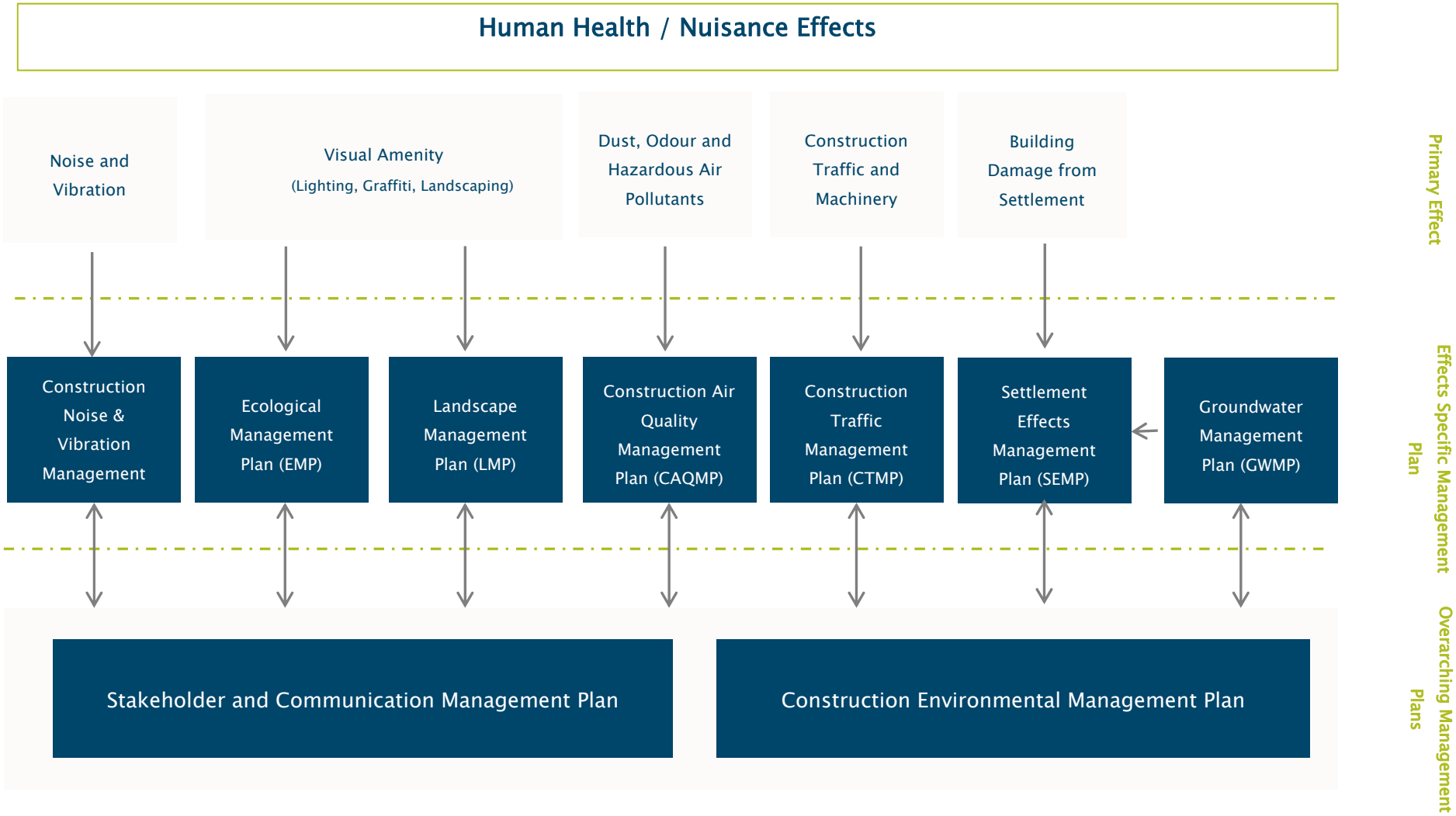



**Figure 2-2 Relevant sub-plans which detail mitigation of potential impacts from construction activities on sensitive receptors**

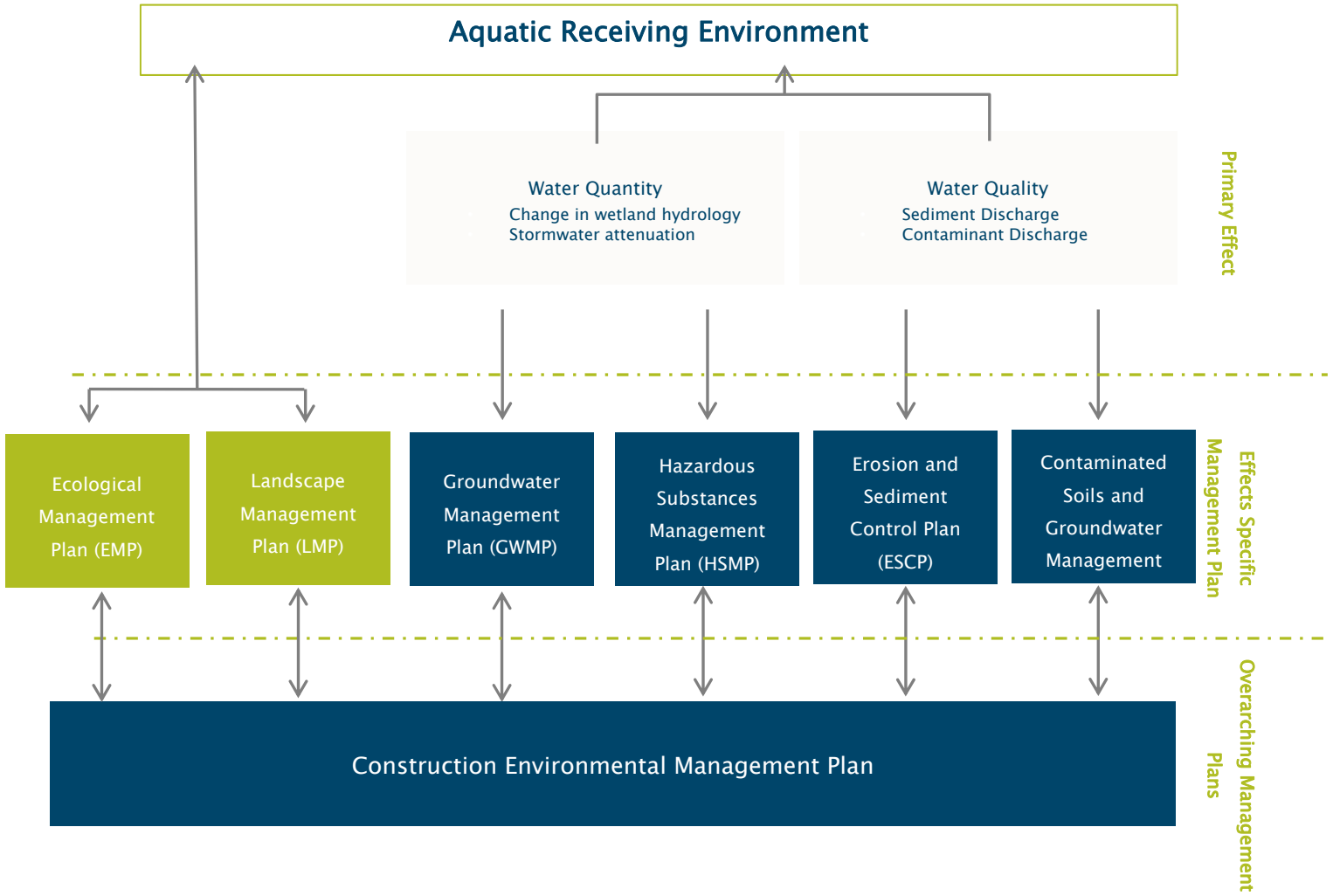



**Figure 2-3 Relevant sub-plans which detail mitigation of potential impacts from construction activities on the aquatic receiving environment**

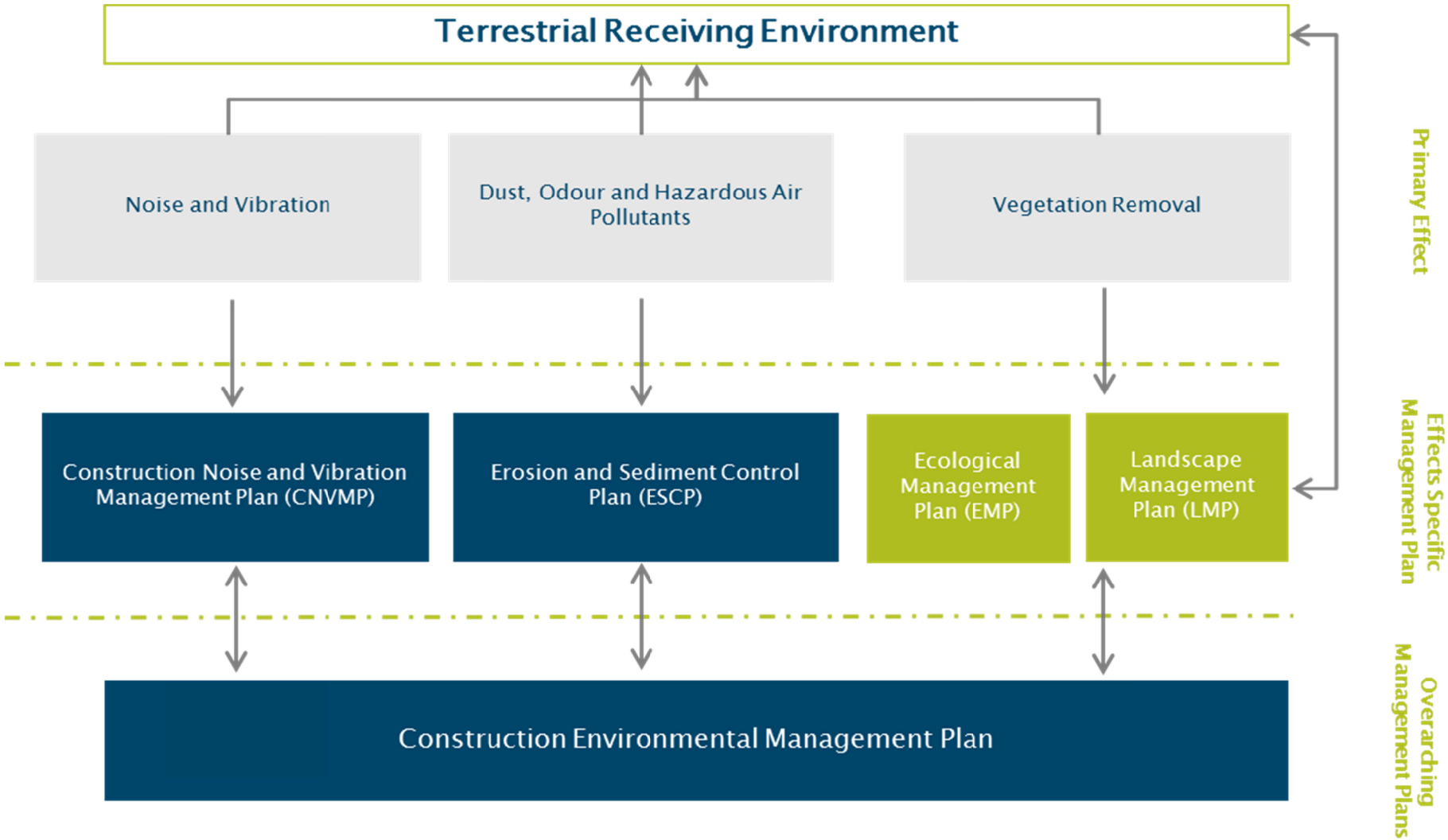



Figure 2-4 Relevant sub-plans which detail mitigation of potential impacts from construction activities on the terrestrial receiving environment

## 2.3 Environmental Risk Register

A preliminary Environmental Risk Register is attached as Appendix D. 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.

Fletcher Construction's risk rating procedure ENV-08 Environmental Aspects and Impacts was followed during the preparation of this register, and a copy is included as Appendix E.

Construction hazards have been identified and a hazard ranking assigned along with the intention to eliminate, isolate or minimise the risk. Finally, mitigation measures were prepared for each environmental risk.

The risk management process is a robust system and has been developed, implemented and maintained as part of Fletcher Construction's ISO 14001 Environmental certification.

### 2.3.1 Review of the Register

The Environmental Manager (roles and responsibilities are defined in Section 3.2) is required to maintain and review the Environmental Risk Register. The risk assessment results will be reviewed at regular intervals and will be repeated at critical times within the Project, such as prior to commencement of construction (taking into account finalised construction methodologies), when there is a new or changed activity, equipment or location of activities or when there is a change to legislative or consent and designation requirements, or as a result of a significant environmental incident. The Register will be reviewed on an annual basis in the event that none of the preceding activities have already triggered a review.

The Alliance Environmental Manager, with the assistance of environmental and technical experts, will determine whether the CEMP and sub-plans require revision to reflect the revised risk assessment. The Project team will be responsible for obtaining Greater Wellington Regional Council or Kāpiti Coast District Council approvals required (if any) prior to commencing any new or changed activities.

The Environmental Manager will inform all relevant staff, Alliance Project Manager and management team of any changes to the Environmental Risk Register.

# 3. Implementation and Operation

This section of the CEMP addresses the implementation and operation of the CEMP and the sub-plans. The following areas are covered:

- CEMP Management Structure and Responsibility;
- Training
- Environmental Maps
- Operating Procedures inclusive of mitigation measures

- Emergency Contacts and Response
- Complaints Management

## 3.1 CEMP Management Structure and Responsibility

### 3.1.1 Overview of Responsibility for this Plan

Each person involved in the Project has equal responsibility to strive to avoid, remedy or mitigate adverse environmental effects. There are three key groups with responsibility for environmental management of the Project:

- The NZTA as the Project owner and holder of the designations and resource consents;
- The Alliance as the party undertaking the works; and
- Greater Wellington Regional Council and Kāpiti Coast District Council who audits the works and monitors compliance with resource consent and designation conditions and the specific CEMP's.

During the construction phase of the Project, an Environmental Manager will be appointed by the Alliance as part of the Construction Team who will be involved throughout the contract period to give advice and to ensure that the CEMP and sub-plans are implemented and maintained. Further details of responsibilities during the construction phase are included below.

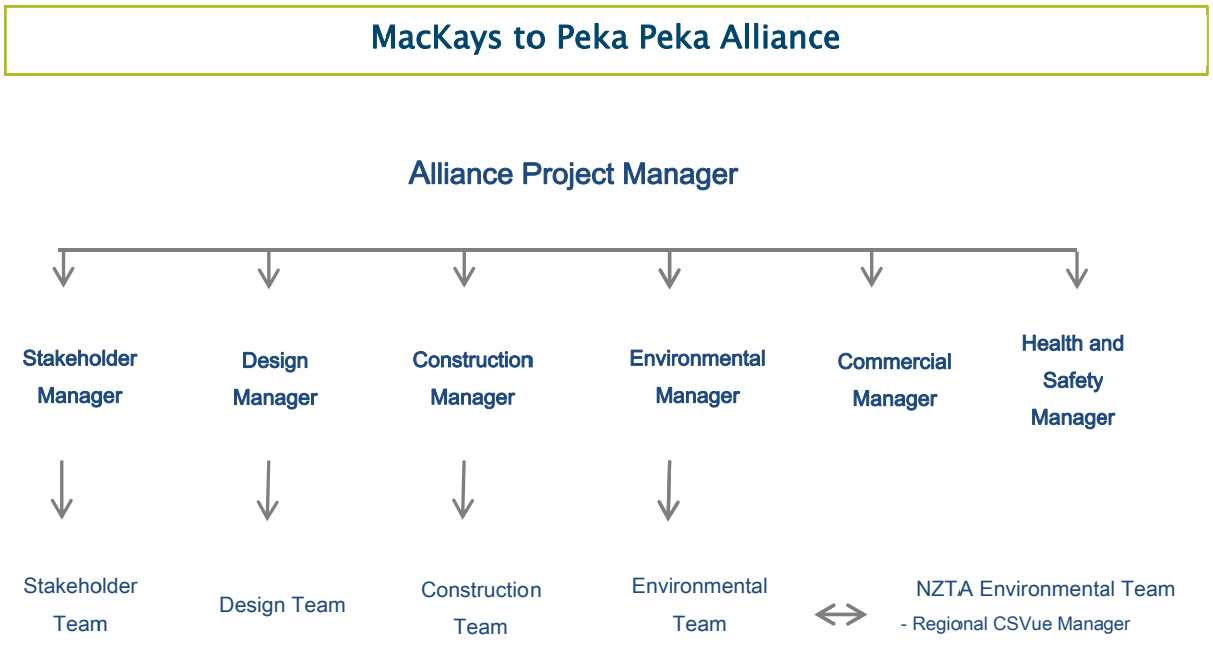
Once the construction of the Project is complete, the responsibility for its management is passed from the 'Capital Works Team' within the NZTA, to the regional Operations and Maintenance Contractor (OMC).

The Project team is responsible for the transition phase between construction and operational phases. In particular, the Project team is responsible for the sign off construction and post construction resource consent and designation conditions, handover of environmental monitoring data and reports and compliance and audit reports before the Project is handed to the OMC.

## 3.3 Organisation and Accountability

### 3.3.1 Organisation

The proposed structure of the Alliance is as follows:




### 3.3.2 Accountabilities

The key requirements/responsibilities for Alliance staff in relation to environmental management during the Project are set out below:

#### 3.3.2.1 All Staff

- Attending tool-box talks and environmental training including familiarisation with the requirements of the CEMP and sub-plans;
- Responsible for reporting environmental incidents, complaints, defects and other problem areas to senior staff as they arise on site;
- Ensuring that required processes and procedures for environmental management are followed;
- Ensuring that environmental mitigation and protection measures are maintained and working correctly;
- Within day to day work responsibilities, ensure the environment both on site and adjacent to the site is protected and respected; and
- Ensure the site is tidy and all waste is placed in appropriate bins.

#### 3.3.2.2 Alliance Project Manager

- Takes ultimate responsibility for compliance with specifications of resource consent and designation conditions;
- Reviews and approves environmental plans prior to issue; and
- Ensures adequate resources are provided to ensure environmental issues and obligations are appropriately managed.

#### 3.3.2.3 Design Manager

- Incorporates environmental requirements into design as required by resource consent and designation conditions, the CEMP and sub-plans; and
- Advises Environmental Manager of any design issues that may impact on the environment.

#### 3.3.2.4 Construction Manager

- Provides leadership to the site team to achieve Project environmental objectives and targets to ensure a high level of performance is achieved;
- Responsible for ensuring environmental controls and erosion and sediment control works are installed, modified and maintained as appropriate for each stage of construction;
- Ensures adequate resources are provided to ensure environmental issues are appropriately managed;
- Reports all incidents, system defects and complaints to the Environmental Manager;
- Assists in the development, implementation and review of Project environmental objectives; and
- Ensures that staff on-site are aware of environmental requirements at all times and sees that routine maintenance to erosion sediment control facilities and management measures continue with ongoing effectiveness.

#### 3.3.2.5 Project Engineers

- Prepares and reviews work packages against Project environmental objectives and targets and CEMP to ensure a high level of performance is achieved;
- Develops, implements and monitors construction methods ensuring compliance with consents and designations and CEMP and sub-plans;
- Coordinates environmental interfaces with subcontractors and suppliers;
- Comply with all Legislation, Regulations designation and consent conditions in relation to the work they are undertaking;
- Demonstrates understanding of major environmental and community issues and environmentally sensitive areas;
- Implements environmental protection measures in accordance with the contract and the CEMP and sub-plans;
- Train all workers in relation to environmental measures;
- Reports all incidents, system defects and complaints to the Construction Manager; and

- Ensures all workers and others (e.g. subcontractors and suppliers) comply with environmental operating procedures and community relations protocols.

#### 3.3.2.6 Environmental Manager and Team

- Provides leadership to ensure staff are motivated to achieve environmental standards, and comply with all resource consent and designation conditions;
- Reports on environmental performance, incidents and issues;
- Develops, implements and reviews environmental management systems including the CEMP and sub-plans for the Project;
- Co-ordinates the interfaces and communications with external agencies and stakeholders in relation to environmental management on the Project in conjunction with Stakeholder Manager;
- Manages and co-ordinates all consents and designations required (current and any additional), and construction monitoring and maintains and submits relevant reporting and records to the Greater Wellington Regional Council and Kāpiti Coast District Council as required;
- Undertakes regular site inspections and audits to ensure compliance with the CEMP and sub-plans and consent and designation conditions;
- Input all environmental monitoring results to a CS-VUE database;
- Provides liaison point between site staff and arborist/subcontractors with regard to tree protection / removal;
- Coordinates site archaeological monitoring and protection requirements and provides necessary training and advice to site staff;
- Coordinates all site monitoring including but not limited to groundwater, settlement, water quality, ecological, dust, noise, and vibration monitoring and provides necessary related training and advice to staff in relation to this monitoring;
- Trains staff in site specific environmental procedures;
- Coordinates environmental emergency responses;
- Notifies Alliance Project Manager, Greater Wellington Regional Council, Historic Places Trust and/or the Department of Conservation of any significant environmental non compliances for which they have jurisdiction;
- Responsible for resolving issues of environmental non compliances;
- Coordinates green house gas (GHG) reduction initiatives, carbon foot printing & reporting;
- Coordinates the preparation of erosion and sediment control plans and preparation of as-built information that is timely and applicable to the consent conditions;;
- Manages maintenance and monitoring of the effectiveness of erosion and sediment controls, stormwater devices and other control devices; and

Ensures spill kits are available and stocked and provides training on equipment use.

#### 3.3.2.7 Stakeholder Manager

- Responsible for notifying residents of works occurring within the near vicinity and managing mitigation as required;
- Disseminates information to the public as approved by the NZTA; and
- Primary contact for Project related complaints and enquiries.

#### 3.3.2.8 Site Superintendents

- Provides leadership to the site construction team to achieve Project environmental objectives and targets;
- Ensures that the CEMP and sub-plans are implemented appropriately;
- Ensures environmental controls and erosion and sediment controls are protected and maintained on a day to day basis;
- Leads the emergency response crew;
- Ensures staff on site are aware of GHG requirements and initiatives;
- Reviews and authorises the closures of site access points to reduce the risk of dirt on roads; and
- Reviews the need to use a water cart to control dust.

#### 3.3.2.9 Foreman

- Manages the construction of critical erosion and sediment control devices, temporary stormwater ponds and removal of vegetation;
- Co-ordinates daily site inspections of environmental controls including erosion and sediment control devices and co-ordinates maintenance where necessary;
- Monitors the site during rainfall events and high wind events; and
- Ensures staff on site are aware of environmental requirements at all times.

## 3.4 Environmental Training and Induction

### 3.4.1 Employees and Subcontractors

All Project staff (Alliance staff and subcontractors) will undergo general environmental awareness training and training about their responsibilities under the CEMP and sub-plans. The training will ensure that all personnel understand their obligation to exercise due diligence for environmental matters. Suitable induction training and on-going programmes of environmental training will, as a minimum, include:

- The significant actual or potential environmental impacts and the importance of mitigation.
- Location of sensitive receptors and areas of high environmental value.
- Importance and relevance of the CEMP and sub-plans.
- Consent and designation requirements, in particular consent and designation conditions.
- Roles and responsibilities in relation to compliance with consents and designations, permits and operating procedures.

- Familiarisation with site environmental controls.
- Spill response and emergency procedures.
- Hazard and risk management to ensure personnel understand the potential impacts and proposed mitigation measures.
- Accident, incident, spill reporting and methods for environmental prevention.
- Complaints management procedures.

  Environmental Monitoring.

A comprehensive environmental induction will be provided to all staff and subcontractors prior to starting work on site. The induction will include information on the surrounding natural environment and its sensitivity. Information will be provided on environmental controls such as sediment control devices, noise and dust mitigation measures, spill contingency plans and waste management. Project engineers responsible for writing work plans and undertaking site specific safety and environmental risk assessments will also be given guidance on how to assess and plan for environmental issues using the CEMP and Environmental Risk Register.

Environmental issues will form a regular part of 'toolbox meetings' (to be attended by Alliance staff and subcontractors) to ensure all workers are aware of the key issues. Opportunities will also be made available for selected staff members to attend erosion and sediment control training courses where available.

Site staff will be made aware of the operational restrictions when working near designation boundaries, sites of archaeological and cultural significance, sensitive aquatic receiving environments, areas of retained/protected vegetation and other sensitive receptors to the nuisance effects of noise, dust, light and vibration.

### 3.4.2 Visitors

All visitors must undergo a visitor's induction. Special shortened inductions may be provided for visitors to the Project where there is minimal potential for environmental harm. Subcontractors are responsible for the actions and conduct of their visitors, and will ensure that visitors obey all environmental requirements of the site. Visitors will be accompanied at all times. Under no circumstances will a visitor undertake any physical work on site.

### 3.4.3 Training Resources and Records

Training resources support and provide on-going education for on-site personnel and site visitors in regard to environmental matters. These resources will be used to communicate up to date methods, hazards and environmental awareness where specific training is not deemed necessary.

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

- Who was trained;
- When the person was trained;

- The name of the trainer; and

General description of training content.

## 3.5 Environmental Maps

A series of GIS layers have been developed into maps to show locations of Project boundaries, construction activities, sensitive receptors controls and mitigation measures. The maps will be updated and refined further by the contractor to reflect changes to construction activities, mitigation measures and results of monitoring. These maps are to be used by the contractor as a tool for inductions, tool-box sessions, and training and for general display in site offices. Appendix C contains examples of these maps. The GIS layers that the maps are comprised from are listed below.

*Location of Construction Activities relative to Human Health and Nuisances Values*

- Proposed construction footprint
- Proposed construction yard boundaries
- Expressway Alignment
- Sensitive Receptors to impacts from dust, noise and vibration (e.g. residential properties, schools).
- Archaeological sites
- Contaminated Land

*Location of Construction Activities Relative to Aquatic Receiving Environments*

- Proposed construction foot print
- Proposed construction yard boundaries
- Contaminated land hotspots
- Indicative Construction Stormwater & Sediment Retention Ponds
- Open stream channels and wetlands.

*Location of Construction Activities Relative to Terrestrial Receiving Environments*

- Proposed construction foot print
- Proposed construction yard boundaries
- Indicative Construction Stormwater & Sediment Retention Ponds
- Significant wetland and terrestrial vegetation

The maps are not intended to be used outside the functions of the CEMP. For up-to-date details on information presented in the GIS layers from which these maps are comprised, refer to the relevant assessment reports listed in Table 1-1.

## 3.6 Operating Procedures

The following sections of the CEMP describe the environmental aspects associated with the construction phase of the proposed works and mitigation measures. Sub-plans that detail the controls

and measures are cross-referenced. Where relevant these environmental aspects are related back to the environmental objectives in NZTA's Environmental Plan.

### 3.6.1 Noise

The construction of the Project will create changes to the existing noise environment. The noise mitigation methods as set out in this CEMP will remain consistent with the Noise Objectives (associated with construction noise) as set out in Section 2.1 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| N2 | Determine reasonable noise requirements when seeking new or altering existing designations including when designating existing local roads by using RMA procedures. |
| N3 | Manage construction and maintenance noise to acceptable levels. |

There will be a significant number of noise generating machinery operating in relatively close proximity to noise sensitive receptors. The New Zealand Standard NZS 6803:1999 "Acoustics – Construction Noise" contains criteria which are generally applied to construction projects. These criteria are applied at a distance of 1 metre from closest building facades.

Night-time construction is required in certain areas. Throughout the construction phase, noise effects must be carefully managed through the use of management plans.

Mitigation and monitoring of noise during the construction phase are detailed in the Construction Noise and Vibration Management Plan (CNVMP; Appendix F of the CEMP, Volume 4).

### 3.6.2 Vibration

The vibration mitigation methods in this CEMP will remain consistent with the Vibration Objectives as set out in Section 2.12 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| V1 | Plan and design new State highways to avoid or reduce adverse vibration effects. |
| V2 | Mitigate vibration where levels are unreasonable and exceed relevant criteria set in New Zealand or internationally accepted thresholds. |
| V3 | Avoid or reduce, as far as is practicable, the disturbance to communities from vibration during construction and maintenance. |

A significant amount of high-vibration generating equipment will be operating in relatively close proximity to vibration sensitive receptors. Night-time construction is required in certain areas, but high-vibration generating equipment will not be used at these times.

The Project vibration criteria are based on a draft NZTA vibration guide which incorporates criteria from two standards[4].The standards address building damage risk and human response to vibration respectively.

Throughout the construction phase, vibration effects must be carefully managed implementing the CNVMP.

### 3.6.3 Air Quality

During the construction phase of the Project there is potential for air to be polluted by contaminants such as dust, odour and hazardous air pollutants (HAP). The air quality mitigation methods in this CEMP will remain consistent with the Air Quality Objectives as set out in Section 2.2 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| A2 | Ensure new State highway projects do not directly cause national environmental standards for ambient air quality to be exceeded. |
| A3 | Contribute to reducing emissions where the State highway network is a significant source of exceedance of national ambient air quality standards. |

The Assessment of Construction Air Quality Effects (Technical Report 14, Volume 3) has identified the key air quality effects as dust and HAP generated from the construction activities. A Construction Air Quality Management Plan (CAQMP; Appendix G of the CEMP, Volume 4) has been prepared to facilitate the avoidance, remediation and mitigation of any adverse effects of dust, and HAP discharges and to promote proactive solutions to the control these discharges from the site.

Procedures for maintaining contact with stakeholders and managing complaints are given in Sections 3.7, and 3.8 of this CEMP.

#### 3.6.3.1 *Dust*

Dust can affect human health and plant life along the edge of the earthworks area, can be a nuisance to the surrounding public, and can contribute to sediment loads discharged to streams and other water bodies by depositing in areas without sediment control measures in place. Sediment deposited in sealed public roads can also result in a dust nuisance. Rainfall, evaporation and wind speed are meteorological conditions having the greatest effect on dust mobilisation. The dust controls are required only for the construction phase and will be a responsibility of the construction team as part of this CEMP as outlined in the CAQMP.

[4] Draft policy criteria from DIN 4150-3:1999 "Structural vibration – Part 3: Effects of vibration on structures", Deutsches Institute für Normung, 1999 and BS 5228-2:2009 "Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration", British Standards Institute, 2009

#### 3.6.3.2 *Hazardous Air Pollutants*

Dust from earthworks on sites that are contaminated with hazardous air pollutants can affect human health and plant life around those sites. As with non-contaminated dust discharges, contributing factors include rainfall, evaporation and wind speed. Given the additional risks posed by the contaminants on these sites, contaminated dust discharges need to be kept to an absolute minimum, although the control measures are similar to those for controlling general dust discharges. The dust controls are required only for the construction phase and will be a responsibility of the construction team as part of this CEMP as outlined in the CAQMP.

#### 3.6.3.3 *Construction Machinery and Vehicle Emissions*

Excessive smoke and odour from diesel-fuelled trucks, generators and other machinery is primarily caused by poor engine maintenance. Failure to maintain air filters, fuel filters, and fuel injectors to manufacturers' specifications may cause excessive black smoke and objectionable odour.

Excessive smoke and odour discharges from trucks, earth moving machinery and generators, while unlikely, could cause complaints from neighbours under adverse meteorological conditions if vehicles and machinery are not well maintained. The Project team will utilise late model vehicles and machinery where possible and will maintain all machinery and vehicles regularly to prevent excessive smoke and odour discharges. The CAQMP outlines the requirement for regular maintenance of construction machinery and vehicles.

### 3.6.4 Water Resource Management

The water resources mitigation methods as set out in this CEMP and sub-plans will remain consistent with the Water Resources Objectives as set out in Section 2.3 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| **W1** | Ensure run-off from State highways complies with RMA requirements |
| **W2** | Limit the adverse effects of run-off from State highways on sensitive receiving environments. |
| **W3** | Ensure stormwater treatment devices on the network are effective. |
| **W4** | Optimise the value of water management through partnership with others. |

#### 3.6.4.1 *Erosion and Sediment Control*

An Erosion and Sediment Control Plan (ESCP; Appendix H) has been formulated in association with the Construction Methodology Report (Technical Report 4, Volume 3) which forms part of the Project implementation. The ESCP follows the principles of erosion and sediment control which are well understood by the contracting industry.

During construction, erosion and sediment control measures will be put in place to minimise potential adverse effects by utilising measures which meet, and often exceed, industry best practice guidelines

such by *Greater Wellington's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002* (Wellington Guidelines). The draft *NZTA Erosion and Sediment Control Standard for State Highway Infrastructure dated August 2010* (NZTA Draft Standard) has also been considered. It is expected, as is the case for projects of this size and nature, that site and activity specific erosion and sediment control plans will be further enhanced which will follow the general principles of the ESCP. These are referred to as Contractor's Erosion and Sediment Control Plans (CESCPs) which will enable the contractor and GWRC to have further input into the methodologies implemented. The ESCP provides for an overview of the erosion and sediment management techniques and measures that will be used within the Project, provides specific examples throughout and also outlines methodologies and management techniques that will apply and will achieve the necessary environmental objectives.

As part of the erosion and sediment control methodology, ongoing site monitoring by the Project team will occur to ensure that the proposed erosion and sediment control measures have been installed correctly, methodologies are being followed and are functioning effectively throughout the duration of the works. This includes both qualitative and quantitative monitoring programmes.

The ESCP sets out a risk management framework and the construction and environmental management and monitoring requirements in relation to land disturbing activities. Furthermore, implementation of the ESCP is considered important mitigation for a range of environmental aspects in particular to minimise impacts on freshwater ecology.

Erosion and sediment control methodologies are detailed within the ESCP for each of the four Project sectors and while the plans provided demonstrate the expected control measures to be utilised, they also reference specific methodologies to be implemented within each sector.

A separate methodology has been prepared for the Waikanae River works which outlines the specific activities to be undertaken in this location, the construction sequence to be followed and the specific environmental controls which will be applied. This is provided for as a separate appendix to the ESCP.

#### 3.6.4.2 *Temporary Stormwater Management*

Stormwater generated within the construction footprint will be managed in accordance with the ESCP. This plan covers the management of earthworked areas during the construction phase. 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.

#### 3.6.4.3 *Groundwater*

Construction of the Expressway will result in temporary and long term changes in groundwater level locally which might affect the existing environment in the following ways:

- Lowering or rise in the water level in some wetlands;
- Altered groundwater contributions to surface water bodies (rivers and wetlands);

- Where permanent lowering of the groundwater level is planned, ground settlement might occur that results in damage to existing structures;
- Alter the flow paths of contaminants that might reside in areas of fill; and
- Affect groundwater levels in shallow private wells.

To limit these potential effects a Groundwater (Level) Management Plan (GWMP; Appendix I of the CEMP, Volume 4) has been developed which describes the monitoring needed to determine whether changes are occurring that might result in an adverse effect and mitigation that might need to be implemented. The GWMP outlines operating procedures to control changes in groundwater level and potential impacts on wetlands and the near-surface aquifers, through the management and design of construction activities.

Monitoring of changes in groundwater level give a warning of the potential for drawdown-induced ground settlements; management responses to ground settlement are detailed in the Settlement Monitoring Management Plan (SMMP; Appendix J of the CEMP, Volume 4).

#### 3.6.4.4 *Settlement*

Construction of the Expressway will result in ground settlements. These settlements will be generated by four sources; consolidation settlement due to embankment construction, consolidation settlement due to groundwater drawdown, mechanical settlement due to vibrations and mechanical settlement due to retaining wall construction. These settlements may have an impact on buildings, services and transport infrastructure. The Settlement Effects Management Plan (SEMP; Appendix J of the CEMP, Volume 4) details the monitoring and mitigation to be implemented.

The SEMP details the following:

- Monitoring of consolidation and mechanical settlements; and

Monitoring and management of buildings, services and infrastructure that have the potential to be impacted by settlement

### 3.6.5 Spill Response and Contamination

The spill response and contamination mitigation methods as set out in this CEMP will remain consistent with the Spill Response and Contamination Objectives as set out in Section 2.7 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| S1 | Design stormwater control and retention devices that can accommodate spills in areas of high environmental risk. |
| S2 | Ensure the removal, placement and disposal of contaminated soils is achieved in accordance with best practices. |

Impacts on freshwater and marine ecology from construction activities can be minimised through the management of contaminated land, groundwater, spills and hazardous substances. These environmental aspects have the potential to contaminate runoff and enter waterways. Management of contaminated soils is covered by a Contaminated Soils and Groundwater Management Plan (CSGMP; Appendix K of the CEMP, Volume 4) and management of hazardous substances and the spill response procedure is covered by the Hazardous Substances Management Plan (HSMP; Appendix L of the CEMP, Volume 4)

#### 3.6.5.1 *Contaminated Land*

The CSGMP outlines the procedures for handling known contaminated soil and groundwater identified at selected locations along the route. Sector specific details on the contaminants present are provided in a contaminant risk register. Disposal/reuse options are presented for materials at each contamination location based on laboratory testing results and investigation observations. The plan also includes procedures for the Project team to follow in the event of the discovery of unexpected contaminated soil or groundwater, and examples of visual and odour indicators of contamination. Requirements for further soil testing and monitoring of excavated materials identified for reuse along the route are also included within the CSGMP.

#### 3.6.5.2 *Hazardous Substances*

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 and degreasers can result in environmental impacts if they are not managed carefully and are discharged to the environment in an uncontrolled manner.

The HSMP outlines the requirements for proper storage, handling, transport and disposal of hazardous substances during the construction phase of the Project to minimise effects on health and safety from exposure and to reduce the impact on the environment.

#### 3.6.5.3 *Spill Response*

The HSMP details the actions required following a spill within the spill response plan. The basis of the spill response plan is that any spills will be contained within the site boundary, and there will be no discharge of contaminants to the wider receiving environment. It is important that workers are trained in the management of spills and that the procedures are tested. Spill kits will be available for use at regular locations throughout the Alignment and placed at each area designated for the storage of hazardous substances. In addition, all foremen will carry a spill response bag in their vehicles to ensure a quick response. An incident form will also be completed for all spills over 5 litres.

### 3.6.6 Archaeology

The archaeology mitigation methods set out in this CEMP are consistent with the Culture and Heritage Objectives in section 2.5 of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| H1 | Proactively limit the disturbance of significant cultural and heritage features along State highways. |

The construction activities associated with the Project will impact on the locations of a number of recorded archaeological sites, and have the potential to expose a possibly large number of unrecorded subsurface archaeological sites and features. An Archaeological Scoping Report (Technical Report 9, Volume 3) forms part of requirements for Historic Places Act authorities being sought concurrently and will detail how adverse effects on archaeological sites and features will be managed and mitigated.

An important mitigation strategy includes investigating certain sections of the Project that contain known sites or have a high probability of sites being discovered. Such investigations will be detailed and high level, and will take place prior to the construction phase.

An additional mitigation strategy includes recording previously unknown archaeological information as it is revealed. This will involve monitoring of works during the construction phase, to record, sample and briefly investigate sites and features that are revealed by construction work.

In all sections of the Project an Accidental Discovery Protocol will be followed so as to set down procedures should unexpected archaeological sites or features be uncovered.

### 3.6.7 Ecological and Landscape Management

The ecological and landscape management and mitigation methods as set out in this CEMP assist in the implementation of the Ecological and Visual Quality Objectives of the NZTA's Environmental Plan (Appendix B):

| | |
|---|---|
| E1 | Promote biodiversity on the State highway network. |
| E2 | No net loss of native vegetation, wetlands, critical habitat or endangered species. |
| E3 | Limit the spread of plant pests. |

| | |
|---|---|
| VQ1 | Incorporate multi-purpose landscaping as an integral part of all new State highway construction Projects. |
| VQ2 | Improve the visual quality of the existing State highway network. |

In the Project shaping phase, potential landscape and visual effects were identified and these have influenced various aspects of the Project, including:

- the earthwork profiles;
- position;
- extent and shape of noise bunds and other structures associated with the Expressway;
- avoiding heritage trees and vegetation;
- form and design of wetlands and associated planting; and
- planting along the route as part of landscape and visual mitigation.

Similarly, the majority of the high value ecological areas in close proximity to the Expressway Alignment have been avoided. In some locations only small areas of marginal vegetation will be lost. However, in other areas there will be some permanent loss of vegetation and habitat beneath the road footprint.

The following are key ecological and landscape management issues during the construction of the Expressway:

- The opportunities to reduce the planned loss and potential damage to existing vegetation and wetlands (and the supporting habitat for native fauna) within the Construction Footprint through best practice.
- The potential adverse construction effects of preloading and peat compaction, 'de-watering' of wetlands.;
- The impact on freshwater receiving environments from construction activities including the potential discharge of sediments, the installation of culverts, temporary stream diversions, bridge construction and permanent stream realignments and drainage systems.
- The potential impact on the ecologically significant receiving environments of the Te Harakeke / Kawakahia wetland, the Waikanae Estuary, Waimeha Estuary and the Wharemauku Estuary, all located downstream of the Expressway Alignment and are considered to have high-significant ecological values.
- The need to avoid pest plants and weed infestations in earthworked and newly planted areas, so that the mitigation planting has an optimum establishment phase.
- The implementation of the planting plans and continued protection of newly planted areas from future phases of construction.
- Undertaking earthworks in landscape valued dune landscapes.

The Ecological Management Plan (EMP; Appendix M of the CEMP, Volume 4) and Landscape Management Plan (LMP; Appendix T of the CEMP, Volume 4) set out methods to manage the seven key issues identified. The references to the EMP and LMP are set out below:

*The opportunities to reduce the planned loss and potential damage to existing vegetation and wetlands (and the supporting habitat for native fauna) within the Construction Footprint through best practice.*

- Methods to avoid unnecessary vegetation loss, both native and exotic (LMP - Section 3.5.1)
- Minimising the extent of wetland loss (EMP - Section 3.3.2a, Table 7)

*The potential adverse construction effects of preloading and peat compaction, 'de-watering' of wetlands.*

- Hydrological monitoring of water levels to ensure the long term ecological health of certain wetlands. (EMP - Section 3.3.2, Table 7)

*The impact on freshwater receiving environments (including the eventual wetland and marine environments) from sedimentation, the installation of culverts, temporary stream diversions, bridge construction and permanent stream realignments and drainage systems.*

- Guidelines and management of all in-stream and riparian works (EMP - Section 3.3.7)

*The need to avoid pest plants and weeds infestations in earthworked and newly planted areas, so that the mitigation planting has an optimum establishment phase.*

- Pest Plant Species Management (EMP - Section 3.3.1b, Table 6)

*The implementation of the planting plans and continued protection of newly planted areas from future phases of construction.*

- Planting Plan along the Expressway Alignment (EMP - Section 3.3.3 and LMP – Section 3.5.2)

*Undertaking earthworks in sensitive dune landscapes.*

- Earthworks in the Remnant Dune Landforms (LMP - Section 3.3.1)

### 3.6.8 Graffiti

Graffiti vandalism is the act of a person damaging or defacing any building, structure, road, tree, property, or other thing by writing, drawing, painting, spraying or etching on it, or otherwise, significantly reducing the visual amenity of a street and community.

Graffiti management guidelines to be implemented include the following measures:

- Undertake an audit to assess the scale of the local graffiti vandalism problem.
- Work out what resources will be required to deal with the problem.
- If insufficient resources are available, work out ways in which further resources can be found.
- Clearly identify who is responsible for removing graffiti in which locations and, if possible, try and work collaboratively to ensure a removal standard is maintained.
- Where graffiti is visible to the passing public, graffiti on Project signage and property will be removed within 24 hours. In sections of the Project, not subject to passing vehicles, graffiti will be removed within three days of it being identified.

In the first instance, prevention of vandalism can be implemented through access denial, vegetation screening, lighting, security graffiti protection coatings and subsequent removal (maintenance).

However, the most effective strategy against graffiti vandalism is to remove it as quickly as possible and to persist in removing it. The community and site workers will be encouraged to report graffiti and weekly inspections will take place.

Removal of graffiti can be carried out by painting over, removing with chemicals, cleaning off (includes the use of sand and soda blasting) or replacement.

### 3.6.9 Construction Lighting Management

During construction, temporary lighting will be required in the main construction areas if any work is carried out during the hours of darkness. Spill lighting may cause a low to moderate nuisance to surrounding residents and glare from temporary light has the potential to cause a disabling effect to vehicles.

To manage the potential impacts of temporary lighting during construction, the contractor will use luminaires that do not produce environmental spill light above that required by KCDC's bylaws.

Monitoring of lighting during construction will take place every 2 months by the contractor or following a complaint from an adjacent resident. Monitoring will include visual tests to check that luminaires have not been re-aimed inappropriately.

### 3.6.10 Resource Efficiency

The efficient use of resources and energy and the reduction of waste as set out in this CEMP is consistent with the Resource Efficiency Objectives 1 and 2 in Section 2.9 of the NZTA's Environmental Plan and the NZTA's Waste and Energy Management Policy detailed in Appendix B:

| | |
|---|---|
| **RE1** | Manage energy consumption and waste associated with the NZTA's business in a cost effective and sustainable manner. |
| **RE2** | Make resource efficiency an integral part of all State highway activities. |

How these objectives shall be met is outlined in the Resource Efficiency & Waste Management Plan (REWMP; Appendix N of the CEMP, Volume 4).

The purpose of the Plan is twofold:

- To document decisions made by the Project team during the design phase of the Project that impact positively on resource efficiency; and
- To describe how the Project team will manage waste generated from the construction phase in a sustainable manner.

The Plan covers the following key areas:

- Design decisions and construction methodologies which impact positively on resource and energy efficiency;

- Reuse, recycling or recovery routes for all major waste streams, with landfill disposal as a final option;
- Reduction of the adverse impacts of waste on the environment;
- The method for measuring and tracking waste arising through the Project; and
- Active promotion of waste awareness through assigning responsibilities, training and staff engagement.

#### 3.6.10.1 *Energy Efficiency*

By adopting an energy efficiency strategy during the construction of the Project the following benefits will be gained;

- Energy efficient equipment operation will reduce energy demand and associated costs; and
- Reduced energy demand will reduce greenhouse gas emissions.

To avoid and minimise potential impacts associated with energy generation and consumption, the following environmental controls and methods will be implemented:

- Purchase energy efficient products and services where applicable and financially viable.
- Construction methods to be energy and time efficient including using well-maintained equipment, minimising equipment down-time through preventative maintenance programmes, reducing idling times, and monitoring emissions for signs of inefficiency (e.g. visible exhaust emissions).
- Specify energy saving measures in main site office where applicable (e.g. timers or motion detectors on lights).
- Undertake an energy audit during construction and identify measures to improve energy efficiency.
- Implement an energy management awareness programme as part of the Project induction, site induction and where applicable, ongoing site toolbox talks.

### 3.6.11 Traffic Management

Construction of the Project involves truck movements, lane and intersection closures and lowered speed limits on roads which have the potential to cause inconvenience to road users, and residents. A Construction Traffic Management Plan (CTMP; Appendix O of the CEMP, Volume 4) is included in Appendix O detailing traffic management methodologies and mitigation measures to be adopted for the Project.

The CTMP provides an appraisal of the types of traffic impacts such as the impacts on pedestrians, cyclists, horse-riders, residents, businesses, public transport, and general traffic and typical mitigation measures that will be considered in development of Site Specific Traffic Management Plans (SSTMP) and management of the Project.

Minimising traffic effects through implementing the CTMP will align with minimising carbon emissions. If the NZTA Project team can minimise congestion and diversions on the road network, the efficiency

of travel is maintained, avoiding an increase in fuel consumption (e.g. increased idling, stop/go traffic, increased diversion distances) and subsequently avoiding an increase in greenhouse gas emissions.

## 3.7 Emergency and Incident Response

There is the potential for unforeseen events to occur that may impact on the environment and will require emergency response. The following sections detail how environmental incidents or emergencies are to be managed by the Project team.

### 3.7.1 Incident/Emergency Management

An environmental incident is an occurrence which has (or potentially could have had) a negative or 'adverse' effect on the environment. An adverse effect is something that causes (or could have caused) environmental harm. An environmental incident can also be a deviation from this CEMP. This means there has been a failure to follow the established process or procedures that help the Project achieve best practice (e.g. failure to report a spill).

Environmental incidents include but are not restricted to:

- Spills;
- Unforeseen impact on areas of high environmental value such as protected flora or fauna, archaeology;
- Greater Wellington Regional Council non-compliances (relating to erosion and sediment control);
- Other consent or designation non-compliances.

An environmental emergency is an event which has a detrimental effect on the surrounding environment. A detrimental environmental effect is something that causes significant harm to the environment, which is not legally allowed and requires immediate response or a failure to follow the established process or procedures that help the Alliance achieve best practice.

Examples of environmental emergencies include but are not restricted to;

- Significant (large volume) chemical / oil spill to a waterway or land
- Bentonite not contained – fine sediment discharge to the downstream environment
- Hazardous substance release to air.

Table 3.1 below sets out, in the event of an environmental incident/emergency, the procedures to be followed. Environmental emergency contact details are included in Table 3.2.

**Table 3.1 Management of environmental incidents/emergencies**

| Environmental Incident Management Plan | |
|---|---|
| Performance Objective | ▪ To ensure rapid and appropriate response is made to on-site environmental incidents/emergencies. |
| Statutory and Legislative Requirements | ▪ RMA and resource consent and designation conditions. |
| Performance Criteria | ▪ All incidents to be formally registered.<br>▪ All incidents responded to expeditiously and followed up by a thorough investigation by Alliance Environmental Manager.<br>▪ Minimise impact of the incident and restrict to an on-site activity.<br>▪ Eliminate potential for environmental complaints. |
| Response Person | ▪ The Environmental Manager or, in the Environmental Manager's absence, the Construction Manager – is responsible for receiving, documenting, and thoroughly investigating all incidents.<br>▪ All members of on-site staff are responsible for their actions which may result in an environmental incident. |
| Implementation Strategy / Mitigation Measures | ▪ The details of all incidents – minor through to major, will be registered on an Environmental Incident / Emergency Form and supplied to the Environmental Manager by the employee involved in the incident.<br>▪ Upon receiving the incident form the Environmental Manager (or in the absence of the Environmental Manager the Construction Manager) will commence an inquiry within 4 hours of the incident occurring.<br>▪ Steps to minimise, isolate or eliminate reoccurrence of the incident needs to be activated. |
| Monitoring | ▪ Targeted monitoring will be completed, dependent on the nature of the incident and requirements of applicable resource consents and designations. |
| Corrective Action | ▪ Following the investigation, a Non-Compliance Report (NCR) is to be issued to any party whose actions or omissions which gave rise to the incident which have been proved to be outside of the guidelines of this CEMP/ regulatory guidelines or permitted operational processes.<br>▪ In the event CEMP / regulatory guidelines or permitted operation processes were not breached, the Environmental Manager, Construction Manager and the Alliance Project Manager are to |

| Environmental Incident Management Plan | |
|---|---|
| | investigate how work practices may be modified to lesson perceived or actual environmental impact. |
| Reporting | ▪ The Environmental Manager will report all incidents to the Alliance Project Manager and Construction Manager<br>▪ The Environmental Manager will enter the details of the incident into the Environmental Incidents Register.<br>▪ The Environmental Manager will meet on a monthly basis with the Alliance Project Manager, to report occurrences of incidents and the appropriate investigations.<br>▪ The Environmental Manager will complete a Construction Compliance Report (including the means by which the incidents was addressed, and whether resolution was reached) for the monthly Project Alliance Board meeting.<br>▪ The Environmental Manager will summarise all incidents received throughout the sites to on-site staff members through weekly Tool Box sessions. |
| Identification of Failure to Comply with Procedure: | The following constitute examples of incidents or failure to comply in relation to the management of environmental incidents:<br>▪ Insufficient information recorded on the Environmental Incident / Emergency Form;<br>▪ Failure to submit the Environmental Incident / Emergency Form as soon as practical following the occurrence of the incident;<br>▪ Incidents not documented or reported, and/or record not maintained;<br>▪ Failure to implement corrective actions;<br>▪ Failure to report incident to the Environmental Manager and on site personnel<br>▪ Reoccurrence of incident |
| Corrective Action: | Should an incident of failure to comply occur in relation to the management of environmental incidents, one or more of the following corrective actions will be undertaken as appropriate:<br>▪ Conduct additional training of staff regarding incident management and processing;<br>▪ Review procedure in light of shortfall. |

Table 3.2 Environmental Emergency Contact Details (Example)

| Name | Position | Organisation | Ph Number | Email |
|---|---|---|---|---|
| Environmental Manager | | | | |
| Superintendent | | | | |
| Construction manager | | | | |
| Project manager | | | | |
| GWRC contact | | | | |
| KCDC contact | | | | |
| Pollution Control contact | | | | |
| Spill Gear Stockist | | | | |
| | | | | |

### 3.7.2 Environmental Incidents Form

A standard Environmental Incident Form (EIF) template will be used for all site specific activities throughout the construction of the Project.

A copy of the Environmental Incident Form is included in Appendix P.

### 3.7.3 Environmental Incident Register

A standard Environmental Incident Register (EIR) will be controlled by the Environmental Manager. It will contain all environmental incidents occurring on sites within the Project.

The Environmental Manager will input all data from completed EIFs as soon as possible.

The EIR will be discussed regularly at the Alliance Management Team meetings. These meetings will discuss the corrective actions taken, and the preventative measures that have been put in place. :

## 3.8 Communication

The framework for engaging and communicating with stakeholders during the construction phase is outlined in the SCMP (Appendix S). The SCMP identifies the key stakeholder groups and methods for engaging with them as well as individual members of the public. The SCMP is not prescriptive but provides a framework for engagement and the range of methods that will be employed. It will be necessary to adopt a responsive approach to engagement and communication as the Project progresses and tailored to the needs of particular situations and stakeholders. Specific targeted engagement and communication plans will be developed for milestones and events during the construction phase.

The SCMP covers the following aspects:

- Stakeholders
  - Stakeholder analysis
  - Summary Construction Methodology and Key Milestones
  - Summary Engagement and Communications Plan
- Engagement and Communication Plan
  - Objectives and key messages
  - Approval processes for External Communications
  - Stakeholder database
  - Detailed Communication Plans
  - Managing Stakeholder Communications
  - Responding to Communications
  - Media Relations
- Engagement and Communication Methods
- Measuring Outcomes and Outputs

## 3.9 Complaints Management

The SCMP provides the framework for engaging and communicating with stakeholders during construction, and details the complaints process.

When an environmental complaint is received, the Stakeholder Manager will pass it to the Environmental Manager (or in the absence of the Environmental Manager, the Construction Manager) to be actioned.

The Environmental Manager will then complete the following forms:

### 3.9.1 Complaint Form

A standard Complaint Form template will be used for all site specific activities throughout the Project. The Environmental Manager will ensure that the details of the investigations and any follow up actions are completed and recorded for each complaint.

The form will contain but not be limited to;

- Name and address of complainant
- Identification of the nature of the complaint
- Date and time of the complaint and alleged event

An example of the Complaint Form is included in Appendix Q.

The Environmental Manager will commence an inquiry within 1 hour of receiving the complaints. Contact will be made with the complainant within the same working day - an interim response advising

that investigations are continuing is acceptable. A formal written response will be provided to the complainant and appropriate regulatory authorities (Greater Wellington Regional Council, Historic Places Trust (HPT) and/or Department of Conservation (DoC) within 10 days of complaint receipt.

### 3.9.2 Complaints Register

A Complaints Register (CR) will be controlled by the Stakeholder Manager. It will contain all complaints received for the Project.

The Environmental Manager will input all data from completed environmental CFs as soon as possible.

The Environmental Manager will summarise all complaints received throughout the site to on-site staff members during weekly Tool Box sessions.

The CR will be discussed at regular meetings held between the Environmental Manager, Stakeholder Manager, Construction Manager and the Alliance Project Manager.

### 3.9.3 Construction Compliance Report

The Environmental Manage will complete a Construction Compliance Report for the monthly Project Alliance Board meeting.

## 3.10 Transition Phase

The transition phase is the crossover period between the construction and operational phases of the Project whereby the responsibility for the management of the environment is transferred from the Project team to the network operator. During this phase the Project team will be required to work with the NZTA in finalising the construction and meeting any post-construction resource consent and designation conditions before the Project is presented to the Operation and Maintenance Contractor (OMC). The transition phase also provides for the transfer of information in relation to consent and designation conditions which remain operative (such as long term monitoring), and historical results of environmental management and monitoring that are pertinent to effective ongoing management of the environment.

Consents and designation conditions still operative are to be entered into the OMC's CS-VUE Project file and managed by the OMC. Environmental Information transferred to the OMC includes:

- Landscape design and as-builts
- Agreements between other key stakeholders (e.g., DoC, landowners)
- Environmentally sensitive areas
- Location of contaminated land and/or fill
- Monitoring requirements
- Historical monitoring results
- Results of audits and inspections in relation to environmental risks that were identified as significant in the risk assessment process

- A report on consent and designation conditions that have been closed out on CS-VUE.

This information is to be collated by the Alliance's environmental team following the completion of works. In addition this information will be included in the assets owner manual and operations and maintenance manual prepared by the contractor and handed to the OMC of the Project.

# 4. Monitor and Review

## 4.1 Compliance Monitoring

The following describes procedures for monitoring activities to evaluate compliance with legal requirements, the NZTA objectives and relevant policies, standards and guidelines.

### 4.1.1 Environmental Risk Register

The Environmental Risk Register, to be populated and maintained by the Project team is a tool for identifying, prioritising and management of activities that have the potential to impact on the environment. As described in Section 2.3, the risk assessment process adopted defines a process of managing significant risks with comprehensive environmental management plans (the sub-plans). The Risk Register will be regularly updated and reassessed to allow all significant aspects to be identified. The Risk Register will allow the Project team to search and sort on activities, locations, environmental aspects, and risk ratings, and provide a quick reference to the mitigation measures and controls that are in place to manage the significant impacts.

### 4.1.2 Environmental Monitoring

Scheduled environmental monitoring of environmental performance and compliance with resource consents and designations is required throughout the construction phase of the Project. This enables the overall effectiveness of the environmental controls to be determined and allows areas of non compliance to be identified so corrective actions can be taken.

Environmental monitoring will take place prior to construction to assess the baseline, during construction to assess the impact of the construction on the environment, and after construction to assess the impact of the completed Project. Environmental monitoring is required at various stages of construction for each environmental aspect as developed in specific environmental sub-plans and this CEMP. The overall monitoring schedule, including environmental aspects (i.e. noise, water quality, air quality etc), frequency and monitoring requirements is included in Appendix R.

As such, the monitoring schedule will be a working document and will be amended and updated to reflect resource consent and designation conditions and management review changes.
Environmental monitoring will be undertaken according to the following;

- The Alliance Environmental Manager is responsible for managing the environmental monitoring programmes relevant to the site activities and location, and arranging training and specialist consultants for the monitoring as required.

- Monitoring will be conducted in accordance with the approved methods stated in the resource consent and designation conditions, or as otherwise agreed by the Greater Wellington Regional Council, DoC or HPT.
- Monitoring results exceeding relevant standards and resource consent and designation conditions will be managed as per the Corrective Actions process and issued with a Non Compliance Report.
- The Alliance Project Manager will be advised by the Environmental Manager of any non – compliance from monitoring and will report these to the Greater Wellington Regional Council, DoC and/or HPT as required.
- Where required by consent conditions, environmental monitoring results will be input by the Environmental Manager to a CS-VUE database. This will be overviewed on a regular basis by the Alliance Project Manager.
- Environmental Monitoring results will be reported to the Greater Wellington Regional Council, DoC and/or HPT as required.
- The specifics of monitoring for each environmental element are detailed in the individual sub-plans, included in the appendices of this CEMP.

#### 4.1.2.1 General Site Monitoring

In addition to formal environmental monitoring, the following general site monitoring will be undertaken;

- Daily – Environmental Team will conduct inspections (including all subcontractor activities), and issues will be noted. These inspections are informal visual inspections in order to check compliance with this CEMP.
- Weekly – Formal site inspections are to be completed by the Environmental Manager. Site specific checklists will be developed to check compliance with resource consent and designation conditions and this CEMP. Issues will be noted if they present significant environmental risks (e.g. noisy works, works near waterways, sediment basin maintenance etc).
- Monthly – The Alliance Project Manager, and appropriate Construction Manager will undertake a monthly site visit with the Environmental Manager, to confirm the environmental monitoring programmes and work procedures containing environmental controls are being implemented in accordance with the site specific CEMP, sub-plans, Operational Work Programme and resource consent and designation conditions. A review of current Risk Register (aspects and impacts) will be carried out, updating the register as required.

The Environmental Manager will submit a site inspection and environmental performance report to the Alliance Project Manager at the monthly Project Alliance Board meeting. The report will include but not be limited to: a summary of environmental issues and actions during the month to ensure compliance with this CEMP including any details of any action item requests, complaints received, incidents, associated investigations and corrective actions, and environmental inductions and awareness training provided.

### 4.1.3 Review

The Environmental Manager and Construction Manager will review the daily inspection forms on a weekly basis to confirm that the checks and subsequent required works are being carried out, and additional inspections are included as per construction progress.

A regular meeting will be held on site between the Alliance Project Manager, Construction Manager and the Environmental Manager to discuss the results of the weekly and monthly site monitoring.

On a monthly basis the Environmental Manager will review the monitoring schedule and compliance results from the required Environmental Monitoring as per the resource consent and designation conditions.

### 4.1.4 Environmental Compliance

Should inspections indicate that the environmental controls are not functioning as intended, the Environmental Manager and Construction Manager or Engineer will instigate a review of the CEMP or relevant sub-plans as required. Specific response targets will be developed by the Environmental Manager prior to construction commencing.

## 4.2 Reporting

Table 4.1 below outlines the reporting requirements as detailed within the CEMP.

**Table 4.1 Reporting requirements**

| Report | Reporting Requirements | Timing | Responsibility | Recipient |
|---|---|---|---|---|
| Resource Consent and designation Compliance Reports | As per resource consent and designation conditions | As per resource consent and designation conditions | Environmental Manager | The Alliance Project Manager, NZTA Greater Wellington Regional Council/Kāpiti Coast District Council |
| Complaint Form | Obtain complaint details as describe in Section 3.8 | At the time of the complaint | Stakeholder Manager | Complaints Register |
| Environmental Complaints Register | Information provide on Environmental Complaint Form | At complaint closure | Environmental Manager | Alliance Project Manager |
| Non-Compliance Report | Identification of non-complying activity which has resulted in an environmental | During complaint investigation | Environmental Manager | Alliance member |

| Report | Reporting Requirements | Timing | Responsibility | Recipient |
|---|---|---|---|---|
| | complaint or incident on site. | | | |
| Construction Compliance Report | Summary of complaints received and resolutions | Quarterly | Environmental Manager | The Alliance Project Manager and Greater Wellington Regional Council/Kāpiti Coast District Council |
| General Site Monitoring Report | Summary of site inspections, including daily, weekly and monthly inspections – consent and designation and CEMP compliance | Monthly | Environmental Manager | Alliance Project Manager |
| Environmental Formal Site Inspection | Weekly site inspection sheets | Weekly | Environmental Management Team | Environmental Manager |
| Environmental Incident Reports | Obtain the incident details as described in Section 3.6 | At the time of the incident | On site personnel involved in the incident | Environmental Manager |
| Incident Response Reports | Obtain Incident information as per Section 3.6 | At the completion of the Incident situation | Environmental Manager and on site personnel involved in the environmental emergency | Construction Manager and the Alliance Project Manager, and Greater Wellington Regional Council and/or Kāpiti Coast District Council – where appropriate and required under legislation |
| Environmental Audits | Summary of quarterly environmental audit | Quarterly, within two weeks of | Environmental Manager | Alliance Project Manager and Construction |

| Report | Reporting Requirements | Timing | Responsibility | Recipient |
|---|---|---|---|---|
| | findings | audit completion | | Manager |
| Site Audits | Summary of informal audit findings | Monthly, within two weeks of audit completion | Environmental Manager | Construction Manager and on site personnel. |

## 4.3 Environmental Auditing

Periodic environmental audits are required to:

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

Internal audits will be undertaken by the Environmental Team on a regular 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 required.

Quarterly audits of the Project will also be undertaken by external environmental managers from the Alliance's participant companies on a rotating basis. 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.

External audits will predominantly be undertaken by regulatory authorities such as Greater Wellington Regional Council and Kāpiti Coast District Council to confirm compliance with resource consent conditions. The Environmental Team with input from the Construction Team will host these audits.

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 auditors recommendations.

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

## 4.4 Corrective Action

Corrective action is required on the basis of the occurrence of substandard performance being observed or experienced, resulting in an actual or potential environmental complaint, incident or emergency.

Substandard performance will be measured by resulting actions i.e. complaints, incidents and emergencies, and compliance with the CEMP, resource consents, designations and operational procedures. Where failure to comply with these requirements occurs the responsible on-site personnel will be issued with a Non-Compliance Report (NCR).

The NCR is to contain the corrective actions required to be completed by the on-site personnel to either - minimise, isolate or eliminate the potential future environmental effects and non-compliance with the site requirements. A NCR can also be used in a proactive situation by on-site personnel where current operational procedures or the CEMP do not cover newly identified significant environmental aspects. On-site personnel are responsible for the identification and reporting of non-compliances, and the usage of NCRs.

Predominantly NCRs will be issued after investigations and inquiries as follow up for environmental complaints, incidents and emergencies.

## 4.5 Environmental Reporting

The Project's overall environmental performance will be reviewed. The following applies:

- The Environmental Manager is responsible for ensuring all relevant documentation is submitted and maintained within the Project filing and document control system.
- Applicable documentation will include but not be limited to:
  - all incidents reports and investigation outcomes;
  - weekly and fortnightly environmental checklists and report files;
  - formal and informal audit and environmental monitoring reports including NCR reports, and any laboratory analysis;
  - records of environmental training;
  - chain of custody records; and
  - minutes of meetings.

The following reports will provide a record of compliance with the resource consents and designations:

- The Environmental Manager will report weekly to the Construction Manager on the status of site environmental matters this report also being an agenda item at the weekly Alliance Management Team meeting.
- In addition to their weekly checklists, sub-contractors will report monthly to the Environmental Manager about environmental issues and the overall status of the CEMP and regulatory compliance.

- The Alliance Project Manager is required to report quarterly to the Project Alliance Board on the status of site environmental matters.
- Further, should any member of the Project team become aware of an environmental incident or hazard that is causing - or has the potential to cause environmental harm - that person must advise their immediate supervisor who will notify the Environmental Manager, and an incident report will be completed.
- The Environmental Manager will be responsible for ensuring that all statutory reporting required by the consents and designations are undertaken.

## 4.6 CEMP Management Review

This document will be reviewed after confirmation of the resource consent and designation conditions and will be revised in accordance with those conditions. The CEMP and the sub-plans will be updated, with the necessary approval, throughout the course of the Project to reflect material changes associated with changes to construction techniques or the natural environment.

Approval from the Greater Wellington Regional Council, Kāpiti Coast District Council, HPT and/or the DoC will be required for any relevant revisions of a material nature to the CEMP or sub-plans, for which these authorities have jurisdiction.

A management review of the CEMP will be undertaken at least annually by the Project Management team and the Alliance Project Manager. The management review will be organised by the Environmental Manager. The review will take into consideration:

- Input from the NZTA;
- Site personnel comments;
- Audit findings and recommendations;
- Environmental monitoring records;
- Environmental complaints, incidents and emergencies;
- Details of corrective and preventative actions;
- Environmental non-compliances;
- Changes to organisational structure;
- Ongoing compliance with objectives, conditions and targets; and
- Possible changes in legislation and standards.

The review process will include looking at the environmental controls and procedures to make sure they are still applicable to the activities being carried out. 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 new/updated version of the CEMP documentation will be issued with a version number and date to eliminate obsolete CEMP documentation being used.

# 5. References

Goldie, A. Construction Methodology Report: Technical Report 4, Volume 3 of the MacKays to Peka Peka Expressway Project AEE.

Kirkby, C. Assessment of Construction Air Quality Effects: Technical Report 14, Volume 3 of the MacKays to Peka Peka Expressway Project AEE.

Appendix A

# Resource Consent and Designation Conditions

Appendix B

# NZTA Environmental Objectives

Appendix C

# Environmental Maps

Appendix D

# Environmental Risk Register

Appendix E

# Environmental Risk Assessment Procedures

Appendix F

# Construction Noise and Vibration Management Plan

Appendix G

# Construction Air Quality Management Plan

Appendix H

# Erosion and Sediment Control Plan

Appendix I

# Groundwater (Level) Management Plan

Appendix J

# Settlement Monitoring Management Plan

Appendix K

# Contaminated Soils and Groundwater Management Plan

Appendix L

# Hazardous Substances Management Plan

Appendix M

# Ecological Management Plan

Appendix N

# Resource Efficiency and Waste Management Plan

Appendix O

# Construction Traffic Management Plan

Appendix P

# Example Environmental Incident Form

Appendix Q

# Example Environmental Complaint Form

Appendix R

# Environmental Monitoring Requirements

Appendix S

# Stakeholder and Communication Management Plan

Appendix T

# Landscape Management Plan