

RiverLink



PROUDLY DELIVERING

New Zealand
Upgrade
Programme



RiverLink

Notices of Requirement for Designations and
Applications for Resource Consent
Volume Four: Supporting Technical Reports

RiverLink



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DRAFT Construction Environmental Management Plan

July 2021

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The draft Construction Environmental Management Plan (CEMP) has been produced in support of the Assessment of Environmental Effects (AEE) for the RiverLink Project. It is contained within Volume 4 of the lodgement document..

This document has been prepared to meet the Waka Kotahi NZ Transport Agency (Waka Kotahi) Guideline for preparing an Environmental and Social Management Plan.

The technical reports produced in support of the AEE form Volume 4 of the lodgement document. Cross-references to the relevant reports and the CEMP itself are provided in the AEE where appropriate. A full list of technical reports is shown in the table below, with links to the relevant sections of the AEE and to any applicable SEMP. For a full understanding of the Project all technical reports need to be read in full along with the AEE itself.

Schedule of Technical Reports for the AEE

No.	Technical Report Title	Primary AEE Chapter Reference	SEMPs
1	River Hydraulics and containment	9.2	
2	Stormwater (including water quality)	9.3	
3	Construction Water Quality	9.4	Erosion Sediment Control Plan including any Site Specific Erosion Sediment Control Plan
4	Hydrogeology	9.5	Groundwater Management Plan, Artesian Aquifer Interception Plan
5	Geomorphology	9.6	
6	Freshwater Ecology	9.7	Ecology Management Plan
7	Terrestrial Ecology	9.8	Ecology Management Plan
8	Marine Ecology	9.9	
9	Traffic impacts and transport integration	9.10	Construction Traffic Management Plan, including any Site Specific Traffic Management Plans
10	Noise and vibration	9.11	Construction Noise and Vibration Management Plan, including any Site Specific Construction Noise and Vibration Management Plans
11	Air quality	9.12	Construction Air Quality Management Plan
12	Archaeology and historic heritage	9.13	Archaeology and Historic Heritage Management Plan
13	Contaminated Land	9.14	Contaminated Land Site Management Plan
14	Landscape and visual impact	9.15	Urban and Landscape Master Plan and Site Specific Design Plans
15	Natural hazards and geotechnical	9.16	
16	Cultural	9.17	
17	Social impact and recreation	9.18	
18	Economics	9.19	
19	Statutory provisions report	6	

1. Part A – Background

This DRAFT Construction Environmental Management Plan (CEMP) describes the principles, practices and procedures to be implemented for environmental management during construction of the Riverlink Project. These principles, practices and procedures are intended to meet the proposed conditions of resource consents and designations, other relevant legislation, and the environmental objectives of Greater Wellington Regional Council (GW), Waka Kotahi NZ Transport Agency (Waka Kotahi), and Hutt City Council (HCC) (the applicants),

This CEMP has been prepared prior to the appointment of a Principal contractor. The Principal contractor will be required to produce its own Contractor's Environmental Management Plan in accordance with the conditions of consent and Project Partner requirements, which will build upon and provide more detail to this CEMP.

1.1 Scope and Application

This CEMP is the umbrella document for environmental management of the construction phase of the Project. It is supported by a range of Specialised Environmental Management Plans (SEMPs) which will be attached as appendices to this CEMP. The list of SEMPs is provided in Table 1.

This CEMP will be reviewed after confirmation of the resource consent and designation conditions, and the document revised in accordance with those conditions. The CEMP and the SEMPs that are included within the Appendices of this CEMP should be updated, with the necessary certification, throughout the course of the Project to reflect material changes associated with changes to construction techniques or the physical environment.

While all sections should be reviewed prior to implementation, sections to be completed or significantly updated prior to works commencement by the Principal contractor, are clearly labelled throughout this Draft CEMP. Where appropriate a section labelled "*CEMP Expectations for the appointed Principal Contractor*" will set out requirements.

Table 1 Specialised Environmental Management Plans

Acronym	Riverlink Management Plans
AHMP	Archaeological and Heritage Management Plan
AAIMP	Artesian Aquifer Interception Plan
CAQMP	Construction Air Quality Management Plan
CLSMP	Contaminated Land Site Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CTMP	Construction Traffic Management Plan
EMP	Ecology Management Plan
ESCP	Erosion and Sediment Control Plan
EWCEMP	Enabling Works Construction Environmental Management Plan
GMP	Groundwater Management Plan
SOP	Stream Offset Plan
SSESCP	Site Specific Erosion and Sediment Control Plan

Acronym	Riverlink Management Plans
SSNVMP	Site Specific Noise and Vibration Management Plan
SSTMP	Site Specific Traffic Management Plans

1.1.1 Purpose of the CEMP

The purpose of the CEMP is to confirm the management procedures and construction methods use in order to avoid, remedy or mitigation potential adverse effects from construction activities. The CEMP will

- Provide the framework for the Principal Contractor to achieve compliance with the conditions of resource consents and designations;
- Assist with compliance with environmental legislation;
- Assist the Principal Contractor to meet the expectations of GW, Waka Kotahi and HCC for environmental protection;
- Assist with adherence to Project environmental objectives;
- Provide the Principal Contractor with sufficient information to enable the development of a Contractor's Environmental Management Plan, or provide a CEMP for direct adoption and refinement by the appointed Principal Contractor; and
- Identify and manage environmental risks associated with the Project.

In preparing this CEMP, the following considerations have been factored into the development process for mitigation measures:

- The identified significant environmental issues within the Assessment of Environmental Effects (AEE)¹;
- The extent and duration of the activities;
- The location of the works, and in particular the proximity to sensitive receiving environments and receptors; and
- The principle that environmental management needs to be incorporated into day-to-day operations.

This CEMP is structured in accordance with Waka Kotahi guidance ² and with best practice following a “plan -do -check -review” cycle as established within ASNZS ISO14001:20043. The ISO14001 standard sets out an internationally recognised and adopted framework for an environmental management system that is at the heart of this CEMP.

The CEMP has been divided into four main sections, as follows:

1. Part A Background – provides an outline of the CEMP development process and the scope and application of the CEMP, a Project description, a description of the anticipated construction activities and the relevant Waka Kotahi Environmental Policy as well as GW and HCC requirements. It also outlines the applicable GW, Waka Kotahi, and HCC environmental objectives and key performance indicators.
2. Part B Social and Environmental Management – identifies the significant environmental aspects of the Project and identifies the applicable legal requirements.

¹ RiverLink Assessment of Environmental Effects. GHD Ltd. 2021.

² Guideline for preparing an Environmental and Social Management Plan April 2014

3. Part C Implementation and operation - describes the management structure, contractor training expectations, relevant operating procedures and emergency contacts and response plans;
4. Part D Monitoring and review – outlines the procedure for compliance monitoring, audit processes, procedures for corrective action and management reviews.

1.2 The Project

RiverLink as a Project developed over the last six years to address flood protection issues within Te Awa Kairangi/Hutt River floodplain between Kennedy Good and Ewen bridges; transport resilience, accessibility, efficiency and safety issues at the Melling intersection on State Highway 2 (SH2); and renewal and revitalisation of Lower Hutt's Central Business District (CBD). RiverLink seeks to resolve these issues by providing an integrated design solution that achieves the best outcome for Lower Hutt.

RiverLink involves a number of significant infrastructure Projects to be built in and around Te Awa Kairangi/ Hutt River including:

- flood protection works,
- roading and intersection works for SH2,
- a new road bridge across Te Awa Kairangi,
- a new pedestrian and cycle bridge across Te Awa Kairangi,
- renewal and revitalisation works within the Lower Hutt City CBD to integrate the infrastructure works with existing or future mixed-use development, and
- a new Melling railway station.

1.2.1 Key Design Features

The key design features and changes within the existing Te Awa Kairangi/Hutt River and surrounding areas proposed are:

- Upgrade and raising of existing and construction of new stopbanks on both sides of Te Awa Kairangi between Ewen Bridge and Mills Street
- Instream works between the Kennedy Good and Ewen Bridges to re-align, deepen and widen the active river channel
- The replacement of the two signalised at-grade intersections of SH2/Harbour View Road/Melling Link and SH2/Tirohanga Road with a new grade separated interchange
- Construction of an approximately 215 m long and up to 7 span road bridge with a direct connection across Te Awa Kairangi from the new interchange to Queens Drive
- Removal of the existing Melling Bridge
- Changes to local roads
- Changes to the Melling Line rail network and supporting infrastructure, including relocation or reconstruction of the Melling Station
- Construction of an approximately 177 m long and 4 span pedestrian/cycle bridge over Te Awa Kairangi
- Construction of a promenade located along the stopbank connecting with future development, running between Margaret Street and High Street. This includes new steps and ramps to facilitate access between the city centre and the promenade.

- Integration of infrastructure works with existing or future mixed-use development
- Associated works including construction and installation of culverts, stormwater management systems, signage (including signage for health and safety, recognition of cultural sites, interpretation and wayfinding), lighting, network utility relocations, landscape and street furniture, pedestrian/cycle connections and landscaping within the Project area.

Project features and associated construction works are described in further detail in Section 1.3.

The proposed Project area is illustrated in Figure 1.

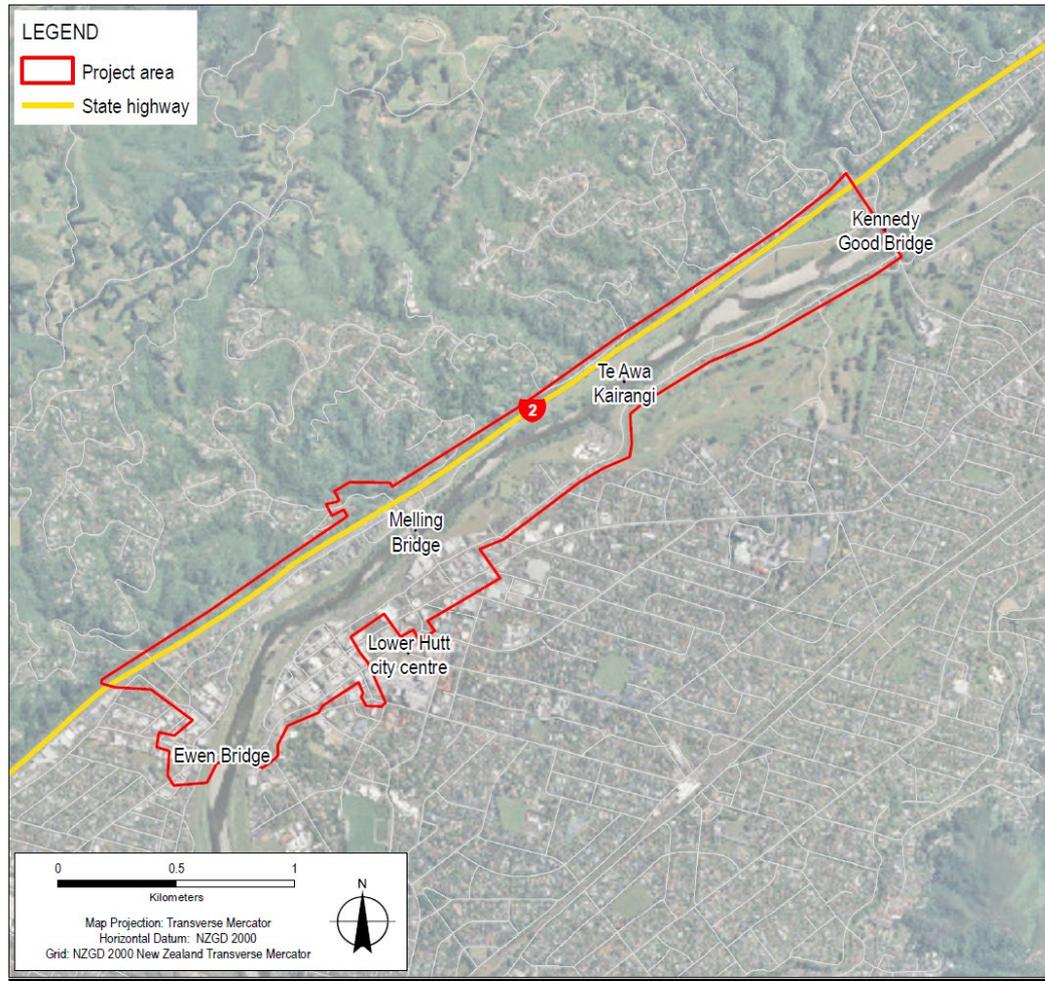


Figure 1 Project Area

1.3 Construction Activities

This section contains a high level summary about the construction activities of the Project. A more detailed construction methodology is provided in Chapter 5 of the AEE. The information provided below should be treated as being indicative only. It is intended to provide sufficient detail on the proposed construction activities to assess their potential environmental effects and to identify any necessary measures to avoid, remedy or mitigate those effects, where appropriate.

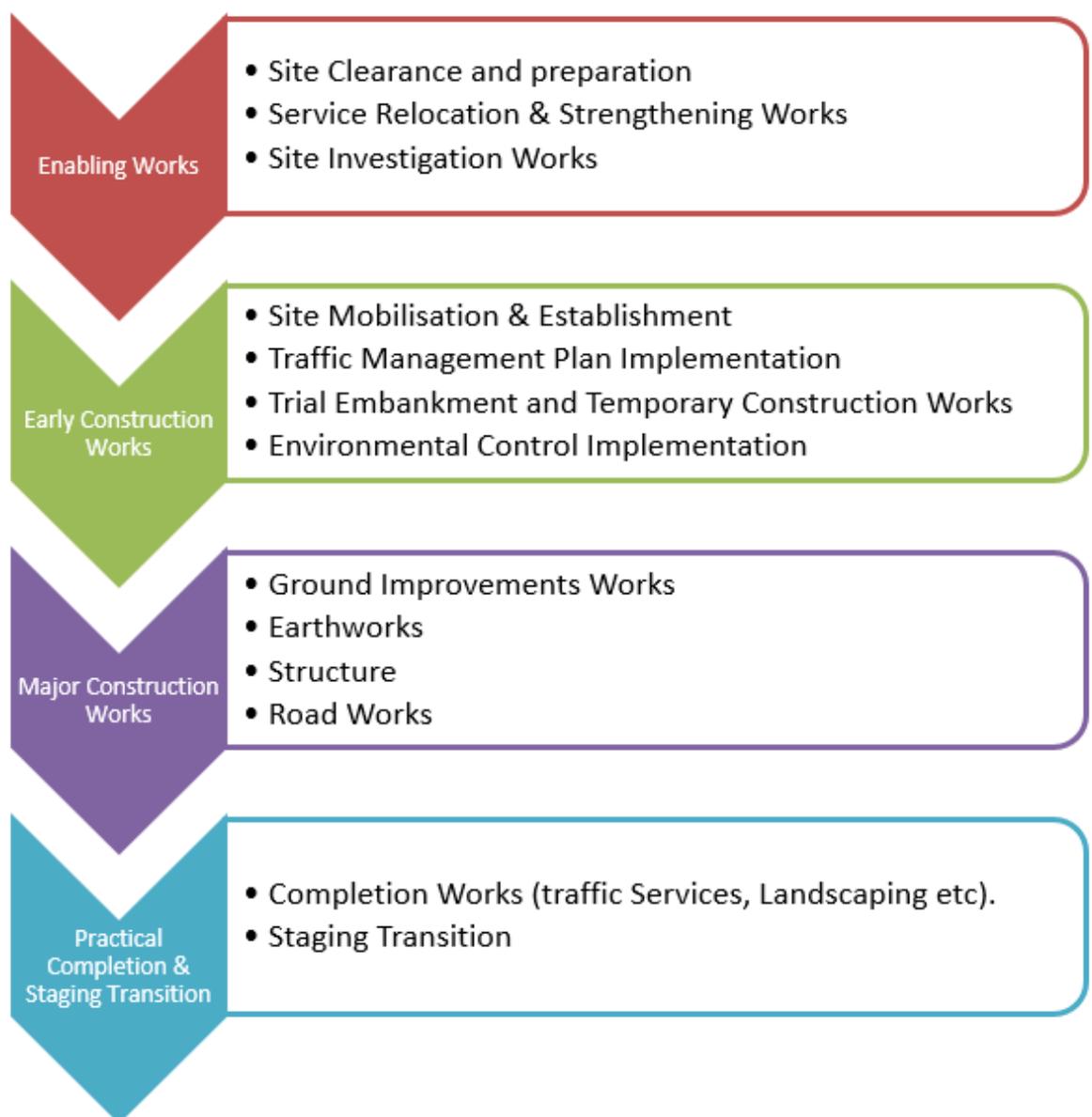
Detailed work programming will depend on a number of factors, and it is recognised that once the contract for the Project has been awarded and a contractor is in place, the construction methodology will be further refined and developed. This will be undertaken within the scope of the designation and consent conditions which will be in place to manage the environmental

effects of the construction activities. Construction management plans will be informed by conditions of the designations and consents to ensure all mitigation measures are implemented as required. Should a contractor wish to undertake construction activities in a manner which is not authorised by the consents held, appropriate authorisations would need to be obtained at that time.

1.3.1 Construction Programme

An outline preliminary construction programme is documented in the Construction Methodology in the AEE. Construction is estimated to start in late 2022 and take approximately 4 years to complete. , River works and stopbanks north of Melling Bridge may be constructed over a longer period. Enabling works are anticipated (i.e. removal/demolition of buildings, relocation of utilities, etc.) and may be done in advance of the main construction period.

The typical sequence of works can be illustrated in four steps, illustrated below



The Construction Methodology has identified the major elements for the Project:

- Works to enable construction of the Melling station and associated works, Pharazyn Street and the adjacent stopbank
 - Environmental Controls, utilities relocations, building demolition etc
 - Pharazyn Street Stopbank and realigned Pharazyn Street, stormwater between the river and the existing Pharazyn Street, earthworks, pavement construction, including stormwater facilities installed beneath the stopbank and earthworks formations.
- Construct the new Melling railway station
 - New rail, station building and platform, station parking, etc
 - Complete railway connection and open new station
- Melling Interchange southbound works
 - Remove existing Railway Station building construct SH2 southbound, southbound ramps and southbound underpass foundation and sub structure
- Melling Interchange northbound works
 - Construction SH2 northbound, northbound underpass foundation and substructure
 - Construct underpass superstructure
 - Construction northbound ramps and western local road improvements
 - Open new interchange
- Complete closure of Melling Link intersection and final carriageway works to SH2
- Removal of Melling Link Bridge

The indicative construction staging and duration is illustrated in Figure 2. Six construction stages have been identified. The final programme will be developed with the Principal Contractor.

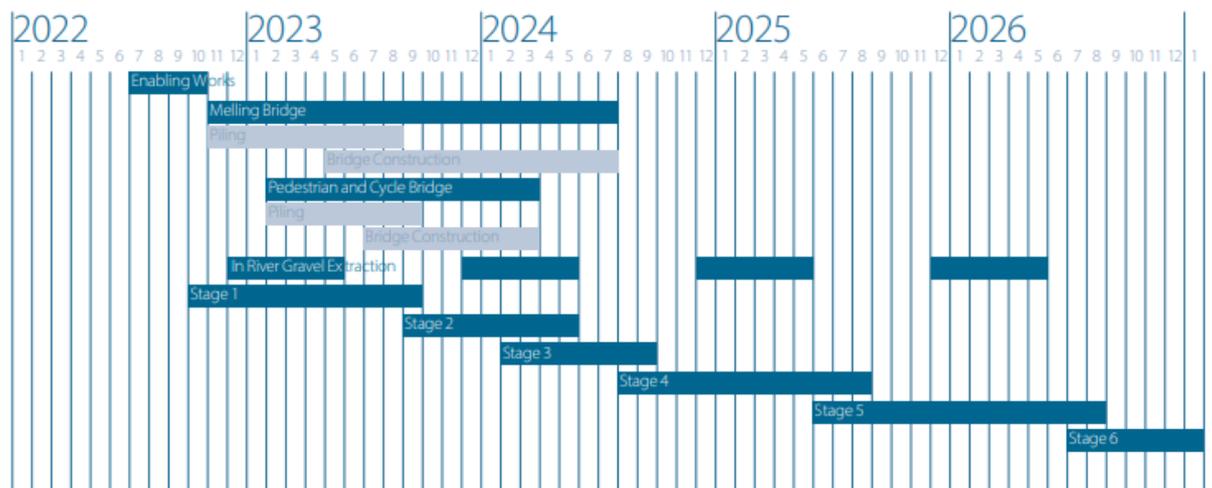


Figure 2: Indicative construction programme

Detailed construction staging drawings are included in Volume 5 of the Application documents (the drawing set). The Construction Methodology provides more detail about the indicative six construction stages.

1.3.2 Enabling works

Prior to the commencement of the main construction activities, it is anticipated there will be enabling works undertaken that will facilitate efficient construction of each stage. If not set out in the CEMP, the enabling works will be set out in the SEMP Enabling Works Construction Environmental Management Plan (EWCEMP).

The enabling works may include:

- Further detailed site investigations, including geotechnical, contaminated land and groundwater,
- investigations to confirm the location of existing services;
- Baseline environmental investigations or surveys;
- Building and structure demolition and removal;
- Site establishment activities, including site access points, road sealing, access tracks, construction yards, temporary local road realignments and fencing;
- Establishing environmental mitigation measures (e.g. erosion and sediment controls);
- Protecting and/or relocating existing network utilities;
- Establishment of the temporary public car park (and market site) on Daly Street; and
- Vegetation clearance where seasonal restrictions will potentially restrict the commencement of subsequent critical path construction activities, e.g. remove trees and other indigenous vegetation outside of the nesting season.

Indicative locations for construction compounds, construction staging areas and aggregate processing areas have been identified and are shown on the construction staging drawings in Volume 5 of the Application documents.

Final locations and areas required for the construction compounds and bridge construction yards will be confirmed at detailed design stage and once a contractor has been appointed.

1.4 CEMP Policy and Objectives

To ensure that environmental management on this Project aligns with all Project Partner (GW, Waka Kotahi, and HCC) policy frameworks for environmental management, the Project will be undertaken in accordance with the environmental policies, guidelines, objectives and key performance indicators set out below.

1.4.1 Waka Kotahi Policy

Waka Kotahi's Environmental and Social Responsibility policy³ states:

Section 96(1)(a) of the Land Transport Management Act requires that the Waka Kotahi exhibit a sense of social and environmental responsibility. We promote an accessible and safe transport system that contributes positively to New Zealand's economic, social and environmental welfare, and we are committed to acting in an environmentally and socially responsible manner.

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,

³ NZTA Environmental and Social Responsibility Policy

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; and*
- provide our employees with the skills, awareness and leadership to achieve environmental and social objectives.*

1.4.2 GW Policy

Subject to activities and works enabled by the resource consents, the following regional plans must be complied with during construction works:

- Proposed Natural Resources Plan (PNRP) for the Wellington Region (2019): The integrated PNRP for the Wellington region will replace the five operative plans for managing the coast, soil, discharges to land, fresh water and air. The plan is currently in the Appeals stage. Provisions that were not appealed or where the appeals have been resolved are operative. Provisions with unresolved appeals are yet to be made operative and hence the operative provisions in the relevant regional plans listed below remain relevant.
- Operative Regional Freshwater Plan (RFP) for the Wellington Region (2007)
- Operational Regional Plan for Discharges to Land (RPDL) for the Wellington Region (1999)
- Operative Regional Soil Plan (RSP) for the Wellington Region (2002)
- Operative Regional Air Quality Management Plan for the Wellington Region ("RAQMP")

1.4.3 HCC Policy

The Hutt City District Plan was made fully operative on 18 March 2004. The plan has been subject to a rolling review and HCC embarked on a comprehensive review of the District Plan in mid-2020. Council's current timeline suggests draft provisions will be released from mid-2021 with the plan not finalised and notified until mid-2022.

1.4.4 Environmental Objectives

Waka Kotahi Environmental Objectives

Waka Kotahi adopted the Transit New Zealand (TNZ) Environmental Plan 2008, which outlines key social and environmental impacts that are relevant to Waka Kotahi's activities. Objectives associated with these impacts are provided and those relevant to the Project construction activities are described in Table 1 below.

Table 2 Summary of relevant Waka Kotahi environmental objectives provided in the TNZ Environmental Plan 2008

Environmental Impact	Relevant Environmental Objectives
Noise	<ul style="list-style-type: none"> N3 Manage construction and maintenance noise to acceptable levels
Air quality	<ul style="list-style-type: none"> None specifically related to construction activities
Water resources	<ul style="list-style-type: none"> W1 Ensure runoff 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.
Erosion and sediment control	<ul style="list-style-type: none"> ES1 Ensure construction and maintenance activities avoid, remedy or mitigate effects of soil erosion, sediment runoff and sediment deposition ES2 Identify areas susceptible to erosion and sediment deposition and implement erosion and sediment control measures appropriate to each situation with particular emphasis on high risk areas ES3 Use bio-engineering and low-impact design practices where practicable
Social responsibility	<ul style="list-style-type: none"> None specifically related to construction activities
Culture and heritage	<ul style="list-style-type: none"> H1 Proactively limit the disturbance of significant cultural and heritage features along state highways
Ecological resources	<ul style="list-style-type: none"> E2 No net loss of native vegetation, wetlands, critical habitat or endangered species E3 Limit the spread of plant pests
Spill response and contamination	<ul style="list-style-type: none"> S1 Design stormwater control and retention devices that can accommodate spills in areas of high environmental risk

Environmental Impact	Relevant Environmental Objectives
	<ul style="list-style-type: none"> S2 Ensure the removal, placement and disposal of contaminated soil is achieved in accordance with the Soil National Environmental Standard (NES)
Resource efficiency	<ul style="list-style-type: none"> None specifically related to construction activities
Climate change	<ul style="list-style-type: none"> C3 Mitigate activities associated with the construction, operation and maintenance of state highways to effect a net reduction of greenhouse gases (GHG) from transport
Visual quality	<ul style="list-style-type: none"> None specifically related to construction activities
Vibration	<ul style="list-style-type: none"> 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

Environmental management methods set out in this CEMP will remain consistent with GW, Waka Kotahi and HCC' overall objective, as well as the objectives and policies in the Waka Kotahi Environmental Plan.

1.4.5 Roles and Responsibilities

Table 3 outlines anticipated management roles on site. These roles are subject to change since GW, Waka Kotahi and HCC have not yet decided upon a delivery method and the Principal Contractor will have its own management structure. The Principal Contractor will need to provide a description of roles and responsibilities to the Applicants during tendering and/or upon contract award.

Table 3 Management roles and responsibilities

Position	Name	Company	Responsibility
Project Manager	TBC	RiverLink or delegate	<ul style="list-style-type: none"> Overall responsibility for the Project
Project Partner Representatives	TBC	HCC, GW, Waka Kotahi	<ul style="list-style-type: none"> Representative for the Respective consent holder
Engineer to the Contract	TBC	Consultant	<ul style="list-style-type: none"> Defined by NZS 3910
Principal Contractor Project Manager	TBC	TBC	<ul style="list-style-type: none"> Contractor representative

Position	Name	Company	Responsibility
Construction Site Manager	TBC	TBC	<ul style="list-style-type: none"> Responsibility for a defined Project element or area
Construction Environmental Manager	TBC	TBC	<ul style="list-style-type: none"> Environmental induction and training of personnel including subcontractors and visitors Responding to incidents and providing feedback to interested or affected parties. Environmental Reporting Maintaining CEMP Compliance with CEMP, aspect management plans and consent conditions Management of consent compliance requirements Liaison with Regional and District Councils and other regulatory authorities

CEMP Expectations for the appointed Principal Contractor

Table 3 should be reviewed and completed upon appointment of the Principal contractor. An organisational chart should also be included in this CEMP by the Construction Environmental Manager. This organisation chart should show the relationships and connections for the positions identified in Table 3.

The defined roles and responsibilities and the chart do not remove or overwrite the legal duties, responsibilities and obligations of the Principal Contractor in accordance with the contract documents and legislation.

2. Part B – Environmental and Social Management

This section outlines significant environmental issues identified in the AEE. It is intended to be used to:

- Outline the existing environment;
- Identify matters to be included in the Specialised Environmental Management Plans (SEMPs) or in General Control Statements (GCS); and
- Outline any recommendations in technical reports relating to environmental management during the construction phase.

2.1 Environmental Management

2.1.1 Identification

The environmental impacts discussed within this DRAFT CEMP come from three information streams:

1. AEE - The potential environmental impacts for the Project have been identified within the Assessment of Environmental Effects (AEE). This document includes an identification and assessment of potential effects as well as identifying measures to avoid, remedy or mitigate adverse effects.
2. Waka Kotahi - The Transit New Zealand Environmental Plan 2008 objectives, (referred to in section 1.4.4 above), are based on known impacts for its road projects. The list of impacts has been based upon Transit New Zealand's Environmental and Social Management form⁴ but adapted to focus on construction activities associated with the Project. This plan only identifies potential impacts and does not assess risk as this has to be done Project by Project.
3. CEMP as a living process - This CEMP requires the Principal Contractor to review risks and potential impacts that have been identified, which results in an always current understanding of potential impacts upon the environment.

Each of the issues identified as requiring specific controls will be addressed in a SEMP to address risks and set out appropriate management (refer Section 2.1.2). General Control Statements (GCS) that cover more general matters that do not require specific management plans are also recommended and explained in further detail in Section 2.1.3 below.

2.1.2 SEMPs

As noted in Section 1.1, a range of Specialised Environmental Management Plans (SEMPs) have been identified (Table 1). The SEMPs will be incorporated as appendices in future versions of this CEMP.

⁴ <https://www.nzta.govt.nz/assets/About-us/docs/esm-plan-for-capital-works.docx>

2.2 Existing Environment

The RiverLink project area includes a section of SH 2, Melling bridge, the Melling railway station and surrounds, local roads and a 3.7 kilometre section of Te Awa Kairangi/Hutt River within the Hutt Valley. The Hutt Valley comprises a broad valley, formed within a wider landform system of steep and elevated ridges, hill country, valleys and basins, and lower coastal areas influenced by Wellington Harbour and coastal processes. Te Awa Kairangi flows from the slopes of the southern Tararua Ranges and surrounding hills, through Upper and Lower Hutt, before draining into Wellington Harbour at Petone.

Within the Project area, land use on the eastern side of the river is characterised by activities expected of a central commercial area (retail and commercial activities, office uses, bars and restaurants) and medium density residential. The south-western extent of the Project area, adjacent to Ewen Bridge, is characterised by industrial activities. Industrial uses are also present in the central section of Pharazyn Street. The northern and southern sections of Pharazyn Street are characterised by low density residential uses.

Areas of land within and adjacent to Te Awa Kairangi are zoned river recreation and are characterised by open space areas. Hard paved car park areas are present on the eastern side of the river between the Lower Hutt CBD and Te Awa Kairangi.

The environmental baseline is described in the AEE (Section 3) and should be referred to for a more in-depth description of the existing environment. The specialist technical reports in Volume 5 should be referred to for further and more detailed information regarding the respective disciplines.

2.3 Project Construction Environmental Issues

Based on the construction programme and our understanding of the local environment and the specialist technical assessments, the key environmental considerations and proposed management measures are outlined below.

The following sections identify Project related potential impacts, guidance for the management of the impacts and the Project issues that need to be considered in the management of the impacts. Thereafter each section concludes with a reference to a SEMP, and we set out expectations for the Principal Contractor.

2.3.1 Erosion and Sediment Control

Potential Impacts

The scale of the Project means that a large area of land will be disturbed. Erosion and sediment control will need to be provided throughout the duration of the construction works and maintenance period to ensure protection of waterways from the adverse effects of sediment from the work area.

The Project requires some construction activities in and immediately adjacent to Te Awa Kairangi. The River is also the receiving environment for stormwater discharges from land based activities of the Project. Therefore, it is essential that best practice measures are adopted to minimise erosion and control potential sedimentation effects.

Project-Specific Issues and Requirements

Key issues which will require addressing include:

- control of stormwater and isolation of runoff;
- separating clean from dirty water;

- protecting adjacent landowners from surface flows;
- minimise sediment leaving the site; and
- controls for wet works within the river.

GW and Waka Kotahi have considerable expertise in erosion and sediment control and have their own guidelines. These guidelines should be utilised when determining the appropriate mitigation methods and technical specifications. The guidelines include:

- GW Erosion And Sediment Control Guide for Land Disturbing Activities in the Wellington Region, February 2021 (GW ESC Guidelines);
- Waka Kotahi New Zealand Transport Agency (Waka Kotahi) Erosion and Sediment Control Guidelines for State Highway Infrastructure, 2014 (Waka Kotahi ESC Guidelines); and
- GW Code of Practice for River Management Activities (2020 Te Awa Kairangi).

The erosion and sediment control measures for the Project will be set out in an Erosion and Sediment Control Plan (ESCP) and, where required, Site Specific Erosion and Sediment Control Plans (SSESCPs). A DRAFT ESCP and an example SSESCP are provided in the Construction Water Quality and Erosion and Sediment Control technical assessment (Technical Report #3). ESC measures are also summarised in the AEE. The ESCP and SSESCP must be submitted to GW for certification prior to Construction Works starting.

CEMP Expectations for the appointed Principal Contractor

The Erosion and Sediment Control Guidelines document prepared by GW should be used as the principal basis for the formation of an Erosion and Sediment Control Plan. The Waka Kotahi Erosion and Sediment Control Standard for State Highway Infrastructure should be used to reinforce best industry practice.

The guidance and expectations out in the SEMP Erosion and Sediment Control Plan (ESCP) should be followed and, where necessary, reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager.

For each relevant area of the Project works a SSESCP shall be produced for specific areas identified in the ESCP.

Erosion and sediment control should be provided by the Principal Contractor throughout the duration of the construction works and maintenance period to ensure protection of the environment from the adverse effects of sediment from the work area.

2.3.2 Groundwater management

Within the Project area, groundwater is likely to be encountered within the Taita Alluvium at relatively shallow depths near the ground level and river water level close to the Hutt River, and at depths 2.5 m to 5 m below ground level (bgl) when further away from Te Awa Kairangi. The deeper Waiwhetu aquifer is utilised for the Municipal water supply.

Potential Impacts

Riverworks – During and immediately following the proposed riverbed reprofiling (gravel extraction), ongoing seepage of shallow groundwater from the Taita aquifer to the river within the Project area is expected to occur when the river stage is lower than the groundwater levels in the Taita Alluvium (i.e. during low flow in the river). Modelling results also indicate that the proposed lowering of the riverbed will not result in reduced yield in the Waiwhetu aquifer.

Monitoring of the shallow and deep groundwater levels and groundwater quality (including turbidity, pH, Dissolved Oxygen (DO), hardness, Ecoli) in the vicinity of the Project will be

required pre-construction, during and post-construction using the existing and a number of proposed additional telemetered piezometers and in accordance with the Groundwater Management Plan (GMP) to confirm the assessed envelope of effects.

Melling Interchange, Melling River Bridge, and Pedestrian bridge – The existing Melling bridge will be deconstructed (removed) to the riverbed level. Existing bridge piles will be cut to riverbed level. This will minimise/eliminate disturbance of the underlying aquifers so that no effects on groundwater quality or quantity are expected.

Excavations associated with the ground improvements for the SH2 bridge abutments are expected to be above the shallow groundwater table, meaning that dewatering is unlikely to be required during earthworks construction. As a result, there are no effects on groundwater from the construction or operation of the Melling Link alignment.

Piles for the bridges are expected to penetrate the Waiwhetu aquifer. A specific construction method for piling has been developed to avoid adverse effects on groundwater. These measures will be managed with a SEMP to be developed as the Artesian Aquifer Interception Plan (AAIMP).

Dewatering –Some level of groundwater management through dewatering will be required during construction. The general groundwater effects of the Project construction will be controlled by a Groundwater Management Plan (GMP). In addition to the GMP, a dewatering assessment will be undertaken as part of the CEMP for all works within the groundwater community drinking water supply zone (as defined in the Proposed Natural Resources Plan) that may encounter groundwater. For dewatering on sites that contain contaminants above levels for human health and ecological receptors, testing to assess contaminant levels is required.

Groundwater drawdown in itself is not an adverse effect, but potential effects may arise as a result of the drawdown. These effects include pore pressure reduction that might result in ground settlement, or changes to groundwater flow and direction that might affect surface water or movement of contaminants.

Project-Specific Issues and Requirements

The measures that will be prescribed in the GMP to avoid and/or mitigate any potential effects from dewatering activities and appropriate discharge of pumped water shall include the following:

- Monitor the river water quality during construction to minimise any potential to affect the groundwater quality in the shallow aquifer.
- Groundwater level and quality monitoring of the shallow groundwater in the vicinity of the river works should be undertaken through the existing and proposed telemetered piezometers and as proposed in the Groundwater Management Plan (GMP).

Once the Principal Contractor has been engaged, an AAIMP for the construction of the bridge piles will be developed and submitted to GW for certification before construction starts.

Further details are provided in the Hydrogeology Technical Assessment and AEE.

CEMP Expectations for the appointed Principal Contractor

The guidance and expectations to be set out in the SEMP's Artesian Aquifer Interception Plan and Groundwater Management Plan should be followed and where necessary reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager.

2.3.3 Ecological management (freshwater, terrestrial and marine)

Potential Impacts

Freshwater – The disturbances to the freshwater habitat through gravel extraction and river/stream bed disturbance as part of Project works are expected to be on a relatively large scale. In the absence of controls, there is potential for adverse effects on the freshwater habitat during construction works. Short-term effects could include the temporary modification of freshwater habitats, fish injury and/or mortality, temporary fish migration and spawning restrictions, and water quality effects resulting from sedimentation and cement wash.

Potential long-term effects anticipated to occur from the Project include reduced fish passage within the tributary sites, changes to hydrology that may result in changes in growth rates of cyanobacteria and periphyton species, and loss of stream ecological function and habitat area within Harbour View Stream.

Terrestrial – Adverse effects on terrestrial ecology will be most pronounced during enabling works construction, seasonal construction, and on an ongoing basis from operations that involve vegetation removal or habitat disturbance. The two potential direct impacts on terrestrial ecology are the loss of habitat through clearance and earthworks; and disturbance, displacement, injury and mortality of birds and lizards. Terrestrial habitat loss has the potential to create a range of adverse effects on ecological values (resulting from direct physical disturbance).

Marine - Land-based earthworks and disturbance of the riverbed material within flowing water will cause mobilisation of natural sediments into the water column. It is unlikely that there will be any more than a negligible amount of Project-related fine sediment that will reach the marine environment.

Project-Specific Issues and Requirements

Freshwater – Adverse effects can be minimised through the implementation of fish salvage protocols, good practice sediment and erosion control measures, and construction methodologies. The measures to be adopted for the Project will include:

- Limiting the river length affected by gravel extraction at any one time;
- Minimising sediment generation and discharge;
- Implementation of clean water diversions;
- Monitoring the impact of suspended and deposited sediment over time;
- Setting target levels that will in turn direct an adaptive construction methodology.

Terrestrial - Measures to avoid or minimise effects within the Project footprint during construction will include:

- Minimisation of vegetation loss through site management and appropriate construction methodology. This will include avoidance of unnecessary vegetation clearance through the physical delineation of the footprint boundary and delineation of vegetation to be retained;
- Staged vegetation clearance as construction progresses rather than all vegetation loss occurring prior to the commencement of construction activities (see Construction Methodology for a description of the sequencing of works);

- An ecologist will assess the macrocarpa black shag nesting site and provide advice on response actions if the site is affected by construction activity;
- Revegetation of the site will occur concurrently as stages are completed;
- Constraints on vegetation clearance to avoid peak bird breeding season in some high risk habitats;
- In lower risk habitats, pre-clearance nesting surveys will be undertaken in lieu of blanket seasonal restrictions;
- Vegetation clearance in potential lizard habitats will be avoided during colder months when lizards are less active and less likely to be detected or survive relocation;
- Pre-vegetation clearance lizard surveys, with salvage and relocation;
- Accidental discovery protocols for At Risk and Threatened fauna; and
- Ecologists present on site during vegetation clearance.

Measures to avoid or minimise potential adverse ecological effects will be further developed in an Ecology Management Plan (EMP), which must be prepared by a Suitably Qualified Person. The EMP will include sections addressing Vegetation Removal and Management, Planting Establishment and Management, Invertebrate and Lizard Management, Avifauna Management, Fish Management and Freshwater Habitat Monitoring. A Stream Offset Plan (SOP) is required in relation to works at Harbour View Stream. All plans require certification by GW prior to Construction Works commencing.

CEMP Expectations for the appointed Principal Contractor

The SEMP's Ecology Management Plan (EMP) and a Stream Offset Plan (SOP) should be followed and where necessary be reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager.

A General Control Statement for Terrestrial Ecological Protection should also be developed

2.3.4 Traffic and transport management

Traffic

Temporary traffic management for the construction of the project will be required. A Construction Traffic Management Plan (CTMP) and Site Specific Traffic Management Plans (SSTMPs) will be developed for the Project. The CTMP and any SSTMPs must be consistent with the version of the *NZ Transport Agency Code of Practice for Temporary Traffic Management* that applies at the time the CTMP is prepared.

The potential impacts on traffic identified include:

- the need to minimise disruption on State highways and local roads as far as practicable;
- the desirability of minimising the number of construction vehicle trips and their effects on local roads, avoiding residential areas where practicable;
- the need to minimise the effects of construction vehicle parking;
- the importance of providing for effective communication;

- providing a safe environment for the general public and construction staff during construction; and
- Maintaining access to existing business and residences in the vicinity of the site.

Co-ordination of Traffic Management – The Construction Methodology identifies the various activities that will take place and the stages of work. Based on this a more detailed sequencing plan will be developed to avoid and/ or mitigate significant traffic effects that may arise from multiple activities that individually result in lesser effects.

Traffic Effects - Increased traffic congestion during construction is to be anticipated, temporary traffic management measures can be put in place to minimise disruption to the greatest extent practicable. This applies to traffic on a given route and traffic on diversion routes. Alternative methodologies may need to be considered along with mitigation measures to minimise the effects, such as:

- undertaking certain works at times of low traffic flow (e.g. night works);
- advance communication of the works to pre-warn the public and advise alternative routes.

Site Access - The site access points will need to be considered and will need to operate in a safe manner that does not cause undue disruption to traffic flows on the adjacent network.

The following should be considered with regard to site access:

- signage to identify the accesses for delivery vehicles and suppliers;
- permitted vehicles (trucks / articulated trucks / cars) and permitted uses (visitors / deliveries / staff);
- permitted movements and / or movement restrictions (e.g. left in / left out may be necessary);
- pedestrian, cycle and public safety;
- deceleration and acceleration requirements to minimise traffic disruption and provide for safe access/ egress.

Diversions - Road closures are anticipated to be required on some of the local roads to enable the construction of structures and local road modifications. These closures and the proposed diversion routes will need to be approved by the Road Controlling Authorities prior to implementation. The diversion routes would avoid residential areas wherever practical.

Property Access - Measures to minimise the effects on property access (including turning restrictions) and on-site parking / manoeuvring will need to be addressed. Consultation will need to be undertaken with affected property owners to identify the impact on their access, duration and date of work. All reasonable steps to maintain property access or a satisfactory alternative route will be implemented.

Passenger Transport

All practical steps will need to be taken to minimise any effects of the on passenger transport services. Consultation will need to be undertaken early in the construction planning stage to identify the potential passenger transport effects. This consultation will include:

- Greater Wellington Regional Council and Passenger Transport Operators (MetLink)
- Hutt City Council
- Ministry of Education (with regard to school bus services).

Walking and Cycling

Pedestrian and cycle requirements (including the mobility impaired) will need to be considered and the likely effects identified. Suitable alternative access will be incorporated which may include the following:

- temporary access in accordance with recognised standards;
- temporary diversions or routes;
- safety fencing and protection barriers from traffic;
- temporary bridges across uneven surfaces.

CEMP Expectations for the appointed Principal Contractor

The guidance and expectations that will be set out in SEMP Construction Traffic Management Plan should be followed and where necessary reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager. The CTMP will need to be approved by the relevant RCA(s).

Site Specific Traffic Management Plans (SSTMPs) are to be developed and implemented for particular areas of the road network impacted by the Project. The SSTMPs will need to be authorised by the relevant RCA(s).

The Principal Contractor should provide information regarding anticipated site compounds and lay down points, and method statements for effective traffic management.

More detail regarding construction traffic control measures for the project is set out in the technical assessment for traffic and transport (Technical Assessment #9). Management and mitigation measures are also described in the AEE.

2.3.5 Construction Noise and Vibration

Potential Impacts

The construction of the Project will require the use of large mobile mechanical equipment and processes that are likely to generate elevated levels of noise at the nearest residences. As such, there are likely to be some significant temporary noise effects through the construction phase that are unavoidable.

Construction noise is expected from the following activities:

- Enabling Works using heavy machinery e.g. excavators, compactors, rollers;
- Topsoil Stripping through the use of motor scrapers;
- General Earthworks (street realignments, river protection works, and pedestrian bridge) utilising heavy machinery e.g. excavators, compactors, spreaders;
- Ground Improvements utilising vibratory construction techniques and most piling activities using rollers/compactors and boring concrete piles.
- Bridge Construction abutment preparation using driven steel piles or auger piles.
- Installation of precast bridge structures.
- Pavement Construction where there is likely to be multiple items operating simultaneously.

The most significant sources include the use of vibratory rollers and piling. Other construction machinery and activities such as truck movements and excavators will also produce ground

vibration. Prior experience has shown that these activities can give rise to adverse effects (particularly adverse human response).

Project-Specific Issues and Requirements

Construction noise effects are assessed in relation to the recognised construction noise standard NZS 6803:1999, which contains recommended noise criteria that are considered appropriate and applicable to noise from construction operations.

The Standard provides for higher noise levels during normal working hours for construction noise received in residential areas, to enable normal construction activity to take place. For commercial and industrial areas, higher noise criteria are allowed during night-time when it is less likely that people or business activity will be affected by construction noise.

The Noise and Vibration Technical Assessment outlines general mitigation measures. These include:

- The restriction in the use of heavy machinery outside of specified working hours for enabling works, topsoil stripping, general earthworks, ground improvements, pavement construction, and so on;
- Site specific measures relating to the proximity of sensitive receivers including temporary noise barriers;
- General good practice techniques including training of personnel, maintenance of equipment, equipment enclosures to attenuate noise at source, selection of low noise plant and avoiding night time activities where practicable;
- Consultation and communication with sensitive receivers; and
- Building condition surveys.

In relation to vibration, for crucial activities, such as vibratory compacting and piling where large vibration energy is typically produced, test measurements of the initial works are recommended. As the number of on-site measurements increases, the models can be refined to allow more accurate prediction of the subsequent construction stages and the achievement of improved controls.

The most effective way to control construction noise and vibration is through good on-site management, with measures to be implemented through the SEMP Construction Noise and Vibration Management Plan (CNVMP) and any required Site Specific Construction Noise and Vibration Management Plans (SSCNVMP). The CNVMP and SSCNVMP must be certified by HCC prior to construction commencing.

More detail regarding noise and vibration control measures for the Project is set out in the specialist technical assessment for the Project (Technical Assessment #10).

CEMP Expectations for the appointed Principal Contractor

The guidance and expectations to be set out in SEMP Construction Noise and Vibration Management Plan and any Site Specific Construction Noise and Vibration Management Plans (SSCNVMP) should be reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager.

2.3.6 Air quality management

Potential Impacts

Construction of the Project will entail relatively large scale earthworks in an urban context. Exposed earthworks can be a significant source of dust which can affect human health and plant life along the edge of the earthworks area. Dust can be a nuisance to the surrounding public, and dust can contribute to sediment loads in waterways if dust falls in areas without sediment control measures. Sediments deposited on sealed public roads can also result in a dust nuisance. Rainfall, water evaporation, and wind speed are the key meteorological conditions that have the greatest effect on dust mobilisation.

The following are potential sources of dust and other air contaminant discharges associated with the construction phase of the Project.

- earthworks and associated material handling;
- on-site screening and processing of excavated material for use in construction;
- building and structure demolition and removal.
- road pavement removal and construction.
- movement of heavy construction vehicles over unsealed surfaces (such as haul routes or construction support areas)

Project-Specific Issues and Requirements

The most effective way to control construction dust is through good on-site management. Mitigation measures include:

- minimisation of mechanical disturbance of potentially dusty materials;
- minimisation of wind exposure and containment of emissions;
- locating activities, such as the aggregate processing plant activities, to maximise separation from sensitive activities; and
- stabilisation or agglomeration of potentially dusty material through application of water or other suppressants.

All construction activities will need to follow the guidance that will be set out in a Construction Air Quality Management Plan (CAQMP). The AEE also contains a detailed list of the proposed mitigation measures to be adopted for this project.

CEMP Expectations for the appointed Principal Contractor

The guidance and expectations set out in the SEMP Air Quality Management Plan should be reviewed and updated once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager.

2.3.7 Landscape and Visual Effects

Potential Impacts

Temporary landscape and visual effects will result from construction of the Project. The visual effects of removal of existing vegetation may also have short term effects in particularly sensitive locations. Soil exposed by earthworks can have visual effects depending on the length

of time it is exposed. Construction yards, construction haul roads and stockpiles of excavated material, hardfill and materials can also have temporary adverse visual effects.

Project-Specific Issues and Requirements

The approach to landscape management should take into account the following:

- Limit the scale of the active face and minimise time to rehabilitation;
- Develop access and activity solutions with affected communities to limit loss of privacy and temporary access, including for residential and commercial businesses;
- Include early implementation and opening of parts of Te Awa Kairangi landscape with high amenity, as this will help mitigate for the ongoing disruption elsewhere;
- Prioritise early planting of both amenity and flood protection planting, even where these areas continue to be off limits to the public; and
- Integrate best practice arboriculture measures to protect existing street trees and notable trees along local roads included within the proposed designation boundary.

More detail regarding the landscape and visual effects measures for the project is set out in the specialist technical assessment (Technical Assessment #14).

2.3.8 Archaeology and Artefacts

Potential Impacts

There are 20 known archaeological and historic heritage sites within and immediately adjacent the Project area. Of these, there are 14 located within the Project works area. Four of these sites have high significance and are largely avoided by the Project, with the exception of works within the existing road corridor. The remaining sites are all heavily modified by previous works with little remaining material and have moderate to low significance overall.

Previous river protection works have already damaged and destroyed the most historic material and features. This includes the Maraenuku Pā site, Te Ahi-o-Manono Kainga and the various Hutt River Bridge settlements and bridges north of Ewen Bridge and along the western end of High Street.

Project-Specific Issues and Requirements

General Project wide mitigation measures have been identified, as follows:

- Development of an On-Call procedure for discovery of un-monitored archaeological material;
- Apply for a general archaeological authority pursuant to the Heritage New Zealand Pouhere Taonga Act (HNZPT).
- Acknowledge and celebrate Māori cultural, archaeological and historic heritage values through installation of interpretive material detailing specific sites and general history of the area;

The following site-specific mitigation measures are proposed:

- Ground-Penetrating Radar investigation in the vicinity of the former Wesleyan Cemetery. Activity monitoring of earthworks, limit depths and building demolition
- Active monitoring should be carried out on earthworks in Area 2 (Connolly Street Substation); Area 4 around the Hutt River Bridge Settlement area and Hutt River Bridges; Area 6 289-317 High Street; Area 7 around 36-137 High Street; Area 8 in the area of 24-

75 Marsden Street; and Area 9 in the general vicinity of 76-80 and 100 Pharazyn Street as shown in Figure 1 of the Heritage and Archaeology Technical Assessment;

- Adopt an on call procedure in Area 2 and Maraenuku Pā, remainder of Areas 3 and 5; Area 8 (58-90 Marsden Street – even numbers only), Area 10 (Melling Station); Area 11, (around 3 Harbour View Road) and Area 12 (Lochaber) when the Project archaeologist is not on site;
- Make visual and virtual records of the buildings in Area 7, Marsden Street and Pharazyn Street that are scheduled for demolition.

An Archaeological and Heritage Management Plan (AHMP) will be prepared by a suitably qualified person (e.g. an archaeologist) in consultation with HNZPT and GW, Waka Kotahi and HCC. The purpose of the AHMP will be to manage and mitigate potential adverse effects on heritage and archaeological sites. The AHMP will provide for:

- Notifications;
- Tikanga Māori Protocols;
- Construction Staff Briefing;
- Site Access by the archaeologist and Iwi partners;
- Protocols applicable to the discovery of kōiwi;
- Mitigation of adverse effects on heritage values;
- Management of Taonga Tuturu/artifacts;
- Provision for development and installation of interpretative material;
- Reporting to HNZPT.

More detail regarding the archaeological and historic heritage mitigation measures for the project is set out in the specialist technical assessment (Technical Assessment #12), including identification of the areas referenced above.

CEMP Expectations for the appointed Principal Contractor

Prior to construction an Archaeological and Heritage Management Plan (AHMP) shall be developed for the Project. The Principal Contractor is to ensure staff are adequately trained in all the provisions of the AHMP, including the protocols for accidental discovery of artifacts and remains.

2.3.9 Soil Contamination Management

Potential Impacts

Construction works associated with the Project will require significant soil disturbance which could encounter soils containing contaminants resulting from hazardous activities or industries.

The actual and potential construction effects of the Project on contaminated land are:

- Disturbance of contaminants and associated discharges of contaminants to air, land and water (surface and groundwater) where there may be an effect on the environment; and
- Discharge of contaminants where there may be an effect on human health – including site workers and/or the public.

There have been a number of historic and current activities, that are included in the Ministry for the Environment's Hazardous Activities and Industries List (HAIL), undertaken across the Project Area that have the potential to have resulted in soil and groundwater contamination. HAIL sites that are located outside the proposed designation could impact groundwater within the proposed designation.

Project-Specific Issues and Requirements

Prior to earthworks commencing on the site, a Detailed Site Investigation (DSI) must be carried out on moderate and high risk sites identified in the contaminated land technical assessment. The DSIs must be completed by a suitably qualified and experienced professional (SQEP) with experience in investigating and assessing contaminated sites. If a DSI identifies soil and/or groundwater that requires remediation to be suitable for the proposed land use, site remediation and/or management may be necessary. In order to allow adequate time for the DSI assessment and any potential remediation, the investigations of the medium and high risk HAIL sites will need to be advanced prior to the commencement of Project construction (provided that site access for the DSIs is possible).

Prior to earthworks commencing on the site, a Contaminated Land Site Management Plan (CLSMP) for the Project must be prepared by a SQEP with experience in remedial measures for contaminated sites.

It is possible that unexpected contamination will be encountered during the construction phase of the Project, and this soil and/or groundwater will need to be managed in an appropriate manner.

Rules related to discharge of contaminants to land and water in the Greater Wellington Regional Council's Proposed Natural Resources Plan will apply to future works. These may require additional investigations, monitoring and assessment.

CEMP Expectations for the appointed Principal Contractor

A Contaminated Land Site Management Plan (CLSMP) should be developed once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager. The CLSMP is to be updated if necessary following completion of the DSIs for the medium and high risk HAIL sites.

2.3.10 Materials and waste management

Potential Impacts

Efficient use of resources is both environmentally and financially beneficial. Furthermore, the consequences from inefficient use of raw materials are to be avoided (such as leaks from liquid stores, contamination, litter, pests and invasive species).

Project-Specific Issues and Requirements

The CEMP should set out an approach to manage waste production and disposal within the Project area from any construction activities. This will also include an approach to minimise the introduction of waste to the environment.

CEMP Expectations for the appointed Principal Contractor

Once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager, an approach for waste management should be developed and implemented.

2.3.11 Utilities

Potential Impacts

The Project directly affects a number of network utilities, including electricity transmission and gas distribution lines, telecommunications, water supply, wastewater, and stormwater disposal utilities. Ensuring that disruptions to service supply are avoided or kept to a minimum is critical - because any outage or loss of levels of service can have a direct impact upon public health, safety and user convenience.

Project-Specific Issues and Requirements

The Services Plans (series A16-4381: C101-C111) in Volume 5 of the Application indicate where network utilities are affected by RiverLink works and the indicative alignments for their relocation. The Project will affect several major utility services.

Protection and/or relocation of existing utilities will occur in conjunction with the project construction. The utilities will need to be carefully planned during detailed design. The appointed contractor will need to work closely with the relevant network utility owners to undertake the necessary protection and/or relocation works and to ensure that any disruptions to these networks are avoided or mitigated. All local network diversions of municipal water supply and wastewater supply must be constructed in accordance with the Regional Standard for Water Services (Wellington Water Ltd) and the Water Sensitive Design for Stormwater: Treatment Device Design Guideline (Wellington Water Ltd), unless otherwise agreed to by Wellington Water Limited. All temporary and permanent works in the vicinity of overhead transmission lines must comply with the New Zealand Code of Practice for Electrical Safe Distances (NZECP 34:2001).

CEMP Expectations for the appointed Principal Contractor

Once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager, a GCS on utilities management and allied communication processes should be developed and implemented.

2.4 Legislative and other requirements

The legislative requirements in relation to the CEMP need to be identified in order for them to be managed. The legislative requirements to consider include (without limitation):

- Resource consents and associated conditions;
- The designations and associated conditions;
- The requirements of any Outline Plan of Work (OPW);
- HNZPT archaeological authorities;
- Building consents;
- Permitted activities in the regional/district plans;

- Regional strategies e.g. Pest Management Strategies; and
- Wildlife Act 1953 permits.

2.4.1 Project Approval Process

GW, Waka Kotahi and HCC are seeking Resource Management Act approvals for the various activities (i.e. bulk earthworks, demolition, construction, and maintenance) required for the Project. This includes Notices of Requirement for new and altered designations within the Hutt City District Plan. The Notice of Requirement applications also incorporate sufficient detail to satisfy OPW requirements, in accordance with Section 176A(2)(b) of the RMA, unless altered or additional works are required as a result of detailed design, or this arises during construction or operation of the project. All key resource consents for the Project are being sought as part of this Application. If, after detailed design is complete, further or different consents are required these will be sought at the time.

2.4.2 National Legal Requirements and Policies

The Land Transport Management Act 2003 (LTMA) and the Resource Management Act 1991 (RMA) are the primary enabling legislation for environmental management of Waka Kotahi activities. The Soil Conservation and Rivers Control Act 1941 (SCRCA), the Local Government Act 2002 (LGA) and the RMA are the primary enabling legislation for GW activities. The RMA is the primary enabling legislation for HCC activities.

Other relevant legislation, regulations and standards which have either direct or indirect bearing on the CEMP include:

- Heritage New Zealand Pouhere Taonga Act 2014;
- Local Government Act 2002;
- Government Roding Powers Act 1989;
- Public Works Act 1981;
- Reserves Act 1977;
- 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;
- Wildlife Act 1953;
- National Policy Statement for Freshwater Management 2020;
- National Policy Statement on Urban Development 2020;
- National Environmental Standards Air Quality 2004;
- National Environmental Standards for assessing and managing contaminants in soil to protect human health 2011;
- National Environmental Standards for Freshwater 2020.

2.4.3 The Waka Kotahi Consent Compliance Management System

There are often many consent conditions for a major Project that make tracking their status a challenge. CS-VUE™ is a compliance system adopted by Waka Kotahi to manage

environmental statutory requirements. CS-VUE™ can be used to track and record the compliance of the following legal obligations;

- resource consents,
- designation conditions,
- Heritage New Zealand Pouhere Taonga authorities, and
- Any other agreements or obligations which have compliance conditions.

CS-VUE™ is a secure database which matches each consent condition (or other legal obligation) with a consent manager and condition manager and automatically sends an email notifying them of compliance requirements. The consent manager is the person responsible for overseeing consent compliance management, and the condition manager can be set up for the Council officer who is responsible for ensuring day-to-day compliance.

Evidence to demonstrate compliance is entered in CS-VUE™ with all entries/changes annotated with the person's name and date who undertook the changes. After construction, the responsibility of any conditions which have on-going maintenance and operational requirements can be transferred to the appropriate Project Partner.

CEMP Expectations for the appointed Principal Contractor

Once a detailed construction programme and build methodology has been agreed with GW, Waka Kotahi and HCC by the Principal Contractor and the Construction Environmental Manager, a GCS on utilities management and allied communication processes should be developed and implemented.

The CEMP should be updated with a table summarising the potential impacts related to construction, which identifies the consent requirements, reference, status and responsibility.

2.5 Environmental Risk Register

An Environmental Risk Register shall be prepared and should be periodically updated by the appointed Principal Contractor and Construction Environmental Manager. As a starting point for the Risk Register the AEE development process and the conditions attached to consents and approvals shall be utilised. The Risk Register shall set out the risks and links to the appropriate section of SEMP, which stipulate the required mitigation should it be required.

The Environmental Risk Register, to be populated and maintained by the Principal Contractor, is a tool for the identification, prioritisation and management of activities that have the potential to impact on the environment. As part of this update process the Principal Contractor is expected to use a recognised Risk Assessment methodology for consensus agreement with GW, Waka Kotahi and HCC. The risk assessment process shall define a process of identifying significant risks. These risks are then entered into the Risk Register.

The Environmental Risk Register will allow the Principal Contractor 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.

The Construction Environmental Manager will also be required to maintain the Environmental Risk Register. The risk assessment results will need to be reviewed at regular intervals and repeated at critical times within the Project. Triggers for this review and update include:

- Project Partner instructions

- Before commencement of construction (once detailed programme and methodologies are understood);
- When there is a new or changed activity, equipment or location of activities;
- When there is a change to legislative or consent and designation requirements; and
- As a result of a significant environmental incident or non-compliance.

The Register will be reviewed and updated on a quarterly calendar basis when none of the preceding activities have already triggered a review in the quarter.

CEMP Expectations for the appointed Principal Contractor

A risk assessment procedure is required to be submitted to GW, Waka Kotahi and HCC by the Principal Contractor prior to commencement of construction, to demonstrate that risks will be identified throughout the construction phase.

The Principal Contractor shall develop, implement and maintain an environmental risk register throughout construction.

3. Part C – Implementation and Operation

This section of the CEMP addresses the implementation and operation of the CEMP and the SEMP.

3.1 CEMP Management Structure and Responsibility

This section includes:

- Operating Procedures;
- Emergency Contacts and Response; and
- Training.

3.2 Operating Procedures

Waka Kotahi has a series of Standard Operating Procedures (SOP) that all contractors have to abide by. These will be provided to the Principal Contractor upon award of the contract and includes those identified in the Social and Environmental Assessment section of PSF13. This includes Minimum Standard Z/22 Accidental Discovery Procedures. Any SOPS from GW and HCC that are relevant to the Project will also be provided to the Principal Contractor.

CEMP Expectations for the appointed Principal Contractor

Operating procedures need to be established and documented. SOPs that are relevant to the Project will be provided to the Principal Contractor by GW, Waka Kotahi and HCC prior to the commencement of the construction works.

It is expected that the Principal Contractor should develop and implement a series of Standard Operating Procedures (SOP) in order to facilitate CEMP adoption and implementation prior to construction start. These SOPs shall be agreed upon with GW, Waka Kotahi and HCC.

3.3 Emergency Contacts and Response

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

3.3.1 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 may have 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:

- Unforeseen impact on areas of high environmental value such as protected flora or fauna;
- Discharge non-compliances (e.g. sediment);
- Significant chemical / oil spill to a waterway or land;
- Hazardous substance release to air; and
- 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 Contractor achieve best practice.

Table 4 below outlines key contacts in case of an environmental emergency.

Table 4 Environmental Emergency Contacts

Name	Role	Contact phone number	Contact email
TBC	Construction Environmental Manager		
TBC	Superintendent		
TBC	Principal Contractor Project Manager		
TBC	Project Manager		
TBC	Other relevant personnel as appropriate.		
New Zealand Fire Service/Police		111	

Name	Role	Contact phone number	Contact email
Greater Wellington Regional Council	TBC	04 384 5708 or 0800 496 734	
24 Hour pollution hotline		0800 496 734	
Hutt City Council contact	TBC	04 570 6666	
Spill equipment stockist	TBC		

The Construction Environmental Manager should devise the emergency response procedures for the approval of the Project Manager.

3.3.2 Environmental Incident reporting

Where there is an environmental incident an Environmental Non-Compliance Report (ENCR) should be completed by the Principal Contractor (or representative) and submitted for review to GW, Waka Kotahi and HCC by the CEM.

All environmental incidents occurring at the site during the Project will be added to an Environmental Incident Register (EIR). The Construction Environmental Manager will be responsible for ensuring all data from completed ENCRs are included in the EIR as soon as practicable.

Discussion of the EIR will be an agenda item for all Project Management Team meetings. These meetings will review incidents that have occurred, suitability of response and preventative measures that have been put in place, as well as any patterns that may emerge over time and how these should be managed to avoid future incidents.

3.3.3 Location and Use of Emergency Management Equipment

Emergency response and management equipment shall be made available at all times during construction activities. All site staff and subcontractors shall be made aware of the location of this equipment as part of the induction process and as part of refresher toolbox talks (when deemed appropriate by the CEM or after an incident has occurred).

A site plan showing the location of spill kits and other emergency management equipment within the site compounds and at intervals along the route shall be prepared.

All staff and subcontractors shall be trained and made aware of their responsibilities in emergency response situations. The training shall include, but not be limited to, education regarding the environmental consequences of emergency situations and in the use of equipment and in the procedures of the CEMP.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall develop and implement an emergency response plan prior to construction start. This emergency response plan should detail:

- How to raise the alarm, and to assess and respond to possible pollution incidents through

- immediate environmental damage limitation action following the “source-pathway-receptor” model (reduce/eliminate the source of contamination- prevent the contaminant moving through the pathway and protect receptor); Identifying and nominating personnel with suitable training, knowledge and experience, for an emergency response team, and determining their responsibilities and lines of communication;
- Notification of and liaison with external parties such as emergency services, statutory consultees/undertakers, local authorities and local community;
- Location plan of emergency response equipment;
- Arrangements for rehearsal;
- Training of staff in emergency response and the use of emergency response equipment; and
- A system to identify and document training and awareness needs and attendance.

3.4 Training and induction

Successful implementation of this CEMP depends upon those responsible for its implementation and review being thoroughly conversant with its content, interpretation and performance measurement.

GW , Waka Kotahi, and HCC are committed to providing training for the Project workforce and putting in place contractual arrangements with the Principal Contractor that stipulate the need for adequate training to be provided to all contracted members of the workforce.

Staff involved in environmental monitoring required by any resource consent conditions and by the requirements identified within this CEMP will be trained and competent in the operation, calibration and maintenance of the equipment. Sampling staff will also be trained and competent in sample collection, handling, storage and transport methodologies and techniques. Records of staff training will be auditable and available for inspection, on request.

3.4.1 CEMP Training

All Project employees and subcontractors are to be inducted and given appropriate environmental awareness training. The training is to be relevant to their different roles to ensure that they are aware of:

- The importance of conformance with the environmental policy and procedures and with the requirements of this CEMP;
- The actual and potential environmental impacts of their work activities and the environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and this CEMP; and
- The potential consequences of departure from specified operating procedures.

The Project specific site environmental induction will include an overview of resource consent conditions, designation conditions, permitted activity standards, environmental control procedures and the SEMP. Specific individuals with environmental responsibilities may require the following training:

- Emergency response training;
- Spill kit training;
- Environmental auditing; and
- Sampling and Monitoring.

All environmental training records are to be held at the Project Construction Office. The Construction Environmental Manager will have responsibility for maintaining and updating these records.

As a requirement of each training session a record should be completed with the date of the training exercise, a description of the training content, the name of the trainer and trainee(s), and the signature of the trainer and relevant manager.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall develop, implement and maintain training systems that meet the requirements of this CEMP. These training systems shall be discussed and if required submitted to GW, Waka Kotahi and HCC for review and agreement prior to construction start.

In particular the Principal Contractor shall submit to GW, Waka Kotahi and HCC prior to the commencement of operations, a procedure for Environmental Training and Awareness, which identifies and addresses all training requirements. The training should address the specific requirements of this CEMP and the identified environmental risks as set out in the risk register. Environmental performance relies to a great extent on the general awareness of environmental issues of all personnel involved in the Project.

Training and awareness tools and indicators could include, but not be restricted to:

- Professional or trade qualifications;
- Experience;
- On the job training;
- Formal skill training;
- Inductions;
- Tool box talks; and
- Training and Awareness literature e.g. posters and leaflets.

4. Part D – Monitor and Review

In order to ensure that legal requirements, Project Partner objectives and relevant policies, standards and guidelines are being complied with, on-going monitoring and evaluation of environmental performance is required. Monitoring will be undertaken to check that the activity specific controls have been implemented and to identify any potential or actual problems and rectify them.

Environmental monitoring will include both scheduled (regular) monitoring and triggered (response) monitoring. As the focus of this CEMP is to anticipate and prevent adverse

environmental effects associated with the construction works, monitoring is crucial. The main focus of this monitoring will be field checks of the environmental controls or measures to reduce the risk of failure and thereby any adverse environmental impacts.

4.1 Compliance Monitoring

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

Environmental monitoring will take place as appropriate:

- Prior to construction to establish 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 SEMP's and required by consent conditions. The overall monitoring schedule, including environmental aspects (i.e. noise, water quality, air quality etc), frequency and monitoring requirements should be updated by the Principal Contractor. The monitoring schedule is intended as 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 CEM 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 relevant authorities;
- 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 CEM will advise the Principal Contractor's Project Manager of any noncompliance found during monitoring and will report these to relevant authorities as required;
- Where required by consent conditions, environmental monitoring results will be reported to the regulator and the CS-VUE record will be updated. This will be overviewed on a regular basis by the Principal Contractor's Project Manager.

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

As part of the commitment to CEMP environmental performance evaluation, Environmental Compliance with all applicable legislation forms part of the CEMP audit process. Routine compliance audits will be used to assess on-going performance and compliance.

4.1.1 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;
- Daily – checking of weather forecast and on-site weather conditions and any pre and post storm inspections as required;
- Inspections as required by environmental control procedures e.g. sediment control devices inspected daily to ensure that they are installed correctly, operating effectively and are properly maintained;
- Weekly – Formal site inspections are to be completed by the Construction 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); and
- Monthly – The Project Manager(s) and CEM will undertake a monthly site inspection, to confirm the environmental monitoring programmes and work procedures containing environmental controls are being implemented in accordance with the CEMP, Operational Work Programme and resource consent and designation conditions.

Triggered inspections will be undertaken in response to the following:

- Feedback – upon receiving feedback on any issue, an inspection of the area affected or involved will be undertaken;
- Extreme weather – site control measures will be inspected immediately before, during and after extreme weather for any non-compliance with resource consent conditions; and
- Non-compliance – inspections will be undertaken immediately following spills or other incidents or emergencies and after “near miss” events.

The findings of these triggered inspections need to be recorded. The CEM will submit a site inspection and environmental performance report to the Contractor's Project Manager at the monthly management meeting. The Principal Contractor Project Manager will report to the Project Manager. 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, feedback received, incidents, associated investigations and corrective actions, and environmental inductions and awareness training provided.

Sampling protocols, equipment and calibration

As part of the sampling and monitoring requirements there is a need for the use of sampling equipment to obtain compliance and surveillance data; regardless of who performs these task (specialist subcontractor/consultant or Principal Contractor staff). The CEM shall make sure that staff are appropriately qualified and trained and the equipment is appropriate for the task and calibrated.

Table 5 sets out requirements for the maintenance and use of sampling equipment that could be used for the collection of compliance data (e.g. noise, pH probe etc.).

Table 5 Equipment Calibration and Maintenance

Tasks	Monitoring	Performance Criteria	Corrective Action
Calibrate and maintain equipment used in environmental monitoring	Construction Environmental Manager to inspect records to establish regular maintenance and calibration programme	Calibration and maintenance records	Prohibit use of faulty or un- calibrated equipment
Sampling, calibration and maintenance undertaken by Competent person	Construction Environmental Manager to inspect training records to establish staff competence	Observation of calibration and maintenance procedures to supplier/ manufacturers guidelines Laboratory sample control documents	Provision of adequate training/ instruction

4.1.2 Monitoring Data Review

The CEM and Principal Contractor Project 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 Project Manager, Principal Contractor Project Manager and the CEM to discuss the results of the weekly and monthly site monitoring.

On a monthly basis the Construction Environmental Manager will review the monitoring schedule and compliance results from the required Environmental Monitoring as per the resource consent and designation conditions. The policy, objectives and procedures described in this plan will be regularly reviewed for effectiveness and revised accordingly.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement, a compliance and general monitoring procedure that meets the requirements of this CEMP.

The procedure should set out as a minimum:

- Responsibilities;
- Competency required;
- Frequency;
- Data analysis techniques;
- Duration; and
- Reporting formats

4.2 Reporting

Table 6 below outlines the reporting requirements. This will be reviewed and refined following the appointment of a Contractor and it may be possible to combine reporting requirements with the agreement of the Project Manager.

Table 6 CEMP 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	CEM	The Construction Project Manager, GW, Waka Kotahi, HCC
Feedback Form	Obtain respondents details	At the time of the feedback	CEM	Feedback Register
Environmental Feedback Register	Information provided on Environmental Feedback Form	At feedback closure	CEM	Project Manager Construction Project Manager Project Manager
Non-Compliance Report	Identification of non-complying activity which has resulted in environmental feedback or an incident onsite	During feedback investigation	CEM	Project Manager
Construction Compliance Report	Summary of feedback received and resolutions	Quarterly	CEM	The Project Manager and the relevant authority or authorities.
General Site Monitoring Report	Summary of site inspections, including daily, weekly and monthly inspections – consent and designation and CEMP compliance	Monthly	CEM	Principal Contractor Project Manager

Report	Reporting Requirements	Timing	Responsibility	Recipient
Environmental Formal Site Inspection	Weekly site inspection sheets	Weekly	Environmental Management Team	CEM
Environmental Incident Reports	Obtain the incident details	At the time of the incident	On site personnel involved in the incident	CEM
Incident Response Reports	Obtain incident information	At the completion of the Incident situation	CEM and on site personnel involved in the environmental emergency	Principal Contractor Project Manager, Project Manager and GW, Waka Kotahi, HCC – where appropriate and required under legislation
Environmental Audits	Summary of quarterly environmental audit findings	Quarterly, within two weeks of audit completion	CEM	Project Manager and Construction Project Manager
Site Audits	Summary of informal audit findings	Monthly, within two weeks of audit completion	CEM	Construction Project Manager and on site personnel.

A monthly report shall be produced that provides a summary of information pertaining to the following:

- Permits and any resource consent approvals granted during the month;
- Results of environmental monitoring (inspections and audits) conducted during the month; and
- Any environmental non-conformances: incidents, emergencies, negative feedback, near misses etc.

This report shall be prepared by the CEM or delegate and tabled at Project Management Team meetings. The report should coincide with the CEMP Audit programme; whereby audit observations and findings can be included in a timely manner for discussion at the next monthly meeting.

Any resource consent conditions that require data and information reporting to Greater Wellington Regional Council and/or Hutt City District Council will be identified, and provision made for submission by the Principal Contractor and the Construction Environmental Manager.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement a reporting schedule that meets the requirements of this CEMP.

4.3 Documents and Records

4.3.1 Principal Contractor Documentation

The Principal Contractor will undertake the construction of the works in accordance with the contract documents, legislation and the CEMP. As a minimum the Principal Contractor should demonstrate to GW, Waka Kotahi and HCC that documentation systems should cover the base requirements of the CEMP and is fully tried and tested.

Documents relating to the CEMP, their issue, revision, storage and archiving will be in accordance with the requirements of the Quality Management System (QMS) and Environmental Management Systems implemented by the Principal Contractor. A schedule of Environmental Records will be maintained by the Construction Environmental Manager.

The environmental records will include amongst others, monitoring results, results of any watching briefs and surveys and pollution incidents in accordance with the contract. A separate record of any feedback or comments will be maintained, together with any actions taken and responses given.

Site induction and staff training records will also be kept in a separate filing system, which will be regularly checked by the site Construction Environmental Manager, as this will help show that all staff are trained at sufficient intervals for their area of work.

The records will be archived as required by the requirements of the QMS and Environmental Management Systems implemented by the Principal Contractor.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement procedures for Document and Record management and control, that sets out as a minimum:

- Retention times;
- Types of records;
- Responsibilities;
- Formats;
- Circulation and issue control; and
- Revision and updates.

This can be as part of a documented QMS.

4.4 CEMP audits

Environmental audits are a means of obtaining information about environmental performance and compliance with the objectives and targets of the CEMP. They also help to signpost any areas of concern or where corrective action may be required in order to reduce the potential for any adverse environmental impacts.

Performance of the CEMP will be reported to the Project Manager by the Principal Contractor and the CEM. Performance will be assessed in terms of the delivery of the objectives. The objectives of the CEMP are the benchmarks of performance and will be subject to ongoing monitoring.

The Principal Contractor and CEM shall devise an audit schedule in accordance with the finalised construction programme to assess the overall performance on site in a timely and appropriate manner.

The CEM and the Principal Contractor shall audit the construction site on a regular basis as deemed appropriate by the CEM, by utilising an audit checklist to be provided by the Principal Contractor. At any time at any time a nominated member of GW, Waka Kotahi and HCC may accompany the audit.

Audit checklists should be updated and refined by the CEM regularly to consider the changing nature of the construction programme and inputs from corrective actions logs originating from non-conformance reports.

Audits will be conducted during the course of the construction works by various people and with regular frequencies. Table 7 below provides proposed environmental auditing frequency and outlines who will undertake the audits.

Table 7 Environmental Audits Schedule

Type of Audit	Responsibility	Purpose	Frequency
Internal audit	CEM (or delegate, to be approved by GW, Waka Kotahi and HCC)	Assess effectiveness of controls and compliance with environmental procedures. This may be combined with internal site safety inspections if appropriate.	Fortnightly
Quarterly audit	External environmental personnel TBC	Identify issues or other matters that may not be noticed by personnel who are working on the Project on a day-to-day basis.	Quarterly
External audit	Regulatory authorities	Confirming compliance with consent conditions	As required

Discussion of environmental audits will be an agenda item for all Project Management Team meetings. These meetings will review audits that have occurred, and any measures that may be required to improve conformance with the CEMP, as well as any updates to the CEMP that may be needed.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement an auditing procedure and schedule that meets the requirements of this CEMP.

4.5 Corrective Action

Corrective actions are required when a non-conformity is identified. Corrective actions are needed for any problem, such as legal non-compliances, to devise and initiate appropriate controls in order to prevent a reoccurrence. The need for corrective action may be identified under the following circumstances:

- When inspecting environmental protection measures on site and identifying that they have not been correctly installed or maintained;

- When site inspections or audits are undertaken;
- When negative environmental feedback is investigated;
- After analysing what happened in an incident, emergency or near miss; or
- From checking or reviewing the CEMP.

Preventative action is part of the corrective action process and involves identifying any potential problems before they occur and to minimise the potential to reoccur.

4.5.1 Environmental Non Compliance and Corrective Actions

If a non-conformance is discovered during an audit or otherwise reported, an Environmental Non Conformance Report Form (ENCR) shall be completed and corrective actions shall be devised. The recommended corrective actions will be recorded in the Corrective Actions Log.

Substandard performance will be measured by resulting actions i.e. negative feedback, 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:

- Eliminate;
- Isolate;
- Minimise;
- Improve;
- Remove; or any combination of the above.

An 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 use of NCRs.

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

The CEM is responsible for handling and investigating any non-compliance. Any action required will then be directed to the relevant personnel for action and a time frame given for completion. Upon completion of the corrective action, the relevant personnel shall notify the Environmental Manager of the action taken, at which time the CEM will update the NCR and close it out if appropriate.

Progress of any corrective actions will be recorded in the NCRs. This information will be monitored and reported to GW, Waka Kotahi and HCC or their delegate in conjunction with the schedule of site inspections.

Audit records will be maintained in accordance with the expectations of this CEMP.

Corrective actions should be ranked commensurate to the risk. On occasions where legal compliance is an issue or environmental pollution is imminent, then the corrective actions should be implemented as soon as possible.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to the Project Partner for agreement a procedure that details the approach toward identifying environmental non-conformances and the development, implementation, and validation of corrective action. This can be as part of a QMS.

4.5.2 Communications

Communications Internal and External

An important procedure for any Project is the communication procedure. A Communications Plan is required to be prepared and a designated public liaison person who will be the main and readily accessible point of contact at all times for persons or parties affected by construction work should be appointed.

The internal component of the Communications Plan shall state how GW, Waka Kotahi and HCC and the Principal Contractor will communicate on matters relating to the CEMP. This will include a section in the Principal Contractor's Monthly Report on the implementation of the CEMP covering;

- Inspection and measurement done;
- Any non-compliance;
- Any corrective/preventative action required, by when and who will do it;
- Opportunities pursued for social and environmental enhancements; and
- Successful innovations that may contribute to best practice.

As part of the external Communications Plan a procedure is required for receiving, documenting, notifying and responding to relevant external parties and the community. This could include:

- 24-hour Project construction response number or maintenance hotline;
- Project website;
- Letterbox drops;
- Public events;
- Media releases or other advertising activities; and
- Methods for responding to feedback received.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement a communication procedure that meets the requirements of this CEMP. This should be done in conjunction with any Stakeholder Management and Communication Plan (or equivalent) that may be prepared for the Project

4.6 Feedback Management

When environmental feedback (complaints, comments or compliments) is received, it will be actioned as necessary by the Construction Environmental Manager and/or the appointed Stakeholder and Engagement team for the Project. The respondent for the Project will then complete the following forms:

Feedback Form

A standard Feedback Form template will be used for all site specific activities throughout the Project.

The details of the investigations and any follow up actions will be recorded for each feedback response. The form will contain but not be limited to:

- Name and address;
- Identification of the nature of the feedback (positive or negative);
- Date and time of the feedback and alleged event.

An inquiry should be commenced as soon as practicable from receiving adverse feedback.

Contact will be made with the respondent within the same working day - an interim response advising that investigations are continuing is acceptable. A formal written response will be provided to the respondent and appropriate regulatory authorities.

Feedback Register

A Feedback Register (FR) will be used to document all feedback (both positive and negative), received for the Project. This will include environmental incident forms.

Feedback received will be communicated to on-site staff members during weekly Tool Box sessions. The Feedback register shall also be discussed at regular meetings held between the Environmental Manager, Principal Contractor Project Manager and the Project Manager.

CEMP Expectations for the appointed Principal Contractor

The appointed Principal Contractor can use the templates and process contained within this CEMP or should submit to GW, Waka Kotahi and HCC for prior evaluation and agreement a procedure for the capture, documentation, investigation and resolution of feedback particularly adverse feedback.

4.7 CEMP Management Review

The CEMP 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 SEMP's 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 physical environment.

A management review of the CEMP will be undertaken at least annually by the CEM. The review will take into consideration:

- Input from GW, Waka Kotahi and HCC;
- Site personnel comments;
- Audit findings and recommendations;

- Environmental monitoring records;
- Environmental feedback, incidents and emergencies;
- Details of corrective and preventative actions;
- Environmental non-compliances;
- Changes to organisational structure;
- On-going 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 superseded. Each new/updated version of the CEMP documentation will be issued with a version number and date to eliminate superseded CEMP documentation being used.

The on-going effectiveness of the arrangements made in this CEMP will be monitored and reviewed through the audit and monitoring process and during all meetings that occur as part of the Project management process.

4.7.1 Final CEMP close-out report

The Construction Environmental Manager will be responsible for the preparation and drafting of a close out report that details CEMP performance over the construction phase, sets out issues that any relevant Operational Environmental Management Plan needs to consider or will inherit, and sets out recommendations and observations regarding overall performance and effectiveness of the CEMP.

The closeout report will be reviewed by the Principal Contractor and Project Partner delegates. The Project Partner representatives who will take over the asset should also be provided a copy for comment.

The final close out report will be signed off by the Project Manager and Principal Contractor. All records and reports relating to the CEMP plus the close out report will be compiled by the CEM into a single final CEMP document. Copies of this final document will be circulated as required and at the discretion of the Project Manager. This report should be timed to coincide with the transition phase.

CEMP Expectations for the appointed Principal Contractor

The Principal Contractor shall submit to GW, Waka Kotahi and HCC for agreement a review and reporting schedule that meets the requirements of the contract, any consent conditions and this CEMP.

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