



Construction Environmental Management Plan

Waipaoa Flood Control Scheme Upgrade

June 2018



Construction Environmental Management Plan

Waipaoa Flood Control Scheme Upgrade

June 2018

Prepared by:

Joss Ruifrok, Senior Project Engineer

Reviewed by:

Neil Daykin, Land, Rivers & Coastal Manager

Approved by:

Neil Daykin, Land, Rivers & Coastal Manager

Signed:

.....

CONTENTS

1.	Overview.....	5
1.1	Environmental Management Scope	5
1.2	Purpose of the CEMP.....	5
1.3	Objectives	5
1.4	CEMP Matters to Address	6
1.5	CEMP Review	6
1.6	CEMP Certification.....	6
2.	Project Description	6
2.1	Scope of Construction Works	7
2.2	Sequence of Works	7
2.3	Construction Method Statement	7
3.	Environment Policy Statement	12
4.	Project Construction Environmental Issues	12
4.1	Dust Control	12
4.2	Erosion and Sediment Control.....	13
4.3	Construction Noise and Vibration Control	15
4.4	Archeological Management	16
4.5	Fish Passage Management	16
5.	CEMP Management Structure and Responsibility	17
5.1	Key Personnel	17
5.2	Environmental Training	18
5.3	Emergency Response	19
5.4	Incident Management	19
6.	Environment Monitoring, Auditing and Reporting	19
6.1	Daily Site Inspections	20
6.2	Weekly Site Inspections	20
6.3	Monthly Site Inspections	20
6.4	External Site Inspections	20
6.5	Contractor Reporting and Meetings	20
6.6	Auditing	20
6.7	Document Control and Records	20

Tables

Table 1	The Sequence of the proposed upgrading work	7
Table 2	Management roles and responsibilities	17

Figures

Figure 1	Plan of the Waipaoa stopbank upgrade and priorities	8
Figure 2	Typical section of the proposed stopbank upgrade on the landslide	9
Figure 3	Typical section of the proposed stopbank upgrade on the riverside	9
Figure 4	Railway Bridge location	10
Figure 5	Location of potential borrow areas within existing stopbank berm areas	11
Figure 6	Location of potential areas at the left and right sides of the Waipaoa River inside the existing stopbank berm area	11

1. Overview

1.1 Environmental Management Scope

The purpose of the Construction Environmental Management Plan (CEMP) is to set out the environmental management and monitoring measures to be put in place during construction of the Waipaoa stopbank which is part of the Waipaoa Control Scheme (WFCS) in Gisborne.

The CEMP sets out how the construction works will be managed to ensure that the works are undertaken in accordance with Gisborne District Council requirements.

The CEMP includes measures to manage effects on the environment during construction only, and does not include any ongoing management and monitoring measures except as it pertains to potential construction effects.

1.2 Purpose of the CEMP

The purpose of the CEMP is to:

- Meet the requirements of the resource consent conditions;
- Ensure application of best practice environmental management;
- Ensure compliance with environmental legislation; and
- Manage environmental risks associated with the construction of the stopbanks.

The CEMP is set out in the following way:

- Section 1 Provides an introduction and summary of the environmental management objectives;
- Section 2 Provides a brief description of the works and proposed construction methodologies;
- Section 3 Provides the environmental policy statement;
- Section 4 Describes the environmental issues and proposed controls;
- Section 5 Describes the organization, roles and responsibilities of key environmental personnel, including contact details; and
- Section 6 Outlines the approach to environmental monitoring, auditing and reporting.

1.3 Objectives

The CEMP objectives are as follows:

- To comply with resource consents and associated legislation applicable to the Contract Works and to apply best practice environmental management;
- To actively encourage a culture of environmental awareness and commitments within the Project Team; and
- To undertake the project in a manner to enhance both Gisborne District Council and the Contractor's reputation.

1.4 CEMP Matters to Address

This draft CEMP accompanies the resource consent application to GDC and will be submitted to GDC's Regulatory Manager.

It addresses the following matters:

- Noise & Vibration Management
- Dust Control
- Erosion and Sediment Control
- Water Quality
- Site Remediation; and
- Heritage discovery.

1.5 CEMP Review

The CEMP for the WFCS is intended to be living document that is updated as required and continually monitored over the course of project. Making changes to the CEMP is an important aspect of improving a project's environmental management in the following situations:

- Following any major environmental incidents;
- At the completion of the environmental audits; and
- At the end of the project (to allow for improvements in subsequent projects); and
- During long duration projects.

The review process allows opportunity to amend 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 and a copy of the original CEMP document and subsequent version shall be kept for project records. Updated CEMPs will be re-submitted to GDC's Regulatory Manager.

1.6 CEMP Certification

Prior to construction commencing, a completed CEMP shall be submitted for certification to GDC's Regulatory Manager, in accordance with the process outlined in the Proposed Conditions for the WFCS upgrade.

2 Project Description

The WFCS began more than 60 years ago to provide flood protection to the productive Poverty Bay floodplains and Gisborne City, following heavy flooding in a 1948 storm. It has a dual urban and rural flood protection function. The Scheme consists of some 64 km of stopbank, 638 ha of floodway land, and associated bank protection works and culverted outlets along the Waipaoa River.

In the 2015 Long Term Plan, Gisborne District Council committed to a 15-year (2015-2030) WFCS Resilience Project to improve the level of protection offered by the scheme. The project will provide a consistent level of protection, confidently above '100-year return period' river levels (with a minimum 600mm free board) based on the expected future climate change to 2090.

2.1 Scope of Construction Works

The construction activities planned include:

- Site preparation works
- Earthworks associated with the stopbank upgrade
- Earthworks associated with the borrow areas
- Bank strengthening works, tree planting and fencing
- Culvert works associated with stopbank upgrade; and
- Reinstatement works.

2.2 Sequence of Works

The WFCS stopbank upgrade project has a 15-year timeframe with preliminary sequencing identified in Table 1.

Table 1: The Sequence of the Proposed Upgrading Work

Year	Location
2015/16	Planning
2016/17	Planning
2017/2018	Planning, Land Purchase
2018/19 – 2030/31	Left bank from XS 18.5 to XS 11
	Left Bank from XS 11 to XS 3
	Left Bank from XS 3 to XS 0.25
	Left Bank from XS 24.5 to XS 18.5
	Right Bank from XS 3 and XS 0.25 and the right bank of Te Arai River
	Right bank from XS 11 to XS 3.5 and the left bank of Te Arai River
	Right bank from Whakaahu Stream confluence to XS 11, right bank from XS 16.5 to the Whakaahu Stream confluence, and left and right bank of the Whakaahu Stream.
	Right bank from XS 19 to XS 16.5
	Right bank from XS 23 to XS 22
	Right bank from XS 28 to XS 22.5

Figure 1 shows the location work priorities. Staging is likely to vary depending on contractor negotiations and land negotiation and final staging arrangements will be submitted to Council's Regulatory Manager prior to works commencing.

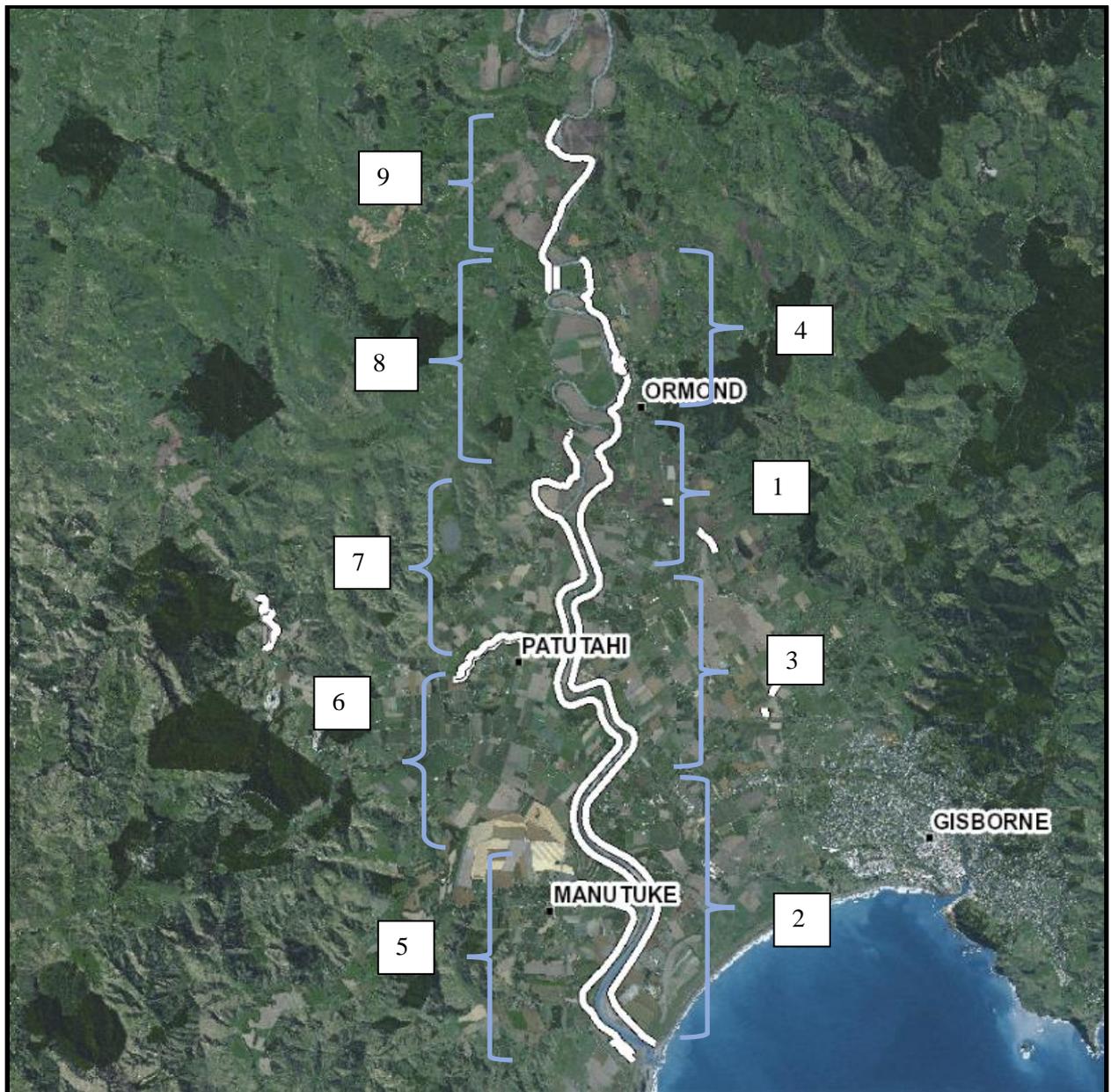


Figure 1: Plan of the Waipaoa stopbank upgrade and priorities

2.3 Construction Method statement

The following section provides an overview of the proposed work.

2.3.1 Site Establishment

Prior to the commencement of the work, some early enabling works will be undertaken, namely:

- Utility diversions and protection works
- Relocation of affected infrastructure on private land
- Installing fence lines along the edge of the works
- Site clearance, removal of vegetation, fences, buildings and the like
- Construction of temporary access routes to work sites and relevant affected properties
- Construction of contractor's compound; and
- Construction of sediment settlement ponds and environmental controls.

There are several utilities that will need relocation, amendment or protection throughout the project. The necessary approvals and agreements to enable these works will be obtained at the detailed design stage.

2.3.2 Earth Works

The figures below show a typical cross section of the proposed stopbank upgrade.

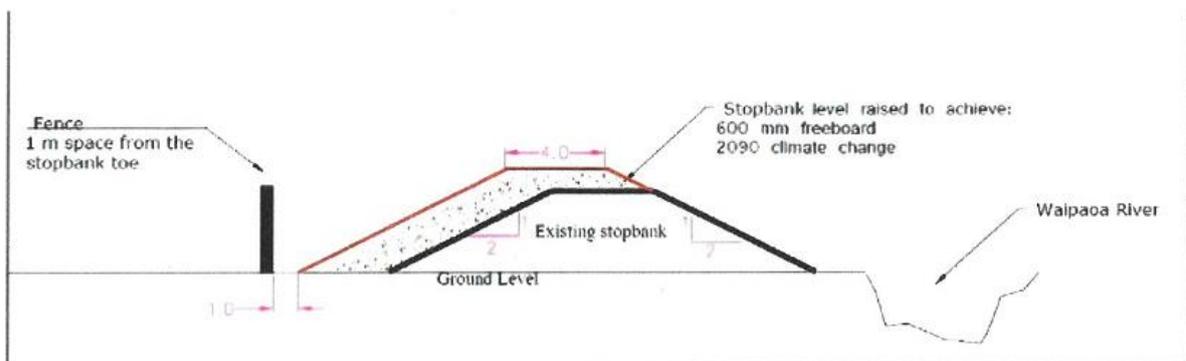


Figure 2: Typical section of the proposed stopbank upgrade on the landside

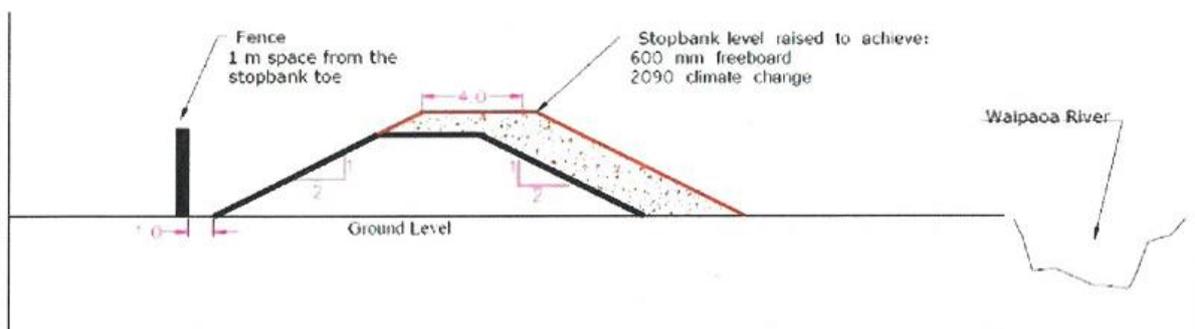


Figure 3: Typical section of the proposed stopbank upgrade on the riverside

In some sections of the stopbank where there is a high risk of riverbank erosion, hard protection options may be required. Protection will be provided using willow tree planting or rock revetments.

There are approximately 76 existing culverts of various sizes located within the stopbanks, providing for stream outlets, land drainage and ephemeral streams. All the culverts have flood gates on their outlets to prevent backflows flooding the land side. Where a culvert extension is required, improving fish passage will be considered for the design, installation and maintenance procedures.

There is one location where the railway crosses the Waipaoa River (Figure 4). There may be some construction work required to protect this section but appropriate consultation with KiwiRail and detailed design will be undertaken closer to the construction time. This section is not planned to start within the next 3-4 years.

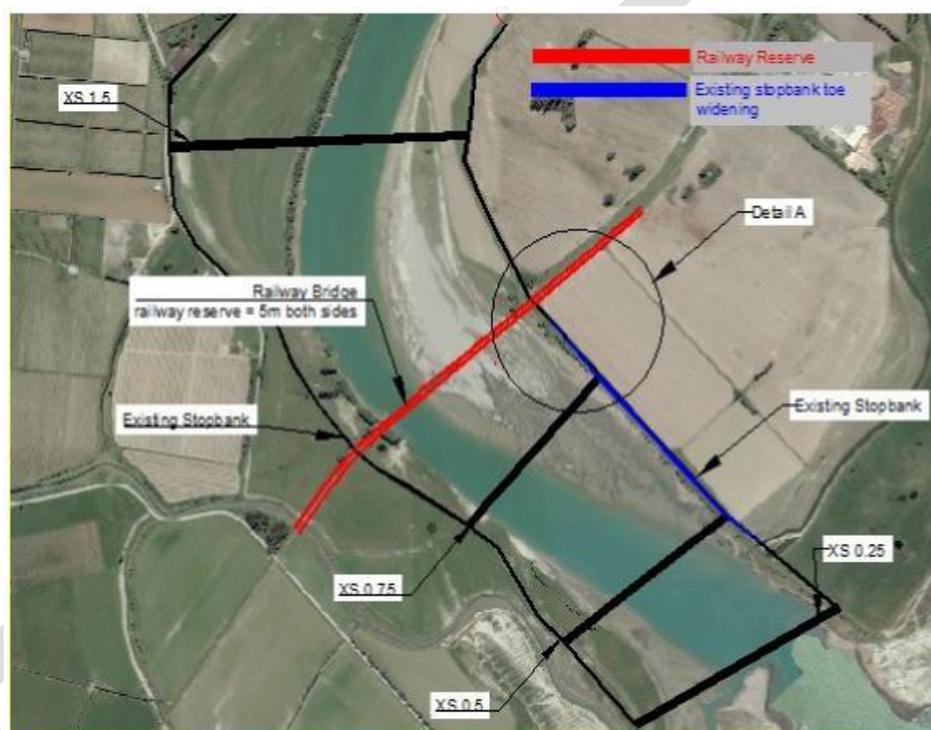


Figure 4: Railway Bridge Location

The bulk of the fill material for the stopbank will come from the borrow areas adjacent to each part of the stopbank. The aim is to minimise haulage distances and greatly reduce the impact of construction traffic on the surrounding roading network. Some of the potential borrow areas are privately owned land and will require permits/agreements before the construction work commences. The borrow areas have been identified to allow sufficient time for sampling and laboratory testing. Test results will be analysed and compaction criteria established before the material is used for construction. The location of the potential borrow areas is shown in Figure 6.

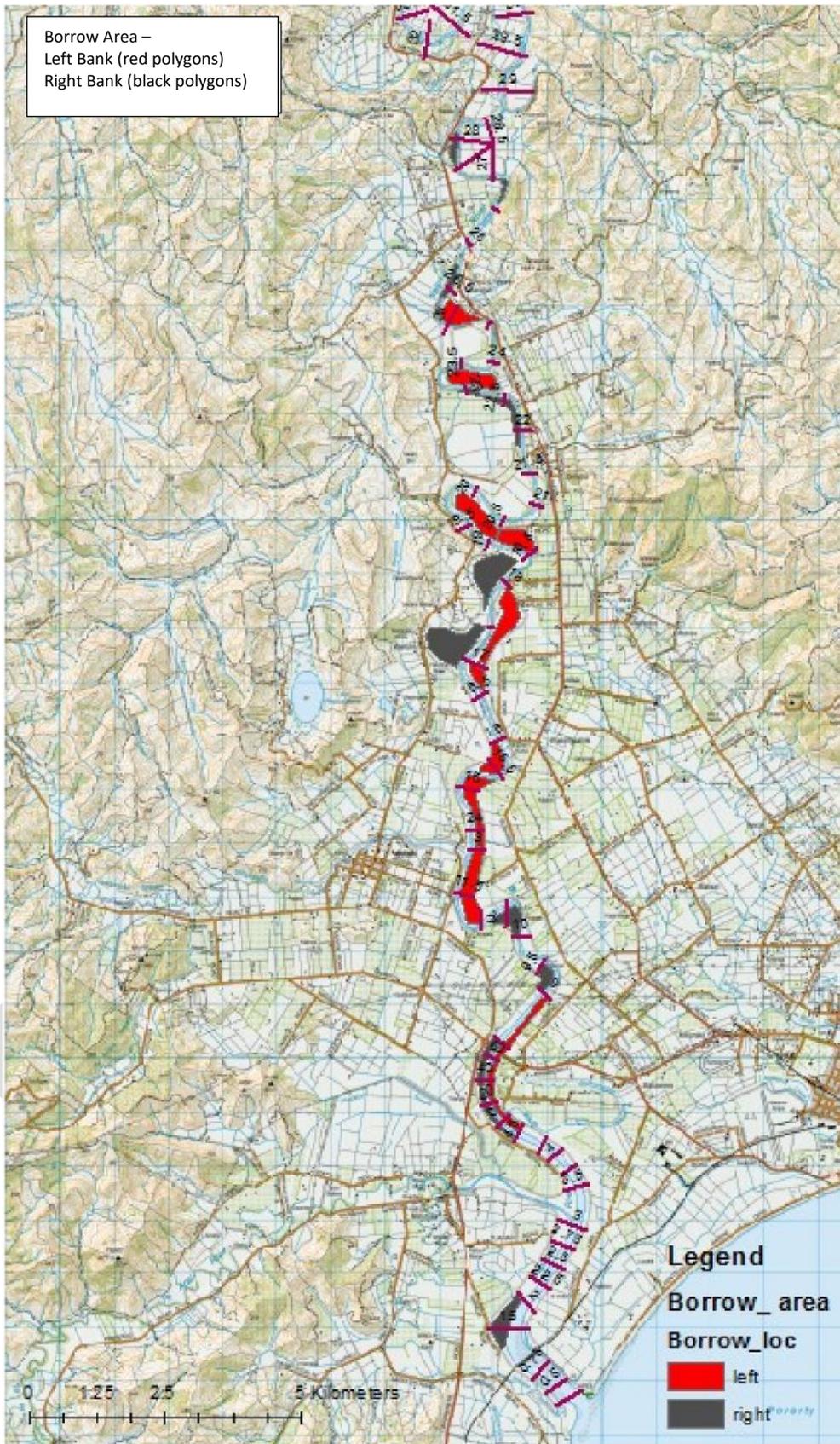


Figure 5: Location of potential borrow areas within existing stopbank berm areas.

Figure 6:

Location of the potential borrow areas at the left (the red polygons) and right side (black polygons) of the Waipaoa River inside the existing stopbank berm areas.

2.3.3 Erosion and Sediment Control

Erosion and sediment control will be provided throughout the duration of the construction works and maintenance period to ensure protection of the downstream receiving environment from the adverse effects of sediment from the work area. Controls will be in place in accordance with Hawke's Bay Waterway Guidelines for Erosion and Sediment Control to reduce potential for sediment during construction to enter the water.

These guidelines are attached as **Appendix 1** to this Plan.

3 Environmental Policy Statement

The works will be undertaken in accordance with Gisborne District Council's and the Contractor's environmental policy statements. Environmental policy statements will be provided by the Contractor before construction work commences as part of the final CEMP.

4 Project Construction Environmental Issues

Based on the understanding of the works construction programme and an understanding of the local environment (from the AEE) the environmental issues are outlined in this section.

The following sections identify project related potential effects; guidance for the management of the effects; and the project issues that need to be considered in the management of the effects. Thereafter each section concludes with a reference to a management plan and sets out the expectations for the appointed Principal Contractor.

4.1 Dust Control

4.1.1 Potential Effects

The proposed work will entail relatively large-scale earthworks. Exposed earthworks can be a significant source of dust which can affect human health and plant life along the edge of the earthworks area and can be a nuisance to the public in the surrounding area.

During wet weather conditions dust that has been deposited on the ground can run off into water courses contributing to sediment loads unless sediment control measures are put in place.

Sediment deposited on sealed public roads can also result in a dust nuisance. Rainfall, water evaporation and wind speed are meteorological conditions having the greatest effect on dust mobilisation.

The following are potential sources of dust discharges associated with the construction phase of the work:

- Dust from roads and access areas generated by trucks and other mobile machinery movements during dry and windy conditions
- Excavation and disturbance of dry material
- Loading and unloading of dusty materials to and from trucks.

4.1.2 Project-Specific Issues and Requirements

Good on-site management is the most effective way to control dust. Potential mitigation measures include:

- Wind break fencing
- Dust suppression – through the use of water carts or water sprinkler systems during adverse dry conditions
- Semi-permanent working areas and construction site access roads should be constructed with an appropriate base, kept metalled, and kept damp
- Minimising exposed surfaces by only exposing surfaces to be actively worked and by stabilising completed areas
- Excavated areas should be watered as necessary, and stabilised rapidly (e.g. through grassing or mulching)
- Stockpile dampening and covering
- Minimizing stockpile drop heights
- Using compactors and rollers to seal exposed surfaces
- Plant and vehicle maintenance and management
- Managing vehicle and tyre wash-down areas to avoid dust nuisance; and
- Setting vehicle speed limits in localised areas if appropriate.

The mitigation measures to be adopted to control dust and other air contaminant discharges are dependent on the Principal Contractors method of working and programme and as part of their contact they will be required to identify the following:

- Potential sources of dust;
- Periods of time when emission of dust might arise from construction activities;
- Measures for minimising and suppressing dust emissions;
- Methods for monitoring dust during construction;
- Communication, consultation and complaints response procedures.

4.1.3 CEMP Expectations for the appointed Principal Contractor

The principal contractor will be required to submit to GDC Land Rivers and Coastal Manager a Dust Control Management Plan outlining proposed dust mitigation. This will be included in the staging details to be provided to GDC's regulatory manager prior to each construction season.

4.2 Erosion and Sediment Control

4.2.1 Potential Effects

The scale of the project means that a relatively 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 the downstream receiving environment from the adverse effects of sediment from the work area.

4.2.2 Project-Specific Issues and Requirements

Key issues which will require addressing include:

- separating clean from dirty water
- protecting adjacent properties from surface flows
- protecting water quality and aquatic ecosystems from site drainage during construction and associated earth disturbance activities
- protecting the natural character and amenity values of the Waipaoa River
- minimising potential adverse effects from flooding and erosion of land and/or water courses from site drainage during construction and associated earth disturbance activities; and
- endeavouring to ensure that the final surface drainage ability of the berm borrow locations is as good or better than pre-existing.

4.2.3 CEMP Expectations for the appointed Principal Contractor

An Erosion and Sediment Control Plan (E&SCP) should be provided by the Principal Contractor to GDC's Rivers Land and Coastal Manager addressing relevant matters outlined in HBRC Guidelines for Erosion and Sediment Control. This Plan shall be provided to GDC's Regulatory Manager as part of staging details to be provided prior to each construction season. This Plan shall be complied with throughout the duration of the construction works and maintenance period to ensure protection of the downstream receiving environment from the adverse effects of sediment from the work area.

The E&SCP shall provide details including (but not limited to)

1. Methods of sediment detention to minimise sediment discharge into the nearby watercourse. For example, details of width of any vegetated strip to be provided between the borrow excavation and the top of the riverbank. Typically, this will be 2 metres depending on the space available.

Note: An individual borrow area will typically remain open from two weeks on small jobs, through to 10 or 12 weeks on larger jobs if rain delays work.

2. Details of post construction works including timing and areas to be re-grassed/revegetated to prevent sediment from entering the water.

Note: Some land owners or licensees may choose to crop post construction and therefore re-grassing will not occur.

3. Methods for minimizing the time any borrow area will be exposed for example by including filling, compacting and finishing stopbank to final design height of each section before proceeding to new sections. Multiple borrow areas supplying a long length of stopbank upgrade will be similarly be reinstated in a progressive manner as the respective sections of stopbank they provide material for are completed.

4. Minimizing machinery working within any waterways

4.3 Construction Noise and Vibration Control

4.3.1 Potential Effects

The proposed work will require the use of large mobile mechanical equipment and processes that are likely to generate elevated levels of noise. There are therefore likely to be some significant temporary noise effects during the construction phase. Construction noise is expected to be generated from the following activities:

- Works including general earthworks, using heavy machinery e.g. excavators, compactors, rollers and motor scrapers.

All noise from construction shall comply with the following criteria for long term construction activities:

Time period	Average Maximum Noise Level (dBA)		
	L95	L10	LMAX
Monday – Saturday 0600 – 1800 hours	60	75	90
Monday - Saturday at all other times	55	45	70

Sound levels shall be measured in accordance with New Zealand Standard NZS6801:1999 “Acoustics: Measurements of Environmental Sound” and assessed in accordance with NZS6802:1991 “Assessment of Environmental Sound”.

Emission of construction noise shall not exceed 168 calendar days per site in any 12 month period.

All vibration from construction shall comply with the following vibration criteria:

The maximum weighted vibration level (Wb or Wd) arising from construction, when measured at or within the boundary of any site, or the notional boundary of any adjacent dwelling shall not exceed the following limits:

General vibration	Time Ma	Maximum Weighted Vibration Level (Wb or Wd)
	0600–1800 hours Monday to Saturday	45mm/s ²
Construction Vibration	Time Ma	Maximum Weighted Vibration Level (Wb or Wd)
	0600–1800 hrs Monday to Saturday	60mm/s ²
	At all other times	15mm/s ²

4.3.2 Project-Specific Issues and Requirements

Noise and vibration mitigation measures will include:

- Ensuring all machinery is in good condition upon its arrival at the site.
- The restriction in use of heavy machinery outside of specified working hours for enabling works, topsoil stripping and general earthworks.
- Construction superintendents will monitor machines to ensure they are not generating unnecessary noise, and will rectify unnecessary noise.
- Excavators and dump trucks will be fitted with appropriate exhaust silencers.
- When machinery and plant is not required to be running, it will be switched off and not left idling.

- Mobile plant will not be parked close to any residential boundaries to avoid noise generation during engine start-up and close down periods.
- Sensitive receivers will be advised of project progress and when particular activities are to be carried out that have the potential to affect them, they will be given advance notice of any required extension to normal work hours.
- All noise complaints will be acknowledged, recorded and investigated. The complainant will be advised of the findings of the investigation and changes to minimise any reoccurrence.
- A construction worker education programme, including a section in the Project induction relating to noise generation and mitigation, will be used.
- Monitoring regime in line with the conditions of consent, if required.

4.3.3 CEMP Expectations for the appointed Principal Contractor

Contractors will be expected to comply with the above construction standards for noise and vibration.

4.4 Archaeological Management

Many of the culverts within the WFCS will require extending, generally at the outlet. Works are to be undertaken in accordance with the Culvert Construction Guidelines for Council administered drainage Areas, the site management methodology outlined in this Construction and Environment Management Plan, and Hawke's Bay Waterway Guidelines for Erosion and Sediment Control. Culvert extension methodology and fish passage mitigation will be provided in accordance with proposed conditions of consent 31 and 32.

4.4.1 Potential Effects

There is a probability that archaeological sites/material may be discovered within the proposed project work areas. These areas are most likely to correspond with the locations of previously recorded archaeological sites within or in the immediate vicinity of the river and floodway corridor.

Further investigations are being undertaken by an archaeologist to assist with this.

4.4.2 CEMP Expectations for the appointed Principal Contractor

The contractors, including all construction staff, must be aware of their obligations under the Heritage New Zealand Pouhere Taonga Act 2014. This will be further informed by the outcome of the archaeological field survey and any subsequent authority applications to Heritage New Zealand that will be required prior to works commencing.

4.5 Fish Passage Management

Many of the culverts within the WFCS will require extending, generally at the outlet. Works are to be undertaken in accordance with the Culvert Construction Guidelines for Council administered drainage Areas, the site management methodology outlined in this Construction and Environment Management Plan, and Hawke's Bay Waterway Guidelines for Erosion and Sediment Control. Culvert extension methodology and fish passage mitigation will be provided in accordance with proposed conditions of consent 31 and 32.

5 CEMP Management Structure and Responsibility

Once offices are established on site, these details will be updated and provided to GDC’s Land, Rivers and Coastal Manager. Contact details and responsibilities of key staff during the construction project will be finalised once the contracts and the contractors’ teams have been established.

5.1 Key Personnel

Table 2 outlines expected environmental anticipated management roles on site. Each contractor will likely have its own management structure and will need to provide a description of roles and responsibilities to GDC upon contract award.

Table 2: Management Roles and Responsibilities

Position	Name	Company	Responsibility
GDC Sponsor	Director of Lifelines	GDC	
GDC Business Owner/Principal	Infrastructure Manager	GDC	
GDC Project Manager	Senior Project Engineer – Waipaoa Flood Control Project	GDC	Overall responsibility for the project.
Engineer to the Project	Engineer to Contract	TBC	<p>The dual role of the Engineer in the administration of the Contract is:</p> <ul style="list-style-type: none"> As expert adviser to and representative of the Principal, giving directions to the Contractor on behalf of the Principal and acting as agent of the Principal in receiving payment claims and providing payment schedules on behalf of the Principal; and Independently of either contracting party, to fairly and impartially make the decisions entrusted to him or her under the Contract, to value the work and to issue certificates.
Principal Contractor/ Project Manager	TBC	Contractor	<ul style="list-style-type: none"> Contractor representative with overall responsibility for the project construction. Compliance and updating of the CEMP. Successful Delivery of the project.
Engineer’s Representative	Senior Project Engineer – Waipaoa Flood Control Project	GDC	<ul style="list-style-type: none"> Overall responsibility for ensuring the design requirements are met. Support the Project Manager and perform the role of Engineer’s representative. Successful delivery of the project. Administration of the contract to NZS 3910.
Construction Environmental Manager (CEM) – or equivalent	TBC	Contractor	<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. Liaison with regional and district councils and other regulatory authorities.

Table 2 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 2.

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. In the occasion of a conflict or discrepancy between the CEMP and the contract requirement the engineer's representative shall be notified and requested to provide confirmation of which is correct.

5.2 Environmental Training

To ensure that specific environmental issues and management requirements are effectively communicated, all employees working on-site will undergo general environmental awareness training and training in relation to the CEMP and their environmental management responsibilities. The training will ensure that all employees and subcontractors understand their obligations to exercise due diligence for environmental matters. Environmental training will include:

- A site induction
- Familiarisation with the requirements of this CEMP
- Familiarisation with the requirements of the Accidental Discovery Protocol
- Environmental emergency response training
- Spill kit training
- Familiarisation with site environmental controls; and/or
- Specific environmental training for relevant personnel (e.g. installing erosion and sediment controls, daily checks to maintain controls, cleaning up spills, sampling and monitoring); and
- Familiarisation with the environmental resource consent conditions that are applicable to the site and works to ensure that requirements are complied with.

Records of all training will be maintained and will include:

- Who was trained
- When the person was trained
- The name of the trainer; and
- A general description of the training content.

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.

5.2.1 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 the GDC's Infrastructure Manager for review and agreement prior to construction start.

5.3 Emergency Response

All reports or spills and other environmental emergencies, regardless of their origin are to be reported to the Construction Environmental Manager and the appropriate environmental agency, i.e. GDC. An environmental emergency is any event that causes or has the potential to cause material harm to the environment.

The Principal Contractor's established and proven Environmental Procedures for Fuel, Oil and Chemical Spills and Erosion and Sediment Control are applicable to the WFCS.

Copies of each the Contractor's procedures will be provided in the final CEMP. The procedures shall contain the following as a minimum:

- Nominated contact person(s) for emergencies who will be available 24 hours a day, seven days a week, and who has the authority to stop or direct works
- Back up contact details in the event that the nominated person(s) are unavailable
- Names and contact details (including all-hours telephone numbers) for emergency response personnel
- Response personnel responsibilities
- Contact details for emergency services (ambulance, fire service, spill clean-up services)
- Location of on-site information on hazardous materials and spill containment materials
- Steps to follow to minimise damage and control an emergency; and
- Instructions and contact details for notifying GDC and/or HBRC and (if necessary) nearby residents.

5.4 Incident Management

All incidents on the project involving environmental non-compliance will be recorded and reported through the Principal Contractor's incident and non-conformance procedures. An environmental incident register will be held at the Site Office. Environmental incidents for the month are also discussed at the monthly Environmental Compliance meeting between GDC and the contractors.

Environmental incidents include, but are not restricted to:

- Spills; and
- GDC consent non-compliances.

6 Environmental Monitoring, Auditing and Reporting

In order to ensure that legal requirements (including conditions of the resource consents) and the CEMP are being complied with, ongoing evaluation of environmental performance is required. Monitoring will be undertaken prior to construction, during construction and after construction 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. The main focus of the monitoring will be field checks of the environmental controls or measures to reduce the risk of failure and thereby any adverse environmental effects.

Monitoring details will be completed in the final CEMP in line with consent conditions and the CEMP's environmental controls.

6.1 Daily Site Inspections

The environmental team will conduct inspections and issues will be noted. These inspections are informal visual inspections in order to check compliance with the CEMP. 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; checking of weather forecast and on-site weather conditions and any pre and post storm inspections as required.

6.2 Weekly Site Inspections

Formal site inspections are to be completed by the Construction Environmental Manager. Site-specific checklists will be developed to check compliance with **resource consent conditions** and this **CEMP**. Issues will be noted and reported to the Engineers Representative if they present significant environmental risks such as noisy works, works near waterways, sediment basin maintenance.

6.3 Monthly Site Inspections

The GDC's Project Manager, and GDC's compliance staff 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 conditions.

6.4 External Site Inspections

It is expected that GDC compliance staff on a regular basis will inspect the site. As the works progress, exposed areas will decrease and the effectiveness of site management is confirmed, it is expected that the frequency of these inspections will decrease. The results of the external inspections will be recorded, with any issues forwarded to the relevant parties for action.

6.5 Contractor Reporting and Meetings

A monthly Environmental Compliance Report will be prepared and submitted to GDC's Infrastructure Manager by each of the Contractors as part of their Project Monthly Progress Reports. 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.

6.6 Auditing

Periodic external environmental audits may be undertaken during the life of the construction. An up-to-date audit register will be kept on site.

6.7 Document Control and Records

Construction records will be maintained on the project to demonstrate compliance with specified requirements. A document Control Plan will be prepared and will define procedures for the identification, collection, filing, access, storage and maintenance of environmental records. Project files located at the site office will be maintained and controlled on a daily basis. Sub-contractor records will be monitored to record compliance.